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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

[x] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF
THE SECURITIES EXCHANGE ACT OF 1934
For The Fiscal Year Ended December 31, 2015
OR
[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number 1-3610

ALCOA INC.

(Exact name of registrant as specified in its charter)

Pennsylvania	25-0317820
(State of incorporation)	(I.R.S. Employer Identification No.)

390 Park Avenue, New York, New York 10022-4608
(Address of principal executive offices) (Zip code)

Registrant's telephone numbers:

Investor Relations------------— (212) 836-2674
Office of the Secretary-------—(212) 836-2732

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value $1.00 per share	New York Stock Exchange
Depositary Shares, each representing a 1/10th ownership interest in a share of 5.375% Class B Mandatory Convertible Preferred Stock, Series 1, par value $1.00 per share	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes___ No ü.

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes __ No ü .

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, and (2) has been subject to such filing requirements for the past 90 days. Yes ü No __.

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ü No __.

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [ü]

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer [ü] Accelerated filer [ ] Non-accelerated filer [ ] Smaller reporting company [ ]

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes __ No ü.

The aggregate market value of the outstanding common stock, other than shares held by persons who may be deemed affiliates of the registrant, as of the last business day of the registrant's most recently completed second fiscal quarter was approximately $14 billion. As of February 11, 2016, there were 1,314,845,888 shares of common stock, par value $1.00 per share, of the registrant outstanding.

Documents incorporated by reference.

Part III of this Form 10-K incorporates by reference certain information from the registrant's definitive Proxy Statement for its 2016 Annual Meeting of Shareholders to be filed pursuant to Regulation 14A (Proxy Statement).

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Note on Incorporation by Reference

In this Form 10-K, selected items of information and data are incorporated by reference to portions of the Proxy Statement. Unless otherwise provided herein, any reference in this report to disclosures in the Proxy Statement shall constitute incorporation by reference of only that specific disclosure into this Form 10-K.

PART I

Item 1. Business.

General

Formed in 1888, Alcoa Inc. is a Pennsylvania corporation with its principal office in New York, New York. In this report, unless the context otherwise requires, "Alcoa" or the "Company" means Alcoa Inc. and all subsidiaries consolidated for the purposes of its financial statements.

The Company's Internet address is http://www.alcoa.com. Alcoa makes available free of charge on or through its website its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the Securities and Exchange Commission (SEC). The information on the Company's Internet site is not a part of, or incorporated by reference in, this annual report on Form 10-K. The SEC maintains an Internet site that contains these reports at http://www.sec.gov.

Forward-Looking Statements

This report contains (and oral communications made by Alcoa may contain) statements that relate to future events and expectations and, as such, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include those containing such words as "anticipates," "believes," "could," "estimates," "expects," "forecasts," "goal," "intends," "may," "outlook," "plans," "projects," "seeks," "sees," "should," "targets," "will," "will likely result," "would," or other words of similar meaning. All statements that reflect Alcoa's expectations, assumptions or projections about the future other than statements of historical fact are forward-looking statements, including, without limitation, forecasts concerning global demand growth for aluminum, supply/demand balances, growth of the aerospace, automotive and other end markets, or other trend projections, anticipated financial results or operating performance, statements about Alcoa's strategies, objectives, goals, targets, outlook, and business and financial prospects, including statements regarding the separation transaction; the future performance of Value-Add Company and Upstream Company if the separation is completed; the expected benefits of the separation; projections of improved profitability, enhanced shareholder value, competitive position, market share, growth opportunities, credit ratings, revenues, cash flow or other financial items of the separated companies; the expected timing of completion of the separation; and the expected qualification of the separation as a tax-free transaction.

Forward-looking statements are subject to a number of known and unknown risks, uncertainties and other factors and are not guarantees of future performance. Actual results, performance or outcomes may differ materially from those expressed in or implied by those forward-looking statements. For a discussion of some of the specific factors that may cause Alcoa's actual results to differ materially from those projected in any forward-looking statements, see the following sections of this report: Part I, Item 1A. (Risk Factors), Part II, Item 7. (Management's Discussion and Analysis of Financial Condition and Results of Operations), including the disclosures under Segment Information and Critical Accounting Policies and Estimates, and Note N and the Derivatives Section of Note X to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data). Market projections are subject to the risks discussed above and other risks in the market. Alcoa disclaims any intention or obligation to update publicly any forward-looking statements, whether in response to new information, future events or otherwise, except as required by applicable law.

Overview

Alcoa is a global leader in lightweight metals engineering and manufacturing. Alcoa's innovative, multi-material products, which include aluminum, titanium, and nickel, are used worldwide in aerospace, automotive, commercial transportation, packaging, building and construction, oil and gas, defense, consumer electronics, and industrial applications.

Alcoa is also the world leader in the production and management of primary aluminum, fabricated aluminum, and alumina combined, through its active participation in all major aspects of the industry: technology, mining, refining, smelting, fabricating, and recycling. Aluminum is a commodity that is traded on the London Metal Exchange (LME) and priced daily. Sales of primary aluminum and alumina represent approximately 40% of Alcoa's revenues. The price of aluminum influences the operating results of Alcoa.

Alcoa is a global company operating in 30 countries. Based upon the country where the point of sale occurred, the United States and Europe generated 55% and 26%, respectively, of Alcoa's sales in 2015. In addition, Alcoa has investments and operating activities in, among others, Australia, Brazil, China, Guinea, Iceland, Russia, and Saudi Arabia. Governmental policies, laws and regulations, and other economic factors, including inflation and fluctuations in foreign currency exchange rates and interest rates, affect the results of operations in these countries.

Alcoa's operations consist of five worldwide reportable segments: Alumina, Primary Metals, Global Rolled Products, Engineered Products and Solutions, and Transportation and Construction Solutions.

Description of the Business

Information describing Alcoa's businesses can be found on the indicated pages of this report:

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The following tables and related discussion of the Company's Bauxite Interests, Alumina Refining and Primary Aluminum Facilities and Capacities, Global Rolled Products, Engineered Products and Solutions and Transportation and Construction Solutions provide additional description of Alcoa's businesses. The Alumina segment primarily consists of a series of affiliated operating entities referred to as Alcoa World Alumina and Chemicals (AWAC). Alcoa owns 60% and Alumina Limited owns 40% of these individual entities. For more information on AWAC, see Exhibit Nos. 10(a) through 10(f)(1) to this report.

Proposed Separation Transaction

On September 28, 2015, Alcoa announced that its Board of Directors approved a plan to separate into two independent, publicly-traded companies. One company will comprise the Alumina and Primary Metals segments and the other company will comprise the Global Rolled Products, Engineered Products and Solutions, and Transportation and Construction Solutions segments. Alcoa is targeting to complete the separation in the second half of 2016. The

transaction is subject to a number of conditions, including, but not limited to, final approval by Alcoa's Board of Directors, receipt of a favorable opinion of legal counsel with respect to the tax-free nature of the transaction for U.S. federal income tax purposes, completed financing, and the effectiveness of a Form 10 registration statement to be filed with the U.S. Securities and Exchange Commission. Upon completion of the separation, Alcoa shareholders will own all of the outstanding shares of both companies. Alcoa may, at any time and for any reason until the proposed transaction is complete, abandon the separation plan or modify or change its terms.

Bauxite Interests

This Bauxite Interests section explains the Company's interests in various bauxite mines throughout the world. Bauxite is one of the Company's basic raw materials and is also a product sold into the third-party marketplace. This section provides mine description and reserve and annual production figures in respect of the Company's interests.

Aluminum is one of the most abundant elements in the earth's crust. Aluminum metal is produced by smelting alumina. Alumina is produced primarily from refining bauxite. Bauxite contains various aluminum hydroxide minerals, the most important of which are gibbsite and boehmite. Alcoa processes most of the bauxite that it mines into alumina. The Company obtains bauxite from its own resources and from those belonging to the AWAC enterprise, located in the countries listed in the table below, as well as pursuant to both long-term and short-term contracts and mining leases. Tons of bauxite are reported as bone dry metric tons (bdmt) unless otherwise stated. See the glossary of bauxite mining related terms at the end of this section.

During 2015, mines operated by Alcoa (owned by Alcoa and AWAC) produced 38.3 million bdmt and separately mines operated by third parties (with Alcoa and AWAC equity interests) produced 7.0 million bdmt on a proportional equity basis for a total bauxite production of 45.3 million bdmt.

Based on the terms of its bauxite supply contracts, AWAC bauxite purchases from Mineração Rio do Norte S.A. (MRN) and Compagnie des Bauxites de Guinée (CBG) differ from its proportional equity in those mines. Therefore during 2015, AWAC had access to 47.8 million bdmt of production from its portfolio of mines.

During 2015, AWAC sold 2.0 million bdmt of bauxite to third parties and purchased 1.1 million bdmt from third parties. The bauxite delivered to Alcoa and AWAC refineries amounted to 46.8 million bdmt during 2015.

The Company is growing its third-party bauxite sales business. During the third quarter of 2015, Alcoa received permission from the Government of Western Australia to export trial shipments from its Western Australia mines.

The Company has access to large bauxite deposit areas with mining rights that extend in most cases more than 20 years from the date of this report. For purposes of evaluating the amount of bauxite that will be available to supply as feedstock to its refineries, the Company considers both estimates of bauxite resources as well as calculated bauxite reserves. Bauxite resources represent deposits for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence based on the amount of exploration sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. Bauxite reserves represent the economically mineable part of resource deposits, and include diluting materials and allowances for losses, which may occur when the material is mined. Appropriate assessments and studies have been carried out to define the reserves, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Alcoa employs a conventional approach (including additional drilling with successive tightening of the drill grid) with customized techniques to define and characterize its various bauxite deposit types allowing Alcoa to confidently establish the extent of its bauxite resources and their ultimate conversion to reserves.

The table below only includes the amount of proven and probable reserves controlled by the Company. While the level of reserves may appear low in relation to annual production levels, they are consistent with historical levels of reserves for the Company's mining locations. Given the Company's extensive bauxite resources, the abundant supply of bauxite

globally and the length of the Company's rights to bauxite, it is not cost-effective to invest the significant funds and efforts necessary to establish bauxite reserves that reflect the total size of the bauxite resources available to the Company. Rather, bauxite resources are upgraded annually to reserves as needed by the location. Detailed assessments are progressively undertaken within a proposed mining area and mine activity is then planned to achieve a uniform quality in the supply of blended feedstock to the relevant refinery. Alcoa believes its present sources of bauxite on a global basis are sufficient to meet the forecasted requirements of its alumina refining operations for the foreseeable future.

Bauxite Resource Development Guidelines

Alcoa has developed best practice guidelines for bauxite reserve and resource classification at its operating bauxite mines. Alcoa's reserves are declared in accordance with Alcoa's internal guidelines as administered by the Alcoa Ore Reserves Committee (AORC). The reported ore reserves set forth in the table below are those that Alcoa estimates could be extracted economically with current technology and in current market conditions. Alcoa does not use a price for bauxite, alumina, or aluminum to determine its bauxite reserves. The primary criteria for determining bauxite reserves are the feed specifications required by the customer alumina refinery. In addition to these specifications, a number of modifying factors have been applied to differentiate bauxite reserves from other mineralized material. Alcoa mining locations have annual in-fill drilling programs designed to progressively upgrade the reserve and resource classification of their bauxite.

Alcoa Bauxite Interests, Share of Reserves and Annual Production[1]

Country	Project	Owners' Mining Rights (% Entitlement)	Expiration Date of Mining Rights	Probable Reserves (million bdmt)	Proven Reserves (million (bdmt)	Available Alumina Content (%) $AvAl_2O_3$	Reactive Silica Content (%) $RxSiO_2$	2015 Annual Production (million bdmt)
Australia	Darling Range Mines ML1SA	Alcoa of Australia Limited (AofA)[2] (100%)	2024	28.5	150.0	33.0	0.9	31.7
Brazil	Poços de Caldas	Alcoa Alumínio S.A. (Alumínio)[3] (100%)	2020[4]	0.9	1.3	39.6	4.4	0.3
	Juruti[4] RN101, RN102, RN103, RN104, #34	Alcoa World Alumina Brasil Ltda. (AWA Brasil)[2] (100%)	2100[4]	8.7	26.5	47.7	4.1	4.7
Suriname	Coermotibo and Onverdacht	Suriname Aluminum Company, L.L.C. (Suralco)[2] (55%) N.V. Alcoa Minerals of Suriname (AMS)[5] (45%)	2033[6]	0.0	0.0	N/A	N/A	1.6
Equity interests:								
Brazil	Trombetas	Mineração Rio do Norte S.A. (MRN)[7] (18.2%)	2046[4]	3.7	10.4	49.5	4.5	3.0
Guinea	Boké	Compagnie des Bauxites de Guinée (CBG)[8] (22.95%)	2038[9]	59.5	23.2	TAl_2O_3[10] 48.5	$TSiO_2$[10] 1.7	3.4
Kingdom of Saudi Arabia	Al Ba'itha	Ma'aden Bauxite & Alumina Company (25.1%)[11]	2037	33.8	19.3	TAA[12] 49.4	$TSiO_2$[12] 8.6	0.6

[1] This table shows only the AWAC and/or Alcoa share (proportion) of reserve and annual production tonnage.

[2] This entity is part of the AWAC group of companies and is owned 60% by Alcoa and 40% by Alumina Limited.

[3] Alumínio is owned 100% by Alcoa.

[4] Brazilian mineral legislation does not establish the duration of mining concessions. The concession remains in force until the exhaustion of the deposit. The Company estimates that (i) the concessions at Poços de Caldas will last at least until 2020, (ii) the concessions at Trombetas will last until 2046 and (iii) the concessions at Juruti will last until 2100. Depending, however, on actual and future needs, the rate at which the deposits are exploited and government approval is obtained, the concessions may be extended to (or expire at) a later (or an earlier) date.

[5] Alcoa World Alumina LLC (AWA LLC) owns 100% of N.V. Alcoa Minerals of Suriname (AMS). Suralco and AMS are parts of the AWAC group of companies which are owned 60% by Alcoa and 40% by Alumina Limited.

[6] At the end of 2015, AWAC's bauxite mineral and mining rights remained valid until 2033. The AWAC mines in Suriname were curtailed in the fourth quarter of 2015. There are no plans for AWAC to restart these mines and there are no reserves to declare.

[7] Alumínio holds an 8.58% total interest, AWA Brasil holds a 4.62% total interest and AWA LLC holds a 5% total interest in MRN. MRN is jointly owned with affiliates of Rio Tinto Alcan Inc., Companhia Brasileira de Alumínio, Companhia Vale do Rio Doce, BHP Billiton Plc (BHP Billiton) and Norsk Hydro. Alumínio, AWA Brasil, and AWA LLC purchase bauxite from MRN under long-term supply contracts.

[8] AWA LLC owns a 45% interest in Halco (Mining), Inc. (Halco). Halco owns 100% of Boké Investment Company, a Delaware company, which owns 51% of CBG. The Guinean Government owns 49% of CBG, which has the exclusive right through 2038 to develop and mine bauxite in certain areas within an approximately 2939 square kilometer concession in northwestern Guinea.

[9] AWA LLC and Alũmina Española, S.A. have bauxite purchase contracts with CBG that expire in 2033. Before that expiration date, AWA LLC and Alũmina Española, S.A. expect to negotiate extensions of their contracts as CBG will have concession rights until 2038. The CBG concession can be renewed beyond 2038 by agreement of the Government of Guinea and CBG should more time be required to commercialize the remaining economic bauxite within the concession.

[10] Guinea—Boké: CBG prices bauxite and plans the mine based on the bauxite qualities of total alumina (TAl_2O_3) and total silica ($TSiO_2$).

[11] Ma'aden Bauxite & Alumina Company is a joint venture owned by Saudi Arabian Mining Company (Ma'aden) (74.9%) and AWA Saudi Limited (25.1%). AWA Saudi Limited is part of the AWAC group of companies and is owned 60% by Alcoa and 40% by Alumina Limited.

[12] Kingdom of Saudi Arabia—Al Ba'itha: Bauxite reserves and mine plans are based on the bauxite qualities of total available alumina (TAA) and total silica ($TSiO_2$).

Qualifying statements relating to the table above:

Australia—Darling Range Mines: Huntly and Willowdale are the two AWAC active mines in the Darling Range of Western Australia. The mineral lease issued by the State of Western Australia to AofA is known as ML1SA and its term extends to 2024. The lease can be renewed for an additional twenty-one year period to 2045. The declared reserves are as for December 31, 2015. The amount of reserves reflects the total AWAC share. Additional resources are routinely upgraded by additional exploration and development drilling to reserve status. The Huntly and Willowdale mines supply bauxite to three local AWAC alumina refineries.

Brazil—Poços de Caldas: Declared reserves are as for December 31, 2015. Tonnage is total Alcoa share. Additional resources are being upgraded to reserves as needed.

Brazil—Juruti RN101, RN102, RN103, RN104, #34: Declared reserves are as for December 31, 2015. All reserves are on Capiranga Plateau. Declared reserves are total AWAC share. Declared reserve tonnages and the annual production tonnage are washed product tonnages. The Juruti mine's operating license is periodically renewed.

Suriname—Suralco: The AWAC mines in Suriname were curtailed in the fourth quarter of 2015. AWAC has no plans to restart these mines and there are no reserves to declare.

Brazil—Trombetas-MRN: Declared reserves have been estimated by MRN as for December 31, 2015. The CP Report for December 31, 2015 reserves is expected to be issued on or about February 29, 2016. Declared and annual production tonnages reflect the total for Alumínio and AWAC shares (18.2%). Declared tonnages are washed product tonnages.

Guinea—Boké-CBG: Declared reserves are based on export quality bauxite and have been estimated by CBG as for December 31, 2015. The CP Report for December 31, 2015 reserves is expected to be issued in March 2016. Declared tonnages reflect only the AWAC share of CBG's reserves. Annual production tonnage is reported based on AWAC's 22.95% share. Declared reserves quality is reported based on total alumina ($TAl_2 O_3$) and total silica ($TSiO_2$) because CBG export bauxite is sold on this basis. Additional resources are being routinely drilled and modeled to upgrade to reserves as needed.

Kingdom of Saudi Arabia—Al Ba'itha: The Al Ba'itha Mine began production during 2014 and production was increased in 2015. Declared reserves are as for December 31, 2015. The proven reserves have been decremented for 2015 mine production. The declared reserves are located in the South Zone of the Az Zabirah Bauxite Deposit. The reserve tonnage in this declaration is AWAC share only (25.1%).

The following table provides additional information regarding the Company's bauxite mines:

Mine & Location	Means of Access	Operator	Title, Lease or Options	History	Type of Mine Mineralization Style	Power Source	Facilities, Use & Condition
Australia—Darling Range; Huntly and Willowdale.	Mine locations accessed by roads. Ore is transported to refineries by long distance conveyor and rail.	Alcoa	Mining lease from the Western Australia Government. ML1SA. Expires in 2024.	Mining began in 1963.	Open-cut mines. Bauxite is derived from the weathering of Archean granites and gneisses and Precambrian dolerite.	Electrical energy from natural gas is supplied by the refinery.	Infrastructure includes buildings for administration and services; workshops; power distribution; water supply; crushers; long distance conveyors. Mines and facilities are operating.
Brazil—Poços de Caldas. Closest town is Poços de Caldas, MG, Brazil.	Mine locations are accessed by road. Ore transport to the refinery is by road.	Alcoa	Mining licenses from the Government of Brazil and Minas Gerais. Company claims and third-party leases. Expires in 2020.	Mining began in 1965.	Open-cut mines. Bauxite derived from the weathering of nepheline syenite and phonolite.	Commercial grid power.	Mining offices and services are located at the refinery. Numerous small deposits are mined by contract miners and the ore is trucked to either the refinery stockpile or intermediate stockpile area. Mines and facilities are operating. Mine production has been reduced to align with the reduced production of the Poços refinery which is now producing specialty alumina.
Brazil—Juruti. Closest town is Juruti located on the Amazon River.	The mine's port at Juruti is located on the Amazon River and accessed by ship. Ore is transported from the mine site to the port by Company owned rail.	Alcoa	Mining licenses from the Government of Brazil and Pará. Mining rights do not have a legal expiration date. See footnote 4 to the table above. Operating licenses for the mine, washing plant and RR have been renewed with validity until 2018. Operating license for the port remains valid until the government agency formalizes the renewal.	The Juruti deposit was systematically evaluated by Reynolds Metals Company beginning in 1974. Alcoa merged Reynolds into the Company in 2000. Alcoa then executed a due diligence program and expanded the exploration area. Mining began in 2009.	Open-cut mines. Bauxite derived from weathering during the Tertiary of Cretaceous fine to medium grained feldspathic sandstones. The deposits are covered by the Belterra clays.	Electrical energy from fuel oil is generated at the mine site. Commercial grid power at the port.	At the mine site: Fixed plant facilities for crushing and washing the ore; mine services offices and workshops; power generation; water supply; stockpiles; rail sidings. At the port: Mine and rail administrative offices and services; port control facilities with stockpiles and ship loader. Mine and port facilities are operating.
Suriname— Coermotibo and Onverdacht. Mines are located in the districts of Para and Marowijne.	The mines are accessed by road. Ore is delivered to the refinery by road from the Onverdacht area and by river barge from the Coermotibo area.	Alcoa	Brokopondo Concession from the Government of Suriname. Concessions formerly owned by a BHP Billiton (BHP) subsidiary that was a 45% joint venture partner in the Surinamese bauxite mining and alumina refining joint ventures. AWA LLC acquired that subsidiary in 2009. After the acquisition of the subsidiary, its name was changed to N.V. Alcoa Minerals of Suriname. Expires in 2033.	Alcoa became active in Suriname in 1916 with the founding of the Suriname Bauxite Company. Bauxite was first exported in 1922. The Brokopondo Agreement was signed in 1958. As noted, Suralco bought the bauxite and alumina interests of a BHP subsidiary from BHP in 2009.	Open-cut mines. At one of the mines, the overburden is dredged and mining progresses with conventional open-cut methods. The protoliths of the bauxite have been completely weathered. The bauxite deposits are mostly derived from the weathering of Tertiary Paleogene arkosic sediments. In some places, the bauxite overlies Precambrian granitic and gneissic rocks which have been deeply weathered to saprolite. Bauxitization likely occurred during the middle to late Eocene Epoch.	Commercial grid power.	In the Onverdacht mining areas, the bauxite is mined and transported to the refinery by truck. In the Coermotibo mining areas, the bauxite is mined, stockpiled and then transported to the refinery by barge. Some of the ore is washed in a small beneficiation plant located in the Coermotibo area. The main mining administrative offices, services, workshops and laboratory are located at the refinery in Paranam. The ore is crushed at Paranam and fed into the refining process. The Suralco mines were curtailed in the fourth quarter of 2015. There are no plans for AWAC to restart these mines.

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Mine & Location	Means of Access	Operator	Title, Lease or Options	History	Type of Mine Mineralization Style	Power Source	Facilities, Use & Condition
Brazil—MRN. Closest town is Trombetas in the State of Pará, Brazil.	The mine and port areas are connected by sealed road and company owned rail. Washed ore is transported to Porto Trombetas by rail. Trombetas is accessed by river and by air at the airport.	MRN	Mining rights and licenses from the Government of Brazil. Concession rights expire in 2046.	Mining began in 1979. Major expansion in 2003.	Open-cut mines. Bauxite derived from weathering during the Tertiary of Cretaceous fine to medium grained feldspathic sandstones. The deposits are covered by the Belterra clays.	MRN generates its own electricity from fuel oil.	Ore mined from several plateaus is crushed and transported to the washing plant by long-distance conveyors. The washing plant is located in the mining zone. Washed ore is transported to the port area by company-owned and operated rail. At Porto Trombetas the ore is loaded onto customer ships berthed in the Trombetas River. Some ore is dried and the drying facilities are located in the port area. Mine planning and services and mining equipment workshops are located in the mine zone. The main administrative, rail and port control offices and various workshops are located in the port area. MRN's main housing facilities, "the city", are located near the port. The mines, port and all facilities are operating.
Guinea—CBG. Closest town to the mine is Sangaredi. Closest town to the port is Kamsar. The CBG Lease is located within the Boké, Telimele and Gaoual administrative regions.	The mine and port areas are connected by sealed road and company-operated rail. Ore is transported to the port at Kamsar by rail. There are air strips near both the mine and port. These are not operated by the company.	CBG	CBG Lease expires in 2038. The lease is renewable in 25-year increments. CBG's rights are specified within the Basic Agreement and Amendment 1 to the Basic Agreement with the Government of Guinea.	Construction began in 1969. First export ore shipment was in 1973.	Open-cut mines. The bauxite deposits within the CBG lease are of two general types. TYPE 1: In-situ laterization of Ordovician and Devonian plateau sediments locally intruded by dolerite dikes and sills. TYPE 2: Sangaredi type deposits are derived from clastic deposition of material eroded from the Type 1 laterite deposits and possibly some of the proliths from the TYPE 1 plateaus deposits.	The company generates its own electricity from fuel oil at both Kamsar and Sangaredi.	Mine offices, workshops, power generation and water supply for the mine and company mine city are located at Sangaredi. The main administrative offices, port control, railroad control, workshops, power generation and water supply are located in Kamsar. Ore is crushed, dried and exported from Kamsar. CBG has company cities within both Kamsar and Sangaredi. The mines, railroad, driers, port and other facilities are operating.
Kingdom of Saudi Arabia—Al Ba'itha Mine. Qibah is the closest regional centre to the mine, located in the Qassim province.	The mine and refinery are connected by road and rail. Ore is transported to the refinery at Ras Al Khair by rail.	Ma'aden Bauxite & Alumina Company	The current mining lease will expire in 2037.	The initial discovery and delineation of bauxite resources was carried out between 1979 and 1984. The southern zone of the Az Zabirah deposit was granted to Ma'aden in 1999. Mine construction was completed in the second quarter of 2015, and the mining operations continued at planned levels.	Open-cut mine. Bauxite occurs as a paleolaterite profile developed at an angular unconformity between underlying late Triassic to early Cretaceous sediments (parent rock sequence Biyadh Formation) and the overlying late Cretaceous Wasia Formation (overburden sequence).	The company generates electricity at the mine site from fuel oil.	The mine includes fixed plants for crushing and train loading; workshops and ancillary services; power plant; and water supply. There is a company village with supporting facilities. Mining operations commenced in 2014. Mine construction was completed in the second quarter of 2015 and the mining operations continued at planned levels.

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Kingdom of Saudi Arabia Joint Venture

In December 2009, Alcoa and Saudi Arabian Mining Company (Ma'aden) entered into a joint venture to develop a fully integrated aluminum complex in the Kingdom of Saudi Arabia. In its initial phases, the complex includes a bauxite mine with an initial capacity of 4 million bdmt per year; an alumina refinery with an initial capacity of 1.8 million mt per year (mtpy); an aluminum smelter with an initial capacity of ingot, slab and billet of 740,000 mtpy; and a rolling mill with initial capacity of 380,000 mtpy. The mill will produce a variety of sheet products.

The refinery, smelter and rolling mill are located within the Ras Al Khair industrial zone on the east coast of the Kingdom of Saudi Arabia.

The smelter and refinery are fully operational. The mine construction was completed in the second quarter of 2015 and ramp up of operations is proceeding as planned.

Total capital investment is expected to be approximately $10.8 billion (SAR 40.5 billion). Ma'aden owns a 74.9% interest in the joint venture. Alcoa owns a 25.1% interest in the smelter and rolling mill, with AWAC holding a 25.1% interest in the mine and refinery. For additional information regarding the joint venture, see the Equity Investments section of Note I to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data).

Glossary of Bauxite Mining Related Terms

Term	Abbreviation	Definition
Alcoa Ore Reserves Committee	AORC	The group within Alcoa, which is comprised of Alcoa geologists and engineers, that specifies the guidelines by which bauxite reserves and resources are classified. These guidelines are used by Alcoa managed mines.
Alumina	Al_2O_3	A compound of aluminum and oxygen. Alumina is extracted from bauxite using the Bayer Process. Alumina is a raw material for smelters to produce aluminum metal.
AORC Guidelines		The Alcoa guidelines used by Alcoa managed mines to classify reserves and resources. These guidelines are issued by the Alcoa Ore Reserves Committee.
Available alumina content	$AvAl_2O_3$	The amount of alumina extractable from bauxite using the Bayer Process.
Bauxite		The principal raw material (rock) used to produce alumina. Bauxite is refined using the Bayer Process to extract alumina.
Bayer Process		The principal industrial means of refining bauxite to produce alumina.
Bone dry metric ton	Bdmt	Tonnage reported on a zero moisture basis.
Coermotibo		The mining area in Suriname containing the deposits of Bushman Hill, CBO Explo, Lost Hill and Remnant. These mines have been curtailed.
Competent Persons Report	CP Report	Joint Ore Reserves Committee (JORC) Code compliant Reserves and Resources Report.
Juruti RN101, RN102, RN103, RN104, #34		Mineral claim areas in Brazil associated with the Juruti mine, within which Alcoa has mining operating licenses issued by the state.
ML1SA		The Mineral lease issued by the State of Western Australia to Alcoa. Alcoa mines located at Huntly and Willowdale operate within ML1SA.
Onverdacht		The mining area in Suriname containing the deposits of Kaaimangrasi, Klaverblad, Lelydorp1 and Sumau 1. These mines have been curtailed.

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Term	Abbreviation	Definition
Open-cut mine		The type of mine in which an excavation is made at the surface to extract mineral ore (bauxite). The mine is not underground and the sky is viewable from the mine floor.
Probable reserve		That portion of a reserve, i.e. bauxite reserve, where the physical and chemical characteristics and limits are known with sufficient confidence for mining and to which various mining modifying factors have been applied. Probable reserves are at a lower confidence level than proven reserves.
Proven reserve		That portion of a reserve, i. e. bauxite reserve, where the physical and chemical characteristics and limits are known with high confidence and to which various mining modifying factors have been applied.
Reactive silica	$RxSiO_2$	The amount of silica contained in the bauxite that is reactive within the Bayer Process.
Reserve		That portion of mineralized material, i.e. bauxite, that Alcoa has determined to be economically feasible to mine and supply to an alumina refinery.
Resources		Resources are bauxite occurrences and/or concentrations of economic interest that are in such form, quality and quantity that are reasonable prospects for economic extraction.
Silica	SiO_2	A compound of silicon and oxygen.
Total alumina content	TAl_2O_3	The total amount of alumina in bauxite. Not all of this alumina is extractable or available in the Bayer Process.
Total available alumina	TAA	The total amount of alumina extractable from bauxite by the Bayer Process. This term is commonly used when there is a hybrid or variant Bayer Process that will refine the bauxite.
Total silica	$TSiO_2$	The total amount of silica contained in the bauxite.

Alumina Refining Facilities and Capacity

Alcoa is the world’s leading producer of alumina. Alcoa’s alumina refining facilities and its worldwide alumina capacity are shown in the following table:

Alcoa Worldwide Alumina Refining Capacity

Country	Facility	Owners (% of Ownership)	Nameplate Capacity[1] (000 MTPY)	Alcoa Consolidated Capacity[2] (000 MTPY)
Australia	Kwinana	AofA[3] (100%)	2,190	2,190
	Pinjarra	AofA (100%)	4,234	4,234
	Wagerup	AofA (100%)	2,555	2,555
Brazil	Poços de Caldas	Alumínio[4] (100%)	390[5]	390
	São Luís (Alumar)	AWA Brasil[3] (39%) Rio Tinto Alcan Inc.[6] (10%) Alumínio (15%) BHP Billiton[6] (36%)	3,500	1,890

Country	Facility	Owners (% of Ownership)	Nameplate Capacity[1] (000 MTPY)	Alcoa Consolidated Capacity[2] (000 MTPY)
Spain	San Ciprián	Alúmina Española, S.A.[3] (100%)	1,500[7]	1,500
Suriname	Suralco	Suralco[3] (55%) AMS[8] (45%)	2,207[9]	2,207
United States	Point Comfort, TX	AWA LLC[3] (100%)	2,305[10]	2,305
TOTAL			18,881	17,271

1 Nameplate Capacity is an estimate based on design capacity and normal operating efficiencies and does not necessarily represent maximum possible production.

2 The figures in this column reflect Alcoa's share of production from these facilities. For facilities wholly-owned by AWAC entities, Alcoa takes 100% of the production.

3 This entity is part of the AWAC group of companies and is owned 60% by Alcoa and 40% by Alumina Limited.

4 This entity is owned 100% by Alcoa.

5 As a result of the decision to fully curtail the Poços de Caldas smelter, management initiated a reduction in alumina production at this refinery. The capacity that is operating at this refinery is producing at an approximately 45% output level.

6 The named company or an affiliate holds this interest.

7 The capacity that is operating at this refinery is producing at an approximately 95% output level.

8 AWA LLC owns 100% of N.V. Alcoa Minerals of Suriname (AMS). AWA LLC is part of the AWAC group of companies and is owned 60% by Alcoa and 40% by Alumina Limited.

9 The Suralco alumina refinery now has been fully curtailed (see below).

10 The Point Comfort alumina refinery will be fully curtailed (see below).

As of December 31, 2015, Alcoa had approximately 2,801,000 mtpy of idle capacity against total Alcoa Consolidated Capacity of 17,271,000 mtpy.

In March 2015, the Company initiated a 12-month review of 2,800,000 mtpy in refining capacity for possible curtailment (partial or full), permanent closure or divestiture. This review is part of the Company's target to lower Alcoa's refining operations on the global alumina cost curve to the 21st percentile (currently 23rd) by the end of 2016. As part of this review, in March 2015, the Company decided to curtail 443,000 mtpy (one digester) of capacity at the Suralco refinery; this action was completed by the end of April 2015.

Additionally, in September, the Company decided to curtail the remaining capacity (887,000 mtpy—two digesters) at Suralco; the Company completed it by the end of November 2015 (877,000 mtpy of capacity at Suralco had previously been curtailed). The Company is currently in discussions with the Suriname government to determine the best long-term solution for Suralco due to limited bauxite reserves and the absence of a long-term energy alternative.

During 2015, Alcoa undertook curtailment of the remaining 2,010,000 mtpy of capacity at the Point Comfort, Texas refinery (295,000 mtpy had previously been curtailed). This action is expected to be completed by the end of June 2016 (375,000 mtpy was completed by the end of December 2015).

As noted above, Alcoa and Ma'aden have developed an alumina refinery in the Kingdom of Saudi Arabia. Initial capacity of the refinery is 1.8 million mtpy. The refinery produced approximately 1.0 million mt in 2015. For additional information regarding the joint venture, see the Equity Investments section of Note I to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data).

In November 2005, AWA LLC and Rio Tinto Alcan Inc. (RTA) signed a Basic Agreement with the Government of Guinea that sets forth the framework for development of a 1.5 million mtpy alumina refinery in Guinea. In 2006, the

Basic Agreement was approved by the Guinean National Assembly and was promulgated into law. The Basic Agreement was originally set to expire in November 2008, but was extended several times, most recently to November 2015. Alcoa completed a pre-feasibility study in 2008, further pre-feasibility work in 2012, and concluded its evaluation of the project in 2015. AWA LLC and RTA agreed that current market conditions are unable to support the development of the project as originally conceived and the Basic Agreement expired in November 2015.

In September 2006, Alcoa received environmental approval from the Government of Western Australia for expansion of the Wagerup alumina refinery to a maximum capacity of 4.7 million mtpy, a potential increase of over 2 million mtpy. This approval had a term of five years and included environmental conditions that must be satisfied before Alcoa could seek construction approval for the project. The project was suspended in November 2008 due to global economic conditions and the unavailability of a secure long-term energy supply in Western Australia. These constraints continue and as such the project remains under suspension. In May 2012, the Government of Western Australia granted Alcoa a 5 year extension of the original environmental approval. In 2015, Alcoa applied for a further five year extension. The extension has not yet been granted and there has been no additional work done on the project.

In 2015, Alcoa and Vietnam National Coal-Minerals Industries Group began discussions regarding potential cooperation to improve the operational and technical performance of the Tan Rai Refinery which started up in 2014. In January 2016, the parties entered into a non-disclosure agreement to support and further the development of this potential cooperation. The parties continue to discuss a Memorandum of Understanding (MOU).

Primary Aluminum Facilities and Capacity

The Company's primary aluminum smelters and their respective capacities are shown in the following table:

Alcoa Worldwide Smelting Capacity

Country	Facility	Owners (% Of Ownership)	Nameplate Capacity[1] (000 MTPY)	Alcoa Consolidated Capacity[2] (000 MTPY)
Australia	Portland	AofA (55%) CITIC[3] (22.5%) Marubeni[3] (22.5%)	358	197[4,5]
Brazil	São Luís (Alumar)	Alumínio (60%) BHP Billiton[3] (40%)	447	268[6]
Canada	Baie Comeau, Québec	Alcoa (100%)	280	280
	Bécancour, Québec	Alcoa (74.95%) Rio Tinto Alcan Inc. [7] (25.05%)	413	310
	Deschambault, Québec	Alcoa (100%)	260	260
Iceland	Fjarðaál	Alcoa (100%)	344	344
Norway	Lista	Alcoa (100%)	94	94
	Mosjøen	Alcoa (100%)	188	188
Spain	Avilés	Alcoa (100%)	93[8]	93
	La Coruña	Alcoa (100%)	87[8]	87
	San Ciprián	Alcoa (100%)	228	228
United States	Evansville, IN (Warrick)	Alcoa (100%)	269[9]	269
	Massena West, NY	Alcoa (100%)	130	130
	Rockdale, TX	Alcoa (100%)	191[10]	191
	Ferndale, WA (Intalco)	Alcoa (100%)	279[11]	279
	Wenatchee, WA	Alcoa (100%)	184[12]	184
TOTAL			3,845	3,401

[1] Nameplate Capacity is an estimate based on design capacity and normal operating efficiencies and does not necessarily represent maximum possible production.

[2] The figures in this column reflect Alcoa's share of production from these facilities.

[3] The named company or an affiliate holds this interest.

[4] This figure includes the minority interest of Alumina Limited in the Portland facility, which is owned by AofA. From this facility, Alcoa takes 100% of the production allocated to AofA.

[5] The Portland smelter has approximately 30,000 mtpy of idle capacity.

[6] The Alumar smelter has been fully curtailed since April 2015 (see below).

[7] Owned through Rio Tinto Alcan Inc.'s interest in Pechiney Reynolds Québec, Inc., which is owned by Rio Tinto Alcan Inc. and Alcoa.

[8] The Avilés and La Coruña smelters have approximately 56,000 mtpy of idle capacity combined.

[9] In January 2016, Alcoa announced that it will permanently close the Warrick smelter by the end of the first quarter of 2016 (see below).

[10] The Rockdale smelter has been fully curtailed since the end of 2008.

[11] The Intalco smelter has had approximately 49,000 mtpy of idle capacity. In November 2015, the Company announced that it would idle the remaining 230,000 mtpy capacity by the end of the first quarter of 2016. In January 2016, Alcoa announced that it will delay this further curtailment of the smelter until the end of the second quarter of 2016 (see below).

[12] The Wenatchee smelter has had approximately 41,000 mtpy of idle capacity. The Company idled the remaining 143,000 mtpy of capacity by the end of December 2015.

As of December 31, 2015, Alcoa had approximately 778,000 mtpy of idle capacity against total Alcoa Consolidated Capacity of 3,401,000 mtpy.

In March 2015, the Company initiated a 12-month review of 500,000 mtpy of smelting capacity for possible curtailment (partial or full), permanent closure or divestiture. This review is part of the Company's target to lower Alcoa's smelting operations on the global aluminum cost curve to the 38th percentile (currently 43rd) by 2016. As part of this review, in March 2015, Alcoa decided to curtail the remaining capacity (74,000 mtpy) at the Alumar smelter; this action was completed in April 2015.

Separate from the smelting capacity review described above, in June 2015, Alcoa decided to permanently close the Poços de Caldas smelter (96,000 mtpy) in Brazil effective immediately. The Poços de Caldas smelter had been temporarily idle since May 2014 due to challenging global market conditions for primary aluminum and higher operating costs, which made the smelter uncompetitive. The decision to permanently close the Poços de Caldas smelter was based on the fact that these underlying conditions had not improved. As a result, the Poços de Caldas smelter was removed from the table above.

In November 2015, Alcoa announced that it would curtail 503,000 mtpy of aluminum smelting capacity amid prevailing market conditions by idling capacity at the Massena West (130,000 mtpy), Intalco (230,000 mtpy) and Wenatchee (143,000 mtpy) smelters. The curtailment of the remaining capacity at Wenatchee was completed by the end of December 2015 and the curtailment of the remaining capacity at Intalco was expected to be completed by the end of March 2016. The casthouses at Massena West and Intalco will continue to operate. Later in November 2015, the Company announced that it had entered into a three-and-a-half year agreement with New York State to increase the competitiveness of the Massena West smelter. As a result, the Massena West smelter will continue to operate.

In January 2016, the Company announced it will delay the curtailment (230,000 mtpy) of its Intalco smelter in Ferndale, Washington until the end of the second quarter of 2016. Recent decreases in energy and raw material costs have made it more cost effective in the near term to keep the smelter operating.

In January 2016, Alcoa announced that it will permanently close its 269,000 mtpy Warrick Operations smelter in Evansville, Indiana by the end of the first quarter of 2016. The rolling mill and power plant at Warrick Operations will continue to operate.

As noted above, Alcoa and Ma'aden have developed an aluminum smelter in the Kingdom of Saudi Arabia. The smelter has an initial nameplate capacity of 740,000 mtpy. Since mid-2014, the smelter has been operating at full capacity and it produced 757,833 mt in 2015.

In 2014, Alcoa and the Brunei Economic Development Board agreed to extend for four years an existing MOU to enable more detailed studies into the feasibility of establishing a modern, gas-powered aluminum smelter in Brunei Darussalam to follow a period of strategic assessment of global market conditions.

In 2007, Alcoa and the Greenland Government entered into an MOU regarding cooperation on a feasibility study for an aluminum smelter with a 360,000 mtpy capacity in Greenland. The MOU also encompasses a hydroelectric power system and related infrastructure improvements, including a port. Due to unfavorable global market conditions for primary aluminum, Alcoa and the Greenland Government entered into negotiations in 2015 to address, among other subjects, formalizing an extension of estimated dates for Alcoa to achieve certain of its undertakings under the MOU, and providing the Greenland Government latitude to develop hydro resources throughout Greenland. Negotiations between the parties are anticipated to complete in 2016.

Global Rolled Products

The Company's Global Rolled Products segment represents Alcoa's midstream operations. For a discussion of this segment's business, see "Results of Operations—Segment Information" in Part II, Item 7. (Management's Discussion and Analysis of Financial Condition and Results of Operations) and Note Q to the Consolidated Financial Statements—Segment and Geographic Area Information in Part II, Item 8. (Financial Statements and Supplementary Data).

In March 2015, Alcoa sold its Russia-based aluminum mill in Belaya Kalitva, Alcoa Metallurg Rus, to a subsidiary of Stupino Titanium Co.

In September 2015, Alcoa announced the completion of an expansion at its Tennessee facility dedicated to supplying aluminum sheet to the automotive industry. The Tennessee plant will provide aluminum sheet to automakers such as Ford Motor Company, Fiat Chrysler Automobiles and General Motors. The expansion created approximately 200 full-time jobs.

In 2014, Alcoa announced a $190 million investment at its Davenport Works facility to expand its product offerings in the aerospace and industrial markets through the installation of technology that will enhance the performance of thick aluminum and aluminum-lithium plate for use in various applications such as wing ribs and fuselage frames for the aerospace market. Construction on this project began in 2015, with first customer production expected in 2017.

In October 2015, Alcoa entered into an agreement with the Danieli Group, a global supplier of plants and equipment to the metals industry, to license and commercialize its Micromill technology. Under the agreement, Alcoa licenses the patented technology to Danieli that will manufacture and sell Micromill equipment to mill operators that will also be licensed by Alcoa. The Alcoa-patented Micromill process produces metal with a microstructure that is distinct from the microstructure obtained from conventional rolling, allowing the production of an aluminum alloy for automotive applications that has 40 percent greater formability and 30 percent greater strength than the incumbent aluminum used today while meeting stringent automotive surface quality requirements. Additionally, automotive parts made with Micromill material will be twice as formable and at least 30 percent lighter than parts made from high strength steel. The Micromill will enable the next generation of automotive aluminum products, and equip Alcoa to capture growing automotive demand.

Also in 2014, Alcoa announced a $40 million investment in its Itapissuma, Brazil rolling mill to increase production of specialty foils for aseptic and flexible packages. Initial work for the expansion is underway and commissioning is expected to begin in 2016.

As noted above, Alcoa and Saudi Arabian Mining Company (Ma'aden) entered into a joint venture to develop a fully integrated aluminum complex in the Kingdom of Saudi Arabia. It includes among other things the Ma'aden Rolling Company, which owns the rolling mill that has capacity to produce 380,000 mtpy and is 74 acres under roof.

Global Rolled Products Principal Facilities

Country	Location	Owners[1] (% Of Ownership)	Products
Brazil	Itapissuma	Alcoa (100%)	Specialty Foil
China	Kunshan	Alcoa (100%)	Sheet and Plate
	Qinhuangdao[2]	Alcoa (100%)	Sheet and Plate
Hungary	Székesfehérvár	Alcoa (100%)	Sheet and Plate/Slabs and Billets
Italy	Fusina	Alcoa (100%)	Sheet and Plate
Russia	Samara	Alcoa (100%)	Sheet and Plate
United Kingdom	Birmingham	Alcoa (100%)	Plate
United States	Davenport, IA	Alcoa (100%)	Sheet and Plate
	Danville, IL	Alcoa (100%)	Sheet and Plate
	Newburgh, IN	Alcoa (100%)	Sheet
	Hutchinson, KS	Alcoa (100%)	Sheet and Plate
	Lancaster, PA	Alcoa (100%)	Sheet and Plate
	Alcoa, TN	Alcoa (100%)	Sheet
	Texarkana, TX	Alcoa (100%)	Sheet and Plate[3]
	San Antonio, TX	Alcoa (100%)	Micromill

[1] Facilities with ownership described as "Alcoa (100%)" are either leased or owned directly or indirectly by the Company.

[2] Leased property or partially leased property.

[3] The Texarkana rolling mill facility has been idle since September 2009 due to a continued weak outlook in common alloy markets. In September 2015, the Company announced that it is restarting its Texarkana casthouse to meet demand for aluminum slab for the automotive industry. The aluminum slab that will be cast at Texarkana will be turned into aluminum sheet at Alcoa's recently expanded automotive facility in Davenport, Iowa and its rolling mill in Lancaster, Pennsylvania.

Engineered Products and Solutions

This segment represents a portion of Alcoa's downstream operations. For a discussion of this segment's business, see "Results of Operations—Segment Information" in Part II, Item 7. (Management's Discussion and Analysis of Financial Condition and Results of Operations) and Note Q to the Consolidated Financial Statements—Segment and Geographic Area Information in Part II, Item 8. (Financial Statements and Supplementary Data). In the third quarter 2015, Alcoa realigned its downstream portfolio into two segments (Engineered Products and Solutions and Transportation and Construction Solutions). Following the realignment, Engineered Products and Solutions consists of: Alcoa Titanium & Engineered Products; Alcoa Fastening Systems & Rings; Alcoa Forgings and Extrusions; and Alcoa Power and Propulsion.

On March 3, 2015, Alcoa completed its acquisition of TITAL, a privately held company based in Germany. TITAL is a leader in titanium and aluminum structural castings for aircraft engines and airframes. In addition, TITAL is a leader in process technology.

In June 2015, Alcoa announced that it is investing $22 million in Hot Isotopic Pressing technology at its facility in Whitehall, Michigan. The investment will enable Alcoa to capture growing demand for advanced titanium, nickel and additive manufactured parts for the world's bestselling engines. Alcoa expects that the new technology will be ready for product qualification in 2016.

On July 23, 2015, Alcoa completed the acquisition of RTI International Metals, Inc. (RTI), a global supplier of titanium and specialty metal products and services for commercial aerospace, defense, energy and medical device markets. Following the acquisition, RTI was renamed Alcoa Titanium & Engineered Products.

Also in October 2015, Alcoa officially opened its expanded jet engines part facility in La Porte, Indiana. The $100 million expansion of the Indiana facility enables Alcoa to manufacture single piece structural parts that are 60 percent larger than those already produced in La Porte.

In 2014, Alcoa commenced an expansion of its Hampton, Virginia facility to create the capability to employ a new process technology that improves jet engine blades. The expansion was completed in fourth quarter 2015. The Hampton facility includes technology that cuts the weight of the Company's highest-volume jet engine blades by 20 percent and significantly improves aerodynamic performance.

Alcoa and VSMPO-AVISMA Corporation signed a cooperation agreement in October 2013, which allowed the companies to meet growing demand for high-end titanium and aluminum products for aircraft manufacturers worldwide. The new joint venture will focus on manufacturing high-end aerospace products, such as landing gear and forged wing components, at Alcoa's plant in Samara, Russia. The definitive Shareholders' Agreement was executed by the parties on July 16, 2014, and the deal is expected to close in the second quarter of 2016. The facility is now operational.

Engineered Products and Solutions Principal Facilities

Country	Facility	Owners[1] (% Of Ownership)	Products
Australia	Oakleigh	Alcoa (100%)	Fasteners
Canada	Georgetown, Ontario[2]	Alcoa (100%)	Aerospace Castings
	Laval, Québec	Alcoa (100%)	Aerospace Casting and Machining
China	Nantong	Alcoa (100%)	Aerospace Castings
	Suzhou[2]	Alcoa (100%)	Fasteners and Rings
France	Dives-sur-Mer	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Evron	Alcoa (100%)	Aerospace and Specialty Castings
	Gennevilliers	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Montbrison	Alcoa (100%)	Fasteners
	St. Cosme-en-Vairais[2]	Alcoa (100%)	Fasteners
	Toulouse	Alcoa (100%)	Fasteners
	Us-par-Vigny	Alcoa (100%)	Fasteners
Germany	Bestwig	Alcoa (100%)	Aerospace Castings
	Erwitte	Alcoa (100%)	Aerospace Castings
	Hannover[2]	Alcoa (100%)	Extrusions
	Hildesheim-Bavenstedt[2]	Alcoa (100%)	Fasteners
	Kelkheim[2]	Alcoa (100%)	Fasteners

Country	Facility	Owners[1] (% Of Ownership)	Products
Hungary	Eger	Alcoa (100%)	Forgings
	Nemesvámos	Alcoa (100%)	Fasteners
	Székesfehérvár	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings and Forgings
Japan	Nomi	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
Mexico	Ciudad Acuña[2]	Alcoa (100%)	Aerospace Castings/Fasteners
Morocco	Casablanca[2]	Alcoa (100%)	Fasteners
Russia	Samara[3]	Alcoa (100%)	Extrusions and Forgings
South Korea	Kyoungnam	Alcoa (100%)	Extrusions
United Kingdom	Darley Dale	Alcoa (100%)	Forgings
	Ecclesfield	Alcoa (100%)	Ingot Castings
	Exeter[2]	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings and Alloy
	Glossop	Alcoa (100%)	Ingot Castings
	Ickles	Alcoa (100%)	Ingot Castings
	Leicester[2]	Alcoa (100%)	Fasteners
	Low Moor	Alcoa (100%)	Extrusions
	Meadowhall	Alcoa (100%)	Forgings
	Provincial Park	Alcoa (100%)	Forgings
	Redditch[2]	Alcoa (100%)	Fasteners
	River Don	Alcoa (100%)	Forgings
	Telford	Alcoa (100%)	Fasteners
	Welwyn Garden City	Alcoa (100%)	Aerospace Formed Parts
United States	Chandler, AZ	Alcoa (100%)	Extrusions
	Tucson, AZ[2]	Alcoa (100%)	Fasteners
	Carson, CA[2]	Alcoa (100%)	Fasteners
	City of Industry, CA[2]	Alcoa (100%)	Fasteners
	Fontana, CA	Alcoa (100%)	Rings
	Fullerton, CA[2]	Alcoa (100%)	Fasteners
	Newbury Park, CA	Alcoa (100%)	Fasteners
	Rancho Cucamonga, CA	Alcoa (100%)	Rings
	Sylmar, CA	Alcoa (100%)	Fasteners
	Torrance, CA	Alcoa (100%)	Fasteners
	Branford, CT	Alcoa (100%)	Aerospace Coatings
	Winsted, CT	Alcoa (100%)	Aerospace Machining
	Savannah, GA	Alcoa (100%)	Forgings
	Lafayette, IN	Alcoa (100%)	Extrusions
	La Porte, IN	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Burlington, MA	Alcoa (100%	Powdered Metal Parts
	Baltimore, MD[2]	Alcoa (100%)	Extrusions
	Whitehall, MI	Alcoa (100%)	Aerospace/Industrial Gas Turbine Castings Coatings/Ti Alloy and Specialty Products

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Country	Facility	Owners[1] (% Of Ownership)	Products
	Washington, MO	Alcoa (100%)	Aerospace Formed Parts
	Big Lake, MN	Alcoa (100%)	Aerospace and Medical Device Machining
	Coon Rapids, MN	Alcoa (100%)	Medical Device Machining
	New Brighton, MN	Alcoa (100%)	Aerospace Machining
	Roseville, MN[2]	Alcoa (100%)	Aerospace Machining
	Dover, NJ	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings and Alloy
	Verdi, NV	Alcoa (100%)	Rings
	Kingston, NY[2]	Alcoa (100%)	Fasteners
	Massena, NY	Alcoa (100%)	Extrusions
	Rochester, NY	Alcoa (100%)	Rings
	Canton, OH	Alcoa (100%)	Ferro-Titanium Alloys and Titanium Mill Products
	Cleveland, OH	Alcoa (100%)	Aerospace Castings
	Niles, OH	Alcoa (100%)	Titanium Mill Products
	Alcoa Center, PA	Alcoa (100%)	Ingot Castings
	Morristown, TN[2]	Alcoa (100%)	Aerospace and Industrial Gas Turbine Ceramic Products
	Austin, TX	Alcoa (100%)	Additively Manufactured Parts
	Houston, TX	Alcoa (100%)	Extrusions
	Spring, TX	Alcoa (100%)	Deep Water Drilling Machining
	Waco, TX[2]	Alcoa (100%)	Fasteners
	Wichita Falls, TX	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Hampton, VA[2]	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Martinsville, VA	Alcoa (100%)	Titanium Mill Products

[1] Unless otherwise noted, facilities with ownership described as “Alcoa (100%)” are owned by the Company.

[2] Leased property or partially leased property.

[3] The operating results of this facility are reported in the Global Rolled Products segment.

Transportation and Construction Solutions

The Company’s Transportation and Construction Solutions segment represents a portion of Alcoa’s downstream operations. For a discussion of this segment’s business, see “Results of Operations—Segment Information” in Part II, Item 7. (Management’s Discussion and Analysis of Financial Condition and Results of Operations) and Note Q to the Consolidated Financial Statements—Segment and Geographic Area Information in Part II, Item 8. (Financial Statements and Supplementary Data). As part of its realignment of the value-add portfolio and creation of this new segment, the Company also moved the Latin American soft alloy extrusions business to Transportation and Construction Solutions.

In January 2015, Alcoa opened its expanded wheels manufacturing plant in Hungary, doubling Alcoa’s capacity to produce its Dura-Bright® EVO surface-treated wheels compared with 2014 production levels. The $13 million expansion is expected to create 35 new jobs in Hungary once the facility reaches full capacity.

Alcoa Wheel and Transportation Products has vertically integrated by building a new aluminum casthouse in Mexico for a total cost of $22 million to convert the scrap generated throughout the Mexico wheels flowpaths into ingot. While the first ingot was cast in November 2014, the run rate production was achieved in March 2015.

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Transportation and Construction Solutions Principal Facilities

Country	Facility	Owners[1] (% Of Ownership)	Products
Brazil	Itapissuma	Alcoa (100%)	Extrusions
	Tubarão	Alcoa (100%)	Extrusions
	Utinga	Alcoa (100%)	Extrusions
Canada	Lethbridge, Alberta	Alcoa (100%)	Architectural Products
	Pointe Claire, Quebec	Alcoa (100%)	Architectural Products
	Vaughan, Ontario	Alcoa (100%)	Architectural Products
France	Guerande	Alcoa (100%)	Architectural Products
	Lézat-sur-Lèze[2]	Alcoa (100%)	Architectural Products
	Merxheim[2]	Alcoa (100%)	Architectural Products
	Vendarques	Alcoa (100%)	Architectural Products
Germany	Iserlohn	Alcoa (100%)	Architectural Products
Hungary	Székesfehérvár	Alcoa (100%)	Forgings
Japan	Jōetsu City[2]	Alcoa (100%)	Forgings
Mexico	Monterrey	Alcoa (100%)	Forgings
Morocco	Casablanca[2]	Alcoa (67%) Ahmed Hattabi (33%)	Architectural Products
Netherlands	Harderwijk	Alcoa (100%)	Architectural Products
Spain	Irutzun	Alcoa (100%)	Architectural Products
United Kingdom	Runcorn	Alcoa (100%)	Architectural Products
United States	Springdale, AZ	Alcoa (100%)	Architectural Products
	Visalia, CA	Alcoa (100%)	Architectural Products
	Eastman, GA	Alcoa (100%)	Architectural Products
	Barberton, OH	Alcoa (100%)	Forgings
	Chillicothe, OH	Alcoa (100%)	Forgings
	Cleveland, OH	Alcoa (100%)	Forgings
	Bloomsburg, PA	Alcoa (100%)	Architectural Products
	Cranberry, PA	Alcoa (100%)	Architectural Products
	Denton, TX[2]	Alcoa (100%)	Forgings

[1] Facilities with ownership described as “Alcoa (100%)” are owned by the Company.

[2] Leased property or partially leased property.

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Sources and Availability of Raw Materials

The major raw materials purchased in 2015 for each of the Company's reportable segments are listed below.

Alumina

Bauxite
Caustic soda
Electricity
Fuel oil
Lime (CaO)
Natural gas

Primary Metals

Alloying materials
Alumina
Aluminum fluoride
Calcined petroleum coke
Cathode blocks
Electricity
Liquid pitch
Natural gas

Global Rolled Products

Alloying materials
Aluminum scrap
Coatings
Electricity
Lube oil
Natural gas
Packaging materials
Primary aluminum (ingot, slab, billet, P1020, high purity)
Steam

Engineered Products and Solutions

Alloying materials
Electricity
Natural gas
Nickel alloys
Primary aluminum (ingot, billet, P1020, high purity)
Resin
Stainless steel
Steel
Titanium alloys
Titanium sponge

Transportation and Construction Solutions

Aluminum coil
Electricity
Natural gas
Paint/Coating
Primary aluminum (ingot, billet, P1020, high purity)
Resin
Scrap aluminum

Generally, other materials are purchased from third-party suppliers under competitively priced supply contracts or bidding arrangements. The Company believes that the raw materials necessary to its business are and will continue to be available.

For each metric ton of alumina produced, Alcoa consumes the following amounts of the identified raw material inputs (approximate range across relevant facilities):

Raw Material	Units	Consumption per MT of Alumina
Bauxite	mt	2.2 – 3.7
Caustic soda	kg	60 – 150
Electricity	kWh	200 – 260 total consumed (0 to 210 imported)
Fuel oil and natural gas	GJ	6.3 – 11.9
Lime (CaO)	kg	6 – 58

For each metric ton of aluminum produced, Alcoa consumes the following amounts of the identified raw material inputs (approximate range across relevant facilities):

Raw Material	Units	Consumption per MT of Aluminum
Alumina	mt	1.92 ±0.02
Aluminum fluoride	kg	16.5 ±6.5
Calcined petroleum coke	mt	0.37 ±0.02
Cathode blocks	mt	0.006 ±0.002
Electricity	kWh	12900 – 17000
Liquid pitch	mt	0.10 ±0.03
Natural gas	mcf	3.5 ±1.5

Explanatory Note: Certain aluminum produced by Alcoa also includes alloying materials. Because of the number of different types of elements that can be used to produce Alcoa's various alloys, providing a range of such elements would not be meaningful. With the exception of a very small number of internally used products, Alcoa produces its alloys in adherence to an Aluminum Association standard. The Aluminum Association, of which Alcoa is an active member, uses a specific designation system to identify alloy types. In general, each alloy type has a major alloying element other than aluminum but will also have other constituents as well, but of lesser amounts.

Energy

Employing the Bayer Process, Alcoa refines alumina from bauxite ore. Alcoa then produces aluminum from the alumina by an electrolytic process requiring substantial amounts of electric power. Energy accounts for approximately 19% of the Company's total alumina refining production costs. Electric power accounts for approximately 23% of the Company's primary aluminum production costs. Alcoa generates approximately 14% of the power used at its smelters worldwide and generally purchases the remainder under long-term arrangements. The paragraphs below summarize the sources of power and natural gas for Alcoa's smelters and refineries.

North America – Electricity

The Deschambault, Baie Comeau, and Bécancour smelters in Québec purchase electricity under long-term contracts with Hydro-Québec executed in 2014, which will expire on December 31, 2029. Upon expiration, Alcoa will have the option of extending the term of the Baie Comeau contract to February 23, 2036. The smelter located in Baie Comeau, Québec purchases approximately 73% of its power needs under the Hydro-Québec contract, and the remainder from a 40% owned hydroelectric generating company, Manicouagan Power Limited Partnership.

The Company's wholly-owned subsidiary, Alcoa Power Generating Inc. (APGI) owns and operates the Yadkin hydroelectric project, consisting of four dams in North Carolina, and the Warrick coal-fired power plant located in Indiana.

For several years, APGI has been pursuing a new long-term license for the Yadkin hydroelectric project from the Federal Energy Regulatory Commission (FERC). In 2007, APGI filed with FERC a Relicensing Settlement Agreement signed by a majority of interested stakeholders that broadly resolved open issues. The National Environmental Policy Act process was complete, and a final environmental impact statement was issued in April 2008. The remaining requirement for relicensing was the issuance by North Carolina of the required water quality certification under Section 401 of the Clean Water Act (401 WQC). North Carolina's Department of Environment Quality ((DEQ), formally known as Department of Environment and Natural Resources (DENR)) issued a 401 WQC to APGI on October 23, 2015. The period for appeals has passed with no aggrieved party filing an appeal. FERC has been notified of the final 401 WQC, completing all necessary items required for FERC to process the application.

On August 2, 2013, the State of North Carolina filed suit in state court seeking a declaratory ruling that it, not APGI, owns the Yadkin riverbed beneath the hydroelectric project as well as a portion of the project dams. APGI removed the riverbed lawsuit to federal court in 2013. On May 6, 2015, U.S. Federal Judge Terrance Boyle declared that the relevant segment of the Yadkin River was not navigable at the time of North Carolina statehood and issued a ruling on September 28, 2015 that APGI owns the riverbed for the 37-mile relevant segment. The State of North Carolina has filed an appeal with the Fourth Circuit Court of Appeals.

Pending completion of the relicensing process, APGI received year-to-year license renewals from FERC starting in May 2008, and will continue to operate under annual licenses until FERC issues a new license. Since the permanent closure of the Badin, North Carolina smelter, power generated from APGI's Yadkin system is largely being sold to an affiliate, Alcoa Power Marketing LLC, and then into the wholesale market.

APGI generates substantially all of the power used at the Company's Warrick, Indiana smelter using nearby coal reserves. Since May 2005, Alcoa has owned the nearby Friendsville, Illinois coal reserves, with the Friendsville Mine being operated by Vigo Coal Company, Inc. (Vigo Coal). The Friendsville Mine is producing approximately 900,000 tons of coal per year and is scheduled to cease production at the end of March 2016. Liberty Mine, also owned by Alcoa and operated by Vigo Coal, produces coal and is operating at a level of approximately 1.4 million tons per year. Friendsville and Liberty Mines together supply 99% of the power plant's needs. The balance of the coal used is royalty coal.

In the State of Washington, Alcoa's Wenatchee smelter is served by a contract with Chelan County Public Utility District (Chelan PUD) under which Alcoa receives approximately 26% of the hydropower output of Chelan PUD's Rocky Reach and Rock Island dams. In November 2015, Alcoa announced the curtailment of the Wenatchee smelter which was completed by the end of December 2015.

Starting on January 1, 2013, the Intalco smelter began receiving physical power from the Bonneville Power Administration (BPA) pursuant to a contract executed between Alcoa and BPA, under which Alcoa receives physical power at the Northwest Power Act mandated industrial firm power (IP) rate through September 30, 2022. In May 2015, the contract was amended to reduce the amount of physical power received from BPA and allow for additional purchases of market power.

Prior to 2007, power for the Rockdale smelter in Texas was historically supplied from Company-owned generating units and Sandow Unit 4 owned by Luminant Generation Company LLC (formerly TXU Generation Company LP) (Luminant), both of which used lignite supplied by the Company's Sandow Mine and Three Oaks Mine. Upon completion of lignite mining in the Sandow Mine in 2005, lignite supply transitioned to the formerly Alcoa-owned Three Oaks Mine. The Company retired its three wholly-owned generating units at Rockdale (Sandow Units 1, 2 and 3) in late 2006, and transitioned to an arrangement under which Luminant is to supply all of the Rockdale smelter's electricity requirements under a long-term power contract that does not expire until at least the end of 2038, with the parties having the right to terminate the contract after 2013 if there has been an unfavorable change in law or after 2025 (by Luminant only) if the cost of the electricity exceeds the market price. In August 2007, Luminant and Alcoa closed on the definitive agreements under which Luminant has constructed and operates a new circulating fluidized bed power plant (Sandow Unit 5) adjacent to the existing Sandow Unit 4 and, in September 2007, on the sale of Three Oaks Mine to Luminant. Concurrent with entering into the agreements under which Luminant constructed and operates Sandow Unit 5, Alcoa and Luminant entered into a power purchase agreement whereby Alcoa purchased power from Luminant. That Sandow Unit 5 power purchase agreement was terminated by Alcoa, effective December 1, 2010. In June 2008, Alcoa temporarily idled half of the capacity at the Rockdale smelter and in November 2008 curtailed the remainder of Rockdale's smelting capacity. In late 2011, Alcoa announced that it would permanently close two of the six idled potlines at the smelter. Demolition and remediation activities related to these actions were completed in 2013. On April 29, 2014, Luminant Generation LLC, Luminant Mining Company LLC, Sandow Power Company LLC and their affiliated debtors filed petitions under Chapter 11 of the U.S. Bankruptcy Code with the U.S Bankruptcy Court for the District of Delaware. The Bankruptcy Court has confirmed the debtors' amended plan of reorganization and has

entered an order approving the debtors' assumption of the Sandow Unit 4 agreement and certain other related agreements with the Company.

In the Northeast, the Massena West smelter in New York receives physical power from the New York Power Authority (NYPA) pursuant to a contract between Alcoa and NYPA, which expires in 2045. In December 2015, Alcoa and NYPA agreed upon a new power contract that will expire in 2019. Upon final approval of the contract by New York State, which is expected in the first half of 2016, the new power contract for physical power will replace the prior contract.

Australia – Electricity

In 2015 Alcoa permanently closed the Anglesea power station and associated coal mine in Victoria. The power station had previously provided electricity to the Point Henry smelter which closed in 2014. Since the Port Henry smelter closure, electricity was sold into the National Electricity Market (NEM); however a combination of low electricity prices and significant future capital expenditure meant the facility was no longer viable.

The Portland smelter continues to purchase electricity from the State Electricity Commission of Victoria (SECV) under a contract with Alcoa Portland Aluminium Pty Ltd, a wholly-owned subsidiary of AofA, that extends to October 2016. Upon the expiration of this contract, the Portland smelter will purchase power from the NEM variable spot market. In March 2010, AofA and Eastern Aluminium (Portland) Pty Ltd separately entered into fixed for floating swap contracts with Loy Yang (now AGL) in order to manage their exposure to the variable energy rates from the NEM. The fixed for floating swap contract with AGL for the Point Henry smelter was terminated in 2013. The fixed for floating swap contract with AGL for the Portland smelter operates from the date of expiration of the current contract with the SECV and continues until December 2036.

Brazil – Electricity Alumínio owns a 25.74% stake in Consórcio Machadinho, which is the owner of the Machadinho hydroelectric power plant located in southern Brazil.

Alumínio has a 42.18% interest in Energética Barra Grande S.A., which built the Barra Grande hydroelectric power plant in southern Brazil.

Alumínio also has a 34.97% share in Serra do Facão Energia S.A., which built the Serra do Facão hydroelectric power plant in the southeast of Brazil.

Alumínio is also participating in the Estreito hydropower project in northern Brazil, through Estreito Energia S.A. (an Alumínio wholly owned company) holding a 25.49% stake in Consórcio Estreito Energia, which is the owner of the hydroelectric power plant.

A consortium in which Alumínio participates and that had received concessions for the Pai Querê hydropower project in southern Brazil (Alumínio's share is 35%) decided not to pursue the development of this concession which will be returned to the Federal Government.

Since May 2015 (after full curtailment of Poços de Caldas and Alumar smelters), the excess generation capacity of around 460MW has been sold into the market.

Europe – Electricity

Alcoa's smelters at San Ciprián, La Coruña and Avilés, Spain purchase electricity under bilateral power contracts that commenced on January 1, 2013. The contracts for San Ciprián and Avilés smelters each have a four-year term (expiring December 31, 2016). The contract for the La Coruña smelter, which expired on December 31, 2015, has been extended for an additional year (expiring December 31, 2016).

A competitive bidding mechanism to allocate interruptibility rights in Spain was settled during 2014 to be applied starting from January 1, 2015. The first auction process to allocate rights took place in November 2014, where Alcoa secured 275MW of interruptibility rights for the 2015 period for the San Ciprián smelter. A second auction process took place in December 2014, where Alcoa secured an additional 100MW of interruptibility rights for the 2015 period for the San Ciprián smelter (20x5MW), 120MW for the La Coruña smelter (24x5MW) and 110MW for the Avilés smelter (22x5MW). The auction process to allocate the rights for the following period took place in the first week of September 2015, where Alcoa secured interruptibility rights for 2016 in the amount of 375MW for San Ciprián Smelter (3x90MW + 21x5MW), 115MW for Avilés Smelter (23x5MW) and 120MW for La Coruña smelter (24x5MW).

Alcoa owns two smelters in Norway, Lista and Mosjøen, which have long-term power arrangements in place that continue until the end of 2019. Financial compensation of the indirect carbon emissions costs passed through in the electricity bill is received in accordance with EU Commission Guidelines and Norwegian compensation regime.

Iceland – Electricity

Alcoa's Fjarðaál smelter in eastern Iceland began operation in 2007. Central to those operations is a forty-year power contract under which Landsvirkjun, the Icelandic national power company, built the Kárahnjúkar dam and hydropower project, and supplies competitively priced electricity to the smelter. In late 2009, Iceland imposed two new taxes on power intensive industries, both for a period of three years, from 2010 through 2012. One tax is based on energy consumption; the other is a pre-payment of certain other charges that was recoverable partly in 2014 and will be fully recovered by end of 2018. In 2012, Iceland extended the energy consumption tax through 2015.

Spain – Natural Gas

In order to facilitate the full conversion of the San Ciprian, Spain alumina refinery from fuel oil to natural gas, in October 2013, Alumina Española SA (AE) and Gas Natural Transporte SDG SL (GN) signed a take or pay gas pipeline utilization agreement. Pursuant to that agreement, the ultimate shareholders of AE, Alcoa Inc. and Alumina Limited, agreed to guarantee the payment of AE's contracted gas pipeline utilization over the four years of the commitment period; in the event AE fails to do so, each shareholder being responsible for its respective proportionate share (i.e., 60/40). Such commitment came into force six months after the gas pipeline was put into operation by GN. The gas pipeline was completed in January 2015 and the refinery has switched to natural gas consumption for 100% of its needs.

Three supply contracts were signed in 2014 for the supply of natural gas to the San Ciprián, Spain alumina refinery during the 2015 period with Endesa, Union Fenosa Gas and BP, expiring by April 2016, December 2015 and December 2015, respectively. In 2015, the Endesa supply contract expiring in April 2016 was extended until June 2017, the BP supply contract expiring in December 2015 was extended until December 2016 and a new contract with Gas Natural Fenosa was signed expiring by December 2016. Pursuant to those agreements, Alcoa Inversiones España, S.L. and Alumina Limited agreed to guarantee the payment of AE's obligations under the Endesa contract that expires in April 2016, each shareholder being responsible for its respective proportionate share (i.e., 60/40). In the same way, Alcoa Inespal S.A. and Alumina Limited have agreed to guarantee the payment of AE's obligations under the Gas Natural Fenosa contract over its respective length, with each entity being responsible for its proportionate share (i.e., 60/40).

North America – Natural Gas

In order to supply its refinery and smelters in the U.S. and Canada, Alcoa generally procures natural gas on a competitive bid basis from a variety of sources, including producers in the gas production areas and independent gas marketers. For Alcoa's larger consuming locations in Canada and the U.S., the gas commodity and the interstate pipeline transportation are procured (directly or via the local distribution companies) to provide increased flexibility and reliability. Contract pricing for gas is typically based on a published industry index or New York Mercantile Exchange (NYMEX) price. The Company may choose to reduce its exposure to NYMEX pricing by hedging a portion of required natural gas consumption.

Australia – Natural Gas

AofA holds a 20% equity interest in the Dampier-to-Bunbury natural gas pipeline (this interest was purchased in October 2004). This pipeline transports gas from the northwest gas fields to Alcoa's alumina refineries and other users in the Southwest of Western Australia. Alcoa uses gas to co-generate steam and electricity for its alumina refining processes at the Kwinana, Pinjarra and Wagerup refineries. More than 90% of Alcoa's gas requirements for the remainder of the decade are secured under long-term contracts. In 2015, AofA entered into a number of long-term gas supply agreements which now means a significant portion of Alcoa's gas supplies are secured to 2030. Alcoa has remained actively involved with projects aimed at developing cost-based gas supply opportunities.

Energy Facilities

The following table sets forth the electricity generation capacity and 2015 generation of facilities in which the Company has an ownership interest:

Country	Facility	Alcoa Consolidated Capacity (MW)[1]	2015 Generation (MWh)
Australia	Anglesea[2]	150	798,542
Brazil	Barra Grande	156	1,562,663
	Estreito	157	1,088,018
	Machadinho	119	1,780,924
	Serra do Facão	60	171,294
Canada	Manicouagan	132	1,161,994
Suriname	Afobaka	189	673,950
United States	Warrick	657	4,538,257
	Yadkin	215	661,214
TOTAL		1,835	12,436,856

1 The Consolidated Capacity of the Brazilian energy facilities is the assured energy that is approximately 55% of hydropower plant nominal capacity.

2 The Anglesea facility was permanently closed on August 31, 2015.

Patents, Trade Secrets and Trademarks

The Company believes that its domestic and international patent, trade secret and trademark assets provide it with a significant competitive advantage. The Company's rights under its patents, as well as the products made and sold under them, are important to the Company as a whole and, to varying degrees, important to each business segment. The patents owned by Alcoa generally concern particular products or manufacturing equipment or techniques. Alcoa's business as a whole is not, however, materially dependent on any single patent, trade secret or trademark. As a result of product development and technological advancement, the Company continues to pursue patent protection in jurisdictions throughout the world. At the end of 2015, the Company's worldwide patent portfolio consisted of approximately 986 pending patent applications and 1,923 granted patents.

The Company has a number of trade secrets, mostly regarding manufacturing processes and material compositions that give many of its businesses important advantages in their markets. The Company continues to strive to improve those processes and generate new material compositions that provide additional benefits.

The Company also has a number of domestic and international registered trademarks that have significant recognition within the markets that are served. Examples include the name "Alcoa" and the Alcoa symbol for aluminum products, Howmet metal castings, Huck® fasteners, Kawneer® building panels and Dura-Bright® wheels with easy-clean surface treatments. The Company's rights under its trademarks are important to the Company as a whole and, to varying degrees, important to each business segment.

Competitive Conditions

Alcoa is subject to highly competitive conditions in all aspects of its aluminum and non-aluminum businesses. Competitors include a variety of both U.S. and non-U.S. companies in all major markets. Innovation, price, quality, and service are the principal competitive factors in Alcoa's markets. Where aluminum, titanium and nickel products compete with other materials—such as steel and plastics for automotive and building applications; magnesium, composites, and plastics for aerospace and defense applications—aluminum, titanium and nickel's diverse characteristics, particularly the strength, light weight, recyclability, and flexibility are also significant factors. Alcoa's customer intimacy, advanced manufacturing capability, technology, technical expertise, and innovation in multi-materials and in specialized alloys provide Alcoa a competitive advantage in certain markets and/or for certain products. For Alcoa's segments that market products under Alcoa's brand names, brand recognition, and brand loyalty also play a role. In addition Alcoa's competitive position depends, in part, on the Company's access to an economical power supply to sustain its operations in various countries.

Research and Development

Alcoa, a light metals technology leader, engages in research and development programs that include process and product development, and basic and applied research. Expenditures for research and development (R&D) activities were $238 million in 2015, $218 million in 2014, and $192 million in 2013.

The Company continued to work on new developments in all business segments in 2015. With a focus on multi-materials, the Company integrated acquisitions of TITAL, Firth Rixson and RTI which expanded its reach into aerospace by adding advanced technologies and materials capabilities, particularly in titanium—the world's fastest-growing aerospace metal.

The Company continued leveraging new technologies in 2015. Among them, the Company entered into a Joint Development Agreement with Ford to collaborate on next-generation aluminum alloys for automotive parts using Micromill technology. Working with Phinergy on advancing an aluminum air battery technology, the Company will make an equity investment of up to $10 million and will be the exclusive anode provider for applications with auto OEMs and energy utilities. Additionally, the Company completed its jet engine expansion in Hampton, Virginia. This facility includes technology that cuts the weight of the Company's highest-volume jet engine blades by 20 percent and significantly improves aerodynamic performance.

The Company has invested $60 million in the expansion of its R&D center designed to accelerate the development of additive manufacturing, with a focus on producing metal powder materials tailored for a range of additive process technologies. Alcoa will further its development of advanced 3D-printing design and manufacturing techniques—such as Alcoa's Ampliforge™ process—to improve production speeds, reduce costs, and achieve geometries not possible through traditional methods. The investment also leverages the Company's testing and process control expertise to overcome challenges with qualifying new 3D-printed parts, starting with aerospace applications.

In 2015 several products spanning various industries were brought to market. Notably, Ford began use of Micromill® material, and Alcoa and Danieli Group agreed to license intellectual property associated with advanced Micromill® alloys and process technology. Samsung unveiled its Galaxy S6 Smartphone using 6013 Alcoa Power Plate™ product for 70 percent greater strength than standard aluminum. The Company launched four foundry alloys that offer strength, thermal performance, corrosion resistance, and at least 20% better fatigue resistance in automotive applications. In addition, Dura-Bright® EVO, Alcoa's most durable, easy-to-maintain commercial truck wheel, was brought to the North American market.

Environmental Matters

Information relating to environmental matters is included in Note N to the Consolidated Financial Statements under the caption "Environmental Matters" on pages 130-134. Approved capital expenditures for new or expanded facilities for environmental control are approximately $60 million for 2016 and $70 million for 2017.

Employees

Total worldwide employment at the end of 2015 was approximately 60,000 employees in 26 countries. About 37,000 of these employees are represented by labor unions. The Company believes that relations with its employees and any applicable union representatives generally are good.

In the U.S., approximately 10,000 employees are represented by various labor unions. The largest collective bargaining agreement is the master collective bargaining agreement between Alcoa and the United Steelworkers (USW). The USW master agreement covers approximately 6,100 employees at 11 U.S. locations; the current labor agreement expires on May 15, 2019. There are 18 other collective bargaining agreements in the U.S. with varying expiration dates. On a regional basis, collective bargaining agreements with varying expiration dates cover approximately 14,650 employees in Europe and Russia, 13,710 employees in North America, 4,350 employees in Central and South America, 3,100 employees in Australia, and 925 employees in China.

Executive Officers of the Registrant

The names, ages, positions and areas of responsibility of the executive officers of the Company as of February 19, 2016 are listed below.

Robert S. Collins, 49, Vice President and Controller. Mr. Collins was elected to his current position in October 2013. He served as Assistant Controller from May 2009 to October 2013. Prior to his role as Assistant Controller, Mr. Collins was Director of Financial Transactions and Policy, providing financial accounting support for Alcoa's transactions in global mergers, acquisitions and divestitures. Before joining Alcoa in 2005, Mr. Collins worked in the audit and mergers and acquisitions practices at PricewaterhouseCoopers LLP for 14 years.

Roy C. Harvey, 41, Executive Vice President, President of Global Primary Products. Mr. Harvey was elected to his current position effective October 2015. From June 2014 to October 2015, he was Executive Vice President, Human Resources and Environment, Health, Safety and Sustainability. Prior to that, Mr. Harvey was Chief Operating Officer for Global Primary Products from July 2013 to June 2014, where he focused on the day-to-day operations of Alcoa's aluminum smelters, alumina refineries and bauxite mines worldwide. Prior to that, Mr. Harvey was Chief Financial Officer for Global Primary Products from December 2011 to July 2013. In addition to these roles, Mr. Harvey served as Director of Investor Relations, interfacing with securities analysts and investors globally on Alcoa's performance and strategic direction, from September 2010 to November 2011 and was Director of Corporate Treasury from January 2010 to September 2010. Mr. Harvey joined Alcoa in 2002 as a business analyst for Global Primary Products in Knoxville, Tennessee. In 2005, he moved to the São Luis Plant in Brazil, as casthouse manager in the smelter and then as the plant controller. In 2007, he became plant manager for the San Ciprián, Spain, smelter and a year later was named Director of Finance and Business Integration for Global Primary Products Europe.

Olivier M. Jarrault, 54, Executive Vice President—Alcoa and Group President, Engineered Products and Solutions. Mr. Jarrault was elected an Alcoa Executive Vice President effective January 21, 2011 and was named Group President of Engineered Products and Solutions effective January 1, 2011. He served as Chief Operating Officer of Engineered Products and Solutions from February 2010 to January 1, 2011. Mr. Jarrault joined Alcoa in 2002 when Alcoa acquired Fairchild Fasteners from The Fairchild Corporation. He served as President of Alcoa Fastening Systems from 2002 to February 2010. He was elected a Vice President of Alcoa in November 2006.

Klaus Kleinfeld, 58, Director, Chairman of the Board and Chief Executive Officer. Mr. Kleinfeld was elected to Alcoa's Board of Directors in November 2003 and became Chairman on April 23, 2010. He has been Chief Executive Officer of Alcoa since May 8, 2008. He was President and Chief Executive Officer from May 8, 2008 to April 23, 2010. He was President and Chief Operating Officer of Alcoa from October 1, 2007 to May 8, 2008. Mr. Kleinfeld was President and Chief Executive Officer of Siemens AG, the global electronics and industrial conglomerate, from January 2005 to June 2007. He served as Deputy Chairman of the Managing Board and Executive Vice President of Siemens AG from 2004 to January 2005. He was President and Chief Executive Officer of Siemens Corporation, the U.S. arm of Siemens AG, from 2002 to 2004.

Christoph Kollatz, 55, Executive Vice President, Corporate Development, Strategy and New Ventures. Mr. Kollatz joined Alcoa in 2015 and was elected an Executive Vice President of Alcoa in September 2015. Before joining Alcoa, Mr. Kollatz was Chief Information and Process Officer at Lufthansa from 2012 to 2015, overseeing the IT technology infrastructure, as well as IT applications, supporting financial and customer operations. Prior to Lufthansa, from 2011 to 2012, Mr. Kollatz created and led a start-up business within SAP, introducing a new database technology to the market. Mr. Kollatz held a series of leadership, strategy and technology positions at Siemens from 1989 to 2011, including as CEO of Siemens IT Solutions and Services.

Kay H. Meggers, 51, Executive Vice President—Alcoa and Group President, Global Rolled Products. Mr. Meggers was elected an Alcoa Executive Vice President in December 2011. He was named Group President, Global Rolled Products effective November 14, 2011. Before his most recent appointment, he led Alcoa's Business Excellence/ Corporate Strategy resource unit and was also responsible for overseeing Alcoa's Asia-Pacific region. He joined Alcoa in February 2010 as Vice President, Corporate Initiatives, a position responsible for planning and coordinating major strategic initiatives from enhancing technology and innovation as part of the Alcoa Technology Advantage program to spearheading growth strategies for China and Brazil. He was elected a Vice President of Alcoa in June 2011. Before joining Alcoa, Mr. Meggers was Senior Vice President at Siemens U.S. Building Technologies Division and served for three years as Business Unit Head of Building Automation. In 2006, he served for nine months as Division Head of Fire Safety, also part of Siemens U.S. Building Technologies Division. Between 2002 and 2005, he served as Vice President of Strategic Planning at Siemens U.S.

Vas Nair, 50, Executive Vice President, Human Resources and Environment, Health, Safety and Sustainability. Ms. Nair was appointed Executive Vice President, Human Resources and Environment, Health, Safety and Sustainability in November 2015. Prior to being appointed to her current role, Ms. Nair was Chief Talent and Diversity Officer, with global responsibility for diversity and inclusion from February 2015 to October 2015. Prior to joining Alcoa, Ms. Nair was VP of Global Learning and Talent Development at Estee Lauder from November 2010 to January 2015. Ms. Nair was Vice President and Chief Learning Officer at Schering-Plough from November 2003 to October 2009.

William F. Oplinger, 49, Executive Vice President and Chief Financial Officer. Mr. Oplinger was elected to his current position effective April 1, 2013. Since joining Alcoa in 2000, Mr. Oplinger has held key corporate positions in financial analysis and planning and as Director of Investor Relations. He also has held key positions in the Global Primary Products business, including as Controller, Operational Excellence Director, Chief Financial Officer and Chief Operating Officer. As Chief Operating Officer of Alcoa's Global Primary Products business from December 2011 to March 2013, Mr. Oplinger was responsible for the day-to-day operations of the business' global network of aluminum smelters, refineries and mines.

Audrey Strauss, 68, Executive Vice President, Chief Legal Officer and Secretary. Ms. Strauss was elected to her current position upon joining Alcoa in May 2012. Prior to joining Alcoa, she was a senior litigation partner from 1990 to 2012 at Fried Frank Harris Shriver and Jacobson LLP (Fried Frank), a law firm based in New York. Prior to her practice at Fried Frank, Ms. Strauss served in the U.S. Attorney's office for the Southern District of New York from 1975 to 1982, where she was Chief Appellate Attorney and Chief of the Fraud Unit.

The Company's executive officers are elected or appointed to serve until the next annual meeting of the Board of Directors (held in conjunction with the annual meeting of shareholders) except in the case of earlier death, retirement, resignation or removal.

Item 1A. RiskFactors.

Alcoa's business, financial condition and results of operations may be impacted by a number of factors. In addition to the factors discussed elsewhere in this report, the following risks and uncertainties could materially harm its business, financial condition or results of operations, including causing Alcoa's actual results to differ materially from those projected in any forward-looking statements. The following list of significant risk factors is not all-inclusive or necessarily in order of importance. Additional risks and uncertainties not presently known to Alcoa or that Alcoa currently deems immaterial also may materially adversely affect us in future periods.

The aluminum industry and aluminum end-use markets are highly cyclical and are influenced by a number of factors, including global economic conditions.

The aluminum industry generally is highly cyclical, and Alcoa is subject to cyclical fluctuations in global economic conditions and aluminum end-use markets. Alcoa sells many products to industries that are cyclical, such as the commercial construction and transportation, automotive, and aerospace industries, and the demand for its products is sensitive to, and quickly impacted by, demand for the finished goods manufactured by its customers in these industries, which may change as a result of changes in the general U.S. or worldwide economy, currency exchange rates, energy prices or other factors beyond its control.

The demand for aluminum is highly correlated to economic growth. For example, the European sovereign debt crisis that began in late 2009 had an adverse effect on European demand for aluminum and aluminum products. The Chinese market is a significant source of global demand for, and supply of, commodities, including aluminum. A sustained slowdown in China's economic growth and aluminum demand, or a significant slowdown in other markets, that is not offset by decreases in supply or by increased aluminum demand in emerging economies, such as India, Brazil, and several South East Asian countries, could have an adverse effect on the global supply and demand for aluminum and aluminum prices.

While Alcoa believes that the long-term prospects for aluminum and aluminum products are positive, the Company is unable to predict the future course of industry variables or the strength of the global economy and the effects of government intervention. Negative economic conditions, such as a major economic downturn, a prolonged recovery period, a downturn in the commodity sector, or disruptions in the financial markets, could have a material adverse effect on Alcoa's business, financial condition or results of operations.

Alcoa could be materially adversely affected by declines in aluminum prices, including global, regional and product-specific prices.

The overall price of primary aluminum consists of several components: 1) the underlying base metal component, which is typically based on quoted prices from the London Metal Exchange (LME); 2) the regional premium, which comprises the incremental price over the base LME component that is associated with the physical delivery of metal to a particular region (e.g., the Midwest premium for metal sold in the United States); and 3) the product premium, which represents the incremental price for receiving physical metal in a particular shape (e.g., coil, billet, slab, rod, etc.) or alloy. Each of the above three components has its own drivers of variability.

The LME price is typically driven by macroeconomic factors, global supply and demand of aluminum (including expectations for growth and contraction and the level of global inventories), and financial investors. An imbalance in global supply and demand of aluminum, such as decreasing demand without corresponding supply declines, could have a negative impact on aluminum pricing. Speculative trading in aluminum and the influence of hedge funds and other financial institutions participating in commodity markets have also increased in recent years, potentially contributing to higher levels of price volatility. In 2015, the cash LME price of aluminum reached a high of $1,919 per metric ton and a low of $1,424 per metric ton. High LME inventories, or the release of substantial inventories into the market, could lead to a reduction in the price of aluminum. Declines in the LME price have had a negative impact on Alcoa's results of operations.

Additionally, Alcoa's results could be adversely affected by decreases in regional premiums that participants in the physical metal market pay for immediate delivery of aluminum. Regional premiums tend to vary based on the supply of and demand for metal in a particular region and associated transportation costs. LME warehousing rules could cause aluminum prices to decrease and surpluses have caused regional premiums to decrease, which would have a negative impact on the Company's results of operations.

Product premiums generally are a function of supply and demand for a given primary aluminum shape and alloy combination in a particular region. A sustained weak LME aluminum pricing environment, deterioration in LME aluminum prices, or a decrease in regional premiums or product premiums could have a material adverse effect on Alcoa's business, financial condition, and results of operations or cash flow.

LME warehousing rules could cause aluminum prices to decrease.

Since 2013, the LME has been engaged in a program aimed at reforming the rules under which registered warehouses in its global network operate. The initial rule changes took effect on February 1, 2015, and the LME has announced additional changes that will be implemented in 2016. These rule changes, and any subsequent changes that the exchange chooses to make, could impact the supply/demand balance in the primary aluminum physical market and may impact regional delivery premiums and LME aluminum prices. Decreases in regional delivery premiums and/or decreases in LME aluminum prices could have a material adverse effect on Alcoa's business, financial condition, and results of operations or cash flow.

Alcoa may not be able to realize the expected benefits from its strategy of transforming its portfolio by growing its value-add business and by creating a lower cost, competitive commodity business by optimizing its portfolio.

Alcoa is continuing to execute on its strategy of transforming its portfolio by growing its value-add business to capture profitable growth as a lightweight metals innovation leader and by creating a lower cost, competitive commodity business by optimizing its portfolio. It is investing in its value-add manufacturing and engineering businesses to capture growth opportunities in strong end markets like automotive and aerospace. Alcoa is building out its value-add businesses, including by introducing innovative new products and technology solutions, and investing in expansions of value-add capacity. Alcoa's growth projects include the joint venture with Ma'aden in Saudi Arabia; the automotive expansions in Davenport, Iowa and Alcoa, Tennessee; the aluminum lithium capacity expansion in Lafayette, Indiana, at the Alcoa Technical Center in Pennsylvania and at the Kitts Green plant in the United Kingdom; and the expansion in aerospace capabilities in La Porte, Indiana, Hampton, Virginia and Davenport, Iowa. From time to time, Alcoa also pursues growth opportunities that are strategically aligned with its objectives, such as the acquisition of the Firth Rixson business (completed in November 2014), the acquisition of TITAL (completed in March 2015) and the acquisition of RTI International Metals (completed in July 2015). In addition, Alcoa is optimizing its rolling mill portfolio as part of its strategy for profitable growth in the midstream business. At the same time, the Company is creating a competitive commodity business by taking decisive actions to lower the cost base of its upstream operations, including closing, selling or curtailing high-cost global smelting capacity, optimizing alumina refining capacity, and pursuing the sale of its interest in certain other operations.

Alcoa has made, and may continue to plan and execute, acquisitions and divestitures and take other actions to grow or streamline its portfolio. Although management believes that its strategic actions are beneficial to Alcoa, there is no assurance that anticipated benefits will be realized. Adverse factors may prevent Alcoa from realizing the benefits of its growth projects, including unfavorable global economic conditions, currency fluctuations, or unexpected delays in target timelines. Acquisitions present significant challenges and risks, including the effective integration of the business into the Company, unanticipated costs and liabilities, and the ability to realize anticipated benefits, such as growth in market share, revenue or margins, at the levels or in the timeframe expected. The Company may be unable to manage acquisitions successfully.

With respect to portfolio optimization actions such as divestitures, curtailments and closures, Alcoa may face barriers to exit from unprofitable businesses or operations, including high exit costs or objections from various stakeholders. In addition, Alcoa may retain unforeseen liabilities for divested entities if a buyer fails to honor all commitments. Alcoa's business operations are capital intensive, and curtailment or closure of operations or facilities may include significant charges, including employee separation costs, asset impairment charges and other measures.

There can be no assurance that acquisitions, growth investments, divestitures or closures will be undertaken or completed in their entirety as planned or that they will be beneficial to Alcoa.

Market-driven balancing of global aluminum supply and demand may be disrupted by non-market forces or other impediments to production closures.

In response to market-driven factors relating to the global supply and demand of aluminum, Alcoa has curtailed or closed portions of its aluminum production. Certain other aluminum producers have independently undertaken to make cuts in production as well. However, the existence of non-market forces on global aluminum industry capacity, such as political pressures in certain countries to keep jobs or to maintain or further develop industry self-sufficiency, may

prevent or delay the closure or curtailment of certain producers' smelters, irrespective of their position on the industry cost curve. Other production cuts may be impeded by long-term contracts to buy power or raw materials. If industry overcapacity persists due to the disruption by such non-market forces on the market-driven balancing of the global supply and demand of aluminum, the resulting weak pricing environment and margin compression may adversely affect the operating results of aluminum producers, including Alcoa.

Alcoa's operations consume substantial amounts of energy; profitability may decline if energy costs rise or if energy supplies are interrupted.

Alcoa's operations consume substantial amounts of energy. Although Alcoa generally expects to meet the energy requirements for its alumina refineries and primary aluminum smelters from internal sources or from long-term contracts, certain conditions could negatively affect Alcoa's results of operations, including the following:

- significant increases in electricity costs rendering smelter operations uneconomic;
- significant increases in fuel oil or natural gas prices;
- unavailability of electrical power or other energy sources due to droughts, hurricanes or other natural causes;
- unavailability of energy due to energy shortages resulting in insufficient supplies to serve consumers;
- interruptions in energy supply or unplanned outages due to equipment failure or other causes;
- curtailment of one or more refineries or smelters due to the inability to extend energy contracts upon expiration or to negotiate new arrangements on cost-effective terms or due to the unavailability of energy at competitive rates; or
- curtailment of one or more smelters due to a regulatory authority's determination that power supply interruptibility rights granted to Alcoa under an interruptibility regime in place under the laws of the country in which the smelter is located do not comply with the regulatory authority's state aid rules, thus rendering the smelter operations that had been relying on such country's interruptibility regime uneconomic.

If events such as those listed above were to occur, the resulting high energy costs or the disruption of an energy source or the requirement to repay all or a portion of the benefit Alcoa received under a power supply interruptibility regime could have a material adverse effect on Alcoa's business and results of operations.

Alcoa's profitability could be adversely affected by increases in the cost of raw materials or by significant lag effects of decreases in commodity or LME-linked costs.

Alcoa's results of operations are affected by changes in the cost of raw materials, including energy, carbon products, caustic soda and other key inputs, as well as freight costs associated with transportation of raw materials to refining and smelting locations. Alcoa may not be able to fully offset the effects of higher raw material costs or energy costs through price increases, productivity improvements or cost reduction programs. Similarly, Alcoa's operating results are affected by significant lag effects of declines in key costs of production that are commodity or LME-linked. For example, declines in the LME-linked costs of alumina and power during a particular period may not be adequate to offset sharp declines in metal price in that period. Increases in the cost of raw materials or decreases in input costs that are disproportionate to concurrent sharper decreases in the price of aluminum could have a material adverse effect on Alcoa's operating results.

Alcoa is exposed to fluctuations in foreign currency exchange rates and interest rates, as well as inflation, and other economic factors in the countries in which it operates.

Economic factors, including inflation and fluctuations in foreign currency exchange rates and interest rates, competitive factors in the countries in which Alcoa operates, and continued volatility or deterioration in the global economic and financial environment could affect Alcoa's revenues, expenses and results of operations. Changes in the valuation of the U.S. dollar against other currencies, particularly the Australian dollar, Brazilian real, Canadian dollar,

Euro and Norwegian kroner, may affect Alcoa's profitability as some important inputs are purchased in other currencies, while the Company's upstream products are generally sold in U.S. dollars. In addition, although a strong U.S. dollar generally has a positive impact on Alcoa's near-term profitability, over a longer term, a strong U.S. dollar may have an unfavorable impact to Alcoa's position on the global aluminum cost curve due to Alcoa's U.S. smelting portfolio. As the U.S. dollar strengthens, the cost curve shifts down for smelters outside the U.S. but costs for Alcoa's U.S. smelting portfolio may not decline.

Alcoa may not be able to successfully realize future targets or goals established for its business segments, at the levels or by the dates targeted.

From time to time, Alcoa may announce future targets or goals for its business, which are based on the Company's then current expectations, estimates, forecasts and projections about the operating environment, economies and markets in which Alcoa operates. Future targets and goals reflect the Company's beliefs and assumptions and its perception of historical trends, then current conditions and expected future developments, as well as other factors management believes are appropriate in the circumstances. As such, targets and goals are inherently subject to significant business, economic, competitive and other uncertainties and contingencies regarding future events, including the risks discussed in this report. The actual outcome may be materially different. There can be no assurance that any targets or goals established by the Company will be accomplished at the levels or by the dates targeted, if at all. Failure to achieve the targets or goals by the Company may have a material adverse effect on its business, financial condition, results of operations or the market price of its securities.

Alcoa faces significant competition, which may have an adverse effect on profitability.

As discussed in Part I, Item 1. (Business—Competitive Conditions) of this report, the markets for Alcoa's aluminum and non-aluminum products are highly competitive. Alcoa's competitors include a variety of both U.S. and non-U.S. companies in all major markets, including some that are subsidized. Alcoa's metals, including aluminum, titanium and nickel, compete with other materials, such as steel, plastics, composites, ceramics, and glass, among others, for various applications in Alcoa's key markets. New product offerings or new technologies in the marketplace may compete with or replace Alcoa products. The willingness of customers to accept substitutes for the products sold by Alcoa, the ability of large customers to exert leverage in the marketplace to affect the pricing for fabricated aluminum products, and technological advancements or other developments by or affecting Alcoa's competitors or customers could affect Alcoa's results of operations. In addition, Alcoa's competitive position depends, in part, on the Company's ability to leverage its innovation expertise across its businesses and key end markets and, in the case of its upstream businesses, having access to an economical power supply to sustain its operations in various countries.

A downgrade of Alcoa's credit ratings could limit Alcoa's ability to obtain future financing, increase its borrowing costs, increase the pricing of its credit facilities, adversely affect the market price of its securities, trigger letter of credit or other collateral postings, or otherwise impair its business, financial condition, and results of operations.

Standard and Poor's Ratings Services currently rates Alcoa's long-term debt BBB-, the lowest level of investment grade rating, with a stable ratings outlook (ratings and outlook were affirmed on March 9, 2015). On September 28, 2015, S&P issued a statement that these ratings and outlook for Alcoa were not affected by Alcoa's plan to separate into two publicly-traded companies. On May 29, 2013, Moody's Investors Service downgraded Alcoa's long-term debt rating from Baa3 to Ba1, which is below investment grade, and changed the outlook from rating under review to stable. On April 30, 2015, Moody's changed the outlook from stable to positive. On September 28, 2015, Moody's affirmed these ratings and changed the current outlook from positive to developing based on Alcoa's plan to separate into two publicly-traded companies. On January 21, 2016, Moody's placed Alcoa's long-term debt rating under review and changed the current outlook from developing to rating under review, while leaving Alcoa's short-term debt rating unchanged. On April 11, 2014, Fitch Ratings downgraded Alcoa's rating from BBB- to BB+, a below investment grade rating, and changed the outlook from negative to stable. On April 16, 2015, Fitch Ratings affirmed Alcoa's rating of

BB+ but revised Alcoa's outlook to positive. On September 30, 2015, Fitch placed these ratings on "ratings watch positive" based on Alcoa's plan to separate into two publicly-traded companies.

There can be no assurance that one or more of these or other rating agencies will not take negative actions with respect to Alcoa's ratings. Increased debt levels, adverse aluminum market or macroeconomic conditions, a deterioration in the Company's debt protection metrics, a contraction in the Company's liquidity, or other factors could potentially trigger such actions. A rating agency may lower, suspend or withdraw entirely a rating or place it on negative outlook or watch if, in that rating agency's judgment, circumstances so warrant.

A downgrade of Alcoa's credit ratings by one or more rating agencies could adversely impact the market price of Alcoa's securities; adversely affect existing financing (for example, a downgrade by Standard and Poor's or a further downgrade by Moody's would subject Alcoa to higher costs under Alcoa's Five-Year Revolving Credit Agreement and certain of its other revolving credit facilities); limit access to the capital (including commercial paper) or credit markets or otherwise adversely affect the availability of other new financing on favorable terms, if at all; result in more restrictive covenants in agreements governing the terms of any future indebtedness that the Company incurs; increase the cost of borrowing or fees on undrawn credit facilities; result in vendors or counterparties seeking collateral or letters of credit from Alcoa; or otherwise impair Alcoa's business, financial condition and results of operations.

Cyber attacks and security breaches may threaten the integrity of Alcoa's intellectual property and other sensitive information, disrupt its business operations, and result in reputational harm and other negative consequences that could have a material adverse effect on its financial condition and results of operations.

Alcoa faces global cybersecurity threats, which may range from uncoordinated individual attempts to sophisticated and targeted measures, known as advanced persistent threats, directed at the Company. Cyber attacks and security breaches may include, but are not limited to, attempts to access information, computer viruses, denial of service and other electronic security breaches.

The Company believes that it faces a heightened threat of cyber attacks due to the industries it serves, the locations of its operations and its technological innovations. The Company has experienced cybersecurity attacks in the past, including breaches of its information technology systems in which information was taken, and may experience them in the future, potentially with more frequency or sophistication. Based on information known to date, past attacks have not had a material impact on Alcoa's financial condition or results of operations. However, due to the evolving nature of cybersecurity threats, the scope and impact of any future incident cannot be predicted. While the Company continually works to safeguard its systems and mitigate potential risks, there is no assurance that such actions will be sufficient to prevent cyber attacks or security breaches that manipulate or improperly use its systems or networks, compromise confidential or otherwise protected information, destroy or corrupt data, or otherwise disrupt its operations. The occurrence of such events could negatively impact Alcoa's reputation and its competitive position and could result in litigation with third parties, regulatory action, loss of business, potential liability and increased remediation costs, any of which could have a material adverse effect on its financial condition and results of operations. In addition, such attacks or breaches could require significant management attention and resources, and result in the diminution of the value of the Company's investment in research and development.

Joint ventures and other strategic alliances may not be successful.

Alcoa participates in joint ventures and has formed strategic alliances and may enter into other similar arrangements in the future. For example, in December 2009, Alcoa formed a joint venture with Ma'aden, the Saudi Arabian Mining Company, to develop a fully integrated aluminum complex (including a bauxite mine, alumina refinery, aluminum smelter and rolling mill) in the Kingdom of Saudi Arabia. Although the Company has, in connection with the Saudi Arabia joint venture and its other existing joint ventures and strategic alliances, sought to protect its interests, joint ventures and strategic alliances inherently involve special risks. Whether or not Alcoa holds majority interests or maintains operational control in such arrangements, its partners may:

- have economic or business interests or goals that are inconsistent with or opposed to those of the Company;

- exercise veto rights so as to block actions that Alcoa believes to be in its or the joint venture's or strategic alliance's best interests;
- take action contrary to Alcoa's policies or objectives with respect to its investments; or
- as a result of financial or other difficulties, be unable or unwilling to fulfill their obligations under the joint venture, strategic alliance or other agreements, such as contributing capital to expansion or maintenance projects.

There can be no assurance that Alcoa's joint ventures or strategic alliances will be beneficial to Alcoa, whether due to the above-described risks, unfavorable global economic conditions, increases in construction costs, currency fluctuations, political risks, or other factors.

Alcoa's business and growth prospects may be negatively impacted by limits in its capital expenditures.

Alcoa requires substantial capital to invest in growth opportunities and to maintain and prolong the life and capacity of its existing facilities. For 2016, generating positive cash flow from operations that will exceed capital expenditures continues to be an Alcoa target. Insufficient cash generation or capital project overruns may negatively impact Alcoa's ability to fund as planned its sustaining and return-seeking capital projects. Over the long term, Alcoa's ability to take advantage of improved aluminum or other market conditions or growth opportunities in its midstream and downstream businesses may be constrained by earlier capital expenditure restrictions, which could adversely affect the long-term value of its business and the Company's position in relation to its competitors.

Alcoa may also need to address commercial and political issues in relation to its reductions in capital expenditures in certain of the jurisdictions in which it operates. If Alcoa's interest in its joint ventures is diluted or it loses key concessions, its growth could be constrained. Any of the foregoing could have a material adverse effect on the Company's business, results of operations, financial condition and prospects.

Alcoa's global operations expose the Company to risks that could adversely affect Alcoa's business, financial condition, operating results or cash flows.

Alcoa has operations or activities in numerous countries and regions outside the United States, including Brazil, China, Europe, Guinea, Russia, and the Kingdom of Saudi Arabia. The Company's global operations are subject to a number of risks, including:

- economic and commercial instability risks, including those caused by sovereign and private debt default, corruption, and changes in local government laws, regulations and policies, such as those related to tariffs and trade barriers, taxation, exchange controls, employment regulations and repatriation of earnings;
- geopolitical risks such as political instability, civil unrest, expropriation, nationalization of properties by a government, imposition of sanctions, renegotiation or nullification of existing agreements, mining leases and permits;
- war or terrorist activities;
- major public health issues such as an outbreak of a pandemic or epidemic (such as Sudden Acute Respiratory Syndrome, Avian Influenza, H7N9 virus, or the Ebola virus), which could cause disruptions in Alcoa's operations or workforce;
- difficulties enforcing intellectual property and contractual rights in certain jurisdictions; and
- unexpected events, including fires or explosions at facilities, and natural disasters.

While the impact of any of the foregoing factors is difficult to predict, any one or more of them could adversely affect Alcoa's business, financial condition, operating results or cash flows. Existing insurance arrangements may not provide protection for the costs that may arise from such events.

An adverse decline in the liability discount rate, lower-than-expected investment return on pension assets and other factors could affect Alcoa's results of operations or amount of pension funding contributions in future periods.

Alcoa's results of operations may be negatively affected by the amount of expense Alcoa records for its pension and other postretirement benefit plans, reductions in the fair value of plan assets and other factors. U.S. generally accepted accounting principles (GAAP) require that Alcoa calculate income or expense for the plans using actuarial valuations.

These valuations reflect assumptions about financial market and other economic conditions, which may change based on changes in key economic indicators. The most significant year-end assumptions used by Alcoa to estimate pension or other postretirement benefit income or expense for the following year are the discount rate applied to plan liabilities and the expected long-term rate of return on plan assets. In addition, Alcoa is required to make an annual measurement of plan assets and liabilities, which may result in a significant charge to shareholders' equity. For a discussion regarding how Alcoa's financial statements can be affected by pension and other postretirement benefits accounting policies, see "Critical Accounting Policies and Estimates—Pension and Other Postretirement Benefits" in Part II, Item 7. (Management's Discussion and Analysis of Financial Condition and Results of Operations) and Note W to the Consolidated Financial Statements—Pension and Other Postretirement Benefits in Part II, Item 8. (Financial Statements and Supplementary Data). Although GAAP expense and pension funding contributions are impacted by different regulations and requirements, the key economic factors that affect GAAP expense would also likely affect the amount of cash or securities Alcoa would contribute to the pension plans.

Potential pension contributions include both mandatory amounts required under federal law and discretionary contributions to improve the plans' funded status. The Moving Ahead for Progress in the 21st Century Act ("MAP-21"), enacted in 2012, provided temporary relief for employers like Alcoa who sponsor defined benefit pension plans related to funding contributions under the Employee Retirement Income Security Act of 1974 by allowing the use of a 25-year average discount rate within an upper and lower range for purposes of determining minimum funding obligations. In 2014, the Highway and Transportation Funding Act (HATFA) was signed into law. HATFA extended the relief provided by MAP-21 and modified the interest rates that had been set by MAP-21. In 2015, the Bipartisan Budget Act of 2015 (BBA 2015) was signed into law. BBA 2015 extends the relief period provided by HAFTA. Alcoa believes that the relief provided by BBA 2015 will moderately reduce the cash flow sensitivity of the Company's U.S. pension plans' funded status to potential declines in discount rates over the next several years. However, higher than expected pension contributions due to a decline in the plans' funded status as a result of declines in the discount rate or lower-than-expected investment returns on plan assets could have a material negative effect on the Company's cash flows. Adverse capital market conditions could result in reductions in the fair value of plan assets and increase the Company's liabilities related to such plans, adversely affecting Alcoa's liquidity and results of operations.

Unanticipated changes in our tax provisions or exposure to additional tax liabilities could affect Alcoa's future profitability.

Alcoa is subject to income taxes in both the United States and various non-U.S. jurisdictions. Its domestic and international tax liabilities are dependent upon the distribution of income among these different jurisdictions. Changes in applicable domestic or foreign tax laws and regulations, or their interpretation and application, including the possibility of retroactive effect, could affect the Company's tax expense and profitability. Alcoa's tax expense includes estimates of additional tax that may be incurred for tax exposures and reflects various estimates and assumptions. The assumptions include assessments of future earnings of the Company that could impact the valuation of its deferred tax assets. The Company's future results of operations could be adversely affected by changes in the effective tax rate as a result of a change in the mix of earnings in countries with differing statutory tax rates, changes in the overall profitability of the Company, changes in tax legislation and rates, changes in generally accepted accounting principles, changes in the valuation of deferred tax assets and liabilities, the results of tax audits and examinations of previously filed tax returns or related litigation and continuing assessments of its tax exposures. Corporate tax reform and tax law changes continue to be analyzed in the United States and in many other jurisdictions. Significant changes to the U.S. corporate tax system in particular could have a substantial impact, positive or negative, on Alcoa's effective tax rate, cash tax expenditures, and deferred tax assets and liabilities.

Union disputes and other employee relations issues could adversely affect Alcoa's financial results.

A significant portion of Alcoa's employees are represented by labor unions in a number of countries under various collective bargaining agreements with varying durations and expiration dates. For more information, see "Employees" in Part I, Item 1. (Business) of this report. While Alcoa was previously successful in renegotiating the master collective bargaining agreement with the United Steelworkers (the most recent renegotiation having taken place in June 2014), Alcoa may not be able to satisfactorily renegotiate that agreement or other collective bargaining agreements in the U.S. and other countries when they expire. In addition, existing collective bargaining agreements may not prevent a strike or work stoppage at Alcoa's facilities in the future. Alcoa may also be subject to general country strikes or work stoppages unrelated to its business or collective bargaining agreements. Any such work stoppages (or potential work stoppages) could have a material adverse effect on Alcoa's financial results.

Alcoa could be adversely affected by changes in the business or financial condition of a significant customer or customers.

A significant downturn or deterioration in the business or financial condition of a key customer or customers supplied by Alcoa could affect Alcoa's results of operations in a particular period. Alcoa's customers may experience delays in the launch of new products, labor strikes, diminished liquidity or credit unavailability, weak demand for their products, or other difficulties in their businesses. If Alcoa is not successful in replacing business lost from such customers, profitability may be adversely affected.

Alcoa may not be able to successfully develop and implement technology initiatives.

Alcoa is working on new developments for a number of strategic projects in all business segments, including additive manufacturing, alloy development, engineered finishes and product design, high speed continuous casting and rolling technology, and other advanced manufacturing technologies. For more information on Alcoa's research and development programs, see "Research and Development" in Part I, Item 1. (Business) of this report. There can be no assurance that such developments or technologies will be commercially feasible or beneficial to Alcoa.

Alcoa's human resource talent pool may not be adequate to support the Company's growth.

Alcoa's existing operations and development projects require highly skilled executives and staff with relevant industry and technical experience. The inability of the Company or the industry to attract and retain such people may adversely impact Alcoa's ability to adequately meet project demands and fill roles in existing operations. Skills shortages in engineering, technical service, construction and maintenance contractors and other labor market inadequacies may also impact activities. These shortages may adversely impact the cost and schedule of development projects and the cost and efficiency of existing operations.

Alcoa may not realize expected benefits from its productivity and cost-reduction initiatives.

Alcoa has undertaken, and may continue to undertake, productivity and cost-reduction initiatives to improve performance and conserve cash, including new procurement strategies for raw materials, such as backward integration and non-traditional sourcing from numerous geographies, deployment of company-wide business process models, such as Alcoa's degrees of implementation process in which ideas are executed in a disciplined manner to generate savings, and overhead cost reductions. There is no assurance that these initiatives will be successful or beneficial to Alcoa or that estimated cost savings from such activities will be realized.

Alcoa may be exposed to significant legal proceedings, investigations or changes in U.S. federal, state or foreign law, regulation or policy.

Alcoa's results of operations or liquidity in a particular period could be affected by new or increasingly stringent laws, regulatory requirements or interpretations, or outcomes of significant legal proceedings or investigations adverse to

Alcoa. The Company may experience a change in effective tax rates or become subject to unexpected or rising costs associated with business operations or provision of health or welfare benefits to employees due to changes in laws, regulations or policies. The Company is also subject to a variety of legal compliance risks. These risks include, among other things, potential claims relating to product liability, health and safety, environmental matters, intellectual property rights, government contracts, taxes, and compliance with U.S. and foreign export laws, anti-bribery laws, competition laws and sales and trading practices. Alcoa could be subject to fines, penalties, damages (in certain cases, treble damages), or suspension or debarment from government contracts.

While Alcoa believes it has adopted appropriate risk management and compliance programs to address and reduce these risks, the global and diverse nature of its operations means that these risks will continue to exist, and additional legal proceedings and contingencies may arise from time to time. In addition, various factors or developments can lead the Company to change current estimates of liabilities or make such estimates for matters previously not susceptible of reasonable estimates, such as a significant judicial ruling or judgment, a significant settlement, significant regulatory developments or changes in applicable law. A future adverse ruling or settlement or unfavorable changes in laws, regulations or policies, or other contingencies that the Company cannot predict with certainty could have a material adverse effect on the Company's results of operations or cash flows in a particular period. For additional information regarding the legal proceedings involving the Company, see the discussion in Part I, Item 3. (Legal Proceedings) of this report and in Note N to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data).

Alcoa is subject to a broad range of health, safety and environmental laws and regulations in the jurisdictions in which it operates and may be exposed to substantial costs and liabilities associated with such laws and regulations.

Alcoa's operations worldwide are subject to numerous complex and increasingly stringent health, safety and environmental laws and regulations. The costs of complying with such laws and regulations, including participation in assessments and cleanups of sites, as well as internal voluntary programs, are significant and will continue to be so for the foreseeable future. Environmental laws may impose cleanup liability on owners and occupiers of contaminated property, including past or divested properties, regardless of whether the owners and occupiers caused the contamination or whether the activity that caused the contamination was lawful at the time it was conducted. Environmental matters for which Alcoa may be liable may arise in the future at its present sites, where no problem is currently known, at previously owned sites, sites previously operated by the Company, sites owned by its predecessors or sites that it may acquire in the future. Compliance with environmental, health and safety legislation and regulatory requirements may prove to be more limiting and costly than the Company anticipates. Alcoa's results of operations or liquidity in a particular period could be affected by certain health, safety or environmental matters, including remediation costs and damages related to certain sites. Additionally, evolving regulatory standards and expectations can result in increased litigation and/or increased costs, all of which can have a material and adverse effect on earnings and cash flows.

Climate change, climate change legislation or regulations and greenhouse effects may adversely impact Alcoa's operations and markets.

Energy is a significant input in a number of Alcoa's operations. There is growing recognition that consumption of energy derived from fossil fuels is a contributor to global warming.

A number of governments or governmental bodies have introduced or are contemplating legislative and regulatory change in response to the potential impacts of climate change. There is also current and emerging regulation, such as the mandatory renewable energy target in Australia, Québec's transition to a "cap and trade" system with compliance required beginning 2013, the European Union Emissions Trading Scheme and the United States' Clean Power Plan, which became effective on December 22, 2015. Alcoa will likely see changes in the margins of greenhouse gas-intensive assets and energy-intensive assets as a result of regulatory impacts in the countries in which the Company operates. These regulatory mechanisms may be either voluntary or legislated and may impact Alcoa's operations

directly or indirectly through customers or Alcoa's supply chain. Inconsistency of regulations may also change the attractiveness of the locations of some of the Company's assets. Assessments of the potential impact of future climate change legislation, regulation and international treaties and accords are uncertain, given the wide scope of potential regulatory change in countries in which Alcoa operates. The Company may realize increased capital expenditures resulting from required compliance with revised or new legislation or regulations, costs to purchase or profits from sales of, allowances or credits under a "cap and trade" system, increased insurance premiums and deductibles as new actuarial tables are developed to reshape coverage, a change in competitive position relative to industry peers and changes to profit or loss arising from increased or decreased demand for goods produced by the Company and indirectly, from changes in costs of goods sold.

The potential physical impacts of climate change on the Company's operations are highly uncertain, and will be particular to the geographic circumstances. These may include changes in rainfall patterns, shortages of water or other natural resources, changing sea levels, changing storm patterns and intensities, and changing temperature levels. These effects may adversely impact the cost, production and financial performance of Alcoa's operations.

Alcoa's plan to separate into two independent publicly-traded companies is subject to various risks and uncertainties and may not be completed in accordance with the expected plans or anticipated timeline, or at all, and will involve significant time and expense, which could disrupt or adversely affect Alcoa's business.

On September 28, 2015, Alcoa announced plans to separate into two independent publicly-traded companies: a Value-Add company comprising the Global Rolled Products, Engineered Products and Solutions, and Transportation and Construction Solutions segments, and an Upstream company comprising the Alumina and Primary Metals segments. The separation, which is currently targeted to be completed in the second half of 2016, is subject to approval by Alcoa's Board of Directors of the final terms of the separation and market, regulatory and certain other conditions. Unanticipated developments, including, among others, failure of the separation to qualify for the expected tax treatment, the possibility that any third-party consents required in connection with the separation will not be received, material adverse changes in aluminum industry conditions and changes in global economic and financial market conditions generally, could delay or prevent the completion of the proposed separation, or cause the proposed separation to occur on terms or conditions that are different or less favorable than expected.

Alcoa expects that the process of completing the proposed separation will be time-consuming and involve significant costs and expenses, which may be significantly higher than what it currently anticipates and may not yield a benefit if the separation is not completed. Executing the proposed separation will require significant time and attention from Alcoa's senior management and employees, which could disrupt the Company's ongoing business and adversely affect the financial results and results of operations. Alcoa may also experience increased difficulties in attracting, retaining and motivating employees during the pendency of the separation and following its completion, which could harm the Company's businesses.

The separation may not achieve some or all of the anticipated benefits.

Alcoa may not realize some or all of the anticipated strategic, financial, operational or other benefits from the separation. As independent publicly-traded companies, the Value-Add and Upstream companies will be smaller, less diversified companies with a narrower business focus and may be more vulnerable to changing market conditions, such as changes in aluminum industry conditions, which could result in increased volatility in their cash flows, working capital and financing requirements and could materially and adversely affect the respective business, financial condition and results of operations. Further, there can be no assurance that the combined value of the common stock of the two publicly-traded companies will be equal to or greater than what the value of Alcoa's common stock would have been had the proposed separation not occurred.

The proposed separation may result in disruptions to, and negatively impact Alcoa's relationships with, the Company's suppliers, customers and other business partners.

Uncertainty related to the proposed separation may lead suppliers, customers and other parties with which Alcoa currently does business or may do business in the future to terminate or attempt to negotiate changes in existing

business relationships, or to consider entering into business relationships with parties other than Alcoa. These disruptions could have a material and adverse effect on Alcoa's businesses, financial condition, results of operations and prospects, or the businesses, financial condition, results of operations and prospects of the independent companies resulting from the separation. The effect of such disruptions could be exacerbated by any delays in the completion of the separation.

Item 1B. UnresolvedStaff Comments.

None.

Item 2. Properties.

Alcoa's principal office is located at 390 Park Avenue, New York, New York 10022-4608. Alcoa's corporate center is located at 201 Isabella Street, Pittsburgh, Pennsylvania 15212-5858. The Alcoa Technical Center for research and development is located at 100 Technical Drive, Alcoa Center, Pennsylvania 15069-0001.

Alcoa leases some of its facilities; however, it is the opinion of management that the leases do not materially affect the continued use of the properties or the properties' values.

Alcoa believes that its facilities are suitable and adequate for its operations. Although no title examination of properties owned by Alcoa has been made for the purpose of this report, the Company knows of no material defects in title to any such properties. See Notes A and H to the financial statements for information on properties, plants and equipment.

Alcoa has active plants and holdings under the following segments and in the following geographic areas:

ALUMINA

Bauxite: See the tables and related text in the **Bauxite Interests** section on pages 3-10 of this report.

Alumina: See the table and related text in the **Alumina Refining Facilities and Capacity** section on pages 10-12 of this report.

PRIMARY METALS

See the table and related text in the **Primary Aluminum Facilities and Capacity** section on pages 12-14 of this report.

GLOBAL ROLLED PRODUCTS

See the table and related text in the **Global Rolled Products Facilities** section on page 14-15 of this report.

ENGINEERED PRODUCTS AND SOLUTIONS

See the table and related text in the **Engineered Products and Solutions Facilities** section on pages 15-18 of this report.

TRANSPORTATION AND CONSTRUCTION SOLUTIONS

See the table and related text in the **Transportation and Construction Solutions** section on pages 18-19 of this report.

Item 3. LegalProceedings.

In the ordinary course of its business, Alcoa is involved in a number of lawsuits and claims, both actual and potential.

Litigation

Italian Energy Matter

As previously reported, before 2002, Alcoa purchased power in Italy in the regulated energy market and received a drawback of a portion of the price of power under a special tariff in an amount calculated in accordance with a

published resolution of the Italian Energy Authority, Energy Authority Resolution n. 204/1999 (“204/1999”). In 2001, the Energy Authority published another resolution, which clarified that the drawback would be calculated in the same manner, and in the same amount, in either the regulated or unregulated market. At the beginning of 2002, Alcoa left the regulated energy market to purchase energy in the unregulated market. Subsequently, in 2004, the Energy Authority introduced regulation no. 148/2004 which set forth a different method for calculating the special tariff that would result in a different drawback for the regulated and unregulated markets. Alcoa challenged the new regulation in the Administrative Court of Milan and received a favorable judgment in 2006. Following this ruling, Alcoa continued to receive the power price drawback in accordance with the original calculation method, through 2009, when the European Commission declared all such special tariffs to be impermissible “state aid.” In 2010, the Energy Authority appealed the 2006 ruling to the Consiglio di Stato (final court of appeal). On December 2, 2011, the Consiglio di Stato ruled in favor of the Energy Authority and against Alcoa, thus presenting the opportunity for the energy regulators to seek reimbursement from Alcoa of an amount equal to the difference between the actual drawback amounts received over the relevant time period, and the drawback as it would have been calculated in accordance with regulation 148/2004. On February 23, 2012, Alcoa filed its appeal of the decision of the Consiglio di Stato (this appeal was subsequently withdrawn in March 2013). On March 26, 2012, Alcoa received a letter from the agency (Cassa Conguaglio per il Settore Eletrico (CCSE)) responsible for making and collecting payments on behalf of the Energy Authority demanding payment in the amount of approximately $110 million (€85 million), including interest. By letter dated April 5, 2012, Alcoa informed CCSE that it disputes the payment demand of CCSE since (i) CCSE was not authorized by the Consiglio di Stato decisions to seek payment of any amount, (ii) the decision of the Consiglio di Stato has been appealed (see above), and (iii) in any event, no interest should be payable. On April 29, 2012, Law No. 44 of 2012 (“44/2012”) came into effect, changing the method to calculate the drawback. On February 21, 2013, Alcoa received a revised request letter from CCSE demanding Alcoa’s subsidiary, Alcoa Trasformazioni S.r.l., make a payment in the amount of $97 million (€76 million), including interest, which reflects a revised calculation methodology by CCSE and represents the high end of the range of reasonably possible loss associated with this matter of $0 to $97 million (€76 million). Alcoa has rejected that demand and has formally challenged it through an appeal before the Administrative Court on April 5, 2013. The Administrative Court scheduled a hearing for December 19, 2013, which was subsequently postponed until April 17, 2014, and further postponed until June 19, 2014. On this date the Administrative Court listened to Alcoa’s oral argument, and on September 2, 2014, rendered its decision. The Administrative Court declared the payment request of CCSE and the Energy Authority to Alcoa to be unsubstantiated based on the 148/2004 resolution with respect to the January 19, 2007 through November 19, 2009 timeframe. On December 18, 2014, the CCSE and the Energy Authority appealed the Administrative Court’s September 2, 2014 decision; however, a date for the hearing has not been scheduled. As a result of the conclusion of the European Commission Matter on January 26, 2016 described below, the Company has modified its outlook with respect to a portion of the pending legal proceedings related to this matter. At this time, the Company is unable to reasonably predict the ultimate outcome for this matter.

European Commission Matter

As previously reported, in July 2006, the European Commission (EC) announced that it had opened an investigation to establish whether an extension of the regulated electricity tariff granted by Italy to some energy-intensive industries complied with European Union (EU) state aid rules. The Italian power tariff extended the tariff that was in force until December 31, 2005 through November 19, 2009 (Alcoa had been incurring higher power costs at its smelters in Italy subsequent to the tariff end date through the end of 2012). The extension was originally through 2010, but the date was changed by legislation adopted by the Italian Parliament effective on August 15, 2009. Prior to expiration of the tariff in 2005, Alcoa had been operating in Italy for more than 10 years under a power supply structure approved by the EC in 1996. That measure provided a competitive power supply to the primary aluminum industry and was not considered state aid from the Italian Government. The EC’s announcement expressed concerns about whether Italy’s extension of the tariff beyond 2005 was compatible with EU legislation and potentially distorted competition in the European market of primary aluminum, where energy is an important part of the production costs.

On November 19, 2009, the EC announced a decision in this matter stating that the extension of the tariff by Italy constituted unlawful state aid, in part, and, therefore, the Italian Government is to recover a portion of the benefit Alcoa received since January 2006 (including interest). The amount of this recovery was to be based on a calculation prepared by the Italian Government (see below). In late 2009, after discussions with legal counsel and reviewing the bases on which the EC decided, including the different considerations cited in the EC decision regarding Alcoa's two smelters in Italy, Alcoa recorded a charge of $250 million (€173 million), which included $20 million (€14 million) to write off a receivable from the Italian Government for amounts due under the now expired tariff structure and $230 million (€159 million) to establish a reserve. On April 19, 2010, Alcoa filed an appeal of this decision with the General Court of the EU (see below). Prior to 2012, Alcoa was involved in other legal proceedings related to this matter that separately sought the annulment of the EC's July 2006 decision to open an investigation alleging that such decision did not follow the applicable procedural rules and requested injunctive relief to suspend the effectiveness of the EC's November 19, 2009 decision. However, the decisions by the General Court, and subsequent appeals to the European Court of Justice, resulted in the denial of these remedies.

In June 2012, Alcoa received formal notification from the Italian Government with a calculated recovery amount of $375 million (€303 million); this amount was reduced by $65 million (€53 million) for amounts owed by the Italian Government to Alcoa, resulting in a net payment request of $310 million (€250 million). In a notice published in the Official Journal of the European Union on September 22, 2012, the EC announced that it had filed an action against the Italian Government on July 18, 2012 to compel it to collect the recovery amount (on October 17, 2013, the European Court of Justice ordered Italy to so collect). On September 27, 2012, Alcoa received a request for payment in full of the $310 million (€250 million) by October 31, 2012. Following discussions with the Italian Government regarding the timing of such payment, Alcoa paid the requested amount in five quarterly installments of $69 million (€50 million) beginning in October 2012 through December 2013. Notwithstanding the payments made, Alcoa's estimate of the most probable loss of the ultimate outcome of this matter and the low end of the range of reasonably possible loss, which is $174 million (€159 million) to $332 million (€303 million), remains the $174 million (€159 million) recorded in 2009 (the U.S. dollar amount reflects the effects of foreign currency movements since 2009). Alcoa no longer has a reserve for this matter; instead, Alcoa has a noncurrent asset reflecting the excess of the total of the five payments made to the Italian Government over the reserve recorded in 2009. At December 31, 2015, the noncurrent asset was $100 million (€91 million) (this does not include the $58 million (€53 million) for amounts owed by the Italian Government to Alcoa mentioned above).

On October 16, 2014, Alcoa received notice from the General Court of the EU that its April 19, 2010 appeal of the EC's November 19, 2009 decision was denied. On December 27, 2014, Alcoa filed an appeal of the General Court's October 16, 2014 ruling to the European Court of Justice (ECJ). Following submission of the EC's response to the appeal, on June 10, 2015, Alcoa filed a request for an oral hearing before the ECJ; no decision on that request was received. On January 26, 2016, Alcoa was informed that the ECJ had dismissed Alcoa's December 27, 2014 appeal of the General Court's October 16, 2014 ruling. The dismissal of Alcoa's appeal represents the conclusion of the legal proceedings in this matter. There will be no further reporting of this matter.

Environmental Matters

Alcoa is involved in proceedings under the Comprehensive Environmental Response, Compensation and Liability Act, also known as Superfund (CERCLA) or analogous state provisions regarding the usage, disposal, storage or treatment of hazardous substances at a number of sites in the U.S. The Company has committed to participate, or is engaged in negotiations with federal or state authorities relative to its alleged liability for participation, in clean-up efforts at several such sites. The most significant of these matters, including the remediation of the Grasse River in Massena, NY, are discussed in the Environmental Matters section of Note N to the Consolidated Financial Statements under the caption "Environmental Matters" on pages 130-134.

As previously reported, in August 2005, Dany Lavoie, a resident of Baie Comeau in the Canadian Province of Québec, filed a Motion for Authorization to Institute a Class Action and for Designation of a Class Representative against Alcoa Canada Ltd., Alcoa Limitée, Societe Canadienne de Metaux Reynolds Limitée and Canadian British Aluminum in the

Superior Court of Québec in the District of Baie Comeau. Plaintiff seeks to institute the class action on behalf of a putative class consisting of all past, present and future owners, tenants and residents of Baie Comeau's St. Georges neighborhood. He alleges that defendants, as the present and past owners and operators of an aluminum smelter in Baie Comeau, have negligently allowed the emission of certain contaminants from the smelter, specifically Polycyclic Aromatic Hydrocarbons or "PAHs," that have been deposited on the lands and houses of the St. Georges neighborhood and its environs causing damage to the property of the putative class and causing health concerns for those who inhabit that neighborhood. Plaintiff originally moved to certify a class action, sought to compel additional remediation to be conducted by the defendants beyond that already undertaken by them voluntarily, sought an injunction against further emissions in excess of a limit to be determined by the court in consultation with an independent expert, and sought money damages on behalf of all class members. In May 2007, the court authorized a class action suit to include only people who suffered property damage or personal injury damages caused by the emission of PAHs from the smelter. In September 2007, plaintiffs filed the claim against the original defendants, which the court had authorized in May. Alcoa has filed its Statement of Defense and plaintiffs filed an Answer to that Statement. Alcoa also filed a Motion for Particulars with respect to certain paragraphs of plaintiffs' Answer and a Motion to Strike with respect to certain paragraphs of plaintiffs' Answer. In late 2010, the court denied these motions. The Soderberg smelting process that plaintiffs allege to be the source of emissions of concern has ceased operations and has been dismantled. No further formal court proceedings or discovery has occurred, while technical advisors nominated by agreement of the parties confer on potential health impacts of prior emissions. This protocol has been agreed to by the parties who have also advised the court regarding the process. Plaintiffs have filed a motion seeking appointment of an expert to advise the court on matters of sampling of homes and standards for interior home remediation. Alcoa has announced its opposition to that motion. Although initially setting a schedule for briefing, during January 2016, the court notified the parties that it was suspending that schedule until further notice. No further schedule has been set. Further proceedings in the case will await resolution of the motion. At this stage of the proceeding, the Company is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss.

As previously reported, in October 2006, in Barnett, et al. v. Alcoa and Alcoa Fuels, Inc., Warrick Circuit Court, County of Warrick, Indiana; 87-C01-0601-PL-499, forty-one plaintiffs sued Alcoa Inc. and a subsidiary, asserting claims similar to those asserted in Musgrave v. Alcoa, et al., Warrick Circuit Court, County of Warrick, Indiana; 87-C01-0601-CT-006. In November 2007, Alcoa Inc. and its subsidiary filed a motion to dismiss the Barnett cases. In October 2008, the Warrick County Circuit Court granted Alcoa's motions to dismiss, dismissing all claims arising out of alleged occupational exposure to wastes at the Squaw Creek Mine, but in November 2008, the trial court clarified its ruling, indicating that the order does not dispose of plaintiffs' personal injury claims based upon alleged "recreational" or non-occupational exposure. Plaintiffs also filed a "second amended complaint" in response to the court's orders granting Alcoa's motion to dismiss. On July 7, 2010, the court granted the parties' joint motions for a general continuance of trial settings. Discovery in this matter remains stayed . The Company is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss because plaintiffs have merely alleged that their medical condition is attributable to exposure to materials at the Squaw Creek Mine but no further information is available due to the discovery stay.

As previously reported, in 1996, Alcoa acquired the Fusina, Italy smelter and rolling operations and the Portovesme, Italy smelter (both of which are owned by Alcoa's subsidiary, Alcoa Trasformazioni S.r.l.) from Alumix, an entity owned by the Italian Government. Alcoa also acquired the extrusion plants located in Feltre and Bolzano, Italy. At the time of the acquisition, Alumix indemnified Alcoa for pre-existing environmental contamination at the sites. In 2004, the Italian Ministry of Environment (MOE) issued orders to Alcoa Trasformazioni S.r.l. and Alumix for the development of a clean-up plan related to soil contamination in excess of allowable limits under legislative decree and to institute emergency actions and pay natural resource damages. On April 5, 2006, Alcoa Trasformazioni S.r.l.'s Fusina site was also sued by the MOE and Minister of Public Works (MOPW) in the Civil Court of Venice for an alleged liability for environmental damages, in parallel with the orders already issued by the MOE. Alcoa Trasformazioni S.r.l. appealed the orders, defended the civil case for environmental damages and filed suit against Alumix, as discussed below. Similar issues also existed with respect to the Bolzano and Feltre plants, based on orders

issued by local authorities in 2006. Most, if not all, of the underlying activities occurred during the ownership of Alumix, the governmental entity that sold the Italian plants to Alcoa.

As noted above, in response to the 2006 civil suit by the MOE and MOPW, Alcoa Trasformazioni S.r.l. filed suit against Alumix claiming indemnification under the original acquisition agreement, but brought that suit in the Court of Rome due to jurisdictional rules. In June 2008, the parties (Alcoa and now Ligestra S.r.l. (Ligestra), the successor to Alumix) signed a preliminary agreement by which they have committed to pursue a settlement. The Court of Rome accepted the request, and postponed the Court's expert technical assessment, reserving its ability to fix the deadline depending on the development of negotiations. Alcoa and Ligestra agreed to a settlement in December 2008 with respect to the Feltre site. Ligestra paid the sum of 1.08 million Euros and Alcoa committed to clean up the site. Further postponements were granted by the Court of Rome, and the next hearing is fixed for December 20, 2016. In the meantime, Alcoa Trasformazioni S.r.l. and Ligestra reached a preliminary agreement for settlement of the liabilities related to Fusina, allocating 80% and 20% of the remediation costs to Ligestra and Alcoa, respectively. In January 2014, a final agreement with Ligestra was signed, and on February 5, 2014, Alcoa signed a final agreement with the MOE and MOPW settling all environmental issues at the Fusina site. As set out in the agreement between Alcoa and Ligestra, those two parties will share the remediation costs and environmental damages claimed by the MOE and MOPW. The remediation project filed by Alcoa and Ligestra has been approved by the MOE. See Note N to the Consolidated Financial Statements under the caption “Fusina and Portovesme, Italy” on page 131. To provide time for settlement with Ligestra, the MOE and Alcoa jointly requested and the Civil Court of Venice has granted a series of postponements of hearings in the Venice trial, assuming that the case will be closed. Following the settlement, the parties caused the Court to dismiss the proceedings. The proceedings were, however, restarted in April 2015 by the MOE and MOPW because the Ministers had not ratified the settlement of February 5, 2014. The Ministers announced in December 2015 that they will ratify the settlement in the following months.

Alcoa and Ligestra have signed a similar agreement relating to the Portovesme site. However, that agreement is contingent upon final acceptance of the proposed soil remediation project for Portovesme that was rejected by the MOE in the fourth quarter of 2013. Alcoa submitted a revised proposal in May 2014 and a further revised proposal in February 2015, in agreement with Ligestra. The MOE issued a Ministerial Decree approving the final project in October 2015. Work on the soil remediation project will commence in 2016 and is expected to be completed in 2019. Alcoa and Ligestra are now working on a final groundwater remediation project which is expected to be submitted to the MOE for review during 2016. While the issuance of the decree for the soil remediation project has provided reasonable certainty regarding liability for the soil remediation, with respect to the groundwater remediation project Alcoa is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss beyond what is described in Footnote N to the Consolidated Financial Statements for several reasons. First, certain costs relating to the groundwater remediation are not yet fixed. In connection with any proposed groundwater remediation plan for Portovesme, the Company understands that the MOE has substantial discretion in defining what must be managed under Italian law, as well as the extent and duration of that remediation program. As a result, the scope and cost of the final groundwater remediation plan remain uncertain for Portovesme; Alcoa and Ligestra are still negotiating a final settlement for groundwater remediation at Portovesme, for an allocation of the cost based on the new remediation project approved by the MOE. In addition, once a groundwater remediation project is submitted, should a final settlement with Ligestra not be reached, Alcoa should be held responsible only for its share of pollution. However, the area is impacted by many sources of pollution, as well as historical pollution. Consequently, the allocation of liabilities would need a very complex technical evaluation by the authorities that has not yet been performed.

As previously reported, on November 30, 2010, Alcoa World Alumina Brasil Ltda. (AWAB) received notice of a lawsuit that had been filed by the public prosecutors of the State of Pará in Brazil in November 2009. The suit names AWAB and the State of Pará, which, through its Environmental Agency, had issued the operating license for the Company's new bauxite mine in Juruti. The suit concerns the impact of the project on the region's water system and alleges that certain conditions of the original installation license were not met by AWAB. In the lawsuit, plaintiffs requested a preliminary injunction suspending the operating license and ordering payment of compensation. On April 14, 2010, the court denied plaintiffs' request. AWAB presented its defense in March 2011, on grounds that it was in compliance with the terms and conditions of its operating license, which included plans to mitigate the impact of the

project on the region's water system. In April 2011, the State of Pará defended itself in the case asserting that the operating license contains the necessary plans to mitigate such impact, that the State monitors the performance of AWAB's obligations arising out of such license, that the licensing process is valid and legal, and that the suit is meritless. The Company's position is that any impact from the project had been fully repaired when the suit was filed. The Company also believes that Jará Lake has not been affected by any project activity and any evidence of pollution from the project would be unreliable. Following the preliminary injunction request, the plaintiffs took no further action until October 2014, when in response to the court's request and as required by statute, they restated the original allegations in the lawsuit. The Company is not certain whether or when the action will proceed. Given that this proceeding is in its preliminary stage and the current uncertainty in this case, the Company is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss.

As previously reported, by an amended complaint filed April 21, 2005, Alcoa Global Fasteners, Inc. was added as a defendant in Orange County Water District (OCWD) v. Northrop Corporation, et al., civil action 04cc00715 (Superior Court of California, County of Orange). OCWD alleges contamination or threatened contamination of a drinking water aquifer by Alcoa, certain of the entities that preceded Alcoa at the same locations as property owners and/or operators, and other current and former industrial and manufacturing businesses that operated in Orange County in past decades. OCWD seeks to recover the cost of aquifer remediation and attorney's fees. Trial on statutory, non-jury claims commenced on February 10, 2012, and continued through September 2012 when the case was submitted to the court for decision. On December 11, 2012, the court issued its tentative ruling in the matter dismissing plaintiff OCWD's remaining statutory claims against all defendants. The court's tentative ruling also invited further briefing on the decision and it is subject to modification. On January 21, 2013, defendants filed a joint brief responding to ten specific questions posed by the court's tentative ruling. The joint brief argued that the court should make further findings of fact and law in favor of the defendants in response to the ten questions. Alcoa Global Fasteners, Inc. also filed a separate brief on two of the questions arguing that the court should determine that it is neither a cause of ground water contamination nor a cause of plaintiff's incurred costs. Remaining in the case at this time are common law trespass and nuisance claims for a Phase II trial which has not been scheduled. OCWD has asserted a total remedy cost of at least $150 million plus attorneys' fees; however, the amount in controversy at this stage is limited to sums already expended by the OCWD, approximately $4 million. The court has indicated that it is not likely to grant the OCWD's request for declaratory relief as to future sums the OCWD expends. On February 28, 2013, the court held a hearing on its tentative Statement of Decision finding that OCWD had not met its burden on the element of causation and, following that hearing, on May 10, 2013, issued a supplemental tentative decision, finding that plaintiff had not met its burden of proof. On that date, the court ordered defendants to submit a proposed statement of decision, followed by filing of objections and counter-proposed statement of decision by the plaintiff and responses by the defendants. All filings were completed by September 23, 2013 at which time the matter was submitted to the court for final decision. On October 29, 2013, the court issued its final Statement of Decision ("SOD") which resolved the statutory law liability claims of the Phase I trial favorably to Alcoa and the other Phase I trial defendants. The plaintiff and the trial defendants disagree on the consequences of the SOD and the Phase I trial on the remaining two tort claims of nuisance and trespass. On December 19, 2013, the court held a Case Management Conference and approved the parties' proposed briefing schedule regarding remaining issues. On June 20, 2014, following the full briefing by the parties, the trial court entered final judgment in favor of Alcoa and the other trial defendants on the remaining tort claims. On August 18, 2014, the OCWD filed a notice of appeal of the judgment with the Superior Court of the County of Orange. On October 14, 2015, the OCWD submitted its opening brief. Defendants' response brief is due March 14, 2016.

St. Croix Proceedings

Abednego and Abraham cases. As previously reported, on January 14, 2010, Alcoa was served with a multi-plaintiff action complaint involving several thousand individual persons claiming to be residents of St. Croix who are alleged to have suffered personal injury or property damage from Hurricane Georges or winds blowing material from the St. Croix Alumina, L.L.C. ("SCA") facility on the island of St. Croix (U.S. Virgin Islands) since the time of the hurricane. This complaint, Abednego, et al. v. Alcoa, et al. was filed in the Superior Court of the Virgin Islands, St. Croix Division. Following an unsuccessful attempt by Alcoa and SCA to remove the case to federal court, the case has been lodged in the Superior Court. The complaint names as defendants the same entities that were sued in a February 1999

action arising out of the impact of Hurricane Georges on the island and added as a defendant the current owner of the alumina facility property.

Also as previously reported, on March 1, 2012, Alcoa was served with a separate multi-plaintiff action complaint involving approximately 200 individual persons alleging claims essentially identical to those set forth in the Abednego v. Alcoa complaint. This complaint, Abraham, et al. v. Alcoa, et al., was filed on behalf of plaintiffs previously dismissed in the federal court proceeding involving the original litigation over Hurricane Georges impacts. The matter was originally filed in the Superior Court of the Virgin Islands, St. Croix Division, on March 30, 2011.

Alcoa and other defendants in the Abraham and Abednego cases filed or renewed motions to dismiss each case in March 2012 and August 2012 following service of the Abraham complaint on Alcoa and remand of the Abednego complaint to Superior Court, respectively. By order dated August 10, 2015, the Superior Court dismissed plaintiffs' complaints without prejudice to re-file the complaints individually, rather than as a multi-plaintiff filing. The order also preserves the defendants' grounds for dismissal if new, individual complaints are filed.

Glencore Contractual Indemnity Claim. As previously reported, on June 5, 2015, Alcoa World Alumina LLC ("AWA") and SCA filed a complaint in Delaware Chancery Court for a declaratory judgment and injunctive relief to resolve a dispute between Alcoa and Glencore Ltd. ("Glencore") with respect to claimed obligations under a 1995 asset purchase agreement between Alcoa and Glencore. The dispute arose from Glencore's demand that Alcoa indemnify it for liabilities it may have to pay to Lockheed Martin ("Lockheed") related to the St. Croix alumina refinery. Lockheed had earlier filed suit against Glencore in federal court in New York seeking indemnity for liabilities it had incurred and would incur to the U.S. Virgin Islands to remediate certain properties at the refinery property and claimed that Glencore was required by an earlier, 1989 purchase agreement to indemnify it. Glencore had demanded that Alcoa indemnify and defend it in the Lockheed case and threatened to claim over against Alcoa in the New York action despite exclusive jurisdiction for resolution of disputes under the 1995 purchase agreement being in Delaware. After Glencore conceded that it was not seeking to add Alcoa to the New York action, AWA and SCA dismissed their complaint in the Chancery Court case and on August 6, 2015 filed a complaint for declaratory judgment in Delaware Superior Court. AWA and SCA filed a motion for judgment on the pleadings on September 16, 2015. Glencore answered AWA's and SCA's complaint and asserted counterclaims on August 27, 2015, and on October 2, 2015 filed its own motion for judgment on the pleadings. Argument on the parties' motions was held by the court on December 7, 2015 and by order dated February 8, 2016, the court granted Alcoa's motion and denied Glencore's motion resulting in Alcoa not being liable to indemnify Glencore for the Lockheed action. The decision also leaves for pretrial discovery and possible summary judgment or trial Glencore's claims for costs and fees it incurred in defending and settling an earlier Superfund action brought against Glencore by the Government of the Virgin Islands. On February 17, 2016, Glencore filed notice of its application for interlocutory appeal of the February 8 ruling. AWA and SCA have 10 days to respond. The Company is unable to reasonably predict an outcome for the remaining claims.

Other Matters

As previously reported, along with various asbestos manufacturers and distributors, Alcoa and its subsidiaries as premises owners are defendants in several hundred active lawsuits filed on behalf of persons alleging injury predominantly as a result of occupational exposure to asbestos at various Company facilities. In addition, an Alcoa subsidiary company has been named, along with a large common group of industrial companies, in a pattern complaint where the Company's involvement is not evident. Since 1999, several thousand such complaints have been filed. To date, the subsidiary has been dismissed from almost every case that was actually placed in line for trial. Alcoa, its subsidiaries and acquired companies, all have had numerous insurance policies over the years that provide coverage for asbestos based claims. Many of these policies provide layers of coverage for varying periods of time and for varying locations. Alcoa has significant insurance coverage and believes that its reserves are adequate for its known asbestos exposure related liabilities. The costs of defense and settlement have not been and are not expected to be material to the results of operations, cash flows, and financial position of the Company.

As previously reported, on August 2, 2013, the State of North Carolina, by and through its agency, the North Carolina Department of Administration, filed a lawsuit against Alcoa Power Generating Inc. (APGI) in Superior Court, Wake County, North Carolina (Docket No. 13-CVS-10477). The lawsuit asserts ownership of certain submerged lands and

hydropower generating structures situated at Alcoa’s Yadkin Hydroelectric Project (the “Yadkin Project”), including the submerged riverbed of the Yadkin River throughout the Yadkin Project and a portion of the hydroelectric dams that Alcoa owns and operates pursuant to a license from the Federal Energy Regulatory Commission. The suit seeks declaratory relief regarding North Carolina’s alleged ownership interests in the riverbed and the dams and further declaration that Alcoa has no right, license or permission from North Carolina to operate the Yadkin Project. By notice filed on September 3, 2013, Alcoa removed the matter to the U.S. District Court for the Eastern District of North Carolina (Docket No. Civil Action No. 5: 13-cv-633). By motion filed September 3, 2013, the Yadkin Riverkeeper sought permission to intervene in the case. On September 25, 2013, Alcoa filed its answer in the case and also filed its opposition to the motion to intervene by the Yadkin Riverkeeper. The Court denied the State’s Motion to Remand and initially permitted the Riverkeeper to intervene although the Riverkeeper has now voluntarily withdrawn as an intervening party and will participate as amicus.

On July 21, 2014, the parties each filed a motion for summary judgment. On November 20, 2014, the Court denied Alcoa’s motion for summary judgment and denied in part and granted in part the State of North Carolina’s motions for summary judgment. The Court held that under North Carolina law, the burden of proof as to title to property is shifted to a private party opposing a state claim of property ownership. The court conducted a trial on navigability on April 21-22, 2015, and, after ruling orally from the bench on April 22, 2015, on May 5, 2015, entered Findings of Fact and Conclusions of Law as to Navigability, ruling in APGI’s favor that the state “failed to meet its burden to prove that the Relevant Segment, as stipulated by the parties, was navigable for commerce at statehood.” Subsequently, APGI filed a motion for summary judgment as to title; the state filed opposition papers. On September 28, 2015, the Court granted summary judgment in APGI’s favor and found that the evidence demonstrates that APGI holds title to the riverbed. The Court further directed judgment to be entered in APGI’s favor and closed the case. On October 13, 2015, the State of North Carolina filed notice of its appeal to the United States Court of Appeals for the Fourth Circuit.

Tax

As previously reported, in September 2010, following a corporate income tax audit covering the 2003 through 2005 tax years, an assessment was received as a result of Spain’s tax authorities disallowing certain interest deductions claimed by a Spanish consolidated tax group owned by the Company. An appeal of this assessment in Spain’s Central Tax Administrative Court by the Company was denied in October 2013. In December 2013, the Company filed an appeal of the assessment in Spain’s National Court.

Additionally, following a corporate income tax audit of the same Spanish tax group for the 2006 through 2009 tax years, Spain’s tax authorities issued an assessment in July 2013 similarly disallowing certain interest deductions. In August 2013, the Company filed an appeal of this second assessment in Spain’s Central Tax Administrative Court, which was denied in January 2015. The Company filed an appeal of this second assessment in Spain’s National Court in March 2015.

The combined assessments (remeasured for a tax rate change enacted in November 2014) total $263 million (€241 million). The Company believes it has meritorious arguments to support its tax position and intends to vigorously litigate the assessments through Spain’s court system. However, in the event the Company is unsuccessful, a portion of the assessments may be offset with existing net operating losses available to the Spanish consolidated tax group. Additionally, it is possible that the Company may receive similar assessments for tax years subsequent to 2009. At this time, the Company is unable to reasonably predict an outcome for this matter.

As previously reported, between 2000 and 2002, Alcoa Alumínio (Alumínio) sold approximately 2,000 metric tons of metal per month from its Poços de Caldas facility, located in the State of Minas Gerais (the “State”), to Alfio, a customer also located in the State. Sales in the State were exempted from value-added tax (VAT) requirements. Alfio subsequently sold metal to customers outside of the State, but did not pay the required VAT on those transactions. In July 2002, Alumínio received an assessment from State auditors on the theory that Alumínio should be jointly and severally liable with Alfio for the unpaid VAT. In June 2003, the administrative tribunal found Alumínio liable, and Alumínio filed a judicial case in the State in February 2004 contesting the finding. In May 2005, the Court of First Instance found Alumínio solely liable, and a panel of a State appeals court confirmed this finding in April 2006.

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Alumínio filed a special appeal to the Superior Tribunal of Justice (STJ) in Brasilia (the federal capital of Brazil) later in 2006. In 2011, the STJ (through one of its judges) reversed the judgment of the lower courts, finding that Alumínio should neither be solely nor jointly and severally liable with Alfio for the VAT, which ruling was then appealed by the State. In August 2012, the STJ agreed to have the case reheard before a five-judge panel. A decision from this panel is pending, but additional appeals are likely. At December 31, 2015, the assessment totaled $35 million (R$135 million), including penalties and interest. While the Company believes it has meritorious defenses, the Company is unable to reasonably predict an outcome.

Other Contingencies

In addition to the matters discussed above, various other lawsuits, claims, and proceedings have been or may be instituted or asserted against Alcoa, including those pertaining to environmental, product liability, safety and health, and tax matters. While the amounts claimed in these other matters may be substantial, the ultimate liability cannot now be determined because of the considerable uncertainties that exist. Therefore, it is possible that the Company’s liquidity or results of operations in a particular period could be materially affected by one or more of these other matters. However, based on facts currently available, management believes that the disposition of these other matters that are pending or asserted will not have a material adverse effect, individually or in the aggregate, on the financial position of the Company.

Item 4. Mine Safety Disclosures.

The information concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K (17 CFR 229.104) is included in Exhibit 95 of this report, which is incorporated herein by reference.

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PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

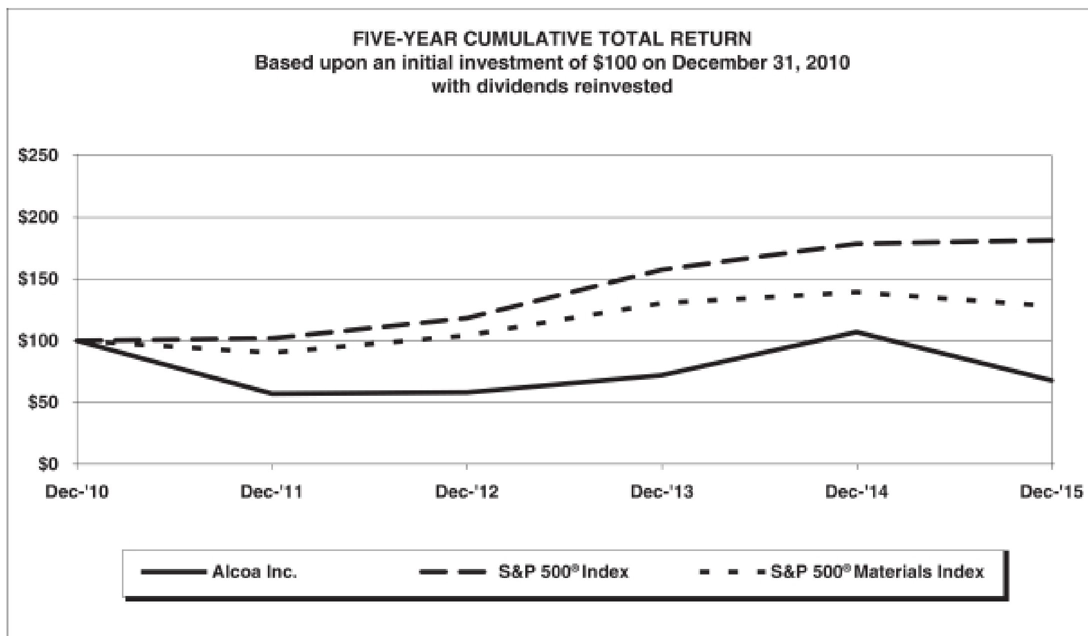
The Company's common stock is listed on the New York Stock Exchange where it trades under the symbol AA. The Company's quarterly high and low trading stock prices and dividends per common share for 2015 and 2014 are shown below.

	2015			2014		
Quarter	**High**	**Low**	**Dividend**	**High**	**Low**	**Dividend**
First	$17.10	$12.65	$ 0.03	$12.97	$ 9.82	$ 0.03
Second	14.29	11.15	0.03	15.18	12.34	0.03
Third	11.23	7.97	0.03	17.36	14.56	0.03
Fourth	11.18	7.81	0.03	17.75	13.71	0.03
Year	17.10	7.81	$ 0.12	17.75	9.82	$ 0.12

The number of holders of record of common stock was approximately 10,101 as of February 11, 2016.

Stock Performance Graph

The following graph compares the most recent five-year performance of Alcoa's common stock with (1) the Standard & Poor's 500® Index and (2) the Standard & Poor's 500® Materials Index, a group of 27 companies categorized by Standard & Poor's as active in the "materials" market sector. Such information shall not be deemed to be "filed."



As of December 31,	2010	2011	2012	2013	2014	2015
Alcoa Inc.	$ 100	$ 57	$ 58	$ 72	$ 107	$ 68
S&P 500® Index	100	102	118	157	178	181
S&P 500® Materials Index	100	90	104	130	139	128

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Source: Research Data Group, Inc. (www.researchdatagroup.com/S&P.htm)

Item 6. Selected Financial Data.

(dollars in millions, except per-share amounts and realized prices; shipments in thousands of metric tons [kmt])

For the year ended December 31,	2015	2014	2013	2012	2011
Sales	$22,534	$23,906	$23,032	$23,700	$24,951
Amounts attributable to Alcoa:					
(Loss) income from continuing operations	$ (322)	$ 268	$ (2,285)	$ 191	$ 614
Loss from discontinued operations	-	-	-	-	(3)
Net (loss) income	$ (322)	$ 268	$ (2,285)	$ 191	$ 611
Earnings per share attributable to Alcoa common shareholders:					
Basic:					
(Loss) income from continuing operations	$ (0.31)	$ 0.21	$ (2.14)	$ 0.18	$ 0.58
Loss from discontinued operations	-	-	-	-	(0.01)
Net (loss) income	$ (0.31)	$ 0.21	$ (2.14)	$ 0.18	$ 0.57
Diluted:					
(Loss) income from continuing operations	$ (0.31)	$ 0.21	$ (2.14)	$ 0.18	$ 0.55
Loss from discontinued operations	-	-	-	-	-
Net (loss) income	$ (0.31)	$ 0.21	$ (2.14)	$ 0.18	$ 0.55
Shipments of alumina (kmt)	10,755	10,652	9,966	9,295	9,218
Shipments of aluminum products (kmt)	4,537	4,794	4,994	5,197	5,037
Alcoa's average realized price per metric ton of primary aluminum	$ 2,069	$ 2,405	$ 2,243	$ 2,327	$ 2,636
Cash dividends declared per common share	$ 0.12	$ 0.12	$ 0.12	$ 0.12	$ 0.12
Total assets*	36,528	37,363	35,696	40,129	40,083
Total debt	9,103	8,852	8,319	8,829	9,371
Cash provided from operations	1,582	1,674	1,578	1,497	2,193
Capital expenditures	1,180	1,219	1,193	1,261	1,287

* In November 2015, Alcoa adopted changes issued by the Financial Accounting Standards Board to the balance sheet classification of deferred income taxes (see the Recently Adopted Accounting Guidance section of Note A to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K). Additionally, for comparative purposes, management elected to retrospectively apply these changes to all periods presented.

The data presented in the Selected Financial Data table should be read in conjunction with the information provided in Management's Discussion and Analysis of Financial Condition and Results of Operations in Part II Item 7 and the Consolidated Financial Statements in Part II Item 8 of this Form 10-K.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

(dollars in millions, except per-share amounts and ingot prices; production and shipments in thousands of metric tons [kmt])

Overview

Our Business

Alcoa is a global leader in lightweight metals engineering and manufacturing. Alcoa's innovative, multi-material products, which include aluminum, titanium, and nickel, are used worldwide in aerospace, automotive, commercial transportation, packaging, building and construction, oil and gas, defense, consumer electronics, and industrial applications.

Alcoa is also the world leader in the production and management of primary aluminum, fabricated aluminum, and alumina combined, through its active participation in all major aspects of the industry: technology, mining, refining, smelting, fabricating, and recycling. Aluminum is a commodity that is traded on the London Metal Exchange (LME) and priced daily. Sales of primary aluminum and alumina represent approximately 40% of Alcoa's revenues. The price of aluminum influences the operating results of Alcoa.

Alcoa is a global company operating in 30 countries. Based upon the country where the point of sale occurred, the United States and Europe generated 55% and 26%, respectively, of Alcoa's sales in 2015. In addition, Alcoa has investments and operating activities in, among others, Australia, Brazil, China, Guinea, Iceland, Russia, and Saudi Arabia. Governmental policies, laws and regulations, and other economic factors, including inflation and fluctuations in foreign currency exchange rates and interest rates, affect the results of operations in these countries.

Management Review of 2015 and Outlook for the Future

In 2015, growth in global aluminum demand reached 6%, which was slightly less than management's projection (7%) at the end of 2014. However, significant market headwinds negatively impacted the smelting portion of Alcoa's upstream operations as the average LME price (on 15-day lag) of aluminum declined 10% and regional premiums decreased substantially (39% in the United States and Canada and 44% in Europe) compared to 2014. The refining portion of the upstream operations continued to make progress in shifting customer pricing away from the LME aluminum price to a mixture of alumina index/spot pricing; however, this was overshadowed by a decrease in the average alumina index/spot price. Conversely, Alcoa's upstream operations realized the benefit of a stronger U.S. dollar in 2015 compared to 2014. In the midstream operations, after-tax operating income was stable in 2015 from 2014 despite generating $1,052 less revenue due to the closure and divestiture of six rolling mills, while the downstream operations received the benefit of $1,310 in combined revenue combined from three acquisitions. Across all operations, cost headwinds continued to be a challenge; however, management was able to more than offset these with net productivity improvements.

Separate from the 2015 operational results, management initiated a number of portfolio actions during the year. In the upstream operations, following similar actions taken in both 2014 and 2013, smelting capacity of 217 kmt was curtailed (another 230 kmt will be curtailed by the end of June 2016) and 96 kmt (all of which was previously curtailed) was permanently closed (another 269 kmt will be closed by the end of March 2016). Additionally, refining capacity of 1,705 kmt was curtailed (another 1,635 kmt will be curtailed by the end of June 2016). Management also completed the divestiture of another rolling mill (three rolling mills were previously divested in December 2014) in the midstream operations that was no longer part of the strategic direction of Alcoa. From a growth perspective, Alcoa completed the acquisition of two businesses, mostly aerospace-related, both of which will enhance the portfolio of Alcoa's downstream operations.

As a result of the previously mentioned capacity reductions, Alcoa's 2015 results were negatively impacted by significant restructuring charges related to these actions. Additionally, developments in legal matters in Italy, an assessment of the realizability of certain deferred tax assets, and an impairment of goodwill caused unfavorable impacts in Alcoa's 2015 results.

Management continued its focus on liquidity and cash flows, generating incremental improvements in procurement efficiencies, overhead rationalization, and disciplined capital spending. This focus and the related results enabled Alcoa to end 2015 with a solid financial position, consistent with the end of 2014.

The following financial information reflects certain key measures of Alcoa's 2015 results:

- Sales of $22,534 and Net loss of $322, or $0.31 per diluted share;
- Total segment after-tax operating income of $1,906, a decrease of 3% from 2014;

- Cash from operations of $1,582, reduced by $470 in pension plan contributions and a $300 prepayment to secure a future supply of gas in Australia;
- Capital expenditures of $1,180, under $1,500 for the sixth consecutive year;
- Cash on hand at the end of the year of $1,919, in excess of $1,400 for the seventh consecutive year;
- Increase in total debt of $251, but a decline of $1,475 since 2008; and
- Total debt of $9,103, Net margin of $1,968, and Depreciation, depletion, and amortization of $1,280 (Net margin is equivalent to Sales minus the following items: Cost of goods sold; Selling, general administrative, and other expenses; Research and development expenses; and Provision for depreciation, depletion, and amortization).

In 2016, management is projecting continued growth (increase of 6%) in the global consumption of primary aluminum, a slight change from that of the last four years, led by China at an estimated 8%. All other regions in the world, except for Brazil and Russia (both are projected to be flat with 2015), are expected to have positive growth in aluminum demand over 2015, including North America at an estimated 5%. After considering forecasted added production, along with expected industry-wide capacity reductions, both of which are mainly driven by China, management anticipates a deficit in the aluminum market. For alumina, growth in global consumption is estimated to be 6%, and demand is expected to slightly exceed supply due to capacity reductions in China, as well as other parts of the world.

Management also anticipates improved market conditions for value-add products in the aerospace, building and construction, packaging, automotive, and industrial gas turbine global end markets, despite declines in certain regions, while the commercial transportation global end market is expected to decrease. Many of the conditions that drove these markets in 2015 will continue throughout 2016.

Aerospace is expected to be driven by large commercial aircraft due to a greater than nine-year order backlog. For building and construction, awarded nonresidential contracts are projected to be up once again in North America while a slight decline in Europe is expected. In packaging, growth in China and Europe, mainly driven by the penetration of aluminum in the growing beer segment and the conversion from steel cans to aluminum cans, respectively, is expected to more than offset a slight decrease in North America. For automotive, growth is anticipated in the United States (due to the replacement of older vehicles, low borrowing rates, and the decline in gasoline prices) and China (due to evolving emissions policies based on new clean air legislation enacted in 2014 and a continued increase in the percentage of the population driving automobiles), as well as Europe. Industrial gas turbines are expected to see growth as a result of new demand for high technology turbines and upgrades of existing turbines. In commercial transportation, improving conditions in both Europe and China are expected to be more than offset by weakness in North America, due to high inventory levels as a result of one of the highest production years ever in 2015 and projected lower orders.

Looking ahead over the next year, management will continue to focus on lowering Alcoa's refining and smelting operations on the respective global cost curves to the 21st and 38th percentiles, respectively. At December 31, 2015, Alcoa's refining operations were at the 23rd percentile, a two-percentage point improvement from 2014, and its smelting operations remained at the 43rd percentile on the respective global cost curves. Actions taken to improve Alcoa's position on the global alumina cost curve included, in late 2014, the sale of an ownership interest in a mining and refining joint venture in Jamaica and the conversion of the fuel source from fuel oil to natural gas at a refinery in Spain, and, in 2015, the curtailment of 1,330 kmt of high-cost capacity in Suriname. Actions taken in the smelting operations included, in late 2014, the sale of an ownership interest in a smelter in the United States and the renewal of a power contract at each of the three smelters in Canada, and, in 2015, the curtailment and closure of 170 kmt combined of high-cost capacity in Brazil. Also, both the refining and smelting operations benefitted from productivity improvements, new initiatives as well as the full realization of those implemented in 2014. While the benefits of the actions in the refining operations can be seen in Alcoa's improved position on the global alumina cost curve at the end of 2015, the benefits from the actions in the smelting operations were offset by a downward shift in the global aluminum cost curve, primarily due to the strong U.S. dollar and curtailments/closures of capacity from other smelting industry participants.

Other actions taken in 2015 to help drive a lower position on the respective global cost curves include additional curtailments and/or closures of 2,100 kmt of refining capacity and 499 kmt of smelting capacity, all within the United States. The initiation of these actions occurred late in 2015 and will be completed during the first half of 2016; therefore, management expects to realize the benefits of curtailing/closing this high-cost capacity during 2016. Additionally, Alcoa has initiatives to drive further productivity improvements during 2016, including from procurement and overhead programs. Furthermore, the smelter and the refinery at the joint venture in Saudi Arabia are expected to provide a two-percentage point reduction on each of the respective global cost curves by the end of 2016 (from 2013).

Management will also continue to focus on revenue growth for both the midstream and downstream operations, which is expected from multiple sources. The midstream operations anticipate positive contributions from both the Davenport, IA rolling mill facility and Tennessee rolling mill facility (expansion completed in September 2015), both of which serve the growing demand for aluminum sheet in the U.S. automotive and market as a result of changing emission regulations. Likewise, the downstream operations expect favorable results from projects completed in late 2014 and throughout 2015 to meet growing demand in both the aerospace and commercial transportation end markets. These projects include an expansion of aluminum lithium capabilities in Lafayette, IN, expansions in LaPorte, IN and Hampton, VA to provide nickel-based super alloy structural components and airfoil blades for jet engines, and an expansion at a facility in Hungary to double production of aluminum wheels. Additionally, the downstream operations completed three acquisitions (mostly aerospace-related) in November 2014 through July 2015 (see Engineered Products and Solutions in Segment Information under Results of Operations below) that will incrementally increase revenue. Furthermore, in 2014 and 2015, Alcoa entered into a number of multi-year supply agreements related to the aerospace end market valued at approximately $13,500, including six contracts valued at more than $6,700 combined with four major customers in the aerospace end market. Under one of these six contracts, the midstream operations will supply aluminum sheet and plate, and under the other five contracts, the downstream operations will supply jet engine components (including aluminum and aluminum-lithium fan blades), multi-material fastening systems, titanium plate and billet, and titanium seat track assemblies.

In addition to focusing on the above-mentioned operational improvements, management has committed to executing the following transaction. On September 28, 2015, Alcoa announced that its Board of Directors approved a plan to separate into two independent, publicly-traded companies. One company will comprise the Alumina and Primary Metals segments and the other company will comprise the Global Rolled Products, Engineered Products and Solutions, and Transportation and Construction Solutions segments. Alcoa is targeting to complete the separation in the second half of 2016. The transaction is subject to a number of conditions, including, but not limited to, final approval by Alcoa's Board of Directors, receipt of a favorable opinion of legal counsel with respect to the tax-free nature of the transaction for U.S. federal income tax purposes, and the effectiveness of a Form 10 registration statement to be filed with the U.S. Securities and Exchange Commission. Upon completion of the separation, Alcoa shareholders will own all of the outstanding shares of both companies. Alcoa may, at any time and for any reason until the proposed transaction is complete, abandon the separation plan or modify or change its terms.

Results of Operations

Earnings Summary

Net loss attributable to Alcoa for 2015 was $322, or $0.31 per diluted share, compared with Net income attributable to Alcoa of $268, or $0.21 per share, in 2014. The decrease in results of $590 was mostly due to a lower average realized price for both aluminum and alumina, a charge for legal matters in Italy, unfavorable price/product mix in the midstream and downstream operations, an unfavorable change in income taxes due to a higher amount of discrete income tax charges and nondeductible items, lower energy sales, and higher costs. These negative impacts were partially offset by net favorable foreign currency movements, net productivity improvements, higher volume in the midstream and downstream operations, and lower charges and expenses related to a number of portfolio actions (e.g., capacity reductions, divestitures, acquisitions).

Net income attributable to Alcoa for 2014 was $268, or $0.21 per share, compared with Net loss attributable to Alcoa of $2,285, or $2.14 per share, in 2013. The improvement in results of $2,553 was primarily due to the absence of all of the following: an impairment of goodwill, a discrete income tax charge for valuation allowances on certain deferred tax assets, and charges for the resolution of a legal matter. Other significant changes in results included the following: higher energy sales, a higher average realized price for primary aluminum, net productivity improvements, and net favorable foreign currency movements. These other changes were mostly offset by higher charges and expenses related to a number of portfolio actions (e.g., capacity reductions, divestitures, acquisitions), higher overall input costs, and an unfavorable change in income taxes due to higher operating results.

Sales—Sales for 2015 were $22,534 compared with sales of $23,906 in 2014, a decline of $1,372, or 6%. The decrease was primarily due to the absence of sales related to capacity that was closed, sold or curtailed in the midstream and upstream operations (see Global Rolled Products and Primary Metals in Segment Information below), a lower average realized price for aluminum in both the upstream and midstream operations and for alumina in the upstream operations, unfavorable foreign currency movements in the midstream and downstream operations, and lower energy sales (both as a result of lower pricing and unfavorable foreign currency movements). These negative impacts were partially offset by the addition of sales from three recently acquired businesses (see Engineered Products and Solutions in Segment Information below), higher volume across all segments, favorable product mix in the midstream operations, and higher buy/resell activity for primary aluminum.

Sales for 2014 were $23,906 compared with sales of $23,032 in 2013, an improvement of $874, or 4%. The increase was mainly the result of higher volumes in the midstream, downstream, and alumina portion of the upstream operations, higher energy sales resulting from excess power due to curtailed smelter capacity, increased buy/resell activity for primary aluminum, and a higher average realized price for primary aluminum. These positive impacts were partially offset by lower primary aluminum volumes, including those related to curtailed and shutdown smelter capacity, and unfavorable price/product mix in the midstream operations.

Cost of Goods Sold—COGS as a percentage of Sales was 80.2% in 2015 compared with 80.1% in 2014. The percentage was negatively impacted by a lower average realized price for both aluminum and alumina in the upstream operations, unfavorable price/product mix in the midstream and downstream operations, lower energy sales, and higher costs. These negative impacts were mostly offset by net favorable foreign currency movements due to a stronger U.S. dollar, net productivity improvements across all segments, higher volume in the midstream and downstream operations, a favorable LIFO (last in, first out) adjustment due to lower prices for aluminum and alumina ($208), lower inventory write-downs related to the decisions to permanently shut down and/or curtail capacity in the upstream and midstream operations (difference of $23—see Restructuring and Other Charges below), and the absence of costs related to a new labor agreement that covers employees at 10 locations in the United States (see below).

COGS as a percentage of Sales was 80.1% in 2014 compared with 83.7% in 2013. The percentage was positively impacted by net productivity improvements across all segments, both the previously mentioned higher energy sales and higher average realized price for primary aluminum, net favorable foreign currency movements due to a stronger U.S. dollar, lower costs for caustic and carbon, and the absence of costs related to a planned maintenance outage in 2013 at a power plant in Australia. These positive impacts were partially offset by higher costs for bauxite, energy, and labor, higher inventory write-downs related to the decisions to permanently shut down certain smelter and rolling mill capacity (difference of $58—see Restructuring and Other Charges below), and costs related to a new labor agreement that covers employees at 10 locations in the United States (see below).

On June 6, 2014, the United Steelworkers ratified a new five-year labor agreement covering approximately 6,100 employees at 10 U.S. locations; the previous labor agreement expired on May 15, 2014. In 2014, as a result of the preparation for and ratification of the new agreement, Alcoa recognized $18 ($12 after-tax) in COGS for, among other items, business contingency costs and a one-time signing bonus for employees. Additionally, as a result of the provisions of the new labor agreement, a significant plan amendment was adopted by one of Alcoa’s U.S. pension plans. Accordingly, this plan was required to be remeasured, which resulted in a $13 decrease to 2014 net periodic benefit cost.

Selling, General Administrative, and Other Expenses—SG&A expenses were $979, or 4.3% of Sales, in 2015 compared with $995, or 4.2% of Sales, in 2014. The decrease of $16 was principally the result of favorable foreign currency movements due to a stronger U.S. dollar, the absence of SG&A related to closed and sold locations, and lower acquisition costs ($15), partially offset by expenses for professional and consulting services related to the planned separation of Alcoa ($24—see Management Review of 2015 and Outlook for the Future above) and new SG&A related to inorganic growth in the Engineered Products and Solutions segment.

SG&A expenses were $995, or 4.2% of Sales, in 2014 compared with $1,008, or 4.4% of Sales, in 2013. The decline of $13 was due to decreases in various expenses, including legal and consulting fees and contract services, mostly offset by costs associated with the acquisition of Firth Rixson ($42—see Engineered Products and Solutions in Segment Information below) and higher stock-based compensation expense.

Research and Development Expenses—R&D expenses were $238 in 2015 compared with $218 in 2014 and $192 in 2013. The increase in 2015 as compared to 2014 was mainly driven by additional spending related to the upgrade of a Micromill™ in San Antonio, TX, which was completed during 2015 and began production of automotive sheet on a limited basis, for the Global Rolled Products segment and additive manufacturing for 3-D printing, partially offset by lower spending related to inert anode and carbothermic technology for the Primary Metals segment. The increase in 2014 as compared to 2013 was primarily caused by spending related to an upgrade of a Micromill™ in San Antonio, TX for the Global Rolled Products segment and additional spending related to inert anode and carbothermic technology for the Primary Metals segment.

Provision for Depreciation, Depletion, and Amortization—The provision for DD&A was $1,280 in 2015 compared with $1,371 in 2014. The decrease of $91, or 7%, was mostly due to favorable foreign currency movements due to a stronger U.S. dollar, particularly against the Australian dollar and Brazilian real, and the absence of DD&A ($71) related to the divestiture and/or permanent closure of five smelters, six rolling mills, one refinery, and one rod mill (see Alumina, Primary Metals, and Global Rolled Products in Segment Information below), all of which occurred from March 2014 through June 2015. These positive impacts were partially offset by new DD&A ($93) associated with three acquisitions that occurred from November 2014 through July 2015 (see Engineered Products and Solutions in Segment Information below).

The provision for DD&A was $1,371 in 2014 compared with $1,421 in 2013. The decrease of $50, or 4%, was principally the result of favorable foreign currency movements due to a stronger U.S. dollar, particularly against the Australian dollar and Brazilian real, and a reduction in expense related to the permanent shutdown of smelter capacity in Australia, Canada, the United States, and Italy that occurred at different points during both 2013 and 2014 (see Primary Metals in Segment Information below). These items were somewhat offset by new DD&A associated with both the acquisition of Firth Rixson in November 2014 (see Engineered Products and Solutions in Segment Information below) and assets placed into service in January 2014 related to the completed automotive expansion at the Davenport, IA plant.

Impairment of Goodwill—In 2015 and 2013, Alcoa recognized an impairment of goodwill in the amount of $25 and $1,731 ($1,719 after noncontrolling interest), respectively, related to the annual impairment review of the soft alloy extrusion business in Brazil and the Primary Metals segment, respectively, (see Goodwill in Critical Accounting Policies and estimates below).

Restructuring and Other Charges—Restructuring and other charges for each year in the three-year period ended December 31, 2015 were comprised of the following:

	2015	2014	2013
Asset impairments	$ 335	$ 406	$116
Layoff costs	299	259	201
Legal matters in Italy	201	-	-
Net loss on divestitures of businesses	161	332	-
Resolution of a legal matter	-	-	391
Other	213	199	82
Reversals of previously recorded layoff and other exit costs	(14)	(28)	(8)
Restructuring and other charges	$1,195	$1,168	$782

Layoff costs were recorded based on approved detailed action plans submitted by the operating locations that specified positions to be eliminated, benefits to be paid under existing severance plans, union contracts or statutory requirements, and the expected timetable for completion of the plans.

2015 Actions. In 2015, Alcoa recorded Restructuring and other charges of $1,195 ($836 after-tax and noncontrolling interest), which were comprised of the following components: $438 ($281 after-tax and noncontrolling interest) for exit costs related to decisions to permanently shut down and demolish three smelters and a power station (see below); $246 ($118 after-tax and noncontrolling interest) for the curtailment of two refineries and two smelters (see below); $201 (pre- and after-tax) related to legal matters in Italy; a $161 ($151 after-tax and noncontrolling interest) net loss related to the March 2015 divestiture of a rolling mill in Russia (see Global Rolled Products in Segment Information below) and post-closing adjustments associated with three December 2014 divestitures; $143 ($102 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 2,100 employees (425 in the Transportation and Construction Solutions segment, 645 in the Engineered Products and Solutions segment, 380 in the Primary Metals segment, 90 in the Global Rolled Products segment, 85 in the Alumina segment, and 475 in Corporate); $34 ($14 after-tax and noncontrolling interest) for asset impairments, virtually all of which was related to prior capitalized costs for an expansion project at a refinery in Australia that is no longer being pursued; an $18 ($13 after-tax) gain on the sale of land related to one of the rolling mills in Australia that was permanently closed in December 2014 (see 2014 Actions below); a net charge of $4 (a net credit of $7 after-tax and noncontrolling interest) for other miscellaneous items; and $14 ($11 after-tax and noncontrolling interest) for the reversal of a number of small layoff reserves related to prior periods.

During 2015, management initiated various alumina refining and aluminum smelting capacity curtailments and/or closures. The curtailments were composed of the remaining capacity at all of the following: the São Luís smelter in Brazil (74 kmt-per-year); the Suriname refinery (1,330 kmt-per-year); the Point Comfort, TX refinery (2,010 kmt-per-year); and the Wenatchee, WA smelter (143 kmt-per-year). All of the curtailments were completed in 2015 except for 1,635 kmt-per-year at the Point Comfort refinery, which is expected to be completed by the end of June 2016. The permanent closures were composed of the capacity at the Warrick, IN smelter (269 kmt-per-year) (includes the closure of a related coal mine) and the infrastructure of the Massena East, NY smelter (potlines were previously shut down in both 2013 and 2014—see 2013 Actions and 2014 Actions below), as the modernization of this smelter is no longer being pursued. The shutdown of the Warrick smelter is expected to be completed by the end of March 2016.

The decisions on the above actions were part of a separate 12-month review in refining (2,800 kmt-per-year) and smelting (500 kmt-per-year) capacity initiated by management in March 2015 for possible curtailment (partial or full), permanent closure or divestiture. While many factors contributed to each decision, in general, these actions were initiated to maintain competitiveness amid prevailing market conditions for both alumina and aluminum. Demolition and remediation activities related to the Warrick smelter and the Massena East location will begin in 2016 and are expected to be completed by the end of 2020.

Separate from the actions initiated under the reviews described above, in mid-2015, management approved the permanent shutdown and demolition of the Poços de Caldas smelter (capacity of 96 kmt-per-year) in Brazil and the

Anglesea power station (includes the closure of a related coal mine) in Australia. The entire capacity at Poços de Caldas had been temporarily idled since May 2014 and the Anglesea power station was shut down at the end of August 2015. Demolition and remediation activities related to the Poços de Caldas smelter and the Anglesea power station began in late 2015 and are expected to be completed by the end of 2026 and 2020, respectively.

The decision on the Poços de Caldas smelter was due to management's conclusion that the smelter was no longer competitive as a result of challenging global market conditions for primary aluminum, which led to the initial curtailment, that have not dissipated and higher costs. For the Anglesea power station, the decision was made because a sale process did not result in a sale and there would have been imminent operating costs and financial constraints related to this site in the remainder of 2015 and beyond, including significant costs to source coal from available resources, necessary maintenance costs, and a depressed outlook for forward electricity prices. The Anglesea power station previously supplied approximately 40 percent of the power needs for the Point Henry smelter, which was closed in August 2014 (see 2014 Actions below).

In 2015, costs related to the shutdown and curtailment actions included asset impairments of $217, representing the write-off of the remaining book value of all related properties, plants, and equipment; $156 for the layoff of approximately 3,100 employees (1,800 in the Primary Metals segment and 1,300 in the Alumina segment), including $30 in pension costs; accelerated depreciation of $84 related to certain facilities as they continued to operate during 2015; and $227 in other exit costs. Additionally in 2015, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of $90 ($43 after-tax and noncontrolling interest), which was recorded in COGS. The other exit costs of $227 represent $76 in asset retirement obligations and $86 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish the aforementioned structures in the United States, Brazil, and Australia (includes the rehabilitation of a related coal mine in each of Australia and the United States), and $65 in supplier and customer contract-related costs.

As of December 31, 2015, approximately 1,500 of the 5,200 employees were separated. The remaining separations for 2015 restructuring programs are expected to be completed by the end of 2016. In 2015, cash payments of $42 were made against layoff reserves related to 2015 restructuring programs.

2014 Actions. In 2014, Alcoa recorded Restructuring and other charges of $1,168 ($703 after-tax and noncontrolling interest), which were comprised of the following components: $693 ($443 after-tax and noncontrolling interest) for exit costs related to decisions to permanently shut down and demolish three smelters and two rolling mills (see below); a $332 ($163 after-tax and noncontrolling interest) net loss for the divestitures of four operations (see Alumina, Primary Metals, and Global Rolled Products in Segment Information below); $68 ($45 after-tax and noncontrolling interest) for the temporary curtailment of two smelters and a related production slowdown at one refinery (see below); $51 ($36 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 1,120 employees (470 in the Engineered Products and Solutions segment, 360 in the Transportation and Construction Solutions segment, 45 in the Global Rolled Products segment, 60 in the Alumina and Primary Metals segments combined, and 185 in Corporate); $34 ($26 after-tax) for asset impairments related to prior capitalized costs for a modernization project at a smelter in Canada that is no longer being pursued; a net charge of $18 ($11 after-tax and noncontrolling interest) for other miscellaneous items, including $2 ($2 after-tax) for asset impairments and accelerated depreciation; and $28 ($21 after-tax and noncontrolling interest) for the reversal of a number of layoff reserves related to prior periods, including those associated with a smelter in Italy due to changes in facts and circumstances (see below).

In early 2014, management approved the permanent shutdown and demolition of the remaining capacity (84 kmt-per-year) at the Massena East, NY smelter and the full capacity (190 kmt-per-year) at the Point Henry smelter in Australia. The capacity at Massena East was fully shut down by the end of March 2014 and the Point Henry smelter was fully shut down in August 2014. Demolition and remediation activities related to both the Massena East and Point Henry smelters began in late 2014 and are expected to be completed by the end of 2020 and 2018, respectively.

The decisions on the Massena East and Point Henry smelters were part of a 15-month review of 460 kmt of smelting capacity initiated by management in May 2013 (see 2013 Actions below) for possible curtailment. Through this review,

management determined that the remaining capacity of the Massena East smelter was no longer competitive and the Point Henry smelter had no prospect of becoming financially viable. Management also initiated the temporary curtailment of the remaining capacity (62 kmt-per-year) at the Poços de Caldas smelter and additional capacity (85 kmt-per-year) at the São Luís smelter, both in Brazil. These curtailments were completed by the end of May 2014. As a result of these curtailments, 200 kmt-per-year of production at the Poços de Caldas refinery was reduced by the end of June 2014.

Also in early 2014, management approved the permanent shutdown of Alcoa's two rolling mills in Australia, Point Henry and Yennora. This decision was made due to the significant impact of excess can sheet capacity in both Australia and Asia. The two rolling mills had a combined can sheet capacity of 200 kmt-per-year and were closed by the end of 2014. Demolition and remediation activities related to the two rolling mills began in mid-2015 and are expected to be completed by the end of 2018.

Additionally, in August 2014, management approved the permanent shutdown and demolition of the capacity (150 kmt-per-year) at the Portovesme smelter in Italy, which had been idle since November 2012. This decision was made because the fundamental reasons that made the Portovesme smelter uncompetitive remained unchanged, including the lack of a viable long-term power solution. Demolition and remediation activities related to the Portovesme smelter will begin in 2016 and are expected to be completed by the end of 2020 (delayed due to discussions with the Italian government and other stakeholders).

In 2014, costs related to the shutdown and curtailment actions included $208 for the layoff of approximately 1,790 employees (1,210 in the Primary Metals segment, 470 in the Global Rolled Products segment, 80 in the Alumina segment, and 30 in Corporate), including $26 in pension costs; accelerated depreciation of $204 related to the three facilities in Australia as they continued to operate during 2014; asset impairments of $166 representing the write-off of the remaining book value of all related properties, plants, and equipment; and $183 in other exit costs. Additionally in 2014, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of $67 ($47 after-tax and noncontrolling interest), which was recorded in COGS. The other exit costs of $183 represent $95 in asset retirement obligations and $42 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish the aforementioned structures in Australia, Italy, and the United States, and $46 in other related costs, including supplier and customer contract-related costs.

As of December 31, 2015, approximately 2,500 of the 2,870 employees (previously 2,910) were separated. The total number of employees associated with 2014 restructuring programs was updated to reflect employees, who were initially identified for separation, accepting other positions within Alcoa and natural attrition. The remaining separations for 2014 restructuring programs are expected to be completed by the end of 2016. In 2015 and 2014, cash payments of $62 and $141, respectively, were made against layoff reserves related to 2014 restructuring programs.

2013 Actions. In 2013, Alcoa recorded Restructuring and other charges of $782 ($585 after-tax and noncontrolling interests), which were comprised of the following components: $391 ($305 after-tax and noncontrolling interest) related to the resolution of a legal matter; $245 ($183 after-tax) for exit costs related to the permanent shutdown and demolition of certain structures at three smelter locations (see below); $87 ($61 after-tax and noncontrolling interests) for layoff costs, including the separation of approximately 1,110 employees (340 in the Primary Metals segment, 250 in the Global Rolled Products segment, 220 in the Engineered Products and Solutions segment, 85 in the Alumina segment, 75 in the Transportation and Construction Solutions segment and 140 in Corporate), of which 590 relates to a global overhead reduction program, and $9 in pension plan settlement charges related to previously separated employees; $25 ($17 after-tax) in net charges, including $12 ($8 after-tax) for asset impairments, related to retirements and/or the sale of previously idled structures; $25 ($13 after-tax and noncontrolling interests) for asset impairments related to the write-off of capitalized costs for projects no longer being pursued due to the market environment; a net charge of $17 ($12 after-tax and noncontrolling interests) for other miscellaneous items, including $3 ($2 after-tax) for asset impairments; and $8 ($6 after-tax and noncontrolling interests) for the reversal of a number of small layoff reserves related to prior periods.

In May 2013, management approved the permanent shutdown and demolition of two potlines (capacity of 105 kmt-per-year) that utilize Soderberg technology at the Baie Comeau smelter in Québec, Canada (remaining capacity of 280

kmt-per-year composed of two prebake potlines) and the full capacity (44 kmt-per-year) at the Fusina smelter in Italy. Additionally, in August 2013, management approved the permanent shutdown and demolition of one potline (capacity of 41 kmt-per-year) that utilizes Soderberg technology at the Massena East, NY smelter (remaining capacity of 84 kmt-per-year composed of two Soderberg potlines). The aforementioned Soderberg lines at Baie Comeau and Massena East were fully shut down by the end of September 2013 while the Fusina smelter was previously temporarily idled in 2010. Demolition and remediation activities related to all three facilities began in late 2013 and are expected to be completed by the end of 2016 for Massena East and by the end of 2017 for both Baie Comeau and Fusina.

The decisions on the Soderberg lines for Baie Comeau and Massena East were part of a 15-month review of 460 kmt of smelting capacity initiated by management in May 2013 for possible curtailment, while the decision on the Fusina smelter was in addition to the capacity being reviewed. Factors leading to all three decisions were in general focused on achieving sustained competitiveness and included, among others: lack of an economically viable, long-term power solution (Italy); changed market fundamentals; other existing idle capacity; and restart costs.

In 2013, exit costs related to the shutdown actions included $114 for the layoff of approximately 550 employees (Primary Metals segment), including $83 in pension costs; accelerated depreciation of $58 (Baie Comeau) and asset impairments of $18 (Fusina and Massena East) representing the write-off of the remaining book value of all related properties, plants, and equipment; and $55 in other exit costs. Additionally in 2013, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value resulting in a charge of $9 ($6 after-tax), which was recorded in COGS. The other exit costs of $55 represent $48 in asset retirement obligations and $5 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish these structures, and $2 in other related costs.

As of December 31, 2015, the separations associated with 2013 restructuring programs were essentially complete. In 2015, 2014, and 2013, cash payments of $7, $39, and $33, respectively, were made against layoff reserves related to 2013 restructuring programs.

Alcoa does not include Restructuring and other charges in the results of its reportable segments. The pretax impact of allocating such charges to segment results would have been as follows:

	2015	2014	2013
Alumina	$ 233	$ 287	$ 11
Primary Metals	691	553	295
Global Rolled Products	131	266	15
Engineered Products and Solutions	49	13	12
Transportation and Construction Solutions	8	10	16
Segment total	1,112	1,129	349
Corporate	83	39	433
Total restructuring and other charges	$1,195	$1,168	$782

Interest Expense—Interest expense was $498 in 2015 compared with $473 in 2014. The increase of $25, or 5%, was primarily due to an 8% higher average debt level, somewhat offset by the absence of fees paid associated with the execution and termination of a 364-day senior unsecured bridge term loan facility related to the then-planned acquisition of Firth Rixson ($13—see Engineered Products and Solutions in Segment Information below). The higher average debt level was mostly attributable to higher outstanding long-term debt due to the September 2014 issuance of $1,250 in 5.125% Notes, the proceeds of which were used to pay a portion of the purchase price of the Firth Rixson acquisition.

Interest expense was $473 in 2014 compared with $453 in 2013. The increase of $20, or 4%, was principally caused by lower capitalized interest ($43), largely due to the progress completed at the aluminum complex in Saudi Arabia, and fees paid associated with the execution and termination of a 364-day senior unsecured bridge term loan facility related to the then-planned acquisition of Firth Rixson ($13—see Engineered Products and Solutions in Segment Information below). These items were partially offset by a 3% lower average debt level and lower amortization of debt-related costs

due to the conversion of convertible notes. The lower average debt level was mostly attributable to lower outstanding long-term debt due to the March 2014 conversion of $575 in 5.25% Convertible Notes and the June 2013 repayment of $422 in 6.00% Notes, partially offset by the September 2014 issuance of $1,250 in 5.125% Notes.

Other Expenses (Income), net—Other expenses, net was $2 in 2015 compared with $47 in 2014. The decrease of $45 was mainly the result of a gain on the sale of land both around the Lake Charles, LA anode facility and at Alcoa’s former Sherwin, TX refinery site ($49) and the remaining equity investment in a China rolling mill ($19) and a favorable change in deferred compensation. These items were somewhat offset by the absence of a gain on the sale of a mining interest in Suriname ($28) and a portion of an equity investment in a China rolling mill ($14), an unfavorable change in the cash surrender value of company-owned life insurance, and a net unfavorable change in mark-to-market derivative contracts.

Other expenses, net was $47 in 2014 compared with Other income, net of $25 in 2013. The change of $72 was mostly due to an unfavorable change in mark-to-market derivative aluminum contracts ($42), net unfavorable foreign currency movements ($34), a higher equity loss related to Alcoa’s share of the joint venture in Saudi Arabia due to start-up costs of the entire complex, including restart costs for one of the smelter potlines that was previously shut down due to a period of instability, and a smaller improvement in the cash surrender value of company-owned life insurance. These items were somewhat offset by a gain on the sale of a mining interest in Suriname ($28) and a portion of an equity investment in a China rolling mill ($14).

Income Taxes—Alcoa’s effective tax rate was 179.4% (provision on income) in 2015 compared with the U.S. federal statutory rate of 35%. The effective tax rate differs from the U.S. federal statutory rate principally due to a $190 discrete income tax charge for valuation allowances on certain deferred tax assets in the United States and Iceland (see Income Taxes in Critical Accounting Policies and Estimates below), a $201 charge for legal matters in Italy (see Restructuring and Other Charges above) and a $25 impairment of goodwill (see Impairment of Goodwill above) that are nondeductible for income tax purposes, a loss on the sale of a rolling mill in Russia (see Global Rolled Products in Segment Information below) for which no tax benefit was recognized, a $34 net discrete income tax charge as described below, and restructuring charges related to the curtailment of a refinery in Suriname (see Restructuring and Other Charges above), a portion for which no tax benefit was recognized.

In 2015, Alcoa World Alumina and Chemicals (AWAC), a joint venture owned 60% by Alcoa and 40% by Alumina Limited (Alcoa consolidates AWAC for financial reporting purposes), recognized an $85 discrete income tax charge for a valuation allowance on certain deferred tax assets in Suriname (see Income Taxes in Critical Accounting Policies and Estimates below), which were related mostly to employee benefits and tax loss carryforwards. Alcoa also had a $51 deferred tax liability related to its 60%-share of these deferred tax assets that was written off as a result of the valuation allowance recognized by AWAC.

Alcoa’s effective tax rate was 64.4% (provision on income) in 2014 compared with the U.S. federal statutory rate of 35%. The effective tax rate differs from the U.S. federal statutory rate mainly due to restructuring charges related to operations in Italy (no tax benefit) and Australia (benefit at a lower tax rate) (see Restructuring and Other Charges above), a $52 ($31 after noncontrolling interest) discrete income tax charge related to a tax rate change in Brazil (see below), a loss on the sale of three rolling mills in Europe (no tax benefit) (see Global Rolled Products in Segment Information below), and a $27 ($16 after noncontrolling interest) discrete income tax charge for the remeasurement of certain deferred tax assets of a subsidiary in Spain due to a November 2014 enacted tax rate change (from 30% in 2014 to 28% in 2015 to 25% in 2016). These items were somewhat offset by foreign income taxed in lower rate jurisdictions and a $9 discrete income tax benefit for the release of a valuation allowance related to operations in Germany due to the initiation of a tax planning strategy.

In December 2011, one of Alcoa’s subsidiaries in Brazil applied for a tax holiday related to its expanded mining and refining operations. During 2013, the application was amended and re-filed and, separately, a similar application was filed for another one of the Company’s subsidiaries in Brazil. The deadline for the Brazilian government to deny the application was July 11, 2014. Since Alcoa did not receive notice that its applications were denied, the tax holiday took effect automatically on July 12, 2014. As a result, the tax rate applicable to qualified holiday income for these

subsidiaries decreased significantly (from 34% to 15.25%), resulting in future cash tax savings over the 10-year holiday period (retroactively effective as of January 1, 2013). Additionally, a portion of one of the subsidiaries net deferred tax asset that reverses within the holiday period was remeasured at the new tax rate (the net deferred tax asset of the other subsidiary was not remeasured since it could still be utilized against the subsidiary's future earnings not subject to the tax holiday). This remeasurement resulted in a decrease to that subsidiary's net deferred tax asset and a noncash charge to earnings of $52 ($31 after noncontrolling interest).

Alcoa's effective tax rate was 23.6% in 2013 (provision on a loss) compared with the U.S. federal statutory rate of 35%. The effective tax rate differs (by (58.6)% points) from the U.S. federal statutory rate primarily due to a $1,731 impairment of goodwill (see Impairment of Goodwill above) and a $209 charge for a legal matter (see Restructuring and Other Charges above) that are nondeductible for income tax purposes, a $372 discrete income tax charge for valuation allowances on certain deferred tax assets in Spain and the United States (see Income Taxes in Critical Accounting Policies and Estimates below), restructuring charges related to operations in Canada (benefit at a lower tax rate) and Italy (no tax benefit) (see Restructuring and Other Charges above), and a $9 discrete income tax charge related to prior year taxes in Spain and Australia. These items were slightly offset by an $18 discrete income tax benefit related to new U.S. tax legislation (see below).

On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law and reinstated various expired or expiring temporary business tax provisions through 2013. Two specific temporary business tax provisions that expired in 2011 and impacted Alcoa are the look-through rule for payments between related controlled foreign corporations and the research and experimentation credit. The expiration of these two provisions resulted in Alcoa recognizing a higher income tax provision of $18 in 2012. As tax law changes are accounted for in the period of enactment, Alcoa recognized an $18 discrete income tax benefit in 2013 related to the 2012 tax year to reflect the extension of these provisions. Beginning on January 1, 2014, these two provisions once again expired. On December 19, 2014, the Tax Increase Prevention Act of 2014 was signed into law, which retroactively extended for one year (i.e. calendar year 2014) a number of the tax provisions that expired at the end of 2013, including the two specific aforementioned provisions. Beginning on January 1, 2015, these two provisions once again expired. On December 18, 2015, the Consolidated Appropriations Act, 2016 was signed into law, which retroactively (as of January 1, 2015) extended for two or five years or made permanent a number of the tax provisions that expired at the end of 2014, including the two specific aforementioned provisions. The look-through rule for payments between related controlled foreign corporations was renewed for five years (through 2019) and the research and experimentation credit was made permanent.

Management anticipates that the effective tax rate in 2016 will be between 30% and 35%. However, business portfolio actions, changes in the current economic environment, tax legislation or rate changes, currency fluctuations, ability to realize deferred tax assets, and the results of operations in certain taxing jurisdictions may cause this estimated rate to fluctuate.

Noncontrolling Interests—Net income attributable to noncontrolling interests was $125 in 2015 compared with Net loss attributable to noncontrolling interests of $91 in 2014 and Net income attributable to noncontrolling interests of $41 in 2013. These amounts were virtually all related to Alumina Limited's 40% ownership interest in AWAC. In 2015, AWAC generated income compared to a loss in both 2014 and 2013.

In 2015, the change in AWAC's results was principally due to improved operating results, the absence of restructuring and other charges related to both the permanent shutdown of the Point Henry smelter in Australia (see Restructuring and Other Charges above) and the divestiture of an ownership interest in a mining and refining joint venture in Jamaica (see Alumina in Segment Information below), and the absence of a combined $79 ($32 was noncontrolling interest's share) discrete income tax charge related to a respective tax rate change in both Brazil and Spain (see Income Taxes above). These positive impacts were somewhat offset by restructuring charges related to the curtailment of both the refinery in Suriname and in Point Comfort, TX and the permanent closure of the Anglesea power station and coal mine (see Restructuring and Other Charges above), an $85 ($34 was noncontrolling interest's share) discrete income tax charge for a valuation allowance on certain deferred tax assets (see Income Taxes above), and the absence of a $28 gain ($11 was noncontrolling interest's share) on the sale of a mining interest in Suriname. The improvement in

AWAC's operating results was largely attributable to net favorable foreign currency movements, net productivity improvements, and lower input costs, slightly offset by a lower average realized alumina price (see Alumina in Segment Information below).

In 2014, AWAC generated a smaller loss compared to 2013 mainly driven by the absence of a $384 charge for a legal matter (see below), improved operating results, and a $28 gain ($11 was noncontrolling interest's share) on the sale of a mining interest in Suriname. These positive impacts were mostly offset by restructuring and other charges associated with both the permanent shutdown of the Point Henry smelter in Australia (see Restructuring and Other Charges above) and the divestiture of an ownership interest in a mining and refining joint venture in Jamaica (see Alumina in Segment Information below) and a combined $79 ($32 was noncontrolling interest's share) discrete income tax charge related to a respective tax rate change in both Brazil and Spain (see Income Taxes above). The improvement in AWAC's operating results was principally due to net favorable foreign currency movements and net productivity improvements, partially offset by an increase in input costs (see Alumina in Segment Information below). Even though AWAC generated an overall loss in both 2014 and 2013, the noncontrolling interest's share resulted in income in 2013 due to the manner in which the charges and costs related to a legal matter were allocated. A description of how these charges and costs for this legal matter impacted Noncontrolling interests follows.

The noncontrolling interest's share of AWAC's charge for a legal matter in 2013 and 2012 was $58 (related to the aforementioned $384) and $34 (an $85 charge related to the civil portion of the same legal matter), respectively. In 2012, the $34 was based on the 40% ownership interest of Alumina Limited, while, in 2013, the $58 was based on 15%. The application of a different percentage was due to the criteria in a 2012 allocation agreement between Alcoa and Alumina Limited related to this legal matter being met. Additionally, the $34 charge, as well as costs related to this legal matter, was retroactively adjusted to reflect the terms of the allocation agreement, resulting in a credit to Noncontrolling interests of $41 in 2013. In summary, Noncontrolling interests included a charge of $17 and $34 related to this legal matter in 2013 and 2012, respectively.

Segment Information

Alcoa's operations consist of five worldwide reportable segments: Alumina, Primary Metals, Global Rolled Products, Engineered Products and Solutions, and Transportation and Construction Solutions (see below). Segment performance under Alcoa's management reporting system is evaluated based on a number of factors; however, the primary measure of performance is the after-tax operating income (ATOI) of each segment. Certain items such as the impact of LIFO inventory accounting; metal price lag (see below); interest expense; noncontrolling interests; corporate expense (general administrative and selling expenses of operating the corporate headquarters and other global administrative facilities, along with depreciation and amortization on corporate-owned assets); restructuring and other charges; and other items, including intersegment profit eliminations, differences between tax rates applicable to the segments and the consolidated effective tax rate, and other nonoperating items such as foreign currency transaction gains/losses and interest income are excluded from segment ATOI.

Effective in the second quarter of 2015, management removed the impact of metal price lag from the results of the Global Rolled Products and Engineered Products and Solutions (now Engineered Products and Solutions and Transportation and Construction Solutions—see below) segments in order to enhance the visibility of the underlying operating performance of these businesses. Metal price lag describes the timing difference created when the average price of metal sold differs from the average cost of the metal when purchased by the respective segment. In general, when the price of metal increases, metal price lag is favorable, and when the price of metal decreases, metal price lag is unfavorable. The impact of metal price lag is now reported as a separate line item in Alcoa's reconciliation of total segment ATOI to consolidated net (loss) income attributable to Alcoa. As a result, this change does not impact the consolidated results of Alcoa. Segment information for all prior periods presented was updated to reflect this change.

In the third quarter of 2015, management approved a realignment of Alcoa's Engineered Products and Solutions segment due to the expansion of this part of Alcoa's business portfolio through both organic and inorganic growth. This realignment consisted of moving both the Alcoa Wheel and Transportation Products and Building and Construction Systems business units to a new reportable segment named Transportation and Construction Solutions.

Additionally, the Latin American soft alloy extrusions business previously included in Corporate was moved into the new Transportation and Construction Solutions segment. The remaining Engineered Products and Solutions segment consists of the Alcoa Fastening Systems and Rings (renamed to include portions of the Firth Rixson business acquired in November 2014), Alcoa Power and Propulsion (includes the TITAL business acquired in March 2015), Alcoa Forgings and Extrusions (includes the other portions of Firth Rixson), and Alcoa Titanium and Engineered Products (a new business unit that consists solely of the RTI International Metals business acquired in July 2015) business units. Segment information for all prior periods presented was updated to reflect the new segment structure.

ATOI for all reportable segments totaled $1,906 in 2015, $1,968 in 2014, and $1,267 in 2013. The following information provides shipments, sales, and ATOI data for each reportable segment, as well as certain production, realized price, and average cost data, for each of the three years in the period ended December 31, 2015. See Note Q to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K for additional information.

Alumina

	2015	2014	2013
Alumina production (kmt)	15,720	16,606	16,618
Third-party alumina shipments (kmt)	10,755	10,652	9,966
Alcoa’s average realized price per metric ton of alumina	$ 317	$ 324	$ 328
Alcoa’s average cost per metric ton of alumina*	$ 237	$ 282	$ 295
Third-party sales	$ 3,455	$ 3,509	$ 3,326
Intersegment sales	1,687	1,941	2,235
Total sales	$ 5,142	$ 5,450	$ 5,561
ATOI	$ 746	$ 370	$ 259

* Includes all production-related costs, including raw materials consumed; conversion costs, such as labor, materials, and utilities; depreciation, depletion, and amortization; and plant administrative expenses.

This segment represents a portion of Alcoa’s upstream operations and consists of the Company’s worldwide refining system. Alumina mines bauxite, from which alumina is produced and then sold directly to external smelter customers, as well as to the Primary Metals segment (see Primary Metals below), or to customers who process it into industrial chemical products. More than half of Alumina’s production is sold under supply contracts to third parties worldwide, while the remainder is used internally by the Primary Metals segment. Alumina produced by this segment and used internally is transferred to the Primary Metals segment at prevailing market prices. A portion of this segment’s third-party sales are completed through the use of agents, alumina traders, and distributors. Generally, the sales of this segment are transacted in U.S. dollars while costs and expenses of this segment are transacted in the local currency of the respective operations, which are the Australian dollar, the Brazilian real, the U.S. dollar, and the euro.

AWAC is an unincorporated global joint venture between Alcoa and Alumina Limited and consists of a number of affiliated operating entities, which own, or have an interest in, or operate the bauxite mines and alumina refineries within the Alumina segment (except for the Poços de Caldas refinery in Brazil and a portion of the São Luís refinery in Brazil). Alcoa owns 60% and Alumina Limited owns 40% of these individual entities, which are consolidated by the Company for financial reporting purposes. As such, the results and analysis presented for the Alumina segment are inclusive of Alumina Limited’s 40% interest.

In December 2014, AWAC completed the sale of its ownership stake in Jamalco, a bauxite mine and alumina refinery joint venture in Jamaica, to Noble Group Ltd. Jamalco was 55% owned by a subsidiary of AWAC, and, while owned by AWAC, 55% of both the operating results and assets and liabilities of this joint venture were included in the Alumina segment. As it relates to AWAC’s previous 55% ownership stake, the refinery (AWAC’s share of the capacity was 779 kmt-per-year) generated sales (third-party and intersegment) of approximately $200 in 2013, and the refinery and mine combined, at the time of divestiture, had approximately 500 employees. See Restructuring and Other Charges in Results of Operations above.

In 2015, alumina production decreased by 886 kmt compared to 2014. The decline was mostly the result of the absence of production at the Jamalco refinery (see above) and lower production at the Suralco (Suriname—see below) and Poços de Caldas (Brazil—see below) refineries, slightly offset by higher production at the San Ciprian (Spain) and Point Comfort (Texas) refineries.

In March 2015, management initiated a 12-month review of 2,800 kmt in refining capacity for possible curtailment (partial or full), permanent closure or divestiture. This review is part of management's target to lower Alcoa's refining operations on the global alumina cost curve to the 21st percentile (currently 23rd) by the end of 2016. As part of this review, in 2015, management decided to curtail all of the operating capacity at both the Suralco (1,330 kmt-per-year) and Point Comfort (2,010 kmt-per-year) refineries. The curtailment of the capacity at Suralco was completed by the end of November 2015. Management is currently in discussions with the Suriname government to determine the best long-term solution for Suralco due to limited bauxite reserves and the absence of a long-term energy alternative. The curtailment of the capacity at Point Comfort is expected to be completed by the end of June 2016 (375 kmt-per-year was completed by the end of December 2015). Suralco and Point Comfort have nameplate capacity of 2,207 kmt-per-year and 2,305 kmt-per-year, respectively, of which 877 kmt and 295 kmt, respectively was curtailed prior to the review. See Restructuring and Other Charges in Results of Operations above for a description of the associated charges related to these actions.

In 2014, alumina production decreased by 12 kmt compared to 2013. The decline was mainly driven by lower production at the Poços de Caldas, Jamalco, and San Ciprian refineries, mostly offset by higher production at every other refinery in the global system. The Poços de Caldas refinery started to reduce production in early 2014 in response to management's decision to fully curtail the Poços de Caldas smelter by the end of May 2014 (see Primary Metals below). As a result, management reduced the alumina production at the Poços de Caldas refinery by approximately 200 kmt-per-year by mid-2014. This reduction was replaced by an increase in production at lower cost refineries within Alcoa's global system. Additionally, the decrease at the refinery in Jamaica was due to the absence of production for one month as a result of the sale of the ownership stake in Jamalco (see above).

Third-party sales for the Alumina segment decreased 2% in 2015 compared with 2014, largely attributable to a 2% decline in average realized price, somewhat offset by a 1% increase in volume. The change in average realized price was mostly driven by a decrease in both the average alumina index/spot price and average LME-based price, somewhat offset by a higher percentage (75% compared to 68%) of smelter-grade alumina shipments linked to an alumina index/spot price instead of an LME-based price.

Third-party sales for this segment improved 6% in 2014 compared with 2013, primarily related to a 7% improvement in volume.

Intersegment sales for the Alumina segment declined 13% in both 2015 compared with 2014 and 2014 compared with 2013. The decrease in both periods was mostly the result of lower demand from the Primary Metals segment, as a result of the closure, curtailment or divestiture of a number of smelters (see Primary Metals below), and a lower average realized price.

ATOI for the Alumina segment increased $376 in 2015 compared with 2014, mainly caused by net favorable foreign currency movements due to a stronger U.S. dollar, especially against the Australian dollar and Brazilian real; net productivity improvements; and lower input costs, including natural gas, fuel oil, and transportation, all of which were slightly offset by higher labor and maintenance costs. These positive impacts were slightly offset by the previously mentioned lower average realized price and the absence of a gain on the sale of a mining interest in Suriname ($18).

ATOI for this segment improved $111 in 2014 compared with 2013, mostly due to net favorable foreign currency movements due to a stronger U.S. dollar, especially against the Australian dollar, net productivity improvements, and a gain on the sale of a mining interest in Suriname ($18). These positive impacts were partially offset by higher input costs, including natural gas (particularly higher prices in Australia), bauxite (mainly due to a new mining site in Suriname), and labor and maintenance, all of which were somewhat offset by lower costs for caustic; and a higher equity loss due to start-up costs of the bauxite mine and refinery in Saudi Arabia.

In 2016, alumina production will be approximately 2,500 kmt lower, mostly due to the curtailment of the Point Comfort and Suralco refineries. Also, the continued shift towards alumina index and spot pricing is expected to average 85% of third-party smelter-grade alumina shipments. Additionally, net productivity improvements are anticipated.

Primary Metals

	2015	2014	2013
Aluminum production (kmt)	2,811	3,125	3,550
Third-party aluminum shipments (kmt)	2,478	2,534	2,801
Alcoa's average realized price per metric ton of aluminum*	$2,069	$2,405	$2,243
Alcoa's average cost per metric ton of aluminum**	$2,064	$2,252	$2,201
Third-party sales	$5,591	$6,800	$6,596
Intersegment sales	2,170	2,931	2,621
Total sales	$7,761	$9,731	$9,217
ATOI	$ 155	$ 594	$ (20)

* Average realized price per metric ton of aluminum includes three elements: a) the underlying base metal component, based on quoted prices from the LME; b) the regional premium, which represents the incremental price over the base LME component that is associated with the physical delivery of metal to a particular region (e.g., the Midwest premium for metal sold in the United States); and c) the product premium, which represents the incremental price for receiving physical metal in a particular shape (e.g., billet, slab, rod, etc.) or alloy.

** Includes all production-related costs, including raw materials consumed; conversion costs, such as labor, materials, and utilities; depreciation and amortization; and plant administrative expenses.

This segment represents a portion of Alcoa's upstream operations and consists of the Company's worldwide smelting system. Primary Metals purchases alumina, mostly from the Alumina segment (see Alumina above), from which primary aluminum is produced and then sold directly to external customers and traders, as well as to Alcoa's midstream operations and, to a lesser extent, downstream operations. Results from the sale of aluminum powder, scrap, and excess energy are also included in this segment, as well as the results of aluminum derivative contracts and buy/resell activity. Primary aluminum produced by Alcoa and used internally is transferred to other segments at prevailing market prices. The sale of primary aluminum represents approximately 90% of this segment's third-party sales. Buy/resell activity occurs when this segment purchases metal and resells such metal to external customers or the midstream and downstream operations in order to maximize smelting system efficiency and to meet customer requirements. Generally, the sales of this segment are transacted in U.S. dollars while costs and expenses of this segment are transacted in the local currency of the respective operations, which are the U.S. dollar, the euro, the Norwegian kroner, Icelandic krona, the Canadian dollar, the Brazilian real, and the Australian dollar.

In November 2014, Alcoa completed the sale of an aluminum rod plant located in Bécancour, Québec, Canada to Sural Laminated Products. This facility takes molten aluminum and shapes it into the form of a rod, which is used by customers primarily for the transportation of electricity. While owned by Alcoa, the operating results and assets and liabilities of this plant were included in the Primary Metals segment. In conjunction with this transaction, Alcoa entered into a multi-year agreement with Sural Laminated Products to supply molten aluminum for the rod plant. The aluminum rod plant generated sales of approximately $200 in 2013 and, at the time of divestiture, had approximately 60 employees. See Restructuring and Other Charges in Results of Operations above.

In December 2014, Alcoa completed the sale of its 50.33% ownership stake in the Mt. Holly smelter located in Goose Creek, South Carolina to Century Aluminum Company. While owned by Alcoa, 50.33% of both the operating results and assets and liabilities related to the smelter were included in the Primary Metals segment. As it relates to Alcoa's previous 50.33% ownership stake, the smelter (Alcoa's share of the capacity was 115 kmt-per-year) generated sales of approximately $280 in 2013 and, at the time of divestiture, had approximately 250 employees. See Restructuring and Other Charges in Results of Operations above.

At December 31, 2015, Alcoa had 778 kmt of idle capacity on a base capacity of 3,401 kmt. In 2015, idle capacity increased 113 kmt compared to 2014, mostly due to the curtailment of 217 kmt combined at a smelter in each the

United States and Brazil, partially offset by the permanent closure of the Poços de Caldas smelter in Brazil (96 kmt-per-year). Base capacity declined 96 kmt between December 31, 2015 and 2014 due to the previously mentioned permanent closure of the Poços de Caldas smelter. A detailed description of each of these actions follows below.

At December 31, 2014, Alcoa had 665 kmt of idle capacity on a base capacity of 3,497 kmt. In 2014, idle capacity increased 10 kmt compared to 2013 due to the curtailment of 159 kmt combined at two smelters in Brazil, mostly offset by the permanent closure of the Portovesme smelter in Italy (150 kmt-per-year). Base capacity declined 540 kmt between December 31, 2014 and 2013 due to the permanent closure of both a smelter in Australia and two remaining potlines at a smelter in the United States (274 kmt combined), the previously mentioned permanent closure of the Portovesme smelter, and the sale of Alcoa's ownership stake in the Mt. Holly smelter (see above). A detailed description of each of these actions follows below.

In March 2015, management initiated a 12-month review of 500 kmt in smelting capacity for possible curtailment (partial or full), permanent closure or divestiture. This review is part of management's target to lower Alcoa's smelting operations on the global aluminum cost curve to the 38th percentile (currently 43rd) by 2016. In summary, under this review, management approved the curtailment of 447 kmt-per-year and the closure of 269 kmt-per-year. The following is a description of each action.

Also in March 2015, management decided to curtail the remaining capacity (74 kmt-per-year) at the São Luís smelter in Brazil; this action was completed in April 2015. In 2013 and 2014 combined, Alcoa curtailed capacity of 194 kmt-per-year at the São Luís smelter under a prior management review (see below).

Additionally, in November 2015, management decided to curtail the remaining capacity at the Intalco (230 kmt-per-year) and Wenatchee (143 kmt-per-year) smelters, both in Washington. These two smelters previously had curtailed capacity of 90 kmt-per-year combined. The curtailment of the remaining capacity at Wenatchee was completed by the end of December 2015 and the curtailment of the remaining capacity at Intalco is expected to be completed by the end of June 2016.

Furthermore, in December 2015, management approved the permanent closure of the Warrick, IN smelter (269 kmt-per-year). This decision was made as this smelter is no longer competitive in light of prevailing market conditions for the price of aluminum. The shutdown of the Warrick smelter is expected to be completed by the end of March 2016.

Separate from the 2015 smelting capacity review described above, in June 2015, management approved the permanent closure of the Poços de Caldas smelter effective immediately. The Poços de Caldas smelter had been temporarily idle since May 2014 (see below) due to challenging global market conditions for primary aluminum and higher operating costs, which made the smelter uncompetitive. The decision to permanently close the Poços de Caldas smelter was based on the fact that these underlying conditions had not improved.

In May 2013, management initiated a 15-month review of 460 kmt in smelting capacity for possible curtailment. This review was aimed at maintaining Alcoa's competitiveness despite falling aluminum prices and focused on the highest-cost smelting capacity and those plants that have long-term risk due to factors such as energy costs or regulatory uncertainty. In 2014, an additional 250 kmt of smelting capacity was included in the review. In summary, under this review, management approved the closure of 146 kmt-per-year and 274 kmt-per-year and the curtailment of 131 kmt-per-year and 159 kmt-per-year in 2013 and 2014, respectively. The following is a description of each action.

Also in May 2013, management approved the permanent closure of two potlines (105 kmt-per-year) that utilize Soderberg technology at the Baie Comeau smelter in Quebec, Canada. Additionally, in August 2013, management approved the permanent closure of one potline (41 kmt-per-year) that utilizes Soderberg technology at the Massena East, NY smelter. The shutdown of these three lines was completed by the end of September 2013. The Baie Comeau smelter has a remaining capacity of 280 kmt-per-year composed of two prebake potlines and the Massena East smelter had a remaining capacity of 84 kmt-per-year composed of two Soderberg potlines (see below).

Additionally, in August 2013, management decided to curtail 97 kmt-per-year at the São Luís smelter and 31 kmt-per-year at the Poços de Caldas smelter. This action was also completed by the end of September 2013. An additional 3 kmt-per-year was curtailed at the Poços de Caldas smelter by the end of 2013.

In January 2014, management approved the permanent closure of the remaining capacity (84 kmt-per-year) at the Massena East smelter, which represented two Soderberg potlines that were no longer competitive. This shutdown was completed by the end of March 2014. In February 2014, management approved the permanent closure of the Point Henry smelter (190 kmt-per-year) in Australia. This decision was made as management determined that the smelter had no prospect of becoming financially viable. The shutdown of the Point Henry smelter was completed in August 2014.

Also, in March 2014, management decided to curtail the remaining capacity (62 kmt-per-year) at the Poços de Caldas smelter and additional capacity (85 kmt-per-year) at the São Luís smelter. The curtailment of this capacity was completed by the end of May 2014. An additional 12 kmt-per-year was curtailed at the São Luís smelter during the remainder of 2014.

Separate from the 2013-2014 smelting capacity review described above, in June 2013, management approved the permanent closure of the Fusina smelter (44 kmt-per-year) in Italy as the underlying conditions that led to the idling of the smelter in 2010 had not fundamentally changed, including low aluminum prices and the lack of an economically viable, long-term power solution. In August 2014, management approved the permanent closure of the Portovesme smelter, which had been idle since November 2012. This decision was made because the fundamental reasons that made the Portovesme smelter uncompetitive remained unchanged, including the lack of a viable long-term power solution.

See Restructuring and Other Charges in Results of Operations above for a description of the associated charges related to all of the above actions in 2015, 2014, and 2013.

In 2015, aluminum production declined by 314 kmt, mainly the result of the absence of and/or lower production at the combined four smelters (Point Henry, São Luís, Massena East, and Poços de Caldas) impacted by the 2014 and 2015 capacity reviews and at the smelter divested in 2014 (Mt. Holly), all of which is described above.

In 2014, aluminum production decreased by 425 kmt, mostly due to lower production at the five smelters (São Luís, Massena East, Point Henry, Baie Comeau, and Poços de Caldas) impacted by the 2013-2014 capacity review described above.

Third-party sales for the Primary Metals segment declined 18% in 2015 compared with 2014, primarily due to a 14% drop in average realized price, the absence of sales (approximately $585) from five smelters and a rod mill that were closed, curtailed or divested in 2014, and lower energy sales in Brazil, due to both a decrease in energy prices and a weaker Brazilian real. These negative impacts were slightly offset by higher volume in the remaining smelter portfolio and higher buy/resell activity. The change in average realized price was largely attributable to a 10% lower average LME price (on 15-day lag) and lower regional premiums, which dropped by an average of 39% in the United States and Canada and 44% in Europe. The higher buy/resell activity was primarily related to the fulfillment of customer orders with aluminum purchased from the smelter at the Saudi Arabia joint venture.

Third-party sales for the Primary Metals segment increased 3% in 2014 compared with 2013, mainly due to higher energy sales in Brazil resulting from excess power due to curtailed smelter capacity, higher buy/resell activity, and a 7% increase in average realized price, mostly offset by lower volumes, including from the five smelters impacted by the 2013 and 2014 capacity reductions. The change in average realized price was driven by higher regional premiums, which increased by an average of 84% in the United States and Canada and 56% in Europe.

Intersegment sales for the Primary Metals segment declined 26% in 2015 compared with 2014, mainly the result of lower demand from the midstream and downstream businesses and a decrease in average realized price. The decline related to the midstream business was driven by the absence of shipments to four of the five rolling mills (the fifth mill

purchased scrap metal from third-parties) that were either divested or permanently closed in December 2014 (see Global Rolled Products below). Intersegment sales for this segment improved 12% in 2014 compared with 2013, principally due to an increase in average realized price, driven by higher regional premiums, and higher demand from the midstream and downstream businesses.

ATOI for the Primary Metals segment decreased $439 in 2015 compared with 2014, primarily caused by both the previously mentioned lower average realized aluminum price and lower energy sales, higher energy costs (mostly in Spain as the 2014 interruptibility rights were more favorable than the 2015 structure), and an unfavorable impact related to the curtailment of the São Luís smelter. These negative impacts were somewhat offset by net favorable foreign currency movements due to a stronger U.S. dollar against most major currencies, net productivity improvements, the absence of a write-off of inventory related to the permanent closure of the Portovesme, Point Henry, and Massena East smelters ($44), and a lower equity loss related to the joint venture in Saudi Arabia, including the absence of restart costs for one of the potlines that was previously shut down due to a period of instability.

ATOI for this segment climbed $614 in 2014 compared with 2013, principally related to a higher average realized aluminum price; the previously mentioned energy sales in Brazil; net productivity improvements; net favorable foreign currency movements due to a stronger U.S. dollar against all major currencies; lower costs for carbon and alumina; and the absence of costs related to a planned maintenance outage in 2013 at a power plant in Australia. These positive impacts were slightly offset by an unfavorable impact associated with the 2013 and 2014 capacity reductions described above, including a write-off of inventory related to the permanent closure of the Portovesme, Point Henry, and Massena East smelters ($44), and higher energy costs (particularly in Spain), labor, and maintenance.

In 2016, aluminum production will be approximately 450 kmt lower and third-party sales will reflect the absence of approximately $400 both as a result of the 2015 curtailment and closure actions. Also, energy sales in Brazil will be negatively impacted by a decline in energy prices, while net productivity improvements are anticipated.

Global Rolled Products

	2015	2014	2013
Third-party aluminum shipments (kmt)	1,775	1,964	1,905
Alcoa’s average realized price per metric ton of aluminum*	$3,514	$3,743	$3,730
Third-party sales	$6,238	$7,351	$7,106
Intersegment sales	125	185	178
Total sales	$6,363	$7,536	$7,284
ATOI	$ 244	$ 245	$ 292

* Generally, average realized price per metric ton of aluminum includes two elements: a) the price of metal (the underlying base metal component plus a regional premium – see the footnote to the table in Primary Metals above for a description of these two components), and b) the conversion price, which represents the incremental price over the metal price component that is associated with converting primary aluminum into sheet and plate. In this circumstance, the metal price component is a pass-through to this segment’s customers with limited exception (e.g., fixed-priced contracts, certain regional premiums).

This segment represents Alcoa’s midstream operations and produces aluminum sheet and plate for a variety of end markets. Approximately one-half of the third-party shipments in this segment consist of sheet sold directly to customers in the packaging end market for the production of aluminum cans (beverage, food, and pet food). Seasonal increases in can sheet sales are generally experienced in the second and third quarters of the year. This segment also includes sheet and plate sold directly to customers and through distributors related to the aerospace, automotive, commercial transportation, building and construction, and industrial products (mainly used in the production of machinery and equipment and consumer durables) end markets. A small portion of this segment also produces aseptic foil for the packaging end market. While the customer base for flat-rolled products is large, a significant amount of sales of sheet and plate is to a relatively small number of customers. In this circumstance, the sales and costs and expenses of this segment are transacted in the local currency of the respective operations, which are mostly the U.S. dollar, the euro, the Russian ruble, the Brazilian real, and the British pound.

In March 2015, Alcoa completed the sale of a rolling mill located in Belaya Kalitva, Russia to a wholly-owned subsidiary of Stupino Titanium Company. While owned by Alcoa, the operating results and assets and liabilities of the rolling mill were included in the Global Rolled Products segment. The rolling mill generated sales of approximately $130 in 2014 and, at the time of divestiture, had approximately 1,870 employees. See Restructuring and Other Charges in Results of Operations above.

In February 2014, management approved the permanent shutdown of Alcoa's two rolling mills in Australia, Point Henry and Yennora. This decision was made due to the significant impact of excess can sheet capacity in both Australia and Asia. The two rolling mills had a combined can sheet capacity of 200 kmt-per-year and were closed by the end of 2014. See Restructuring and Other Charges in Results of Operations above for a description of the associated charges.

In December 2014, Alcoa completed the sale of three rolling mills located in Spain (Alicante and Amorebieta) and France (Castelsarrasin) to a subsidiary of Atlas Holdings LLC. While owned by Alcoa, the operating results and assets and liabilities of the rolling mills were included in the Global Rolled Products segment. In conjunction with this transaction, Alcoa entered into a multi-year agreement with the buyer to supply aluminum for the rolling mills. The rolling mills combined generated sales of approximately $500 in 2013 and, at the time of divestiture, had approximately 750 employees. See Restructuring and Other Charges in Results of Operations above.

Third-party sales for the Global Rolled Products segment declined 15% in 2015 compared with 2014, primarily driven by the absence of sales ($1,052) from six rolling mills in Australia, Spain, Russia, and France (see above), unfavorable pricing, mostly due to a decrease in metal prices (both LME and regional premium components), and unfavorable foreign currency movements, mainly the result of a weaker euro, Russian ruble, and Brazilian real. These negative impacts were somewhat offset by increased demand of the remaining rolling portfolio and favorable product mix (automotive and aerospace versus industrial products). The volume improvement of the remaining portfolio was largely attributable to the automotive (North America) and can sheet packaging (China) end markets, slightly offset by lower demand in the industrial products end market.

Third-party sales for this segment improved 3% in 2014 compared with 2013, principally caused by increased demand, somewhat offset by unfavorable price/product mix related to the packaging, aerospace, and industrial products end markets. Volume improvements were mostly driven by the automotive and commercial transportation end markets.

ATOI for the Global Rolled Products segment decreased $1 in 2015 compared with 2014, primarily attributable to unfavorable price/product mix, largely the result of overall pricing pressure in the global can sheet packaging end market, and higher costs related to growth projects, including research and development as Alcoa develops and qualifies products from a new Micromill™ production process and the ramp-up of the Tennessee automotive expansion. These negative impacts were virtually offset by net productivity improvements across most businesses and higher volumes of the remaining rolling portfolio, principally driven by higher demand in the automotive end market.

ATOI for this segment declined $47 in 2014 compared with 2013, mainly the result of unfavorable price/product mix related to the packaging, aerospace, and industrial products end markets; higher input costs, including energy, labor, maintenance, and transportation; a larger equity loss due to start-up costs related to the rolling mill at the joint venture in Saudi Arabia; a write-off of inventory related to the decision to permanently shut down the Point Henry and Yennora rolling mills ($9); and costs (business continuity and contract specific) related to a new labor agreement that covers employees at three rolling mills in the United States ($4) (see COGS in Results of Operations above). These negative impacts were partially offset by net productivity improvements across most businesses and overall higher volumes.

In 2016, demand in the automotive end market is expected to remain strong and the automotive expansion at the Davenport, IA facility will operate at full capacity for the entire year while the automotive expansion at the Tennessee facility will continue to ramp-up, both of which will serve the growing demand for aluminum-intensive vehicles. Also, costs related to the ramp-up of the Tennessee facility and the previously-idled casthouse in Texarkana, TX, as well as for preparations to run the Warrick, IN rolling facility on cold metal as a result of the planned closure of the Warrick smelter (see Primary Metals above), are expected. Additionally, net productivity improvements are anticipated.

Engineered Products and Solutions

	2015	2014	2013
Third-party sales	$5,342	$4,217	$4,054
ATOI	$ 595	$ 579	$ 569

This segment represents a portion of Alcoa's downstream operations and produces products that are used mostly in the aerospace (commercial and defense), commercial transportation, and power generation end markets. Such products include fastening systems (titanium, steel, and nickel alloys) and seamless rolled rings (mostly nickel alloys); and investment castings (nickel super alloys, titanium, and aluminum), including airfoils and forged jet engine components (e.g., jet engine disks), all of which are sold directly to customers and through distributors. More than 70% of the third-party sales in this segment are from the aerospace end market. A small part of this segment also produces various forging and extrusion metal products for the oil and gas, industrial products, automotive, and land and sea defense end markets. Seasonal decreases in sales are generally experienced in the third quarter of the year due to the European summer slowdown across all end markets. Generally, the sales and costs and expenses of this segment are transacted in the local currency of the respective operations, which are mostly the U.S. dollar and the euro.

In March 2015, Alcoa completed the acquisition of an aerospace castings company, TITAL, a privately held company with approximately 650 employees based in Germany. TITAL produces aluminum and titanium investment casting products for the aerospace and defense end markets. In 2014, TITAL generated sales of approximately $100. The purpose of this acquisition is to capture increasing demand for advanced jet engine components made of titanium, establish titanium-casting capabilities in Europe, and expand existing aluminum casting capacity. The operating results and assets and liabilities of TITAL were included within the Engineered Products and Solutions segment since the date of acquisition.

Also in March 2015, Alcoa signed a definitive agreement to acquire RTI International Metals, Inc. (RTI), a global supplier of titanium and specialty metal products and services for the commercial aerospace, defense, energy, and medical device end markets. On July 23, 2015, after satisfying all customary closing conditions and receiving the required regulatory and RTI shareholder approvals, Alcoa completed the acquisition of RTI. The purpose of this acquisition is to expand Alcoa's range of titanium offerings and add advanced technologies and materials, primarily related to the aerospace end market. In 2014, RTI generated net sales of $794 and had approximately 2,600 employees. Alcoa estimates that RTI will generate approximately $1,200 in Third-party sales by 2019. In executing its integration plan for RTI, Alcoa expects to realize annual cost savings of approximately $100 by 2019 due to synergies derived from procurement and productivity improvements, leveraging Alcoa's global shared services, and driving profitable growth. The operating results and assets and liabilities of RTI were included within the Engineered Products and Solutions segment since the date of acquisition.

On November 19, 2014, after satisfying all customary closing conditions and receiving the required regulatory approvals, Alcoa completed the acquisition of Firth Rixson, a global leader in aerospace jet engine components. Firth Rixson manufactures rings, forgings, and metal products for the aerospace end market, as well as other markets requiring highly engineered material applications. The purpose of this acquisition is to strengthen Alcoa's aerospace business and position the Company to capture additional aerospace growth with a broader range of high-growth, value-add jet engine components. This business generated sales of approximately $970 in 2014 and has 13 operating facilities in the United States, United Kingdom, Europe, and Asia employing approximately 2,400 people combined. In executing its integration plan for Firth Rixson, Alcoa expects to realize annual cost savings of more than $100 by 2019 due to synergies derived from procurement and productivity improvements, optimizing internal metal supply, and leveraging Alcoa's global shared services. The operating results and assets and liabilities of Firth Rixson were included within the Engineered Products and Solutions segment since the date of acquisition.

Third-party sales for the Engineered Products and Solutions segment improved 27% in 2015 compared with 2014, largely attributable to the third-party sales ($1,310) of three acquired businesses (see above), primarily aerospace-related, and higher volumes in this segment's organic businesses, mostly related to the aerospace end market. These positive impacts were slightly offset by unfavorable foreign currency movements, principally driven by a weaker euro.

Third-party sales for this segment increased 4% in 2014 compared with 2013, primarily due to higher volumes and the acquisition of Firth Rixson ($81—see above). The higher volumes were mostly related to the aerospace (commercial) and commercial transportation end markets, somewhat offset by lower volumes in the industrial gas turbine end market.

ATOI for the Engineered Products and Solutions segment increased $16 in 2015 compared with 2014, principally the result of net productivity improvements across most businesses, a positive contribution from inorganic growth, and overall higher volumes in this segment's organic businesses. These positive impacts were partially offset by unfavorable price/product mix, higher costs related to growth projects, and net unfavorable foreign currency movements, primarily related to a weaker euro.

ATOI for this segment climbed $10 in 2014 compared with 2013, mainly due to net productivity improvements across all businesses and overall higher volumes, partially offset by higher costs, primarily labor, and unfavorable product mix.

In 2016, demand in the commercial aerospace end market is expected to remain strong, driven by significant order backlog. Also, third-party sales will include a positive impact due to a full year of sales related to the acquisitions of RTI and TITAL. Additionally, net productivity improvements are anticipated while pricing pressure across all markets is expected.

Transportation and Construction Solutions

	2015	2014	2013
Third-party sales	$1,882	$2,021	$1,951
ATOI	$ 166	$ 180	$ 167

This segment represents a portion of Alcoa's downstream operations and produces products that are used mostly in the nonresidential building and construction and commercial transportation end markets. Such products include integrated aluminum structural systems, architectural extrusions, and forged aluminum commercial vehicle wheels, which are sold directly to customers and through distributors. A small part of this segment also produces aluminum products for the industrial products end market. Generally, the sales and costs and expenses of this segment are transacted in the local currency of the respective operations, which are mostly the U.S. dollar, the euro, and the Brazilian real.

Third-party sales for the Transportation and Construction Solutions segment decreased 7% in 2015 compared with 2014, primarily driven by unfavorable foreign currency movements, principally caused by a weaker euro and Brazilian real, and lower volume related to the building and construction end market, somewhat offset by higher volume related to the commercial transportation end market.

Third-party sales for this segment increased 4% in 2014 compared with 2013, mostly the result of higher volume related to the commercial transportation and building and construction end markets, somewhat offset by lower volume in the industrial products and market.

ATOI for the Transportation and Construction Solutions segment declined $14 in 2015 compared with 2014, mainly due to higher costs, net unfavorable foreign currency movements, primarily related to a weaker euro and Brazilian real, and unfavorable price/product mix. These negative impacts were mostly offset by net productivity improvements across all businesses.

ATOI for this segment improved $13 in 2014 compared with 2013, principally attributable to net productivity improvements across all businesses and overall higher volumes, partially offset by unfavorable product mix and higher costs, primarily labor.

In 2016, the non-residential building and construction end market is expected to improve through growth in North America but will be slightly offset by overall weakness in Europe. Also, North America build rates in the commercial

transportation end market are expected to decline while improvements in Europe are anticipated. Additionally, net productivity improvements are anticipated**.**

Reconciliation of ATOI to Consolidated Net (Loss) Income Attributable to Alcoa

Items required to reconcile total segment ATOI to consolidated net (loss) income attributable to Alcoa include: the impact of LIFO inventory accounting; metal price lag; interest expense; noncontrolling interests; corporate expense (general administrative and selling expenses of operating the corporate headquarters and other global administrative facilities, along with depreciation and amortization on corporate-owned assets); restructuring and other charges; and other items, including intersegment profit eliminations, differences between tax rates applicable to the segments and the consolidated effective tax rate, and other nonoperating items such as foreign currency transaction gains/losses and interest income.

The following table reconciles total segment ATOI to consolidated net (loss) income attributable to Alcoa:

	2015	2014	2013
Total segment ATOI	$1,906	$1,968	$ 1,267
Unallocated amounts (net of tax):			
Impact of LIFO	136	(54)	52
Metal price lag	(133)	78	(45)
Interest expense	(324)	(308)	(294)
Noncontrolling interests	(125)	91	(41)
Corporate expense	(266)	(284)	(274)
Impairment of goodwill	(25)	-	(1,731)
Restructuring and other charges	(943)	(894)	(607)
Other	(548)	(329)	(612)
Consolidated net (loss) income attributable to Alcoa	$ (322)	$ 268	$(2,285)

The significant changes in the reconciling items between total segment ATOI and consolidated net (loss) income attributable to Alcoa for 2015 compared with 2014 consisted of:

- a change in the Impact of LIFO, mostly due to lower prices for both aluminum, driven by both lower base metal prices (LME) and regional premiums, and alumina (decrease in price at December 31, 2015 indexed to December 31, 2014 compared to an increase in price at December 31, 2014 indexed to December 31, 2013);
- a change in Metal price lag, the result of lower prices for aluminum;
- an increase in Interest expense, principally caused by an 8% higher average debt level, which was largely attributable to higher outstanding long-term debt due to the September 2014 issuance of $1,250 in 5.125% Notes, somewhat offset by the absence of fees paid associated with the execution and termination of a 364-day senior unsecured bridge term loan facility related to the then-planned acquisition of Firth Rixson ($8);
- a change in Noncontrolling interests, due to the change in results of AWAC, primarily driven by improved operating results and lower restructuring and other charges related to a number of portfolio actions (e.g. capacity reductions and a divestiture), slightly offset by the absence of a gain on the sale of a mining interest in Suriname ($11 was noncontrolling interest’s share);
- a decline in Corporate expense, largely attributable to decreases in various expenses, including lower acquisition costs ($13), partially offset by expenses related to the planned separation of Alcoa ($24);
- an increase in Restructuring and other charges, mostly the result of a charge for legal matters in Italy, partially offset by lower restructuring and other charges associated with a number of portfolio actions (e.g. capacity reductions and divestitures); and
- a change in Other, primarily due to a discrete income tax charge for valuation allowances on certain deferred tax assets in the United States and Iceland ($190), write-downs of inventories related to various shutdown and curtailment actions ($75), a net discrete income tax charge for a valuation allowance on certain deferred

tax assets ($34), and charges for separate environmental matters in both Norway and Italy ($15), somewhat offset by a discrete income tax charge related to a tax rate change in both Brazil and Spain ($79) and higher gains on various asset sales ($35).

The significant changes in the reconciling items between total segment ATOI and consolidated net income (loss) attributable to Alcoa for 2014 compared with 2013 consisted of:

- a change in the Impact of LIFO, mostly due to higher prices for aluminum, driven by both higher base metal prices (LME) and regional premiums (increase in price at December 31, 2014 indexed to December 31, 2013 compared to a decrease in price at December 31, 2013 indexed to December 31, 2012), and the absence of significant reductions in LIFO inventory quantities, which caused a partial liquidation of the lower cost LIFO inventory base in 2013 (income of $17 in 2013);
- a change in Metal price lag, the result of higher prices for aluminum;
- an increase in Interest expense, primarily the result of lower capitalized interest ($28) and fees paid associated with the execution and termination of a 364-day senior unsecured bridge term loan facility related to the then-planned acquisition of Firth Rixson ($8), partially offset by a 3% lower average debt level and lower amortization of debt-related costs due to the conversion of convertible notes;
- a change in Noncontrolling interests, due to the change in the results of AWAC, mainly driven by restructuring and other charges associated with both the permanent shutdown of the Point Henry smelter in Australia and the divestiture of an ownership interest in a mining and refining joint venture in Jamaica and a discrete income tax charge related to a tax rate change in both Brazil and Spain ($32 combined was noncontrolling interest's share), partially offset by improved operating results, the absence of a charge for a legal matter ($17 was noncontrolling interest's share), and a gain on the sale of a mining interest in Suriname ($11 was noncontrolling interest's share);
- an increase in Corporate expense, mostly related to costs associated with the acquisition of Firth Rixson ($34), partially offset by decreases in various expenses;
- an increase in Restructuring and other charges, principally caused by higher costs related to decisions to permanently shut down and/or temporarily curtail refinery, smelter and/or rolling mill capacity and a net loss on the divestiture of four operations, partially offset by the absence of a charge for a legal matter ($322); and
- a change in Other, largely attributable to the absence of a discrete income tax charge for valuation allowances on certain deferred tax assets in Spain and the United States ($372), slightly offset by a discrete income tax charge related to a tax rate change in both Brazil and Spain ($79).

Environmental Matters

See the Environmental Matters section of Note N to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K.

Liquidity and Capital Resources

Alcoa maintains a disciplined approach to cash management and strengthening of its balance sheet. In 2015, as has been the focus since 2008, management initiated actions to significantly improve Alcoa's cost structure and liquidity, providing the Company with the ability to operate effectively. Such actions include procurement efficiencies and overhead rationalization to reduce costs, working capital initiatives to yield significant cash improvements, and maintaining a sustainable level of capital expenditures. In 2016, this approach will continue with the ultimate goal of generating cash from operations that exceeds capital expenditures.

Along with the foregoing actions, cash provided from operations and financing activities is expected to be adequate to cover Alcoa's operational and business needs over the next 12 months. For an analysis of long-term liquidity, see Contractual Obligations and Off-Balance Sheet Arrangements below.

At December 31, 2015, cash and cash equivalents of Alcoa were $1,919, of which $1,107 was held outside the United States. Alcoa has a number of commitments and obligations related to the Company's growth strategy in foreign jurisdictions, resulting in the need for cash outside the United States. As such, management does not have a current expectation of repatriating cash held in foreign jurisdictions.

Cash from Operations

Cash provided from operations in 2015 was $1,582 compared with $1,674 in 2014. The decrease of $92, or 5%, was due to a negative change in noncurrent assets of $328, lower operating results (net (loss) income plus net add-back for noncash transactions in earnings) and a negative change in noncurrent liabilities of $18, mostly offset by a positive change associated with working capital of $572 and lower pension contributions of $31.

The components of the positive change in working capital were as follows:

- a favorable change of $524 in receivables, mostly driven by lower customer sales as a result of closed, divested, and curtailed locations and lower metal prices;
- a positive change of $291 in inventories, largely attributable to the absence of inventory build related to the ramp-up of automotive production at the Davenport, IA plant and customer requirements related to smelters that have been curtailed or shut down;
- a favorable change of $71 in prepaid expenses and other current assets;
- a negative change of $346 in accounts payable, trade, principally the result of timing of payments;
- a positive change of $14 in accrued expenses, mainly caused by a smaller payment to the United States government due to the resolution of a legal matter (see below); and
- a favorable change of $18 in taxes, including income taxes.

The unfavorable change in noncurrent assets was mostly related to a $300 prepayment made under a natural gas supply agreement in Australia (see below).

On April 8, 2015, Alcoa's majority-owned subsidiary, Alcoa of Australia Limited (AofA), which is part of AWAC, secured a new 12-year gas supply agreement to power its three alumina refineries in Western Australia beginning in July 2020. This agreement was conditional on the completion of a third-party acquisition of the related energy assets from the then-current owner, which occurred in June 2015. The terms of AofA's gas supply agreement require a prepayment of $500 to be made in two installments. The first installment of $300 was made at the time of the completion of the third-party acquisition and the second installment of $200 will be made in April 2016 (previously was scheduled in January 2016).

Cash provided from operations in 2014 was $1,674 compared with $1,578 in 2013. The increase of $96, or 6%, was due to higher operating results (net income plus net add-back for noncash transactions in earnings) and a positive change in noncurrent assets of $114, mostly offset by a negative change associated with working capital of $620, a negative change in noncurrent liabilities of $138, and higher pension contributions of $39.

The components of the negative change in working capital were as follows:

- an unfavorable change of $171 in receivables, primarily related to higher customer sales;
- a negative change of $380 in inventories, largely attributable to inventory build for the ramp-up of automotive production at the Davenport, IA plant and customer requirements related to smelters that were curtailed or shut down in 2014;
- an unfavorable change of $16 in prepaid expenses and other current assets;
- a negative change of $70 in accounts payable, trade, principally the result of timing of payments;

- an unfavorable change of $33 in accrued expenses, mainly caused by $139 in higher payments for layoff and other exit costs associated with restructuring actions and an $88 payment to the United States government due to the resolution of a legal matter (see below), partially offset by the absence of $148 (€109) in payments to the Italian government related to a November 2009 European Commission decision on electricity pricing for certain energy-intensive industries; and
- a positive change of $50 in taxes, including income taxes, mostly driven by higher pretax income.

The higher pension contributions of $39 were principally driven by special termination benefits of $86 for employees affected by the 2013 shutdown of capacity at a smelter in Canada.

On August 8, 2014, the Highway and Transportation Funding Act (HATFA) was signed into law by the United States government. HATFA, in part, provides temporary relief for employers who sponsor defined benefit pension plans related to funding contributions under the Employee Retirement Income Security Act of 1974. Specifically, HATFA modifies the interest rates that had been set in 2012 by the Moving Ahead for Progress in the 21st Century Act. This relief had an immediate impact on the calculation of the then remaining funding contributions in 2014, resulting in a reduction of $100 in minimum required pension funding.

In 2014, Alcoa World Alumina LLC, a majority-owned subsidiary of Alcoa, and Alcoa Inc. paid a combined $88 to the United States government due to the resolution of a legal matter. Additionally, another $74 was paid in 2015 and will be paid in each of the three subsequent years, 2016 (paid in January 2016) through 2018.

Financing Activities

Cash used for financing activities was $441 in 2015 compared with cash provided from financing activities of $2,250 in 2014 and cash used for financing activities of $679 in 2013.

The use of cash in 2015 was principally the result of $2,030 in payments on debt, mostly related to the repayment of borrowings under certain revolving credit facilities (see below) and the repayment of convertible notes assumed in conjunction with the acquisition of RTI (see below); $223 in dividends paid to shareholders; and $104 in net cash paid to the noncontrolling interest in AWAC, Alumina Limited. These items were mostly offset by $1,901 in additions to debt, virtually all of which was the result of borrowings under certain revolving credit facilities (see below).

The source of cash in 2014 was mostly driven by $2,878 in additions to debt, virtually all of which was the result of $1,238 in net proceeds from the issuance of new senior debt securities used for the acquisition of Firth Rixson (see below) and $1,640 in borrowings under certain revolving credit facilities (see below); net proceeds of $1,211 from the issuance of mandatory convertible preferred stock related to the aforementioned acquisition; and $150 in proceeds from employee exercises of 17.3 million stock options at a weighted average exercise price of $8.70 (not in millions). These items were somewhat offset by $1,723 in payments on debt, mostly related to $1,640 for the repayment of borrowings under certain revolving credit facilities (see below), and $161 in dividends paid to shareholders.

The use of cash in 2013 was primarily due to $2,317 in payments on debt, mainly related to $1,850 for the repayment of borrowings under certain credit facilities (see below), a $422 early repayment of 6.00% Notes due July 2013, and $27 for previous borrowings on the loans supporting the Estreito hydroelectric power project in Brazil; $132 in dividends paid to shareholders; and net cash paid to noncontrolling interests of $97, most of which relates to Alumina Limited's share of AWAC. These items were partially offset by $1,852 in additions to debt, virtually all of which was the result of borrowings under certain credit facilities (see below).

In July 2015, through the acquisition of RTI (see Engineered Products and Solutions in Segment Information above), Alcoa assumed the obligation to repay two tranches of convertible debt; one tranche was due and settled in cash on December 1, 2015 (principal amount of $115) and the other tranche is due October 15, 2019 (principal amount of $403), unless earlier converted or purchased by Alcoa at the holder's option upon a fundamental change. Upon conversion of the 2019 convertible notes in accordance with their terms, holders will receive, at Alcoa's election, cash,

shares of common stock (up to 27,990,966 shares), or a combination of cash and shares. On the maturity date, each holder of outstanding notes will be entitled to receive on such date $1,000 (not in millions) in cash for each $1,000 (not in millions) in principal amount of notes, together with accrued and unpaid interest to, but not including, the maturity date.

On July 25, 2014, Alcoa entered into a Five-Year Revolving Credit Agreement (the “Credit Agreement”) with a syndicate of lenders and issuers named therein. The Credit Agreement provides a $4,000 senior unsecured revolving credit facility (the “Credit Facility”), the proceeds of which are to be used to provide working capital or for other general corporate purposes of Alcoa. Subject to the terms and conditions of the Credit Agreement, Alcoa may from time to time request increases in lender commitments under the Credit Facility, not to exceed $500 in aggregate principal amount, and may also request the issuance of letters of credit, subject to a letter of credit sublimit of $1,000 under the Credit Facility.

The Credit Facility was scheduled to mature on July 25, 2019; however, on July 7, 2015, Alcoa received approval for a one-year extension of the maturity date by the lenders and issuers that support the Credit Facility. As such, the Credit Facility now matures on July 25, 2020, unless extended or earlier terminated in accordance with the provisions of the Credit Agreement. Alcoa may make one additional one-year extension request during the remaining term of the Credit Facility, subject to the lender consent requirements set forth in the Credit Agreement. Under the provisions of the Credit Agreement, Alcoa will pay a fee of 0.25% (based on Alcoa’s long-term debt ratings as of December 31, 2015) of the total commitment per annum to maintain the Credit Facility.

The Credit Facility is unsecured and amounts payable under it will rank *pari passu* with all other unsecured, unsubordinated indebtedness of Alcoa. Borrowings under the Credit Facility may be denominated in U.S. dollars or euros. Loans will bear interest at a base rate or a rate equal to LIBOR, plus, in each case, an applicable margin based on the credit ratings of Alcoa’s outstanding senior unsecured long-term debt. The applicable margin on base rate loans and LIBOR loans will be 0.50% and 1.50% per annum, respectively, based on Alcoa’s long-term debt ratings as of December 31, 2015. Loans may be prepaid without premium or penalty, subject to customary breakage costs.

The Credit Agreement replaces Alcoa’s Five-Year Revolving Credit Agreement, dated as of July 25, 2011 (the “Former Credit Agreement”), which was scheduled to mature on July 25, 2017. The Former Credit Agreement, which had a total capacity of $3,750 and was undrawn, was terminated effective July 25, 2014.

The Credit Agreement includes covenants substantially similar to those in the Former Credit Agreement, including, among others, (a) a leverage ratio, (b) limitations on Alcoa’s ability to incur liens securing indebtedness for borrowed money, (c) limitations on Alcoa’s ability to consummate a merger, consolidation or sale of all or substantially all of its assets, and (d) limitations on Alcoa’s ability to change the nature of its business. As of December 31, 2015, Alcoa was in compliance with all such covenants.

The obligation of Alcoa to pay amounts outstanding under the Credit Facility may be accelerated upon the occurrence of an “Event of Default” as defined in the Credit Agreement. Such Events of Default include, among others, (a) Alcoa’s failure to pay the principal of, or interest on, borrowings under the Credit Facility, (b) any representation or warranty of Alcoa in the Credit Agreement proving to be materially false or misleading, (c) Alcoa’s breach of any of its covenants contained in the Credit Agreement, and (d) the bankruptcy or insolvency of Alcoa.

There were no amounts outstanding at December 31, 2015 and no amounts were borrowed during 2015 and 2014 under the Credit Facility. Also, there were no amounts borrowed during 2014 related to the Former Credit Agreement.

In addition to the Credit Agreement above, Alcoa has a number of other credit agreements that provide a combined borrowing capacity of $990, as of December 31, 2015, of which $890 is due to expire in 2016 and $100 is due to expire in 2017. The purpose of any borrowings under these credit arrangements is to provide for working capital requirements and for other general corporate purposes. The covenants contained in all these arrangements are the same as the Credit Agreement (see above).

In 2015, 2014, and 2013, Alcoa borrowed and repaid $1,890, $1,640, and $1,850, respectively, under the respective credit arrangements. The weighted-average interest rate and weighted-average days outstanding of the respective borrowings during 2015, 2014, and 2013 were 1.61%, 1.54%, and 1.57%, respectively, and 69 days, 67 days, and 213 days, respectively.

In February 2014, Alcoa's automatic shelf registration statement filed with the Securities and Exchange Commission expired. On July 11, 2014, Alcoa filed a new shelf registration statement, which was amended on July 25, 2014 and became effective on July 30, 2014, for up to $5,000 of securities on an unallocated basis for future issuance. As of December 31, 2015, $2,500 in securities were issued under the new shelf registration statement.

In September 2014, Alcoa completed two public securities offerings under its shelf registration statement for (i) $1,250 of 25 million depositary shares, each representing a 1/10th interest in a share of Alcoa's 5.375% Class B Mandatory Convertible Preferred Stock, Series 1, par value $1 per share, liquidation preference $500 per share, and (ii) $1,250 of 5.125% Notes due 2024. The net proceeds of the offerings were used to finance the cash portion of the acquisition of Firth Rixson (see Engineered Products and Solutions in Segment Information above).

Alcoa's cost of borrowing and ability to access the capital markets are affected not only by market conditions but also by the short- and long-term debt ratings assigned to Alcoa's debt by the major credit rating agencies.

On March 9, 2015, Standard and Poor's Ratings Services (S&P) affirmed the following ratings for Alcoa: long-term debt at BBB- and short-term debt at A-3. Additionally, S&P changed the current outlook from negative to stable. On September 28, 2015 S&P issued a statement that these ratings and outlook for Alcoa were not affected by Alcoa's plan to separate into two publicly-traded companies.

On April 16, 2015 Fitch affirmed the following ratings for Alcoa: long-term debt at BB+ and short-term debt at B. Additionally, Fitch changed the current outlook from stable to positive. On September 30, 2015, Fitch placed these ratings on "ratings watch positive" based on Alcoa's plan to separate into two publicly-traded companies.

On April 30, 2015, Moody's Investor Service (Moody's) affirmed the following ratings for Alcoa; long-term debt at Ba1 and short-term debt at Speculative Grade Liquidity Rating-1. Additionally, Moody's changed the current outlook from stable to positive. On September 28, 2015, Moody's affirmed these ratings and changed the current outlook from positive to developing based on Alcoa's plan to separate into two publicly-traded companies. On January 21, 2016, Moody's placed Alcoa's long-term debt rating under review and changed the current outlook from developing to rating under review, while leaving Alcoa's short-term debt rating unchanged.

Investing Activities

Cash used for investing activities was $1,060 in 2015 compared with $3,460 in 2014 and $1,290 in 2013.

The use of cash in 2015 was mainly due to $1,180 in capital expenditures (includes costs related to environmental control in new and expanded facilities of $141), 38% of which related to growth projects, including the aerospace expansion at the La Porte, IN plant, the automotive expansion at the Alcoa, TN plant, the aerospace expansion (thick plate stretcher) at the Davenport, IA plant, the aerospace expansion (isothermal press) at the Savannah, GA plant (Firth Rixson), and the specialty foil expansion at the Itapissuma plant in Brazil; $205 (net of cash acquired) for the acquisition of TITAL (see Engineered Products and Solutions in Segment Information above); and $134 in additions to investments, including the purchase of $70 in equities and fixed income securities held by Alcoa's captive insurance company and equity contributions of $29 related to the aluminum complex joint venture in Saudi Arabia. These items were somewhat offset by $302 in cash acquired with RTI International Metals (see Engineered Products and Solutions in Segment Information above); $112 in proceeds from the sale of assets and businesses, composed of three land sales in Australia and the United States combined and post-closing adjustments related to an ownership stake in a smelter, four rolling mills, and an ownership stake in a bauxite mine/alumina refinery divested from December 2014 through March 2015; and $40 in sales of investments, related to the sale of $21 in equities and fixed income securities held by Alcoa's captive insurance company and $19 in proceeds from the sale of the remaining portion of an equity investment in a China rolling mill.

The use of cash in 2014 was principally due to $2,385 (net of cash acquired) for the acquisition of Firth Rixson (see Engineered Products and Solutions in Segment Information above); $1,219 in capital expenditures (includes costs related to environmental control in new and expanded facilities of $129), 40% of which related to growth projects, including the automotive expansions at the Alcoa, TN and Davenport, IA fabrication plants, the aerospace expansion at the La Porte, IN plant, the aluminum-lithium capacity expansion at the Lafayette, IN plant, and the specialty foil expansion at the Itapissuma plant in Brazil; and $195 in additions to investments, including equity contributions of $120 related to the aluminum complex joint venture in Saudi Arabia and the purchase of $49 in equities and fixed income securities held by Alcoa's captive insurance company. These items were slightly offset by $253 in proceeds from the sale of assets and businesses, largely attributable to the sale of an ownership stake in a bauxite mine and refinery in Jamaica (see Alumina in Segment Information above), an ownership stake in a smelter in the United States (see Primary Metals in Segment Information above), three rolling mills in Spain and France combined (see Global Rolled Products in Segment Information above), and a rod plant in Canada (see Primary Metals in Segment Information above); and $57 in sales of investments, mostly related to $42 in combined proceeds from the sale of a mining interest in Suriname and a portion of an equity investment in a China rolling mill.

The use of cash in 2013 was primarily due to $1,193 in capital expenditures (includes costs related to environmental control in new and expanded facilities of $143), 34% of which related to growth projects, including the automotive expansion at the Davenport, IA fabrication plant, the aluminum-lithium capacity expansion at the Lafayette, IN plant, and the automotive sheet expansion at the Alcoa, TN plant; and $293 in additions to investments, including equity contributions of $171 related to the aluminum complex joint venture in Saudi Arabia and the purchase of $54 in equities and fixed income securities held by Alcoa's captive insurance company. These items were slightly offset by a net change in restricted cash of $170, mostly related to the release of funds to be used for capital expenditures of the automotive expansion at the Davenport, IA fabrication plant (see Noncash Financing and Investing Activities below).

Noncash Financing and Investing Activities

In July 2015, Alcoa purchased all outstanding shares of RTI common stock in a stock-for-stock transaction valued at $870. As a result, Alcoa issued 87 million shares of its common stock to consummate this transaction, which was not reflected in Alcoa's Statement of Consolidated Cash Flows as it represents a noncash financing activity.

In early 2014, holders of $575 principal amount of Alcoa's 5.25% Convertible Notes due March 15, 2014 (the "2014 Notes") exercised their option to convert the 2014 Notes into 89 million shares of Alcoa common stock. The conversion rate for the 2014 Notes was 155.4908 shares of Alcoa's common stock per $1,000 (in full dollars) principal amount of notes, equivalent to a conversion price of $6.43 per share. The difference between the $575 principal amount of the 2014 Notes and the $89 par value of the issued shares increased Additional capital on Alcoa's Consolidated Balance Sheet. This transaction was not reflected in Alcoa's Statement of Consolidated Cash Flows as it represents a noncash financing activity.

In late 2014, Alcoa paid $2,995 (net of cash acquired) to acquire Firth Rixson (see Engineered Products and Solutions in Segment Information above). A portion of this consideration was paid through the issuance of 37 million shares in Alcoa common stock valued at $610. The issuance of common stock was not reflected in Alcoa's Statement of Consolidated Cash Flows as it represents a noncash investing activity.

In August 2012, Alcoa received a loan of $250 for the purpose of financing all or part of the cost of acquiring, constructing, reconstructing, and renovating certain facilities at Alcoa's rolling mill plant in Davenport, IA. Because this loan can only be used for this purpose, the net proceeds of $248 were classified as restricted cash. Since restricted cash is not part of cash and cash equivalents, this transaction was not reflected in Alcoa's Statement of Consolidated Cash Flows as it represents a noncash activity. As funds were expended for the project, the release of the cash was reflected as both an inflow on the Net change in restricted cash line and an outflow on the Capital expenditures line in the Investing Activities section of the Statement of Consolidated Cash Flows. At December 31, 2013 and 2012, Alcoa had $13 and $171, respectively, of restricted cash remaining related to this transaction. In 2014, the remaining funds were expended on the project.

Contractual Obligations and Off-Balance Sheet Arrangements

Contractual Obligations. Alcoa is required to make future payments under various contracts, including long-term purchase obligations, financing arrangements, and lease agreements. Alcoa also has commitments to fund its pension plans, provide payments for other postretirement benefit plans, and fund capital projects. As of December 31, 2015, a summary of Alcoa's outstanding contractual obligations is as follows (these contractual obligations are grouped in the same manner as they are classified in the Statement of Consolidated Cash Flows in order to provide a better understanding of the nature of the obligations and to provide a basis for comparison to historical information):

	Total	2016	2017-2018	2019-2020	Thereafter
Operating activities:					
Energy-related purchase obligations	$16,555	$1,311	$ 2,128	$ 2,009	$ 11,107
Raw material purchase obligations	6,970	1,612	1,183	815	3,360
Other purchase obligations	1,317	166	328	328	495
Operating leases	853	243	298	174	138
Interest related to total debt	3,817	500	933	723	1,661
Estimated minimum required pension funding	2,150	300	850	1,000	-
Other postretirement benefit payments	2,095	230	450	440	975
Layoff and other restructuring payments	250	235	15	-	-
Deferred revenue arrangements	147	20	41	34	52
Uncertain tax positions	52	-	-	-	52
Financing activities:					
Total debt	9,102	59	1,810	2,158	5,075
Dividends to shareholders	-	-	-	-	-
Investing activities:					
Capital projects	861	586	223	52	-
Equity contributions	10	10	-	-	-
Payments related to acquisitions	150	-	-	150	-
Totals	$44,329	$5,272	$ 8,259	$ 7,883	$ 22,915

Obligations for Operating Activities

Energy-related purchase obligations consist primarily of electricity and natural gas contracts with expiration dates ranging from 1 year to 32 years. Raw material obligations consist mostly of bauxite (relates to Alcoa's bauxite mine interests in Guinea and Brazil), caustic soda, alumina, aluminum fluoride, calcined petroleum coke, cathode blocks, and various metals with expiration dates ranging from less than 1 year to 18 years. Other purchase obligations consist principally of freight for bauxite and alumina with expiration dates ranging from 1 to 16 years. Many of these purchase obligations contain variable pricing components, and, as a result, actual cash payments may differ from the estimates provided in the preceding table. Operating leases represent multi-year obligations for certain land and buildings, alumina refinery process control technology, plant equipment, vehicles, and computer equipment.

Interest related to total debt is based on interest rates in effect as of December 31, 2015 and is calculated on debt with maturities that extend to 2042. The effect of outstanding interest rate swaps, which are accounted for as fair value hedges, was included in interest related to total debt. As of December 31, 2015, these hedges effectively convert the interest rate from fixed to floating on $200 of debt through 2018. As the contractual interest rates for certain debt and interest rate swaps are variable, actual cash payments may differ from the estimates provided in the preceding table.

Estimated minimum required pension funding and postretirement benefit payments are based on actuarial estimates using current assumptions for discount rates, long-term rate of return on plan assets, rate of compensation increases, and health care cost trend rates, among others. The minimum required contributions for pension funding are estimated to be $300 for 2016, $375 for 2017, $475 for 2018, $425 for 2019, and $575 for 2020. These expected pension contributions reflect the impacts of the Pension Protection Act of 2006; the Worker, Retiree, and Employer Recovery Act of 2008; the Moving Ahead for Progress in the 21st Century Act of 2012; the Highway and Transportation Funding

Act of 2014; and the Bipartisan Budget Act of 2015. Other postretirement benefit payments are expected to approximate $220 to $230 annually for years 2016 through 2020 and $195 annually for years 2021 through 2025. Such payments will be slightly offset by subsidy receipts related to Medicare Part D, which are estimated to be approximately $15 to $20 annually for years 2016 through 2025. Alcoa has determined that it is not practicable to present pension funding and other postretirement benefit payments beyond 2020 and 2025, respectively.

Layoff and other restructuring payments expected to be paid within one year primarily relate to severance costs. Amounts scheduled to be paid beyond one year are related to ongoing site remediation work and special layoff benefit payments.

Deferred revenue arrangements require Alcoa to deliver alumina and sheet and plate to certain customers over the specified contract period (through 2027 for an alumina contract and through 2020 for a sheet and plate contract). While these obligations are not expected to result in cash payments, they represent contractual obligations for which the Company would be obligated if the specified product deliveries could not be made.

Uncertain tax positions taken or expected to be taken on an income tax return may result in additional payments to tax authorities. The amount in the preceding table includes interest and penalties accrued related to such positions as of December 31, 2015. The total amount of uncertain tax positions is included in the "Thereafter" column as the Company is not able to reasonably estimate the timing of potential future payments. If a tax authority agrees with the tax position taken or expected to be taken or the applicable statute of limitations expires, then additional payments will not be necessary.

Obligations for Financing Activities

Total debt amounts in the preceding table represent the principal amounts of all outstanding debt, including short-term borrowings and long-term debt. Maturities for long-term debt extend to 2042.

Alcoa has historically paid quarterly dividends on its preferred and common stock. Including dividends on preferred stock, Alcoa paid $223 in dividends to shareholders during 2015. This amount includes dividends related to a new class of preferred stock issued in September 2014 (see Financing Activities in Liquidity and Capital Resources above). Because all dividends are subject to approval by Alcoa's Board of Directors, amounts are not included in the preceding table unless such authorization has occurred. There were $17 of preferred stock dividends approved to be paid on January 1, 2016; however, Alcoa paid the dividends on December 31, 2015. As of December 31, 2015, there were 1,310,610,141 shares of outstanding common stock and 546,024 and 2,500,000 shares of outstanding Class A and Class B preferred stock, respectively. The annual Class A and Class B preferred stock dividends are at the rate of $3.75 and $26.8750 per share, respectively, and the annual common stock dividend is $0.12 per share.

Obligations for Investing Activities

Capital projects in the preceding table only include amounts approved by management as of December 31, 2015. Funding levels may vary in future years based on anticipated construction schedules of the projects. It is expected that significant expansion projects will be funded through various sources, including cash provided from operations. Total capital expenditures are anticipated to be approximately $1,400 in 2016.

Equity contributions represent Alcoa's committed investment related to a joint venture in Saudi Arabia. Alcoa is a participant in a joint venture to develop a new aluminum complex in Saudi Arabia, comprised of a bauxite mine, alumina refinery, aluminum smelter, and rolling mill, which requires the Company to contribute approximately $1,100. As of December 31, 2015, Alcoa has made equity contributions of $981. Based on changes to both the project's capital investment and equity and debt structure from the initial plans, the estimated $1,100 equity contribution may be reduced. The timing of the amounts included in the preceding table may vary based on changes in anticipated construction schedules of the project.

Payments related to acquisitions are based on provisions in certain acquisition agreements that state additional funds are due to the seller from Alcoa if the businesses acquired achieve stated financial and operational thresholds. Amounts

are only presented in the preceding table if it is has been determined that payment is more likely than not to occur. In connection with the acquisition of Firth Rixson (see Engineered Products and Solutions in Segment Information above), Alcoa entered into an earn-out agreement, which states that Alcoa will make earn-out payments up to an aggregate maximum amount of $150 through 2020. The amounts in the preceding table represent Alcoa's best estimate of when the payments may be made.

Off-Balance Sheet Arrangements. At December 31, 2015, Alcoa has maximum potential future payments for guarantees issued on behalf of a third party of $478. These guarantees expire at various times between 2017 and 2024 and relate to project financing for the aluminum complex in Saudi Arabia. Alcoa also has outstanding bank guarantees related to tax matters, outstanding debt, workers compensation, environmental obligations, energy contracts, and customs duties, among others. The total amount committed under these guarantees, which expire at various dates between 2016 and 2023 was $320 at December 31, 2015.

Alcoa has outstanding letters of credit primarily related to workers' compensation, energy contracts (including $200 related to an expected April 2016 prepayment under a gas supply contract), and leasing obligations. The total amount committed under these letters of credit, which automatically renew or expire at various dates, mostly in 2016, was $510 at December 31, 2015. Alcoa also has outstanding surety bonds primarily related to tax matters, contract performance, workers compensation, environmental-related matters, and customs duties. The total amount committed under these bonds, which automatically renew or expire at various dates, mostly in 2016, was $159 at December 31, 2015.

Critical Accounting Policies and Estimates

The preparation of the Consolidated Financial Statements in accordance with accounting principles generally accepted in the United States of America requires management to make certain judgments, estimates, and assumptions regarding uncertainties that affect the amounts reported in the Consolidated Financial Statements and disclosed in the accompanying Notes. Areas that require significant judgments, estimates, and assumptions include accounting for derivatives and hedging activities; environmental and litigation matters; asset retirement obligations; the testing of goodwill, equity investments, and properties, plants, and equipment for impairment; estimating fair value of businesses to be divested; pension plans and other postretirement benefits obligations; stock-based compensation; and income taxes.

Management uses historical experience and all available information to make these judgments, estimates, and assumptions, and actual results may differ from those used to prepare the Company's Consolidated Financial Statements at any given time. Despite these inherent limitations, management believes that Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and accompanying Notes provide a meaningful and fair perspective of the Company.

A summary of the Company's significant accounting policies is included in Note A to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K. Management believes that the application of these policies on a consistent basis enables the Company to provide the users of the Consolidated Financial Statements with useful and reliable information about the Company's operating results and financial condition.

Derivatives and Hedging. Derivatives are held for purposes other than trading and are part of a formally documented risk management program. For derivatives designated as fair value hedges, Alcoa measures hedge effectiveness by formally assessing, at least quarterly, the historical high correlation of changes in the fair value of the hedged item and the derivative hedging instrument. For derivatives designated as cash flow hedges, Alcoa measures hedge effectiveness by formally assessing, at least quarterly, the probable high correlation of the expected future cash flows of the hedged item and the derivative hedging instrument. The ineffective portions of both types of hedges are recorded in sales or other income or expense in the current period. If the hedging relationship ceases to be highly effective or it becomes probable that an expected transaction will no longer occur, future gains or losses on the derivative instrument are recorded in other income or expense.

Alcoa accounts for interest rate swaps related to its existing long-term debt and hedges of firm customer commitments for aluminum as fair value hedges. As a result, the fair values of the derivatives and changes in the fair values of the

underlying hedged items are reported in other current and noncurrent assets and liabilities in the Consolidated Balance Sheet. Changes in the fair values of these derivatives and underlying hedged items generally offset and are recorded each period in sales or interest expense, consistent with the underlying hedged item.

Alcoa accounts for hedges of foreign currency exposures and certain forecasted transactions as cash flow hedges. The fair values of the derivatives are recorded in other current and noncurrent assets and liabilities in the Consolidated Balance Sheet. The effective portions of the changes in the fair values of these derivatives are recorded in other comprehensive income and are reclassified to sales, cost of goods sold, or other income or expense in the period in which earnings are impacted by the hedged items or in the period that the transaction no longer qualifies as a cash flow hedge. These contracts cover the same periods as known or expected exposures, generally not exceeding five years.

If no hedging relationship is designated, the derivative is marked to market through earnings.

Cash flows from derivatives are recognized in the Statement of Consolidated Cash Flows in a manner consistent with the underlying transactions.

Environmental Matters. Expenditures for current operations are expensed or capitalized, as appropriate. Expenditures relating to existing conditions caused by past operations, which will not contribute to future revenues, are expensed. Liabilities are recorded when remediation costs are probable and can be reasonably estimated. The liability may include costs such as site investigations, consultant fees, feasibility studies, outside contractors, and monitoring expenses. Estimates are generally not discounted or reduced by potential claims for recovery. Claims for recovery are recognized as agreements are reached with third parties. The estimates also include costs related to other potentially responsible parties to the extent that Alcoa has reason to believe such parties will not fully pay their proportionate share. The liability is continuously reviewed and adjusted to reflect current remediation progress, prospective estimates of required activity, and other factors that may be relevant, including changes in technology or regulations.

Litigation Matters. For asserted claims and assessments, liabilities are recorded when an unfavorable outcome of a matter is deemed to be probable and the loss is reasonably estimable. Management determines the likelihood of an unfavorable outcome based on many factors such as the nature of the matter, available defenses and case strategy, progress of the matter, views and opinions of legal counsel and other advisors, applicability and success of appeals processes, and the outcome of similar historical matters, among others. Once an unfavorable outcome is deemed probable, management weighs the probability of estimated losses, and the most reasonable loss estimate is recorded. If an unfavorable outcome of a matter is deemed to be reasonably possible, then the matter is disclosed and no liability is recorded. With respect to unasserted claims or assessments, management must first determine that the probability that an assertion will be made is likely, then, a determination as to the likelihood of an unfavorable outcome and the ability to reasonably estimate the potential loss is made. Legal matters are reviewed on a continuous basis to determine if there has been a change in management's judgment regarding the likelihood of an unfavorable outcome or the estimate of a potential loss.

Asset Retirement Obligations. Alcoa recognizes asset retirement obligations (AROs) related to legal obligations associated with the normal operation of Alcoa's bauxite mining, alumina refining, and aluminum smelting facilities. These AROs consist primarily of costs associated with spent pot lining disposal, closure of bauxite residue areas, mine reclamation, and landfill closure. Alcoa also recognizes AROs for any significant lease restoration obligation, if required by a lease agreement, and for the disposal of regulated waste materials related to the demolition of certain power facilities. The fair values of these AROs are recorded on a discounted basis, at the time the obligation is incurred, and accreted over time for the change in present value. Additionally, Alcoa capitalizes asset retirement costs by increasing the carrying amount of the related long-lived assets and depreciating these assets over their remaining useful life.

Certain conditional asset retirement obligations (CAROs) related to alumina refineries, aluminum smelters, and fabrication facilities have not been recorded in the Consolidated Financial Statements due to uncertainties surrounding the ultimate settlement date. A CARO is a legal obligation to perform an asset retirement activity in which the timing and/or method of settlement are conditional on a future event that may or may not be within Alcoa's control. Such

uncertainties exist as a result of the perpetual nature of the structures, maintenance and upgrade programs, and other factors. At the date a reasonable estimate of the ultimate settlement date can be made, Alcoa would record an ARO for the removal, treatment, transportation, storage and/or disposal of various regulated assets and hazardous materials such as asbestos, underground and aboveground storage tanks, polychlorinated biphenyls, various process residuals, solid wastes, electronic equipment waste, and various other materials. Such amounts may be material to the Consolidated Financial Statements in the period in which they are recorded. If Alcoa was required to demolish all such structures immediately, the estimated CARO as of December 31, 2015 ranges from less than $1 to $46 per structure (156 structures) in today's dollars.

Goodwill. Goodwill is not amortized; instead, it is reviewed for impairment annually (in the fourth quarter) or more frequently if indicators of impairment exist or if a decision is made to sell or exit a business. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include deterioration in general economic conditions, negative developments in equity and credit markets, adverse changes in the markets in which an entity operates, increases in input costs that have a negative effect on earnings and cash flows, or a trend of negative or declining cash flows over multiple periods, among others. The fair value that could be realized in an actual transaction may differ from that used to evaluate the impairment of goodwill.

Goodwill is allocated among and evaluated for impairment at the reporting unit level, which is defined as an operating segment or one level below an operating segment. Alcoa has ten reporting units, of which four are included in the Engineered Products and Solutions segment and three are included in the Transportation and Construction Solutions segment. The remaining three reporting units are the Alumina segment, the Primary Metals segment (all goodwill was impaired in 2013—see below), and the Global Rolled Products segment. More than 70% of Alcoa's total goodwill is allocated to two reporting units as follows: Alcoa Fastening Systems and Rings (AFSR) ($2,232) and Alcoa Power and Propulsion (APP) ($1,695) businesses, both of which are included in the Engineered Products and Solutions segment. These amounts include an allocation of Corporate's goodwill.

In November 2014, Alcoa acquired Firth Rixson (see Engineered Products and Solutions in Segment Information under Results of Operations above), and, as a result recognized $1,801 in goodwill. This amount was allocated between the AFSR and Alcoa Forgings and Extrusion reporting units, which is part of the Engineered Products and Solutions segment. In March and July 2015, Alcoa acquired TITAL and RTI, respectively, (see Engineered Products and Solutions in Segment Information under Results of Operations above) and recognized $118 and $240, respectively, in goodwill. The goodwill amount related to TITAL was allocated to the APP reporting unit and the amount related to RTI was allocated to Alcoa Titanium and Engineered Products, a new Alcoa reporting unit that consists solely of the acquired RTI business and is part of the Engineered Products and Solutions segment.

In reviewing goodwill for impairment, an entity has the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not (greater than 50%) that the estimated fair value of a reporting unit is less than its carrying amount. If an entity elects to perform a qualitative assessment and determines that an impairment is more likely than not, the entity is then required to perform the existing two-step quantitative impairment test (described below), otherwise no further analysis is required. An entity also may elect not to perform the qualitative assessment and, instead, proceed directly to the two-step quantitative impairment test. The ultimate outcome of the goodwill impairment review for a reporting unit should be the same whether an entity chooses to perform the qualitative assessment or proceeds directly to the two-step quantitative impairment test.

Alcoa's policy for its annual review of goodwill is to perform the qualitative assessment for all reporting units not subjected directly to the two-step quantitative impairment test. Generally, management will proceed directly to the two-step quantitative impairment test for two to three reporting units (based on facts and circumstances) during each annual review of goodwill. This policy will result in each of the nine reporting units with goodwill being subjected to the two-step quantitative impairment test at least once during every three-year period.

Under the qualitative assessment, various events and circumstances (or factors) that would affect the estimated fair value of a reporting unit are identified (similar to impairment indicators above). These factors are then classified by the

type of impact they would have on the estimated fair value using positive, neutral, and adverse categories based on current business conditions. Additionally, an assessment of the level of impact that a particular factor would have on the estimated fair value is determined using high, medium, and low weighting. Furthermore, management considers the results of the most recent two-step quantitative impairment test completed for a reporting unit and compares the weighted average cost of capital (WACC) between the current and prior years for each reporting unit.

During the 2015 annual review of goodwill, management performed the qualitative assessment for seven reporting units, the Alumina segment, the four reporting units in the Engineered Products and Solutions segment, including AFSR and APP, and two reporting units in the Transportation and Construction Solutions segment. Management concluded that it was not more likely than not that the estimated fair values of the seven reporting units were less than their carrying values. As such, no further analysis was required.

Under the two-step quantitative impairment test, the evaluation of impairment involves comparing the current fair value of each reporting unit to its carrying value, including goodwill. Alcoa uses a discounted cash flow (DCF) model to estimate the current fair value of its reporting units when testing for impairment, as management believes forecasted cash flows are the best indicator of such fair value. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including markets and market share, sales volumes and prices, production costs, tax rates, capital spending, discount rate, and working capital changes. Most of these assumptions vary significantly among the reporting units. Cash flow forecasts are generally based on approved business unit operating plans for the early years and historical relationships in later years. The betas used in calculating the individual reporting units' WACC rate are estimated for each business with the assistance of valuation experts.

In the event the estimated fair value of a reporting unit per the DCF model is less than the carrying value, additional analysis would be required. The additional analysis would compare the carrying amount of the reporting unit's goodwill with the implied fair value of that goodwill, which may involve the use of valuation experts. The implied fair value of goodwill is the excess of the fair value of the reporting unit over the fair value amounts assigned to all of the assets and liabilities of that unit as if the reporting unit was acquired in a business combination and the fair value of the reporting unit represented the purchase price. If the carrying value of goodwill exceeds its implied fair value, an impairment loss equal to such excess would be recognized, which could significantly and adversely impact reported results of operations and shareholders' equity.

During the 2015 annual review of goodwill, management proceeded directly to the two-step quantitative impairment test for two reporting units as follows: Global Rolled Products segment and the soft alloys extrusion business in Brazil (hereafter "SAE"), which is included in the Transportation and Construction Solutions segment. The estimated fair value of the Global Rolled Products segment was substantially in excess of its respective carrying value, resulting in no impairment. For SAE, the estimated fair value as determined by the DCF model was lower than the associated carrying value. As a result, management performed the second step of the impairment analysis in order to determine the implied fair value of the SAE reporting unit's goodwill. The results of the second-step analysis showed that the implied fair value of the goodwill was zero. Therefore, in the fourth quarter of 2015, Alcoa recorded a goodwill impairment of $25. The impairment of the SAE goodwill resulted from headwinds from the recent downturn in the Brazilian economy and the continued erosion of gross margin despite the execution of cost reduction strategies. As a result of the goodwill impairment, there is no goodwill remaining for the SAE reporting unit.

Goodwill impairment tests in prior years indicated that goodwill was not impaired for any of the Company's reporting units, except for the Primary Metals segment in 2013 (see below), and there were no triggering events since that time that necessitated an impairment test.

In 2013, for Primary Metals, the estimated fair value as determined by the DCF model was lower than the associated carrying value. As a result, management performed the second step of the impairment analysis in order to determine the implied fair value of Primary Metals' goodwill. The results of the second-step analysis showed that the implied fair value of goodwill was zero. Therefore, in the fourth quarter of 2013, Alcoa recorded a goodwill impairment of $1,731 ($1,719 after noncontrolling interest). As a result of the goodwill impairment, there is no goodwill remaining for the Primary Metals reporting unit.

The impairment of Primary Metals' goodwill resulted from several causes: the prolonged economic downturn; a disconnect between industry fundamentals and pricing that has resulted in lower metal prices; and the increased cost of alumina, a key raw material, resulting from expansion of the Alumina Price Index throughout the industry. All of these factors, exacerbated by increases in discount rates, continue to place significant downward pressure on metal prices and operating margins, and the resulting estimated fair value, of the Primary Metals business. As a result, management decreased the near-term and long-term estimates of the operating results and cash flows utilized in assessing Primary Metals' goodwill for impairment. The valuation of goodwill for the second step of the goodwill impairment analysis is considered a level 3 fair value measurement, which means that the valuation of the assets and liabilities reflect management's own judgments regarding the assumptions market participants would use in determining the fair value of the assets and liabilities.

Equity Investments. Alcoa invests in a number of privately-held companies, primarily through joint ventures and consortia, which are accounted for on the equity method. The equity method is applied in situations where Alcoa has the ability to exercise significant influence, but not control, over the investee. Management reviews equity investments for impairment whenever certain indicators are present suggesting that the carrying value of an investment is not recoverable. This analysis requires a significant amount of judgment from management to identify events or circumstances indicating that an equity investment is impaired. The following items are examples of impairment indicators: significant, sustained declines in an investee's revenue, earnings, and cash flow trends; adverse market conditions of the investee's industry or geographic area; the investee's ability to continue operations measured by several items, including liquidity; and other factors. Once an impairment indicator is identified, management uses considerable judgment to determine if the impairment is other than temporary, in which case the equity investment is written down to its estimated fair value. An impairment that is other than temporary could significantly and adversely impact reported results of operations.

Properties, Plants, and Equipment. Properties, plants, and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets (asset group) may not be recoverable. Recoverability of assets is determined by comparing the estimated undiscounted net cash flows of the operations related to the assets (asset group) to their carrying amount. An impairment loss would be recognized when the carrying amount of the assets (asset group) exceeds the estimated undiscounted net cash flows. The amount of the impairment loss to be recorded is calculated as the excess of the carrying value of the assets (asset group) over their fair value, with fair value determined using the best information available, which generally is a DCF model. The determination of what constitutes an asset group, the associated estimated undiscounted net cash flows, and the estimated useful lives of assets also require significant judgments.

Discontinued Operations and Assets Held For Sale. The fair values of all businesses to be divested are estimated using accepted valuation techniques such as a DCF model, valuations performed by third parties, earnings multiples, or indicative bids, when available. A number of significant estimates and assumptions are involved in the application of these techniques, including the forecasting of markets and market share, sales volumes and prices, costs and expenses, and multiple other factors. Management considers historical experience and all available information at the time the estimates are made; however, the fair value that is ultimately realized upon the divestiture of a business may differ from the estimated fair value reflected in the Consolidated Financial Statements.

Pension and Other Postretirement Benefits. Liabilities and expenses for pension and other postretirement benefits are determined using actuarial methodologies and incorporate significant assumptions, including the interest rate used to discount the future estimated liability, the expected long-term rate of return on plan assets, and several assumptions relating to the employee workforce (salary increases, health care cost trend rates, retirement age, and mortality).

The interest rate used to discount future estimated liabilities is determined using a Company-specific yield curve model (above-median) developed with the assistance of an external actuary. The cash flows of the plans' projected benefit obligations are discounted using a single equivalent rate derived from yields on high quality corporate bonds, which represent a broad diversification of issuers in various sectors, including finance and banking, consumer products, transportation, insurance, and pharmaceutical, among others. The yield curve model parallels the plans' projected cash flows, which have an average duration of 10 years, and the underlying cash flows of the bonds included in the model

exceed the cash flows needed to satisfy the Company's plans' obligations multiple times. In 2015, 2014, and 2013, the discount rate used to determine benefit obligations for U.S. pension and other postretirement benefit plans was 4.29%, 4.00%, and 4.80%, respectively. The impact on the liabilities of a change in the discount rate of 1/4 of 1% would be approximately $430 and either a charge or credit of approximately $15 to after-tax earnings in the following year.

In conjunction with the annual measurement of the funded status of Alcoa's pension and other postretirement benefit plans at December 31, 2015, management elected to change the manner in which the interest cost component of net periodic benefit cost will be determined in 2016 and beyond. Previously, the interest cost component was determined by multiplying the single equivalent rate described above and the aggregate discounted cash flows of the plans' projected benefit obligations. Under the new methodology, the interest cost component will be determined by aggregating the product of the discounted cash flows of the plans' projected benefit obligations for each year and an individual spot rate (referred to as the "spot rate" approach). This change will result in a lower interest cost component of net periodic benefit cost under the new methodology compared to the previous methodology of approximately $100 ($65 after-tax) in 2016. Management believes this new methodology, which represents a change in an accounting estimate, is a better measure of the interest cost as each year's cash flows are specifically linked to the interest rates of bond payments in the same respective year.

The expected long-term rate of return on plan assets is generally applied to a five-year market-related value of plan assets (a four-year average or the fair value at the plan measurement date is used for certain non-U.S. plans). The process used by management to develop this assumption is one that relies on a combination of historical asset return information and forward-looking returns by asset class. As it relates to historical asset return information, management focuses on the annual, 10-year moving, and 20-year moving averages when developing this assumption. Management also incorporates expected future returns on current and planned asset allocations using information from various external investment managers and consultants, as well as management's own judgment.

For 2015, 2014, and 2013, management used 7.75%, 8.00%, and 8.50% as its expected long-term rate of return, which was based on the prevailing and planned strategic asset allocations, as well as estimates of future returns by asset class. These rates fell within the respective range of the 20-year moving average of actual performance and the expected future return developed by asset class. In 2015, the decrease of 25 basis points in the expected long-term rate of return was due to a decrease in the 20-year moving average of actual performance. For 2016, management anticipates that 7.75% will be the expected long-term rate of return.

A change in the assumption for the expected long-term rate of return on plan assets of 1/4 of 1% would impact after-tax earnings by approximately $20 for 2015.

During 2014, an independent U.S. organization that publishes standard mortality rates based on statistical analysis and studies issued updated mortality tables. The rates within these standard tables are used by actuaries as one of the many assumptions when measuring a company's projected benefit obligation for pension and other postretirement benefit plans. The funded status of all of Alcoa's pension and other postretirement benefit plans are measured as of December 31 each calendar year. During the measurement process at the end of 2014, Alcoa, with the assistance of an external actuary, considered the rates in the new mortality tables, along with specific data related to Alcoa's retiree population, to develop the mortality-related assumptions used to measure the benefit obligation of various U.S. benefit plans. As a result, Alcoa recognized a charge of approximately $100 ($65 after-tax) in other comprehensive loss related to the updated mortality assumptions.

In 2015, a net charge of $10 (after-tax and noncontrolling interest) was recorded in other comprehensive loss, primarily due to the unfavorable performance of the plan assets, which was mostly offset by the amortization of actuarial losses and a 30 basis point increase in the discount rate. In 2014, a net charge of $69 (after-tax and noncontrolling interest) was recorded in other comprehensive loss, primarily due to an 80 basis point decrease in the discount rate and a change in the mortality assumption (see above), which was mostly offset by the favorable performance of the plan assets and the amortization of actuarial losses. In 2013, a net benefit of $531 (after-tax and noncontrolling interest) was recorded in other comprehensive loss, primarily due to a 65 basis point increase in the discount rate and the amortization of actuarial losses.

Stock-based Compensation. Alcoa recognizes compensation expense for employee equity grants using the non-substantive vesting period approach, in which the expense (net of estimated forfeitures) is recognized ratably over the requisite service period based on the grant date fair value. The fair value of new stock options is estimated on the date of grant using a lattice-pricing model. Determining the fair value of stock options at the grant date requires judgment, including estimates for the average risk-free interest rate, dividend yield, volatility, and exercise behavior. These assumptions may differ significantly between grant dates because of changes in the actual results of these inputs that occur over time.

As part of Alcoa's stock-based compensation plan design, individuals who are retirement-eligible have a six-month requisite service period in the year of grant. As a result, a larger portion of expense will be recognized in the first half of each year for these retirement-eligible employees. Compensation expense recorded in 2015, 2014, and 2013 was $92 ($61 after-tax), $87 ($58 after-tax), and $71 ($48 after-tax), respectively. Of these amounts, $17, $15, and $14 in 2015, 2014, and 2013, respectively, pertains to the acceleration of expense related to retirement-eligible employees.

Most plan participants can choose whether to receive their award in the form of stock options, stock awards, or a combination of both. This choice is made before the grant is issued and is irrevocable.

Income Taxes. The provision for income taxes is determined using the asset and liability approach of accounting for income taxes. Under this approach, the provision for income taxes represents income taxes paid or payable (or received or receivable) for the current year plus the change in deferred taxes during the year. Deferred taxes represent the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid, and result from differences between the financial and tax bases of Alcoa's assets and liabilities and are adjusted for changes in tax rates and tax laws when enacted.

Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not (greater than 50%) that a tax benefit will not be realized. In evaluating the need for a valuation allowance, management considers all potential sources of taxable income, including income available in carryback periods, future reversals of taxable temporary differences, projections of taxable income, and income from tax planning strategies, as well as all available positive and negative evidence. Positive evidence includes factors such as a history of profitable operations, projections of future profitability within the carryforward period, including from tax planning strategies, and Alcoa's experience with similar operations. Existing favorable contracts and the ability to sell products into established markets are additional positive evidence. Negative evidence includes items such as cumulative losses, projections of future losses, or carryforward periods that are not long enough to allow for the utilization of a deferred tax asset based on existing projections of income. Deferred tax assets for which no valuation allowance is recorded may not be realized upon changes in facts and circumstances, resulting in a future charge to establish a valuation allowance. Existing valuation allowances are re-examined under the same standards of positive and negative evidence. If it is determined that it is more likely than not that a deferred tax asset will be realized, the appropriate amount of the valuation allowance, if any, is released. Deferred tax assets and liabilities are also re-measured to reflect changes in underlying tax rates due to law changes and the granting and lapse of tax holidays.

In 2013, Alcoa recognized a $372 discrete income tax charge for valuation allowances on certain deferred tax assets in Spain and the United States. Of this amount, a $237 valuation allowance was established on the full value of the deferred tax assets related to a Spanish consolidated tax group. These deferred tax assets have an expiration period ranging from 2016 (for certain credits) to an unlimited life (for operating losses). After weighing all available positive and negative evidence, as described above, management determined that it was no longer more likely than not that Alcoa will realize the tax benefit of these deferred tax assets. This was mainly driven by a decline in the outlook of the Primary Metals business (2013 realized prices were the lowest since 2009) combined with prior year cumulative losses of the Spanish consolidated tax group. During 2014, the underlying value of the deferred tax assets decreased due to a remeasurement as a result of the enactment of new tax rates in Spain beginning in 2015 (see Income Taxes in Earnings Summary under Results of Operations above), the sale of a member of the Spanish consolidated tax group, and a change in foreign currency exchange rates. As a result, the valuation allowance decreased by the same amount. At December 31, 2015, the amount of the valuation allowance was $149. This valuation allowance was reevaluated as of December 31, 2015, and no change to the allowance was deemed necessary based on all available evidence. The need

for this valuation allowance will be assessed on a continuous basis in future periods and, as a result, a portion or all of the allowance may be reversed based on changes in facts and circumstances.

The remaining $135 recognized in 2013 relates to a valuation allowance established on a portion of available foreign tax credits in the United States. These credits can be carried forward for 10 years, and have an expiration period ranging from 2016 to 2023 as of December 31, 2013 (2016 to 2025 as of December 31, 2015). After weighing all available positive and negative evidence, as described above, management determined that it was no longer more likely than not that Alcoa will realize the full tax benefit of these foreign tax credits. This was primarily due to lower foreign sourced taxable income after consideration of tax planning strategies and after the inclusion of earnings from foreign subsidiaries projected to be distributable as taxable foreign dividends. This valuation allowance was reevaluated as of December 31, 2015, and due to reductions in foreign sourced taxable income, a $134 discrete income tax charge was recognized. Additionally, $15 of foreign tax credits expired at the end of 2015 resulting in a corresponding decrease to the valuation allowance. At December 31, 2015, the amount of the valuation allowance was $254. The need for this valuation allowance will be assessed on a continuous basis in future periods and, as a result, an increase or decrease to this allowance may result based on changes in facts and circumstances.

In 2015, Alcoa recognized an additional $141 discrete income tax charge for valuation allowances on certain deferred tax assets in Iceland and Suriname. Of this amount, an $85 valuation allowance was established on the full value of the deferred tax assets in Suriname, which were related mostly to employee benefits and tax loss carryforwards. These deferred tax assets have an expiration period ranging from 2016 to 2022. The remaining $56 charge relates to a valuation allowance established on a portion of the deferred tax assets recorded in Iceland. These deferred tax assets have an expiration period ranging from 2017 to 2023. After weighing all available positive and negative evidence, as described above, management determined that it was no longer more likely than not that Alcoa will realize the tax benefit of either of these deferred tax assets. This was mainly driven by a decline in the outlook of the Primary Metals business, combined with prior year cumulative losses and a short expiration period. The need for this valuation allowance will be assessed on a continuous basis in future periods and, as a result, a portion or all of the allowance may be reversed based on changes in facts and circumstances.

Tax benefits related to uncertain tax positions taken or expected to be taken on a tax return are recorded when such benefits meet a more likely than not threshold. Otherwise, these tax benefits are recorded when a tax position has been effectively settled, which means that the statute of limitation has expired or the appropriate taxing authority has completed their examination even though the statute of limitations remains open. Interest and penalties related to uncertain tax positions are recognized as part of the provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law until such time that the related tax benefits are recognized.

Related Party Transactions

Alcoa buys products from and sells products to various related companies, consisting of entities in which Alcoa retains a 50% or less equity interest, at negotiated prices between the two parties. These transactions were not material to the financial position or results of operations of Alcoa for all periods presented.

Recently Adopted Accounting Guidance

See the Recently Adopted Accounting Guidance section of Note A to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K.

Recently Issued Accounting Guidance

See the Recently Issued Accounting Guidance section of Note A to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

See the Derivatives section of Note X to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K.

Item 8. Financial Statements and Supplementary Data.

Management's Reports to Alcoa Shareholders

Management's Report on Financial Statements and Practices

The accompanying Consolidated Financial Statements of Alcoa Inc. and its subsidiaries (the "Company") were prepared by management, which is responsible for their integrity and objectivity. The statements were prepared in accordance with accounting principles generally accepted in the United States of America and include amounts that are based on management's best judgments and estimates. The other financial information included in the annual report is consistent with that in the financial statements.

Management also recognizes its responsibility for conducting the Company's affairs according to the highest standards of personal and corporate conduct. This responsibility is characterized and reflected in key policy statements issued from time to time regarding, among other things, conduct of its business activities within the laws of the host countries in which the Company operates and potentially conflicting outside business interests of its employees. The Company maintains a systematic program to assess compliance with these policies.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. In order to evaluate the effectiveness of internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act, management has conducted an assessment, including testing, using the criteria in *Internal Control—Integrated Framework (2013)*, issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The Company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Based on the assessment, management has concluded that the Company maintained effective internal control over financial reporting as of December 31, 2015, based on criteria in *Internal Control—Integrated Framework (2013)* issued by the COSO.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2015 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

RTI International Metals has been excluded from management's assessment of internal control over financial reporting as of December 31, 2015, as it was acquired by the Company in a purchase business combination in July 2015. RTI International Metals is a 100% owned subsidiary whose total assets (excluding goodwill and intangible assets) and total sales represent 5% and 1%, respectively, of the related consolidated financial statement amounts of the Company as of and for the year ended December 31, 2015.

/s/ Klaus Kleinfeld

Klaus Kleinfeld
Chairman and
Chief Executive Officer

/s/ William F. Oplinger

William F. Oplinger
Executive Vice President and
Chief Financial Officer

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of Alcoa Inc.

In our opinion, the accompanying consolidated balance sheet and the related statements of consolidated operations, consolidated comprehensive loss, changes in consolidated equity, and consolidated cash flows present fairly, in all material respects, the financial position of Alcoa Inc. and its subsidiaries (the "Company") at December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As disclosed in Recently Adopted Accounting Guidance in Note A to the consolidated financial statements, the Company changed the classification of current deferred income tax assets and liabilities in the consolidated balance sheet at December 31, 2015 and 2014.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As described in the accompanying Management's Report on Internal Control over Financial Reporting, management has excluded RTI International Metals from its assessment of internal control over financial reporting as of December 31, 2015 because it was acquired by the Company in a purchase business combination in July 2015. We have also excluded RTI International Metals from our audit of internal control over financial reporting. RTI International Metals is a 100% owned subsidiary whose total assets (excluding goodwill and intangible assets) and total sales represent 5% and 1%, respectively, of the related consolidated financial statement amounts of the Company as of and for the year ended December 31, 2015.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Pittsburgh, Pennsylvania
February 19, 2016

Alcoa and subsidiaries
Statement of Consolidated Operations
(in millions, except per-share amounts)

For the year ended December 31,	**2015**	**2014**	**2013**
Sales (Q)	$22,534	$23,906	$23,032
Cost of goods sold (exclusive of expenses below)	18,069	19,137	19,286
Selling, general administrative, and other expenses	979	995	1,008
Research and development expenses	238	218	192
Provision for depreciation, depletion, and amortization	1,280	1,371	1,421
Impairment of goodwill (A & E)	25	-	1,731
Restructuring and other charges (D)	1,195	1,168	782
Interest expense (V)	498	473	453
Other expenses (income), net (O)	2	47	(25)
Total costs and expenses	22,286	23,409	24,848
Income (loss) before income taxes	248	497	(1,816)
Provision for income taxes (T)	445	320	428
Net (loss) income	(197)	177	(2,244)
Less: Net income (loss) attributable to noncontrolling interests	125	(91)	41
Net (Loss) Income Attributable to Alcoa	(322)	$ 268	$ (2,285)
Amounts Attributable to Alcoa Common Shareholders (S):			
Net (loss) income	(391)	$ 247	$ (2,287)
Earnings per share:			
Basic	$ (0.31)	$ 0.21	$ (2.14)
Diluted	$ (0.31)	$ 0.21	$ (2.14)

The accompanying notes are an integral part of the consolidated financial statements.

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Alcoa and subsidiaries
Statement of Consolidated Comprehensive Loss
(in millions)

	Alcoa			Noncontrolling Interests			Total		
For the year ended December 31,	**2015**	**2014**	**2013**	**2015**	**2014**	**2013**	**2015**	**2014**	**2013**
Net (loss) income	$ (322)	$ 268	$(2,285)	$ 125	$ (91)	$ 41	$ (197)	$ 177	$(2,244)
Other comprehensive loss, net of tax (B):									
Change in unrecognized net actuarial loss and prior service cost/benefit related to pension and other postretirement benefits	(10)	(69)	531	8	(13)	26	(2)	(82)	557
Foreign currency translation adjustments	(1,566)	(1,025)	(968)	(429)	(241)	(367)	(1,995)	(1,266)	(1,335)
Net change in unrealized gains on available-for-sale securities	(5)	(2)	(1)	-	-	-	(5)	(2)	(1)
Net change in unrecognized losses on cash flow hedges	827	78	181	(1)	-	3	826	78	184
Total Other comprehensive loss, net of tax	(754)	(1,018)	(257)	(422)	(254)	(338)	(1,176)	(1,272)	(595)
Comprehensive loss	$(1,076)	$ (750)	$(2,542)	$(297)	$(345)	$(297)	$(1,373)	$(1,095)	$(2,839)

The accompanying notes are an integral part of the consolidated financial statements.

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Alcoa and subsidiaries
Consolidated Balance Sheet
(in millions)

December 31,	2015	2014
Assets		
Current assets:		
Cash and cash equivalents (X)	$ 1,919	$ 1,877
Receivables from customers, less allowances of $13 in 2015 and $14 in 2014 (U)	1,340	1,395
Other receivables (U)	522	733
Inventories (G)	3,442	3,082
Prepaid expenses and other current assets	730	761
Total current assets	7,953	7,848
Properties, plants, and equipment, net (H)	14,815	16,426
Goodwill (A & E)	5,401	5,247
Investments (I)	1,685	1,944
Deferred income taxes (T)	2,668	3,139
Other noncurrent assets (J)	4,006	2,759
Total Assets	$36,528	$37,363
Liabilities		
Current liabilities:		
Short-term borrowings (K & X)	$ 38	$ 54
Accounts payable, trade	2,889	3,152
Accrued compensation and retirement costs	850	937
Taxes, including income taxes	239	265
Other current liabilities	1,174	1,021
Long-term debt due within one year (K & X)	21	29
Total current liabilities	5,211	5,458
Long-term debt, less amount due within one year (K & X)	9,044	8,769
Accrued pension benefits (W)	3,298	3,291
Accrued other postretirement benefits (W)	2,106	2,155
Other noncurrent liabilities and deferred credits (L)	2,738	2,896
Total liabilities	22,397	22,569
Contingencies and commitments (N)		
Equity		
Alcoa shareholders’ equity:		
Preferred stock (R)	55	55
Mandatory convertible preferred stock (R)	3	3
Common stock (R)	1,391	1,304
Additional capital	10,019	9,284
Retained earnings	8,834	9,379
Treasury stock, at cost	(2,825)	(3,042)
Accumulated other comprehensive loss (B)	(5,431)	(4,677)
Total Alcoa shareholders’ equity	12,046	12,306
Noncontrolling interests (M)	2,085	2,488
Total equity	14,131	14,794
Total Liabilities and Equity	$36,528	$37,363

The accompanying notes are an integral part of the consolidated financial statements.

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Alcoa and subsidiaries
Statement of Consolidated Cash Flows
(in millions)

For the year ended December 31,	2015	2014	2013
Cash from Operations			
Net (loss) income	$ (197)	$ 177	$(2,244)
Adjustments to reconcile net (loss) income to cash from operations:			
Depreciation, depletion, and amortization	1,280	1,372	1,422
Deferred income taxes (T)	34	(35)	178
Equity income, net of dividends	158	104	77
Impairment of goodwill (A & E)	25	-	1,731
Restructuring and other charges (D)	1,195	1,168	782
Net gain from investing activities—asset sales (O)	(74)	(47)	(10)
Net periodic pension benefit cost (W)	485	423	516
Stock-based compensation (R)	92	87	71
Excess tax benefits from stock-based payment arrangements	(9)	(9)	-
Other	(32)	66	4
Changes in assets and liabilities, excluding effects of acquisitions, divestitures, and foreign currency translation adjustments:			
Decrease (increase) in receivables	212	(312)	(141)
(Increase) decrease in inventories	(64)	(355)	25
Decrease (increase) in prepaid expenses and other current assets	46	(25)	(9)
(Decrease) increase in accounts payable, trade	(90)	256	326
(Decrease) in accrued expenses	(437)	(451)	(418)
Increase (decrease) in taxes, including income taxes	25	7	(43)
Pension contributions (W)	(470)	(501)	(462)
(Increase) in noncurrent assets	(370)	(42)	(156)
(Decrease) increase in noncurrent liabilities	(227)	(209)	(71)
Cash provided from operations	1,582	1,674	1,578
Financing Activities			
Net change in short-term borrowings (original maturities of three months or less) (K)	(16)	(2)	5
Additions to debt (original maturities greater than three months) (K)	1,901	2,878	1,852
Debt issuance costs	(3)	(17)	(3)
Payments on debt (original maturities greater than three months) (K)	(2,030)	(1,723)	(2,317)
Proceeds from exercise of employee stock options (R)	25	150	13
Excess tax benefits from stock-based payment arrangements	9	9	-
Issuance of mandatory convertible preferred stock (R)	-	1,211	-
Dividends paid to shareholders	(223)	(161)	(132)
Distributions to noncontrolling interests	(106)	(120)	(109)
Contributions from noncontrolling interests (M)	2	53	12
Acquisitions of noncontrolling interests (M & P)	-	(28)	-
Cash (used for) provided from financing activities	(441)	2,250	(679)
Investing Activities			
Capital expenditures	(1,180)	(1,219)	(1,193)
Acquisitions, net of cash acquired (F & P)	97	(2,385)	-
Proceeds from the sale of assets and businesses (F)	112	253	13
Additions to investments (I & N)	(134)	(195)	(293)
Sales of investments (I)	40	57	-
Net change in restricted cash	(20)	(2)	170
Other	25	31	13
Cash used for investing activities	(1,060)	(3,460)	(1,290)
Effect of exchange rate changes on cash and cash equivalents	(39)	(24)	(33)
Net change in cash and cash equivalents	42	440	(424)
Cash and cash equivalents at beginning of year	1,877	1,437	1,861
Cash and cash equivalents at end of year	$ 1,919	$ 1,877	$ 1,437

The accompanying notes are an integral part of the consolidated financial statements.

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Alcoa and subsidiaries
Statement of Changes in Consolidated Equity
(in millions, except per-share amounts)

	Alcoa Shareholders								
	Preferred stock	Mandatory convertible preferred stock	Common stock	Additional capital	Retained earnings	Treasury stock	Accumulated other comprehensive loss	Noncontrolling interests	Total equity
Balance at December 31, 2012	55	-	1,178	7,560	11,689	(3,881)	(3,402)	3,324	16,523
Net (loss) income	-	-	-	-	(2,285)	-	-	41	(2,244)
Other comprehensive loss (B)	-	-	-	-	-	-	(257)	(338)	(595)
Cash dividends declared:									
Preferred @ $3.75 per share	-	-	-	-	(2)	-	-	-	(2)
Common @ $0.12 per share	-	-	-	-	(130)	-	-	-	(130)
Stock-based compensation (R)	-	-	-	71	-	-	-	-	71
Common stock issued: compensation plans (R)	-	-	-	(122)	-	119	-	-	(3)
Distributions	-	-	-	-	-	-	-	(109)	(109)
Contributions (M)	-	-	-	-	-	-	-	12	12
Other	-	-	-	-	-	-	-	(1)	(1)
Balance at December 31, 2013	55	-	1,178	7,509	9,272	(3,762)	(3,659)	2,929	13,522
Net (loss) income	-	-	-	-	268	-	-	(91)	177
Other comprehensive loss (B)	-	-	-	-	-	-	(1,018)	(254)	(1,272)
Cash dividends declared:									
Preferred–Class A @ $3.75 per share	-	-	-	-	(2)	-	-	-	(2)
Preferred–Class B @ $7.53993 per share	-	-	-	-	(19)	-	-	-	(19)
Common @ $0.12 per share	-	-	-	-	(140)	-	-	-	(140)
Stock-based compensation (R)	-	-	-	87	-	-	-	-	87
Common stock issued: compensation plans (R)	-	-	-	(584)	-	720	-	-	136
Issuance of mandatory convertible preferred stock (R)	-	3	-	1,210	-	-	-	-	1,213
Issuance of common stock (F, K, & R)	-	-	126	1,059	-	-	-	-	1,185
Distributions	-	-	-	-	-	-	-	(120)	(120)
Contributions (M)	-	-	-	-	-	-	-	53	53
Purchase of equity from noncontrolling interest (F)	-	-	-	3	-	-	-	(31)	(28)
Other	-	-	-	-	-	-	-	2	2
Balance at December 31, 2014	$ 55	$ 3	$ 1,304	$ 9,284	$ 9,379	$ (3,042)	$ (4,677)	$ 2,488	$14,794
Net (loss) income	-	-	-	-	(322)	-	-	125	(197)
Other comprehensive loss (B)	-	-	-	-	-	-	(754)	(422)	(1,176)
Cash dividends declared:									
Preferred–Class A @ $3.75 per share	-	-	-	-	(2)	-	-	-	(2)
Preferred–Class B @ $26.8750 per share	-	-	-	-	(67)	-	-	-	(67)
Common @ $0.12 per share	-	-	-	-	(154)	-	-	-	(154)
Equity option on convertible notes (F)	-	-	-	55	-	-	-	-	55
Stock-based compensation (R)	-	-	-	92	-	-	-	-	92
Common stock issued: compensation plans (R)	-	-	-	(195)	-	217	-	-	22
Issuance of common stock (F, K, & R)	-	-	87	783	-	-	-	-	870
Distributions	-	-	-	-	-	-	-	(106)	(106)
Contributions (M)	-	-	-	-	-	-	-	2	2
Other	-	-	-	-	-	-	-	(2)	(2)
Balance at December 31, 2015	$ 55	$ 3	$ 1,391	$ 10,019	$ 8,834	$ (2,825)	$ (5,431)	$ 2,085	$14,131

The accompanying notes are an integral part of the consolidated financial statements.

Alcoa and subsidiaries
Notes to the Consolidated Financial Statements
(dollars in millions, except per-share amounts)

A. Summary of Significant Accounting Policies

Basis of Presentation. The Consolidated Financial Statements of Alcoa Inc. and subsidiaries ("Alcoa" or the "Company") are prepared in conformity with accounting principles generally accepted in the United States of America (GAAP) and require management to make certain judgments, estimates, and assumptions. These may affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements. They also may affect the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates upon subsequent resolution of identified matters. Certain prior year amounts have been reclassified to conform to the current year presentation.

Principles of Consolidation. The Consolidated Financial Statements include the accounts of Alcoa and companies in which Alcoa has a controlling interest. Intercompany transactions have been eliminated. The equity method of accounting is used for investments in affiliates and other joint ventures over which Alcoa has significant influence but does not have effective control. Investments in affiliates in which Alcoa cannot exercise significant influence are accounted for on the cost method.

Management also evaluates whether an Alcoa entity or interest is a variable interest entity and whether Alcoa is the primary beneficiary. Consolidation is required if both of these criteria are met. Alcoa does not have any variable interest entities requiring consolidation.

Related Party Transactions. Alcoa buys products from and sells products to various related companies, consisting of entities in which Alcoa retains a 50% or less equity interest, at negotiated prices between the two parties. These transactions were not material to the financial position or results of operations of Alcoa for all periods presented.

Cash Equivalents. Cash equivalents are highly liquid investments purchased with an original maturity of three months or less.

Inventory Valuation. Inventories are carried at the lower of cost or market, with cost for approximately half of U.S. and Canadian inventories determined under the last-in, first-out (LIFO) method. The cost of other inventories is principally determined under the average-cost method.

Properties, Plants, and Equipment. Properties, plants, and equipment are recorded at cost. Depreciation is recorded principally on the straight-line method at rates based on the estimated useful lives of the assets. For greenfield assets, which refer to the construction of new assets on undeveloped land, the units of production method is used to record depreciation. These assets require a significant period (generally greater than one-year) to ramp-up to full production capacity. As a result, the units of production method is deemed a more systematic and rational method for recognizing depreciation on these assets. Depreciation is recorded on temporarily idled facilities until such time management approves a permanent shutdown. The following table details the weighted-average useful lives of structures and machinery and equipment by reporting segment (numbers in years):

Segment	Structures	Machinery and equipment
Alumina:		
Alumina refining	30	27
Bauxite mining	34	17
Primary Metals:		
Aluminum smelting	36	22
Power generation	31	22
Global Rolled Products	31	21
Engineered Products and Solutions	29	18
Transportation and Construction Solutions	28	19

Gains or losses from the sale of assets are generally recorded in other income or expenses (see policy below for assets classified as held for sale and discontinued operations). Repairs and maintenance are charged to expense as incurred. Interest related to the construction of qualifying assets is capitalized as part of the construction costs.

Properties, plants, and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets (asset group) may not be recoverable. Recoverability of assets is determined by comparing the estimated undiscounted net cash flows of the operations related to the assets (asset group) to their carrying amount. An impairment loss would be recognized when the carrying amount of the assets (asset group) exceeds the estimated undiscounted net cash flows. The amount of the impairment loss to be recorded is calculated as the excess of the carrying value of the assets (asset group) over their fair value, with fair value determined using the best information available, which generally is a discounted cash flow (DCF) model. The determination of what constitutes an asset group, the associated estimated undiscounted net cash flows, and the estimated useful lives of assets also require significant judgments.

Mineral Rights. Alcoa recognizes mineral rights upon specific acquisitions of land that include such underlying rights, primarily in Jamaica (in December 2014, Alcoa divested its ownership stake in the joint venture in Jamaica—see Note F). This land is purchased for the sole purpose of mining bauxite. The underlying bauxite reserves are known at the time of acquisition based on associated drilling and analysis and are considered to be proven reserves. The acquisition cost of the land and mineral rights are amortized as the bauxite is produced based on the level of minable tons determined at the time of purchase. Mineral rights are included in Properties, plants, and equipment on the accompanying Consolidated Balance Sheet.

Deferred Mining Costs. Alcoa recognizes deferred mining costs during the development stage of a mine life cycle. Such costs include the construction of access and haul roads, detailed drilling and geological analysis to further define the grade and quality of the known bauxite, and overburden removal costs. These costs relate to sections of the related mines where Alcoa is either currently extracting bauxite or is preparing for production in the near term. These sections are outlined and planned incrementally and generally are mined over periods ranging from one to five years, depending on mine specifics. The amount of geological drilling and testing necessary to determine the economic viability of the bauxite deposit being mined is such that the reserves are considered to be proven, and the mining costs are amortized based on this level of reserves. Deferred mining costs are included in Other noncurrent assets on the accompanying Consolidated Balance Sheet.

Goodwill and Other Intangible Assets. Goodwill is not amortized; instead, it is reviewed for impairment annually (in the fourth quarter) or more frequently if indicators of impairment exist or if a decision is made to sell or exit a business. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include deterioration in general economic conditions, negative developments in equity and credit markets, adverse changes in the markets in which an entity operates, increases in input costs that have a negative effect on earnings and cash flows, or a trend of negative or declining cash flows over multiple periods, among others. The fair value that could be realized in an actual transaction may differ from that used to evaluate the impairment of goodwill.

Goodwill is allocated among and evaluated for impairment at the reporting unit level, which is defined as an operating segment or one level below an operating segment. Alcoa has ten reporting units, of which four are included in the Engineered Products and Solutions segment and three are included in the Transportation and Construction Solutions segment. The remaining three reporting units are the Alumina segment, the Primary Metals segment (all goodwill was impaired in 2013—see below), and the Global Rolled Products segment. More than 70% of Alcoa's total goodwill is allocated to two reporting units as follows: Alcoa Fastening Systems and Rings (AFSR) ($2,232) and Alcoa Power and Propulsion (APP) ($1,695) businesses, both of which are included in the Engineered Products and Solutions segment. These amounts include an allocation of Corporate's goodwill.

In November 2014, Alcoa acquired Firth Rixson (see Note F), and, as a result recognized $1,801 in goodwill. This amount was allocated between the AFSR and Alcoa Forgings and Extrusion reporting units, which is part of the Engineered Products and Solutions segment. In March and July 2015, Alcoa acquired TITAL and RTI, respectively,

(see Note F) and recognized $118 and $240, respectively, in goodwill. The goodwill amount related to TITAL was allocated to the APP reporting unit and the amount related to RTI was allocated to Alcoa Titanium and Engineered Products, a new Alcoa reporting unit that consists solely of the acquired RTI business and is part of the Engineered Products and Solutions segment.

In reviewing goodwill for impairment, an entity has the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not (greater than 50%) that the estimated fair value of a reporting unit is less than its carrying amount. If an entity elects to perform a qualitative assessment and determines that an impairment is more likely than not, the entity is then required to perform the existing two-step quantitative impairment test (described below), otherwise no further analysis is required. An entity also may elect not to perform the qualitative assessment and, instead, proceed directly to the two-step quantitative impairment test. The ultimate outcome of the goodwill impairment review for a reporting unit should be the same whether an entity chooses to perform the qualitative assessment or proceeds directly to the two-step quantitative impairment test.

Alcoa's policy for its annual review of goodwill is to perform the qualitative assessment for all reporting units not subjected directly to the two-step quantitative impairment test. Generally, management will proceed directly to the two-step quantitative impairment test for two to three reporting units (based on facts and circumstances) during each annual review of goodwill. This policy will result in each of the nine reporting units with goodwill being subjected to the two-step quantitative impairment test at least once during every three-year period.

Under the qualitative assessment, various events and circumstances (or factors) that would affect the estimated fair value of a reporting unit are identified (similar to impairment indicators above). These factors are then classified by the type of impact they would have on the estimated fair value using positive, neutral, and adverse categories based on current business conditions. Additionally, an assessment of the level of impact that a particular factor would have on the estimated fair value is determined using high, medium, and low weighting. Furthermore, management considers the results of the most recent two-step quantitative impairment test completed for a reporting unit and compares the weighted average cost of capital (WACC) between the current and prior years for each reporting unit.

During the 2015 annual review of goodwill, management performed the qualitative assessment for seven reporting units, the Alumina segment, the four reporting units in the Engineered Products and Solutions segment, including AFSR and APP, and two reporting units in the Transportation and Construction Solutions segment. Management concluded that it was not more likely than not that the estimated fair values of the seven reporting units were less than their carrying values. As such, no further analysis was required.

Under the two-step quantitative impairment test, the evaluation of impairment involves comparing the current fair value of each reporting unit to its carrying value, including goodwill. Alcoa uses a DCF model to estimate the current fair value of its reporting units when testing for impairment, as management believes forecasted cash flows are the best indicator of such fair value. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including markets and market share, sales volumes and prices, production costs, tax rates, capital spending, discount rate, and working capital changes. Most of these assumptions vary significantly among the reporting units. Cash flow forecasts are generally based on approved business unit operating plans for the early years and historical relationships in later years. The betas used in calculating the individual reporting units' WACC rate are estimated for each business with the assistance of valuation experts.

In the event the estimated fair value of a reporting unit per the DCF model is less than the carrying value, additional analysis would be required. The additional analysis would compare the carrying amount of the reporting unit's goodwill with the implied fair value of that goodwill, which may involve the use of valuation experts. The implied fair value of goodwill is the excess of the fair value of the reporting unit over the fair value amounts assigned to all of the assets and liabilities of that unit as if the reporting unit was acquired in a business combination and the fair value of the reporting unit represented the purchase price. If the carrying value of goodwill exceeds its implied fair value, an impairment loss equal to such excess would be recognized, which could significantly and adversely impact reported results of operations and shareholders' equity.

During the 2015 annual review of goodwill, management proceeded directly to the two-step quantitative impairment test for two reporting units as follows: Global Rolled Products segment and the soft alloys extrusion business in Brazil (hereafter "SAE"), which is included in the Transportation and Construction Solutions segment. The estimated fair value of the Global Rolled Products segment was substantially in excess of its respective carrying value, resulting in no impairment. For SAE, the estimated fair value as determined by the DCF model was lower than the associated carrying value. As a result, management performed the second step of the impairment analysis in order to determine the implied fair value of the SAE reporting unit's goodwill. The results of the second-step analysis showed that the implied fair value of the goodwill was zero. Therefore, in the fourth quarter of 2015, Alcoa recorded a goodwill impairment of $25. The impairment of the SAE goodwill resulted from headwinds from the recent downturn in the Brazilian economy and the continued erosion of gross margin despite the execution of cost reduction strategies. As a result of the goodwill impairment, there is no goodwill remaining for the SAE reporting unit.

Goodwill impairment tests in prior years indicated that goodwill was not impaired for any of the Company's reporting units, except for the Primary Metals segment in 2013 (see below), and there were no triggering events since that time that necessitated an impairment test.

In 2013, for Primary Metals, the estimated fair value as determined by the DCF model was lower than the associated carrying value. As a result, management performed the second step of the impairment analysis in order to determine the implied fair value of Primary Metals' goodwill. The results of the second-step analysis showed that the implied fair value of goodwill was zero. Therefore, in the fourth quarter of 2013, Alcoa recorded a goodwill impairment of $1,731 ($1,719 after noncontrolling interest). As a result of the goodwill impairment, there is no goodwill remaining for the Primary Metals reporting unit.

The impairment of Primary Metals' goodwill resulted from several causes: the prolonged economic downturn; a disconnect between industry fundamentals and pricing that has resulted in lower metal prices; and the increased cost of alumina, a key raw material, resulting from expansion of the Alumina Price Index throughout the industry. All of these factors, exacerbated by increases in discount rates, continue to place significant downward pressure on metal prices and operating margins, and the resulting estimated fair value, of the Primary Metals business. As a result, management decreased the near-term and long-term estimates of the operating results and cash flows utilized in assessing Primary Metals' goodwill for impairment. The valuation of goodwill for the second step of the goodwill impairment analysis is considered a level 3 fair value measurement, which means that the valuation of the assets and liabilities reflect management's own judgments regarding the assumptions market participants would use in determining the fair value of the assets and liabilities.

Intangible assets with indefinite useful lives are not amortized while intangible assets with finite useful lives are amortized generally on a straight-line basis over the periods benefited. The following table details the weighted-average useful lives of software and other intangible assets by reporting segment (numbers in years):

Segment	Software	Other intangible assets
Alumina	7	15
Primary Metals	6	37
Global Rolled Products	9	14
Engineered Products and Solutions	7	32
Transportation and Construction Solutions	8	23

Equity Investments. Alcoa invests in a number of privately-held companies, primarily through joint ventures and consortia, which are accounted for using the equity method. The equity method is applied in situations where Alcoa has the ability to exercise significant influence, but not control, over the investee. Management reviews equity investments for impairment whenever certain indicators are present suggesting that the carrying value of an investment is not recoverable. This analysis requires a significant amount of judgment from management to identify events or circumstances indicating that an equity investment is impaired. The following items are examples of impairment indicators: significant, sustained declines in an investee's revenue, earnings, and cash

flow trends; adverse market conditions of the investee's industry or geographic area; the investee's ability to continue operations measured by several items, including liquidity; and other factors. Once an impairment indicator is identified, management uses considerable judgment to determine if the impairment is other than temporary, in which case the equity investment is written down to its estimated fair value. An impairment that is other than temporary could significantly and adversely impact reported results of operations.

Revenue Recognition. Alcoa recognizes revenue when title, ownership, and risk of loss pass to the customer, all of which occurs upon shipment or delivery of the product and is based on the applicable shipping terms. The shipping terms vary across all businesses and depend on the product, the country of origin, and the type of transportation (truck, train, or vessel).

Alcoa periodically enters into long-term supply contracts with alumina and aluminum customers and receives advance payments for product to be delivered in future periods. These advance payments are recorded as deferred revenue, and revenue is recognized as shipments are made and title, ownership, and risk of loss pass to the customer during the term of the contracts. Deferred revenue is included in Other current liabilities and Other noncurrent liabilities and deferred credits on the accompanying Consolidated Balance Sheet.

Environmental Matters. Expenditures for current operations are expensed or capitalized, as appropriate. Expenditures relating to existing conditions caused by past operations, which will not contribute to future revenues, are expensed. Liabilities are recorded when remediation costs are probable and can be reasonably estimated. The liability may include costs such as site investigations, consultant fees, feasibility studies, outside contractors, and monitoring expenses. Estimates are generally not discounted or reduced by potential claims for recovery. Claims for recovery are recognized as agreements are reached with third parties. The estimates also include costs related to other potentially responsible parties to the extent that Alcoa has reason to believe such parties will not fully pay their proportionate share. The liability is continuously reviewed and adjusted to reflect current remediation progress, prospective estimates of required activity, and other factors that may be relevant, including changes in technology or regulations.

Litigation Matters. For asserted claims and assessments, liabilities are recorded when an unfavorable outcome of a matter is deemed to be probable and the loss is reasonably estimable. Management determines the likelihood of an unfavorable outcome based on many factors such as the nature of the matter, available defenses and case strategy, progress of the matter, views and opinions of legal counsel and other advisors, applicability and success of appeals processes, and the outcome of similar historical matters, among others. Once an unfavorable outcome is deemed probable, management weighs the probability of estimated losses, and the most reasonable loss estimate is recorded. If an unfavorable outcome of a matter is deemed to be reasonably possible, then the matter is disclosed and no liability is recorded. With respect to unasserted claims or assessments, management must first determine that the probability that an assertion will be made is likely, then, a determination as to the likelihood of an unfavorable outcome and the ability to reasonably estimate the potential loss is made. Legal matters are reviewed on a continuous basis to determine if there has been a change in management's judgment regarding the likelihood of an unfavorable outcome or the estimate of a potential loss.

Asset Retirement Obligations. Alcoa recognizes asset retirement obligations (AROs) related to legal obligations associated with the normal operation of Alcoa's bauxite mining, alumina refining, and aluminum smelting facilities. These AROs consist primarily of costs associated with spent pot lining disposal, closure of bauxite residue areas, mine reclamation, and landfill closure. Alcoa also recognizes AROs for any significant lease restoration obligation, if required by a lease agreement, and for the disposal of regulated waste materials related to the demolition of certain power facilities. The fair values of these AROs are recorded on a discounted basis, at the time the obligation is incurred, and accreted over time for the change in present value. Additionally, Alcoa capitalizes asset retirement costs by increasing the carrying amount of the related long-lived assets and depreciating these assets over their remaining useful life.

Certain conditional asset retirement obligations (CAROs) related to alumina refineries, aluminum smelters, and fabrication facilities have not been recorded in the Consolidated Financial Statements due to uncertainties surrounding the ultimate settlement date. A CARO is a legal obligation to perform an asset retirement activity in which the timing

and/or method of settlement are conditional on a future event that may or may not be within Alcoa's control. Such uncertainties exist as a result of the perpetual nature of the structures, maintenance and upgrade programs, and other factors. At the date a reasonable estimate of the ultimate settlement date can be made, Alcoa would record an ARO for the removal, treatment, transportation, storage, and/or disposal of various regulated assets and hazardous materials such as asbestos, underground and aboveground storage tanks, polychlorinated biphenyls (PCBs), various process residuals, solid wastes, electronic equipment waste, and various other materials. Such amounts may be material to the Consolidated Financial Statements in the period in which they are recorded.

Income Taxes. The provision for income taxes is determined using the asset and liability approach of accounting for income taxes. Under this approach, the provision for income taxes represents income taxes paid or payable (or received or receivable) for the current year plus the change in deferred taxes during the year. Deferred taxes represent the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid, and result from differences between the financial and tax bases of Alcoa's assets and liabilities and are adjusted for changes in tax rates and tax laws when enacted.

Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized. In evaluating the need for a valuation allowance, management considers all potential sources of taxable income, including income available in carryback periods, future reversals of taxable temporary differences, projections of taxable income, and income from tax planning strategies, as well as all available positive and negative evidence. Positive evidence includes factors such as a history of profitable operations, projections of future profitability within the carryforward period, including from tax planning strategies, and Alcoa's experience with similar operations. Existing favorable contracts and the ability to sell products into established markets are additional positive evidence. Negative evidence includes items such as cumulative losses, projections of future losses, or carryforward periods that are not long enough to allow for the utilization of a deferred tax asset based on existing projections of income. Deferred tax assets for which no valuation allowance is recorded may not be realized upon changes in facts and circumstances, resulting in a future charge to establish a valuation allowance. Existing valuation allowances are re-examined under the same standards of positive and negative evidence. If it is determined that it is more likely than not that a deferred tax asset will be realized, the appropriate amount of the valuation allowance, if any, is released. Deferred tax assets and liabilities are also re-measured to reflect changes in underlying tax rates due to law changes and the granting and lapse of tax holidays.

Tax benefits related to uncertain tax positions taken or expected to be taken on a tax return are recorded when such benefits meet a more likely than not threshold. Otherwise, these tax benefits are recorded when a tax position has been effectively settled, which means that the statute of limitation has expired or the appropriate taxing authority has completed their examination even though the statute of limitations remains open. Interest and penalties related to uncertain tax positions are recognized as part of the provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law until such time that the related tax benefits are recognized.

Stock-Based Compensation. Alcoa recognizes compensation expense for employee equity grants using the non-substantive vesting period approach, in which the expense (net of estimated forfeitures) is recognized ratably over the requisite service period based on the grant date fair value. The fair value of new stock options is estimated on the date of grant using a lattice-pricing model. Determining the fair value of stock options at the grant date requires judgment, including estimates for the average risk-free interest rate, dividend yield, volatility, and exercise behavior. These assumptions may differ significantly between grant dates because of changes in the actual results of these inputs that occur over time.

Most plan participants can choose whether to receive their award in the form of stock options, stock awards, or a combination of both. This choice is made before the grant is issued and is irrevocable.

Derivatives and Hedging. Derivatives are held for purposes other than trading and are part of a formally documented risk management program. For derivatives designated as fair value hedges, Alcoa measures hedge effectiveness by formally assessing, at inception and at least quarterly, the historical high correlation of changes in the fair value of the

hedged item and the derivative hedging instrument. For derivatives designated as cash flow hedges, Alcoa measures hedge effectiveness by formally assessing, at inception and at least quarterly, the probable high correlation of the expected future cash flows of the hedged item and the derivative hedging instrument. The ineffective portions of both types of hedges are recorded in sales or other income or expense in the current period. If the hedging relationship ceases to be highly effective or it becomes probable that an expected transaction will no longer occur, future gains or losses on the derivative instrument are recorded in other income or expense.

Alcoa accounts for interest rate swaps related to its existing long-term debt and hedges of firm customer commitments for aluminum as fair value hedges. As a result, the fair values of the derivatives and changes in the fair values of the underlying hedged items are reported in other current and noncurrent assets and liabilities in the Consolidated Balance Sheet. Changes in the fair values of these derivatives and underlying hedged items generally offset and are recorded each period in sales or interest expense, consistent with the underlying hedged item.

Alcoa accounts for hedges of foreign currency exposures and certain forecasted transactions as cash flow hedges. The fair values of the derivatives are recorded in other current and noncurrent assets and liabilities in the Consolidated Balance Sheet. The effective portions of the changes in the fair values of these derivatives are recorded in other comprehensive income and are reclassified to sales, cost of goods sold, or other income or expense in the period in which earnings are impacted by the hedged items or in the period that the transaction no longer qualifies as a cash flow hedge. These contracts cover the same periods as known or expected exposures, generally not exceeding five years.

If no hedging relationship is designated, the derivative is marked to market through earnings.

Cash flows from derivatives are recognized in the Statement of Consolidated Cash Flows in a manner consistent with the underlying transactions.

Foreign Currency. The local currency is the functional currency for Alcoa's significant operations outside the United States, except for certain operations in Canada, Russia, and Iceland, where the U.S. dollar is used as the functional currency. The determination of the functional currency for Alcoa's operations is made based on the appropriate economic and management indicators.

Acquisitions. Alcoa's business acquisitions are accounted for using the acquisition method. The purchase price is allocated to the assets acquired and liabilities assumed based on their estimated fair values. Any excess purchase price over the fair value of the net assets acquired is recorded as goodwill. For all acquisitions, operating results are included in the Statement of Consolidated Operations from the date of the acquisition.

Discontinued Operations and Assets Held For Sale. For those businesses where management has committed to a plan to divest, each business is valued at the lower of its carrying amount or estimated fair value less cost to sell. If the carrying amount of the business exceeds its estimated fair value, an impairment loss is recognized. Fair value is estimated using accepted valuation techniques such as a DCF model, valuations performed by third parties, earnings multiples, or indicative bids, when available. A number of significant estimates and assumptions are involved in the application of these techniques, including the forecasting of markets and market share, sales volumes and prices, costs and expenses, and multiple other factors. Management considers historical experience and all available information at the time the estimates are made; however, the fair value that is ultimately realized upon the divestiture of a business may differ from the estimated fair value reflected in the Consolidated Financial Statements. Depreciation, depletion, and amortization expense is not recorded on assets of a business to be divested once they are classified as held for sale. Businesses to be divested are classified in the Consolidated Financial Statements as either discontinued operations or held for sale.

For businesses classified as discontinued operations, the balance sheet amounts and results of operations are reclassified from their historical presentation to assets and liabilities of operations held for sale on the Consolidated Balance Sheet and to discontinued operations on the Statement of Consolidated Operations, respectively, for all periods presented. The gains or losses associated with these divested businesses are recorded in discontinued operations on the

Statement of Consolidated Operations. The Statement of Consolidated Cash Flows is also reclassified for assets and liabilities of operations held for sale and discontinued operations for all periods presented. Additionally, segment information does not include the assets or operating results of businesses classified as discontinued operations for all periods presented. These businesses are expected to be disposed of within one year.

For businesses classified as held for sale that do not qualify for discontinued operations treatment, the balance sheet and cash flow amounts are reclassified from their historical presentation to assets and liabilities of operations held for sale for all periods presented. The results of operations continue to be reported in continuing operations. The gains or losses associated with these divested businesses are recorded in restructuring and other charges on the Statement of Consolidated Operations. The segment information includes the assets and operating results of businesses classified as held for sale for all periods presented. Management expects that Alcoa will have continuing involvement with these businesses following their divestiture, primarily in the form of equity participation, or ongoing aluminum or other significant supply contracts.

Recently Adopted Accounting Guidance. On January 1, 2015, Alcoa adopted changes issued by the Financial Accounting Standards Board (FASB) to reporting discontinued operations and disclosures of disposals of components of an entity. These changes require a disposal of a component to meet a higher threshold in order to be reported as a discontinued operation in an entity's financial statements. The threshold is defined as a strategic shift that has, or will have, a major effect on an entity's operations and financial results such as a disposal of a major geographical area or a major line of business. Additionally, the following two criteria have been removed from consideration of whether a component meets the requirements for discontinued operations presentation: (i) the operations and cash flows of a disposal component have been or will be eliminated from the ongoing operations of an entity as a result of the disposal transaction, and (ii) an entity will not have any significant continuing involvement in the operations of the disposal component after the disposal transaction. Furthermore, equity method investments now may qualify for discontinued operations presentation. These changes also require expanded disclosures for all disposals of components of an entity, whether or not the threshold for reporting as a discontinued operation is met, related to profit or loss information and/or asset and liability information of the component. The adoption of these changes had no impact on the Consolidated Financial Statements. This guidance will need to be considered in the event Alcoa initiates a disposal of a component.

In September 2015, the FASB issued changes to the accounting for measurement-period adjustments related to business combinations. Currently, an acquiring entity is required to retrospectively adjust the balance sheet amounts of the acquiree recognized at the acquisition date with a corresponding adjustment to goodwill during the measurement period, as well as revise comparative information for prior periods presented within financial statements as needed, including revising income effects, such as depreciation and amortization, as a result of changes made to the balance sheet amounts of the acquiree. Such adjustments are required when new information is obtained about facts and circumstances that existed as of the acquisition date that, if known, would have affected the measurement of the amounts initially recognized or would have resulted in the recognition of additional assets or liabilities. The measurement period is the period after the acquisition date during which the acquirer may adjust the balance sheet amounts recognized for a business combination (generally up to one year from the date of acquisition). The changes eliminate the requirement to make such retrospective adjustments, and, instead require the acquiring entity to record these adjustments in the reporting period they are determined. Additionally, the changes require the acquiring entity to present separately on the face of the income statement or disclose in the notes to the financial statements the portion of the amount recorded in current-period income by line item that would have been recorded in previous reporting periods if the adjustment to the balance sheet amounts had been recognized as of the acquisition date. These changes were to become effective for Alcoa on January 1, 2016; however, early adoption is permitted. As such, Alcoa elected to early adopt these changes upon issuance and applied the new requirements to three acquisitions (see Note F). In 2015, Alcoa recognized adjustments to the original balance sheet amounts of these three acquisitions, resulting in the recognition of amounts in current period operations that would have been recorded in previous reporting periods had the adjustments to the balance sheet amounts been recognized as of the respective acquisition date. Such amounts recorded in current period operations were not material to the Statement of Consolidated Operations for the year ended December 31, 2015.

In November 2015, the FASB issued changes to the balance sheet classification of deferred taxes, which Alcoa immediately adopted. These changes simplify the presentation of deferred income taxes by requiring all deferred

income tax assets and liabilities to be classified as noncurrent in a classified balance sheet. The current requirement that deferred tax assets and liabilities of a tax-paying component of an entity be offset and presented as a single amount is not affected by these changes. As such, all deferred income tax assets and liabilities were classified in the Deferred income taxes and Other noncurrent liabilities and deferred credits, respectively, line items on the December 31, 2015 Consolidated Balance Sheet. Additionally, management elected to update the December 31, 2014 Consolidated Balance Sheet for these changes for comparative purposes. As a result $421 of current deferred income tax assets (previously reported in Prepaid expenses and other current assets) and $83 of current deferred income tax liabilities (previously reported in Taxes, including income taxes) were reclassified to the aforementioned noncurrent asset ($385) and liability ($47) line items on the December 31, 2014 Consolidated Balance Sheet.

Recently Issued Accounting Guidance. In January 2015, the FASB issued changes to the presentation of extraordinary items. Such items are defined as transactions or events that are both unusual in nature and infrequent in occurrence, and, currently, are required to be presented separately in an entity's income statement, net of income tax, after income from continuing operations. The changes eliminate the concept of an extraordinary item and, therefore, the presentation of such items will no longer be required. Notwithstanding this change, an entity will still be required to present and disclose a transaction or event that is both unusual in nature and infrequent in occurrence in the notes to the financial statements. These changes become effective for Alcoa on January 1, 2016. Management has determined that the adoption of these changes will not have an impact on the Consolidated Financial Statements.

In February 2015, the FASB issued changes to the analysis that an entity must perform to determine whether it should consolidate certain types of legal entities. These changes (i) modify the evaluation of whether limited partnerships and similar legal entities are variable interest entities or voting interest entities, (ii) eliminate the presumption that a general partner should consolidate a limited partnership, (iii) affect the consolidation analysis of reporting entities that are involved with variable interest entities, particularly those that have fee arrangements and related party relationships, and (iv) provide a scope exception from consolidation guidance for reporting entities with interests in legal entities that are required to comply with or operate in accordance with requirements that are similar to those in Rule 2a-7 of the Investment Company Act of 1940 for registered money market funds. These changes become effective for Alcoa on January 1, 2016. Management is currently evaluating the potential impact of these changes on the Consolidated Financial Statements.

In April 2015, the FASB issued changes to the presentation of debt issuance costs. Currently, such costs are required to be presented as a deferred asset in an entity's balance sheet and amortized into interest expense over the term of the related debt instrument. The changes require that debt issuance costs be presented in an entity's balance sheet as a direct deduction from the carrying value of the related debt liability. The amortization of debt issuance costs remains unchanged. These changes become effective for Alcoa on January 1, 2016. In August 2015, the FASB issued an update to these changes based on an announcement of the staff of the U.S. Securities and Exchange Commission. This change provides an exception to the April 2015 FASB changes allowing debt issuance costs related to line-of-credit arrangements to continue to be presented as an asset regardless of whether there are any outstanding borrowings under such arrangement. This additional change also becomes effective for Alcoa on January 1, 2016. Management has determined that the adoption of all of these changes will result in a decrease of $58 to both Other noncurrent assets and Long-term debt, less amount due within one year on the accompanying Consolidated Balance Sheet.

In July 2015, the FASB issued changes to the subsequent measurement of inventory. Currently, an entity is required to measure its inventory at the lower of cost or market, whereby market can be replacement cost, net realizable value, or net realizable value less an approximately normal profit margin. The changes require that inventory be measured at the lower of cost and net realizable value, thereby eliminating the use of the other two market methodologies. Net realizable value is defined as the estimated selling prices in the ordinary course of business less reasonably predictable costs of completion, disposal, and transportation. These changes do not apply to inventories measured using LIFO (last-in, first-out) or the retail inventory method. Currently, Alcoa applies the net realizable value market option to measure non-LIFO inventories at the lower of cost or market. These changes become effective for Alcoa on January 1, 2017. Management has determined that the adoption of these changes will not have an impact on the Consolidated Financial Statements.

In May 2014, the FASB issued changes to the recognition of revenue from contracts with customers. These changes created a comprehensive framework for all entities in all industries to apply in the determination of when to recognize revenue, and, therefore, supersede virtually all existing revenue recognition requirements and guidance. This framework is expected to result in less complex guidance in application while providing a consistent and comparable methodology for revenue recognition. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve this principle, an entity should apply the following steps: (i) identify the contract(s) with a customer, (ii) identify the performance obligations in the contract(s), (iii) determine the transaction price, (iv) allocate the transaction price to the performance obligations in the contract(s), and (v) recognize revenue when, or as, the entity satisfies a performance obligation. In August 2015, the FASB deferred the effective date by one year, making these changes effective for Alcoa on January 1, 2018. Management is currently evaluating the potential impact of these changes on the Consolidated Financial Statements.

In August 2014, the FASB issued changes to the disclosure of uncertainties about an entity's ability to continue as a going concern. Under GAAP, continuation of a reporting entity as a going concern is presumed as the basis for preparing financial statements unless and until the entity's liquidation becomes imminent. Even if an entity's liquidation is not imminent, there may be conditions or events that raise substantial doubt about the entity's ability to continue as a going concern. Because there is no guidance in GAAP about management's responsibility to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern or to provide related note disclosures, there is diversity in practice whether, when, and how an entity discloses the relevant conditions and events in its financial statements. As a result, these changes require an entity's management to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the entity's ability to continue as a going concern within one year after the date that financial statements are issued. Substantial doubt is defined as an indication that it is probable that an entity will be unable to meet its obligations as they become due within one year after the date that financial statements are issued. If management has concluded that substantial doubt exists, then the following disclosures should be made in the financial statements: (i) principal conditions or events that raised the substantial doubt, (ii) management's evaluation of the significance of those conditions or events in relation to the entity's ability to meet its obligations, (iii) management's plans that alleviated the initial substantial doubt or, if substantial doubt was not alleviated, management's plans that are intended to at least mitigate the conditions or events that raise substantial doubt, and (iv) if the latter in (iii) is disclosed, an explicit statement that there is substantial doubt about the entity's ability to continue as a going concern. These changes become effective for Alcoa for the 2016 annual period. Management has determined that the adoption of these changes will not have an impact on the Consolidated Financial Statements. Subsequent to adoption, this guidance will need to be applied by management at the end of each annual period and interim period therein to determine what, if any, impact there will be on the Consolidated Financial Statements in a given reporting period.

B. Accumulated Other Comprehensive Loss

The following table details the activity of the four components that comprise Accumulated other comprehensive loss for both Alcoa's shareholders and noncontrolling interests:

	Alcoa			Noncontrolling Interests		
	2015	2014	2013	2015	2014	2013
Pension and other postretirement benefits (W)						
Balance at beginning of period	$(3,601)	$(3,532)	$(4,063)	$ (64)	$ (51)	$ (77)
Other comprehensive (loss) income:						
Unrecognized net actuarial loss and prior service cost/benefit	(478)	(492)	281	5	(22)	28
Tax benefit (expense)	170	167	(88)	(1)	7	(9)
Total Other comprehensive (loss) income before reclassifications, net of tax	(308)	(325)	193	4	(15)	19
Amortization of net actuarial loss and prior service cost/benefit[1]	458	394	520	6	3	11
Tax expense[2]	(160)	(138)	(182)	(2)	(1)	(4)
Total amount reclassified from Accumulated other comprehensive loss, net of tax[8]	298	256	338	4	2	7
Total Other comprehensive (loss) income	(10)	(69)	531	8	(13)	26
Balance at end of period	$(3,611)	$(3,601)	$(3,532)	$ (56)	$ (64)	$ (51)
Foreign currency translation						
Balance at beginning of period	$ (846)	$ 179	$ 1,147	$ (351)	$ (110)	$ 257
Other comprehensive loss[3]	(1,566)	(1,025)	(968)	(429)	(241)	(367)
Balance at end of period	$(2,412)	$ (846)	$ 179	$ (780)	$ (351)	$ (110)
Available-for-sale securities						
Balance at beginning of period	$ -	$ 2	$ 3	$ -	$ -	$ -
Other comprehensive loss[4]	(5)	(2)	(1)	-	-	-
Balance at end of period	$ (5)	$ -	$ 2	$ -	$ -	$ -
Cash flow hedges (X)						
Balance at beginning of period	$ (230)	$ (308)	$ (489)	$ (2)	$ (2)	$ (5)
Other comprehensive income (loss):						
Net change from periodic revaluations	1,138	78	205	(1)	-	4
Tax expense	(340)	(21)	(43)	-	-	(1)
Total Other comprehensive income before reclassifications, net of tax	798	57	162	(1)	-	3
Net amount reclassified to earnings:						
Aluminum contracts[5]	21	27	18	-	-	-
Energy contracts[6]	6	-	-	-	-	-
Foreign exchange contracts[5]	5	(3)	2	-	-	-
Interest rate contracts[7]	1	1	2	-	-	-
Nickel contracts[6]	2	-	-	-	-	-
Sub-total	35	25	22	-	-	-
Tax (expense)[2]	(6)	(4)	(3)	-	-	-
Total amount reclassified from Accumulated other comprehensive loss, net of tax[8]	29	21	19	-	-	-
Total Other comprehensive income (loss)	827	78	181	(1)	-	3
Balance at end of period	$ 597	$ (230)	$ (308)	$ (3)	$ (2)	$ (2)

(1) These amounts were included in the computation of net periodic benefit cost for pension and other postretirement benefits (see Note W).
(2) These amounts were included in Provision for income taxes on the accompanying Statement of Consolidated Operations.
(3) In all periods presented, there were no tax impacts related to rate changes and no amounts were reclassified to earnings.
(4) In all periods presented, unrealized and realized gains and losses related to these securities were immaterial. Realized gains and losses were included in Other expenses (income), net on the accompanying Statement of Consolidated Operations.
(5) These amounts were included in Sales on the accompanying Statement of Consolidated Operations.
(6) These amounts were included in Cost of goods sold on the accompanying Statement of Consolidated Operations.
(7) These amounts were included in Interest expense on the accompanying Statement of Consolidated Operations.
(8) A positive amount indicates a corresponding charge to earnings and a negative amount indicates a corresponding benefit to earnings. These amounts were reflected on the accompanying Statement of Consolidated Operations in the line items indicated in footnotes 1 through 7.

C. Asset Retirement Obligations

Alcoa has recorded AROs related to legal obligations associated with the normal operations of bauxite mining, alumina refining, and aluminum smelting facilities. These AROs consist primarily of costs associated with spent pot lining disposal, closure of bauxite residue areas, mine reclamation, and landfill closure. Alcoa also recognizes AROs for any significant lease restoration obligation, if required by a lease agreement, and for the disposal of regulated waste materials related to the demolition of certain power facilities.

In addition to AROs, certain CAROs related to alumina refineries, aluminum smelters, and fabrication facilities have not been recorded in the Consolidated Financial Statements due to uncertainties surrounding the ultimate settlement date. Such uncertainties exist as a result of the perpetual nature of the structures, maintenance and upgrade programs, and other factors. At the date a reasonable estimate of the ultimate settlement date can be made (e.g., planned demolition), Alcoa would record an ARO for the removal, treatment, transportation, storage, and/or disposal of various regulated assets and hazardous materials such as asbestos, underground and aboveground storage tanks, PCBs, various process residuals, solid wastes, electronic equipment waste, and various other materials. If Alcoa was required to demolish all such structures immediately, the estimated CARO as of December 31, 2015 ranges from less than $1 to $46 per structure (156 structures) in today’s dollars.

The following table details the carrying value of recorded AROs by major category (of which $97 and $76 was classified as a current liability as of December 31, 2015 and 2014, respectively):

December 31,	2015	2014
Spent pot lining disposal	$141	$170
Closure of bauxite residue areas	165	178
Mine reclamation	191	167
Demolition*	117	114
Landfill closure	30	31
Other	4	3
	$648	$663

* In 2015 and 2014, AROs were recorded as a result of management’s decision to permanently shut down and demolish certain structures (see Note D).

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The following table details the changes in the total carrying value of recorded AROs:

December 31,	2015	2014
Balance at beginning of year	$663	$629
Accretion expense	19	25
Payments	(74)	(84)
Liabilities incurred	96	144
Divestitures*	-	(20)
Foreign currency translation and other	(56)	(31)
Balance at end of year	$648	$663

* In 2014, this amount relates to the sale of an interest in a bauxite mine and alumina refinery in Jamaica and a smelter in the United States (see Note F).

D. Restructuring and Other Charges

Restructuring and other charges for each year in the three-year period ended December 31, 2015 were comprised of the following:

	2015	2014	2013
Asset impairments	$ 335	$ 406	$116
Layoff costs	299	259	201
Legal matters in Italy (N)	201	-	-
Net loss on divestitures of businesses (F)	161	332	-
Resolution of a legal matter (N)	-	-	391
Other	213	199	82
Reversals of previously recorded layoff and other exit costs	(14)	(28)	(8)
Restructuring and other charges	$1,195	$1,168	$782

Layoff costs were recorded based on approved detailed action plans submitted by the operating locations that specified positions to be eliminated, benefits to be paid under existing severance plans, union contracts or statutory requirements, and the expected timetable for completion of the plans.

2015 Actions. In 2015, Alcoa recorded Restructuring and other charges of $1,195 ($836 after-tax and noncontrolling interest), which were comprised of the following components: $438 ($281 after-tax and noncontrolling interest) for exit costs related to decisions to permanently shut down and demolish three smelters and a power station (see below); $246 ($118 after-tax and noncontrolling interest) for the curtailment of two refineries and two smelters (see below); $201 (pre- and after-tax) related to legal matters in Italy (see Note N); a $161 ($151 after-tax and noncontrolling interest) net loss related to the March 2015 divestiture of a rolling mill in Russia and post-closing adjustments associated with three December 2014 divestitures (see Note F); $143 ($102 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 2,100 employees (425 in the Transportation and Construction Solutions segment, 645 in the Engineered Products and Solutions segment, 380 in the Primary Metals segment, 90 in the Global Rolled Products segment, 85 in the Alumina segment, and 475 in Corporate); $34 ($14 after-tax and noncontrolling interest) for asset impairments, virtually all of which was related to prior capitalized costs for an expansion project at a refinery in Australia that is no longer being pursued; an $18 ($13 after-tax) gain on the sale of land related to one of the rolling mills in Australia that was permanently closed in December 2014 (see 2014 Actions below); a net charge of $4 (a net credit of $7 after-tax and noncontrolling interest) for other miscellaneous items; and $14 ($11 after-tax and noncontrolling interest) for the reversal of a number of small layoff reserves related to prior periods.

During 2015, management initiated various alumina refining and aluminum smelting capacity curtailments and/or closures. The curtailments were composed of the remaining capacity at all of the following: the São Luís smelter in Brazil (74,000 metric-tons-per-year); the Suriname refinery (1,330,000 metric-tons-per-year); the Point Comfort, TX

refinery (2,010,000 metric-tons-per-year); and the Wenatchee, WA smelter (143,000 metric-tons-per-year). All of the curtailments were completed in 2015 except for 1,635,000 metric-tons-per-year at the Point Comfort refinery, which is expected to be completed by the end of June 2016. The permanent closures were composed of the capacity at the Warrick, IN smelter (269,000 metric-tons-per-year) (includes the closure of a related coal mine) and the infrastructure of the Massena East, NY smelter (potlines were previously shut down in both 2013 and 2014—see 2013 Actions and 2014 Actions below), as the modernization of this smelter is no longer being pursued. The shutdown of the Warrick smelter is expected to be completed by the end of March 2016.

The decisions on the above actions were part of a separate 12-month review in refining (2,800,000 metric-tons-per-year) and smelting (500,000 metric-tons-per-year) capacity initiated by management in March 2015 for possible curtailment (partial or full), permanent closure or divestiture. While many factors contributed to each decision, in general, these actions were initiated to maintain competitiveness amid prevailing market conditions for both alumina and aluminum. Demolition and remediation activities related to the Warrick smelter and the Massena East location will begin in 2016 and are expected to be completed by the end of 2020.

Separate from the actions initiated under the reviews described above, in mid-2015, management approved the permanent shutdown and demolition of the Poços de Caldas smelter (capacity of 96,000 metric-tons-per-year) in Brazil and the Anglesea power station (includes the closure of a related coal mine) in Australia. The entire capacity at Poços de Caldas had been temporarily idled since May 2014 and the Anglesea power station was shut down at the end of August 2015. Demolition and remediation activities related to the Poços de Caldas smelter and the Anglesea power station began in late 2015 and are expected to be completed by the end of 2026 and 2020, respectively.

The decision on the Poços de Caldas smelter was due to management's conclusion that the smelter was no longer competitive as a result of challenging global market conditions for primary aluminum, which led to the initial curtailment, that have not dissipated and higher costs. For the Anglesea power station, the decision was made because a sale process did not result in a sale and there would have been imminent operating costs and financial constraints related to this site in the remainder of 2015 and beyond, including significant costs to source coal from available resources, necessary maintenance costs, and a depressed outlook for forward electricity prices. The Anglesea power station previously supplied approximately 40 percent of the power needs for the Point Henry smelter, which was closed in August 2014 (see 2014 Actions below).

In 2015, costs related to the shutdown and curtailment actions included asset impairments of $217, representing the write-off of the remaining book value of all related properties, plants, and equipment; $156 for the layoff of approximately 3,100 employees (1,800 in the Primary Metals segment and 1,300 in the Alumina segment), including $30 in pension costs (see Note W); accelerated depreciation of $84 related to certain facilities as they continued to operate during 2015; and $227 in other exit costs. Additionally in 2015, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of $90 ($43 after-tax and noncontrolling interest), which was recorded in Cost of goods sold on the accompanying Statement of Consolidated Operations. The other exit costs of $227 represent $76 in asset retirement obligations and $86 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish the aforementioned structures in the United States, Brazil, and Australia (includes the rehabilitation of a related coal mine in each of Australia and the United States), and $65 in supplier and customer contract-related costs.

As of December 31, 2015, approximately 1,500 of the 5,200 employees were separated. The remaining separations for 2015 restructuring programs are expected to be completed by the end of 2016. In 2015, cash payments of $42 were made against layoff reserves related to 2015 restructuring programs.

2014 Actions. In 2014, Alcoa recorded Restructuring and other charges of $1,168 ($703 after-tax and noncontrolling interest), which were comprised of the following components: $693 ($443 after-tax and noncontrolling interest) for exit costs related to decisions to permanently shut down and demolish three smelters and two rolling mills (see below); a $332 ($163 after-tax and noncontrolling interest) net loss for the divestitures of four operations (see Note F); $68 ($45 after-tax and noncontrolling interest) for the temporary curtailment of two smelters and a related production slowdown

at one refinery (see below); $51 ($36 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 1,120 employees (470 in the Engineered Products and Solutions segment, 360 in the Transportation and Construction Solutions segment, 45 in the Global Rolled Products segment, 60 in the Alumina and Primary Metals segments combined, and 185 in Corporate); $34 ($26 after-tax) for asset impairments related to prior capitalized costs for a modernization project at a smelter in Canada that is no longer being pursued; a net charge of $18 ($11 after-tax and noncontrolling interest) for other miscellaneous items, including $2 ($2 after-tax) for asset impairments and accelerated depreciation; and $28 ($21 after-tax and noncontrolling interest) for the reversal of a number of layoff reserves related to prior periods, including those associated with a smelter in Italy due to changes in facts and circumstances (see below).

In early 2014, management approved the permanent shutdown and demolition of the remaining capacity (84,000 metric-tons-per-year) at the Massena East, NY smelter and the full capacity (190,000 metric-tons-per-year) at the Point Henry smelter in Australia. The capacity at Massena East was fully shut down by the end of March 2014 and the Point Henry smelter was fully shut down in August 2014. Demolition and remediation activities related to both the Massena East and Point Henry smelters began in late 2014 and are expected to be completed by the end of 2020 and 2018, respectively.

The decisions on the Massena East and Point Henry smelters were part of a 15-month review of 460,000 metric tons of smelting capacity initiated by management in May 2013 (see 2013 Actions below) for possible curtailment. Through this review, management determined that the remaining capacity of the Massena East smelter was no longer competitive and the Point Henry smelter had no prospect of becoming financially viable. Management also initiated the temporary curtailment of the remaining capacity (62,000 metric-tons-per-year) at the Poços de Caldas smelter and additional capacity (85,000 metric-tons-per-year) at the São Luís smelter, both in Brazil. These curtailments were completed by the end of May 2014. As a result of these curtailments, 200,000 metric-tons-per-year of production at the Poços de Caldas refinery was reduced by the end of June 2014.

Also in early 2014, management approved the permanent shutdown of Alcoa’s two rolling mills in Australia, Point Henry and Yennora. This decision was made due to the significant impact of excess can sheet capacity in both Australia and Asia. The two rolling mills had a combined can sheet capacity of 200,000 metric-tons-per-year and were closed by the end of 2014. Demolition and remediation activities related to the two rolling mills began in mid-2015 and are expected to be completed by the end of 2018.

Additionally, in August 2014, management approved the permanent shutdown and demolition of the capacity (150,000 metric-tons-per-year) at the Portovesme smelter in Italy, which had been idle since November 2012. This decision was made because the fundamental reasons that made the Portovesme smelter uncompetitive remained unchanged, including the lack of a viable long-term power solution. Demolition and remediation activities related to the Portovesme smelter will begin in 2016 and are expected to be completed by the end of 2020 (delayed due to discussions with the Italian government and other stakeholders).

In 2014, costs related to the shutdown and curtailment actions included $208 for the layoff of approximately 1,790 employees (1,210 in the Primary Metals segment, 470 in the Global Rolled Products segment, 80 in the Alumina segment, and 30 in Corporate), including $26 in pension costs (see Note W); accelerated depreciation of $204 related to the three facilities in Australia as they continued to operate during 2014; asset impairments of $166 representing the write-off of the remaining book value of all related properties, plants, and equipment; and $183 in other exit costs. Additionally in 2014, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of $67 ($47 after-tax and noncontrolling interest), which was recorded in Cost of goods sold on the accompanying Statement of Consolidated Operations. The other exit costs of $183 represent $95 in asset retirement obligations and $42 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish the aforementioned structures in Australia, Italy, and the United States, and $46 in other related costs, including supplier and customer contract-related costs.

As of December 31, 2015, approximately 2,500 of the 2,870 employees (previously 2,910) were separated. The total number of employees associated with 2014 restructuring programs was updated to reflect employees, who were initially identified for separation, accepting other positions within Alcoa and natural attrition. The remaining separations for 2014 restructuring programs are expected to be completed by the end of 2016. In 2015 and 2014, cash payments of $62 and $141, respectively, were made against layoff reserves related to 2014 restructuring programs.

2013 Actions. In 2013, Alcoa recorded Restructuring and other charges of $782 ($585 after-tax and noncontrolling interests), which were comprised of the following components: $391 ($305 after-tax and noncontrolling interest) related to the resolution of a legal matter (see Government Investigations under Litigation in Note N); $245 ($183 after-tax) for exit costs related to the permanent shutdown and demolition of certain structures at three smelter locations (see below); $87 ($61 after-tax and noncontrolling interests) for layoff costs, including the separation of approximately 1,110 employees (340 in the Primary Metals segment, 250 in the Global Rolled Products segment, 220 in the Engineered Products and Solutions segment, 85 in the Alumina segment, 75 in the Transportation and Construction Solutions segment and 140 in Corporate), of which 590 relates to a global overhead reduction program, and $9 in pension plan settlement charges related to previously separated employees; $25 ($17 after-tax) in net charges, including $12 ($8 after-tax) for asset impairments, related to retirements and/or the sale of previously idled structures; $25 ($13 after-tax and noncontrolling interests) for asset impairments related to the write-off of capitalized costs for projects no longer being pursued due to the market environment; a net charge of $17 ($12 after-tax and noncontrolling interests) for other miscellaneous items, including $3 ($2 after-tax) for asset impairments; and $8 ($6 after-tax and noncontrolling interests) for the reversal of a number of small layoff reserves related to prior periods.

In May 2013, management approved the permanent shutdown and demolition of two potlines (capacity of 105,000 metric-tons-per-year) that utilize Soderberg technology at the Baie Comeau smelter in Québec, Canada (remaining capacity of 280,000 metric-tons-per-year composed of two prebake potlines) and the full capacity (44,000 metric-tons-per-year) at the Fusina smelter in Italy. Additionally, in August 2013, management approved the permanent shutdown and demolition of one potline (capacity of 41,000 metric-tons-per-year) that utilizes Soderberg technology at the Massena East, NY smelter (remaining capacity of 84,000 metric-tons-per-year composed of two Soderberg potlines). The aforementioned Soderberg lines at Baie Comeau and Massena East were fully shut down by the end of September 2013 while the Fusina smelter was previously temporarily idled in 2010. Demolition and remediation activities related to all three facilities began in late 2013 and are expected to be completed by the end of 2016 for Massena East and by the end of 2017 for both Baie Comeau and Fusina.

The decisions on the Soderberg lines for Baie Comeau and Massena East were part of a 15-month review of 460,000 metric tons of smelting capacity initiated by management in May 2013 for possible curtailment, while the decision on the Fusina smelter was in addition to the capacity being reviewed. Factors leading to all three decisions were in general focused on achieving sustained competitiveness and included, among others: lack of an economically viable, long-term power solution (Italy); changed market fundamentals; other existing idle capacity; and restart costs.

In 2013, exit costs related to the shutdown actions included $114 for the layoff of approximately 550 employees (Primary Metals segment), including $83 in pension costs (see Note W); accelerated depreciation of $58 (Baie Comeau) and asset impairments of $18 (Fusina and Massena East) representing the write-off of the remaining book value of all related properties, plants, and equipment; and $55 in other exit costs. Additionally in 2013, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value resulting in a charge of $9 ($6 after-tax), which was recorded in Cost of goods sold on the accompanying Statement of Consolidated Operations. The other exit costs of $55 represent $48 in asset retirement obligations and $5 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish these structures, and $2 in other related costs.

As of December 31, 2015, the separations associated with 2013 restructuring programs were essentially complete. In 2015, 2014, and 2013, cash payments of $7, $39, and $33, respectively, were made against layoff reserves related to 2013 restructuring programs.

Alcoa does not include Restructuring and other charges in the results of its reportable segments. The pretax impact of allocating such charges to segment results would have been as follows:

	2015	2014	2013
Alumina	$ 233	$ 287	$ 11
Primary Metals	691	553	295
Global Rolled Products	131	266	15
Engineered Products and Solutions	49	13	12
Transportation and Construction Solutions	8	10	16
Segment total	1,112	1,129	349
Corporate	83	39	433
Total restructuring and other charges	$1,195	$1,168	$782

Activity and reserve balances for restructuring charges were as follows:

	Layoff costs	Other exit costs	Total
Reserve balances at December 31, 2012	$ 59	$ 52	$ 111
2013:			
Cash payments	(63)	(11)	(74)
Restructuring charges	201	85	286
Other*	(101)	(84)	(185)
Reserve balances at December 31, 2013	96	42	138
2014:			
Cash payments	(191)	(22)	(213)
Restructuring charges	259	194	453
Other*	(66)	(180)	(246)
Reserve balances at December 31, 2014	98	34	132
2015:			
Cash payments	(111)	(12)	(123)
Restructuring charges	299	233	532
Other*	(60)	(231)	(291)
Reserve balances at December 31, 2015	$ 226	$ 24	$ 250

* Other includes reversals of previously recorded restructuring charges and the effects of foreign currency translation. In 2015, 2014, and 2013, Other for layoff costs also included a reclassification of $35, $26, and $92, respectively, in pension and/or other postretirement benefits costs, as these obligations were included in Alcoa's separate liability for pension and other postretirement benefits obligations (see Note W). Additionally in 2015, 2014, and 2013, Other for other exit costs also included a reclassification of the following restructuring charges: $76, $95, and $58, respectively, in asset retirement and $86, $47, and $12, respectively, in environmental obligations, as these liabilities were included in Alcoa's separate reserves for asset retirement obligations (see Note C) and environmental remediation (see Note N).

The remaining reserves are expected to be paid in cash during 2016, with the exception of approximately $10 to $15, which is expected to be paid over the next several years for ongoing site remediation work and special layoff benefit payments.

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E. Goodwill and Other Intangible Assets

The following table details the changes in the carrying amount of goodwill:

	Alumina	Primary Metals	Global Rolled Products	Engineered Products and Solutions	Transportation and Construction Solutions	Corporate*	Total
Balance at December 31, 2013:							
Goodwill	$ 9	$ 989	$ 218	$ 2,606	$ 117	$ 1,235	$ 5,174
Accumulated impairment losses	-	(989)	-	-	(28)	(742)	(1,759)
	9	-	218	2,606	89	493	3,415
Acquisitions (F)	-	-	-	1,898	-	-	1,898
Divestitures (F)	(3)	-	-	-	-	-	(3)
Translation	2	-	(8)	(46)	(3)	(8)	(63)
Balance at December 31, 2014:							
Goodwill	8	989	210	4,458	114	1,227	7,006
Accumulated impairment losses	-	(989)	-	-	(28)	(742)	(1,759)
	8	-	210	4,458	86	485	5,247
Acquisitions (F)	-	-	-	261	-	-	261
Divestitures (F)	-	-	(1)	-	-	-	(1)
Impairment	-	-	-	-	(25)	-	(25)
Translation	(2)	-	(8)	(59)	(3)	(9)	(81)
Balance at December 31, 2015:							
Goodwill	6	989	201	4,660	111	1,218	7,185
Accumulated impairment losses	-	(989)	-	-	(53)	(742)	(1,784)
	6	-	201	4,660	58	476	5,401

* As of December 31, 2015, the amount reflected in Corporate is allocated to four of Alcoa's five reportable segments ($146 to Alumina, $59 to Global Rolled Products, $253 to Engineered Products and Solutions, and $18 to Transportation and Construction Solutions) included in the table above for purposes of impairment testing (see Note A). This goodwill is reflected in Corporate for segment reporting purposes because it is not included in management's assessment of performance by the four reportable segments.

In 2015 and 2013, Alcoa recognized an impairment of goodwill in the amount of $25 and $1,731 ($1,719 after noncontrolling interest), respectively, related to the annual impairment review of the soft alloy extrusion business in Brazil (included in the Transportation and Construction Solutions segment) and the Primary Metals segment, respectively, (see Goodwill and Other Intangible Assets policy in Note A).

Other intangible assets, which are included in Other noncurrent assets on the accompanying Consolidated Balance Sheet, were as follows:

December 31, 2015	Gross carrying amount	Accumulated amortization
Computer software	$ 969	$ (801)
Patents and licenses	135	(104)
Other intangibles*	988	(74)
Total amortizable intangible assets	2,092	(979)
Indefinite-lived trade names and trademarks	45	-
Total other intangible assets	$ 2,137	$ (979)

* As of December 31, 2015, Other intangibles include amounts related to the acquisitions of Firth Rixson, TITAL, and RTI (see Note F).

December 31, 2014	Gross carrying amount	Accumulated amortization
Computer software	$ 973	$ (775)
Patents and licenses	133	(98)
Other intangibles*	493	(35)
Total amortizable intangible assets	1,599	(908)
Indefinite-lived trade names and trademarks	46	-
Total other intangible assets	$ 1,645	$ (908)

* As of December 31, 2014, Other intangibles include amounts related to the acquisition of Firth Rixson (see Note F).

Computer software consists primarily of software costs associated with an enterprise business solution (EBS) within Alcoa to drive common systems among all businesses.

Amortization expense related to the intangible assets in the tables above for the years ended December 31, 2015, 2014, and 2013 was $77, $69, and $73, respectively, and is expected to be in the range of approximately $75 to $85 annually from 2016 to 2020.

F. Acquisitions and Divestitures

Pro forma results of the Company, assuming all acquisitions described below were made at the beginning of the earliest prior period presented, would not have been materially different from the results reported.

2015 Acquisitions. In March 2015, Alcoa completed the acquisition of an aerospace structural castings company, TITAL, for $204 (€188) in cash (an additional $1 (€1) was paid in September 2015 to settle working capital in accordance with the purchase agreement). This transaction is no longer subject to post-closing adjustments. TITAL, a privately held company with approximately 650 employees based in Germany, produces aluminum and titanium investment casting products for the aerospace and defense end markets. The purpose of this acquisition is to capture increasing demand for advanced jet engine components made of titanium, establish titanium-casting capabilities in Europe, and expand existing aluminum casting capacity. The assets, including the associated goodwill, and liabilities of this business were included within Alcoa’s Engineered Products and Solutions segment since the date of acquisition. Based on the preliminary allocation of the purchase price, goodwill of $118 was recorded for this transaction, none of which is estimated to be deductible for income tax purposes. The final allocation of the purchase price will be based on management’s best estimates, including a third-party valuation of certain assets acquired, which may result in the identification of other intangible assets. This valuation is expected to be completed in March 2016.

Also in March 2015, Alcoa signed a definitive agreement to acquire RTI International Metals, Inc. (RTI), a U.S. company that was publicly traded on the New York Stock Exchange under the ticker symbol "RTI." On July 23, 2015, after satisfying all customary closing conditions and receiving the required regulatory and RTI shareholder approvals, Alcoa completed the acquisition of RTI. Alcoa purchased all outstanding shares of RTI common stock in a stock-for-stock transaction valued at $870 (based on the $9.96 per share July 23, 2015 closing price of Alcoa's common stock). Each issued and outstanding share of RTI common stock prior to the completion of the transaction was converted into the right to receive 2.8315 shares of Alcoa common stock. In total, Alcoa issued 87,397,414 shares of its common stock to consummate this transaction, which was not reflected in the accompanying Statement of Consolidated Cash Flows as it represents a noncash financing activity. The exchange ratio was the quotient of a $41 per RTI common share acquisition price and the $14.48 per share March 6, 2015 closing price of Alcoa's common stock. In addition to the transaction price, Alcoa also paid $25 ($19 after-tax) in professional fees and costs related to this acquisition. This amount was recorded in Selling, general administrative, and other expenses on the accompanying Statement of Consolidated Operations.

RTI is a global supplier of titanium and specialty metal products and services for the commercial aerospace, defense, energy, and medical device end markets. The purpose of this acquisition is to expand Alcoa's range of titanium offerings and add advanced technologies and materials, primarily related to the aerospace end market. In 2014, RTI generated net sales of $794 and had approximately 2,600 employees. The operating results and assets and liabilities of RTI were included within Alcoa's Engineered Products and Solutions segment since the date of acquisition. Third-party sales and after-tax operating income (Alcoa's primary segment performance measure—see Note Q) of RTI from the acquisition date through December 31, 2015 were $309 and less than $(1), respectively.

The following table represents the preliminary allocation of the purchase price by major asset acquired and liability assumed, as well as the amount of goodwill recognized:

Assets:	
Cash and cash equivalents	$ 302
Receivables from customers	103
Inventories	531
Prepaid expenses and other current assets	47
Properties, plants, and equipment	436
Goodwill	240
Other noncurrent assets	93
Total assets	$1,752
Liabilities:	
Accounts payable	$ 90
Other current liabilities	94
Long-term debt due within one year	115
Long-term debt, less amount due within one year	385
Other noncurrent liabilities	138
Total liabilities	$ 822
Equity:	
Additional capital	$ 60
Total equity	$ 60

The amounts in the table above are subject to change based, in part, on management's review of a third-party valuation of the assets acquired and liabilities assumed, which is expected to be completed in mid-2016.

As reflected in the table above, Alcoa recognized goodwill of $240, which represents the earnings growth potential of RTI, Alcoa's ability to expand its titanium capabilities in the aerospace market, and expected synergies from combining the operations of the two companies. This goodwill was allocated to a new Alcoa reporting unit associated with the Engineered Products and Solutions segment, Alcoa Titanium and Engineered Products, which consists solely of the acquired RTI business. None of this goodwill is deductible for income tax purposes.

The other noncurrent assets in the table above include an estimate for intangible assets of $73, most of which were included in Alcoa's other intangibles class (see Note E). The specific identification and weighted-average amortization period for these intangible assets is dependent on the final valuation.

As part of this acquisition, Alcoa assumed the obligation to repay two tranches of convertible debt; one tranche was due and settled in cash on December 1, 2015 (principal amount of $115) and the other tranche is due on October 15, 2019 (principal amount of $403). Upon conversion of the 2019 convertible notes in accordance with their terms, holders will receive, at Alcoa's election, cash, shares of common stock (up to 27,990,966 shares), or a combination of cash and shares. This cash conversion feature requires the convertible notes to be bifurcated into a liability component and an equity component. The fair value of the liability component was determined by calculating the net present value of the cash flows of the convertible notes using the interest rate of a similar instrument without a conversion feature. The fair value of the equity component is the difference between the fair value of the entire instrument on the date of acquisition and the fair value of the liability and is included as Additional capital on the accompanying Consolidated Balance Sheet.

2015 Divestitures. In 2015, Alcoa completed the divestiture of an operation in Russia (see below) and had post-closing adjustments, as provided for in the respective purchase agreements, related to three divestitures completed in December 2014 (see 2014 Divestitures below). The divestiture and post-closing adjustments combined resulted in net cash received of $30 and a net loss of $161 ($151 after-tax and noncontrolling interest), which was recorded in Restructuring and other charges (see Note D) on the accompanying Statement of Consolidated Operations. These four divestitures are no longer subject to post-closing adjustments.

In March 2015, Alcoa completed the sale of a rolling mill located in Belaya Kalitva, Russia to a wholly-owned subsidiary of Stupino Titanium Company. While owned by Alcoa, the operating results and assets and liabilities of the rolling mill were included in the Global Rolled Products segment. The rolling mill generated sales of approximately $130 in 2014 and, at the time of divestiture, had approximately 1,870 employees.

2014 Acquisitions. In June 2014, Alcoa signed a purchase agreement to acquire an aerospace jet engine components company, Firth Rixson, from Oak Hill Capital Partners for $2,850. The purchase price was composed of $2,350 in cash and $500 of Alcoa common stock. The common stock component was equivalent to 36,523,010 shares at a per share price of $13.69, as determined in the agreement. In conjunction with the purchase agreement, Alcoa also entered into an earn-out agreement, which states that Alcoa will make earn-out payments up to an aggregate maximum amount of $150 through December 31, 2020 upon certain conditions (see below for additional information). On November 19, 2014, after satisfying all customary closing conditions and receiving the required regulatory approvals, Alcoa completed the acquisition of Firth Rixson for $2,995. The purchase price was composed of $2,385 in cash (net of cash acquired) and $610 of Alcoa common stock. The cash portion of the transaction price increased by $35 due to working capital and other adjustments based on the provisions of the purchase agreement. The common stock portion of the transaction price was based on the closing market price ($16.69 per share) of Alcoa's common stock on the acquisition date. This transaction is subject to certain post-closing adjustments as defined in the purchase agreement.

In addition to the transaction price, Alcoa also paid $42 ($34 after-tax) in professional fees and costs related to this acquisition. This amount was recorded in Selling, general administrative, and other expenses on the accompanying Statement of Consolidated Operations. Additionally, Alcoa recorded $13 ($8 after-tax) in Interest expense on the accompanying Statement of Consolidated Operations for costs associated with the execution (in June 2014) and termination (in September 2014) of a $2,500 364-day senior unsecured bridge term loan facility. This facility was entered into for the purpose of financing all or a portion of the cash consideration for this acquisition and to pay fees and expenses incurred in connection therewith. However, in September 2014, the facility was no longer necessary as Alcoa completed the issuance of $2,500 in debt (see Note K) and equity (see Note R) instruments to finance the acquisition.

Firth Rixson manufactures rings, forgings, and metal products for the aerospace end market, as well as other markets requiring highly engineered material applications. This business has 13 operating facilities in the United States, United Kingdom, Europe, and Asia employing approximately 2,400 people combined. The purpose of this acquisition is to strengthen Alcoa's aerospace business and position the Company to capture additional aerospace growth with a broader range of high-growth, value-add jet engine components. The operating results and assets and liabilities of Firth Rixson were included within the Engineered Products and Solutions segment since the date of acquisition. Third-party sales and after-tax operating income (Alcoa's primary segment performance measure—see Note Q) of Firth Rixson from the acquisition date through December 31, 2014 were $81 and $(12), respectively.

The following table represents the final allocation of the purchase price by major asset acquired and liability assumed, as well as the amount of goodwill recognized and the net present value of the potential earn-out:

Assets:	
Receivables from customers	$ 193
Inventories	227
Prepaid expenses and other current assets	22
Properties, plants, and equipment	493
Goodwill	1,801
Other noncurrent assets	758
Total assets	$3,494
Liabilities:	
Accounts payable	$ 162
Other current liabilities	100
Contingent consideration	130
Other noncurrent liabilities	107
Total liabilities	$ 499

As reflected in the table above, Alcoa recognized goodwill of $1,801, which represents the earnings growth potential of Firth Rixson and expected synergies from combining the operations of the two companies. The goodwill was allocated to two of Alcoa's reporting units associated with the Engineered Products and Solutions segment, Alcoa Fastening Systems and Rings ($1,117) and Alcoa Forging and Extrusions ($684), on a relative fair value basis. None of the goodwill is deductible for income tax purposes.

The other noncurrent assets in the table above represent intangible assets, which were included in the other intangibles class (see Note E). These intangible assets consist primarily of customer relationships and contracts, backlog, qualifications, and technology, and have a weighted-average amortization period of 35 years.

The contingent consideration liability presented in the table above represents the net present value of the potential earn-out of $150 (Level 3 in the fair value hierarchy—see Note X). This earn-out is contingent on the Firth Rixson forging business in Savannah, Georgia achieving certain identified financial targets through December 31, 2020. Management has determined that payment of the maximum amount is probable based on the forecasted financial performance of this location. It is estimated that the earn-out will be paid in 2019 through 2020. The fair value of this liability will be updated in future periods with any change resulting in a corresponding charge or credit to earnings.

In August 2014, Alcoa completed the acquisition of the 30% outstanding noncontrolling interest in the aluminum brazing sheet venture in Kunshan City, China from Shanxi Yuncheng Engraving Group for $28. The $3 difference between the purchase price and the carrying value of the noncontrolling interest on Alcoa's Consolidated Balance Sheet was included in Additional capital.

2014 Divestitures. In 2014, Alcoa completed the divestiture of four operations as described below. Combined, these transactions yielded net cash proceeds of $247 and resulted in a net loss of $332 ($163 after-tax and noncontrolling interest), which was recorded in Restructuring and other charges (see Note D) on the accompanying Statement of Consolidated Operations. All four transactions were subject to certain post-closing adjustments as defined in the respective purchase agreements as of December 31, 2014 (see 2015 Divestitures above).

In November 2014, Alcoa completed the sale of an aluminum rod plant located in Bécancour, Québec, Canada to Sural Laminated Products. This facility takes molten aluminum and shapes it into the form of a rod, which is used by customers primarily for the transportation of electricity. While owned by Alcoa, the operating results and assets and liabilities of this plant were included in the Primary Metals segment. In conjunction with this transaction, Alcoa entered into a multi-year agreement with Sural Laminated Products to supply molten aluminum for the rod plant. The aluminum rod plant generated sales of approximately $200 in 2013 and, at the time of divestiture, had approximately 60 employees.

In December 2014, Alcoa's majority-owned subsidiary (60%), Alcoa World Alumina and Chemicals (AWAC), completed the sale of its ownership stake in a bauxite mine and alumina refinery joint venture in Jamaica to Noble Group Ltd. The joint venture was 55% owned by a subsidiary of AWAC, which is 40% owned by Alumina Limited. While owned by AWAC, 55% of both the operating results and assets and liabilities of this joint venture were included in the Alumina segment. As it relates to AWAC's previous 55% ownership stake, the refinery (AWAC's share of the capacity was 778,800 metric-tons-per-year) generated sales (third-party and intersegment) of approximately $200 in 2013, and the refinery and mine combined, at the time of divestiture, had approximately 500 employees.

Also in December 2014, Alcoa completed the sale of its 50.33% ownership stake in the Mt. Holly smelter located in Goose Creek, South Carolina to Century Aluminum Company. While owned by Alcoa, 50.33% of both the operating results and assets and liabilities related to the smelter were included in the Primary Metals segment. As it relates to Alcoa's previous 50.33% ownership stake, the smelter (Alcoa's share of the capacity was 115,000 metric-tons-per-year) generated sales of approximately $280 in 2013 and, at the time of divestiture, had approximately 250 employees.

Additionally in December 2014, Alcoa completed the sale of three rolling mills located in Spain (Alicante and Amorebieta) and France (Castelsarrasin) to a subsidiary of Atlas Holdings LLC. While owned by Alcoa, the operating results and assets and liabilities of the rolling mills were included in the Global Rolled Products segment. In conjunction with this transaction, Alcoa entered into a multi-year agreement with the buyer to supply aluminum for the rolling mills. The rolling mills combined generated sales of approximately $500 in 2013 and, at the time of divestiture, had approximately 750 employees.

G. Inventories

December 31,	2015	2014
Finished goods	$ 811	$ 768
Work-in-process	1,272	1,035
Bauxite and alumina	445	578
Purchased raw materials	720	508
Operating supplies	194	193
	$3,442	$3,082

At December 31, 2015 and 2014, the total amount of inventories valued on a LIFO basis was $1,373 and $1,514, respectively. If valued on an average-cost basis, total inventories would have been $559 and $767 higher at December 31, 2015 and 2014, respectively. During 2015 and 2013, reductions in LIFO inventory quantities caused partial liquidations of the lower cost LIFO inventory base. These liquidations resulted in the recognition of income of $1 ($1 after-tax) in 2015 and $26 ($17 after-tax) in 2013.

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H. Properties, Plants, and Equipment, Net

December 31,	2015	2014
Land and land rights, including mines*	$ 481	$ 548
Structures:		
Alumina:		
Alumina refining	2,387	2,750
Bauxite mining	1,054	1,403
Primary Metals:		
Aluminum smelting	3,567	3,725
Power generation	518	645
Global Rolled Products	1,298	1,276
Engineered Products and Solutions*	658	547
Transportation and Construction Solutions	239	239
Other	619	715
	10,340	11,300
Machinery and equipment:		
Alumina:		
Alumina refining	3,709	4,165
Bauxite mining	428	524
Primary Metals:		
Aluminum smelting	6,831	7,210
Power generation	1,044	1,080
Global Rolled Products	5,372	5,333
Engineered Products and Solutions*	2,745	2,402
Transportation and Construction Solutions	682	669
Other	750	820
	21,561	22,203
	32,382	34,051
Less: accumulated depreciation, depletion, and amortization	18,872	19,091
	13,510	14,960
Construction work-in-progress*	1,305	1,466
	$14,815	$16,426

* As of December 31, 2015 and 2014, these line items include amounts related to the acquisitions of Firth Rixson, TITAL, and/or RTI (see Note F).

As of December 31, 2015 and 2014, the net carrying value of temporarily idled smelting assets was $324 and $419, representing 778 kmt and 665 kmt of idle capacity, respectively. Also, as of December 31, 2015 and 2014, the net carrying value of temporarily idled refining assets was $53 and $62, representing 2,801 kmt and 1,216 kmt of idle capacity, respectively.

I. Investments

December 31,	2015	2014
Equity investments	$1,476	$1,780
Other investments	209	164
	$1,685	$1,944

Equity Investments. As of December 31, 2015 and 2014, Equity investments included an interest in a project to develop a fully-integrated aluminum complex in Saudi Arabia (see below); bauxite mining interests in Guinea (45% of Halco Mining, Inc.) and Brazil (18.2% of Mineração Rio do Norte S.A.); two hydroelectric power projects in Brazil (see Note N); a natural gas pipeline in Australia (see Note N); a smelter operation in Canada (50% of Pechiney Reynolds Quebec, Inc.); and a hydroelectric power company in Canada (40% of Manicouagan Power Limited Partnership). Pechiney Reynolds Quebec, Inc. owns a 50.1% interest in the Bécancour smelter in Quebec, Canada thereby entitling Alcoa to a 25.05% interest in the smelter. Through two wholly-owned Canadian subsidiaries, Alcoa also owns 49.9% of the Bécancour smelter. Halco Mining, Inc. owns 100% of Boké Investment Company, which owns 51% of Compagnie des Bauxites de Guinée. The investments in the bauxite mining interests in Guinea and Brazil and the natural gas pipeline in Australia are held by wholly-owned subsidiaries of Alcoa World Alumina and Chemicals (AWAC), which is owned 60% by Alcoa and 40% by Alumina Limited. In 2015, 2014, and 2013, Alcoa received $152, $86, and $89, respectively, in dividends from its equity investments.

Alcoa and Saudi Arabian Mining Company (known as “Ma’aden”) have a 30-year (from December 2009) joint venture shareholders’ agreement (automatic extension for an additional 20 years, unless the parties agree otherwise or unless earlier terminated) setting forth the terms for the development, construction, ownership, and operation of an integrated aluminum complex in Saudi Arabia. Specifically, the project being developed by the joint venture consists of: (i) a bauxite mine for the extraction of approximately 4,000 kmt of bauxite from the Al Ba’itha bauxite deposit near Quiba in the northern part of Saudi Arabia; (ii) an alumina refinery with an initial capacity of 1,800 kmt; (iii) a primary aluminum smelter with an initial capacity of 740 kmt; and (iv) a rolling mill with an initial capacity of 380 kmt. The refinery, smelter, and rolling mill have been constructed in an industrial area at Ras Al Khair on the east coast of Saudi Arabia. The facilities use critical infrastructure, including power generation derived from reserves of natural gas, as well as port and rail facilities, developed by the government of Saudi Arabia. First production from the smelter, rolling mill, and mine and refinery occurred in December of 2012, 2013, and 2014, respectively.

In 2012, Alcoa and Ma’aden agreed to expand the capabilities of the rolling mill to include a capacity of 100 kmt dedicated to supplying aluminum automotive, building and construction, and foil stock sheet. First production related to the expanded capacity occurred in 2014. This expansion is not expected to result in additional equity investment (see below) due to significant savings anticipated from a change in the project execution strategy of the initial 380 kmt capacity of the rolling mill.

The joint venture is owned 74.9% by Ma’aden and 25.1% by Alcoa and consists of three separate companies as follows: one each for the mine and refinery, the smelter, and the rolling mill. Following the signing of the joint venture shareholders’ agreement, Alcoa paid Ma’aden $80 representing the initial investment in the project. In addition, Alcoa paid $56 to Ma’aden, representing Alcoa’s pro rata share of certain agreed upon pre-incorporation costs incurred by Ma’aden prior to formation of the joint venture.

Ma’aden and Alcoa have put and call options, respectively, whereby Ma’aden can require Alcoa to purchase from Ma’aden, or Alcoa can require Ma’aden to sell to Alcoa, a 14.9% interest in the joint venture at the then fair market value. These options may only be exercised in a six-month window that opens five years after the Commercial Production Date (as defined in the joint venture shareholders’ agreement) and, if exercised, must be exercised for the full 14.9% interest. The Commercial Production Date for the smelting company was declared on September 1, 2014. There have not been similar declarations yet for the rolling mill company and the mining and refining company.

The Alcoa affiliate that holds Alcoa’s interests in the smelting company and the rolling mill company is wholly owned by Alcoa, and the Alcoa affiliate that holds Alcoa’s interests in the mining and refining company is wholly owned by AWAC. Except in limited circumstances, Alcoa may not sell, transfer or otherwise dispose of or encumber or enter into any agreement in respect of the votes or other rights attached to its interests in the joint venture without Ma’aden’s prior written consent.

A number of Alcoa employees perform various types of services for the smelting, rolling mill, and refining and mining companies as part of the construction of the fully-integrated aluminum complex. At December 31, 2015 and 2014, Alcoa had an outstanding receivable of $19 and $30, respectively, from the smelting, rolling mill, and refining and mining companies for labor and other employee-related expenses.

Capital investment in the project is expected to total approximately $10,800 (SAR 40.5 billion) and has been funded through a combination of equity contributions by the joint venture partners and project financing by the joint venture, which has been guaranteed by both partners (see below). Both the equity contributions and the guarantees of the project financing are based on the joint venture's partners' ownership interests. Originally, it was estimated that Alcoa's total equity investment in the joint venture would be approximately $1,100, of which Alcoa has contributed $981, including $29 and $120 in 2015 and 2014, respectively. Based on changes to both the project's capital investment and equity and debt structure from the initial plans, the estimated $1,100 equity contribution may be reduced. As of December 31, 2015 and 2014, the carrying value of Alcoa's investment in this project was $928 and $983, respectively.

The smelting and rolling mill companies have project financing totaling $4,311 (reflects principal payments made through December 31, 2015), of which $1,082 represents Alcoa's share (the equivalent of Alcoa's 25.1% interest in the smelting and rolling mill companies). In conjunction with the financings, Alcoa issued guarantees on behalf of the smelting and rolling mill companies to the lenders in the event that such companies default on their debt service requirements through 2017 and 2020 for the smelting company and 2018 and 2021 for the rolling mill company (Ma'aden issued similar guarantees for its 74.9% interest). Alcoa's guarantees for the smelting and rolling mill companies cover total debt service requirements of $142 in principal and up to a maximum of approximately $50 in interest per year (based on projected interest rates). At December 31, 2015 and 2014, the combined fair value of the guarantees was $7 and $8, respectively, which was included in Other noncurrent liabilities and deferred credits on the accompanying Consolidated Balance Sheet.

The mining and refining company has project financing totaling $2,232, of which $560 represents AWAC's 25.1% interest in the mining and refining company. In conjunction with the financings, Alcoa, on behalf of AWAC, issued guarantees to the lenders in the event that the mining and refining company defaults on its debt service requirements through 2019 and 2024 (Ma'aden issued similar guarantees for its 74.9% interest). Alcoa's guarantees for the mining and refining company cover total debt service requirements of $120 in principal and up to a maximum of approximately $30 in interest per year (based on projected interest rates). At December 31, 2015 and 2014, the combined fair value of the guarantees was $3 and $4, respectively, which was included in Other noncurrent liabilities and deferred credits on the accompanying Consolidated Balance Sheet. In the event Alcoa would be required to make payments under the guarantees, 40% of such amount would be contributed to Alcoa by Alumina Limited, consistent with its ownership interest in AWAC.

In June 2013, all three joint venture companies entered into a 20-year gas supply agreement with Saudi Aramco, replacing the previous authorized gas allocation of the Ministry of Petroleum and Mineral Resources of Saudi Arabia (the "Ministry of Petroleum"). The gas supply agreement provides sufficient fuel to meet manufacturing process requirements as well as fuel to the adjacent combined water and power plant being constructed by Saline Water Conversion Corporation, which is owned by the government of Saudi Arabia and is responsible for desalinating sea water and producing electricity for Saudi Arabia. The combined water and power plant will convert the three joint venture companies' gas into electricity and water at cost, which will be supplied to the refinery, smelter, and rolling mill. A $60 letter of credit previously provided to the Ministry of Petroleum by Ma'aden (Alcoa is responsible for its pro rata share) under the gas allocation was terminated in June 2015 due to the completion of certain auxiliary rolling facilities.

The parties subject to the joint venture shareholders' agreement may not sell, transfer, or otherwise dispose of, pledge, or encumber any interests in the joint venture until certain milestones have been met as defined in both agreements. Under the joint venture shareholders' agreement, upon the occurrence of an unremedied event of default by Alcoa, Ma'aden may purchase, or, upon the occurrence of an unremedied event of default by Ma'aden, Alcoa may sell, its interest for consideration that varies depending on the time of the default.

Other Investments. As of December 31, 2015 and 2014, Other investments included $193 and $153, respectively, in exchange-traded fixed income and equity securities, which are classified as available-for-sale and are carried at fair value with unrealized gains and losses recognized in other comprehensive income. Unrealized and realized gains and losses related to these securities were immaterial in 2015, 2014, and 2013.

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J. Other Noncurrent Assets

December 31,	2015	2014
Intangibles, net (E)	$1,158	$ 737
Fair value of derivative contracts (X)	1,008	163
Cash surrender value of life insurance	492	506
Gas supply prepayment (N)	288	-
Prepaid gas transmission contract (N)	268	295
Value-added tax receivable	233	294
Deferred mining costs, net	203	209
Unamortized debt expense	58	65
Prepaid pension benefit (W)	44	53
Advance related to European Commission Matter in Italy (N)	-	111
Other	254	326
	$4,006	$2,759

K. Debt

Long-Term Debt.

December 31,	2015	2014
5.55% Notes, due 2017	$ 750	$ 750
6.50% Bonds, due 2018	250	250
6.75% Notes, due 2018	750	750
5.72% Notes, due 2019	750	750
1.63% Convertible Notes, due 2019*	403	-
6.150% Notes, due 2020	1,000	1,000
5.40% Notes, due 2021	1,250	1,250
5.87% Notes, due 2022	627	627
5.125% Notes, due 2024	1,250	1,250
5.90% Notes, due 2027	625	625
6.75% Bonds, due 2028	300	300
5.95% Notes due 2037	625	625
BNDES Loans, due 2015-2029 (see below for weighted average rates)	174	267
Iowa Finance Authority Loan, due 2042 (4.75%)	250	250
Other**	61	104
	9,065	8,798
Less: amount due within one year	21	29
	$9,044	$8,769

* Amount was assumed in conjunction with the acquisition of RTI (see Note F).

** Other includes various financing arrangements related to subsidiaries, unamortized debt discounts related to the outstanding notes and bonds listed in the table above, an equity option related to the convertible notes due in 2019 (see Note F), and adjustments to the carrying value of long-term debt related to an interest swap contract accounted for as a fair value hedge (see Derivatives in Note X).

The principal amount of long-term debt maturing in each of the next five years is $21 in 2016, $771 in 2017, $1,039 in 2018, $1,140 in 2019, and $1,018 in 2020.

Public Debt—In early 2014, holders of $575 principal amount of Alcoa's 5.25% Convertible Notes due March 15, 2014 (the "2014 Notes") exercised their option to convert the 2014 Notes into 89 million shares of Alcoa common stock. The conversion rate for the 2014 Notes was 155.4908 shares of Alcoa's common stock per $1,000 (in full dollars) principal amount of notes, equivalent to a conversion price of $6.43 per share. The difference between the $575 principal amount of the 2014 Notes and the $89 par value of the issued shares increased Additional capital on the accompanying Consolidated Balance Sheet. This transaction was not reflected in the accompanying Statement of Consolidated Cash Flows as it represents a noncash financing activity.

In September 2014, Alcoa completed a public debt offering under its shelf registration statement for $1,250 of 5.125% Notes due 2024 (the "2024 Notes"). Alcoa received $1,238 in net proceeds from the public debt offering reflecting an original issue discount. The net proceeds were used, together with the net proceeds of newly issued mandatory convertible preferred stock (see Note R), to finance the cash portion of the acquisition of Firth Rixson (see Note F). The original issue discount was deferred and is being amortized to interest expense over the term of the 2024 Notes. Interest on the 2024 Notes will be paid semi-annually in April and October, commencing April 2015. Alcoa has the option to redeem the 2024 Notes, as a whole or in part, at any time or from time to time, on at least 30 days, but not more than 60 days, prior notice to the holders of the 2024 Notes at a redemption price specified in the 2024 Notes. The 2024 Notes are subject to repurchase upon the occurrence of a change in control repurchase event (as defined in the 2024 Notes) at a repurchase price in cash equal to 101% of the aggregate principal amount of the 2024 Notes repurchased, plus any accrued and unpaid interest on the 2024 Notes repurchased. The 2024 Notes rank *pari passu* with Alcoa's other unsecured unsubordinated indebtedness.

BNDES Loans—Alcoa Alumínio (Alumínio) has a loan agreement with Brazil's National Bank for Economic and Social Development (BNDES) that provides for a financing commitment of $397 (R$687), which is divided into three subloans and was used to pay for certain expenditures of the Estreito hydroelectric power project. Interest on the three subloans is a Brazil real rate of interest equal to BNDES' long-term interest rate, 7.00% and 5.00% as of December 31, 2015 and 2014, respectively, plus a weighted-average margin of 1.48%. Principal and interest are payable monthly, which began in October 2011 and end in September 2029 for two of the subloans totaling R$667 and began in July 2012 and end in June 2018 for the subloan of R$20. This loan may be repaid early without penalty with the approval of BNDES.

As of December 31, 2015 and 2014, Alumínio's outstanding borrowings were $136 (R$522) and $209 (R$560), respectively, and the weighted-average interest rate was 8.49%. During 2015 and 2014, Alumínio repaid $15 (R$48) and $20 (R$47), respectively, of outstanding borrowings. Additionally, Alumínio borrowed less than $1 (R$1) and $1 (R$2) under the loan in 2015 and 2014, respectively.

Alumínio has another loan agreement with BNDES that provides for a financing commitment of $85 (R$177), which also was used to pay for certain expenditures of the Estreito hydroelectric power project. Interest on the loan is a Brazil real rate of interest equal to BNDES' long-term interest rate plus a margin of 1.55%. Principal and interest are payable monthly, which began in January 2013 and end in September 2029. This loan may be repaid early without penalty with the approval of BNDES. As of December 31, 2015 and 2014, Alumínio's outstanding borrowings were $38 (R146) and $58 (R$156), respectively, and the interest rate was 6.55%. During 2015 and 2014, Alumínio repaid $3 (R$10) and $5 (R$11), respectively, of outstanding borrowings.

Credit Facilities. On July 25, 2014, Alcoa entered into a Five-Year Revolving Credit Agreement (the "Credit Agreement") with a syndicate of lenders and issuers named therein. The Credit Agreement provides a $4,000 senior unsecured revolving credit facility (the "Credit Facility"), the proceeds of which are to be used to provide working capital or for other general corporate purposes of Alcoa. Subject to the terms and conditions of the Credit Agreement, Alcoa may from time to time request increases in lender commitments under the Credit Facility, not to exceed $500 in aggregate principal amount, and may also request the issuance of letters of credit, subject to a letter of credit sublimit of $1,000 under the Credit Facility.

The Credit Facility was scheduled to mature on July 25, 2019; however, on July 7, 2015, Alcoa received approval for a one-year extension of the maturity date by the lenders and issuers that support the Credit Facility. As such, the Credit Facility now matures on July 25, 2020, unless extended or earlier terminated in accordance with the provisions of the Credit Agreement. Alcoa may make one additional one-year extension request during the remaining term of the Credit Facility, subject to the lender consent requirements set forth in the Credit Agreement. Under the provisions of the Credit Agreement, Alcoa will pay a fee of 0.25% (based on Alcoa's long-term debt ratings as of December 31, 2015) of the total commitment per annum to maintain the Credit Facility.

The Credit Facility is unsecured and amounts payable under it will rank *pari passu* with all other unsecured, unsubordinated indebtedness of Alcoa. Borrowings under the Credit Facility may be denominated in U.S. dollars or euros. Loans will bear interest at a base rate or a rate equal to LIBOR, plus, in each case, an applicable margin based on the credit ratings of Alcoa's outstanding senior unsecured long-term debt. The applicable margin on base rate loans and LIBOR loans will be 0.50% and 1.50% per annum, respectively, based on Alcoa's long-term debt ratings as of December 31, 2015. Loans may be prepaid without premium or penalty, subject to customary breakage costs.

The Credit Agreement replaces Alcoa's Five-Year Revolving Credit Agreement, dated as of July 25, 2011 (the "Former Credit Agreement"), which was scheduled to mature on July 25, 2017. The Former Credit Agreement, which had a total capacity of $3,750 and was undrawn, was terminated effective July 25, 2014.

The Credit Agreement includes covenants substantially similar to those in the Former Credit Agreement, including, among others, (a) a leverage ratio, (b) limitations on Alcoa's ability to incur liens securing indebtedness for borrowed money, (c) limitations on Alcoa's ability to consummate a merger, consolidation or sale of all or substantially all of its assets, and (d) limitations on Alcoa's ability to change the nature of its business. As of December 31, 2015, Alcoa was in compliance with all such covenants.

The obligation of Alcoa to pay amounts outstanding under the Credit Facility may be accelerated upon the occurrence of an "Event of Default" as defined in the Credit Agreement. Such Events of Default include, among others, (a) Alcoa's failure to pay the principal of, or interest on, borrowings under the Credit Facility, (b) any representation or warranty of Alcoa in the Credit Agreement proving to be materially false or misleading, (c) Alcoa's breach of any of its covenants contained in the Credit Agreement, and (d) the bankruptcy or insolvency of Alcoa.

There were no amounts outstanding at December 31, 2015 and 2014 and no amounts were borrowed during 2015 or 2014 under the Credit Facility. Also, there were no amounts borrowed during 2014 related to the Former Credit Agreement.

In addition to the Credit Agreement above, Alcoa has a number of other credit agreements that provide a combined borrowing capacity of $990 as of December 31, 2015, of which $890 is due to expire in 2016 and $100 is due to expire in 2017. The purpose of any borrowings under these credit arrangements is to provide for working capital requirements and for other general corporate purposes. The covenants contained in all these arrangements are the same as the Credit Agreement (see above).

In 2015 and 2014, Alcoa borrowed and repaid $1,890 and $1,640, respectively, under the respective credit arrangements. The weighted-average interest rate and weighted-average days outstanding of the respective borrowings during 2015, 2014, and 2013 were 1.61%, 1.54%, and 1.57%, respectively, and 69 days, 67 days, and 213 days, respectively.

Short-Term Borrowings. At December 31, 2015 and 2014, Short-term borrowings were $38 and $54, respectively. These amounts included $32 and $50 at December 31, 2015 and 2014, respectively, related to accounts payable settlement arrangements with certain vendors and third-party intermediaries. These arrangements provide that, at the vendor's request, the third-party intermediary advances the amount of the scheduled payment to the vendor, less an appropriate discount, before the scheduled payment date and Alcoa makes payment to the third-party intermediary on the date stipulated in accordance with the commercial terms negotiated with its vendors. Alcoa records imputed interest related to these arrangements in Interest expense on the accompanying Statement of Consolidated Operations.

Commercial Paper. Alcoa had no outstanding commercial paper at December 31, 2015 and 2014. In 2015 and 2014, the average outstanding commercial paper was $198 and $257, respectively. Commercial paper matures at various times within one year and had an annual weighted average interest rate of 0.6%, 0.6%, and 0.8% during 2015, 2014, and 2013, respectively.

L. Other Noncurrent Liabilities and Deferred Credits

December 31,	2015	2014
Environmental remediation (N)	$ 554	$ 473
Asset retirement obligations (C)	551	587
Income taxes (T)	521	377
Accrued compensation and retirement costs	329	346
Fair value of derivative contracts (X)	208	376
Liability related to the resolution of a legal matter (N)	148	222
Contingent payment related to an acquisition (F)	130	130
Deferred alumina sales revenue	84	93
Deferred credit related to derivative contract (X)	-	62
Other	213	230
	$2,738	$2,896

M. Noncontrolling Interests

The following table summarizes the noncontrolling shareholders' interests in the equity of certain Alcoa majority-owned consolidated subsidiaries:

December 31,	2015	2014
Alcoa World Alumina and Chemicals	$2,071	$2,474
Other	14	14
	$2,085	$2,488

In 2015, 2014, and 2013, Alcoa received $2, $43, and $9, respectively, in contributions from the noncontrolling shareholder (Alumina Limited) of Alcoa World Alumina and Chemicals.

In August 2014, Alcoa acquired the 30% outstanding noncontrolling interest in its aluminum brazing sheet venture in Kunshan City, China (see Note F).

In 2013, Noncontrolling interests included a charge of $17 related to a legal matter (see Settlement with Alumina Limited under Litigation in Note N).

N. Contingencies and Commitments

Contingencies

Litigation

Alba Matter

Civil Suit. On February 27, 2008, Alcoa Inc. received notice that Aluminium Bahrain B.S.C. ("Alba") had filed suit against Alcoa, Alcoa World Alumina LLC ("AWA"), and William Rice (collectively, the "Alcoa Parties"), and others, in the U.S. District Court for the Western District of Pennsylvania (the "Court"), Civil Action number 08-299, styled Aluminium Bahrain B.S.C. v. Alcoa Inc., Alcoa World Alumina LLC, William Rice, and Victor Phillip Dahdaleh. The complaint alleged that certain Alcoa entities and their agents, including Victor Phillip Dahdaleh, had engaged in a conspiracy over a period of 15 years to defraud Alba. The complaint further alleged that Alcoa and its employees or agents (1) illegally bribed officials of the government of Bahrain and/or officers of Alba in order to force Alba to purchase alumina at excessively high prices, (2) illegally bribed officials of the government of Bahrain and/or officers of Alba and issued threats in order to pressure Alba to enter into an agreement by which Alcoa would purchase an

equity interest in Alba, and (3) assigned portions of existing supply contracts between Alcoa and Alba for the sole purpose of facilitating alleged bribes and unlawful commissions. The complaint alleged that Alcoa and the other defendants violated the Racketeer Influenced and Corrupt Organizations Act (RICO) and committed fraud. Alba claimed damages in excess of $1,000. Alba's complaint sought treble damages with respect to its RICO claims; compensatory, consequential, exemplary, and punitive damages; rescission of the 2005 alumina supply contract; and attorneys' fees and costs.

On October 9, 2012, the Alcoa Parties, without admitting any liability, entered into a settlement agreement with Alba. The agreement called for AWA to pay Alba $85 in two equal installments, one-half at time of settlement and one-half one year later, and for the case against the Alcoa Parties to be dismissed with prejudice. Additionally, AWA and Alba entered into a long-term alumina supply agreement. On October 9, 2012, pursuant to the settlement agreement, AWA paid Alba $42.5, and all claims against the Alcoa Parties were dismissed with prejudice. On October 9, 2013 pursuant to the settlement agreement, AWA paid the remaining $42.5. Based on the settlement agreement, in the 2012 third quarter, Alcoa recorded a $40 charge in addition to the $45 charge it recorded in the 2012 second quarter in respect of the suit (see Agreement with Alumina Limited below).

Government Investigations. On February 26, 2008, Alcoa Inc. advised the Department of Justice ("DOJ") and the Securities and Exchange Commission ("SEC") that it had recently become aware of the claims by Alba as alleged in the Alba civil suit, had already begun an internal investigation and intended to cooperate fully in any investigation that the DOJ or the SEC may commence. On March 17, 2008, the DOJ notified Alcoa that it had opened a formal investigation. The SEC subsequently commenced a concurrent investigation. Alcoa has been cooperating with the government since that time.

In the past year, Alcoa had been seeking settlements of both investigations. In the second quarter of 2013, Alcoa proposed to settle the DOJ matter by offering the DOJ a cash payment of $103. Based on this offer, Alcoa recorded a charge of $103 in the 2013 second quarter. Also in the second quarter of 2013, Alcoa exchanged settlement offers with the SEC. However, the SEC staff rejected Alcoa's offer of $60 and no charge was recorded. During the remainder of 2013, settlement discussions with both the DOJ and the SEC continued.

On January 9, 2014, Alcoa resolved the investigations by the DOJ and the SEC. The settlement with the DOJ was reached with AWA. Under the terms of a plea agreement entered into with the DOJ, effective January 9, 2014, AWA pled guilty to one count of violating the anti-bribery provisions of the Foreign Corrupt Practices Act of 1977, as amended (the "FCPA"). As part of the DOJ resolution, AWA agreed to pay a total of $223, including a fine of $209 payable in five equal installments over four years. The first installment of $41.8, plus a one-time administrative forfeiture of $14, was paid in the first quarter of 2014, the second installment of $41.8 was paid in the first quarter of 2015, and the remaining installments of $41.8 each will be paid in the first quarters of 2016 through 2018 (the third installment was paid on January 8, 2016). The DOJ is bringing no case against Alcoa Inc.

Effective January 9, 2014, the Company also settled civil charges filed by the SEC in an administrative proceeding relating to the anti-bribery, internal controls, and books and records provisions of the FCPA. Under the terms of the settlement with the SEC, the Company agreed to a settlement amount of $175, but will be given credit for the $14 one-time forfeiture payment, which is part of the DOJ resolution, resulting in a total cash payment to the SEC of $161 payable in five equal installments over four years. The first and second installments of $32.2 each were paid to the SEC in the first quarter of 2014 and 2015, respectively, and the remaining installments of $32.2 each will be paid in the first quarters of 2016 through 2018 (the third installment was paid on January 25, 2016).

There was no allegation in the filings by the DOJ and there was no finding by the SEC that anyone at Alcoa Inc. knowingly engaged in the conduct at issue.

Based on the resolutions with both the DOJ and SEC, in the 2013 fourth quarter, Alcoa recorded a $288 charge, which includes legal costs of $7, in addition to the $103 charge it recorded in the 2013 second quarter in respect of the investigations (see Agreement with Alumina Limited below).

Agreement with Alumina Limited. AWA is a U.S.-based Alcoa World Alumina and Chemicals (“AWAC”) company organized under the laws of Delaware that owns, directly or indirectly, alumina refineries and bauxite mines in the Atlantic region. AWAC is an unincorporated global bauxite mining and alumina refining venture between Alcoa and Alumina Limited. AWAC consists of a number of affiliated operating entities, including AWA, which own, or have an interest in, or operate bauxite mines and alumina refineries in eight countries (seven as of December 31, 2014 due to the divestiture of an ownership interest in a mining and refining joint venture in Jamaica—see Note F). Alcoa owns 60% and Alumina Limited owns 40% of these individual entities, which are consolidated by the Company for financial reporting purposes.

In October 2012, Alcoa and Alumina Limited entered into an agreement to allocate the costs of the Alba civil settlement and all legal fees associated with this matter (including the government investigations discussed above) between Alcoa and Alumina Limited on an 85% and 15% basis, respectively, but this would occur only if a settlement is reached with the DOJ and the SEC regarding their investigations. As such, the $85 civil settlement in 2012 and all legal costs associated with the civil suit and government investigations incurred prior to 2013 were allocated on a 60% and 40% basis in the respective periods on Alcoa’s Statement of Consolidated Operations. As a result of the resolutions of the government investigations, the $384 charge and legal costs incurred in 2013 were allocated on an 85% and 15% basis per the allocation agreement with Alumina Limited. Additionally, the $85 civil settlement from 2012 and all legal costs associated with the civil suit and government investigations incurred prior to 2013 were reallocated on the 85% and 15% basis. The following table details the activity related to the Alba matter:

	2013			2012		
	Alcoa	Alumina Limited	Total	Alcoa	Alumina Limited	Total
Government investigations[1]	$ 326	$ 58	$ 384	$ -	$ -	$ -
Civil suit[1]	-	-	-	51	34	85
Reallocation of civil suit	21	(21)	-	-	-	-
Reallocation of legal costs	20	(20)	-	-	-	-
Loss before income taxes	367	17	384	51	34	85
Benefit for income taxes	66	-	66	18	-	18
Net loss[2]	$ 301	$ 17	$ 318	$ 33	$ 34	$ 67

(1) The amount in the Total column was recorded in Restructuring and other charges (see Note D).

(2) In 2013 and 2012, the amount for Alcoa was included in Net (loss) income attributable to Alcoa, and the amount for Alumina Limited was included in Net income (loss) attributable to noncontrolling interests.

Other Matters

On June 5, 2015, AWA and St. Croix Alumina, L.L.C. (“SCA”) filed a complaint in Delaware Chancery Court for a declaratory judgment and injunctive relief to resolve a dispute between Alcoa and Glencore Ltd. (“Glencore”) with respect to claimed obligations under a 1995 asset purchase agreement between Alcoa and Glencore. The dispute arose from Glencore’s demand that Alcoa indemnify it for liabilities it may have to pay to Lockheed Martin (“Lockheed”) related to the St. Croix alumina refinery. Lockheed had earlier filed suit against Glencore in federal court in New York seeking indemnity for liabilities it had incurred and would incur to the U.S. Virgin Islands to remediate certain properties at the refinery property and claimed that Glencore was required by an earlier, 1989 purchase agreement to indemnify it. Glencore had demanded that Alcoa indemnify and defend it in the Lockheed case and threatened to claim over against Alcoa in the New York action despite exclusive jurisdiction for resolution of disputes under the 1995 purchase agreement being in Delaware. After Glencore conceded that it was not seeking to add Alcoa to the New York action, AWA and SCA dismissed their complaint in the Chancery Court case and on August 6, 2015 filed a complaint for declaratory judgment in Delaware Superior Court. AWA and SCA filed a motion for judgment on the pleadings on September 16, 2015. Glencore answered AWA’s and SCA’s complaint and asserted counterclaims on August 27, 2015, and on October 2, 2015 filed its own motion for judgment on the pleadings. Argument on the parties’ motions was held by the court on December 7, 2015, and by order dated February 8, 2016, Alcoa’s motion was granted and Glencore’s motion was denied resulting in Alcoa not being liable to indemnify Glencore for the Lockheed action. On February 17,

2016, Glencore filed notice of its application for interlocutory appeal of the February 8 ruling. AWA and SCA have 10 days to respond. At this time, the Company is unable to reasonably predict the ultimate outcome for this matter.

Before 2002, Alcoa purchased power in Italy in the regulated energy market and received a drawback of a portion of the price of power under a special tariff in an amount calculated in accordance with a published resolution of the Italian Energy Authority, Energy Authority Resolution n. 204/1999 ("204/1999"). In 2001, the Energy Authority published another resolution, which clarified that the drawback would be calculated in the same manner, and in the same amount, in either the regulated or unregulated market. At the beginning of 2002, Alcoa left the regulated energy market to purchase energy in the unregulated market. Subsequently, in 2004, the Energy Authority introduced regulation no. 148/2004, which set forth a different method for calculating the special tariff that would result in a different drawback for the regulated and unregulated markets. Alcoa challenged the new regulation in the Administrative Court of Milan and received a favorable judgment in 2006. Following this ruling, Alcoa continued to receive the power price drawback in accordance with the original calculation method, through 2009, when the European Commission declared all such special tariffs to be impermissible "state aid." In 2010, the Energy Authority appealed the 2006 ruling to the Consiglio di Stato (final court of appeal). On December 2, 2011, the Consiglio di Stato ruled in favor of the Energy Authority and against Alcoa, thus presenting the opportunity for the energy regulators to seek reimbursement from Alcoa of an amount equal to the difference between the actual drawback amounts received over the relevant time period, and the drawback as it would have been calculated in accordance with regulation 148/2004. On February 23, 2012, Alcoa filed its appeal of the decision of the Consiglio di Stato (this appeal was subsequently withdrawn in March 2013). On March 26, 2012, Alcoa received a letter from the agency (Cassa Conguaglio per il Settore Eletrico (CCSE)) responsible for making and collecting payments on behalf of the Energy Authority demanding payment in the amount of approximately $110 (€85), including interest. By letter dated April 5, 2012, Alcoa informed CCSE that it disputes the payment demand of CCSE since (i) CCSE was not authorized by the Consiglio di Stato decisions to seek payment of any amount, (ii) the decision of the Consiglio di Stato has been appealed (see above), and (iii) in any event, no interest should be payable. On April 29, 2012, Law No. 44 of 2012 ("44/2012") came into effect, changing the method to calculate the drawback. On February 21, 2013, Alcoa received a revised request letter from CSSE demanding Alcoa's subsidiary, Alcoa Trasformazioni S.r.l., make a payment in the amount of $97 (€76), including interest, which reflects a revised calculation methodology by CCSE and represents the high end of the range of reasonably possible loss associated with this matter of $0 to $97 (€76). Alcoa has rejected that demand and has formally challenged it through an appeal before the Administrative Court on April 5, 2013. The Administrative Court scheduled a hearing for December 19, 2013, which was subsequently postponed until April 17, 2014, and further postponed until June 19, 2014. On this date, the Administrative Court listened to Alcoa's oral argument, and on September 2, 2014, rendered its decision. The Administrative Court declared the payment request of CCSE and the Energy Authority to Alcoa to be unsubstantiated based on the 148/2004 resolution with respect to the January 19, 2007 through November 19, 2009 timeframe. On December 18, 2014, the CCSE and the Energy Authority appealed the Administrative Court's September 2, 2014 decision; however, a date for the hearing has not been scheduled. As a result of the conclusion of the European Commission Matter on January 26, 2016 described below, management has modified its outlook with respect to a portion of the pending legal proceedings related to this matter. As such, a charge of $37 (€34) was recorded in Restructuring and other charges for the year ended December 31, 2015 on the accompanying Statement of Consolidated Operations to establish a partial reserve for this matter. At this time, the Company is unable to reasonably predict the ultimate outcome for this matter.

European Commission Matter. In July 2006, the European Commission (EC) announced that it had opened an investigation to establish whether an extension of the regulated electricity tariff granted by Italy to some energy-intensive industries complied with European Union (EU) state aid rules. The Italian power tariff extended the tariff that was in force until December 31, 2005 through November 19, 2009 (Alcoa had been incurring higher power costs at its smelters in Italy subsequent to the tariff end date through the end of 2012). The extension was originally through 2010, but the date was changed by legislation adopted by the Italian Parliament effective on August 15, 2009. Prior to expiration of the tariff in 2005, Alcoa had been operating in Italy for more than 10 years under a power supply structure approved by the EC in 1996. That measure provided a competitive power supply to the primary aluminum industry and was not considered state aid from the Italian Government. The EC's announcement expressed concerns about whether Italy's extension of the tariff beyond 2005 was compatible with EU legislation and potentially distorted competition in the European market of primary aluminum, where energy is an important part of the production costs.

On November 19, 2009, the EC announced a decision in this matter stating that the extension of the tariff by Italy constituted unlawful state aid, in part, and, therefore, the Italian Government is to recover a portion of the benefit Alcoa received since January 2006 (including interest). The amount of this recovery was to be based on a calculation prepared by the Italian Government (see below). In late 2009, after discussions with legal counsel and reviewing the bases on which the EC decided, including the different considerations cited in the EC decision regarding Alcoa's two smelters in Italy, Alcoa recorded a charge of $250 (€173), which included $20 (€14) to write off a receivable from the Italian Government for amounts due under the now expired tariff structure and $230 (€159) to establish a reserve. On April 19, 2010, Alcoa filed an appeal of this decision with the General Court of the EU (see below). Prior to 2012, Alcoa was involved in other legal proceedings related to this matter that separately sought the annulment of the EC's July 2006 decision to open an investigation alleging that such decision did not follow the applicable procedural rules and requested injunctive relief to suspend the effectiveness of the EC's November 19, 2009 decision. However, the decisions by the General Court, and subsequent appeals to the European Court of Justice, resulted in the denial of these remedies.

In June 2012, Alcoa received formal notification from the Italian Government with a calculated recovery amount of $375 (€303); this amount was reduced by $65 (€53) for amounts owed by the Italian Government to Alcoa, resulting in a net payment request of $310 (€250). In a notice published in the Official Journal of the European Union on September 22, 2012, the EC announced that it had filed an action against the Italian Government on July 18, 2012 to compel it to collect the recovery amount (on October 17, 2013, the European Court of Justice ordered Italy to so collect). On September 27, 2012, Alcoa received a request for payment in full of the $310 (€250) by October 31, 2012. Following discussions with the Italian Government regarding the timing of such payment, Alcoa paid the requested amount in five quarterly installments of $69 (€50) beginning in October 2012 through December 2013.

On October 16, 2014, Alcoa received notice from the General Court of the EU that its April 19, 2010 appeal of the EC's November 19, 2009 decision was denied. On December 27, 2014, Alcoa filed an appeal of the General Court's October 16, 2014 ruling to the European Court of Justice (ECJ). Following submission of the EC's response to the appeal, on June 10, 2015, Alcoa filed a request for an oral hearing before the ECJ; no decision on that request was received. On January 26, 2016, Alcoa was informed that the ECJ had dismissed Alcoa's December 27, 2014 appeal of the General Court's October 16, 2014 ruling. The dismissal of Alcoa's appeal represents the conclusion of the legal proceedings in this matter. Prior to this dismissal, Alcoa had a noncurrent asset of $100 (€91) reflecting the excess of the total of the five payments made to the Italian Government over the reserve recorded in 2009. As a result, this noncurrent asset, along with the $58 (€53) for amounts owed by the Italian Government to Alcoa mentioned above plus $6 (€6) for interest previously paid, was written-off. A charge of $164 (€150) was recorded in Restructuring and other charges for the year ended December 31, 2015 on the accompanying Statement of Consolidated Operations (see Note D).

As a result of the EC's November 19, 2009 decision, management had contemplated ceasing operations at its Italian smelters due to uneconomical power costs. In February 2010, management agreed to continue to operate its smelters in Italy for up to six months while a long-term solution to address increased power costs could be negotiated. Over a portion of this time, a long-term solution was not able to be reached related to the Fusina smelter, therefore, in May 2010, Alcoa and the Italian Government agreed to a temporary idling of the Fusina smelter. As of September 30, 2010, the Fusina smelter was fully curtailed (44,000 metric-tons-per-year). For the Portovesme smelter, Alcoa executed a new power agreement effective September 1, 2010 through December 31, 2012, replacing the short-term, market-based power contract that was in effect since early 2010. This new agreement along with interruptibility rights (i.e. compensation for power interruptions when grids are overloaded) granted to Alcoa for the Portovesme smelter provided additional time to negotiate a long-term solution (the EC had previously determined that the interruptibility rights were not considered state aid).

At the end of 2011, as part of a restructuring of Alcoa's global smelting system, management decided to curtail operations at the Portovesme smelter during 2012 due to the uncertain prospects for viable, long-term power, along with rising raw materials costs and falling global aluminum prices (mid-2011 to late 2011). As of December 31, 2012, the Portovesme smelter was fully curtailed (150,000 metric-tons-per-year).

In June 2013 and August 2014, Alcoa decided to permanently shut down and demolish the Fusina and Portovesme smelters, respectively, due to persistent uneconomical conditions (see Note D).

Environmental Matters. Alcoa participates in environmental assessments and cleanups at more than 100 locations. These include owned or operating facilities and adjoining properties, previously owned or operating facilities and adjoining properties, and waste sites, including Superfund (Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)) sites.

A liability is recorded for environmental remediation when a cleanup program becomes probable and the costs can be reasonably estimated. As assessments and cleanups proceed, the liability is adjusted based on progress made in determining the extent of remedial actions and related costs. The liability can change substantially due to factors such as the nature and extent of contamination, changes in remedial requirements, and technological changes, among others.

Alcoa's remediation reserve balance was $604 and $543 at December 31, 2015 and 2014 (of which $50 and $70 was classified as a current liability), respectively, and reflects the most probable costs to remediate identified environmental conditions for which costs can be reasonably estimated.

In 2015, the remediation reserve was increased by $115 due to a charge of $52 related to the planned demolition of the remaining structures at the Massena East smelter location (see Note D), a charge of $29 related to the planned demolition of the Poços de Caldas smelter and the Anglesea power station (see Note D), a charge of $12 related to the Mosjøen location (see below), a charge of $7 related to the Portovesme location (see below), and a net charge of $15 associated with a number of other sites. In 2014, the remediation reserve was increased by $61 due to a charge of $42 related to the planned demolition of certain structures at the Massena East, NY, Point Henry and Yennora, Australia, and Portovesme, Italy locations (see Note D), a charge of $3 related to the Portovesme location (see below), and a net charge of $16 associated with a number of other sites. Of the changes to the remediation reserve in 2015 and 2014, $86 and $47, respectively, was recorded in Restructuring and other charges, while the remainder was recorded in Cost of goods sold on the accompanying Statement of Consolidated Operations.

Payments related to remediation expenses applied against the reserve were $43 and $46 in 2015 and 2014, respectively. These amounts include expenditures currently mandated, as well as those not required by any regulatory authority or third party. In 2015, the change in the reserve also reflects a decrease of $16 due to the effects of foreign currency translation and an increase of $5 related to the acquisition of Firth Rixson (see Note F). In 2014, the change in the reserve also reflects an increase of $19 due to the effects of foreign currency translation and a reclassification of amounts included in other reserves within Other noncurrent liabilities and deferred credits on Alcoa's Consolidated Balance Sheet as of December 31, 2013.

Included in annual operating expenses are the recurring costs of managing hazardous substances and environmental programs. These costs are estimated to be approximately 2% of cost of goods sold.

The following discussion provides details regarding the current status of certain significant reserves related to current or former Alcoa sites.

Massena West, NY—Alcoa has an ongoing remediation project related to the Grasse River, which is adjacent to Alcoa's Massena plant site. Many years ago, it was determined that sediments and fish in the river contain varying levels of polychlorinated biphenyls (PCBs). The project, which was selected by the U.S. Environmental Protection Agency (EPA) in a Record of Decision (ROD) issued in April 2013, is aimed at capping PCB contaminated sediments with concentration in excess of one part per million in the main channel of the river and dredging PCB contaminated sediments in the near-shore areas where total PCBs exceed one part per million. At December 31, 2015 and 2014, the reserve balance associated with this matter was $234 and $239, respectively. Alcoa is in the planning and design phase, which is expected to be completed in 2017. Subsequently in 2017, the actual remediation fieldwork is expected to commence and take approximately four years. The majority of the project funding is expected to be spent between 2017 and 2021.

Sherwin, TX—In connection with the sale of the Sherwin alumina refinery, which was required to be divested as part of the Reynolds merger in 2000, Alcoa agreed to retain responsibility for the remediation of the then existing environmental conditions, as well as a pro rata share of the final closure of the active bauxite residue waste disposal areas (known as the Copano facility). Alcoa's share of the closure costs is proportional to the total period of operation of the active waste disposal areas. At December 31, 2015 and 2014, the reserve balance associated with Sherwin was $30 and $32, respectively. Approximately half of the project funding is expected to be spent through 2019. The remainder is not expected to be spent in the foreseeable future as it is dependent upon the operating life of the active waste disposal areas.

East St. Louis, IL—Alcoa has an ongoing remediation project related to an area used for the disposal of bauxite residue from former alumina refining operations. The project, which was selected by the EPA in a ROD issued in July 2012, is aimed at implementing a soil cover over the affected area. On November 1, 2013, the U.S. Department of Justice lodged a consent decree on behalf of the EPA for Alcoa to conduct the work outlined in the ROD. This consent decree was entered as final in February 2014 by the U.S. Department of Justice. As a result, Alcoa began construction in March 2014; this project is expected to be completed by the end of March 2016 (Alcoa has a second project in East St. Louis that is separate from the matter presented herein on which Alcoa is expecting an EPA decision in 2016—any resulting liability is not expected to be material). At December 31, 2015 and 2014, the reserve balance associated with this matter was $8 and $15, respectively.

Fusina and Portovesme, Italy—In 1996, Alcoa acquired the Fusina smelter and rolling operations and the Portovesme smelter, both of which are owned by Alcoa's subsidiary Alcoa Trasformazioni S.r.l. ("Trasformazioni"), from Alumix, an entity owned by the Italian Government. At the time of the acquisition, Alumix indemnified Alcoa for pre-existing environmental contamination at the sites. In 2004, the Italian Ministry of Environment and Protection of Land and Sea (MOE) issued orders to Trasformazioni and Alumix for the development of a clean-up plan related to soil contamination in excess of allowable limits under legislative decree and to institute emergency actions and pay natural resource damages. Trasformazioni appealed the orders and filed suit against Alumix, among others, seeking indemnification for these liabilities under the provisions of the acquisition agreement. In 2009, Ligestra S.r.l. ("Ligestra"), Alumix's successor, and Trasformazioni agreed to a stay of the court proceedings while investigations were conducted and negotiations advanced towards a possible settlement.

In December 2009, Trasformazioni and Ligestra reached an initial agreement for settlement of the liabilities related to Fusina while negotiations continued related to Portovesme (see below). The agreement outlined an allocation of payments to the MOE for emergency action and natural resource damages and the scope and costs for a proposed soil remediation project, which was formally presented to the MOE in mid-2010. The agreement was contingent upon final acceptance of the remediation project by the MOE. As a result of entering into this agreement, Alcoa increased the reserve by $12 in 2009 for Fusina. Based on comments received from the MOE and local and regional environmental authorities, Trasformazioni submitted a revised remediation plan in the first half of 2012; however, such revisions did not require any change to the existing reserve. In October 2013, the MOE approved the project submitted by Alcoa, resulting in no adjustment to the reserve.

In January 2014, in anticipation of Alcoa reaching a final administrative agreement with the MOE, Alcoa and Ligestra entered into a final agreement related to Fusina for allocation of payments to the MOE for emergency action and natural resource damages and the costs for the approved soil remediation project. The agreement resulted in Ligestra assuming 50% to 80% of all payments and remediation costs. On February 27, 2014, Alcoa and the MOE reached a final administrative agreement for conduct of work. The agreement includes both a soil and groundwater remediation project estimated to cost $33 (€24) and requires payments of $25 (€18) to the MOE for emergency action and natural resource damages. The remediation projects are slated to begin as soon as Alcoa receives final approval from the Ministry of Infrastructure. Based on the final agreement with Ligestra, Alcoa's share of all costs and payments is $17 (€12), of which $9 (€6) related to the damages will be paid annually over a 10-year period, which began in April 2014, and was previously fully reserved.

Separately, in 2009, due to additional information derived from the site investigations conducted at Portovesme, Alcoa increased the reserve by $3. In November 2011, Trasformazioni and Ligestra reached an agreement for settlement of the liabilities related to Portovesme, similar to the one for Fusina. A proposed soil remediation project for Portovesme was formally presented to the MOE in June 2012. Neither the agreement with Ligestra nor the proposal to the MOE resulted in a change to the reserve for Portovesme. In November 2013, the MOE rejected the proposed soil remediation project and requested a revised project be submitted. In May 2014, Trasformazioni and Ligestra submitted a revised soil remediation project that addressed certain stakeholders' concerns. Alcoa increased the reserve by $3 in 2014 to reflect the estimated higher costs associated with the revised soil remediation project, as well as current operating and maintenance costs of the Portovesme site.

In October 2014, the MOE required a further revised project be submitted to reflect the removal of a larger volume of contaminated soil than what had been proposed, as well as design changes for the cap related to the remaining contaminated soil left in place and the expansion of an emergency containment groundwater pump and treatment system that was previously installed. Trasformazioni and Ligestra submitted the further revised soil remediation project in February 2015. As a result, Alcoa increased the reserve by $7 in March 2015 to reflect the increase in the estimated costs of the project. In October 2015, Alcoa received a final ministerial decree approving the February 2015 revised soil remediation project. Work on the soil remediation project will commence in 2016 and is expected to be completed in 2019. Alcoa and Ligestra are now working on a final groundwater remediation project, which will be submitted to the MOE for review during 2016. The ultimate outcome of this matter may result in a change to the existing reserve for Portovesme.

Baie Comeau, Quebec, Canada—In August 2012, Alcoa presented an analysis of remediation alternatives to the Quebec Ministry of Sustainable Development, Environment, Wildlife and Parks (MDDEP), in response to a previous request, related to known PCBs and polycyclic aromatic hydrocarbons (PAHs) contained in sediments of the Anse du Moulin bay. As such, Alcoa increased the reserve for Baie Comeau by $25 in 2012 to reflect the estimated cost of Alcoa's recommended alternative, consisting of both dredging and capping of the contaminated sediments. In July 2013, Alcoa submitted the Environmental Impact Assessment for the project to the MDDEP. The MDDEP notified Alcoa that the project as it was submitted was approved and a final mistrial decree was issued in July 2015. As a result, no further adjustment to the reserve was required in 2015. The decree provides final approval for the project and allows Alcoa to start work on the final project design, which is expected to be completed in 2016 with construction on the project expected to begin in 2017. Completion of the final project design and bidding of the project may result in additional liability in a future period.

Mosjøen, Norway—In September 2012, Alcoa presented an analysis of remediation alternatives to the Norwegian Environmental Agency (NEA) (formerly the Norwegian Climate and Pollution Agency, or "Klif"), in response to a previous request, related to known PAHs in the sediments located in the harbor and extending out into the fjord. As such, Alcoa increased the reserve for Mosjøen by $20 in 2012 to reflect the estimated cost of the baseline alternative for dredging of the contaminated sediments. A proposed project reflecting this alternative was formally presented to the NEA in June 2014, and was resubmitted in late 2014 to reflect changes by the NEA. The revised proposal did not result in a change to the reserve for Mosjøen.

In April 2015, the NEA notified Alcoa that the revised project was approved and required submission of the final project design before issuing a final order. Alcoa completed and submitted the final project design, which identified a need to stabilize the related wharf structure to allow for the sediment dredging in the harbor. As a result, Alcoa increased the reserve for Mosjøen by $11 in June 2015 to reflect the estimated cost of the wharf stabilization. Also in June 2015, the NEA issued a final order approving the project as well as the final project design. In September 2015, Alcoa increased the reserve by $1 to reflect the potential need (based on prior experience with similar projects) to perform additional dredging if the results of sampling, which is required by the order, don't achieve the required cleanup levels. Project construction will commence in 2016 and is expected to be completed by the end of 2017.

Tax. In September 2010, following a corporate income tax audit covering the 2003 through 2005 tax years, an assessment was received as a result of Spain's tax authorities disallowing certain interest deductions claimed by a Spanish consolidated tax group owned by the Company. An appeal of this assessment in Spain's Central Tax Administrative Court by the Company was denied in October 2013. In December 2013, the Company filed an appeal of the assessment in Spain's National Court.

Additionally, following a corporate income tax audit of the same Spanish tax group for the 2006 through 2009 tax years, Spain's tax authorities issued an assessment in July 2013 similarly disallowing certain interest deductions. In August 2013, the Company filed an appeal of this second assessment in Spain's Central Tax Administrative Court, which was denied in January 2015. The Company filed an appeal of this second assessment in Spain's National Court in March 2015.

The combined assessments (remeasured for a tax rate change enacted in November 2014—see Note T) total $263 (€241). The Company believes it has meritorious arguments to support its tax position and intends to vigorously litigate the assessments through Spain's court system. However, in the event the Company is unsuccessful, a portion of the assessments may be offset with existing net operating losses available to the Spanish consolidated tax group. Additionally, it is possible that the Company may receive similar assessments for tax years subsequent to 2009. At this time, the Company is unable to reasonably predict an outcome for this matter.

In March 2013, Alcoa's subsidiary, Alcoa World Alumina Brasil (AWAB), was notified by the Brazilian Federal Revenue Office (RFB) that approximately $110 (R$220) of value added tax credits previously claimed are being disallowed and a penalty of 50% assessed. Of this amount, AWAB received $41 (R$82) in cash in May 2012. The value added tax credits were claimed by AWAB for both fixed assets and export sales related to the Juruti bauxite mine and São Luís refinery expansion. The RFB has disallowed credits they allege belong to the consortium in which AWAB owns an interest and should not have been claimed by AWAB. Credits have also been disallowed as a result of challenges to apportionment methods used, questions about the use of the credits, and an alleged lack of documented proof. AWAB presented defense of its claim to the RFB on April 8, 2013. If AWAB is successful in this administrative process, the RFB would have no further recourse. If unsuccessful in this process, AWAB has the option to litigate at a judicial level. Separately from the AWAB's administrative appeal, in June 2015, new tax law was enacted repealing the provisions in the tax code that were the basis for the RFB assessing a 50% penalty in this matter. As such, the estimated range of reasonably possible loss is $0 to $27 (R$103), whereby the maximum end of this range represents the portion of the disallowed credits applicable to the export sales and excludes the 50% penalty. Additionally, the estimated range of disallowed credits related to AWAB's fixed assets is $0 to $30 (R$117), which would increase the net carrying value of AWAB's fixed assets if ultimately disallowed. It is management's opinion that the allegations have no basis; however, at this time, management is unable to reasonably predict an outcome for this matter.

Between 2000 and 2002, Alcoa Alumínio (Alumínio) sold approximately 2,000 metric tons of metal per month from its Poços de Caldas facility, located in the State of Minas Gerais (the "State"), to Alfio, a customer also located in the State. Sales in the State were exempted from value-added tax (VAT) requirements. Alfio subsequently sold metal to customers outside of the State, but did not pay the required VAT on those transactions. In July 2002, Alumínio received an assessment from State auditors on the theory that Alumínio should be jointly and severally liable with Alfio for the unpaid VAT. In June 2003, the administrative tribunal found Alumínio liable, and Alumínio filed a judicial case in the State in February 2004 contesting the finding. In May 2005, the Court of First Instance found Alumínio solely liable, and a panel of a State appeals court confirmed this finding in April 2006. Alumínio filed a special appeal to the Superior Tribunal of Justice (STJ) in Brasilia (the federal capital of Brazil) later in 2006. In 2011, the STJ (through one of its judges) reversed the judgment of the lower courts, finding that Alumínio should neither be solely nor jointly and severally liable with Alfio for the VAT, which ruling was then appealed by the State. In August 2012, the STJ agreed to have the case reheard before a five-judge panel. A decision from this panel is pending, but additional appeals are likely. At December 31, 2015, the assessment totaled $35 (R$135), including penalties and interest. While the Company believes it has meritorious defenses, the Company is unable to reasonably predict an outcome.

Other. In addition to the matters discussed above, various other lawsuits, claims, and proceedings have been or may be instituted or asserted against Alcoa, including those pertaining to environmental, product liability, safety and health, and tax matters. While the amounts claimed in these other matters may be substantial, the ultimate liability cannot now be determined because of the considerable uncertainties that exist. Therefore, it is possible that the Company’s liquidity or results of operations in a particular period could be materially affected by one or more of these other matters. However, based on facts currently available, management believes that the disposition of these other matters that are pending or asserted will not have a material adverse effect, individually or in the aggregate, on the financial position of the Company.

Commitments

Investments. Alumínio, a wholly-owned subsidiary of Alcoa, is a participant in four consortia that each owns a hydroelectric power project in Brazil. The purpose of Alumínio’s participation is to increase its energy self-sufficiency and provide a long-term, low-cost source of power for its two smelters (see below) and one refinery. These projects are known as Machadinho, Barra Grande, Serra do Facão, and Estreito.

Alumínio committed to taking a share of the output of the Machadinho and Barra Grande projects each for 30 years and the Serra do Facão and Estreito projects each for 26 years at cost (including cost of financing the project). In the event that other participants in any of these projects fail to fulfill their financial responsibilities, Alumínio may be required to fund a portion of the deficiency. In accordance with the respective agreements, if Alumínio funds any such deficiency, its participation and share of the output from the respective project will increase proportionately.

The Machadinho project reached full capacity in 2002. Alumínio’s investment in this project is 30.99%, which entitles Alumínio to approximately 120 megawatts of assured power. The Machadinho consortium is an unincorporated joint venture, and, therefore, Alumínio’s share of the assets and liabilities of the consortium are reflected in the respective lines on the accompanying Consolidated Balance Sheet.

The Barra Grande project reached full capacity in 2006. Alumínio’s investment in this project is 42.18% and is accounted for under the equity method. This entitles Alumínio to approximately 160 megawatts of assured power. Alumínio’s total investment in this project was $94 (R$374) and $132 (R$355) at December 31, 2015 and 2014, respectively.

The Serra do Facão project reached full capacity in 2010. Alumínio’s investment in this project is 34.97% and is accounted for under the equity method. This entitles Alumínio to approximately 65 megawatts of assured power. Alumínio’s total investment in this project was $52 (R$208) and $66 (R$178) at December 31, 2015 and 2014, respectively.

The Estreito project reached full capacity in March 2013. Alumínio’s investment in this project is 25.49%, which entitles Alumínio to approximately 150 megawatts of assured power. The Estreito consortium is an unincorporated joint venture, and, therefore, Alumínio’s share of the assets and liabilities of the consortium are reflected in the respective lines on the accompanying Consolidated Balance Sheet. As of December 31, 2015, construction of the Estreito project is essentially complete.

Prior to October 2013, Alumínio’s power self-sufficiency satisfied approximately 70% of a total energy demand of approximately 690 megawatts from two smelters (São Luís (Alumar) and Poços de Caldas) and one refinery (Poços de Caldas) in Brazil. Since that time, the total energy demand has declined by approximately 675 megawatts due to capacity curtailments of both smelters in both 2013 and 2014, as well as the eventual permanent closure of the Poços de Caldas smelter in 2015.

In 2004, Alcoa acquired a 20% interest in a consortium, which subsequently purchased the Dampier to Bunbury Natural Gas Pipeline (DBNGP) in Western Australia, in exchange for an initial cash investment of $17 (A$24). The investment in the DBNGP, which is classified as an equity investment, was made in order to secure a competitively priced long-term supply of natural gas to Alcoa's refineries in Western Australia. Alcoa made additional contributions of $141 (A$176) for its share of the pipeline capacity expansion and other operational purposes of the consortium through September 2011. No further expansion of the pipeline's capacity is planned at this time. In late 2011, the consortium initiated a three-year equity call plan to improve its capitalization structure. This plan required Alcoa to contribute $39 (A$40), all of which was made through December 31, 2014. Following the completion of the three-year equity call plan in December 2014, the consortium initiated a new equity call plan to further improve its capitalization structure. This plan requires Alcoa to contribute $30 (A$36) through mid 2016, of which $17 (A$22) was made through December 31, 2015, including $16 (A$21) in 2015. In addition to its equity ownership, Alcoa has an agreement to purchase gas transmission services from the DBNGP. At December 31, 2015, Alcoa has an asset of $268 (A$368) representing prepayments made under the agreement for future gas transmission services. Alcoa's maximum exposure to loss on the investment and the related contract is approximately $380 (A$520) as of December 31, 2015.

On April 8, 2015, Alcoa's majority-owned subsidiary, Alcoa of Australia Limited (AofA), which is part of AWAC, secured a new 12-year gas supply agreement to power its three alumina refineries in Western Australia beginning in July 2020. This agreement was conditional on the completion of a third-party acquisition of the related energy assets from the then-current owner, which occurred in June 2015. The terms of AofA's gas supply agreement require a prepayment of $500 to be made in two installments. The first installment of $300 was made at the time of the completion of the third-party acquisition and the second installment of $200 will be made in April 2016 (previously was scheduled in January 2016). At December 31, 2015, Alcoa has an asset of $288 (A$395), which was included in Other noncurrent assets on the accompanying Consolidated Balance Sheet, representing the first installment.

Purchase Obligations. Alcoa is party to unconditional purchase obligations for energy that expire between 2018 and 2036. Commitments related to these contracts total $74 in 2016, $130 in 2017, $133 in 2018, $126 in 2019, $129 in 2020, and $1,711 thereafter. Expenditures under these contracts totaled $131 in 2015, $178 in 2014, and $163 in 2013. Additionally, Alcoa has entered into other purchase commitments for energy, raw materials, and other goods and services, which total $3,015 in 2016, $1,807 in 2017, $1,569 in 2018, $1,496 in 2019, $1,401 in 2020, and $13,251 thereafter.

Operating Leases. Certain land and buildings, alumina refinery process control technology, plant equipment, vehicles, and computer equipment are under operating lease agreements. Total expense for all leases was $210 in 2015, $227 in 2014, and $232 in 2013. Under long-term operating leases, minimum annual rentals are $243 in 2016, $168 in 2017, $130 in 2018, $100 in 2019, $74 in 2020, and $138 thereafter.

Guarantees. At December 31, 2015, Alcoa has maximum potential future payments for guarantees issued on behalf of a third party of $478. These guarantees expire at various times between 2017 and 2024 and relate to project financing for the aluminum complex in Saudi Arabia (see Note I). Alcoa also has outstanding bank guarantees related to tax matters, outstanding debt, workers compensation, environmental obligations, energy contracts, and customs duties, among others. The total amount committed under these guarantees, which expire at various dates between 2016 and 2023 was $320 at December 31, 2015.

Letters of Credit. Alcoa has outstanding letters of credit primarily related to workers' compensation, energy contracts (including $200 related to an expected April 2016 prepayment under a gas supply contract—see Investments above), and leasing obligations. The total amount committed under these letters of credit, which automatically renew or expire at various dates, mostly in 2016, was $510 at December 31, 2015.

Surety Bonds. Alcoa has outstanding surety bonds primarily related to tax matters, contract performance, workers compensation, environmental-related matters, and customs duties. The total amount committed under these bonds, which automatically renew or expire at various dates, mostly in 2016, was $159 at December 31, 2015.

O. Other Expenses (Income), Net

	2015	2014	2013
Equity loss	$ 89	$ 92	$ 68
Interest income	(16)	(19)	(13)
Foreign currency losses (gains), net	-	1	(33)
Net gain from asset sales	(74)	(47)	(10)
Net loss (gain) on mark-to-market derivative contracts (X)	23	15	(29)
Other, net	(20)	5	(8)
	$ 2	$ 47	$ (25)

In 2015, Net gain from asset sales included a $49 gain related to the sale of land around both the Lake Charles, LA anode facility and at Alcoa's former Sherwin, TX refinery site, and a $19 gain related to the sale of the remaining equity investment in a China rolling mill. In 2014, Net gain from asset sales included a $28 gain and a $14 gain related to the sale of a mining interest in Suriname and an equity investment in a China rolling mill, respectively.

P. Cash Flow Information

Cash paid for interest and income taxes was as follows:

	2015	2014	2013
Interest, net of amount capitalized	$487	$441	$433
Income taxes, net of amount refunded	$345	301	200

The details related to cash paid for acquisitions (including of a noncontrolling interest in 2014) were as follows:

	2015	2014	2013
Assets acquired	$2,003	$3,515	$ -
Liabilities assumed	(868)	(345)	-
Contingent consideration liability	-	(130)	-
Equity issued	(870)	(610)	-
Noncontrolling interest acquired	-	31	-
Increase in Alcoa's shareholders' equity	(60)	(3)	-
Cash paid	205	2,458	-
Less: cash acquired	302	45	-
Net cash paid	$ (97)	$2,413	$ -

Noncash Financing and Investing Activities. In July 2015, Alcoa purchased all outstanding shares of RTI common stock in a stock-for-stock transaction valued at $870 (see Note F). As a result, Alcoa issued 87 million shares of its common stock to consummate this transaction, which was not reflected in the accompanying Statement of Consolidated Cash Flows as it represents a noncash financing activity.

In early 2014, holders of $575 principal amount of Alcoa's 5.25% Convertible Notes due March 15, 2014 (the "2014 Notes") exercised their option to convert the 2014 Notes into 89 million shares of Alcoa common stock (see Note K). This transaction was not reflected in the accompanying Statement of Consolidated Cash Flows as it represents a noncash financing activity.

In late 2014, Alcoa paid $2,995 (net of cash acquired) to acquire Firth Rixson (see Note F). A portion of this consideration was paid through the issuance of 37 million shares in Alcoa common stock valued at $610. The issuance of common stock was not reflected in the accompanying Statement of Consolidated Cash Flows as it represents a noncash investing activity.

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Q. Segment and Geographic Area Information

Alcoa is primarily a producer of aluminum products. Aluminum and alumina represent approximately 80% of Alcoa's revenues. Nonaluminum products include precision castings and aerospace and industrial fasteners. Alcoa's products are used worldwide in transportation (including aerospace, automotive, truck, trailer, rail, and shipping), packaging, building and construction, oil and gas, defense, and industrial applications. Alcoa's segments are organized by product on a worldwide basis. Segment performance under Alcoa's management reporting system is evaluated based on a number of factors; however, the primary measure of performance is the after-tax operating income (ATOI) of each segment. Certain items such as the impact of LIFO inventory accounting; metal price lag (see below); interest expense; noncontrolling interests; corporate expense (general administrative and selling expenses of operating the corporate headquarters and other global administrative facilities, along with depreciation and amortization on corporate-owned assets); restructuring and other charges; and other items, including intersegment profit eliminations, differences between tax rates applicable to the segments and the consolidated effective tax rate, and other nonoperating items such as foreign currency transaction gains/losses and interest income are excluded from segment ATOI. Segment assets exclude, among others, cash and cash equivalents; deferred income taxes; goodwill not allocated to businesses for segment reporting purposes; corporate fixed assets; and LIFO reserves.

The accounting policies of the segments are the same as those described in the Summary of Significant Accounting Policies (see Note A). Transactions among segments are established based on negotiation among the parties. Differences between segment totals and Alcoa's consolidated totals for line items not reconciled are in Corporate.

Effective in the second quarter of 2015, management removed the impact of metal price lag from the results of the Global Rolled Products and Engineered Products and Solutions (now Engineered Products and Solutions and Transportation and Construction Solutions—see below) segments in order to enhance the visibility of the underlying operating performance of these businesses. Metal price lag describes the timing difference created when the average price of metal sold differs from the average cost of the metal when purchased by the respective segment. In general, when the price of metal increases, metal price lag is favorable, and when the price of metal decreases, metal price lag is unfavorable. The impact of metal price lag is now reported as a separate line item in Alcoa's reconciliation of total segment ATOI to consolidated net (loss) income attributable to Alcoa. As a result, this change does not impact the consolidated results of Alcoa. Segment information for all prior periods presented was updated to reflect this change.

In the third quarter of 2015, management approved a realignment of Alcoa's Engineered Products and Solutions segment due to the expansion of this part of Alcoa's business portfolio through both organic and inorganic growth. This realignment consisted of moving both the Alcoa Wheel and Transportation Products and Building and Construction Systems business units to a new reportable segment named Transportation and Construction Solutions. Additionally, the Latin American soft alloy extrusions business previously included in Corporate was moved into the new Transportation and Construction Solutions segment. The remaining Engineered Products and Solutions segment consists of the Alcoa Fastening Systems and Rings (renamed to include portions of the Firth Rixson business acquired in November 2014), Alcoa Power and Propulsion (includes the TITAL business acquired in March 2015), Alcoa Forgings and Extrusions (includes the other portions of Firth Rixson), and Alcoa Titanium and Engineered Products (a new business unit that consists solely of the RTI International Metals business acquired in July 2015) business units. Segment information for all prior periods presented was updated to reflect the new segment structure.

Alcoa's operations consist of five worldwide reportable segments as follows:

Alumina. This segment represents a portion of Alcoa's upstream operations and consists of the Company's worldwide refining system. Alumina mines bauxite, from which alumina is produced and then sold directly to external smelter customers, as well as to the Primary Metals segment (see Primary Metals below), or to customers who process it into industrial chemical products. More than half of Alumina's production is sold under supply contracts to third parties worldwide, while the remainder is used internally by the Primary Metals segment. Alumina produced by this segment and used internally is transferred to the Primary Metals segment at prevailing market prices. A portion of this segment's third-party sales are completed through the use of agents, alumina traders, and distributors.

Primary Metals. This segment represents a portion of Alcoa's upstream operations and consists of the Company's worldwide smelting system. Primary Metals purchases alumina, mostly from the Alumina segment (see Alumina above), from which primary aluminum is produced and then sold directly to external customers and traders, as well as to Alcoa's midstream operations and, to a lesser extent, downstream operations. Results from the sale of aluminum powder, scrap, and excess energy are also included in this segment, as well as the results of aluminum derivative contracts and buy/resell activity. Primary aluminum produced by Alcoa and used internally is transferred to other segments at prevailing market prices. The sale of primary aluminum represents approximately 90% of this segment's third-party sales. Buy/resell activity occurs when this segment purchases metal and resells such metal to external customers or the midstream and downstream operations in order to maximize smelting system efficiency and to meet customer requirements.

Global Rolled Products. This segment represents Alcoa's midstream operations and produces aluminum sheet and plate for a variety of end markets. Approximately one-half of the third-party shipments in this segment consist of sheet sold directly to customers in the packaging end market for the production of aluminum cans (beverage, food, and pet food). Seasonal increases in can sheet sales are generally experienced in the second and third quarters of the year. This segment also includes sheet and plate sold directly to customers and through distributors related to the aerospace, automotive, commercial transportation, building and construction, and industrial products (mainly used in the production of machinery and equipment and consumer durables) end markets. A small portion of this segment also produces aseptic foil for the packaging end market. While the customer base for flat-rolled products is large, a significant amount of sales of sheet and plate is to a relatively small number of customers.

Engineered Products and Solutions. This segment represents a portion of Alcoa's downstream operations and produces products that are used mostly in the aerospace (commercial and defense), commercial transportation, and power generation end markets. Such products include fastening systems (titanium, steel, and nickel alloys) and seamless rolled rings (mostly nickel alloys); and investment castings (nickel super alloys, titanium, and aluminum), including airfoils and forged jet engine components (e.g., jet engine disks), all of which are sold directly to customers and through distributors. More than 70% of the third-party sales in this segment are from the aerospace end market. A small part of this segment also produces various forging and extrusion metal products for the oil and gas, industrial products, automotive, and land and sea defense end markets. Seasonal decreases in sales are generally experienced in the third quarter of the year due to the European summer slowdown across all end markets.

Transportation and Construction Solutions. This segment represents a portion of Alcoa's downstream operations and produces products that are used mostly in the nonresidential building and construction and commercial transportation end markets. Such products include integrated aluminum structural systems, architectural extrusions, and forged aluminum commercial vehicle wheels, which are sold directly to customers and through distributors. A small part of this segment also produces aluminum products for the industrial products end market.

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The operating results and assets of Alcoa's reportable segments were as follows:

	Alumina	Primary Metals	Global Rolled Products	Engineered Products and Solutions	Transportation and Construction Solutions	Total
2015						
Sales:						
Third-party sales	$ 3,455	$ 5,591	$ 6,238	$ 5,342	$ 1,882	$22,508
Intersegment sales	1,687	2,170	125	-	-	3,982
Total sales	$ 5,142	$ 7,761	$ 6,363	$ 5,342	$ 1,882	$26,490
Profit and loss:						
Equity loss	$ (41)	$ (12)	$ (32)	$ -	$ -	$ (85)
Depreciation, depletion, and amortization	296	429	227	233	43	1,228
Income taxes	300	(28)	109	282	63	726
ATOI	746	155	244	595	166	1,906
2014						
Sales:						
Third-party sales	$ 3,509	$ 6,800	$ 7,351	$ 4,217	$ 2,021	$23,898
Intersegment sales	1,941	2,931	185	-	-	5,057
Total sales	$ 5,450	$ 9,731	$ 7,536	$ 4,217	$ 2,021	$28,955
Profit and loss:						
Equity loss	$ (29)	$ (34)	$ (27)	$ -	$ -	$ (90)
Depreciation, depletion, and amortization	387	494	235	137	42	1,295
Income taxes	153	203	89	298	69	812
ATOI	370	594	245	579	180	1,968
2013						
Sales:						
Third-party sales	$ 3,326	$ 6,596	$ 7,106	$ 4,054	$ 1,951	$23,033
Intersegment sales	2,235	2,621	178	-	-	5,034
Total sales	$ 5,561	$ 9,217	$ 7,284	$ 4,054	$ 1,951	$28,067
Profit and loss:						
Equity loss	$ (4)	$ (51)	$ (13)	$ -	$ -	$ (68)
Depreciation, depletion, and amortization	426	526	226	124	42	1,344
Income taxes	66	(74)	123	286	67	468
ATOI	259	(20)	292	569	167	1,267
2015						
Assets:						
Capital expenditures	$ 184	$ 156	$ 307	$ 383	$ 77	$ 1,107
Equity investments	667	634	217	-	-	1,518
Goodwill	6	-	201	4,660	58	4,925
Total assets	6,165	7,324	4,498	10,732	947	29,666
2014						
Assets:						
Capital expenditures	$ 246	$ 176	$ 389	$ 249	$ 72	$ 1,132
Equity investments	669	890	226	-	-	1,785
Goodwill	8	-	210	4,458	86	4,762
Total assets	7,350	9,308	4,908	8,800	975	31,341

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The following tables reconcile certain segment information to consolidated totals:

	2015	2014	2013
Sales:			
Total segment sales	$26,490	$28,955	$28,067
Elimination of intersegment sales	(3,982)	(5,057)	(5,034)
Corporate	26	8	(1)
Consolidated sales	$22,534	$23,906	$23,032

	2015	2014	2013
Net (loss) income attributable to Alcoa:			
Total segment ATOI	$1,906	$1,968	$ 1,267
Unallocated amounts (net of tax):			
Impact of LIFO	136	(54)	52
Metal price lag	(133)	78	(45)
Interest expense	(324)	(308)	(294)
Noncontrolling interests	(125)	91	(41)
Corporate expense	(266)	(284)	(274)
Impairment of goodwill	(25)	-	(1,731)
Restructuring and other charges	(943)	(894)	(607)
Other	(548)	(329)	(612)
Consolidated net (loss) income attributable to Alcoa	$ (322)	$ 268	$(2,285)

December 31,	2015	2014
Assets:		
Total segment assets	$29,666	$31,341
Elimination of intersegment receivables	(318)	(490)
Unallocated amounts:		
Cash and cash equivalents	1,919	1,877
Deferred income taxes	2,668	3,139
Corporate goodwill	476	485
Corporate fixed assets, net	733	819
LIFO reserve	(559)	(767)
Fair value of derivative contracts	1,078	16
Other	865	943
Consolidated assets	$36,528	$37,363

Sales by major product grouping were as follows:

	2015	2014	2013
Sales:			
Alumina	$ 3,333	$ 3,401	$ 3,151
Primary aluminum	5,085	6,011	6,194
Flat-rolled aluminum	6,238	7,351	7,106
Investment castings	1,812	1,784	1,807
Fastening systems	2,168	1,647	1,505
Architectural aluminum systems	951	1,002	977
Aluminum wheels	790	786	702
Other extruded and forged products	1,332	1,019	1,015
Other	825	905	575
	$22,534	$23,906	$23,032

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Geographic information for sales was as follows (based upon the country where the point of sale occurred):

	2015	2014	2013
Sales:			
United States[1]	$12,425	$12,103	$11,766
Spain[2] [3]	2,853	3,359	2,282
Australia	2,196	3,028	3,240
Brazil	854	1,398	1,221
France	802	915	862
United Kingdom	698	464	475
Hungary	622	630	555
China	565	415	259
Russia	455	642	683
Canada	308	143	123
Germany	264	229	230
Italy	139	150	157
Netherlands[3]	34	36	524
Norway[2]	30	31	283
Other	289	363	372
	$22,534	$23,906	$23,032

(1) Sales of a portion of the alumina from Alcoa's refineries in Suriname, Brazil, Australia, and Jamaica (prior to divestiture—see Note F) and most of the aluminum from Alcoa's smelters in Canada occurred in the United States.

(2) In 2015, 2014, and 2013, Sales of the aluminum from Alcoa's smelters in Norway occurred in Spain.

(3) In 2015 and 2014, Sales of the aluminum from Alcoa's smelter in Iceland occurred in Spain. In 2013, Sales of the aluminum from Alcoa's smelter in Iceland occurred in both Spain and the Netherlands.

Geographic information for long-lived assets was as follows (based upon the physical location of the assets):

December 31,	**2015**	**2014**
Long-lived assets:		
United States	$ 5,758	$ 5,403
Australia	2,159	2,538
Brazil	2,046	3,137
Iceland	1,397	1,460
Canada	1,238	1,216
Norway	463	588
China	352	389
United Kingdom	312	333
Russia	303	443
Spain	294	339
Hungary	190	210
Other	303	370
	$14,815	$16,426

R. Preferred and Common Stock

Preferred Stock. Alcoa has two classes of preferred stock: Class A Preferred Stock and Class B Serial Preferred Stock. Class A Preferred Stock has 660,000 shares authorized at a par value of $100 per share with an annual $3.75 cumulative dividend preference per share. There were 546,024 of such shares outstanding at December 31, 2015 and 2014. Class B Serial Preferred Stock has 10 million shares authorized at a par value of $1 per share. There were 2.5 million of such shares outstanding at December 31, 2015 and 2014 (see below).

In September 2014, Alcoa completed a public offering under its shelf registration statement for $1,250 of 25 million depositary shares, each of which represents a 1/10th interest in a share of Alcoa's 5.375% Class B Mandatory Convertible Preferred Stock, Series 1, par value $1 per share, liquidation preference $500 per share (the "Mandatory Convertible Preferred Stock"). The 25 million depositary shares are equivalent to 2.5 million shares of Mandatory Convertible Preferred Stock. Each depositary share entitles the holder, through the depositary, to a proportional fractional interest in the rights and preferences of a share of Mandatory Convertible Preferred Stock, including conversion, dividend, liquidation, and voting rights, subject to terms of the deposit agreement. Alcoa received $1,213 in net proceeds from the public offering reflecting an underwriting discount. The net proceeds were used, together with the net proceeds of issued debt (see Note K), to finance the cash portion of the acquisition of Firth Rixson (see Note F). The underwriting discount was recorded as a decrease to Additional capital on the accompanying Consolidated Balance Sheet.

The Mandatory Convertible Preferred Stock constitutes a series of Alcoa's Class B Serial Preferred Stock, which ranks senior to Alcoa's common stock and junior to Alcoa's Class A Preferred Stock and existing and future indebtedness. Dividends on the Mandatory Convertible Preferred Stock are cumulative in nature and are paid at the rate of $26.8750 per annum per share, which commenced January 1, 2015 (paid on December 30, 2014). Holders of the Mandatory Convertible Preferred Stock generally have no voting rights.

On the mandatory conversion date, October 1, 2017, all outstanding shares of Mandatory Convertible Preferred Stock will automatically convert into shares of Alcoa's common stock. Based on the Applicable Market Value (as defined in the terms of the Mandatory Convertible Preferred Stock) of Alcoa's common stock on the mandatory conversion date, each share of Mandatory Convertible Preferred Stock will be convertible into not more than 30.9406 shares of common stock and not less than 25.7838 shares of common stock, subject to certain anti-dilution and other adjustments as described in the terms of the Mandatory Convertible Preferred Stock. At any time prior to October 1, 2017, a holder may elect to convert shares of Mandatory Convertible Preferred Stock, in whole or in part (but in no event less than one share of Mandatory Convertible Preferred Stock), at the minimum conversion rate of 25.7838 shares of common stock, subject to certain anti-dilution and other adjustments as described in the terms of the Mandatory Convertible Preferred Stock. Alcoa does not have the right to redeem the Mandatory Convertible Preferred Stock.

If Alcoa undergoes a fundamental change, as defined in the terms of the Mandatory Convertible Preferred Stock, holders may elect to convert their Mandatory Convertible Preferred Stock, in whole or in part (but in no event less than one share of Mandatory Convertible Preferred Stock), into shares of Alcoa's common stock. The per share conversion rate under a fundamental change is not less than 25.2994 shares of common stock and not more than 30.9406 shares of common stock. Holders who elect to convert will also receive any accumulated and unpaid dividends and a Fundamental Change Dividend Make-whole Amount (as defined in the terms of the Mandatory Convertible Preferred Stock) equal to the present value of all remaining dividend payments on the Mandatory Convertible Preferred Stock.

Common Stock. There are 1.8 billion shares authorized at a par value of $1 per share, and 1,391,211,244 and 1,303,813,830 shares, respectively, were issued at December 31, 2015 and 2014. The current dividend yield as authorized by Alcoa's Board of Directors is $0.12 per annum or $0.03 per quarter.

In July 2015, Alcoa issued 87 million shares of common stock as consideration paid to acquire RTI (see Note F).

In early 2014, Alcoa issued 89 million shares of common stock under the terms of Alcoa's 5.25% Convertible Notes due March 15, 2014 (see Note K). Also, in November 2014, Alcoa issued 37 million shares of common stock as part of the consideration paid to acquire an aerospace business, Firth Rixson (see Note F).

As of December 31, 2015, 77 million shares of common stock were reserved for issuance under Alcoa's stock-based compensation plans, respectively. Alcoa issues shares from treasury stock to satisfy the exercise of stock options and the conversion of stock awards.

Share Activity (number of shares)

	Common stock	
	Treasury	**Outstanding**
Balance at end of 2012	110,694,604	1,067,211,953
Conversion of convertible notes	-	310
Issued for stock-based compensation plans	(3,798,899)	3,798,899
Balance at end of 2013	106,895,705	1,071,011,162
Conversion of convertible notes	-	89,383,953
Private placement	-	36,523,010
Issued for stock-based compensation plans	(19,745,536)	19,745,536
Balance at end of 2014	87,150,169	1,216,663,661
Acquisition of RTI	-	87,397,414
Issued for stock-based compensation plans	(6,099,066)	6,099,066
Balance at end of 2015	81,051,103	1,310,160,141

Stock-based Compensation

Alcoa has a stock-based compensation plan under which stock options and stock awards are granted in January each year to eligible employees. Most plan participants can choose whether to receive their award in the form of stock options, stock awards, or a combination of both. This choice is made before the grant is issued and is irrevocable. Stock options are granted at the closing market price of Alcoa's common stock on the date of grant and vest over a three-year service period (1/3 each year) with a ten-year contractual term. Stock awards also vest over a three-year service period from the date of grant and certain of these awards also include performance conditions. In 2015, 2014, and 2013, the final number of performance stock awards earned will be based on Alcoa's achievement of sales and profitability targets over the respective three-year period. One-third of the award will be earned each year based on the performance against the pre-established targets for that year. The performance stock awards earned over the three-year period vest at the end of the third year.

In 2015, 2014, and 2013, Alcoa recognized stock-based compensation expense of $92 ($61 after-tax), $87 ($58 after-tax), and $71 ($48 after-tax), respectively, of which approximately 80%, 80%, and 70%, respectively, related to stock awards (there was no stock-based compensation expense capitalized in 2015, 2014, or 2013). At December 31, 2015, there was $71 (pretax) of unrecognized compensation expense related to non-vested stock option grants and non-vested stock award grants. This expense is expected to be recognized over a weighted average period of 1.6 years. As part of Alcoa's stock-based compensation plan design, individuals who are retirement-eligible have a six-month requisite service period in the year of grant. As a result, a larger portion of expense will be recognized in the first half of each year for these retirement-eligible employees. Of the total pretax compensation expense recognized in 2015, 2014, and 2013, $17, $15, and $14, respectively, pertains to the acceleration of expense related to retirement-eligible employees.

Stock-based compensation expense is based on the grant date fair value of the applicable equity grant. For stock awards, the fair value was equivalent to the closing market price of Alcoa's common stock on the date of grant. For stock options, the fair value was estimated on the date of grant using a lattice-pricing model, which generated a result of $4.47, $2.84, and $2.24 per option in 2015, 2014, and 2013, respectively. The lattice-pricing model uses a number of assumptions to estimate the fair value of a stock option, including an average risk-free interest rate, dividend yield, volatility, exercise behavior, and contractual life. The following paragraph describes in detail the assumptions used to estimate the fair value of stock options granted in 2015 (the assumptions used to estimate the fair value of stock options granted in 2014 and 2013 were not materially different).

The range of average risk-free interest rates (0.07-1.83%) was based on a yield curve of interest rates at the time of the grant based on the contractual life of the option. The dividend yield (0.8%) was based on a one-year average. Volatility (32-41%) was based on historical and implied volatilities over the term of the option. Alcoa utilized historical option forfeiture data to estimate annual pre- and post-vesting forfeitures (7%). Exercise behavior (50%) was based on a weighted average exercise ratio (exercise patterns for grants issued over the number of years in the contractual option term) of an option's intrinsic value resulting from historical employee exercise behavior. Based upon the other assumptions used in the determination of the fair value, the life of an option (5.9 years) was an output of the lattice-pricing model. The activity for stock options and stock awards during 2015 was as follows (options and awards in millions):

	Stock options		Stock awards	
	Number of options	**Weighted average exercise price**	**Number of awards**	**Weighted average FMV per award**
Outstanding, January 1, 2015	32	11.26	19	9.98
Granted	3	15.55	7	14.85
Assumed at Acquisition	2	11.24	1	9.96
Exercised	(3)	8.95	-	-
Converted	-	-	(5)	10.08
Expired or forfeited	(1)	13.39	(1)	11.64
Performance share adjustment	-	-	(1)	10.96
Outstanding, December 31, 2015	33	11.91	20	11.38

As of December 31, 2015, the number of stock options outstanding had a weighted average remaining contractual life of 6.08 years and a total intrinsic value of $8. Additionally, 23.3 million of the stock options outstanding were fully vested and exercisable and had a weighted average remaining contractual life of 5.25 years, a weighted average exercise price of $11.82, and a total intrinsic value of $5 as of December 31, 2015. In 2015, 2014, and 2013, the cash received from stock option exercises was $25, $150, and $13 and the total tax benefit realized from these exercises was $6, $28, and $1, respectively. The total intrinsic value of stock options exercised during 2015, 2014, and 2013 was $19, $84, and $2, respectively.

S. Earnings Per Share

Basic earnings per share (EPS) amounts are computed by dividing earnings, after the deduction of preferred stock dividends declared by the average number of common shares outstanding. Diluted EPS amounts assume the issuance of common stock for all potentially dilutive share equivalents outstanding.

The information used to compute basic and diluted EPS attributable to Alcoa common shareholders was as follows (shares in millions):

	2015	2014	2013
Net (loss) income attributable to Alcoa	$ (322)	$ 268	$(2,285)
Less: preferred stock dividends declared	69	21	2
Net (loss) income available to Alcoa common shareholders—basic	(391)	247	(2,287)
Add: dividends related to mandatory convertible preferred stock	-	-	-
Add: interest expense related to convertible notes	-	-	-
Net (loss) income available to Alcoa common shareholders—diluted	$ (391)	$ 247	$(2,287)
Average shares outstanding—basic	1,259	1,162	1,070
Effect of dilutive securities:			
Stock options	-	7	-
Stock and performance awards	-	11	-
Mandatory convertible preferred stock	-	-	-
Convertible notes	-	-	-
Average shares outstanding—diluted	1,259	1,180	1,070

In 2015, basic average shares outstanding and diluted average shares outstanding were the same because the effect of potential shares of common stock was anti-dilutive since Alcoa generated a net loss. As a result, 77 million share equivalents related to mandatory convertible preferred were not included in the computation of diluted EPS. Additionally, 20 million stock awards, 33 million stock options, and 15 million (weighted-average) share equivalents related to convertible debt (acquired from RTI—see Note F) were not included in the computation of diluted EPS. Had Alcoa generated net income in 2015, 77 million, 15 million, 12 million, and 3 million potential shares of common stock related to the mandatory convertible preferred stock, convertible notes, stock awards, and stock options, respectively, would have been included in diluted average shares outstanding.

In 2014, 16 million and 22 million share equivalents related to convertible notes and mandatory convertible preferred stock, respectively, were not included in the computation of diluted EPS because their effect was anti-dilutive.

In 2013, basic average shares outstanding and diluted average shares outstanding were the same because the effect of potential shares of common stock was anti-dilutive since Alcoa generated a net loss. As a result, 89 million share equivalents related to convertible notes, 16 million stock awards, and 12 million stock options were not included in the computation of diluted EPS. Had Alcoa generated sufficient income from continuing operations in 2013, 89 million, 9 million, and 2 million potential shares of common stock related to the convertible notes, stock awards, and stock options, respectively, would have been included in diluted average shares outstanding.

Options to purchase 26 million, 3 million, and 12 million shares of common stock at a weighted average exercise price of $12.75, $16.24, and $15.81 per share were outstanding as of December 31, 2015, 2014, and 2013, respectively, but were not included in the computation of diluted EPS because they were anti-dilutive, as the exercise prices of the options were greater than the average market price of Alcoa's common stock.

T. Income Taxes

The components of income (loss) before income taxes were as follows:

	2015	2014	2013
United States	$(607)	$(125)	$(1,269)
Foreign	855	622	(547)
	$ 248	$ 497	$(1,816)

The provision for income taxes consisted of the following:

	2015	2014	2013
Current:			
Federal*	$ 3	$ (3)	$ 14
Foreign	409	357	235
State and local	(1)	1	1
	411	355	250
Deferred:			
Federal*	(108)	7	84
Foreign	142	(41)	95
State and local	-	(1)	(1)
	34	(35)	178
Total	$ 445	$320	$428

* Includes U.S. taxes related to foreign income

The exercise of employee stock options generated a tax benefit of $3 and $9 in 2015 and 2014, respectively, and a tax charge of $1 in 2013, representing only the difference between compensation expense recognized for financial reporting and tax purposes. These amounts decreased equity and increased either current taxes payable or deferred tax assets (not operating losses) in the respective periods.

Alcoa has unamortized tax-deductible goodwill of $27 resulting from intercompany stock sales and reorganizations. Alcoa recognizes the tax benefits (at a 28% rate in 2015 and will be at a rate of 25% in 2016 and later years) associated with this tax-deductible goodwill as it is being amortized for local income tax purposes rather than in the period in which the transaction is consummated.

A reconciliation of the U.S. federal statutory rate to Alcoa's effective tax rate was as follows (the effective tax rate for 2015 and 2014 was a provision on income and for 2013 was a provision on a loss):

	2015	2014	2013
U.S. federal statutory rate	35.0%	35.0%	35.0%
Taxes on foreign operations	0.4	(3.2)	0.7
Permanent differences on restructuring and other charges and asset disposals	2.7	(3.5)	(0.8)
Non-deductible acquisition costs	5.2	1.7	-
Equity income/loss	4.9	3.2	(0.7)
Noncontrolling interests[1]	11.4	6.8	(3.1)
Statutory tax rate and law changes[2]	(0.8)	17.9	0.6
Tax holidays[3]	(11.3)	6.1	-
Tax credits	(3.6)	(1.3)	0.2
Changes in valuation allowances	135.3	3.5	(23.2)
Impairment of goodwill	3.6	-	(33.3)
Company-owned life insurance/split-dollar net premiums	(2.2)	(2.2)	1.1
Other	(1.2)	0.4	(0.1)
Effective tax rate	179.4%	64.4%	(23.6)%

(1) In 2014, the noncontrolling interests' impact on Alcoa's effective tax rate was mostly due to the noncontrolling interest's share of a loss on the divestiture of an ownership interest in a mining and refining joint venture in Jamaica (see Note F).

(2) In November 2014, Spain enacted corporate tax reform that changed the corporate tax rate from 30% in 2014 to 28% in 2015 to 25% in 2016. As a result, Alcoa remeasured certain deferred tax assets related to Spanish subsidiaries.

(3) In 2014, a tax holiday for certain Alcoa subsidiaries in Brazil became effective (see below).

The components of net deferred tax assets and liabilities were as follows:

	2015		2014	
December 31,	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Depreciation	$ 194	$ 1,353	$ 147	$ 1,187
Employee benefits	2,517	34	2,413	37
Loss provisions	486	9	441	10
Deferred income/expense	37	294	30	230
Tax loss carryforwards	1,917	-	2,075	-
Tax credit carryforwards	693	-	625	-
Derivatives and hedging activities	-	276	5	39
Other	680	339	521	297
	6,524	2,305	6,257	1,800
Valuation allowance	(2,037)	-	(1,668)	-
	$ 4,487	$ 2,305	$ 4,589	$ 1,800

The following table details the expiration periods of the deferred tax assets presented above:

December 31, 2015	Expires within 10 years	Expires within 11-20 years	No expiration*	Other*	Total
Tax loss carryforwards	$ 361	$ 694	$ 862	$ -	$ 1,917
Tax credit carryforwards	492	103	98	-	693
Other	-	-	473	3,441	3,914
Valuation allowance	(596)	(704)	(423)	(314)	(2,037)
	$ 257	$ 93	$ 1,010	$ 3,127	$ 4,487

* Deferred tax assets with no expiration may still have annual limitations on utilization. Other represents deferred tax assets whose expiration is dependent upon the reversal of the underlying temporary difference. A substantial amount of Other relates to employee benefits that will become deductible for tax purposes over an extended period of time as contributions are made to employee benefit plans and payments are made to retirees.

The total deferred tax asset (net of valuation allowance) is supported by projections of future taxable income exclusive of reversing temporary differences (58%) and taxable temporary differences that reverse within the carryforward period (42%).

Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not (greater than 50%) that a tax benefit will not be realized. In evaluating the need for a valuation allowance, management considers all potential sources of taxable income, including income available in carryback periods, future reversals of taxable temporary differences, projections of taxable income, and income from tax planning strategies, as well as all available positive and negative evidence. Positive evidence includes factors such as a history of profitable operations, projections of future profitability within the carryforward period, including from tax planning strategies, and Alcoa's experience with similar operations. Existing favorable contracts and the ability to sell products into established markets are additional positive evidence. Negative evidence includes items such as cumulative losses, projections of future losses, or carryforward periods that are not long enough to allow for the utilization of a deferred tax asset based on existing projections of income. In certain jurisdictions, deferred tax assets related to cumulative losses exist without a valuation allowance where in management's judgment the weight of the positive evidence more than offsets the negative evidence of the cumulative losses. Upon changes in facts and circumstances, management may conclude that deferred tax assets for which no valuation allowance is currently recorded may not be realized, resulting in a future charge to establish a valuation allowance. Existing valuation allowances are re-examined under the same standards of positive and negative evidence. If it is determined that it is more likely than not that a deferred tax asset will be realized, the appropriate amount of the valuation allowance, if any, is released. Deferred tax assets and liabilities are also re-measured to reflect changes in underlying tax rates due to law changes and the granting and lapse of tax holidays.

In 2013, Alcoa recognized a $372 discrete income tax charge for valuation allowances on certain deferred tax assets in Spain and the United States. Of this amount, a $237 valuation allowance was established on the full value of the deferred tax assets related to a Spanish consolidated tax group. These deferred tax assets have an expiration period ranging from 2016 (for certain credits) to an unlimited life (for operating losses). After weighing all available positive and negative evidence, as described above, management determined that it was no longer more likely than not that Alcoa will realize the tax benefit of these deferred tax assets. This was mainly driven by a decline in the outlook of the Primary Metals business (2013 realized prices were the lowest since 2009) combined with prior year cumulative losses of the Spanish consolidated tax group. During 2014, the underlying value of the deferred tax assets decreased due to a remeasurement as a result of the enactment of new tax rates in Spain beginning in 2015, the sale of a member of the Spanish consolidated tax group, and a change in foreign currency exchange rates. As a result the valuation allowance decreased by the same amount. At December 31, 2015, the amount of the valuation allowance was $149. This valuation allowance was reevaluated as of December 31, 2015, and no change to the allowance was deemed necessary based on all available evidence. The need for this valuation allowance will be assessed on a continuous basis in future periods and, as a result, a portion or all of the allowance may be reversed based on changes in facts and circumstances.

The remaining $135 recognized in 2013 relates to a valuation allowance established on a portion of available foreign tax credits in the United States. These credits can be carried forward for 10 years, and have an expiration period ranging from 2016 to 2023 as of December 31, 2013 (2016 to 2025 as of December 31, 2015). After weighing all available positive and negative evidence, as described above, management determined that it was no longer more likely than not that Alcoa will realize the full tax benefit of these foreign tax credits. This was primarily due to lower foreign sourced taxable income after consideration of tax planning strategies and after the inclusion of earnings from foreign subsidiaries projected to be distributable as taxable foreign dividends. This valuation allowance was reevaluated as of December 31, 2015, and due to reductions in foreign sourced taxable income, a $134 discrete income tax charge was recognized. Additionally, $15 of foreign tax credits expired at the end of 2015 resulting in a corresponding decrease to the valuation allowance. At December 31, 2015, the amount of the valuation allowance was $254. The need for this valuation allowance will be assessed on a continuous basis in future periods and, as a result, an increase or decrease to this allowance may result based on changes in facts and circumstances.

In 2015, Alcoa recognized an additional $141 discrete income tax charge for valuation allowances on certain deferred tax assets in Iceland and Suriname. Of this amount, an $85 valuation allowance was established on the full value of the deferred tax assets in Suriname, which were related mostly to employee benefits and tax loss carryforwards. These deferred tax assets have an expiration period ranging from 2016 to 2022. The remaining $56 charge relates to a valuation allowance established on a portion of the deferred tax assets recorded in Iceland. These deferred tax assets have an expiration period ranging from 2017 to 2023. After weighing all available positive and negative evidence, as described above, management determined that it was no longer more likely than not that Alcoa will realize the tax benefit of either of these deferred tax assets. This was mainly driven by a decline in the outlook of the Primary Metals business, combined with prior year cumulative losses and a short expiration period. The need for this valuation allowance will be assessed on a continuous basis in future periods and, as a result, a portion or all of the allowance may be reversed based on changes in facts and circumstances.

In December 2011, one of Alcoa’s subsidiaries in Brazil applied for a tax holiday related to its expanded mining and refining operations. During 2013, the application was amended and re-filed and, separately, a similar application was filed for another one of the Company’s subsidiaries in Brazil. The deadline for the Brazilian government to deny the application was July 11, 2014. Since Alcoa did not receive notice that its applications were denied, the tax holiday took effect automatically on July 12, 2014. As a result, the tax rate applicable to qualified holiday income for these subsidiaries decreased significantly (from 34% to 15.25%), resulting in future cash tax savings over the 10-year holiday period (retroactively effective as of January 1, 2013). Additionally, a portion of one of the subsidiaries net deferred tax asset that reverses within the holiday period was remeasured at the new tax rate (the net deferred tax asset of the other subsidiary was not remeasured since it could still be utilized against the subsidiary’s future earnings not subject to the tax holiday). This remeasurement resulted in a decrease to that subsidiary’s net deferred tax asset and a noncash charge to earnings of $52 ($31 after noncontrolling interest).

The following table details the changes in the valuation allowance:

December 31,	**2015**	**2014**	**2013**
Balance at beginning of year	$1,668	$1,804	$1,400
Increase to allowance	472	117	471
Release of allowance	(42)	(77)	(41)
Acquisitions and divestitures (F)	29	(37)	-
U.S. state tax apportionment and tax rate changes	(45)	(80)	(32)
Foreign currency translation	(45)	(59)	6
Balance at end of year	$2,037	$1,668	$1,804

The cumulative amount of Alcoa’s foreign undistributed net earnings for which no deferred taxes have been provided was approximately $4,000 at December 31, 2015. Alcoa has a number of commitments and obligations related to the Company’s growth strategy in foreign jurisdictions. As such, management has no plans to distribute such earnings in the foreseeable future, and, therefore, has determined it is not practicable to determine the related deferred tax liability.

Alcoa and its subsidiaries file income tax returns in the U.S. federal jurisdiction and various states and foreign jurisdictions. With a few minor exceptions, Alcoa is no longer subject to income tax examinations by tax authorities for years prior to 2006. All U.S. tax years prior to 2015 have been audited by the Internal Revenue Service. Various state and foreign jurisdiction tax authorities are in the process of examining Alcoa's income tax returns for various tax years through 2014.

A reconciliation of the beginning and ending amount of unrecognized tax benefits (excluding interest and penalties) was as follows:

December 31,	2015	2014	2013
Balance at beginning of year	$ 35	$ 63	$ 66
Additions for tax positions of the current year	2	2	2
Additions for tax positions of prior years	15	5	11
Reductions for tax positions of prior years	(2)	(4)	(2)
Settlements with tax authorities	(2)	(29)	(8)
Expiration of the statute of limitations	(1)	-	(2)
Foreign currency translation	(4)	(2)	(4)
Balance at end of year	$ 43	$ 35	$ 63

For all periods presented, a portion of the balance at end of year pertains to state tax liabilities, which are presented before any offset for federal tax benefits. The effect of unrecognized tax benefits, if recorded, that would impact the annual effective tax rate for 2015, 2014, and 2013 would be approximately 12%, 4%, and (1)%, respectively, of pretax book income (loss). Alcoa does not anticipate that changes in its unrecognized tax benefits will have a material impact on the Statement of Consolidated Operations during 2016 (see Other Matters in Note N for a matter for which no reserve has been recognized).

It is Alcoa's policy to recognize interest and penalties related to income taxes as a component of the Provision for income taxes on the accompanying Statement of Consolidated Operations. In 2015, 2014, and 2013, Alcoa recognized $8, $1, and $2, respectively, in interest and penalties. Due to the expiration of the statute of limitations, settlements with tax authorities, and refunded overpayments, Alcoa also recognized interest income of $2, $5, and $12 in 2015, 2014, and 2013, respectively. As of December 31, 2015 and 2014, the amount accrued for the payment of interest and penalties was $9.

U. Receivables

Sale of Receivables Programs

Alcoa has an arrangement with three financial institutions to sell certain customer receivables without recourse on a revolving basis. The sale of such receivables is completed through the use of a bankruptcy remote special purpose entity, which is a consolidated subsidiary of Alcoa. This arrangement provides for minimum funding of $200 up to a maximum of $500 for receivables sold. On March 30, 2012, Alcoa initially sold $304 of customer receivables in exchange for $50 in cash and $254 of deferred purchase price under this arrangement. Alcoa has received additional net cash funding of $200 for receivables sold ($1,258 in draws and $1,058 in repayments) since the program's inception (no draws or repayments occurred in 2015), including $40 ($710 in draws and $670 in repayments) in 2014.

As of December 31, 2015 and 2014, the deferred purchase price receivable was $249 and $356, respectively, which was included in Other receivables on the accompanying Consolidated Balance Sheet. The deferred purchase price receivable is reduced as collections of the underlying receivables occur; however, as this is a revolving program, the sale of new receivables will result in an increase in the deferred purchase price receivable. The net change in the deferred purchase price receivable was reflected in the Decrease (increase) in receivables line item on the accompanying Statement of Consolidated Cash Flows. This activity is reflected as an operating cash flow because the related customer receivables are the result of an operating activity with an insignificant, short-term interest rate risk.

In 2015 and 2014, the gross cash outflows and inflows associated with the deferred purchase price receivable were $6,893 and $7,001, respectively, and $7,381 and $7,272, respectively. The gross amount of receivables sold and total cash collected under this program since its inception was $24,598 and $24,099 respectively. Alcoa services the customer receivables for the financial institutions at market rates; therefore, no servicing asset or liability was recorded.

Allowance for Doubtful Accounts

The following table details the changes in the allowance for doubtful accounts related to customer receivables and other receivables:

	Customer receivables			Other receivables		
December 31,	**2015**	**2014**	**2013**	**2015**	**2014**	**2013**
Balance at beginning of year	$ 14	$ 20	$ 39	$ 41	$ 47	$ 74
Provision for doubtful accounts	5	2	3	8	8	29
Write off of uncollectible accounts	(4)	(3)	(19)	(2)	(4)	(39)
Recoveries of prior write-offs	-	(2)	(3)	1	(7)	(10)
Other	(2)	(3)	-	1	(3)	(7)
Balance at end of year	$ 13	$ 14	$ 20	$ 49	$ 41	$ 47

V. Interest Cost Components

	2015	2014	2013
Amount charged to expense	$498	$473	$453
Amount capitalized	57	56	99
	$555	$529	$552

W. Pension and Other Postretirement Benefits

Alcoa maintains pension plans covering most U.S. employees and certain employees in foreign locations. Pension benefits generally depend on length of service, job grade, and remuneration. Substantially all benefits are paid through pension trusts that are sufficiently funded to ensure that all plans can pay benefits to retirees as they become due. Most salaried and non-bargaining hourly U.S. employees hired after March 1, 2006 participate in a defined contribution plan instead of a defined benefit plan.

On June 6, 2014, the United Steelworkers ratified a new five-year labor agreement covering approximately 6,100 employees at 10 U.S. locations; the previous labor agreement expired on May 15, 2014. In 2014, as a result of the preparation for and ratification of the new agreement, Alcoa recognized $18 ($12 after-tax) in Cost of goods sold on the accompanying Statement of Consolidated Operations for, among other items, business contingency costs and a one-time signing bonus for employees. Additionally, as a result of the provisions of the new labor agreement, a significant plan amendment was adopted by one of Alcoa's U.S. pension plans. Accordingly, this plan was required to be remeasured, and through this process, the discount rate was updated from 4.80% at December 31, 2013 to 4.25% at May 31, 2014. The plan remeasurement resulted in an increase to both Alcoa's pension liability of $100 and a combination of the plan's unrecognized net actuarial loss and prior service cost (included in Accumulated other comprehensive loss) of $65 (after-tax). The plan remeasurement also resulted in a $13 decrease to 2014 net periodic benefit cost.

Alcoa also maintains health care and life insurance postretirement benefit plans covering eligible U.S. retired employees and certain retirees from foreign locations. Generally, the medical plans are unfunded and pay a percentage of medical expenses, reduced by deductibles and other coverage. Life benefits are generally provided by insurance contracts. Alcoa retains the right, subject to existing agreements, to change or eliminate these benefits. All salaried and certain non-bargaining hourly U.S. employees hired after January 1, 2002 and certain bargaining hourly U.S. employees hired after July 1, 2010 are not eligible for postretirement health care benefits. All salaried and certain hourly U.S. employees that retire on or after April 1, 2008 are not eligible for postretirement life insurance benefits.

Effective January 1, 2015, Alcoa no longer offers postretirement health care benefits to Medicare-eligible, primarily non-bargaining, U.S. retirees through Company-sponsored plans. Qualifying retirees (hired prior to January 1, 2002), both current and future, may access these benefits in the marketplace by purchasing coverage directly from insurance carriers. This change resulted in the adoption of a significant plan amendment by certain Alcoa U.S. postretirement benefit plans in August 2014. Accordingly, these plans were required to be remeasured, and through this process, the discount rate was updated from 4.80% at December 31, 2013 to 4.15% at August 31, 2014. The remeasurement of the plans resulted in a decrease to both Alcoa's other postretirement benefits liability of $90 and a combination of the plans' unrecognized net actuarial loss and prior service benefit (included in Accumulated other comprehensive loss) of $59 (after-tax). The remeasurement of the plans also resulted in a $7 decrease to 2014 net periodic benefit cost.

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The funded status of all of Alcoa's pension and other postretirement benefit plans are measured as of December 31 each calendar year.

Obligations and Funded Status

December 31,	Pension benefits		Other postretirement benefits	
	2015	2014	2015	2014
Change in benefit obligation				
Benefit obligation at beginning of year	$15,019	$13,730	$ 2,368	$ 2,592
Service cost	187	182	14	15
Interest cost	583	640	92	114
Amendments	18	33	-	(111)
Actuarial (gains) losses	(222)	1,552	26	16
Acquisitions (F)	188	455	48	-
Divestitures (F)	-	(142)	-	(10)
Settlements	(72)	(134)	-	-
Curtailments	(12)	-	(6)	-
Benefits paid, net of participants' contributions	(1,033)	(1,051)	(235)	(264)
Medicare Part D subsidy receipts	-	-	15	19
Foreign currency translation impact	(409)	(246)	(3)	(3)
Benefit obligation at end of year*	$14,247	$15,019	$ 2,319	$ 2,368
Change in plan assets				
Fair value of plan assets at beginning of year	$11,717	$10,580	$ -	$ -
Actual return on plan assets	24	1,764	-	-
Employer contributions	479	507	-	-
Participants' contributions	21	25	-	-
Benefits paid	(1,015)	(1,038)	-	-
Administrative expenses	(55)	(54)	-	-
Acquisitions (F)	164	431	-	-
Divestitures (F)	-	(164)	-	-
Settlements	(72)	(134)	-	-
Foreign currency translation impact	(335)	(200)	-	-
Fair value of plan assets at end of year*	$10,928	$11,717	$ -	$ -
Funded status*	$ (3,319)	$ (3,302)	$ (2,319)	$ (2,368)
Less: Amounts attributed to joint venture partners	(30)	(33)	-	-
Net funded status	$ (3,289)	$ (3,269)	$ (2,319)	$ (2,368)
Amounts recognized in the Consolidated Balance Sheet consist of:				
Noncurrent assets	$ 44	$ 53	$ -	$ -
Current liabilities	(35)	(31)	(213)	(213)
Noncurrent liabilities	(3,298)	(3,291)	(2,106)	(2,155)
Net amount recognized	$ (3,289)	$ (3,269)	$ (2,319)	$ (2,368)
Amounts recognized in Accumulated Other Comprehensive Loss consist of:				
Net actuarial loss	$ 5,351	$ 5,379	$ 398	$ 392
Prior service cost (benefit)	70	102	(106)	(144)
Total, before tax effect	5,421	5,481	292	248
Less: Amounts attributed to joint venture partners	38	43	-	-
Net amount recognized, before tax effect	$ 5,383	$ 5,438	$ 292	$ 248
Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Loss consist of:				
Net actuarial loss	$ 440	$ 572	$ 23	$ 15
Amortization of accumulated net actuarial loss	(468)	(391)	(17)	(13)
Prior service (benefit) cost	(7)	26	1	(112)
Amortization of prior service (cost) benefit	(25)	(18)	37	25
Total, before tax effect	(60)	189	44	(85)
Less: Amounts attributed to joint venture partners	(5)	5	-	-
Net amount recognized, before tax effect	$ (55)	$ 184	$ 44	$ (85)

* At December 31, 2015, the benefit obligation, fair value of plan assets, and funded status for U.S. pension plans were $10,983, $8,077, and $(2,906), respectively. At December 31, 2014, the benefit obligation, fair value of plan assets, and funded status for U.S. pension plans were $11,404, $8,576, and $(2,828), respectively.

Pension Plan Benefit Obligations

	Pension benefits	
	2015	2014
The projected benefit obligation and accumulated benefit obligation for all defined benefit pension plans was as follows:		
Projected benefit obligation	$14,247	$15,019
Accumulated benefit obligation	13,832	14,553
The aggregate projected benefit obligation and fair value of plan assets for pension plans with projected benefit obligations in excess of plan assets was as follows:		
Projected benefit obligation	14,146	14,151
Fair value of plan assets	10,786	10,777
The aggregate accumulated benefit obligation and fair value of plan assets for pension plans with accumulated benefit obligations in excess of plan assets was as follows:		
Accumulated benefit obligation	12,510	13,112
Fair value of plan assets	9,512	10,144

Components of Net Periodic Benefit Cost

	Pension benefits[1]			Other postretirement benefits[2]		
	2015	2014	2013	2015	2014	2013
Service cost	$ 175	$ 166	$ 194	$ 14	$ 15	$ 17
Interest cost	577	630	602	92	114	114
Expected return on plan assets	(753)	(782)	(788)	-	-	-
Recognized net actuarial loss	468	391	489	17	13	35
Amortization of prior service cost (benefit)	16	18	19	(37)	(25)	(18)
Settlements[3]	16	26	9	-	-	-
Curtailments[4]	9	-	6	(4)	-	-
Special termination benefits[5]	16	-	77	-	-	-
Net periodic benefit cost[6]	$ 524	$ 449	$ 608	$ 82	$ 117	$ 148

(1) In 2015, 2014, and 2013, net periodic benefit cost for U.S pension plans was $423, $335, and $391, respectively.

(2) In 2015, 2014, and 2013, net periodic benefit cost for other postretirement benefits reflects a reduction of $34, $38, and $55, respectively, related to the recognition of the federal subsidy awarded under Medicare Part D.

(3) In 2015, settlements were due to workforce reductions (see Note D) and the payment of lump sum benefits and/or purchases of annuity contracts. In 2014, settlements were due to workforce reductions (see Note D). In 2013, settlements were due to the payment of lump sum benefits and/or purchases of annuity contracts.

(4) In 2015 and 2013, curtailments were due to elimination of benefits or workforce reductions (see Note D).

(5) In 2015 and 2013, special termination benefits were due to workforce reductions (see Note D).

(6) Amounts attributed to joint venture partners are not included.

Amounts Expected to be Recognized in Net Periodic Benefit Cost

	Pension benefits	Other postretirement benefits
	2016	2016
Net actuarial loss recognition	413	21
Prior service cost (benefit) recognition	15	(26)

Assumptions

Weighted average assumptions used to determine benefit obligations for U.S. pension and other postretirement benefit plans were as follows (assumptions for non-U.S plans did not differ materially):

December 31,	2015	2014
Discount rate	4.29%	4.00%
Rate of compensation increase	3.5	3.5

The discount rate is determined using a Company-specific yield curve model (above-median) developed with the assistance of an external actuary. The cash flows of the plans' projected benefit obligations are discounted using a single equivalent rate derived from yields on high quality corporate bonds, which represent a broad diversification of issuers in various sectors, including finance and banking, consumer products, transportation, insurance, and pharmaceutical, among others. The yield curve model parallels the plans' projected cash flows, which have an average duration of 10 years, and the underlying cash flows of the bonds included in the model exceed the cash flows needed to satisfy the Company's plans' obligations multiple times.

The rate of compensation increase is based upon actual experience. For 2016, the rate of compensation increase will be 3.5%, which approximates the five-year average.

Weighted average assumptions used to determine net periodic benefit cost for U.S. pension and other postretirement benefit plans were as follows (assumptions for non-U.S plans did not differ materially):

	2015	2014	2013
Discount rate*	4.00%	4.80%	4.15%
Expected long-term rate of return on plan assets	7.75	8.00	8.50
Rate of compensation increase	3.50	3.50	3.50

* In all periods presented, the respective discount rates were used to determine net periodic benefit cost for most U.S. pension plans for the full annual period. However, the discount rates for a limited number of plans were updated during 2015, 2014, and 2013 to reflect the remeasurement of these plans due to new union labor agreements, settlements, and/or curtailments. The updated discount rates used were not significantly different from the discount rates presented.

In conjunction with the annual measurement of the funded status of Alcoa's pension and other postretirement benefit plans at December 31, 2015, management elected to change the manner in which the interest cost component of net periodic benefit cost will be determined in 2016 and beyond. Previously, the interest cost component was determined by multiplying the single equivalent rate described above and the aggregate discounted cash flows of the plans' projected benefit obligations. Under the new methodology, the interest cost component will be determined by aggregating the product of the discounted cash flows of the plans' projected benefit obligations for each year and an individual spot rate (referred to as the "spot rate" approach). This change will result in a lower interest cost component of net periodic benefit cost under the new methodology compared to the previous methodology of approximately $100 ($65 after-tax) in 2016. Management believes this new methodology, which represents a change in an accounting estimate, is a better measure of the interest cost as each year's cash flows are specifically linked to the interest rates of bond payments in the same respective year.

The expected long-term rate of return on plan assets is generally applied to a five-year market-related value of plan assets (a four-year average or the fair value at the plan measurement date is used for certain non-U.S. plans). The process used by management to develop this assumption is one that relies on a combination of historical asset return information and forward-looking returns by asset class. As it relates to historical asset return information, management focuses on the annual, 10-year moving, and 20-year moving averages when developing this assumption. Management also incorporates expected future returns on current and planned asset allocations using information from various external investment managers and consultants, as well as management's own judgment.

For 2015, 2014, and 2013, the expected long-term rate of return used by management was based on the prevailing and planned strategic asset allocations, as well as estimates of future returns by asset class. These rates fell within the respective range of the 20-year moving average of actual performance and the expected future return developed by asset class. In 2015, the decrease of 25 basis points in the expected long-term rate of return was due to a decrease in the 20-year moving average of actual performance. For 2016, management anticipates that 7.75% will be the expected long-term rate of return.

Assumed health care cost trend rates for U.S. other postretirement benefit plans were as follows (assumptions for non-U.S plans did not differ materially):

	2015	2014	2013
Health care cost trend rate assumed for next year	5.5%	5.5%	5.5%
Rate to which the cost trend rate gradually declines	4.5%	4.5%	4.5%
Year that the rate reaches the rate at which it is assumed to remain	2019	2018	2017

The assumed health care cost trend rate is used to measure the expected cost of gross eligible charges covered by Alcoa's other postretirement benefit plans. For 2016, a 5.5% trend rate will be used, reflecting management's best estimate of the change in future health care costs covered by the plans. The plans' actual annual health care cost trend experience over the past three years has ranged from 4.0%. to 9.6% Management does not believe this three-year range is indicative of expected increases for future health care costs over the long-term.

Assumed health care cost trend rates have an effect on the amounts reported for the health care plan. A one-percentage point change in these assumed rates would have the following effects:

	1% increase	1% decrease
Effect on other postretirement benefit obligations	$ 126	$ (113)
Effect on total of service and interest cost components	5	(5)

Plan Assets

Alcoa's pension plans' investment policy and weighted average asset allocations at December 31, 2015 and 2014, by asset class, were as follows:

		Plan assets at December 31,	
Asset class	**Policy range**	**2015**	**2014**
Equities	20–55%	30%	33%
Fixed income	25–55%	43	45
Other investments	15–35%	27	22
Total		100%	100%

The principal objectives underlying the investment of the pension plans' assets are to ensure that Alcoa can properly fund benefit obligations as they become due under a broad range of potential economic and financial scenarios, maximize the long-term investment return with an acceptable level of risk based on such obligations, and broadly diversify investments across and within various asset classes to protect asset values against adverse movements. Specific objectives for long-term investment strategy include reducing the volatility of pension assets relative to pension liabilities and achieving risk factor diversification across the balance of the asset portfolio. A portion of the assets are matched to the interest rate profile of the benefit obligation through long duration fixed income investments and exposure to broad equity risk has been decreased and diversified through investments in discretionary and

systematic macro hedge funds, long/short equity hedge funds, and global and emerging market equities. Investments are further diversified by strategy, asset class, geography, and sector to enhance returns and mitigate downside risk. A large number of external investment managers are used to gain broad exposure to the financial markets and to mitigate manager-concentration risk.

Investment practices comply with the requirements of the Employee Retirement Income Security Act of 1974 (ERISA) and other applicable laws and regulations. The use of derivative instruments is permitted where appropriate and necessary for achieving overall investment policy objectives. Currently, the use of derivative instruments is not significant when compared to the overall investment portfolio.

The following section describes the valuation methodologies used by the trustees to measure the fair value of pension plan assets, including an indication of the level in the fair value hierarchy in which each type of asset is generally classified (see Note X for the definition of fair value and a description of the fair value hierarchy).

Equities. These securities consist of: (i) direct investments in the stock of publicly traded U.S. and non-U.S. companies and are valued based on the closing price reported in an active market on which the individual securities are traded (generally classified in Level 1); (ii) the plans' share of commingled funds that are invested in the stock of publicly traded companies and are valued at the net asset value of shares held at December 31 (included in Level 1 if quoted in an active market, otherwise these investments are included in Level 2); and (iii) direct investments in long/short equity hedge funds and private equity (limited partnerships and venture capital partnerships) and are valued by investment managers based on the most recent financial information available, which typically represents significant unobservable data (generally classified as Level 3).

Fixed income. These securities consist of: (i) U.S. government debt and are generally valued using quoted prices (included in Level 1); (ii) publicly traded U.S. and non-U.S. fixed interest obligations (principally corporate bonds and debentures) and are valued through consultation and evaluation with brokers in the institutional market using quoted prices and other observable market data (included in Level 2); (iii) cash and cash equivalents, which consist of government securities in commingled funds, and are generally valued using observable market data (included in Level 2); and (iv) commercial and residential mortgage-backed securities and are valued by investment managers based on the most recent financial information available, which typically represents significant unobservable data (generally classified as Level 3).

Other investments. These investments include, among others: (i) exchange traded funds, such as gold, and real estate investment trusts and are valued based on the closing price reported in an active market on which the investments are traded (included in Level 1); (ii) the plans' share of commingled funds that are invested in real estate investment trusts and are valued at the net asset value of shares held at December 31 (generally included in Level 3, however, if fair value is able to be determined through the use of quoted market prices of similar assets or other observable market data, then the investments are classified in Level 2); and (iii) direct investments of discretionary and systematic macro hedge funds and private real estate (includes limited partnerships) and are valued by investment managers based on the most recent financial information available, which typically represents significant unobservable data (generally classified as Level 3, however, if fair value is able to be determined through the use of quoted market prices of similar assets or other observable market data, then the investments are classified in Level 2).

The fair value methods described above may not be indicative of net realizable value or reflective of future fair values. Additionally, while Alcoa believes the valuation methods used by the plans' trustees are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following table presents the fair value of pension plan assets classified under the appropriate level of the fair value hierarchy:

December 31, 2015	Level 1	Level 2	Level 3	Total
Equities:				
Equity securities	$ 826	$ 929	$ 170	$ 1,925
Long/short equity hedge funds	-	-	932	932
Private equity	-	-	466	466
	$ 826	$ 929	$ 1,568	$ 3,323
Fixed income:				
Intermediate and long duration government/credit	$ 2,496	$ 1,255	$ -	$ 3,751
Other	-	952	-	952
	$ 2,496	$ 2,207	$ -	$ 4,703
Other investments:				
Real estate	$ 158	$ 16	$ 562	$ 736
Discretionary and systematic macro hedge funds	-	-	1,671	1,671
Other	126	-	367	493
	$ 284	$ 16	$ 2,600	$ 2,900
Total*	$ 3,606	$ 3,152	$ 4,168	$10,926

December 31, 2014	Level 1	Level 2	Level 3	Total
Equities				
Equity securities	$ 1,156	$ 1,131	$ 176	$ 2,463
Long/short equity hedge funds	-	-	963	963
Private equity	-	-	543	543
	$ 1,156	$ 1,131	$ 1,682	$ 3,969
Fixed income:				
Intermediate and long duration government/credit	$ 2,998	$ 1,900	$ -	$ 4,898
Other	-	413	-	413
	$ 2,998	$ 2,313	$ -	$ 5,311
Other investments:				
Real estate	$ 152	$ 18	$ 459	$ 629
Discretionary and systematic macro hedge funds	-	-	1,408	1,408
Other	140	-	376	516
	$ 292	$ 18	$ 2,243	$ 2,553
Total**	$ 4,446	$ 3,462	$ 3,925	$11,833

* As of December 31, 2015, the total fair value of pension plans' assets excludes a net receivable of $2 which represents securities sold not yet settled plus interest and dividends earned on various investments.

** As of December 31, 2014, the total fair value of pension plans' assets excludes a net payable of $116, which represents assets related to divested businesses (see Note F) to be transferred to the buyers' pension plans less securities sold not yet settled plus interest and dividends earned on various investments.

Pension plan assets classified as Level 3 in the fair value hierarchy represent investments in which the trustees have used significant unobservable inputs in the valuation model. The following table presents a reconciliation of activity for such investments:

	2015	2014
Balance at beginning of year	$3,925	$3,421
Realized gains	118	180
Unrealized gains	94	146
Purchases	640	868
Sales	(481)	(768)
Issuances	-	-
Settlements	-	-
Acquisitions (F)	12	117
Foreign currency translation impact	(140)	(39)
Transfers in and/or out of Level 3*	-	-
Balance at end of year	$4,168	$3,925

* In 2015 and 2014, there were no transfers of financial instruments into or out of Level 3.

Funding and Cash Flows

It is Alcoa's policy to fund amounts for pension plans sufficient to meet the minimum requirements set forth in applicable country benefits laws and tax laws, including the Pension Protection Act of 2006; the Worker, Retiree, and Employer Recovery Act of 2008; the Moving Ahead for Progress in the 21st Century Act of 2012; the Highway and Transportation Funding Act of 2014; and the Bipartisan Budget Act of 2015 for U.S. plans. From time to time, Alcoa contributes additional amounts as deemed appropriate. In 2015 and 2014, cash contributions to Alcoa's pension plans were $470 and $501. The minimum required contribution to pension plans in 2016 is estimated to be $300, of which $218 is for U.S. plans.

Benefit payments expected to be paid to pension and other postretirement benefit plans' participants and expected Medicare Part D subsidy receipts are as follows:

Year ended December 31,	Pension benefits	Gross Other postretirement benefits	Medicare Part D subsidy receipts	Net Other postretirement benefits
2016	$ 910	$ 230	$ 15	$ 215
2017	900	225	15	210
2018	910	225	15	210
2019	910	220	15	205
2020	920	220	20	200
2021 through 2025	4,650	975	80	895
	$ 9,200	$ 2,095	$ 160	$ 1,935

Defined Contribution Plans

Alcoa sponsors savings and investment plans in several countries, including the United States and Australia. Expenses related to these plans were $142 in 2015, $151 in 2014, and $149 in 2013. In the United States, employees may contribute a portion of their compensation to the plans, and Alcoa matches a portion of these contributions in equivalent form of the investments elected by the employee. Prior to January 1, 2014, Alcoa's match was mostly in company stock.

X. Derivatives and Other Financial Instruments

Fair Value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy distinguishes between (i) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (ii) an entity's own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are described below:

- Level 1—Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.
- Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, including quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in markets that are not active; inputs other than quoted prices that are observable for the asset or liability (e.g., interest rates); and inputs that are derived principally from or corroborated by observable market data by correlation or other means.
- Level 3—Inputs that are both significant to the fair value measurement and unobservable.

Derivatives. Alcoa is exposed to certain risks relating to its ongoing business operations, including financial, market, political, and economic risks. The following discussion provides information regarding Alcoa's exposure to the risks of changing commodity prices, interest rates, and foreign currency exchange rates.

Alcoa's commodity and derivative activities are subject to the management, direction, and control of the Strategic Risk Management Committee (SRMC), which is composed of the chief executive officer, the chief financial officer, and other officers and employees that the chief executive officer selects. The SRMC meets on a periodic basis to review derivative positions and strategy and reports to Alcoa's Board of Directors on the scope of its activities.

The aluminum, energy, interest rate, and foreign exchange contracts are held for purposes other than trading. They are used primarily to mitigate uncertainty and volatility, and to cover underlying exposures. Alcoa is not involved in trading activities for energy, weather derivatives, or other nonexchange commodity trading activities.

A number of Alcoa's aluminum, energy, and foreign exchange contracts are classified as Level 1 and an interest rate contract is classified as Level 2 under the fair value hierarchy. These energy, foreign exchange, and interest rate contracts are not material to Alcoa's Consolidated Financial Statements for all periods presented except as follows for two foreign exchange contracts. Alcoa had a forward contract to purchase $53 (C$58) to mitigate the foreign currency risk related to a Canadian-denominated loan, which was repaid on August 31, 2014 upon maturity. The forward contract expired on August 5, 2014 and a gain of $1 was recognized in Other expenses, net on the accompanying Statement of Consolidated Operations in 2014. Also, Alcoa had a forward contract to purchase $231 (R$543) to mitigate the foreign currency risk associated with a potential future transaction denominated in Brazilian reais. This contract expired on March 31, 2014 and a loss of $4 was recognized in Other expenses, net on the accompanying Statement of Consolidated Operations in 2014.

For the aluminum contracts classified as Level 1, the total fair value of derivatives recorded as assets and liabilities was $8 and $58 and $2 and $31 at December 31, 2015 and 2014, respectively. These contracts were entered into to either hedge forecasted sales or purchases of aluminum in order to manage the associated aluminum price risk. Certain of these contracts are designated as hedging instruments, either fair value or cash flow, and the remaining are not designated as such. Combined, Alcoa recognized a net gain of $19, a net loss of $15, and a net gain of $4 in Sales on the accompanying Statement of Consolidated Operations in 2015, 2014, and 2013, respectively, related to these aluminum contracts. Additionally, for the contracts designated as cash flow hedges, Alcoa recognized an unrealized gain of $9 in Other comprehensive loss in 2013.

In addition to the Level 1 and 2 derivative instruments described above, Alcoa has nine derivative instruments classified as Level 3 under the fair value hierarchy. These instruments are composed of seven embedded aluminum derivatives, an energy contract, and an embedded credit derivative, all of which relate to energy supply contracts associated with eight smelters and three refineries. Five of the embedded aluminum derivatives and the energy contract were designated as cash flow hedging instruments and two of the embedded aluminum derivatives and the embedded credit derivative were not designated as hedging instruments.

The following section describes the valuation methodologies used by Alcoa to measure its Level 3 derivative instruments at fair value. Derivative instruments classified as Level 3 in the fair value hierarchy represent those in which management has used at least one significant unobservable input in the valuation model. Alcoa uses a discounted cash flow model to fair value all Level 3 derivative instruments. Where appropriate, the description below includes the key inputs to those models and any significant assumptions. These valuation models are reviewed and tested at least on an annual basis.

Inputs in the valuation models for Level 3 derivative instruments are composed of the following: (i) quoted market prices (e.g., aluminum prices on the 10-year London Metal Exchange (LME) forward curve and energy prices), (ii) significant other observable inputs (e.g., information concerning time premiums and volatilities for certain option type embedded derivatives and regional premiums for aluminum contracts), and (iii) unobservable inputs (e.g., aluminum and energy prices beyond those quoted in the market). For periods beyond the term of quoted market prices for aluminum, Alcoa estimates the price of aluminum by extrapolating the 10-year LME forward curve. Additionally, for periods beyond the term of quoted market prices for energy, management has developed a forward curve based on independent consultant market research. Where appropriate, valuations are adjusted for various factors such as liquidity, bid/offer spreads, and credit considerations. Such adjustments are generally based on available market evidence (Level 2). In the absence of such evidence, management’s best estimate is used (Level 3). If a significant input that is unobservable in one period becomes observable in a subsequent period, the related asset or liability would be transferred to the appropriate classification (Level 1 or 2) in the period of such change (there were no such transfers in the periods presented).

Alcoa has embedded derivatives in two power contracts that index the price of power to the LME price of aluminum. Additionally, in late 2014, Alcoa renewed three power contracts, each of which contain an embedded derivative that indexes the price of power to the LME price of aluminum plus the Midwest premium. The embedded derivatives in these five power contracts are primarily valued using observable market prices; however, due to the length of the contracts, the valuation models also require management to estimate the long-term price of aluminum based upon an extrapolation of the 10-year LME forward curve and/or 5-year Midwest premium curve. Significant increases or decreases in the actual LME price beyond 10 years and/or the Midwest premium beyond 5 years would result in a higher or lower fair value measurement. An increase in actual LME price and/or the Midwest premium over the inputs used in the valuation models will result in a higher cost of power and a corresponding decrease to the derivative asset or increase to the derivative liability. The embedded derivatives have been designated as cash flow hedges of forward sales of aluminum. Unrealized gains and losses were included in Other comprehensive loss on the accompanying Consolidated Balance Sheet while realized gains and losses were included in Sales on the accompanying Statement of Consolidated Operations.

Also, Alcoa has a power contract separate from above that contains an LME-linked embedded derivative. The embedded derivative is valued using the probability and interrelationship of future LME prices, Australian dollar to U.S. dollar exchange rates, and the U.S. consumer price index. Significant increases or decreases in the LME price would result in a higher or lower fair value measurement. An increase in actual LME price over the inputs used in the valuation model will result in a higher cost of power and a corresponding decrease to the derivative asset. This embedded derivative did not qualify for hedge accounting treatment. Unrealized gains and losses from the embedded derivative were included in Other expenses (income), net on the accompanying Statement of Consolidated Operations while realized gains and losses were included in Cost of goods sold on the accompanying Statement of Consolidated Operations as electricity purchases were made under the contract. At the time this derivative asset was recognized, an equivalent amount was recognized as a deferred credit in Other noncurrent liabilities and deferred credits on the

accompanying Consolidated Balance Sheet (see Note L). This deferred credit is recognized in Other expenses (income), net on the accompanying Statement of Consolidated Operations as power is received over the life of the contract. Alcoa had a similar power contract and related embedded derivative associated with another smelter and rolling mill combined; however, the contract and related derivative instrument matured in July 2014.

Additionally, Alcoa has a natural gas supply contract, which has an LME-linked ceiling. This embedded derivative is valued using probabilities of future LME aluminum prices and the price of Brent crude oil (priced on Platts), including the interrelationships between the two commodities subject to the ceiling. Any change in the interrelationship would result in a higher or lower fair value measurement. An LME ceiling was embedded into the contract price to protect against an increase in the price of oil without a corresponding increase in the price of LME. An increase in oil prices with no similar increase in the LME price would limit the increase of the price paid for natural gas. This embedded derivative did not qualify for hedge accounting treatment. Unrealized gains and losses from the embedded derivative were included in Other expenses (income), net on the accompanying Statement of Consolidated Operations while realized gains and losses were included in Cost of goods sold on the accompanying Statement of Consolidated Operations as gas purchases were made under the contract.

Furthermore, Alcoa has an embedded derivative in a power contract that indexes the difference between the long-term debt ratings of Alcoa and the counterparty from any of the three major credit rating agencies. Management uses market prices, historical relationships, and forecast services to determine fair value. Significant increases or decreases in any of these inputs would result in a lower or higher fair value measurement. A wider credit spread between Alcoa and the counterparty would result in a higher cost of power and a corresponding increase in the derivative liability. This embedded derivative did not qualify for hedge accounting treatment. Unrealized gains and losses were included in Other expenses (income), net on the accompanying Statement of Consolidated Operations while realized gains and losses were included in Cost of goods sold on the accompanying Statement of Consolidated Operations as electricity purchases were made under the contract.

Finally, Alcoa has a derivative contract that will hedge the anticipated power requirements at one of its smelters once the existing power contract expires in September 2016. Beyond the term where market information is available, management has developed a forward curve, for valuation purposes, based on independent consultant market research. Significant increases or decreases in the power market may result in a higher or lower fair value measurement. Lower prices in the power market would cause a decrease in the derivative asset. The derivative contract has been designated as a cash flow hedge of future purchases of electricity. Unrealized gains and losses on this contract were recorded in Other comprehensive loss on the accompanying Consolidated Balance Sheet. Once the designated hedge period begins in September 2016, realized gains and losses will be recorded in Cost of goods sold as electricity purchases are made under the power contract. Alcoa had a similar contract related to another smelter once the prior existing contract expired in 2014, but elected to terminate the new contract in early 2013. This election was available to Alcoa under the terms of the contract and was made due to a projection that suggested the contract would be uneconomical. Prior to termination, the new contract was accounted for in the same manner.

The following table presents quantitative information related to the significant unobservable inputs described above for Level 3 derivative contracts:

	Fair value at December 31, 2015		Unobservable input	Range ($in full amounts)
Assets:				
Embedded aluminum derivatives	$	1,060	Price of aluminum beyond forward curve	Aluminum: $2,060 per metric ton in 2026 to $2,337 per metric ton in 2029 (two contracts) and $2,534 per metric ton in 2036 (one contract) Midwest premium: $0.0940 per pound in 2021 to $0.0940 per pound in 2029 (two contracts) and 2036 (one contract)
Embedded aluminum derivative		69	Interrelationship of future aluminum prices, foreign currency exchange rates, and the U.S. consumer price index (CPI)	Aluminum: $1,525 per metric ton in January 2016 to $1,550 per metric ton in September 2016 Foreign currency: A$1 = $0.73 in 2016 (January through September) CPI: 1982 base year of 100 and 233 in January 2016 to 236 in September 2016
Embedded aluminum derivative		6	Interrelationship of LME price to overall energy price	Aluminum: $1,512 per metric ton in 2016 to $1,686 per metric ton in 2019
Embedded aluminum derivative		-	Interrelationship of future aluminum and oil prices	Aluminum: $1,525 per metric ton in 2016 to $1,652 per metric ton in 2018 Oil: $38 per barrel in 2016 to $53 per barrel in 2018
Liabilities:				
Embedded aluminum derivative		169	Price of aluminum beyond forward curve	Aluminum: $2,060 per metric ton in 2026 to $2,128 per metric ton in 2027
Embedded credit derivative		35	Credit spread between Alcoa and counterparty	3.41% to 4.29% (3.85% median)
Energy contract		2	Price of electricity beyond forward curve	Electricity: $45 per megawatt hour in 2019 to $121 per megawatt hour in 2036

* The fair value of the energy contract reflected as a liability in this table is lower by $2 compared to the respective amount reflected in the Level 3 tables presented below. This is due to the fact that this contract is in a liability position for the current portion but is in an asset position for the noncurrent portion, and is reflected as such on the accompanying Consolidated Balance Sheet. However, this derivative is reflected as a net liability in the above table for purposes of presenting the assumptions utilized to measure the fair value of the derivative instrument in its entirety.

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The fair values of Level 3 derivative instruments recorded as assets and liabilities in the accompanying Consolidated Balance Sheet were as follows:

Asset Derivatives	December 31, 2015	December 31, 2014
Derivatives designated as hedging instruments:		
Prepaid expenses and other current assets:		
Embedded aluminum derivatives	$ 72	$ 24
Other noncurrent assets:		
Embedded aluminum derivative	994	73
Energy contract	2	2
Total derivatives designated as hedging instruments	$ 1,068	$ 99
Derivatives not designated as hedging instruments:		
Prepaid expenses and other current assets:		
Embedded aluminum derivatives	$ 69	$ 98
Other noncurrent assets:		
Embedded aluminum derivatives	-	71
Total derivatives not designated as hedging instruments	$ 69	$ 169
Total Asset Derivatives	$ 1,137	$ 268
Liability Derivatives		
Derivatives designated as hedging instruments:		
Other current liabilities:		
Embedded aluminum derivative	$ 9	$ 24
Energy contract	4	-
Other noncurrent liabilities and deferred credits:		
Embedded aluminum derivatives	160	352
Total derivatives designated as hedging instruments	$ 173	$ 376
Derivatives not designated as hedging instruments:		
Other current liabilities:		
Embedded credit derivative	$ 6	$ 2
Other noncurrent liabilities and deferred credits:		
Embedded credit derivative	29	16
Total derivatives not designated as hedging instruments	$ 35	$ 18
Total Liability Derivatives	$ 208	$ 394

The following table shows the net fair values of the Level 3 derivative instruments at December 31, 2015 and the effect on these amounts of a hypothetical change (increase or decrease of 10%) in the market prices or rates that existed as of December 31, 2015:

	Fair value asset/(liability)	Index change of + / - 10%
Embedded aluminum derivatives	$ 966	$ 340
Embedded credit derivative	(35)	4
Energy contract	(2)	136

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The following tables present a reconciliation of activity for Level 3 derivative contracts:

2015	Assets		Liabilities		
	Embedded aluminum derivatives	Energy contract	Embedded aluminum derivatives	Embedded credit derivative	Energy contract
Opening balance—January 1, 2015	$ 266	$ 2	$ 376	$ 18	$ -
Total gains or losses (realized and unrealized) included in:					
Sales	5	-	(16)	-	-
Cost of goods sold	(99)	-	-	-	-
Other expenses, net	(8)	(2)	-	17	1
Other comprehensive loss	964	1	(191)	-	3
Purchases, sales, issuances, and settlements*	-	-	-	-	-
Transfers into and/or out of Level 3*	-	-	-	-	-
Foreign currency translation	7	1	-	-	-
Closing balance—December 31, 2015	$ 1,135	$ 2	$ 169	$ 35	$ 4
Change in unrealized gains or losses included in earnings for derivative contracts held at December 31, 2015:					
Sales	$ -	$ -	$ -	$ -	$ -
Cost of goods sold	-	-	-	-	-
Other expenses, net	(8)	(2)	-	(17)	1

* In 2015, there were no purchases, sales, issuances or settlements of Level 3 derivative instruments. Additionally, there were no transfers of derivative instruments into or out of Level 3.

2014	Assets		Liabilities	
	Embedded aluminum derivatives	Energy contract	Embedded aluminum derivatives	Embedded credit derivative
Opening balance—January 1, 2014	$ 349	$ 6	$ 410	$ 21
Total gains or losses (realized and unrealized) included in:				
Sales	(1)	-	(27)	-
Cost of goods sold	(163)	-	-	(1)
Other expenses, net	(15)	-	-	(2)
Other comprehensive loss	71	(4)	(7)	-
Purchases, sales, issuances, and settlements*	-	-	-	-
Transfers into and/or out of Level 3*	-	-	-	-
Foreign currency translation	23	-	-	-
Closing balance—December 31, 2014	$ 266	$ 2	$ 376	$ 18
Change in unrealized gains or losses included in earnings for derivative contracts held at December 31, 2014:				
Sales	$ -	$ -	$ -	$ -
Cost of goods sold	-	-	-	-
Other expenses, net	(15)	-	-	(2)

* In November 2014, three new embedded derivatives were contained within renewed power contracts; however, there was no amount included for issuances as the fair value on the date of issuance was zero. There were no purchases, sales or settlements of Level 3 derivative instruments. Additionally, there were no transfers of derivative instruments into or out of Level 3.

Derivatives Designated As Hedging Instruments—Cash Flow Hedges

For derivative instruments that are designated and qualify as cash flow hedges, the effective portion of unrealized gains or losses on the derivative is reported as a component of other comprehensive income (OCI). Realized gains or losses on the derivative are reclassified from OCI into earnings in the same period or periods during which the hedged transaction impacts earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized directly in earnings immediately.

Alcoa has five Level 3 embedded aluminum derivatives and one Level 3 energy contract (a second one was terminated in early 2013) that have been designated as cash flow hedges as follows.

Embedded aluminum derivatives. Alcoa has entered into energy supply contracts that contain pricing provisions related to the LME aluminum price. The LME-linked pricing features are considered embedded derivatives. Five of these embedded derivatives have been designated as cash flow hedges of forward sales of aluminum, three of which were new derivatives contained in three power contracts that were renewed in late 2014. At December 31, 2015 and 2014, these embedded aluminum derivatives hedge forecasted aluminum sales of 3,307 kmt and 3,610 kmt, respectively.

In 2015, 2014, and 2013, Alcoa recognized an unrealized gain of $1,155, $78, and $190, respectively, in Other comprehensive loss related to these five derivative instruments. Additionally, Alcoa reclassified a realized loss of $21, $28, and $29 from Accumulated other comprehensive loss to Sales in 2015, 2014, and 2013, respectively. There was no ineffectiveness related to these five derivative instruments in 2015, 2014, and 2013. Assuming market rates remain constant with the rates at December 31, 2015, a realized gain of $45 is expected to be recognized in Sales over the next 12 months.

Energy contract. Alcoa has a derivative contract that will hedge the anticipated power requirements at one of its smelters once the existing power contract expires in 2016. Alcoa had a similar contract related to another smelter once the prior existing contract expired in 2014, but elected to terminate the new contract in early 2013 (see additional information in description of Level 3 derivative contracts above). At December 31, 2015 and 2014, this energy contract hedges forecasted electricity purchases of 59,409,328 megawatt hours. In 2015, 2014, and 2013, Alcoa recognized an unrealized loss of $2, an unrealized loss of $4, and an unrealized gain of $3, respectively, in Other comprehensive loss. Additionally, Alcoa recognized a loss of $3 in Other expenses, net related to hedge ineffectiveness in 2015. There was no ineffectiveness related to the respective energy contracts outstanding in 2014 and 2013.

Derivatives Not Designated As Hedging Instruments

Alcoa has two Level 3 embedded aluminum derivatives and one Level 3 embedded credit derivative that do not qualify for hedge accounting treatment. As such, gains and losses related to the changes in fair value of these instruments are recorded directly in earnings. In 2015, 2014, and 2013, Alcoa recognized a loss of $25, a loss of $13, and a gain of $36, respectively, in Other expenses (income), net, of which a loss of $8, a loss of $15, and a gain of $28, respectively, related to the two embedded aluminum derivatives and a loss of $17, a gain of $2, and a gain of $8, respectively, related to the embedded credit derivative.

Material Limitations

The disclosures with respect to commodity prices, interest rates, and foreign currency exchange risk do not take into account the underlying commitments or anticipated transactions. If the underlying items were included in the analysis, the gains or losses on the futures contracts may be offset. Actual results will be determined by a number of factors that are not under Alcoa’s control and could vary significantly from those factors disclosed.

Alcoa is exposed to credit loss in the event of nonperformance by counterparties on the above instruments, as well as credit or performance risk with respect to its hedged customers' commitments. Although nonperformance is possible, Alcoa does not anticipate nonperformance by any of these parties. Contracts are with creditworthy counterparties and are further supported by cash, treasury bills, or irrevocable letters of credit issued by carefully chosen banks. In addition, various master netting arrangements are in place with counterparties to facilitate settlement of gains and losses on these contracts.

Other Financial Instruments. The carrying values and fair values of Alcoa's other financial instruments were as follows:

	2015		2014	
December 31,	Carrying value	Fair value	Carrying value	Fair value
Cash and cash equivalents	$ 1,919	$1,919	$ 1,877	$1,877
Restricted cash	37	37	20	20
Noncurrent receivables	17	17	17	17
Available-for-sale securities	193	193	153	153
Short-term borrowings	38	38	54	54
Commercial paper	-	-	-	-
Long-term debt due within one year	21	21	29	29
Contingent payment related to an acquisition	130	130	130	130
Long-term debt, less amount due within one year	9,044	8,922	8,769	9,445

The following methods were used to estimate the fair values of other financial instruments:

Cash and cash equivalents, Restricted cash, Short-term borrowings, and Commercial paper. The carrying amounts approximate fair value because of the short maturity of the instruments. The fair value amounts for Cash and cash equivalents, Restricted cash, and Commercial paper were classified in Level 1, and Short-term borrowings were classified in Level 2.

Noncurrent receivables. The fair value of noncurrent receivables was based on anticipated cash flows, which approximates carrying value, and was classified in Level 2 of the fair value hierarchy.

Available-for-sale securities. The fair value of such securities was based on quoted market prices. These financial instruments consist of exchange-traded fixed income and equity securities, which are carried at fair value and were classified in Level 1 of the fair value hierarchy.

Contingent payment related to an acquisition (see Note F). The fair value was based on the net present value of expected future cash flows and was classified in Level 3 of the fair value hierarchy.

Long-term debt due within one year and Long-term debt, less amount due within one year. The fair value was based on quoted market prices for public debt and on interest rates that are currently available to Alcoa for issuance of debt with similar terms and maturities for non-public debt. The fair value amounts for all Long-term debt were classified in Level 2 of the fair value hierarchy.

Y. Proposed Separation Transaction

On September 28, 2015, Alcoa announced that its Board of Directors approved a plan to separate into two independent, publicly-traded companies. One company will comprise the Alumina and Primary Metals segments and the other company will comprise the Global Rolled Products, Engineered Products and Solutions, and Transportation and Construction Solutions segments. Alcoa is targeting to complete the separation in the second half of 2016. The transaction is subject to a number of conditions, including, but not limited to, final approval by Alcoa's Board of Directors, receipt of a favorable opinion of legal counsel with respect to the tax-free nature of the transaction for U.S. federal income tax purposes, and the effectiveness of a Form 10 registration statement to be filed with the U.S. Securities and Exchange Commission. Upon completion of the separation, Alcoa shareholders will own all of the outstanding shares of both companies. Alcoa may, at any time and for any reason until the proposed transaction is complete, abandon the separation plan or modify or change its terms. In 2015, Alcoa recognized $24 (pre- and after-tax) in Selling, general administrative, and other expenses on the accompanying Statement of Consolidated Operations for costs related to the proposed separation transaction.

Z. Subsequent Events

Management evaluated all activity of Alcoa and concluded that no subsequent events have occurred that would require recognition in the Consolidated Financial Statements or disclosure in the Notes to the Consolidated Financial Statements, except as described below.

On January 26, 2016, the European Court of Justice issued a decision in connection with legal proceedings related to whether the extension of energy tariffs by Italy to Alcoa constituted unlawful state aid (see European Commission Matters in Note N). In addition, a separate but related matter was also updated as a result of the aforementioned decision (see Other Matters in the Litigation section of Note N).

Supplemental Financial Information (unaudited)

Quarterly Data
(in millions, except per-share amounts)

	First	Second	Third	Fourth*	Year
2015					
Sales	$5,819	$ 5,897	$5,573	$ 5,245	$22,534
Net income (loss) attributable to Alcoa	$ 195	$ 140	$ 44	$ (701)	$ (322)
Earnings per share attributable to Alcoa common shareholders**:					
Basic	$ 0.15	$ 0.10	$ 0.02	$ (0.55)	$ (0.31)
Diluted	$ 0.14	$ 0.10	$ 0.02	$ (0.55)	$ (0.31)
2014					
Sales	$5,454	$ 5,836	$6,239	$ 6,377	$23,906
Net (loss) income attributable to Alcoa	$ (178)	$ 138	$ 149	$ 159	$ 268
Earnings per share attributable to Alcoa common shareholders**:					
Basic	$ (0.16)	$ 0.12	$ 0.13	$ 0.12	$ 0.21
Diluted	$ (0.16)	$ 0.12	$ 0.12	$ 0.11	$ 0.21

* In the fourth quarter of 2015, Alcoa recorded restructuring and other charges of $735 ($507 after-tax and noncontrolling interest), which were primarily related to closures and/or curtailments of a number of smelters and refineries (see Note D) and a charge for legal matters in Italy (see Note N); a discrete income tax charge of $190 for valuation allowances on certain deferred tax assets in the United States and Iceland (see Note T); and an impairment of goodwill of $25 (see Goodwill and Other Intangible Assets in Notes A and E). In the fourth quarter of 2014, Alcoa recorded a net loss of $332 ($163 after-tax and noncontrolling interest) related to the divestiture of four operations (see Notes D and F).

** Per share amounts are calculated independently for each period presented; therefore, the sum of the quarterly per share amounts may not equal the per share amounts for the year.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

(a) Evaluation of Disclosure Controls and Procedures

Alcoa’s Chief Executive Officer and Chief Financial Officer have evaluated the Company’s disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as of the end of the period covered by this report, and they have concluded that these controls and procedures are effective.

(b) Management’s Annual Report on Internal Control over Financial Reporting

Management’s Report on Internal Control over Financial Reporting is included in Part II, Item 8 of this Form 10-K beginning on page 89.

(c) Attestation Report of the Registered Public Accounting Firm

The effectiveness of Alcoa’s internal control over financial reporting as of December 31, 2015 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report, which is included in Part II, Item 8 of this Form 10-K on page 90.

(d) Changes in Internal Control over Financial Reporting

There have been no changes in internal control over financial reporting during the fourth quarter of 2015, that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by Item 401 of Regulation S-K regarding directors is contained under the caption “Item 1 Election of Directors” of the Proxy Statement and is incorporated by reference. The information required by Item 401 of Regulation S-K regarding executive officers is set forth in Part I, Item 1 of this report under “Executive Officers of the Registrant”.

The information required by Item 405 of Regulation S-K is contained under the caption “Section 16(a) Beneficial Ownership Reporting Compliance” of the Proxy Statement and is incorporated by reference.

The Company’s Code of Ethics for the CEO, CFO and Other Financial Professionals is publicly available on the Company’s Internet website at http://www.alcoa.com under the section “About Alcoa—Corporate Governance.” The remaining information required by Item 406 of Regulation S-K is contained under the captions “Corporate Governance” and “Corporate Governance—Business Conduct Policies and Code of Ethics” of the Proxy Statement and is incorporated by reference.

The information required by Items 407(c)(3), (d)(4) and (d)(5) of Regulation S-K is included under the captions “Item 1 Election of Directors—Nominating Board Candidates—Procedures and Director Qualifications” and “Corporate Governance—Committees of the Board—Audit Committee” of the Proxy Statement and is incorporated by reference.

Item 11. Executive Compensation.

The information required by Item 402 of Regulation S-K is contained under the captions “Director Compensation”, “Executive Compensation” (excluding the information under the caption “—Compensation Committee Report”) and “Corporate Governance—Recovery of Incentive Compensation” of the Proxy Statement. Such information is incorporated by reference.

The information required by Items 407(e)(4) and (e)(5) of Regulation S-K is contained under the captions “Corporate Governance—Compensation Committee Interlocks and Insider Participation” and “Executive Compensation—Compensation Committee Report” of the Proxy Statement. Such information (other than the Compensation Committee Report, which shall not be deemed to be “filed”) is incorporated by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by Item 201(d) of Regulation S-K relating to securities authorized for issuance under equity compensation plans is contained under the caption “Equity Compensation Plan Information” of the Proxy Statement and is incorporated by reference.

The information required by Item 403 of Regulation S-K is contained under the captions “Alcoa Stock Ownership—Stock Ownership of Certain Beneficial Owners” and “—Stock Ownership of Directors and Executive Officers” of the Proxy Statement and is incorporated by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by Item 404 of Regulation S-K is contained under the captions “Executive Compensation” (excluding the information under the caption “Compensation Committee Report”) and “Corporate Governance—Related Person Transactions” of the Proxy Statement and is incorporated by reference.

The information required by Item 407(a) of Regulation S-K regarding director independence is contained under the captions “Item 1 Election of Directors” and “Corporate Governance” of the Proxy Statement and is incorporated by reference.

Item 14. Principal Accounting Fees and Services.

The information required by Item 9(e) of Schedule 14A is contained under the captions “Item 2 Ratification of the Appointment of the Independent Registered Public Accounting Firm—Report of the Audit Committee” and “—Audit and Non-Audit Fees” of the Proxy Statement and in Attachment A (Pre-Approval Policies and Procedures for Audit and Non-Audit Services) thereto and is incorporated by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) The consolidated financial statements and exhibits listed below are filed as part of this report.

(1) The Company's consolidated financial statements, the notes thereto and the report of the Independent Registered Public Accounting Firm are on pages 90 through 168 of this report.

(2) Financial statement schedules have been omitted because they are not applicable, not required, or the required information is included in the consolidated financial statements or notes thereto.

(3) Exhibits.

Exhibit Number	Description*
2.	Share Purchase Agreement, dated as of June 25, 2014, by and among Alcoa Inc., Alcoa IH Limited, FR Acquisition Corporation (US), Inc., FR Acquisitions Corporation (Europe) Limited, FR Acquisition Finance Subco (Luxembourg), S.à.r.l. and Oak Hill Capital Partners III, L.P. and Oak Hill Capital Management Partners III, L.P., collectively in their capacity as the Seller Representative, incorporated by reference to exhibit 2.1 to the Company's Current Report on Form 8-K dated June 26, 2014.
3(a).	Articles of the Registrant, as amended effective September 22, 2014, incorporated by reference to exhibit 3(a) to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2014.
3(b).	By-Laws of the Registrant, as amended effective as of February 5, 2016, incorporated by reference to exhibit 3 to the Company's Current Report on Form 8-K dated February 4, 2016.
4(a).	Articles. See Exhibit 3(a) above.
4(b).	By-Laws. See Exhibit 3(b) above.
4(c).	Form of Indenture, dated as of September 30, 1993, between Alcoa Inc. and The Bank of New York Trust Company, N.A., as successor to J. P. Morgan Trust Company, National Association (formerly Chase Manhattan Trust Company, National Association), as successor Trustee to PNC Bank, National Association, as Trustee (undated form of Indenture incorporated by reference to exhibit 4(a) to Registration Statement No. 33-49997 on Form S-3).
4(c)(1).	First Supplemental Indenture, dated as of January 25, 2007, between Alcoa Inc. and The Bank of New York Trust Company, N.A., as successor to J.P. Morgan Trust Company, National Association (formerly Chase Manhattan Trust Company, National Association), as successor Trustee to PNC Bank, National Association, as Trustee, incorporated by reference to exhibit 99.4 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated January 25, 2007.
4(c)(2).	Second Supplemental Indenture, dated as of July 15, 2008, between Alcoa Inc. and The Bank of New York Mellon Trust Company, N.A., as successor in interest to J. P. Morgan Trust Company, National Association (formerly Chase Manhattan Trust Company, National Association, as successor to PNC Bank, National Association), as Trustee, incorporated by reference to exhibit 4(c) to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated July 15, 2008.
4(d).	Form of 5.55% Notes Due 2017, incorporated by reference to exhibit 4(d) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2008.
4(e).	Form of 5.90% Notes Due 2027, incorporated by reference to exhibit 4(d) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2008.

4(f).	Form of 5.95% Notes Due 2037, incorporated by reference to exhibit 4(d) to the Company’s Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2008.
4(g).	Form of 6.75% Notes Due 2018, incorporated by reference to exhibit 4(b) to the Company’s Current Report on Form 8-K (Commission file number 1-3610) dated July 15, 2008.
4(h).	Form of 6.150% Notes Due 2020, incorporated by reference to exhibit 4 to the Company’s Current Report on Form 8-K (Commission file number 1-3610) dated August 3, 2010.
4(i).	Form of 5.40% Notes Due 2021, incorporated by reference to exhibit 4 to the Company’s Current Report on Form 8-K dated April 21, 2011.
4(j).	Form of 5.125% Notes Due 2024, incorporated by reference to exhibit 4.5 to the Company’s Current Report on Form 8-K dated September 22, 2014.
4(k).	Deposit Agreement, dated September 22, 2014, among Alcoa Inc., Computershare Trust Company, N.A., Computershare Inc., and the holders from time to time of the depositary receipts evidencing the Depositary Shares (including Form of Depositary Receipt), incorporated by reference to exhibit 4.1 to the Company’s Current Report on Form 8-K dated September 22, 2014.
4(l).	Form of Depositary Receipt for Deposit Agreement, dated September 22, 2014, among Alcoa Inc., Computershare Trust Company, N.A., Computershare Inc., and the holders from time to time of the depositary receipts evidencing the Depositary Shares, incorporated by reference to exhibit A to exhibit 4.1 to the Company’s Current Report on Form 8-K dated September 22, 2014.
4(m).	Indenture, dated as of December 14, 2010, between RTI International Metals, Inc. and The Bank of New York Trust Company, N.A., as Trustee.
4(n).	Third Supplemental Indenture, dated as of April 17, 2013, between RTI International Metals, Inc. and The Bank of New York Trust Company, N.A., as Trustee.
4(o).	Fourth Supplemental Indenture, dated as of July 23, 2015, between RTI International Metals, Inc. and The Bank of New York Trust Company, N.A., as Trustee, incorporated by reference to Exhibit 4.1 on Form 8-K dated July 23, 2015.
4(p).	Alcoa Retirement Savings Plan for Bargaining Employees, as Amended and Restated effective January 1, 2015.
4(q).	Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees, as Amended and Restated effective January 1, 2015.
4(r).	Alcoa Retirement Savings Plan for Fastener Systems Employees, as Amended and Restated effective January 1, 2015.
4(s).	Alcoa Retirement Savings Plan for Salaried Employees, as Amended and Restated effective January 1, 2015.
10(a).	Alcoa’s Summary of the Key Terms of the AWAC Agreements, incorporated by reference to exhibit 99.2 to the Company’s Current Report on Form 8-K (Commission file number 1-3610) dated November 28, 2001.
10(b).	Charter of the Strategic Council executed December 21, 1994, incorporated by reference to exhibit 99.3 to the Company’s Current Report on Form 8-K (Commission file number 1-3610) dated November 28, 2001.
10(c).	Amended and Restated Limited Liability Company Agreement of Alcoa Alumina & Chemicals, L.L.C. dated as of December 31, 1994, incorporated by reference to exhibit 99.4 to the Company’s Current Report on Form 8-K (Commission file number 1-3610) dated November 28, 2001.

10(d).	Shareholders' Agreement dated May 10, 1996 between Alcoa International Holdings Company and WMC Limited, incorporated by reference to exhibit 99.5 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated November 28, 2001.
10(e).	Side Letter of May 16, 1995 clarifying transfer restrictions, incorporated by reference to exhibit 99.6 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated November 28, 2001.
10(f).	Enterprise Funding Agreement, dated September 18, 2006, between Alcoa Inc., certain of its affiliates and Alumina Limited, incorporated by reference to exhibit 10(f) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2006.
10(f)(1).	Amendments to Enterprise Funding Agreement, effective January 25, 2008, between Alcoa Inc., certain of its affiliates and Alumina Limited, incorporated by reference to exhibit 10(f)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2007.
10(g).	Earnout Agreement, dated as of June 25, 2014, by and among Alcoa Inc., FR Acquisition Finance Subco (Luxembourg), S.à.r.l. and Oak Hill Capital Partners III, L.P. and Oak Hill Capital Management Partners III, L.P., collectively in their capacity as the Seller Representative, incorporated by reference to exhibit 10.1 to the Company's Current Report on Form 8-K dated June 26, 2014.
10(g)(1).	Registration Rights Agreement, dated as of November 19, 2014, by and between Alcoa Inc. and Firth Rixson (Cyprus) Limited, incorporated by reference to exhibit 10.1 to the Company's Current Report on Form 8-K dated November 20, 2014.
10(h).	Five-Year Revolving Credit Agreement, dated as of July 25, 2014, among Alcoa Inc., the Lenders and Issuers named therein, Citibank, N.A., as Administrative Agent for the Lenders and Issuers, and JPMorgan Chase Bank, N.A., as Syndication Agent, incorporated by reference to exhibit 10.2 to the Company's Current Report on Form 8-K dated July 31, 2014.
10(h)(1).	Extension Request and Amendment Letter, dated as of June 5, 2015, among Alcoa Inc., each lender and issuer party thereto, and Citibank, N.A., as Administrative Agent, effective July 7, 2015, incorporated by reference to exhibit 10.1 to the Company's Current Report on Form 8-K dated July 13, 2015.
10(i).	Aluminum Project Framework Shareholders' Agreement, dated December 20, 2009, between Alcoa Inc. and Saudi Arabian Mining Company (Ma'aden), incorporated by reference to exhibit 10(i) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(i)(1).	First Supplemental Agreement, dated March 30, 2010, to the Aluminium Project Framework Shareholders Agreement, dated December 20, 2009, between Saudi Arabian Mining Company (Ma'aden) and Alcoa Inc., incorporated by reference to exhibit 10(c) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended March 31, 2010.
10(j).	Settlement Agreement, dated as of October 9, 2012, by and between Aluminium Bahrain B.S.C., Alcoa Inc., Alcoa World Alumina LLC, and William Rice, incorporated by reference to exhibit 10(a) to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2012.
10(k).	Plea Agreement dated January 8, 2014, between the United States of America and Alcoa World Alumina LLC, incorporated by reference to exhibit 10(l) to the Company's Annual Report on Form 10-K for the year ended December 31, 2013.
10(l).	Offer of Settlement of Alcoa Inc. before the Securities and Exchange Commission dated December 27, 2013, incorporated by reference to exhibit 10(m) to the Company's Annual Report on Form 10-K for the year ended December 31, 2013.
10(m).	Securities and Exchange Commission Order dated January 9, 2014, incorporated by reference to exhibit 10(n) to the Company's Annual Report on Form 10-K for the year ended December 31, 2013.

10(n).	Agreement, dated February 1, 2016, by and between Elliott Associates, L.P., Elliott International, L.P., Elliott International Capital Advisors Inc. and Alcoa Inc., incorporated by reference to exhibit 10.1 to the Company's Current Report on Form 8-K dated February 1, 2016.
10(o).	Alcoa Internal Revenue Code Section 162(m) Compliant Annual Cash Incentive Compensation Plan, incorporated by reference to Attachment D to the Company's Definitive Proxy Statement on Form DEF 14A, filed March 7, 2011.
10(p).	2004 Summary Description of the Alcoa Incentive Compensation Plan, incorporated by reference to exhibit 10(g) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2004.
10(p)(1).	Incentive Compensation Plan of Alcoa Inc., as revised and restated effective November 8, 2007, incorporated by reference to exhibit 10(k)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2007.
10(p)(2).	Amendment to Incentive Compensation Plan of Alcoa Inc., effective December 18, 2009, incorporated by reference to exhibit 10(n)(2) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(q).	Employees' Excess Benefits Plan, Plan C, as amended and restated effective December 31, 2007, incorporated by reference to exhibit 10(l) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2007.
10(q)(1).	Amendments to Employees' Excess Benefits Plan, Plan C, effective December 29, 2008, incorporated by reference to exhibit 10(l)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2008.
10(q)(2).	Amendment to Employees' Excess Benefits Plan C, effective December 18, 2009, incorporated by reference to exhibit 10(o)(2) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(q)(3).	Amendment to Employees' Excess Benefits Plan C, effective January 1, 2011, incorporated by reference to exhibit 10(p)(3) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2010.
10(q)(4).	Amendments to Employees' Excess Benefits Plan C, effective January 1, 2012, incorporated by reference to exhibit 10(o)(4) to the Company's Annual Report on Form 10-K for the year ended December 31, 2011.
10(q)(5).	Amendment to Employees' Excess Benefits Plan C, effective September 1, 2014, incorporated by reference to exhibit 10(c) to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2014.
10(r).	Deferred Fee Plan for Directors, as amended effective July 9, 1999, incorporated by reference to exhibit 10(g)(1) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended June 30, 1999.
10(s).	Restricted Stock Plan for Non-Employee Directors, as amended effective March 10, 1995, incorporated by reference to exhibit 10(h) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1994.

10(s)(1).	Amendment to Restricted Stock Plan for Non-Employee Directors, effective November 10, 1995, incorporated by reference to exhibit 10(h)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1995.
10(t).	Description of Changes to Non-Employee Director Compensation and Stock Ownership Guidelines, effective January 1, 2011, incorporated by reference to exhibit 10(b) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2010.
10(u).	Summary of 2013 Non-Employee Director Compensation and Stock Ownership Guidelines, incorporated by reference to exhibit 10(mm) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012.
10(v).	Fee Continuation Plan for Non-Employee Directors, incorporated by reference to exhibit 10(k) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1989.
10(v)(1).	Amendment to Fee Continuation Plan for Non-Employee Directors, effective November 10, 1995, incorporated by reference to exhibit 10(i)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1995.
10(v)(2).	Second Amendment to the Fee Continuation Plan for Non-Employee Directors, effective September 15, 2006, incorporated by reference to exhibit 10.2 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated September 20, 2006.
10(w).	Deferred Compensation Plan, as amended effective October 30, 1992, incorporated by reference to exhibit 10(k) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1992.
10(w)(1).	Amendments to Deferred Compensation Plan, effective January 1, 1993, February 1, 1994 and January 1, 1995, incorporated by reference to exhibit 10(j)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1994.
10(w)(2).	Amendment to Deferred Compensation Plan, effective June 1, 1995, incorporated by reference to exhibit 10(j)(2) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1995.
10(w)(3).	Amendment to Deferred Compensation Plan, effective November 1, 1998, incorporated by reference to exhibit 10(j)(3) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1999.
10(w)(4).	Amendments to Deferred Compensation Plan, effective January 1, 1999, incorporated by reference to exhibit 10(j)(4) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1999.
10(w)(5).	Amendments to Deferred Compensation Plan, effective January 1, 2000, incorporated by reference to exhibit 10(j)(5) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2000.
10(w)(6).	Amendments to Deferred Compensation Plan, effective January 1, 2005, incorporated by reference to exhibit 10(q)(6) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2005.

10(w)(7).	Amendments to Deferred Compensation Plan, effective November 1, 2007 incorporated by reference to exhibit 10(p)(7) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2007.
10(w)(8).	Amendments to Deferred Compensation Plan, effective December 29, 2008, incorporated by reference to exhibit 10(p)(8) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2008.
10(w)(9).	Amendment to Deferred Compensation Plan, effective April 1, 2009, incorporated by reference to exhibit 10(s)(9) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(w)(10).	Amendment to Deferred Compensation Plan, effective December 18, 2009, incorporated by reference to exhibit 10(s)(10) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(w)(11).	Amendment to Deferred Compensation Plan, effective January 1, 2011, incorporated by reference to exhibit 10(u)(11) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2010.
10(w)(12).	Amendment to the Amendment dated as of December 30, 2010 to Deferred Compensation Plan, effective January 1, 2011, incorporated by reference to exhibit 10(t)(12) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012.
10(w)(13).	Amendment to Deferred Compensation Plan, effective January 1, 2013, incorporated by reference to exhibit 10(t)(13) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012.
10(x).	Summary of the Executive Split Dollar Life Insurance Plan, dated November 1990, incorporated by reference to exhibit 10(m) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1990.
10(y).	Amended and Restated Dividend Equivalent Compensation Plan, effective January 1, 1997, incorporated by reference to exhibit 10(h) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2004.
10(z).	Form of Indemnity Agreement between the Company and individual directors or officers, incorporated by reference to exhibit 10(j) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1987.
10(aa).	2004 Alcoa Stock Incentive Plan, as amended through November 11, 2005, incorporated by reference to exhibit 10.1 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated November 16, 2005.
10(bb).	2009 Alcoa Stock Incentive Plan, incorporated by reference to Attachment C to the Company's Definitive Proxy Statement on Form DEF 14A (Commission file number 1-3610) filed March 16, 2009.
10(bb)(1).	Amended and Restated 2009 Alcoa Stock Incentive Plan, dated February 15, 2011, incorporated by reference to exhibit 10(z)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2010.

10(cc).	Terms and Conditions for Special Retention Awards under the 2009 Alcoa Stock Incentive Plan, effective January 1, 2010, incorporated by reference to exhibit 10(e) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended March 31, 2010.
10(dd).	Alcoa Supplemental Pension Plan for Senior Executives, as amended and restated effective December 31, 2007, incorporated by reference to exhibit 10(u) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2007.
10(dd)(1).	Amendment to Alcoa Supplemental Pension Plan for Senior Executives, effective December 29, 2008, incorporated by reference to exhibit 10(u)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2008.
10(dd)(2).	Amendment to Alcoa Supplemental Pension Plan for Senior Executives, effective December 16, 2009, incorporated by reference to exhibit 10(y)(2) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(dd)(3).	Amendment to Alcoa Supplemental Pension Plan for Senior Executives, effective December 18, 2009, incorporated by reference to exhibit 10(y)(3) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(dd)(4).	Amendment to Alcoa Supplemental Pension Plan for Senior Executives, effective January 1, 2011, incorporated by reference to exhibit 10(bb)(4) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2010.
10(dd)(5).	Amendments to Alcoa Supplemental Pension Plan for Senior Executives, effective January 1, 2012, incorporated by reference to exhibit 10(aa)(5) to the Company's Annual Report on Form 10-K for the year ended December 31, 2011.
10(dd)(6).	Amendment to Alcoa Supplemental Pension Plan for Senior Executives, effective September 1, 2014, incorporated by reference to exhibit 10(d) to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2014.
10(ee).	Deferred Fee Estate Enhancement Plan for Directors, effective July 10, 1998, incorporated by reference to exhibit 10(r) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 1998.
10(ff).	Alcoa Inc. Change in Control Severance Plan, as amended and restated effective November 8, 2007, incorporated by reference to exhibit 10(x) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2007.
10(ff)(1).	Amendment to Alcoa Inc. Change in Control Severance Plan, effective December 16, 2009, incorporated by reference to exhibit 10(bb)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(gg).	Form of Agreement for Stock Option Awards, effective January 1, 2004, incorporated by reference to exhibit 10(a) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2004.
10(hh).	Form of Agreement for Stock Awards, effective January 1, 2004, incorporated by reference to exhibit 10(b) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2004.

10(ii).	Form of Agreement for Performance Share Awards, effective January 1, 2004, incorporated by reference to exhibit 10(c) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2004.
10(jj).	Stock Option Award Rules, revised January 1, 2004, incorporated by reference to exhibit 10(d) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2004.
10(kk).	Stock Awards Rules, effective January 1, 2004, incorporated by reference to exhibit 10(e) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2004.
10(ll).	Performance Share Awards Rules, effective January 1, 2004, incorporated by reference to exhibit 10(f) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2004.
10(mm).	2005 Deferred Fee Plan for Directors, as amended, effective January 1, 2016, incorporated by reference to exhibit 10(a) to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015 .
10(nn).	Global Pension Plan, effective January 1, 1998, incorporated by reference to exhibit 10(jj) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2004.
10(nn)(1).	Amendments to Global Pension Plan, incorporated by reference to exhibit 10(jj)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2004.
10(nn)(2).	Amendments to Global Pension Plan, effective January 1, 2005, incorporated by reference to exhibit 10(gg)(2) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2005.
10(nn)(3).	Amendments to Global Pension Plan, effective December 1, 2005, incorporated by reference to exhibit 10(gg)(3) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2005.
10(nn)(4).	Amendments to Global Pension Plan, effective December 29, 2008, incorporated by reference to exhibit 10(ff)(4) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2008.
10(nn)(5).	Amendments to Global Pension Plan, effective July 1, 2009, incorporated by reference to exhibit 10(jj)(5) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(nn)(6).	Amendments to Global Pension Plan, effective December 18, 2009, incorporated by reference to exhibit 10(jj)(6) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(nn)(7).	Amendment to Global Pension Plan, effective January 1, 2011, incorporated by reference to exhibit 10(mm)(7) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2010.
10(nn)(8).	Amendment to Global Pension Plan, effective January 1, 2011, incorporated by reference to exhibit 10(kk)(8) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012.

10(oo).	Executive Severance Agreement, as amended and restated effective December 8, 2008, between Alcoa Inc. and Klaus Kleinfeld, incorporated by reference to exhibit 10(gg) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2008.
10(oo)(1).	Form of Executive Severance Agreement between the Company and new officers entered into after July 22, 2010, incorporated by reference to exhibit 10(a) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2010.
10(pp).	Form of Award Agreement for Stock Options, effective January 1, 2006, incorporated by reference to exhibit 10.2 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated November 16, 2005.
10(qq).	Form of Award Agreement for Stock Awards, effective January 1, 2006, incorporated by reference to exhibit 10.3 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated November 16, 2005.
10(rr).	Form of Award Agreement for Performance Share Awards, effective January 1, 2006, incorporated by reference to exhibit 10.4 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated November 16, 2005.
10(ss).	Form of Award Agreement for Performance Stock Options, effective January 1, 2006, incorporated by reference to exhibit 10.5 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated November 16, 2005.
10(tt).	Form of Award Agreement for Stock Options, effective May 8, 2009, incorporated by reference to exhibit 10.2 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated May 13, 2009.
10(uu).	Terms and Conditions for Stock Options, effective January 1, 2011, incorporated by reference to exhibit 10(c) to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011.
10(vv).	Form of Award Agreement for Restricted Share Units, effective May 8, 2009, incorporated by reference to exhibit 10.3 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated May 13, 2009.
10(ww).	Terms and Conditions for Restricted Share Units, effective January 1, 2011, incorporated by reference to exhibit 10(b) to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011.
10(xx).	Summary Description of Equity Choice Program for Performance Equity Award Participants, dated November 2005, incorporated by reference to exhibit 10.6 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated November 16, 2005.
10(yy).	Reynolds Metals Company Benefit Restoration Plan for New Retirement Program, as amended through December 31, 2005, incorporated by reference to exhibit 10(rr) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2005.
10(yy)(1).	Amendments to the Reynolds Metals Company Benefit Restoration Plan for New Retirement Program, effective December 18, 2009, incorporated by reference to exhibit 10(tt)(1) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(yy)(2).	Amendments to the Reynolds Metals Company Benefit Restoration Plan for New Retirement Program, effective January 1, 2012, incorporated by reference to exhibit 10(xx)(2) to the Company's Annual Report on Form 10-K for the year ended December 31, 2011.

10(yy)(3).	Amendment to Reynolds Metals Company Benefit Restoration Plan for New Retirement Program, effective September 1, 2014, incorporated by reference to exhibit 10(e) to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2014.
10(zz).	Global Expatriate Employee Policy (pre-January 1, 2003), incorporated by reference to exhibit 10(uu) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2005.
10(aaa).	Form of Special Retention Stock Award Agreement, effective July 14, 2006, incorporated by reference to exhibit 10.3 to the Company's Current Report on Form 8-K (Commission file number 1-3610) dated September 20, 2006.
10(bbb).	Omnibus Amendment to Rules and Terms and Conditions of all Awards under the 2004 Alcoa Stock Incentive Plan, effective January 1, 2007, incorporated by reference to exhibit 10(tt) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2007.
10(ccc).	Letter Agreement, dated August 14, 2007, between Alcoa Inc. and Klaus Kleinfeld, incorporated by reference to exhibit 10(b) to the Company's Quarterly Report on Form 10-Q (Commission file number 1-3610) for the quarter ended September 30, 2007.
10(ddd).	Employment Offer Letter, dated April 2, 2012, between Alcoa Inc. and Audrey Strauss, incorporated by reference to exhibit 10(b) to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012.
10(eee).	Director Plan: You Make a Difference Award, incorporated by reference to exhibit 10(uu) to the Company's Annual Report on Form 10-K (Commission on file number 1-3610) for the year ended December 31, 2008.
10(fff).	Form of Award Agreement for Stock Options, effective January 1, 2010, incorporated by reference to exhibit 10(ddd) to the Company's Annual Report on Form 10-K (Commission file number 1-3610) for the year ended December 31, 2009.
10(ggg).	2013 Alcoa Stock Incentive Plan, incorporated by reference to exhibit 10(a) to the Company's Current Report on Form 8-K dated May 8, 2013.
10(hhh).	Alcoa Inc. Terms and Conditions for Stock Option Awards, effective May 3, 2013, incorporated by reference to exhibit 10(b) to the Company's Current Report on Form 8-K dated May 8, 2013.
10(iii).	Alcoa Inc. Terms and Conditions for Restricted Share Units, effective May 3, 2013, incorporated by reference to exhibit 10(c) to the Company's Current Report on Form 8-K dated May 8, 2013.
10(jjj).	Terms and Conditions (Australian Addendum) 2013 Alcoa Stock Incentive Plan, effective May 3, 2013, incorporated by reference to exhibit 10(d) to the Company's Current Report on Form 8-K dated May 8, 2013.
10(kkk).	Amendment to Employees' Excess Benefits Plan C, effective August 11, 2014.
10(lll).	Amendment to Deferred Compensation Plan, effective August 11, 2014.
10(mmm).	Amendment to Deferred Compensation Plan, effective January 1, 2016.
10(nnn).	RTI International Metals, Inc. 2014 Stock and Incentive Plan, incorporated by reference to Exhibit 4(a) to the Company's Current Report on Form 8-K dated July 23, 2015.

10(ooo).	RTI International Metals, Inc. 2004 Stock Plan, incorporated by reference to Exhibit 4(b) to the Company's Current Report on Form 8-K dated July 23, 2015.
10(ppp).	Alcoa Inc. Terms and Conditions for Special Retention Awards under the 2013 Alcoa Stock Incentive Plan, incorporated by reference to exhibit 10(a) to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2013.
10(qqq).	Summary of 2015 Non-Employee Director Compensation and Stock Ownership Guidelines, incorporated by reference to exhibit 10(a) to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015.
12.	Computation of Ratio of Earnings to Fixed Charges.
21.	Subsidiaries of the Registrant.
23.	Consent of Independent Registered Public Accounting Firm.
24.	Power of Attorney for certain directors.
31.	Certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.	Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
95.	Mine Safety Disclosure.
101. INS	XBRL Instance Document.
101. SCH	XBRL Taxonomy Extension Schema Document.
101. CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101. DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101. LAB	XBRL Taxonomy Extension Label Linkbase Document.
101. PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

* Exhibit Nos. 10(o) through 10(qqq) are management contracts or compensatory plans required to be filed as Exhibits to this Form 10-K.

Amendments and modifications to other Exhibits previously filed have been omitted when in the opinion of the registrant such Exhibits as amended or modified are no longer material or, in certain instances, are no longer required to be filed as Exhibits.

No other instruments defining the rights of holders of long-term debt of the registrant or its subsidiaries have been filed as Exhibits because no such instruments met the threshold materiality requirements under Regulation S-K. The registrant agrees, however, to furnish a copy of any such instruments to the Commission upon request.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ALCOA INC.

February 19, 2016 By /s/ Robert S. Collins

Robert S. Collins
Vice President and Controller
(Also signing as Principal Accounting Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Klaus Kleinfeld Klaus Kleinfeld	Chairman and Chief Executive Officer (Principal Executive Officer and Director)	February 19, 2016
/s/ William F. Oplinger William F. Oplinger	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 19, 2016

Arthur D. Collins, Jr., Kathryn S. Fuller, Sean O. Mahoney, Michael G. Morris, E. Stanley O'Neal, James W. Owens, John C. Plant, Dr. L. Rafael Reif, Carol L. Roberts, Patricia F. Russo, Ulrich R. Schmidt, Sir Martin Sorrell, Ratan N. Tata and Ernesto Zedillo, each as a Director, on February 19, 2016, by Robert S. Collins, their Attorney-in-Fact.*

*By /s/ Robert S. Collins

Robert S. Collins
Attorney-in-Fact

Exhibit 4(m)

RTI INTERNATIONAL METALS, INC.

as Issuer

and

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.

as Trustee

INDENTURE

Dated as of December 14, 2010

Senior Debt Securities

RTI International Metals, Inc.,
Debt Securities
Cross Reference Sheet[1]

This Cross Reference Sheet shows the location in the Indenture of the provisions inserted pursuant to Sections 310 — 318(a), inclusive, of the Trust Indenture Act of 1939, as amended.

Trust Indenture Act	Sections of Indenture
§310(a)(1)	9.08
(a)(2)	9.08
(a)(3)	Inapplicable
(a)(4)	Inapplicable
(a)(5)	9.08
(b)	9.07 and 9.09
(c)	Inapplicable
§311(a)	9.12
(b)	9.12
(c)	Inapplicable
§312(a)	7.01 and 7.02
(b)	7.02
(c)	7.02
§313(a)	7.03
(b)	7.03
(c)	7.03
(d)	7.03
§314(a)	7.04
(a)(4)	1.01 and 6.07
(b)	Inapplicable
(c)(l)	13.05
(c)(2)	13.05
(c)(3)	Inapplicable
(d)	Inapplicable
(e)	13.05
(f)	Inapplicable
§315 (a)	9.01
(b)	8.08
(c)	9.01
(d)	9.01
(e)	8.07
§316 (a)	1.01
(a)(l)(A)	8.01 and 8.06
(a)(l)(B)	8.01
(a)(2)	Inapplicable
(b)	8.09
(c)	13.11
§317(a)(1)	8.02
(a)(2)	8.02
(b)	6.03
§318(a)	13.08

1 The Cross Reference Sheet is not part of the Indenture.

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Exhibit A — Form of Security

THIS INDENTURE**,** dated as of December 14, 2010 among RTI International Metals, Inc., a corporation duly organized and existing under the laws of the State of Ohio (the "Company"), each of the Subsidiary Guarantors that becomes a party hereto pursuant to a Board Resolution, supplemental indenture or an Officer's Certificate, and The Bank of New York Mellon Trust Company, N.A., a national banking association, as trustee (the "Trustee").

WITNESSETH:

WHEREAS, the Company has duly authorized the execution and delivery of this Indenture to provide for the issuance from time to time of its unsecured debentures, notes, and other evidences of indebtedness (the "Securities"), to be issued in one or more series as in this Indenture provided; and

WHEREAS, the Securities of each series will be in substantially the form set forth on Exhibit A hereto, or in such other form as may be established by or pursuant to a Board Resolution or in one or more indentures supplemental hereto, in each case with such appropriate insertions, omissions, substitutions, and other variations as are required or permitted by this Indenture, and may have such letters, numbers, or other marks of identification and such legends or endorsements placed thereon as may be required to comply with the rules of any securities exchange or as may, consistently herewith, be determined by the officers executing such Securities, as evidenced by their execution of the Securities.

NOW, THEREFORE:

In order to declare the terms and conditions upon which the Securities are authenticated, issued, and delivered, and in consideration of the premises and of the purchase and acceptance of the Securities by the Holders thereof, it is mutually agreed, for the equal and proportionate benefit of the respective Holders from time to time of the Securities or of a series thereof, as follows:

ARTICLE I
Definitions

SECTION 1.01. Certain Terms Defined.

(a) The terms defined in this Section 1.01 (except as herein otherwise expressly provided or unless the context of this Indenture otherwise requires) for all purposes of this Indenture and of any indenture supplemental hereto have the respective meanings specified in this Section 1.01. All other terms used in this Indenture that are defined in the Trust Indenture Act, either directly or by reference therein (except as herein otherwise expressly provided or unless the context of this Indenture otherwise requires), have the respective meanings assigned to such terms in the Trust Indenture Act as in force at the date of this Indenture as originally executed.

Act: The term "Act", when used with respect to any Holder, has the meaning set forth in Section 14.11.

Affiliate: The term “Affiliate” means, with respect to a particular Person, any Person that, directly or indirectly, is in control of, is controlled by, or is under common control with, such Person. For purposes of this definition, control of a Person means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; and the terms “controlling” and “controlled” have meanings correlative of the foregoing.

Authenticating Agent: The term “Authenticating Agent” means any Person authorized by the Trustee pursuant to Section 9.13 to act on behalf of the Trustee to authenticate Securities of one or more series.

Board of Directors: The term “Board of Directors” means the Board of Directors of the Company or a duly authorized committee of such Board.

Board Resolution: The term “Board Resolution” means a copy of a resolution certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification and delivered to the Trustee.

Business Day: The term “Business Day”, when used with respect to any Place of Payment, means each Monday, Tuesday, Wednesday, Thursday, and Friday which is not a day on which banking institutions in that Place of Payment are authorized or required by law or executive order to close.

Capital Lease: The term “Capital Lease” means, with respect to any Person, any lease of property (whether real, personal, or mixed) by such Person or its Subsidiaries as lessee that would be capitalized on a balance sheet of such Person or its Subsidiaries prepared in conformity with GAAP, other than, in the case of such Person or its Subsidiaries, any such lease under which such Person or any of its Subsidiaries is the lessor.

Capital Lease Obligations: The term “Capital Lease Obligations” means, with respect to any Person, the capitalized amount of all obligations of such Person and its Subsidiaries under Capital Leases, as determined on a consolidated basis in conformity with GAAP.

Commission: The term “Commission” means the Securities and Exchange Commission, as from time to time constituted, created under the Exchange Act or, if at any time after the execution of this instrument such Commission is not existing and performing the duties now assigned to it under the Trust Indenture Act, then the body performing such duties at such time.

Common Stock: The term “Common Stock” means the common stock, par value $.01 per share, of the Company.

Company: The term “Company” means RTI International Metals, Inc., an Ohio corporation, until a successor Person shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Company” will mean such successor Person.

Company Request or Company Order: The term “Company Request” or “Company Order” means a written request or order signed in the name of the Company by the Chairman of the Board of Directors, the Vice Chairman of the Board of Directors, the President, a Vice President, the Treasurer, an Assistant Treasurer, the Secretary, or an Assistant Secretary of the Company, and delivered to the Trustee.

Corporate Trust Office: "Corporate Trust Office" means the principal office of the Trustee at which at any time its corporate trust business shall be administered, which office at the date hereof is located at 525 William Penn Place, 38th Floor, Pittsburgh, Pennsylvania 15259, Attention: Corporate Trust Administration, or such other address as the Trustee may designate from time to time by notice to the Holders and the Company, or the principal corporate trust office of any successor Trustee (or such other address as such successor Trustee may designate from time to time by notice to the Holders and the Company).

Covenant Defeasance: The term "Covenant Defeasance" has the meaning set forth in Section 5.03.

Default: The term "Default" means any event which, with notice or passage of time or both, would constitute an Event of Default.

Defaulted Interest: The term "Defaulted Interest" has the meaning set forth in Section 2.09.

Defeasance: The term "Defeasance" has the meaning set forth in Section 5.02.

Defeasible Series: The term "Defeasible Series" has the meaning set forth in Section 5.01.

Depositary: The term "Depositary" means, with respect to Securities of any series issuable in whole or in part in the form of one or more Global Securities, a clearing agency registered under the Exchange Act that is designated to act as Depositary for such Securities as contemplated by Section 2.01.

Event of Default: The term "Event of Default" has the meaning set forth in Section 8.01(a).

Exchange Act: The term "Exchange Act" means the Securities Exchange Act of 1934, as amended, or any similar Federal statute, and the rules and regulations of the Commission thereunder, as the same may be in effect from time to time.

GAAP: The term "GAAP" means generally accepted accounting principles in the United States of America as in effect from time to time set forth in the opinions and pronouncements of the Accounting Principles Board and The American Institute of Certified Public Accountants and the statements and pronouncements of the Financial Accounting Standards Board, or in such other statements by any successor entity as may be in general use by significant segments of the accounting profession, which are applicable to the circumstances as of the date of determination.

Global Security: The term "Global Security" means a Security that evidences all or part of the Securities of any series and is authenticated and delivered to, and registered in the name of, the Depositary for such Securities or a nominee thereof.

Holder: The term "Holder" means a person in whose name a particular Security is registered in the Security Register.

Indebtedness: The term “Indebtedness” means, as applied to any Person, without duplication: (a) all obligations of such Person for borrowed money; (b) all obligations of such Person for the deferred purchase price of property or services (other than property and services purchased, and expense accruals and deferred compensation items arising, in the ordinary course of business); (c) all obligations of such Person evidenced by notes, bonds, debentures, mandatorily redeemable preferred stock, or other similar instruments (other than performance, surety, and appeals bonds arising in the ordinary course of business); (d) all payment obligations created or arising under any conditional sale, deferred price, or other title retention agreement with respect to property acquired by such Person (unless the rights and remedies of the seller or lender under such agreement in the event of default are limited to repossession or sale of such property); (e) any Capital Lease Obligation of such Person; (f) all reimbursement, payment, or similar obligations, contingent or otherwise, of such Person under acceptance, letter of credit, or similar facilities (other than letters of credit in support of trade obligations or incurred in connection with public liability insurance, workers compensation, unemployment insurance, old-age pensions, and other social security benefits other than in respect of employee benefit plans subject to ERISA); (g) all obligations of such Person, contingent or otherwise, under any guarantee by such Person of the obligations of another Person of the type referred to in clauses (a) through (f) above; and (h) all obligations referred to in clauses (a) through (f) above secured by (or for which the holder of such Indebtedness has an existing right, contingent or otherwise, to be secured by) any mortgage or security interest in property (including without limitation accounts, contract rights, and general intangibles) owned by such Person and as to which such Person has not assumed or become liable for the payment of such obligations other than to the extent of the property subject to such mortgage or security interest; provided, however, that Indebtedness of the type referred to in clauses (g) and (h) above shall be included within the definition of “Indebtedness” only to the extent of the least of: (i) the amount of the underlying Indebtedness referred to in the applicable clause (a) through (f) above; (ii) in the case of clause (g), the limit on recoveries, if any, from such Person under obligations of the type referred to in clause (g) above; and (iii) in the case of clause (h), the aggregate value (as determined in good faith by the Board of Directors) of the security for such Indebtedness.

Indenture: The term “Indenture” means this Indenture, as this Indenture may be amended, supplemented, or otherwise modified from time to time, including, for all purposes of this Indenture and any such supplemental indenture, the provisions of the Trust Indenture Act that are deemed to be a part of and govern this instrument and any such supplemental indenture, respectively. The term “Indenture” will also include the terms of particular series of Securities established as contemplated by Section 2.01.

Interest: The term “interest” (i) when used with respect to an Original Issue Discount Security which by its terms bears interest only after Maturity, means interest which accrues from and after and is payable after Maturity and (ii) when used with respect to any Security, means the amount of all interest accruing on such Security, including any default interest and any interest accruing after any Event of Default that would have accrued but for the occurrence of such Event of Default, whether or not a claim for such interest would be otherwise allowable under applicable law.

Interest Payment Date: The term “Interest Payment Date” when used with respect to any Security means the Stated Maturity of an installment of interest on such Security.

Material Adverse Effect: The term “Material Adverse Effect” means a material adverse effect on the business, assets, financial condition or results of operations of the Company (taken together with its Subsidiaries as a whole). The Trustee shall be entitled to conclusively rely upon an Opinion of Counsel as to the existence of a Material Adverse Effect.

Maturity: The term “Maturity” when used with respect to any Security means the date on which the principal of that Security or an installment of principal becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption, or otherwise.

Notice of Default: The term “Notice of Default” means a written notice of the kind set forth in Section 8.01(a)(iv).

Officer’s Certificate: The term “Officer’s Certificate” means a certificate executed on behalf of the Company by a responsible officer and delivered to the Trustee.

Opinion of Counsel: The term “Opinion of Counsel” means an opinion in writing signed by legal counsel, who, subject to any express provisions hereof, may be an employee of or counsel for the Company or any Subsidiary, reasonably acceptable to the Trustee.

Original Issue Discount Security: The term “Original Issue Discount Security” means any Security which provides for an amount less than the principal amount thereof to be due and payable upon a declaration of acceleration of the Maturity thereof pursuant to Section 8.01(b).

Outstanding: The term “Outstanding” means, when used with reference to Securities as of a particular time, all Securities theretofore issued by the Company and authenticated and delivered by the Trustee under this Indenture, except (a) Securities theretofore canceled by the Trustee or delivered to the Trustee for cancellation, (b) Securities for the payment or redemption of which money in the necessary amount has been theretofore deposited with the Trustee or any Paying Agent (other than the Company) in trust or set aside and segregated in trust by the Company (if the Company is acting as its own Paying Agent) for the Holders of such Securities; provided that, if such Securities are to be redeemed, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made, and (c) Securities paid pursuant to Section 2.07 or Securities in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, other than any such Securities in respect of which there shall have been presented to the Trustee proof satisfactory to it that such Securities are held by a bona fide purchaser in whose hands such Securities are valid obligations of the Company; provided, however, that in determining whether the Holders of the requisite principal amount of the Outstanding Securities have given any request, demand, authorization, direction, notice, consent, or waiver hereunder, (i) the principal amount of an Original Issue Discount Security that will be deemed to be Outstanding will be the amount of the principal thereof that would be due and payable as of the date of such determination upon acceleration of the Maturity thereof to such date pursuant to Section 8.01(b), (ii) the principal amount of a Security denominated in one or more foreign currencies or currency units will be the U.S. dollar equivalent, determined in the manner contemplated by Section 2.01 on the date of original issuance of such Security, of the principal amount (or, in the case of an Original Issue Discount Security, the U.S. dollar equivalent on the date of original issuance of such Security of

the amount determined as provided in clause (i) above) of such Security, and (iii) Securities owned by the Company or any other obligor (including any Subsidiary Guarantor) upon the Securities or any Affiliate of the Company or of any such other obligor will be disregarded and deemed not to be Outstanding, except that, in determining whether the Trustee will be protected in relying upon any such request, demand, authorization, direction, notice, consent, or waiver, only Securities which a Responsible Officer of the Trustee actually knows to be so owned will be so disregarded. Securities so owned which have been pledged in good faith may be regarded as Outstanding if the pledgor establishes to the satisfaction of the Trustee the pledgee's right so to act with respect to such Securities and that the pledgee is not the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor.

Paying Agent: The term "Paying Agent" means any Person authorized by the Company to pay the principal of or any premium or interest on any Securities on behalf of the Company.

Person: The term "Person" means any individual, partnership, corporation, limited liability company, joint stock company, business trust, trust, unincorporated association, joint venture, or other entity, or government or political subdivision or agency thereof.

Place of Payment: The term "Place of Payment" when used with respect to the Securities of any series means the place or places where the principal of and any premium and interest on the Securities of that series are payable as specified as contemplated by Section 2.01.

Predecessor Security: The term "Predecessor Security" when used with respect to any particular Security means every previous Security evidencing all or a portion of the same debt as that evidenced by such Security; and, for the purposes of this definition, any Security authenticated and delivered under Section 2.07 in exchange for or in lieu of a mutilated, destroyed, lost, or stolen Security will be deemed to evidence the same debt as the mutilated, destroyed, lost, or stolen Security.

Redemption Date: The term "Redemption Date" when used with respect to any Security to be redeemed means the date fixed for such redemption by or pursuant to this Indenture.

Redemption Price: The term "Redemption Price" when used with respect to any Security to be redeemed means the price (including premium, if any) at which it is to be redeemed pursuant to this Indenture.

Regular Record Date: The term "Regular Record Date" for the interest payable on any Interest Payment Date on the Securities of any series means the date specified for that purpose as contemplated by Section 2.01.

Responsible Officer: "Responsible Officer" when used with respect to the Trustee, means any vice president, any assistant vice president, any senior trust officer or assistant trust officer, any trust officer, or any other officer associated with the corporate trust department of the Trustee customarily performing functions similar to those performed by any of the above designated officers and also means, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of such person's knowledge of and familiarity with the particular subject.

Securities: The term "Securities" has the meaning set forth in the first recital of this Indenture and more particularly means any Securities authenticated and delivered under this Indenture.

Security Register and Security Registrar: The terms "Security Register" and "Security Registrar" have the respective meanings set forth in Section 2.05.

Significant Subsidiary: The term "Significant Subsidiary" means any Subsidiary that would be a "Significant Subsidiary" of the Company within the meaning of Rule 1-02 under Regulation S-X promulgated by the Commission.

Special Record Date: The term "Special Record Date" for the payment of any Defaulted Interest means a date fixed by the Trustee pursuant to Section 2.09.

Stated Maturity: The term "Stated Maturity" when used with respect to any Security, any installment of interest thereon, or any other amount payable under this Indenture or the Securities means the date specified in this Indenture or such Security as the regularly scheduled date on which the principal of such Security, such installment of interest, or such other amount, is due and payable.

Subsidiary: The term "Subsidiary" means, as applied with respect to any Person, any corporation, partnership, or other business entity of which, in the case of a corporation, more than 50% of the issued and outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether at the time capital stock of any other class or classes of such corporation has or might have voting power upon the occurrence of any contingency), or, in the case of any partnership or other legal entity, more than 50% of the ordinary equity capital interests, is at the time directly or indirectly owned or controlled by such Person, by such Person and one or more of its other Subsidiaries, or by one or more of such Person's other Subsidiaries.

Subsidiary Guarantee: The term "Subsidiary Guarantee" means a Guarantee by a Subsidiary Guarantor of the Company's obligations with respect to a particular series of Securities.

Subsidiary Guarantor: The term "Subsidiary Guarantor" means each such Subsidiary of the Company as is designated in a Board Resolution, supplemental indenture or an Officer's Certificate as a "Subsidiary Guarantor" for a particular series of Securities.

Trust Indenture Act: The term "Trust Indenture Act" means the Trust Indenture Act of 1939, as amended, as in force upon the date as of which this instrument was executed; provided, however, that in the event the Trust Indenture Act of 1939 is amended after such date, "Trust Indenture Act" means, to the extent required by any such amendment, the Trust Indenture Act of 1939 as so amended.

Trustee: The term "Trustee" means the Person named as the "Trustee" in the first paragraph of this Indenture until a successor Trustee shall have become such pursuant to the applicable provisions of this Indenture, and thereafter "Trustee" will mean or include each Person who is then a Trustee hereunder, and if at any time there is more than one such Person, "Trustee" as used with respect to the Securities of any series will mean each Trustee with respect to Securities of that series.

U.S. Government Obligation: The term “U.S. Government Obligation” means (a) any security that is (i) a direct obligation of the United States of America for the payment of which full faith and credit of the United States of America is pledged or (ii) an obligation of a Person controlled or supervised by and acting as an agency or instrumentality of the United States of America the payment of which is unconditionally guaranteed as a full faith and credit obligation by the United States of America, which, in either case (i) or (ii), is not callable or redeemable at the option of the issuer thereof and (b) any depositary receipt issued by a bank (as defined in Section 3(a)(2) of the Securities Act of 1933, as amended) as custodian with respect to any U.S. Government Obligation specified in clause (a), which U.S. Government Obligation is held by such custodian for the account of the holder of such depositary receipt, or with respect to any specific payment of principal of or interest on any such U.S. Government Obligation; provided that (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such depositary receipt from any amount received by the custodian in respect of the U.S. Government Obligation or the specific payment of principal or interest evidenced by such depositary receipt.

Vice President: The term “Vice President” when used with respect to the Company or the Trustee means any vice president, whether or not designated by a number or a word or words added before or after the title “vice president”.

(b) The words “Article” and “Section” refer to an Article and Section, respectively, of this Indenture. The words “herein”, “hereof” and “hereunder” and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section, or other subdivision. Certain terms used principally in Articles V, VI, and IX are defined in those Articles. Terms in the singular include the plural and terms in the plural include the singular.

ARTICLE II
The Securities

SECTION 2.01. Designation and Amount of Securities.

(a) The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is unlimited.

(b) The Securities may be issued in one or more series. There will be established in or pursuant to a Board Resolution and, subject to Section 2.04, set forth or determined in the manner provided in an Officer’s Certificate, or established in one or more indentures supplemental hereto, prior to the issuance of Securities of any series: (i) the title of the Securities of the series (which will distinguish the Securities of the series from Securities of any other series); (ii) any limit upon the aggregate principal amount of the Securities of the series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in the exchange for, or in lieu of, other Securities of the series pursuant to Section 2.05, 2.06, 2.07, 3.05, or 10.06 and except for any Securities which, pursuant to Section 2.04, are deemed never to have been authenticated and delivered hereunder); (iii) the Person to whom any interest on a Security of the series will be payable, if other than the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest; (iv) whether or

not the Securities shall have the benefit of Article XIII and, if so, which entities shall be the initial Subsidiary Guarantors of the Company's obligations with respect to such Securities; (v) the date or dates on which the principal of the Securities of the series is payable; (vi) the rate or rates at which the Securities of the series will bear interest, if any, the date or dates from which such interest will accrue, the Interest Payment Dates on which any such interest will be payable, and the Regular Record Date for any interest payable on any Interest Payment Date; (vii) the place or places where the principal of and any premium and interest on Securities of the series will be payable; (viii) the right of the Company, if any, to defer any payment of principal of, premium, or interest in respect of the Securities of the series, and the maximum length of any such deferral period (which shall not exceed the Stated Maturity for the final installment of principal on the Securities of such series); (ix) any additions, modifications or deletions in the Events of Default with respect to Securities of the series, if any, other than those set forth herein; (x) the period or periods within which, the price or prices at which, and the terms and conditions upon which Securities of the series may be redeemed, in whole or in part, at the option of the Company; (xi) the obligation, if any, of the Company to redeem or purchase Securities of the series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof and the period or periods within which, the price or prices at which, and the terms and conditions upon which Securities of the series will be redeemed or purchased, in whole or in part, pursuant to such obligation; (xii) if other than denominations of $1,000 and integral multiples thereof, the denominations in which Securities of the series will be issuable; (xiii) the currency, currencies, or currency units in which payment of the principal of and any premium and interest on any Securities of the series will be payable if other than the currency of the United States of America and the manner of determining the equivalent thereof in the currency of the United States of America for purposes of the definition of "Outstanding" in Section 1.01; (xiv) if the amount of payments of principal of or any premium or interest on any Securities of the series may be determined with reference to an index, based upon a formula, or in some other manner, the manner in which such amounts will be determined; (xv) if the principal of or any premium or interest on any Securities of the series is to be payable, at the election of the Company or a Holder thereof, in one or more currencies or currency units other than that or those in which the Securities are stated to be payable, the currency, currencies, or currency units in which payment of the principal of and any premium and interest on Securities of such series as to which such election is made will be payable, and the periods within which and the terms and conditions upon which such election is to be made; (xvi) if other than the principal amount thereof, the portion of the principal amount of Securities of the series which will be payable upon declaration of acceleration of the Maturity thereof pursuant to Section 8.01(b); (xvii) if applicable, that the Securities of the series will be subject to either or both of Defeasance or Covenant Defeasance as provided in Article V, provided that no series of Securities that is convertible into Common Stock or other property pursuant to Section 2.01(b)(xix) or convertible into or exchangeable for any other securities or property pursuant to Section 2.01(b)(xx) will be subject to Defeasance pursuant to Section 5.02; (xviii) if and as applicable, that the Securities of the series will be issuable in whole or in part in the form of one or more Global Securities and, in such case, the Depositary or Depositaries for such Global Security or Global Securities and any circumstances other than those set forth in Section 2.05 in which any such Global Security may be transferred to, and registered and exchanged for Securities registered in the name of, a Person other than the Depositary for such Global Security or a nominee thereof and in which any such transfer may be registered; (xix) the terms and conditions, if any, pursuant to which the Securities are convertible

into Common Stock or other property; (xx) the terms and conditions, if any, pursuant to which the Securities are convertible into or exchangeable for any other securities, including (without limitation) securities of Persons other than the Company, or other property; and (xxi) any other terms of, or provisions, covenants, rights or other matters applicable to, the series (which terms, provisions, covenants, rights or other matters will not be inconsistent with the provisions of this Indenture, except as permitted by Section 10.01(f)).

(c) All Securities of any one series will be substantially identical except as to denomination and except as may otherwise be provided for in or pursuant to the Board Resolution referred to below and (subject to Section 2.04) set forth or determined in the manner provided in the Officer's Certificate referred to above or in any such indenture supplemental hereto.

(d) If any of the terms of the series are established by action taken pursuant to a Board Resolution, a copy of an appropriate record of such action will be certified by the Secretary or an Assistant Secretary of the Company and delivered to the Trustee concurrently with or prior to the delivery of the Officer's Certificate setting forth the terms of the series.

SECTION 2.02. Form of Securities and Trustee's Certificate of Authentication.

(a) The Securities of each series will be in substantially the form set forth in or otherwise contemplated by Exhibit A to this Indenture, with appropriate variations to reflect the specific terms of such series. If the form of Securities of any series is established by action taken pursuant to a Board Resolution, a copy of an appropriate record of such action will be certified by the Secretary or an Assistant Secretary of the Company and delivered to the Trustee concurrently with or prior to the delivery of the Company Order contemplated by Section 2.04 for the authentication and delivery of such Securities.

(b) The definitive Securities will be printed, lithographed, or engraved on steel engraved borders or may be produced in any other manner permitted by the rules of any securities exchange on which the Securities may be listed, all as determined by the officers executing such Securities, as evidenced by their execution of such Securities.

(c) The Trustee's certificate of authentication will be in substantially the form set forth in Exhibit A to this Indenture.

(d) Every Global Security authenticated and delivered hereunder will bear a legend in substantially the form set forth in Exhibit A to this Indenture.

SECTION 2.03. Date and Denominations.

Each Security will be dated the date of its authentication. The Securities of each series will be issuable only in registered form without coupons in such denominations as may be specified as contemplated by Section 2.01. In the absence of any such specified denomination with respect to the Securities of any series, the Securities of such series will be issuable in denominations of $1,000 and integral multiples thereof.

SECTION 2.04. Execution, Authentication and Delivery of Securities.

(a) The Securities will be executed on behalf of the Company by the Chairman or any Vice Chairman of the Board of Directors, the Chief Executive Officer, the President, or any Vice President of the Company and attested by the Treasurer, the Secretary, any Assistant Treasurer, or any Assistant Secretary of the Company. The signature of any of these officers on the Securities may be manual or facsimile. Each Subsidiary Guarantor shall execute the Subsidiary Guarantee in the manner set forth in Section 13.03. Typographical and other minor errors or defects in any such signature shall not affect the validity or enforceability of any security that has been duly authenticated and delivered by the Trustee.

(b) Only such Securities bearing the Trustee's certificate of authentication, signed manually by the Trustee, will be entitled to the benefits of this Indenture or be valid or obligatory for any purpose. Such execution of the certificate of authentication by the Trustee upon any Securities executed by the Company will be conclusive evidence that the Securities so authenticated have been duly authenticated and delivered hereunder. Notwithstanding the foregoing, if any Security shall have been authenticated and delivered hereunder but never issued and sold by the Company, and the Company shall deliver such Security to the Trustee for cancellation as provided in Section 2.08, for all purposes of this Indenture such Security will be deemed never to have been authenticated and delivered hereunder and will never be entitled to the benefits of this Indenture.

(c) Securities or Subsidiary Guarantees bearing the manual or facsimile signatures of individuals who were at any time the proper officers of the Company or the applicable Subsidiary Guarantor will bind the Company or the applicable Subsidiary Guarantor, notwithstanding that such individuals or any of them have ceased to hold such offices prior to the authentication and delivery of such Securities or Subsidiary Guarantees or did not hold such offices at the date of such Securities or the applicable Subsidiary Guarantees.

(d) At any time and from time to time after the execution and delivery of this Indenture, the Company may deliver Securities of any series executed by the Company to the Trustee for authentication, together with a Company Order for the authentication and delivery of such Securities, and the Trustee in accordance with the Company Order will authenticate and deliver such Securities. If the form or terms of the Securities of the series have been established in or pursuant to one or more Board Resolutions as permitted by Sections 2.01 and 2.02, in authenticating such Securities, and accepting the additional responsibilities under this Indenture in relation to such Securities, the Trustee shall receive, and (subject to Section 9.01) will be fully protected in relying upon, an Opinion of Counsel stating:

(i) if the form of such Securities has been established by or pursuant to a Board Resolution as permitted by Section 2.02, that such form has been established in conformity with the provisions of this Indenture;

(ii) if the terms of such Securities have been established by or pursuant to a Board Resolution as permitted by Section 2.01, that such terms have been established in conformity with the provisions of this Indenture;

(iii) that such Securities, when authenticated and delivered by the Trustee and issued by the Company in the manner and subject to any conditions specified in such

Opinion of Counsel, will constitute valid and binding obligations of the Company enforceable in accordance with their terms, except as the enforceability thereof may be limited by bankruptcy, insolvency, reorganization, moratorium, or other laws relating to or affecting creditors' rights and by general principles of equity; and

(iv) that no consent, approval, authorization, order, registration or qualification of or with any court or any governmental agency or body having jurisdiction over the Company is required for the execution and delivery of such Securities by the Company, except such as have been obtained.

The Trustee shall have the right to decline to authenticate and deliver any Securities under this Section if the Trustee, being advised by counsel, determines that such action may not lawfully be taken or if the Trustee in good faith shall determine that such action would expose the Trustee to personal liability to existing Holders.

(e) Notwithstanding the provisions of Sections 2.01 and 2.04(d), if all Securities of a series are not to be originally issued at one time, it will not be necessary to deliver the Officer's Certificate otherwise required pursuant to Section 2.01 or the Company Order and Opinion of Counsel otherwise required pursuant to Section 2.04(d) at or prior to the time of authentication of each Security of such series if such documents are delivered at or prior to the authentication upon original issuance of the first Security of such series to be issued.

SECTION 2.05. Registration of Transfer and Exchange.

(a) The Company will cause to be kept at the Corporate Trust Office a register (the register maintained in such office and in any other office or agency of the Company in a Place of Payment being herein sometimes collectively referred to as the "Security Register") in which, subject to such reasonable regulations as it may prescribe, the Company will provide for the registration of Securities and of transfers of Securities. The Trustee is hereby appointed "Security Registrar" for the purpose of registering Securities and transfers of Securities as herein provided.

(b) Upon surrender for registration of transfer of any Security of any series at the office or agency in a Place of Payment for that series, the Company will execute, and the Trustee will authenticate and deliver in the name of the designated transferee or transferees, one or more new Securities of the same series, of any authorized denominations and of a like aggregate principal amount and tenor.

(c) At the option of the Holder, Securities of any series may be exchanged for other Securities of the same series, of any authorized denominations and of a like aggregate principal amount and tenor, upon surrender of the Securities to be exchanged at such office or agency. Whenever any Securities are so surrendered for exchange, the Company will execute, and the Trustee will authenticate and deliver the Securities which the Holder making the exchange is entitled to receive.

(d) Every Security presented or surrendered for registration of transfer or exchange will (if so required by the Company or the Trustee) be duly endorsed, or be accompanied by a written instrument or instruments of transfer, in form reasonably satisfactory

to the Company and the Security Registrar duly executed, by the Holder thereof or his attorney duly authorized in writing. No service charge will be made for any registration of transfer or exchange of Securities, but the Company may require payment of a sum sufficient to cover any tax, assessment, fee or other governmental charge that may be imposed in connection with any registration of transfer or exchange of Securities, other than exchanges pursuant to Section 2.06, 3.05, or 10.06 not involving any transfer. The Company will not be required (i) to issue, register the transfer of, or exchange Securities of any series during a period beginning at the opening of business 15 calendar days before the mailing of a notice of redemption of Securities of that series selected for redemption under Section 3.02(c) and ending at the close of business on the day of such mailing or (ii) to register the transfer of or exchange any Security so selected for redemption in whole or in part, except, in the case of any Securities to be redeemed in part, the portion thereof not being redeemed.

(e) All Securities issued upon any registration of transfer or exchange of Securities will be valid obligations of the Company and any applicable Subsidiary Guarantors, evidencing the same debt, and entitled to the same benefits under this Indenture, as the Securities surrendered upon such registration of transfer or exchange.

(f) Notwithstanding any other provision in this Indenture, no Global Security may be transferred to, or registered or exchanged for Securities registered in the name of, any Person other than the Depositary for such Global Security or any nominee thereof, and no such transfer may be registered, unless (i) such Depositary (A) notifies the Company that it is unwilling or unable to continue as Depositary for such Global Security or (B) ceases to be a clearing agency registered under the Exchange Act, (ii) the Company executes and delivers to the Trustee a Company Order that such Global Security shall be so transferable, registrable, and exchangeable, and such transfers shall be registrable, (iii) there shall have occurred and be continuing an Event of Default with respect to the Securities evidenced by such Global Security, or (iv) there shall exist such other circumstances, if any, as have been specified for this purpose as contemplated by Section 2.01. Notwithstanding any other provision in this Indenture, a Global Security to which the restriction set forth in the preceding sentence shall have ceased to apply may be transferred only to, and may be registered and exchanged for Securities registered only in the name or names of, such Person or Persons as the Depositary for such Global Security shall have directed and no transfer thereof other than such a transfer may be registered. Every Security authenticated and delivered upon registration of transfer of, or in exchange for or in lieu of, a Global Security to which the restriction set forth in the first sentence of this Section 2.05(f) shall apply, whether pursuant to this Section 2.05, Section 2.06, 2.07, 3.05, or 10.06 or otherwise, will be authenticated and delivered in the form of, and will be, a Global Security.

(g) Each Holder of a Security agrees to indemnify the Company and the Trustee against any liability that may result from the transfer, exchange or assignment of such Holder’s Security in violation of any provision of this Indenture and/or applicable United States Federal or state securities law.

(h) The Trustee shall have no obligation or duty to monitor, determine or inquire as to compliance with any restrictions on transfer imposed under this Indenture or under applicable law with respect to any transfer of any interest in any Security (including any transfers between or among Depositary participants or beneficial owners of interests in any Global

Security) other than to require delivery of such certificates and other documentation or evidence as are expressly required by, and to do so if and when expressly required by the terms of, this Indenture, and to examine the same to determine substantial compliance as to form with the express requirements hereof.

SECTION 2.06. Temporary Securities.

Pending the preparation of definitive Securities of any series, the Company may execute and register and upon Company Order the Trustee will authenticate and deliver temporary Securities (printed, lithographed, or typewritten) of any authorized denomination, and substantially in the form of the definitive Securities but with such omissions, insertions, and variations as may be appropriate for temporary Securities, all as may be determined by the officers executing such Securities as evidenced by their execution of such Securities; provided, however, that the Company will use reasonable efforts to have definitive Securities of that series available at the times of any issuance of Securities under this Indenture. Every temporary Security will be executed and registered by the Company and be authenticated by the Trustee upon the same conditions and in substantially the same manner, and with like effect, as the definitive Securities. The Company will execute and register and furnish definitive Securities of such series as soon as practicable and thereupon any or all temporary Securities of such series may be surrendered in exchange therefor at the office or agency of the Company in the Place of Payment for that series, and the Trustee will authenticate and deliver in exchange for such temporary Securities of such series one or more definitive Securities of the same series, of any authorized denominations, and of a like aggregate principal amount and tenor. Such exchange will be made by the Company at its own expense and without any charge to the Holder therefor. Until so exchanged, the temporary Securities of any series will be entitled to the same benefits under this Indenture as definitive Securities of the same series authenticated and delivered hereunder.

SECTION 2.07. Mutilated, Destroyed, Lost, and Stolen Securities.

(a) If any mutilated Security is surrendered to the Trustee, the Company will execute and the Trustee will authenticate and deliver in exchange therefor a new Security of the same series and of like tenor and principal amount and bearing a number not contemporaneously outstanding.

(b) If there shall be delivered to the Company and the Trustee (i) evidence to each of the Company's and Trustee's satisfaction of the destruction, loss, or theft of any Security and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a bona fide purchaser, the Company will execute and the Trustee will authenticate and deliver, in lieu of any such destroyed, lost, or stolen Security, a new Security of the same series and of like tenor and principal amount and bearing a number not contemporaneously outstanding.

(c) In case any such mutilated, destroyed, lost, or stolen Security has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

(d) Upon the issuance of any new Security under this Section 2.07, the Company may require the payment of a sum sufficient to cover any tax, assessment, fee or other governmental charge that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith.

(e) Every new Security of any series issued pursuant to this Section 2.07 in exchange for any mutilated Security or in lieu of any destroyed, lost, or stolen Security will constitute an additional original contractual obligation of the Company, whether or not the mutilated, destroyed, lost, or stolen Security shall be at any time enforceable by anyone, and will be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that series duly issued hereunder.

(f) The provisions of this Section 2.07 are exclusive and will preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost, or stolen Securities.

SECTION 2.08. Cancellation of Surrendered Securities.

All Securities surrendered for payment, redemption, registration of transfer or exchange, or for credit against any sinking fund payment will, if surrendered to any Person other than the Trustee, be delivered to the Trustee and will be promptly canceled by it. The Company may at any time deliver to the Trustee for cancellation any Securities previously authenticated and delivered hereunder which the Company may have acquired in any manner whatsoever, and may deliver to the Trustee (or to any other Person for delivery to the Trustee) for cancellation any Securities previously authenticated hereunder which the Company has not issued and sold, and all Securities so delivered will be promptly canceled by the Trustee. No Securities will be authenticated in lieu of or in exchange for any Securities canceled as provided in this Section 2.08, except as expressly permitted by this Indenture. The Trustee shall dispose of all canceled Securities in accordance with its customary procedures.

SECTION 2.09. Payment of Interest; Interest Rights Preserved.

(a) Except as otherwise provided as contemplated by Section 2.01 with respect to any series of Securities, interest on any Security which is payable, and is punctually paid or duly provided for, on any Interest Payment Date will be paid to the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest, except that at the option of the Company payment may be made (i) except in the case of a Global Security by check mailed to the address of the Person entitled thereto as such address appears in the Securities Registrar or (ii) by transfer to an account maintained by the Person entitled thereto as specified in the Securities Registrar; provided that proper transfer instructions have been received by the Regular Record Date.

(b) Any interest on any Security of any series which is payable, but is not punctually paid or duly provided for, on any Interest Payment Date (herein called “Defaulted Interest”) will forthwith cease to be payable to the Holder on the relevant regular Record Date by virtue of having been such Holder, and such Defaulted Interest may be paid by the Company

together with interest thereon (to the extent permitted by law) at the rate of interest applicable to such Security, at its election in each case, as provided in clause (i) or (ii) below:

(i) The Company may elect to make payment of any Defaulted Interest (and interest thereon, if any) to the Persons in whose names the Securities of such series (or their respective Predecessor Securities) are registered at the close of business on a Special Record Date for the payment of such Defaulted Interest, which will be fixed in the following manner. The Company will promptly notify the Trustee in writing of the amount of Defaulted Interest (and interest thereon, if any) proposed to be paid on each Security of such series and the date of the proposed payment, and at the same time the Company will deposit with the Trustee an amount of money equal to the aggregate amount proposed to be paid in respect of such Defaulted Interest (and interest thereon, if any) or will make arrangements satisfactory to the Trustee for such deposit prior to the date of the proposed payment, such money when deposited to be held in trust for the benefit of the persons entitled to such Defaulted Interest (and interest thereon, if any) as in this clause (i) provided. Thereupon the Trustee will fix a Special Record Date for the payment of such Defaulted Interest (and interest thereon, if any) which will be not more than 15 calendar days and not less than ten calendar days prior to the date of the proposed payment and not less than ten calendar days after the receipt by the Trustee of the notice of the proposed payment. The Trustee will promptly notify the Company of such Special Record Date and, in the name and at the expense of the Company, will cause notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor to be mailed, first class postage prepaid, to each Holder of Securities of such series at his address as it appears in the Security Register, not less than ten calendar days prior to such Special Record Date. Notice of the proposed payment of such Defaulted Interest (and interest thereon, if any) and the Special Record Date therefor having been so mailed, such Defaulted Interest will be paid to the Persons in whose names the Securities of such series (or their respective Predecessor Securities) are registered at the close of business on such Special Record Date and will no longer be payable pursuant to the following clause (ii).

(ii) The Company may make payment of any Defaulted Interest (and interest thereon, if any) on the Securities of any series in any other lawful manner not inconsistent with the requirements of any securities exchange on which such Securities may be listed, and upon such notice as may be required by such exchange, if, after notice given by the Company to the Trustee of the proposed payment pursuant to this clause (ii), such manner of payment shall be deemed practicable by the Trustee.

(c) Subject to the foregoing provisions of this Section 2.09, each Security delivered under this Indenture upon registration of transfer of or in exchange for or in lieu of any other Security will carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Security.

SECTION 2.10. Persons Deemed Owners.

(a) Prior to due presentment of a Security for registration of transfer, the Company, the Trustee, and any agent of the Company or the Trustee may treat the Person in

whose name such Security is registered as the owner of such Security for the purpose of receiving payment of principal of and any premium and (subject to Section 2.09) any interest on such Security and for all other purposes whatsoever, whether or not such Security shall be overdue, and neither the Company, the Trustees nor any agent of the Company or the Trustee will be affected by notice to the contrary.

(b) None of the Company, the Trustee or any agent of the Company or the Trustee shall have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interest of a Security in global form, or for maintaining, supervising or reviewing any records relating to such beneficial ownership interest. Notwithstanding the foregoing, with respect to any Security in global form, nothing herein shall prevent the Company or the Trustee or any agent of the Company or the Trustee from giving effect to any written certification, proxy or other authorization furnished by any U.S. Depositary or common Depositary (or its nominee), as a Holder, with respect to such Security in global form or impair, as between such U.S. Depositary or common Depositary and owners of beneficial interests in such Security in global form, the operation of customary practices governing the exercise of the right of such U.S. Depositary or common Depositary (or its nominee) as holder of such Security in global form.

SECTION 2.11. Computation of Interest.

Except as otherwise specified as contemplated by Section 2.01 for Securities of any series, interest on the Securities of each series will be computed on the basis of a 360-day year consisting of twelve 30-day months.

SECTION 2.12. CUSIP Numbers.

The Company in issuing any series of the Securities may use CUSIP numbers, if then generally in use, and thereafter with respect to such series, the Trustee may use such numbers in any notice of redemption or exchange with respect to such series; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other identification numbers printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company will promptly notify the Trustee in writing of any change in the CUSIP numbers.

ARTICLE III
Redemption of Securities

SECTION 3.01. Applicability of Article.

Securities of any series which are redeemable before their Stated Maturity will be redeemable in accordance with their terms and (except as otherwise specified as contemplated by Section 2.01 for Securities of any series) in accordance with this Article III.

SECTION 3.02. Election to Redeem; Notice to Trustee.

(a) The election of the Company to redeem any Securities will be evidenced by a Board Resolution. In case of any redemption at the election of the Company, the Company will, at least 45 calendar days prior to the Redemption Date fixed by the Company (unless a shorter notice shall be satisfactory to the Trustee), notify the Trustee of such Redemption Date and of the principal amount of Securities of such series to be redeemed. In the case of any redemption of Securities prior to the expiration of any restriction on such redemption provided in the terms of such Securities or elsewhere in this Indenture, the Company will furnish the Trustee with an Officer's Certificate evidencing compliance with such restriction.

(b) Notice of redemption of Securities to be redeemed at the election of the Company will be given by the Company or, at the Company's request, by the Trustee in the name and at the expense of the Company and will be irrevocable. Notice of redemption will be given by mail, first class postage prepaid, not less than 30 or more than 45 calendar days prior to the Redemption Date, to each Holder of Securities to be redeemed, at his address appearing in the Security Register. All notices of redemption will include the CUSIP number (if any) and will state (i) the Redemption Date, (ii) the Redemption Price, (iii) if less than all the Outstanding Securities of any series are to be redeemed, the identification (and, in the case of partial redemption of any Securities, the principal amounts) of the particular Securities to be redeemed, (iv) that on the Redemption Date the Redemption Price will become due and payable upon each such Security to be redeemed and, if applicable, that interest thereon will cease to accrue on and after said date, (v) the place or places where such Securities are to be surrendered for payment of the Redemption Price, (vi) that the redemption is for a sinking fund, if such is the case, and (vii) the specific provision of this Indenture or any applicable supplemental indenture pursuant to which such Securities are to be redeemed.

(c) If less than all the Securities of any series are to be redeemed, the particular Securities to be redeemed will be selected not more than 60 calendar days prior to the Redemption Date by the Trustee, from the Outstanding Securities of such series not previously called for redemption, by such method as the Trustee may deem fair and appropriate consistent with DTC procedures (so long as such method is not prohibited by the rules of any securities exchange on which the securities are then listed), and which may provide for the selection for redemption of portions (equal to the minimum authorized denomination for Securities of that series or any integral multiple thereof) of the principal amount of Securities of such series of a denomination larger than the minimum authorized denomination for Securities of that series. The Trustee will promptly notify the Company in writing of the Securities selected for redemption and, in the case of any Securities selected for partial redemption, the principal amount thereof to be redeemed.

(d) For all purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities will relate, in the case of any Securities redeemed or to be redeemed only in part, to the portion of the principal amount of such Securities which has been or is to be redeemed.

SECTION 3.03. Deposit of Redemption Price.

Prior to 10:00 a.m. (local time at the Place of Payment) on the Redemption Date specified in the notice of redemption given as provided in Section 3.02, the Company will deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying

Agent, segregate and hold in trust as provided in Section 6.03) an amount of money sufficient to pay the Redemption Price of, and (except if the Redemption Date shall be an Interest Payment Date) any accrued interest on, all of the Securities that are to be redeemed on that date.

SECTION 3.04. Securities Payable on Redemption Date.

(a) Notice of redemption having been given as aforesaid, the Securities so to be redeemed will, on the Redemption Date, become due and payable at the Redemption Price therein specified, and from and after such date (unless the Company defaults in the payment of the Redemption Price and accrued interest) such Securities will cease to accrue interest. Upon surrender of any such Security for redemption in accordance with said notice, such Security will be paid by the Company at the Redemption Price, together with accrued interest to the Redemption Date; provided, however, that unless otherwise specified as contemplated by Section 2.01, installments of interest whose Stated Maturity is on or prior to the Redemption Date will be payable to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the relevant Record Dates in accordance with their terms and the provisions of Section 2.09.

(b) If any Security called for redemption shall not be so paid upon surrender thereof for redemption, the principal and any premium will, until paid, bear interest from the Redemption Date at the rate prescribed therefor in the Security.

SECTION 3.05. Securities Redeemed in Part.

Any Security that is to be redeemed only in part will be surrendered at a Place of Payment therefor (with, if the Company or the Trustee so requires, due endorsement by, or a written instrument of transfer in form satisfactory to the Company and the Trustee duly executed by, the Holder thereof or his attorney duly authorized in writing), and the Company will execute, and the Trustee will authenticate and deliver to the Holder of such Security without service charge, a new Security or Securities of the same series and of like tenor, of any authorized denomination as requested by such Holder, in aggregate principal amount equal to and in exchange for the unredeemed portion of the principal of the Security so surrendered.

ARTICLE IV
Sinking Funds

SECTION 4.01. Applicability of Article.

The provisions of this Article IV will be applicable to any sinking fund for the retirement of Securities of a series except as otherwise specified as contemplated by Section 2.01 for Securities of such series. The minimum amount of any sinking fund payment provided for by the terms of Securities of any series is herein referred to as a “mandatory sinking fund payment”, and any payment in excess of such minimum amount provided for by the terms of Securities of any series is herein referred to as an “optional sinking fund payment”. If provided for by the terms of Securities of any series, the amount of any sinking fund payment may be subject to reduction as provided in Section 4.02. Each sinking fund payment with respect to Securities of a particular series will be applied to the redemption of Securities of such series as provided for by the terms of Securities of such series.

SECTION 4.02. Satisfaction of Sinking Fund Payments With Securities.

The Company (a) may deliver Outstanding Securities of a series (other than any previously called for redemption) and (b) may apply as a credit Securities of a series which have been redeemed either at the election of the Company pursuant to the terms of such Securities or through the application of permitted optional sinking fund payments pursuant to the terms of such Securities, in each case in satisfaction of all or any part of any sinking fund payment with respect to the Securities of such series required to be made pursuant to the terms of such Securities as provided for by the terms of such series; provided that such Securities have not been previously so credited. Such Securities will be received and credited for such purpose by the Trustee at the Redemption Price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment will be reduced accordingly.

SECTION 4.03. Redemption of Securities for Sinking Fund.

Not less than 45 calendar days prior to each sinking fund payment date for any series of Securities, the Company will deliver to the Trustee an Officer's Certificate specifying the amount of the next ensuing sinking fund payment for that series pursuant to the terms of that series, the portion thereof, if any, that is to be satisfied by payment of cash and the portion thereof, if any, that is to be satisfied by delivering and crediting Securities of that series pursuant to Section 4.02 and will also deliver to the Trustee any Securities to be so delivered. Not less than 30 calendar days before each such sinking fund payment date, the Trustee will select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 3.02(c) and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 3.02(b). Such notice having been duly given, the redemption of such Securities will be made upon the terms and in the manner stated in Sections 3.04 and 3.05.

ARTICLE V
Defeasance and Covenant Defeasance

SECTION 5.01. Company's Option to Effect Defeasance or Covenant Defeasance.

The Company may elect, at its option by Board Resolution at any time, to have either Section 5.02 or Section 5.03 applied to the Outstanding Securities of any series designated pursuant to Section 2.01 as being defeasible pursuant to this Article V (hereinafter called "Defeasible Series"), upon compliance with the conditions set forth below in this Article V; provided that Section 5.02 will not apply to any series of Securities that is convertible into Common Stock pursuant to Section 2.01(b)(xvii) or convertible into or exchangeable for any other securities pursuant to Section 2.01 (b)(xviii).

SECTION 5.02. Defeasance and Discharge.

Upon the Company's exercise of the option provided in Section 5.01 to have this Section 5.02 applied to the Outstanding Securities of any Defeasible Series and subject to the proviso to Section 5.01, the Company will be deemed to have been discharged from its obligations with respect to the Outstanding Securities of such series (and all obligations of any

Subsidiary Guarantors with respect to any Subsidiary Guarantees of the Outstanding Securities of such series shall be discharged) as provided in this Section 5.02 on and after the date the conditions set forth in Section 5.04 are satisfied (hereinafter called "Defeasance"). For this purpose, such Defeasance means that the Company will be deemed to have paid and discharged the entire indebtedness represented by the Outstanding Securities of such series and to have satisfied all its other obligations under the Securities of such series and this Indenture insofar as the Securities of such series are concerned (and the Trustee, at the expense of the Company, will execute proper instruments acknowledging the same), subject to the following which will survive until otherwise terminated or discharged hereunder: (a) the rights of Holders of Securities of such series to receive, solely from the trust fund described in Section 5.04 and as more fully set forth in Section 5.04, payments in respect of the principal of and any premium and interest on such Securities of such series when payments are due, (b) the Company's obligations with respect to the Securities of such series under Sections 2.05, 2.06, 2.07, 6.02, 6.03, and 10.06, (c) the rights, powers, trusts, duties, and immunities of the Trustee hereunder, and (d) this Article V. Subject to compliance with this Article V, the Company may exercise its option provided in Section 5.01 to have this Section 5.02 applied to the Outstanding Securities of any Defeasible Series notwithstanding the prior exercise of its option provided in Section 5.01 to have Section 5.03 applied to the Outstanding Securities of such series.

SECTION 5.03. Covenant Defeasance.

Upon the Company's exercise of the option provided in Section 5.01 to have this Section 5.03 applied to the Outstanding Securities of any Defeasible Series, (a) the Company will be released from its obligations under Sections 6.04 through 6.05, inclusive, Section 11.01, and the provisions of any supplemental indenture specified in such supplemental indenture, and (b) the occurrence of any event specified in Sections 8.01(a)(iii), 8.01(a)(iv) (with respect to any of Sections 6.04 through 6.05, inclusive, Section 11.01, and the provisions of any supplemental indenture specified in such supplemental indenture), 8.01(a)(v), and 8.01(a)(viii) will be deemed not to be or result in an Event of Default, in each case with respect to the Outstanding Securities of such series as provided in this Section on and after the date the conditions set forth in Section 5.04 are satisfied (hereinafter called "Covenant Defeasance"). For this purpose, such Covenant Defeasance means that the Company may omit to comply with and will have no liability in respect of any term, condition, or limitation set forth in any such specified Section (to the extent so specified in the case of Section 8.01(a)(iv)), whether directly or indirectly by reason of any reference elsewhere herein to any such Section or by reason of any reference in any such Section to any other provision herein or in any other document, but the remainder of this Indenture and the Securities of such series will be unaffected thereby.

SECTION 5.04. Conditions to Defeasance or Covenant Defeasance.

The following will be the conditions to application of either Section 5.02 or Section 5.03 to the Outstanding Securities of any Defeasible Series:

(a) The Company shall irrevocably have deposited or caused to be deposited with the Trustee (or another trustee that satisfies the requirements contemplated by Section 9.08 and agrees to comply with the provisions of this Article V applicable to it) as trust funds in trust for the benefit of the Holders of Outstanding Securities of such

series (i) money in an amount, or (ii) U.S. Government Obligations that through the scheduled payment of principal and interest in respect thereof in accordance with their terms will provide, without reinvestment, not later than one day before the due date of any payment, money in an amount, or (iii) a combination thereof, in each case sufficient in the opinion of an independent firm of certified public accountants, to pay and discharge, and which will be applied by the Trustee (or any such other qualifying trustee) to pay and discharge, the principal of and any premium and interest on the Securities of such series on the respective Stated Maturities or on any earlier date or dates on which the Securities of such series shall be subject to redemption and the Company shall have given the Trustee irrevocable instructions satisfactory to the Trustee to give notice to the Holders of the redemption of the Securities of such series, all in accordance with the terms of this Indenture and the Securities of such series.

(b) In the case of an election with respect to Section 5.02, the Company shall have delivered to the Trustee either (A) a ruling directed to the Trustee received from the Internal Revenue Service to the effect that the Holders of the Outstanding Securities of such series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit, Defeasance and discharge to be effected with respect to the Securities of such series and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Defeasance had not occurred or (B) an Opinion of Counsel, from a counsel who shall not be an employee of the Company, based on a ruling published by the Internal Revenue Service or on a change in the applicable federal income tax law since the date of this Indenture, in either case to the effect that, and based thereon such opinion shall confirm that, the Holders of the Outstanding Securities of such series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit, Defeasance and discharge to be effected with respect to the Securities of such series and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if the deposit, Defeasance and discharge to be effected with respect to the Securities of such series had not occurred.

(c) In the case of an election with respect to Section 5.03, the Company shall have delivered to the Trustee an Opinion of Counsel, from a counsel who shall not be an employee of the Company, or a ruling directed to the Trustee received from the Internal Revenue Service to the effect that the Holders of the Outstanding Securities of such series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit and Covenant Defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such deposit and Covenant Defeasance had not occurred.

(d) The Company shall have delivered to the Trustee an Officer’s Certificate to the effect that the Securities of such series, if then listed on any securities exchange, will not be delisted solely as a result of such deposit.

(e) No Event of Default or event that (after notice or lapse of time or both) would become an Event of Default shall have occurred and be continuing at the time of such deposit or, with regard to any Event of Default or any such event specified in Sections 8.01(a)(vi) and (vii), at any time on or prior to the 90th calendar day after the date of such deposit (it being understood that this condition will not be deemed satisfied until after such 90th calendar day).

(f) Such Defeasance or Covenant Defeasance will not cause the Trustee to have a conflicting interest within the meaning of the Trust Indenture Act (assuming all Securities are in default within the meaning of such Act).

(g) Such Defeasance or Covenant Defeasance will not result in a breach or violation of, or constitute a default under, any other agreement or instrument to which the Company is a party or by which it is bound.

(h) The Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent with respect to such Defeasance or Covenant Defeasance have been complied with.

(i) Such Defeasance or Covenant Defeasance will not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless such trust will be qualified under such Act or exempt from regulation thereunder.

SECTION 5.05. Deposited Money and U.S. Government Obligations to be Held in Trust; Other Miscellaneous Provisions.

(a) Subject to the provisions of Section 6.03(e), all money and U.S. Government Obligations (including the proceeds thereof) deposited with the Trustee or other qualifying trustee (solely for purposes of this Section 5.05 and Section 5.06, the Trustee and any such other trustee are referred to collectively as the "Trustee") pursuant to Section 5.04 in respect of the Securities of any Defeasible Series will be held in trust and applied by the Trustee, in accordance with the provisions of the Securities of such series and this Indenture, to the payment, either directly or through any such Paying Agent (including the Company acting as its own Paying Agent) as the Trustee may determine, to the Holders of Securities of such series, of all sums due and to become due thereon in respect of principal and any premium and interest, but money so held in trust need not be segregated from other funds except to the extent required by law.

(b) The Company will pay and indemnify the Trustee against any tax, fee, or other charge imposed on or assessed against the U.S. Government Obligations deposited pursuant to Section 5.04 or the principal and interest received in respect thereof other than any such tax, fee, or other charge that by law is for the account of the Holders of Outstanding Securities.

(c) Notwithstanding anything in this Article V to the contrary, the Trustee will deliver or pay to the Company from time to time upon a Company Request any money or U.S. Government Obligations held by it as provided in Section 5.04 with respect to Securities of any Defeasible Series that are in excess of the amount thereof that would then be required to be deposited to effect an equivalent Defeasance or Covenant Defeasance with respect to the Securities of such series.

SECTION 5.06. Reinstatement.

If the Trustee or the Paying Agent is unable to apply any money in accordance with this Article V with respect to the Securities of any series by reason of any order or judgment of any court or governmental authority enjoining, restraining, or otherwise prohibiting such application, then the Company's obligations under this Indenture and the Securities of such series will be revived and reinstated as though no deposit had occurred pursuant to this Article V with respect to Securities of such series until such time as the Trustee or Paying Agent is permitted to apply all money held in trust pursuant to Section 5.05 with respect to Securities of such series in accordance with this Article V; provided, however, that if the Company makes any payment of principal of or any premium or interest on any Security of such series following the reinstatement of its obligations, the Company will be subrogated to the rights of the Holders of Securities of such series to receive such payment from the money so held in trust.

ARTICLE VI
Particular Covenants of the Company

SECTION 6.01. Payment of Principal, Premium and Interest on Securities.

The Company, for the benefit of each series of Securities, will duly and punctually pay the principal of and any premium and interest on the Securities of that series in accordance with the terms of the Securities and this Indenture.

SECTION 6.02. Maintenance of Office or Agency.

(a) The Company will maintain in each Place of Payment for any series of Securities an office or agency where Securities of that series may be presented or surrendered for payment, where Securities of that series may be surrendered for registration of transfer or exchange, and where notices and demands to or upon the Company in respect of the Securities of that series and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and any change in the location, of such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices, and demands may be made or served at the Corporate Trust Office, and the Company hereby appoints the Trustee as its agent to receive all such presentations, surrenders, notices, and demands.

(b) The Company may also from time to time designate one or more other offices or agencies where the Securities of one or more series may be presented or surrendered for any or all such purposes and may from time to time rescind such designations; provided, however, that no such designation or rescission will in any manner relieve the Company of its obligation to maintain an office or agency in each Place of Payment for Securities of any series for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the location of any such other office or agency.

SECTION 6.03. Money for Securities Payments to be Held in Trust.

(a) If the Company shall at any time act as its own Paying Agent with respect to any series of Securities, it will, prior to 10:00 a.m. (local time at the Place of Payment) on the

due date of the principal of or any premium or interest on any of the Securities of that series, segregate and hold in trust for the benefit of the Persons entitled thereto a sum sufficient to pay the principal and any premium and interest so becoming due until such sums shall be paid to such Persons or otherwise disposed of as herein provided and will promptly notify the Trustee of its action or failure so to act.

(b) Whenever the Company shall have one or more Paying Agents for any series of Securities, it will, prior to each due date of the principal of or any premium or interest on any Securities of that series, deposit with a Paying Agent a sum sufficient to pay such amount, such sum to be held as provided by the Trust Indenture Act, and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of its action or failure so to act.

(c) The Company will cause each Paying Agent for any series of Securities other than the Trustee to execute and deliver to the Trustee an instrument in which such Paying Agent will agree with the Trustee, subject to the provisions of this Section 6.03, that such Paying Agent will (i) comply with the provisions of the Trust Indenture Act applicable to it as a Paying Agent and (ii) during the continuance of any default by the Company (or any other obliger upon the Securities of that series) in the making of any payment in respect of the Securities of that series, and upon the written request of the Trustee, forthwith pay to the Trustee all sums held in trust by such Paying Agent for payment in respect of the Securities of that series.

(d) The Company may at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture or for any other purpose, pay, or by Company Order direct any Paying Agent to pay, to the Trustee all sums held in trust by the Company or such Paying Agent, such sums to be held by the Trustee upon the same trusts as those upon which such sums were held by the Company or such Paying Agent; and, upon such payment by any Paying Agent to the Trustee, such Paying Agent will be released from all further liability with respect to such money.

(e) Any money deposited with the Trustee or any Paying Agent, or then held by the Company, in trust for the payment of the principal of or any premium or interest on any Security of any series and remaining unclaimed for two years after such principal, premium, or interest has become due and payable will be paid to the Company upon a Company Request (or, if then held by the Company, will be discharged from such trust); and the Holder of such Security will thereafter, as an unsecured general creditor, look only to the Company for payment thereof, and all liability of the Trustee or such Paying Agent with respect to such trust money, and all liability of the Company as trustee thereof, will thereupon cease; provided, however, that the Trustee or such Paying Agent, before being required to make any such repayment, shall, at the expense of the Company cause to be published once, in a newspaper published in the English language, customarily published on each Business Day and of general circulation in the Borough of Manhattan, The City of New York, notice, to be prepared by the Company, that such money remains unclaimed and that, after a date specified therein, which will not be less than 30 calendar days from the date of such publication, any unclaimed balance of such money then remaining will be repaid to the Company.

SECTION 6.04. Payment of Taxes and Other Claims.

The Company will pay or discharge or cause to be paid or discharged, before the same shall become delinquent, (a) all taxes, assessments, and governmental charges levied or imposed upon the Company or any Subsidiary of the Company or upon the income, profits, or property of the Company or any Subsidiary of the Company, and (b) all lawful claims for labor, materials, and supplies, in each case with respect to either (a) or (b) which, if unpaid, might by law become a lien upon the property of the Company or any Subsidiary of the Company and might have a Material Adverse Effect; provided, however, that the Company will not be required to pay or discharge or cause to be paid or discharged any such tax, assessment, charge, or claim the amount, applicability, or validity of which is being contested in good faith by appropriate proceedings.

SECTION 6.05. Existence.

Subject to Article XI, the Company will, and will cause each of its Subsidiaries to, do or cause to be done all things necessary to preserve and keep in full force and effect its existence, rights (charter and statutory), and franchises; provided, however, that neither the Company nor any Subsidiary will be required to preserve any such existence (with respect to a Subsidiary other than a Subsidiary Gurantor), right or franchise if the Company determines that the preservation thereof is no longer desirable in the conduct of the business of the Company and that the loss thereof will not result in a Material Adverse Effect.

SECTION 6.06. Statement by Officers as to Default.

The Company will deliver to the Trustee, within 120 calendar days after the end of each fiscal year of the Company ending after the date hereof, an Officer's Certificate signed by the principal executive officer, principal financial officer, or principal accounting officer of the Company stating whether or not to the knowledge of such person after due inquiry the Company is in default in the performance and observance of any of the terms, provisions, and conditions of this Indenture (without regard to any period of grace or requirement of notice provided hereunder) and, if the Company is in default, specifying all such defaults and the nature and status thereof of which such person may have such knowledge. In addition, the Company will deliver to the Trustee, as soon as possible, and in any event within 10 days after the Company becomes aware of the occurrence of any uncured Event of Default or uncured Default, notice of such Event of Default or Default and the nature and status thereof to the extent known by the Company and the action that the Company proposes to take with respect thereto.

SECTION 6.07. Waiver of Certain Covenants.

The Company may omit in any particular instance to comply with any term, provision, or condition set forth in Sections 6.04 through 6.05, inclusive, and the provisions of any supplemental indenture specified in such supplemental indenture, with respect to the Securities of any series if the Holders of a majority in principal amount of the Outstanding Securities of such series shall, by Act of such Holders, either waive such compliance in such instance or generally waive compliance with such term, provision, or condition, but no such waiver will extend to or affect such term, provision, or condition except to the extent so expressly waived, and, until such waiver shall become effective, the obligations of the Company and the duties of the Trustee in respect of any such term, provision, or condition will remain in full force and effect.

SECTION 6.08. Calculation of Original Issue Discount.

The Company shall file with the Trustee promptly at the end of each calendar year to the extent applicable, (i) a written notice specifying the amount of original issue discount (including daily rates and accrual periods) accrued on Outstanding Securities as of the end of such year and (ii) such other specific information relating to such original issue discount as may then be relevant under the Internal Revenue Code of 1986, as amended from time to time; provided, however, that no notice shall be required hereunder in the event that there are no Outstanding Securities as of the end of said calendar year.

ARTICLE VII
Securities Holders' List and Reports by the Company and the Trustee

SECTION 7.01. Company to Furnish Trustee Names and Addresses of Holders.

The Company will furnish or cause to be furnished to the Trustee (a) semi-annually, not more than 15 calendar days after the applicable Regular Record Date, a list for each series of Securities, in such form as the Trustee may reasonably require, of the names and addresses of the Holders of Securities of such series as of such Regular Record Date and (b) at such other times as the Trustee may request in writing, within 30 calendar days after the receipt by the Company of any such request, a list of similar form and content as of a date not more than 15 calendar days prior to the time such list is furnished; excluding from any such list names and addresses received by the Trustee in its capacity as Security Registrar.

SECTION 7.02. Preservation of Information; Communication to Holders.

(a) The Trustee will preserve, in as current a form as is reasonably practicable, the names and addresses of Holders contained in the most recent list furnished to the Trustee as provided in Section 7.01 and the names and addresses of Holders received by the Trustee in its capacity as Security Registrar. The Trustee may destroy any list furnished to it as provided in Section 7.01 upon receipt of a new list so furnished.

(b) The rights of the Holders to communicate with other Holders with respect to their rights under this Indenture or under the Securities, and the corresponding rights and privileges of the Trustee, will be as provided by the Trust Indenture Act.

(c) Every Holder of Securities, by receiving and holding the same, agrees with the Company and the Trustee that neither the Company nor the Trustee nor any agent of either of them will be held accountable by reason of any disclosure of information as to names and addresses of Holders made pursuant to the Trust Indenture Act.

SECTION 7.03. Reports by Trustee.

(a) The Trustee will transmit to Holders such reports concerning the Trustee and its actions under this Indenture as may be required pursuant to the Trust Indenture Act at the

times and in the manner provided pursuant thereto. If required by Section 313(a) of the Trust Indenture Act, the Trustee shall, within sixty days after each April 15 following the date of this Indenture deliver to Holders a brief report, dated as of such April 15, which complies with the provisions of such Section 313(a).

(b) A copy of each such report will, at the time of such transmission to Holders, be filed by the Trustee with each stock exchange upon which any Securities are listed, with the Commission, and with the Company. The Company will promptly notify the Trustee in writing when any Securities are listed on any stock exchange or of any delisting thereof.

SECTION 7.04. Reports by Company.

(a) The Company will file with the Trustee and the Commission, and transmit to Holders, such information, documents, and other reports, and such summaries thereof, as may be required pursuant to the Trust Indenture Act at the times and in the manner provided pursuant to such Act; provided that any such information, documents, or reports required to be filed with the Commission pursuant to Section 13 or 15(d) of the Exchange Act shall be deemed to have been filed with the Trustee upon submission by the Company to the Commission of such information, documents or reports.

(b) Delivery of such reports, information and documents to the Trustee is for informational purposes only and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to conclusively rely exclusively on Officer's Certificates).

ARTICLE VIII
Default

SECTION 8.01. Event of Default.

(a) "Event of Default," wherever used herein with respect to Securities of any series, means any one of the following events (whatever the reason for such Event of Default and whether it may be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree, or order of any court or any order, rule, or regulation of any administrative or governmental body):

(i) default in the payment of any interest upon any Security of that series when it becomes due and payable, and continuance of such default for a period of 30 calendar days; provided, however, that if the Company is permitted by the terms of the Securities of the applicable series to defer the payment in question, the date on which such payment is due and payable shall be the date on which the Company is required to make payment following such deferral, if such deferral has been elected pursuant to the terms of the Securities;

(ii) default in the payment of the principal of (or premium, if any, on) any Security of that series when it becomes due and payable;

(iii) default in the making of any sinking fund payment when and as due by the terms of a Security of that series;

(iv) default in the performance, or breach, of any covenant or warranty of the Company in this Indenture (other than a covenant or warranty, a default in the performance or breach of which is elsewhere in this Section 8.01 specifically dealt with or which has expressly been included in this Indenture solely for the benefit of one or more series of Securities other than that series), and continuance of such default or breach for a period of 60 calendar days after there has been given, by registered or certified mail, to the Company by the Trustee or to the Company and the Trustee by the Holders of at least 25% in principal amount of the Outstanding Securities of that series a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a “Notice of Default” hereunder;

(v) any nonpayment at maturity or other default is made under any agreement or instrument relating to any other Indebtedness of the Company (the unpaid principal amount of which is not less than $50 million), and, in any such case, such default (A) continues beyond any period of grace provided with respect thereto and (B) results in such Indebtedness becoming due prior to its stated maturity or occurs at the final maturity of such Indebtedness; provided, however, that, subject to the provisions of Section 9.01 and 8.08, the Trustee will not be deemed to have knowledge of such nonpayment or other default unless either (1) a Responsible Officer of the Trustee has actual knowledge of nonpayment or other default or (2) the Trustee has received written notice thereof from the Company, from any Holder, from the holder of any such Indebtedness or from the trustee under the agreement or instrument relating to such Indebtedness;

(vi) the entry by a court having jurisdiction in the premises of (A) a decree or order for relief in respect of the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary in an involuntary case or proceeding under any applicable Federal or state bankruptcy, insolvency, reorganization, or other similar law or (B) a decree or order adjudging the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary a bankrupt or insolvent, or approving as properly filed a petition seeking reorganization, arrangement, adjustment, or composition of or in respect of the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary under any applicable Federal or state law, or appointing a custodian, receiver, liquidator, assignee, trustee, sequestrator, or other similar official of the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary or of any substantial part of the property of the Company, such Subsidiary Guarantor, such Significant Subsidiary or such group of Subsidiaries, or ordering the winding up or liquidation of the affairs of the Company, such Subsidiary Guarantor, such Significant Subsidiary or such group of Subsidiaries, and the continuance of any such decree or order for relief or any such other decree or order unstayed and in effect for a period of 60 consecutive calendar days;

(vii) the commencement by the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary of a voluntary case or proceeding under any applicable Federal or state bankruptcy, insolvency, reorganization, or other similar law or of any other case or proceeding to be adjudicated a bankrupt or insolvent, or the consent by it to the entry of a decree or order for relief in respect of the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary in an involuntary case or proceeding under any applicable Federal or state bankruptcy, insolvency, reorganization, or other similar law or to the commencement of any bankruptcy or insolvency case or proceeding against it, or the filing by it of a petition or answer or consent seeking reorganization or relief with respect to the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary under any applicable Federal or state bankruptcy, insolvency, reorganization, or other similar law, or the consent by it to the filing of such petition or to the appointment of or taking possession by a custodian, receiver, liquidator, assignee, trustee, sequestrator, or other similar official of the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary or of any substantial part of the property of the Company, such Subsidiary Guarantor, such Significant Subsidiary or such group of Subsidiaries pursuant to any such law, or the making by it of an assignment for the benefit of creditors, or the admission by it in writing of its inability to pay its debts generally as they become due, or the taking of corporate action by the Company, any Subsidiary Guarantor, any Significant Subsidiary or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary in furtherance of any such action; or

(viii) any other Event of Default provided with respect to Securities of that series.

(b) If an Event of Default (other than an Event of Default arising under Section 8.01(a)(vi) or (vii)) with respect to Securities of any series at the time Outstanding occurs and is continuing, then in every case the Trustee or the Holders of not less than 25% in principal amount of the Outstanding Securities of that series may declare the principal amount (or, if any of the Securities of that series are Original Issue Discount Securities, such portion of the principal amount of such Securities as may be specified in the terms thereof) of all of the Securities of that series to be due and payable immediately, by a notice in writing to the Company (and to the Trustee if given by Holders), and upon any such declaration such principal amount (or specified amount) will become immediately due and payable. If an Event of Default under Section 8.01(a)(vi) or (vii) occurs, then the principal of, premium, if any, and accrued interest on the Securities shall become immediately due and payable without any declaration or other act on the part of the Trustee or any Holder.

(c) At any time after such a declaration of acceleration with respect to Securities of any series has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article VIII provided, the Holders of a majority in principal amount of the outstanding Securities of that series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if (i) the

Company has paid or deposited with the Trustee a sum sufficient to pay (A) all overdue interest on all Securities of that series, (B) the principal of (and premium, if any, on) any Securities of that series which have become due otherwise than by such declaration of acceleration and any interest thereon at the rate or rates prescribed therefor in such Securities, (C) to the extent that payment of such interest is lawful, interest upon overdue interest at the rate or rates prescribed therefor in such Securities, and (D) all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements, and advances of the Trustee and its agents and counsel and (ii) all Events of Default with respect to Securities of that series, other than the nonpayment of the principal of Securities of that series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 8.01(d). No such rescission will affect any subsequent default or impair any right consequent thereon.

(d) The Holders of a majority in principal amount of the Outstanding Securities of any series may on behalf of the Holders of all the Securities of such series waive any past default hereunder with respect to such series and its consequences, except a default (i) in the payment of the principal of or any premium or interest on any Security of such series or (ii) in respect of a covenant or provision hereof which under Article X cannot be modified or amended without the consent of the Holder of each Outstanding Security of such series affected. Upon any such waiver, such default will cease to exist, and any Event of Default arising therefrom will be deemed to have been cured, for every purpose of this Indenture, but no such waiver will extend to any subsequent or other default or impair any right consequent thereon.

SECTION 8.02. Covenant of Company to Pay to Trustee Whole Amount Due on Securities on Default in Payment of Interest or Principal; Suits for Enforcement by Trustee.

(a) The Company covenants that if (i) default is made in the payment of any interest on any Security when such interest becomes due and payable and such default continues for a period of 30 calendar days or (ii) default is made in the payment of the principal of (or premium, if any, on) any Security when it becomes due and payable, the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal and any premium and interest and, to the extent that payment of such interest will be legally enforceable, interest on any overdue principal and premium and on any overdue interest, at the rate or rates prescribed therefor in such Securities, and, in addition thereto, such further amount as will be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements, and advances of the Trustee and its agents and counsel.

(b) If an Event of Default with respect to Securities of any series occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities of such series by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

(c) In case of any judicial proceeding relative to the Company (or any other obliger upon the Securities, including any Subsidiary Guarantor), its property or its creditors, the Trustee will be entitled and empowered, by intervention in such proceeding or otherwise, to take

any and all actions authorized under the Trust Indenture Act in order to have claims of the Holders and the Trustee allowed in any such proceeding. In particular, the Trustee will be authorized to collect and receive any money or other property payable or deliverable on any such claims and to distribute the same, and any custodian, receiver, assignee, trustee, liquidator, sequestrator, or other similar official in any such judicial proceeding is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee consents to the making of such payments directly to the Holders, to pay to the Trustee any amount due it for the reasonable compensation, expenses, disbursements, and advances of the Trustee and its agents and counsel, and any other amounts due the Trustee under Section 9.06.

(d) No provision of this Indenture will be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment, or composition affecting the Securities or the rights of any Holder thereof or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding; provided, however, that the Trustee may, on behalf of the Holders, vote for the election of a trustee in bankruptcy or similar official and be a member of a creditors' or other similar committee.

(e) All rights of action and claims under this Indenture or the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee will be brought in its own name as trustee of an express trust, and any recovery of judgment will, after provision for the payment of the reasonable compensation, expenses, disbursements, and advances of the Trustee and its agents and counsel, be for the ratable benefit of the Holders of the Securities in respect of which such judgment has been recovered.

SECTION 8.03. Application of Money Collected by Trustee.

Any money collected by the Trustee pursuant to this Article VIII will be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money on account of principal or any premium or interest, upon presentation of the Securities and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

FIRST: To the payment of all amounts due the Trustee under Section 9.06;

SECOND: To the payment of the amounts then due and unpaid for principal of and any premium and interest on the Securities in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities for principal and any premium and interest, respectively; and

THIRD: To the Company.

SECTION 8.04. Limitation on Suits by Holders of Securities.

No Holder of any Security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless (a) such Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to the Securities of that series, (b) the Holders of not less than 25% in principal amount of the Outstanding Securities of that series shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder, (c) such Holder or Holders have offered to the Trustee indemnity or security reasonably satisfactory to the Trustee against the costs, expenses, and liabilities to be incurred in compliance with such request, (d) the Trustee for 60 calendar days after its receipt of such notice, request, and offer of indemnity has failed to institute any such proceeding, and (e) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in principal amount of the Outstanding Securities of that series, it being understood and intended that no one or more of such Holders will have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb, or prejudice the rights of any other of such Holders (it being understood that the Trustee does not have an affirmative duty to ascertain whether or not such actions or forbearances are unduly prejudicial to such Holders), or to obtain or to seek to obtain priority or preference over any other of such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all of such Holders.

SECTION 8.05. Rights and Remedies Cumulative; Delay or Omission in Exercise of Rights not a Waiver of Event of Default.

(a) Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost, or stolen Securities in the last paragraph of Section 2.07, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders is intended to be exclusive of any other right or remedy, and every right and remedy will, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, will not prevent the concurrent assertion or employment of any other appropriate right or remedy.

(b) No delay or omission of the Trustee or of any Holder of any Securities to exercise any right or remedy accruing upon any Event of Default will impair any such right or remedy or constitute a waiver of any such Event of Default or an acquiescence therein. Every right and remedy given by this Article VIII or by law to the Trustee or to the Holders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Holders, as the case may be.

SECTION 8.06. Rights of Holders of Majority in Principal Amount of Outstanding Securities to Direct Trustee.

The Holders of a majority in principal amount of the Outstanding Securities of any series will have the right to direct the time, method, and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred on the Trustee, with respect to the Securities of such series; provided that (a) such direction will not be in conflict with any rule of law or with this Indenture and (b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction.

SECTION 8.07. Requirement of an Undertaking to Pay Costs in Certain Suits Under the Indenture or Against the Trustee.

In any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken, suffered, or omitted by it as Trustee, a court may require any party litigant in such suit to file undertaking to pay the costs of such suit, and may assess costs, including attorney’s fees and expenses, against any such party litigant, in the manner and to the extent provided in the Trust Indenture Act; provided that neither this Section 8.07 nor the Trust Indenture Act will be deemed to authorize any court to require such an undertaking or to make such an assessment in any suit instituted by the Trustee, a suit by a Holder pursuant to Section 8.09 hereof, or a suit by Holders of more than 10% in aggregate principal amount of the then Outstanding Securities of the applicable series.

SECTION 8.08. Notice of Defaults.

The Trustee shall, within 90 days after the occurrence of a Default with respect to Securities of any series of which a Responsible Officer has actual knowledge mail to all Holders of such series as the names and addresses of such Holders appear upon the Note Register, notice of all Defaults actually known to a Responsible Officer, unless such Defaults shall have been cured or waived before the giving of such notice; provided that, except in the case of a Default in the payment of the principal of or accrued and unpaid interest on, any of the Securities of such series or a Default in the payment or delivery, as the case may be, of the consideration due upon conversion of the Securities of any such series that are convertible or exchangeable, the Trustee shall be protected in withholding such notice if and so long as it in good faith determines that the withholding of such notice is in the interests of the Holders of Securities of such series.

SECTION 8.09. Unconditional Right of Holders to Receive Principal, Premium, and Interest.

Notwithstanding any other provision in this Indenture, the Holder of any Security will have the right, which is absolute and unconditional, to receive payment of the principal of and any premium and (subject to Section 2.09 and 8.01(a)(i)) interest on such Security on the respective Stated Maturities expressed in such Security (or, in the case of redemption, on the Redemption Date) and to institute suit for the enforcement of any such payment, and such rights may not be impaired without the consent of such Holder.

SECTION 8.10. Restoration of Rights and Remedies.

If the Trustee or any Holder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, subject to any determination in such proceeding, the Company, the Trustee, and the Holders will be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders will continue as though no such proceeding had been instituted.

SECTION 8.11. Trustee May File Proofs of Claims.

The Trustee may file such proofs of claim and other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements, and advances of the Trustee, its agents and counsel) and the Holders allowed in any judicial proceeding relative to the Company or the Subsidiaries (or any other obligor upon the Securities), their creditors or their property and shall be entitled and empowered to collect and receive any monies or other property payable or deliverable on any such claim and to distribute the same, and any custodian in any such judicial proceedings is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Holders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements, and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee hereunder. Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof, or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

ARTICLE IX
Concerning the Trustee

SECTION 9.01. Certain Duties and Responsibilities.

(a) Except during the continuance of an Event of Default,

(1) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture, and no implied covenants or obligations shall be read into this Indenture against the Trustee; and

(2) in the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; but in the case of any such certificates or opinions which by any provision hereof are specifically required to be furnished to the Trustee, the Trustee shall be under a duty to examine the same to determine whether or not they conform to the requirements of this Indenture (but need not confirm or investigate the accuracy of mathematical calculations or other facts stated therein).

(b) In case an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, as a prudent person would exercise or use under the circumstances in the conduct of his or her own affairs.

(c) No provision of this Indenture shall be construed to relieve the Trustee from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that

(1) this Subsection shall not be construed to limit the effect of Subsection (a) of this Section;

(2) the Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it shall be proved that the Trustee was negligent in ascertaining the pertinent facts;

(3) the Trustee shall not be liable with respect to any action taken or omitted to be taken by it in good faith in accordance with the direction of the Holders of a majority in principal amount of the Outstanding Securities of any series, determined as provided in Sections 1.01, 8.06 and 14.11, relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture with respect to the Securities of such series, unless it shall be proved that the Trustee was negligent in following said directions; and

(4) no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers.

(d) Whether or not therein expressly so provided, every provision of this Indenture relating to the conduct or affecting the liability of or affording protection to the Trustee shall be subject to the provisions of this Section.

SECTION 9.02. Certain Rights of Trustee.

Subject to the provisions of Section 9.01:

(a) the Trustee may conclusively rely and will be protected in acting or refraining from acting upon, whether in its original or facsimile form, any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness, or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties;

(b) any request or direction of the Company mentioned herein will be sufficiently evidenced by a Company Request or Company Order and any resolution of the Board will be sufficiently evidenced by a Board Resolution;

(c) whenever in the administration of this Indenture the Trustee shall deem it desirable that a matter be proved or established prior to taking, suffering, or omitting any action hereunder, the Trustee (unless other evidence be herein specifically prescribed) may, in the absence of bad faith on its part, conclusively rely upon an Officer’s Certificate;

(d) the Trustee may consult with counsel of its selection and the advice of such counsel or any Opinion of Counsel will be full and complete authorization and protection in respect of any action taken, suffered, or omitted by it hereunder in good faith and in reliance thereon;

(e) the Trustee will be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Holders pursuant to this Indenture, unless such Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses, and liabilities which might be incurred by it in compliance with such request or direction;

(f) the Trustee will not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness, or other paper or document, but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit, and, if the Trustee shall determine to make such further inquiry or investigation, it will be entitled to examine the books, records, and premises of the Company, personally or by agent or attorney at the sole cost of the Company and shall incur no liability or additional liability of any kind by reason of such inquiry or investigation;

(g) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through agents, attorneys or independent contractors and the Trustee will not be responsible for any misconduct or negligence on the part of any agent, attorney or independent contractor appointed with due care by it hereunder;

(h) the Trustee shall not be liable for any action taken, suffered, or omitted to be taken by it in good faith and reasonably believed by it to be authorized or within the discretion or rights or powers conferred upon it by this Indenture;

(i) in no event shall the Trustee be responsible or liable for special, indirect, or consequential loss or damage of any kind whatsoever (including, but not limited to, loss of profit) irrespective of whether the Trustee has been advised of the likelihood of such loss or damage and regardless of the form of action;

(j) the Trustee shall not be deemed to have notice of any Default or Event of Default unless a Responsible Officer of the Trustee has actual knowledge thereof or unless written notice of any event which is in fact such a default is received by the Trustee at the Corporate Trust Office of the Trustee, and such notice references the Securities and this Indenture;

(k) the rights, privileges, protections, immunities and benefits given to the Trustee, including, without limitation, its right to be indemnified, are extended to, and shall be enforceable by, the Trustee in each of its capacities hereunder, and to each agent, custodian and other Person employed to act hereunder; and

(l) the Trustee may request that the Company deliver a certificate setting forth the names of individuals and/or titles of officers authorized at such time to take specified actions pursuant to this Indenture.

SECTION 9.03. Not Responsible for Recitals or Issuance of Securities.

The recitals contained herein and in the Securities, except the Trustee's certificates of authentication, may be taken as the statements of the Company, and neither the Trustee nor any Authenticating Agent assumes any responsibility for their correctness. The Trustee makes no representations as to the validity or sufficiency of this Indenture or of the Securities. The Trustee or any Authenticating Agent will not be accountable for the use or application by the Company of Securities or the proceeds thereof.

SECTION 9.04. May Hold Securities.

The Trustee, any Authenticating Agent, any Paying Agent, any Security Registrar, or any other agent of the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and, subject to Sections 9.07 and 9.12, may otherwise deal with the Company with the same rights it would have if it were not Trustee, Authenticating Agent, Paying Agent, Security Registrar, or such other agent; provided, however that any such ownership shall not relieve any of the Trustee, Authenticating Agent or Paying Agent of their duties, responsibilities or obligations in connection with their roles as such.

SECTION 9.05. Money Held in Trust.

Money held by the Trustee in trust hereunder need not be segregated from other funds except to the extent required herein or by law. The Trustee will be under no liability for interest on any money received by it hereunder except as otherwise agreed in writing with the Company.

SECTION 9.06. Compensation and Reimbursement.

The Company will (a) pay to the Trustee from time to time such compensation for all services rendered by it hereunder as the parties shall agree from time to time (which compensation will not be limited to any provision of law in regard to the compensation of a trustee of an express trust); (b) except as otherwise expressly provided herein, reimburse the Trustee upon its written request for all reasonable expenses, disbursements, and advances incurred or made by the Trustee in accordance with provision of this Indenture (including the reasonable compensation and the expenses and disbursements of agents and counsel), except any such expense, disbursement, or advance as may be attributable to its negligence or willful misconduct or negligence or willful misconduct of its agents or counsel; and (c) indemnify each of the Trustee and any predecessor Trustee and their agents for, and hold them harmless against, any and all loss, liability, claim, damage or expense, including taxes (other than taxes based on the income of the Trustee) incurred without negligence or willful misconduct on its part arising out of or in connection with the acceptance or administration of the trust or trusts hereunder, including the costs and expenses of defending itself against any claim (whether asserted by the Company, any Holder or any other Person) or liability in connection with the exercise or performance of any of its powers or duties hereunder or in connection with enforcing the provisions of this Section.

The Trustee shall have a lien prior to the Securities as to all property and funds held by it hereunder for any amount owing it or any predecessor Trustee pursuant to this Section 9.06, except with respect to funds held in trust for the benefit of the Holders of particular Securities.

When the Trustee incurs expenses or renders services in connection with an Event of Default specified in Section 8.01(vi) or Section 8.01(vii), the expenses (including the reasonable charges and expenses of its counsel) and the compensation for the services are intended to constitute expenses of administration under any applicable Federal or state bankruptcy, insolvency or other similar law.

The provisions of this Section shall survive the termination of this Indenture.

SECTION 9.07. Disqualification; Conflicting Interests.

If the Trustee has or acquires a conflicting interest within the meaning of the Trust Indenture Act, the Trustee will either eliminate such interest or resign, to the extent and in the manner provided by, and subject to the provisions of, the Trust Indenture Act and this Indenture.

SECTION 9.08. Corporate Trustee Required; Eligibility.

There will at all times be one or more Trustees hereunder with respect to the Securities of each series, at least one of which will be a Person that is eligible pursuant to the Trust Indenture Act to act as such and has a combined capital and surplus of at least $50,000,000 and its Corporate Trust Office or principal office in New York City, or any other major city in the United States that is acceptable to the Company. If such Person publishes reports of condition at least annually, pursuant to law or to the requirements of a supervising or examining state or Federal authority, then for the purposes of this Section 9.08, the combined capital and surplus of such Person shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time the Trustee shall cease to be eligible in accordance with the provisions of this Section 9.08, it will resign immediately in the manner and with the effect hereinafter specified in this Article IX.

SECTION 9.09. Resignation and Removal; Appointment of Successor.

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article IX will become effective until the acceptance of appointment by the successor Trustee in accordance with the applicable requirements of Section 9.10.

(b) The Trustee may resign at any time with respect to the Securities of one or more series by giving written notice thereof to the Company. If the instrument of acceptance by a successor Trustee required by Section 9.10 shall not have been delivered to the Trustee within 30 calendar days after the giving of such notice of resignation, the resigning Trustee may, at the expense of the Company, petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to the Securities of such series.

(c) The Trustee may be removed at any time with respect to the Securities of any series by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series, delivered to the Trustee and to the Company. If the instrument of acceptance by a successor Trustee required by Section 9.10 shall not have been delivered to the Trustee within 30

calendar days after the giving of such notice of removal, the Trustee being removed may, at the expense of the Company, petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to the Securities of such series.

(d) If, at any time, (i) the Trustee fails to comply with Section 9.07 after written request therefor by the Company or by any Holder of a Security, (ii) the Trustee ceases to be eligible under Section 9.08 and fails to resign after written request therefor by the Company or by any such Holder, or (iii) the Trustee becomes incapable of acting or is adjudged a bankrupt or insolvent or a receiver of the Trustee or of its property is appointed or any public officer takes charge or control of the Trustee or of its property or affairs for the purpose of rehabilitation, conservation, or liquidation, then, in any such case, (A) the Company by a Board Resolution may remove the Trustee with respect to all Securities or (B) subject to Section 8.07, any Holder of a Security, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee with respect to all Securities and the appointment of a successor Trustee or Trustees.

(e) If the Trustee resigns, is removed, or becomes incapable of acting, or if a vacancy occurs in the office of Trustee for any reason, with respect to the Securities of one or more series, the Company by a Board Resolution will promptly appoint a successor Trustee or Trustees with respect to the Securities of that or those series (it being understood that any such successor Trustee may be appointed with respect to the Securities of one or more or all of such series and that at any time there will be only one Trustee with respect to the Securities of any particular series) and will comply with the applicable requirements of Section 9.10. If, within one year after such resignation, removal, or incapability or the occurrence of such vacancy, a successor Trustee with respect to the Securities of any series is appointed by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series delivered to the Company and the retiring Trustee, the successor Trustee so appointed will, forthwith upon its acceptance of such appointment in accordance with the applicable requirements of Section 9.10, become the successor Trustee with respect to the Securities of such series and to that extent supersede the successor Trustee appointed by the Company. If no successor Trustee with respect to the Securities of any series shall have been so appointed by the Company or the Holders and accepted appointment in the manner required by Section 9.10, any Holder of a Security of such series may, on behalf of himself and all others similarly situated, at the expense of the Company, petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to the Securities of such series.

(f) The Company will give notice of each resignation and each removal of the Trustee with respect to the Securities of any series and each appointment of a successor Trustee with respect to the Securities of any series to all holders of Securities of such series in the manner provided in Section 13.03. Each notice will include the name of the successor Trustee with respect to the Securities of such series and the address of its Corporate Trust Office.

SECTION 9.10. Acceptance of Appointment by Successor.

(a) In case of the appointment hereunder of a successor Trustee with respect to all Securities, every such successor Trustee so appointed will execute, acknowledge, and deliver to the Company and to the retiring Trustee an instrument accepting such appointment, and

thereupon the resignation or removal of the retiring Trustee will become effective and such successor Trustee, without any further act, deed, or conveyance, will become vested with all the rights, powers, trusts, and duties of the retiring Trustee, but, on the request of the Company or the successor Trustee, such retiring Trustee will, upon payment of its charges, execute and deliver an instrument transferring to such successor Trustee all the rights, powers, and duties of the retiring Trustee and will duly assign, transfer, and deliver to such Trustee all property and money held by such retiring Trustee hereunder.

(b) In case of the appointment hereunder of a successor Trustee with respect to the Securities of one or more (but not all) series, the Company, the retiring Trustee, and each successor Trustee with respect to the Securities of one or more series will execute and deliver an indenture supplemental hereto wherein such successor Trustee will accept such appointment and which (i) will contain such provisions as may be necessary or desirable to transfer and confirm to, and to vest in, each successor Trustee all the rights, powers, trusts, and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates, (ii) if the retiring Trustee is not retiring with respect to all Securities, will contain such provisions as may be deemed necessary or desirable to confirm that all the rights, powers, trusts, and duties of the retiring Trustee with respect to the Securities of that or those series as to which the retiring Trustee is not retiring will continue to be vested in the retiring Trustee, and (iii) will add to or change any of the provisions of this Indenture as may be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee, it being understood that nothing herein or in such supplemental indenture will constitute such Trustees co-trustees of the same trust and that each such Trustee will be trustee of a trust or trusts hereunder separate and apart from any trust or trusts hereunder administered by any other such Trustees and upon the execution and delivery of such supplemental indenture the resignation or removal of the retiring Trustee will become effective to the extent provided therein and each such successor Trustee, without any further act, deed, or conveyance, will become vested with all the rights, powers, trusts, and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates; but on request of the Company or any successor Trustee, such retiring Trustee will duly assign, transfer, and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder with respect to the Securities of that or those series to which the appointment of such successor Trustee relates.

(c) Upon request of any such successor Trustee, the Company will execute any and all instruments for more fully and certainly vesting in and confirming to such successor Trustee all applicable rights, powers, and trusts referred to in the preceding paragraphs of this Section 9.10.

(d) No successor Trustee will accept its appointment unless at the time of such acceptance such successor Trustee is qualified and eligible under this Article IX.

SECTION 9.11. Merger, Conversion, Consolidation, or Succession to Business.

Any corporation into which the Trustee may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion, or consolidation to which the Trustee may be a party, or any corporation succeeding to all or

substantially all the corporate trust business of the Trustee, will be the successor of the Trustee hereunder; provided that such corporation is otherwise qualified and eligible under this Article IX, without the execution or filing of any paper or any further act on the part of any of the parties hereto. In case any Securities shall have been authenticated, but not delivered, by the Trustee then in office, any successor by merger, conversion, or consolidation to such authenticating Trustee may adopt such authentication and deliver the Securities so authenticated with the same effect as if such successor Trustee had itself authenticated such Securities.

SECTION 9.12. Preferential Collection of Claims Against Company.

If and when the Trustee is or becomes a creditor of the Company (or any other obligor upon the Securities), the Trustee will be subject to the provisions of the Trust Indenture Act regarding the collection of claims against the Company (or any such other obligor).

SECTION 9.13. Appointment of Authenticating Agent.

(a) The Trustee may appoint an Authenticating Agent or Agents with respect to one or more series of Securities which will be authorized to act on behalf of the Trustee to authenticate Securities of such series issued upon original issue and upon exchange, registration of transfer, or partial redemption thereof or pursuant to Section 2.07, and Securities so authenticated will be entitled to the benefits of this Indenture and will be valid and obligatory for all purposes as if authenticated by the Trustee hereunder. Wherever reference is made in this Indenture to the authentication and delivery of Securities by the Trustee or the Trustee's certificate of authentication, such reference will be deemed to include authentication and delivery on behalf of the Trustee by an Authenticating Agent and a certificate of authentication executed on behalf of the Trustee by an Authenticating Agent. Each Authenticating Agent shall be acceptable to the Company and shall at all times be a corporation organized and doing business under the laws of the United States of America, any state thereof, or the District of Columbia, authorized under such laws to act as Authenticating Agent, having a combined capital and surplus of not less than $50,000,000 and subject to supervision or examination by Federal or state authority. If such Authenticating Agent publishes reports of condition at least annually, pursuant to law or to the requirements of said supervising or examining authority, then for the purposes of this Section 9.13, the combined capital and surplus of such Authenticating Agent will be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time an Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section 9.13, such Authenticating Agent will resign immediately in the manner and with the effect specified in this Section 9.13.

(b) Any corporation into which an Authenticating Agent may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion, or consolidation to which such Authenticating Agent may be a party, or any corporation succeeding to all or substantially all the corporate agency or corporate trust business of an Authenticating Agent, will continue to be an Authenticating Agent; provided that such corporation is otherwise eligible under this Section 9.13, without the execution or filing of any paper or any further act on the part of the Trustee or the Authenticating Agent.

(c) An Authenticating Agent may resign at any time by giving written notice thereof to the Trustee and to the Company. The Trustee may at any time terminate the agency of an Authenticating Agent by giving written notice thereof to such Authenticating Agent and to the Company. Upon receiving such a notice of resignation or upon such a termination, or in case at any time such Authenticating Agent shall cease to be eligible in accordance with the provisions this Section 9.13, the Trustee may appoint a successor Authenticating Agent which shall be acceptable to the Company and will mail written notice of such appointment by first-class mail, postage prepaid, to all Holders of Securities of the series with respect to which such Authenticating Agent will serve, as their names and addresses appear in the Security Register. Any successor Authenticating Agent upon acceptance of its appointment hereunder will become vested with all the rights, powers, and duties of its predecessor hereunder, with like effect as if originally named as an Authenticating Agent. No successor Authenticating Agent will be appointed unless eligible under the provisions of this Section 9.13.

(d) The Company agrees to pay to each Authenticating Agent from time to time reasonable compensation for its services under this Section 9.13.

(e) If an appointment with respect to one or more series of Securities is made pursuant to this Section 9.13, the Securities of such series may have endorsed thereon, in addition to the Trustee's certificate of authentication, an alternative form of certificate of authentication in the following form:

This is one of the Securities of the series designated therein referred to in the within mentioned Indenture.

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,
as Trustee

by ______________________________
Authenticating Agent

by ______________________________
Authorized Signatory

Dated:

SECTION 9.14. Trustee's Application for Instructions from the Company.

Any application by the Trustee for written instructions from the Company may, at the option of the Trustee, set forth in writing any action proposed to be taken or omitted by the Trustee under this Indenture and the date on and/or after which such action shall be taken or such omission shall be effective. The Trustee shall not be liable for any action taken by, or omission of, the Trustee in accordance with a proposal included in such application on or after the date specified in such application (which date shall not be less than three Business Days after the date any officer of the Company actually receives such application, unless any such officer shall have consented in writing to any earlier date) unless prior to taking any such action (or the effective date in the case of an omission), the Trustee shall have received written instructions in response to such application specifying the action to be taken or omitted.

ARTICLE X
Supplemental Indentures and Certain Actions

SECTION 10.01. Purposes for Which Supplemental Indentures May Be Entered Into Without Consent of Holders.

Without the consent of or notice to any Holders, the Company, when authorized by a Board Resolution, and the Trustee, at any time and from time to time, may enter into one or more indentures supplemental hereto, in form satisfactory to the Trustee, for any of the following purposes:

(a) to evidence the succession of another Person to the Company and the assumption by any such successor of the covenants of the Company herein and in the Securities, all to the extent otherwise permitted hereunder;

(b) to add to the covenants of the Company for the benefit of the Holders of all or any series of Securities (and if such covenants are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included solely for the benefit of such series) or to surrender any right or power herein conferred upon the Company;

(c) to add any additional Events of Default;

(d) to add any Subsidiary as a Subsidiary Guarantor;

(e) to add to or change any of the provisions of this Indenture to such extent as may be necessary to permit or facilitate the issuance of Securities in bearer form, registrable or not registrable as to principal, and with or without interest coupons, or to permit or facilitate the issuance of Securities in uncertificated form;

(f) to add to, change, or eliminate any of the provisions of this Indenture in respect of one or more series of Securities, provided that any such addition, change, or elimination (i) will neither (A) apply to any Security of any series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (B) modify adversely the rights of the Holder of any such Security with respect to such provision or (ii) will become effective only when there is no such Security Outstanding of any series created prior to the execution of such supplemental indenture which is entitled to the benefit of such provision;

(g) to release a Subsidiary Guarantor which, in accordance with the terms of this Indenture, ceases to be liable in respect of its Subsidiary Guarantee;

(h) to establish the form or terms of Securities of any series as permitted by Sections 2.01 and 2.02;

(i) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more series and to add to or change any of the provisions of this Indenture as may be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee, pursuant to the requirements of Section 9.10; or

(j) to cure any ambiguity, to correct or supplement any provision herein which may be defective or inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Indenture; provided that such action pursuant to this clause (j) will not adversely affect the interests of the Holders of Securities of any series in any material respect.

SECTION 10.02. Modification of Indenture with Consent of Holders of at Least a Majority in Principal Amount of Outstanding Securities.

(a) With the consent of the Holders of a majority in principal amount of the Outstanding Securities of each series affected by such supplemental indenture (including consents obtained in connection with a purchase of, or tender offer or exchange offer for, any such Securities), by Act of said Holders delivered to the Company and the Trustee, the Company, when authorized by a Board Resolution, and the Trustee may enter into an indenture or indentures supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of modifying in any manner the rights of the Holders of Securities of such series under this Indenture; provided, however that no such supplemental indenture will, without the consent of the Holder of each Outstanding Security affected thereby:

(i) change the Stated Maturity of the principal of, or any installment of principal of or interest on, any Security, or reduce the principal amount thereof or the rate of interest thereon or any premium payable upon the redemption thereof, or reduce the amount of the principal of an Original Issue Discount Security that would be due and payable upon a declaration of acceleration of the Maturity thereof pursuant to Sections 8.01(b), or change the coin or currency in which any Security or any premium or interest thereon is payable, or impair the right to institute suit for the enforcement of any such payment on or after the Stated Maturity thereof (or, in the case of redemption, on or after the Redemption Date);

(ii) reduce the percentage in principal amount of the Outstanding Securities of any series, the consent of the Holders of which is required for any such supplemental indenture, or the consent of the Holders of which is required for any waiver (of compliance with certain provisions of this Indenture or certain defaults hereunder and their consequences) provided for in this Indenture; or

(iii) modify any of the provisions of this Section 10.02, Section 8.01(d) or Section 6.09, except to increase the percentage in principal amount of Holders required under any

such Section or to provide that certain other provisions of this Indenture cannot be modified or waived without the consent of the Holder of each Outstanding Security affected thereby; provided, however that this clause (iii) will not be deemed to require the consent of any Holder with respect to changes in the references to "the Trustee" and concomitant changes in this Section 10.02 and Section 6.09, or the deletion of this proviso, in accordance with the requirements of Sections 9.10 and 10.01(g).

(b) A supplemental indenture which changes or eliminates any covenant or other provision of this Indenture which has expressly been included solely for the benefit of one or more particular series of Securities, or which modifies the rights of the Holders of Securities of such series with respect to such covenant or other provision, will be deemed not to affect the rights under this Indenture of the Holders of Securities of any other series.

(c) It will not be necessary for any Act of Holders under this Section 10.02 to approve the particular form of any proposed supplemental indenture, but it will be sufficient if such Act approves the substance thereof.

SECTION 10.03. Execution of Supplemental Indentures.

In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article X or the modifications thereby of the trusts created by this Indenture, the Trustee will receive, and (subject to Section 9.01) will be fully protected in relying upon, an Officer's Certificate and an Opinion of Counsel stating that the execution of such supplemental indenture is authorized or permitted by this Indenture. The Trustee may, but will not be obligated to, enter into any such supplemental indenture which affects the Trustee's own rights, duties, or immunities under this Indenture or otherwise.

SECTION 10.04. Effect of Supplemental Indentures.

Upon the execution of any supplemental indenture under this Article X, this Indenture will be modified in accordance therewith, and such supplemental indenture will form a part of this Indenture for all purposes; and every Holder of Securities theretofore or thereafter authenticated and delivered hereunder will be bound thereby.

SECTION 10.05. Conformity with Trust Indenture Act.

Every supplemental indenture executed pursuant to this Article X will conform to the requirements of the Trust Indenture Act.

SECTION 10.06. Reference in Securities to Supplemental Indentures.

Securities of any series authenticated and delivered after the execution of any supplemental indenture pursuant to this Article X may, and will if required by the Trustee, bear a notation in form approved by the Trustee as to any matter provided for in such supplemental indenture. If the Company shall so determine, new Securities of any series so modified as to conform, in the opinion of the Trustee and the Company, to any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities of such series.

ARTICLE XI
Consolidation, Merger, Sale, or Transfer

SECTION 11.01. Consolidations and Mergers of Company and Sales Permitted Only on Certain Terms.

(a) The Company shall not consolidate with or merge with or into any other Person, or transfer (by lease, assignment, sale, or otherwise) all or substantially all of its properties and assets to another Person unless (i) either (A) the Company shall be the continuing or surviving Person in such a consolidation or merger or (B) the Person (if other than the Company) formed by such consolidation or into which the Company is merged or to which all or substantially all of the properties and assets of the Company are transferred (the Company or such other Person being referred to as the "Surviving Person") shall be a corporation organized and validly existing under the laws of the United States, any state thereof, or the District of Columbia, and shall expressly assume, by an indenture supplement, all the obligations of the Company under the Securities and this Indenture, (ii) immediately after the transaction and the incurrence or anticipated incurrence of any Indebtedness to be incurred in connection therewith, no Event of Default will exist, and (iii) an Officer's Certificate has been delivered to the Trustee to the effect that the conditions set forth in the preceding clauses (i) and (ii) have been satisfied and an Opinion of Counsel (from a counsel who shall not be an employee of the Company) has been delivered to the Trustee to the effect that the conditions set forth in the preceding clause (i) have been satisfied.

(b) In case of any such consolidation, merger or transfer (other than a lease) the predecessor entity shall be relieved of all obligations and covenants under this Indenture and the Securities only upon the assumption by the successor entity, by supplemental indenture, executed and delivered to the Trustee and satisfactory in form to the Trustee, of the due and punctual payment of the principal of, premium, if any, and interest on all of the Securities of all series outstanding and the due and punctual performance of all of the covenants and conditions of this Indenture or established with respect to each series of the Securities pursuant to Section 2.02 to be performed by the Company with respect to each series, such that the Surviving Person shall succeed to and be substituted for and may exercise every right and power of the Company under this Indenture with the same effect as if it had been named as the Company herein.

(c) In case of any such consolidation, merger, or transfer such changes in phraseology and form (but not in substance) may be made in the Securities thereafter to be issued as may be appropriate.

ARTICLE XII
Satisfaction and Discharge of Indenture

SECTION 12.01. Satisfaction and Discharge of Indenture.

This Indenture will upon a Company Request cease to be of further effect (except as to any surviving rights of registration of transfer or exchange of Securities herein expressly provided for), and the Trustee, at the expense of the Company, will execute proper instruments acknowledging satisfaction and discharge of this Indenture, when: (a) either (i) all Securities

theretofore authenticated and delivered (other than (A) Securities which have been destroyed, lost, or stolen and which have been replaced or paid as provided in Section 2.07 and (B) Securities for the payment of which money has theretofore been deposited in trust or segregated and held in trust by the Company and thereafter repaid to the Company or discharged from such trust, as provided in Section 6.03) have been delivered to the Trustee for cancellation or (ii) all such Securities not theretofore delivered to the Trustee for cancellation (A) have become due and payable, (B) will become due and payable at their Stated Maturity within one year, or (C) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company, and the Company, in the case of clause (A), (B), or (C) above, has deposited or caused to be deposited with the Trustee as trust funds in trust for such purpose an amount sufficient to pay and discharge the entire indebtedness on such Securities not theretofore delivered to the Trustee for cancellation, for principal and any premium and interest to the date of such deposit (in the case of Securities which have become due and payable) or to the Stated Maturity or Redemption Date, as the case may be; (b) the Company has paid or caused to be paid all other sums payable hereunder by the Company; and (c) the Company has delivered to the Trustee an Officer's Certificate and an Opinion of Counsel stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture have been satisfied. Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 9.06, the obligations of the Company to any Authenticating Agent under Section 9.13, and, if money shall have been deposited with the Trustee pursuant to subclause (ii) of clause (a) of this Section 12.01, the obligations of the Trustee under Sections 6.03(e) and 12.02, will survive.

SECTION 12.02. Application of Trust Money.

Subject to provisions of Section 6.03(e), all money deposited with the Trustee pursuant to Section 12.01 will be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (including the Company acting as its own Paying Agent) as the Trustee may determine, to the Persons entitled thereto, of the principal and any premium and interest for whose payment such money has been deposited with the Trustee.

ARTICLE XIII
Subsidiary Guarantees

SECTION 13.01. Subsidiary Guarantees.

(a) If so provided in a Board Resolution, supplemental indenture hereto or Officer's Certificate with respect to a series of Securities, subject to this Article XIII, each Subsidiary Guarantor hereby unconditionally and irrevocably guarantees, jointly and severally, to each Holder and to the Trustee and its successors and assigns the full and punctual payment of principal of and interest on such series of Securities when due, whether at maturity, by acceleration, by redemption or otherwise, and all other monetary obligations of the Company under this Indenture and such series of Securities (all the foregoing being hereinafter collectively called the "Subsidiary Guarantor Obligations"). Each Subsidiary Guarantor further agrees that the Subsidiary Guarantor Obligations may be extended or renewed, in whole or in part, without notice or further assent from such Subsidiary Guarantor and that such Subsidiary Guarantor will remain bound under this Article XIII notwithstanding any extension or renewal of any Subsidiary Guarantor Obligation.

(b) Each of the applicable Subsidiary Guarantors agrees to (1) waive presentation to, demand of, payment from and protest to the Company of any of the Subsidiary Guarantor Obligations and also shall waive notice of protest for nonpayment and (2) waive notice of any default under the Securities or the Subsidiary Guarantor Obligations. The obligations of each Subsidiary Guarantor hereunder is intended to be a general, unsecured, senior obligation of each of the Subsidiary Guarantors and will rank *pari passu* in right of payment with all unsecured debt of such Guarantor that is not, by its terms, expressly subordinated in right of payment to the Subsidiary Guarantee and shall not be affected by (a) the failure of any Holder or the Trustee to assert any claim or demand or to enforce any right or remedy against the Company or any other Person under this Indenture, such Securities or any other agreement or otherwise; (b) any extension or renewal of any thereof; (c) the release of any security held by any Holder or the Trustee for the Subsidiary Guarantor Obligations or any of them; (d) the failure of any Holder or the Trustee to exercise any right or remedy against any other guarantor of the Subsidiary Guarantor Obligations; or (e) except as set forth in Section 13.06, any change in the ownership of such Subsidiary Guarantor.

(c) Each Subsidiary Guarantor agrees that its Subsidiary Guarantee constitutes a guarantee of payment, performance and compliance when due (and not a guarantee of collection) and will waive any right to require that any resort be had by any Holder or the Trustee to any security held for payment of the Subsidiary Guarantor Obligations.

(d) Except as expressly set forth in Sections 13.02 and 13.06 or a Board Resolution, supplemental indenture hereto or Officer’s Certificate with respect to a series of Securities, the obligations of each Subsidiary Guarantor so provided for shall not be subject to any reduction, limitation, impairment or termination for any reason, including any claim of waiver, release, surrender, alteration or compromise, and shall not be subject to any defense of setoff, counterclaim, recoupment or termination whatsoever or by reason of the invalidity, illegality or unenforceability of the Subsidiary Guarantor Obligations or otherwise. Without limiting the generality of the foregoing, the obligations of each Subsidiary Guarantor if so provided shall not be discharged or impaired or otherwise affected by the failure of any Holder or the Trustee to assert any claim or demand or to enforce any remedy under this Indenture, such series of Securities or any other agreement, by any waiver or modification of any thereof, by any default, failure or delay, willful or otherwise, in the performance of the obligations, or by any other act or thing or omission or delay to do any other act or thing which may or might in any manner or to any extent vary the risk of such Subsidiary Guarantor or would otherwise operate as a discharge of such Subsidiary Guarantor as a matter of law or equity.

(e) Each Subsidiary Guarantor agrees that its Subsidiary Guarantee shall continue to be effective or be reinstated, as the case may be, if at any time payment, or any part thereof, of principal of or interest on any Subsidiary Guarantor Obligation is rescinded or must otherwise be restored by any Holder or the Trustee upon the bankruptcy or reorganization of the Company or otherwise.

(f) In furtherance of the foregoing and not in limitation of any other right which any Holder or the Trustee has at law or in equity against any Subsidiary Guarantor by virtue hereof, upon the failure of the Company to pay the principal of or interest on any Subsidiary Guarantor Obligation when and as the same shall become due, whether at maturity, by acceleration, by redemption or otherwise, or to perform or comply with any other Subsidiary Guarantor Obligation, each Subsidiary Guarantor will promise to and shall, upon receipt of written demand by the Trustee, forthwith pay, or cause to be paid, in cash, to the Holders or the Trustee an amount equal to the sum of the unpaid amount of such Subsidiary Guarantor Obligations.

(g) Each Subsidiary Guarantor agrees that it shall not be entitled to any right of subrogation in respect of any Subsidiary Guarantor Obligations guaranteed hereby until payment in full of all Subsidiary Guarantor Obligations and all obligations to which the Subsidiary Guarantor Obligations are subordinated, as provided by the applicable Board Resolution, supplemental indenture or Officers' Certificate. Each such Subsidiary Guarantor further agrees that, as between it, on the one hand, and the Holders and the Trustee, on the other hand, (x) the maturity of the Subsidiary Guarantor Obligations guaranteed hereby may be accelerated as provided in Article VIII for the purposes of such Subsidiary Guarantor's Subsidiary Guarantee herein, and (y) in the event of any declaration of acceleration of such Subsidiary Guarantor Obligations as provided in Article VIII, such Subsidiary Guarantor Obligations (whether or not due and payable) shall forthwith become due and payable by such Subsidiary Guarantor for the purposes of this Section 13.01.

(h) Each Subsidiary Guarantor agrees to pay any and all costs and expenses (including reasonable attorneys' fees) incurred by the Trustee or any Holder in enforcing any rights under this Article XIII.

(i) In addition to the requirement of a Board Resolution, supplemental indenture or Officers' Certificate providing for the Subsidiary Guarantee with respect to a particular series of Securities, the Subsidiary Guarantee set forth in this Section 13.01 shall not be valid or become obligatory for any purpose with respect to such series of Securities until the certificate of authentication on such Securities shall have been signed by or on behalf of the Trustee.

SECTION 13.02. Limitation on Liability.

(a) Any term or provision of this Indenture to the contrary notwithstanding, the maximum aggregate amount of the Subsidiary Guarantor Obligations to be guaranteed by any Subsidiary Guarantor shall not exceed the maximum amount that can be guaranteed without rendering this Indenture, as it relates to such Subsidiary Guarantor, or the applicable Board Resolution, supplemental indenture or Officers' Certificate, voidable under applicable law relating to fraudulent conveyance or fraudulent transfer or similar laws affecting the rights of creditors generally.

(b) Each Subsidiary Guarantor that makes a payment under its Subsidiary Guarantee will be entitled to a contribution from each other Subsidiary Guarantor so providing a Subsidiary Guarantee with respect to such Series of Securities in an amount equal to such other Subsidiary Guarantor's pro rata portion of such payment based on the respective net assets of all the Subsidiary Guarantors so providing a Subsidiary Guarantee with respect to such Series of Securities at the time of such payment determined in accordance with GAAP.

SECTION 13.03. Execution and Delivery of Subsidiary Guarantee.

(a) To further evidence the Subsidiary Guarantee set forth in Section 13.01, each of the Subsidiary Guarantors hereby agrees that a notation relating to such Subsidiary Guarantee, substantially in the form attached to Exhibit A hereto or to the form of Security for the applicable Securities, shall be endorsed on each Security entitled to the benefits of the Subsidiary Guarantee authenticated and delivered by the Trustee and executed by either manual or facsimile signature of an officer of such Subsidiary Guarantor, or in the case of a Subsidiary Guarantor that is a limited partnership, an officer of the general partner of each Subsidiary Guarantor. Each of the Subsidiary Guarantors hereby agrees that the Subsidiary Guarantee set forth in Section 13.01 shall remain in full force and effect notwithstanding any failure to endorse on each Security a notation relating to the Subsidiary Guarantee. If any officer of the Subsidiary Guarantor, or in the case of a Subsidiary Guarantor that is a limited partnership, any officer of the general partner of the Subsidiary Guarantor, whose signature is on this Indenture or a Security no longer holds that office at the time the Trustee authenticates such Security or at any time thereafter, the Subsidiary Guarantee of such Security shall be valid nevertheless. The delivery of any Security by the Trustee, after the authentication thereof hereunder, shall constitute due delivery of the Subsidiary Guarantee set forth in this Indenture on behalf of the Subsidiary Guarantors.

(b) The Trustee hereby accepts the trusts in this Indenture upon the terms and conditions herein set forth.

SECTION 13.04. Successors and Assigns.

This Article XIII shall be binding upon each Subsidiary Guarantor providing a Subsidiary Guarantee with respect to a series of Securities and its successors and assigns and shall inure to the benefit of the successors and assigns of the Trustee and the Holders and, in the event of any transfer or assignment of rights by any Holder or the Trustee, the rights and privileges conferred upon that party in this Indenture and in such series of Securities shall automatically extend to and be vested in such transferee or assignee, all subject to the terms and conditions of this Indenture.

SECTION 13.05. No Waiver.

Neither a failure nor a delay on the part of either the Trustee or the Holders in exercising any right, power or privilege under this Article XIII shall operate as a waiver thereof, nor shall a single or partial exercise thereof preclude any other or further exercise of any right, power or privilege. The rights, remedies and benefits of the Trustee and the Holders herein expressly specified are cumulative and not exclusive of any other rights, remedies or benefits which either may have under this Article XIII at law, in equity, by statute or otherwise.

SECTION 13.06. Modification.

No modification, amendment or waiver of any provision of this Article XIII, nor the consent to any departure by any Subsidiary Guarantor therefrom, shall in any event be

effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice to or demand on any Subsidiary Guarantor in any case shall entitle such Subsidiary Guarantor to any other or further notice or demand in the same, similar or other circumstances.

SECTION 13.07. Release of Subsidiary Guarantor.

Unless otherwise specified in the applicable Board Resolution, supplemental indenture or Officers' Certificate providing for a Subsidiary Guarantee with respect to a particular series of Securities, upon the sale or other disposition (including by way of consolidation or merger) of a Subsidiary Guarantor or the sale or disposition of all or substantially all the assets of such Subsidiary Guarantor (in each case other than a sale or disposition to the Company or an Affiliate of the Company) or at such other time as specified in the applicable Board Resolution, supplemental indenture or Officers' Certificate, such Subsidiary Guarantor shall be deemed released from all obligations under this Article XIII without any further action required on the part of the Trustee or any Holder. At the request of the Company, the Trustee shall execute and deliver an appropriate instrument evidencing such release.

SECTION 13.08. Mergers, Etc. of Subsidiary Guarantors.

Unless otherwise specified in the applicable Board Resolution, supplemental indenture or Officers' Certificate, providing for a Subsidiary Guarantee with respect to a particular series of Securities, the Company shall not permit any Subsidiary Guarantor to consolidate with or merge with or into, or sell, convey, assign, transfer or lease or otherwise dispose of, in one transaction or a series of transactions, all or substantially all of its assets to any Person unless: (1) except in the case of a Subsidiary Guarantor that has been disposed of in its entirety to another Person (other than to the Company or an Affiliate of the Company), whether through a merger, consolidation or sale of capital stock or assets, the resulting, surviving or transferee Person (if not such Subsidiary) shall be a corporation, limited liability company or partnership organized and existing under the laws of the United States of America, or any State thereof or the District of Columbia, and such corporation, limited liability company or partnership shall expressly assume, by a guaranty agreement or supplemental indenture, in a form satisfactory to the Trustee, all the obligations of such Subsidiary, if any, under its Subsidiary Guarantee of the Securities; (2) immediately after giving effect to such transaction or transactions on a pro forma basis, no Default shall have occurred and be continuing; and (3) the Company delivers to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that such consolidation, merger, sale, conveyance, assignment, transfer, lease or other disposition and such guaranty agreement, if any, complies with this Indenture.

ARTICLE XIV
Miscellaneous Provisions

SECTION 14.01. Successors and Assigns of Company Bound by Indenture.

All the covenants, stipulations, promises, and agreements in this Indenture contained by or on behalf of the Company will bind its successors and assigns, whether so expressed or not.

SECTION 14.02. Service of Required Notice to Trustee and Company.

(a) Any request, demand, authorization, direction, notice, consent, waiver, Act of Holders or other document provided or permitted by this Indenture to be made upon, given or furnished to, or filed with (a) the Trustee by any Holder or by the Company will be sufficient for every purpose hereunder if made, given, furnished, or filed in writing (including facsimile or electronic mail) to or with the Trustee at its Corporate Trust Office, Attention: Corporate Trust Administration or (b) the Company and any Subsidiary Guarantor by the Trustee or by any Holder will be sufficient for every purpose hereunder (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to the Company addressed to it at RTI International Metals, Inc., 1550 Coraopolis Heights Road, Fifth Floor, Pittsburgh, PA 15108-2973, Attention: General Counsel, or at any other address previously furnished in writing to the Trustee by the Company.

(b) In addition to the foregoing, the Trustee agrees to accept and act upon notice, instructions or directions pursuant to this Indenture sent by unsecured e-mail, facsimile transmission or other similar unsecured electronic methods; provided, however, that (a) the party providing such written instructions, subsequent to such transmission of written instructions, shall provide the originally executed instructions or directions to the Trustee in a timely manner, and (b) such originally executed instructions or directions shall be signed by an authorized representative of the party providing such instructions or directions. If the party elects to give the Trustee e-mail or facsimile instructions (or instructions by a similar electronic method) and the Trustee in its discretion elects to act upon such instructions, the Trustee's understanding of such instructions shall be deemed controlling. The Trustee shall not be liable for any losses, costs or expenses arising directly or indirectly from the Trustee's reliance upon and compliance with such instructions notwithstanding such instructions conflict or are inconsistent with a subsequent written instruction. The party providing electronic instructions agrees to assume all risks arising out of the use of such electronic methods to submit instructions and directions to the Trustee, including without limitation the risk of the Trustee acting on unauthorized instructions, and the risk or interception and misuse by third parties.

SECTION 14.03. Service of Required Notice to Holders; Waiver.

Where this Indenture provides for notice to Holders of any event, such notice will be sufficiently given (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to each Holder affected by such event, at his address as it appears in the Security Register, not later than the latest date (if any), and not earlier than the earliest date (if any), prescribed for the giving of such notice. In any case where notice to Holders is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder will affect the sufficiency of such notice with respect to other Holders. Where this Indenture provides for notice in any manner, such notice may be waived in writing by the Person entitled to receive such notice, either before or after the event, and such waiver will be the equivalent of such notice. Waivers of notice by Holders will be filed with the Trustee, but such filing will not be a condition precedent to the validity of any action taken in reliance upon such waiver. In case by reason of the suspension of regular mail service or by reason of any other cause it will be impracticable to give such notice by mail, then such notification as may be made with the approval of the Trustee will constitute a sufficient notification for every purpose hereunder.

SECTION 14.04. Indenture and Securities to be Construed in Accordance with the Laws of the State of New York; WAIVER OF JURY TRIAL.

This Indenture and the Securities will be deemed to be a contract made under the laws of the State of New York, and for all purposes will be construed in accordance with the laws of said State without giving effect to principles of conflicts of laws of such State.

EACH OF THE COMPANY, ANY SUBSIDIARY GUARANTOR AND THE TRUSTEE HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THE INDENTURE, THE NOTES OR THE TRANSACTION CONTEMPLATED HEREBY.

SECTION 14.05. Compliance Certificates and Opinions.

Upon any application or demand by the Company to the Trustee to take any action under any of the provisions of this Indenture, the Trustee may request that the Company furnish to the Trustee an Officer's Certificate stating that all conditions precedent provided for in this Indenture relating to the proposed action have been complied with, or an Opinion of Counsel stating that in the opinion of such counsel all such conditions precedent have been complied with, except that in the case of any such application or demand as to which the furnishing of such document is specifically required by any provision of this Indenture relating to such particular application or demand, no additional certificate or opinion need be furnished.

Each certificate or opinion provided for in this Indenture and delivered to the Trustee with respect to compliance with a condition or covenant provided for in this Indenture shall include: (1) a statement that the person making such certificate or opinion has read such covenant or condition; (2) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based; (3) a statement that, in the opinion of such person, he or she has made such examination or investigation as is necessary to enable him or her to express an informed opinion as to whether or not such covenant or condition has been complied with; and (4) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with.

SECTION 14.06. Form of Documents Delivered to Trustee.

In any case where several matters are required to be certified by, or covered by an opinion of, any specified Person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such Person, or that they be so certified or covered by only one document, but one such Person may certify or give an opinion with respect to some matters and one or more other such Persons as to other matters, and any such Person may certify or give an opinion as to such matters in one or several documents. Where any Person is required to make, give, or execute two or more applications, requests, consents, certificates, statements, opinions, or other instruments under this Indenture, they may, but need not, be consolidated and form one instrument.

SECTION 14.07. Payments Due on Non-Business Days.

In any case where any Interest Payment Date, Redemption Date, or Stated Maturity of any Security shall not be a Business Day at any Place of Payment, then (notwithstanding any other provision of this Indenture or of the Securities (other than a provision of the Securities of any series which specifically states that such provision will apply in lieu of this Section 14.07)) payment of interest or principal (and premium, if any) need not be made at such Place of Payment on such date, but may be made on the next succeeding Business Day at such Place of Payment with the same force and effect as if made on the Interest Payment Date or Redemption Date, or at the Stated Maturity; provided that no interest will accrue for the period from and after such Interest Payment Date, Redemption Date, or Stated Maturity, as the case may be.

SECTION 14.08. Provisions Required by Trust Indenture Act to Control.

If any provision of this Indenture limits, qualifies, or conflicts with the duties imposed on any Person by Sections 310 to and including 317 of the Trust Indenture Act (including provisions automatically deemed included in this Indenture pursuant to the Trust Indenture Act unless this Indenture provides that such provisions are excluded), which are deemed to be a part of and govern this Indenture, whether or not contained herein, then such imposed duties will control.

SECTION 14.09. Invalidity of Particular Provisions.

In case any one or more of the provisions contained in this Indenture or in the Securities is for any reason held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability will not affect any other provision of this Indenture or of the Securities, but this Indenture and such Securities will be construed as if such invalid or illegal or unenforceable provision had never been contained herein or therein.

SECTION 14.10. Indenture May be Executed In Counterparts.

This instrument may be executed in any number of counterparts, each of which will be an original, but such counterparts will together constitute but one and the same instrument.

SECTION 14.11. Acts of Holders; Record Dates.

(a) Any request, demand, authorization, direction, notice, consent, waiver, or other action provided by this Indenture to be given or taken by Holders may be embodied in and evidenced by one or more instruments of substantially similar tenor signed by such Holders in person or by agent duly appointed in writing; and, except as herein otherwise expressly provided, such action will become effective when such instrument or instruments are delivered to the Trustee and, where it is hereby expressly required, to the Company. Such instrument or instruments (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the “Act” of the Holders signing such instrument or instruments. Proof of execution of any such instrument or of a writing appointing any such agent will be sufficient for any purpose of this Indenture and conclusive in favor of the Trustee and the Company, if made in the manner provided in this Section 14.11.

(b) The fact and date of the execution by any Person of any such instrument or writing may be proved by the affidavit of a witness of such execution or by a certificate of a notary public or other officer authorized by law to take acknowledgments of deeds, certifying that the individual signing such instrument or writing acknowledged to him the execution thereof. Where such execution is by a signer acting in a capacity other than his individual capacity, such certificate or affidavit will also constitute sufficient proof of his authority. The fact and date of the execution of any such instrument or writing, or the authority of the Person executing the same, may also be proved in any other manner which the Trustee deems sufficient.

(c) The ownership of Securities will be proved by the Security Register.

(d) Any request, demand, authorization, direction, notice, consent, waiver, or other Act of the Holder of any Security will bind every future Holder of the same Security and the Holder of every Security issued upon the registration of transfer thereof or in exchange thereof or in lieu thereof in respect of anything done, omitted, or suffered to be done by the Trustee or the Company in reliance thereon, whether or not notation of such action is made upon such Security.

(e) The Company may, in the circumstances permitted by the Trust Indenture Act, set any day as the record date for the purpose of determining the Holders of Outstanding Securities of any series entitled to give or take any request, demand, authorization, direction, notice, consent, waiver, or other action provided or permitted by this Indenture to be given or taken by Holders of Securities of such series. With regard to any record date set pursuant to this paragraph, the Holders of Outstanding Securities of the relevant series on such record date (or their duly appointed agents), and only such Persons, will be entitled to give or take the relevant action, whether or not such Holders remain Holders after such record date. With regard to any action that may be given or taken hereunder only by Holders of a requisite principal amount of Outstanding Securities of any series (or their duly appointed agents) and for which a record date is set pursuant to this paragraph, the Company may, at its option, set an expiration date after which no such action purported to be given or taken by any Holder will be effective hereunder unless given or taken on or prior to such expiration date by Holders of the requisite principal amount of Outstanding Securities of such series on such record date (or their duly appointed agents). On or prior to any expiration date set pursuant to this paragraph, the Company may, on one or more occasions at its option, extend such date to any later date. Nothing in this paragraph will prevent any Holder (or any duly appointed agent thereof) from giving or taking, after any such expiration date, any action identical to, or, at any time, contrary to or different from, the action or purported action to which such expiration date relates, in which event the Company may set a record date in respect thereof pursuant to this paragraph. Nothing in this Section 14.11(e) will be construed to render ineffective any action taken at any time by the Holders (or their duly appointed agents) of the requisite principal amount of Outstanding Securities of the relevant series on the date such action is so taken. Notwithstanding the foregoing or the Trust Indenture Act, the Company will not set a record date for, and the provisions of this Section 14.11(e) will not apply with respect to, any notice, declaration, or direction referred to in the next paragraph.

(f) Upon receipt by the Trustee from any Holder of Securities of a particular series of (a) any notice of default or breach referred to in Section 8.01(a)(iv) or 8.01(a)(v) or any other default provision requiring a Notice of Default or other notice from Holders of Securities of such series with respect to Securities of such series, if such default or breach has occurred and is continuing and the Trustee shall not have given such notice to the Company, (b) any declaration of acceleration referred to in Section 8.01(b), if an Event of Default with respect to Securities of such series has occurred and is continuing and the Trustee shall not have given such a declaration to the Company, or (c) any direction referred to in Section 8.06 with respect to Securities of such series, if the Trustee shall not have taken the action specified in such direction, then a record date will automatically and without any action by the Company or the Trustee be set for determining the Holders of Outstanding Securities of such series entitled to join in such notice, declaration, or direction, which record date will be the close of business on the tenth calendar day following the day on which the Trustee receives such notice, declaration, or direction. Promptly after such receipt by the Trustee, and in any case not later than the fifth calendar day thereafter, the Trustee will notify the Company and the Holders of Outstanding Securities of such series of any such record date so fixed. The Holders of Outstanding Securities of such series on such record date (or their duly appointed agents), and only such Persons, will be entitled to join in such notice, declaration, or direction, whether or not such Holders remain Holders after such record date; provided that, unless such notice, declaration, or direction shall have become effective by virtue of Holders of the requisite principal amount of Outstanding Securities of such series on such record date (or their duly appointed agents) having joined therein on or prior to the 90th calendar day after such record date, such notice, declaration, or direction will automatically and without any action by any Person be canceled and of no further effect. Nothing in this Section 14.11(f) will be construed to prevent a Holder (or a duly appointed agent thereof) from giving, before or after the expiration of such 90-day period, a notice, declaration, or direction contrary to or different from, or, after the expiration of such period, identical to, the notice, declaration, or direction to which such record date relates, in which event a new record date in respect thereof will be set pursuant to this Section 14.11(f). Nothing in this Section 14.11(f) will be construed to render ineffective any notice, declaration, or direction of the type referred to in this Section 14.11(f) given at any time to the Trustee and the Company by Holders (or their duly appointed agents) of the requisite principal amount of Outstanding Securities of the relevant series on the date such notice, declaration, or direction is so given.

(g) Without limiting the foregoing, a Holder entitled hereunder to give or take any action hereunder with regard to any particular Security may do so with regard to all or any part of the principal amount of such Security or by one or more duly appointed agents each of which may do so pursuant to such appointment with regard to all or any different part of such principal amount.

SECTION 14.12. Effect of Headings and Table of Contents.

The Article and Section headings herein and the Table of Contents are for convenience only and will not affect the construction hereof.

SECTION 14.13. Benefits of Indenture.

Nothing in this Indenture or in the Securities, express or implied, will give to any Person, other than the parties hereto and their successors hereunder and the Holders any benefit or any legal or equitable right, remedy, or claim under this Indenture.

SECTION 14.14. Force Majeure.

In no event shall the Trustee be responsible or liable for any failure or delay in the performance of its obligations hereunder arising out of or caused by, directly or indirectly, forces beyond its control, including, without limitation strikes, work stoppages, accidents, acts of war or terrorism, civil or military disturbances, nuclear or natural catastrophes or acts of God, and interruptions, loss or malfunctions of utilities, communications or computer (software and hardware) services; it being understood that the Trustee shall use reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances.

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed, all as of the day and year first above written.

RTI INTERNATIONAL METALS, INC., as Issuer

By: /s/ William F. Strome
Name: William F. Strome
Title: Senior Vice President — Finance & Administration

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., as Trustee

By: /s/ Beth Mellinger
Name: Beth Mellinger
Title: Agent

Exhibit A

[Form of Face of Security]
[Insert any legend required by the Internal
Revenue Code and the regulations thereunder.]

RTI International Metals, Inc.

CUSIP No.

No. R - $

RTI International Metals, Inc., a corporation duly organized and existing under the laws of the State of Ohio (hereinafter called the "Company", which term includes any surviving Person under the Indenture hereinafter referred to), for value received, hereby promises to pay to , or registered assigns, the principal sum of $ on [if the Security is to bear interest prior to Maturity, insert: ", and to pay interest thereon from or from the most recent Interest Payment Date to which interest has been paid or duly provided for, on and in each year, commencing on , at the rate of % per annum, until the principal hereof is paid or made available for payment [if applicable, insert: ", and at the rate of % per annum on any overdue principal and premium and on any overdue installment of interest"]. The interest so payable, and punctually paid or duly provided for, on any Interest Payment Date will, as provided in such Indenture, be paid to the Person in whose name this Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest, which will be the or (whether or not a Business Day), as the case may be, next preceding such Interest Payment Date. Any such interest not so punctually paid or duly provided for will forthwith cease to be payable to the Holder on such Regular Record Date and may either be paid to the Person in whose name this Security (or one or more Predecessor Securities) is registered at the close of business on a Special Record Date for the payment of such Defaulted Interest to be fixed by the Trustee, notice whereof will be given to Holders of Securities of this series not less than 10 calendar days prior to such Special Record Date, or be paid at any time in any other lawful manner not inconsistent with the requirements of any securities exchange on which the Securities of this series may be listed, and upon such notice as may be required by such exchange, all as more fully provided in said Indenture"].

[If the Security is not to bear interest prior to Maturity, insert: "The principal of this Security will not bear interest except in the case of a default in payment of principal upon acceleration, upon redemption, or at Stated Maturity, and in such case the overdue principal of this Security will bear interest at the rate of % per annum which will accrue from the date of such default in payment to the date payment of such principal has been made or duly provided for. Interest on any overdue principal will be payable on demand. Any such interest on any overdue principal that is not so paid on demand will bear interest at the rate of % per annum which will accrue from the date of such demand for payment to the date payment of such interest has been made or duly provided for, and such interest will also be payable on demand."]

Payment of the principal of (and premium, if any) and [if applicable, insert: any such interest on this Security] will be made at the office or agency of the Company maintained for the purpose in , in such coin or currency of the United States of America as at the time of

payment is legal tender for payment of public and private debts [if applicable, insert: "; provided, however, that at the option of the Company payment of interest may be made by check mailed to the address of the Person entitled thereto as such address appears in the Security Register"].

REFERENCE IS HEREBY MADE TO THE FURTHER PROVISIONS SET FORTH ON THE REVERSE HEREOF. SUCH PROVISIONS WILL FOR ALL PURPOSES HAVE THE SAME EFFECT AS THOUGH FULLY SET FORTH IN THIS PLACE.

This Security will not be valid or become obligatory for any purpose until the certificate of authentication herein has been signed manually by the Trustee under the Indenture referred to on the reverse side hereof.

IN WITNESS WHEREOF, this instrument has been duly executed in accordance with the Indenture.

Dated:

by ______________________________

Attest:

____

[Form of Reverse of Security]

This Security is one of a duly authorized issue of securities of the Company (herein called the "Securities") and is to be issued in one or more series under an Indenture, dated as of December , 2010 (herein called the "Indenture"), between the Company and The Bank of New York Mellon Trust Company, N.A., as Trustee (herein called the "Trustee", which term includes any successor trustee under the Indenture), to which Indenture and all indentures supplemental thereto reference is hereby made for a statement of the respective rights, limitations of rights, duties, and immunities thereunder of the Company, any Subsidiary Guarantor, the Trustee, and the Holders of the Securities and of the terms upon which the Securities are, and are to be, authenticated and delivered. This Security is one of the series designated on the face hereof [if applicable, insert: ", limited in aggregate principal amount to $ "].

[If applicable, insert: "The Securities of this series are subject to redemption upon not less than 30 calendar days' notice by mail, [if applicable, insert: "(a) on in each year commencing with the year and ending with the year through operation of the sinking fund for this series at a Redemption Price equal to 100% of the principal amount, and (b)"] at any time [if applicable, insert: "on or after , "], as a whole or in part, at the election of the Company, at the following Redemption Prices (expressed as percentages of the principal amount): If redeemed [If applicable, insert: "on or before , %, and if redeemed during the 12-month period beginning of the years indicated,

Year	**Redemption Price**	**Year**	**Redemption Price**

and thereafter at a Redemption Price equal to % of the principal amount, together in the case of any such redemption [if applicable, insert: "(whether through operation of the sinking fund or otherwise)"] with accrued interest to the Redemption Date, but interest installments whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holders of such Securities, or one or more Predecessor Securities, of record at the close of business on the relevant Record Dates referred to on the face hereof, all as provided in the Indenture."].

[If applicable, insert: "The Securities of this series are subject to redemption upon not less than 30 calendar days' notice by mail, [if applicable, insert: "(a) on in each year commencing with the year and ending with the year through operation of the sinking fund for this series at the following Redemption Prices (expressed as percentages of the principal amount) applicable to redemption through operation of the sinking fund and (b)"] at any time [if applicable, insert: "on or after , "] as a whole or in part, at the election of the Company, at the following Redemption Prices (expressed as percentages of the principal amount) applicable to redemption otherwise than through operation of the sinking fund: If redeemed [If applicable, insert: "on or before , %, and if redeemed"] during the 12-month period beginning of the years indicated,

Year	Redemption Price For Redemption Through Operation of the Sinking Fund	Redemption Price For Redemption Otherwise Than Through Operation of the Sinking Fund

and thereafter at a Redemption Price equal to % of the principal amount, together in the case of any such redemption (whether through operation of the sinking fund or otherwise) with accrued interest to the Redemption Date, but interest installments whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holders of such Securities, or one or more Predecessor Securities, of record at the close of business on the relevant Record Dates referred to on the face hereof, all as provided in the Indenture.”].

[If applicable, insert: Notwithstanding the foregoing, the Company may not, prior to , redeem any Securities of this series as contemplated by [if applicable, insert: “Clause (b) of”] the preceding paragraph as a part of, or in anticipation of, any refunding operation by the application, directly or indirectly, of moneys borrowed having an interest cost to the Company (calculated in accordance with generally accepted financial practice) of less than % per annum.”]

[If applicable, insert: “The sinking fund for this series provides for the redemption on in each year beginning with the year and ending with the year of [if applicable, insert: “not less than $ (“mandatory sinking fund”) and not more than “] $ aggregate principal amount of Securities of this series. Securities of this series acquired or redeemed by the Company otherwise than through [if applicable, insert: “mandatory”] sinking fund payments may be credited against subsequent [if applicable, insert: “mandatory”] sinking fund payments otherwise required to be made [if applicable, insert: “in the inverse order in which they become due”].”].

This Security is a senior unsecured obligation of the Company and will rank pari passu in right of payment with all other senior unsecured obligations of the Company.

[If the Security is subject to redemption of any kind, insert: “In the event of redemption of this Security in part only, a new Security or Securities of this series and of like tenor for the unredeemed portion hereof will be issued in the name of the Holder hereof upon the cancellation hereof.”]

[If applicable, insert: “The Indenture contains provisions for defeasance at any time of (a) the entire indebtedness evidenced by this Security or (b) certain restrictive covenants and Events of Default with respect to this Security, in each case upon compliance with certain conditions set forth in the Indenture.”]

[If the Security is not an Original Issue Discount Security, insert: “If an Event of Default with respect to Securities of this series shall occur and be continuing, the principal of the Securities of this series may be declared due and payable in the manner and with the effect provided in the Indenture.”]

[If the Security is an Original Issue Discount Security, insert: "If an Event of Default with respect to Securities of this series shall occur and be continuing, an amount of principal of the Securities of this series may be declared due and payable in the manner and with the effect provided in the Indenture. Such amount will be equal to [insert formula for determining the amount]. Upon payment (a) of the amount of principal so declared due and payable and (b) of interest on any overdue principal and overdue interest, all of the Company's obligations in respect of the payment of the principal of and interest, if any, on the Securities of this series will terminate."]

The Indenture permits, with certain exceptions as therein provided, the amendment thereof and the modification of the rights and obligations of the Company and the rights of the Holders of the Securities of each series to be affected under the Indenture at any time by the Company and the Trustee with the consent of the Holders of a majority in principal amount of the Securities at the time Outstanding of each series to be affected. The Indenture also contains provisions permitting the Holders of specified percentages in principal amount of the Securities of each series at the time Outstanding, on behalf of the Holders of all Securities of such series, to waive compliance by the Company with certain provisions of the Indenture and certain past defaults under the Indenture and their consequences. Any such consent or waiver by the Holder of this Security will be conclusive and binding upon such Holder and upon all future Holders of this Security and of any Security issued upon the registration of transfer hereof or in exchange herefor or in lieu hereof, whether or not notation of such consent or waiver is made upon this Security.

As provided in and subject to the provisions of the Indenture, the Holder of this Security will not have the right to institute any proceeding with respect to the Indenture or for the appointment of a receiver or trustee or for any other remedy thereunder, unless such Holder shall have previously given the Trustee written notice of a continuing Event of Default with respect to the Securities of this series, the Holders of not less than a majority in principal amount of the Securities of this series at the time Outstanding shall have made written request to the Trustee to institute proceedings in respect of such Event of Default as Trustee and offered the Trustee indemnity satisfactory to it, and the Trustee shall not have received from the Holders of a majority in principal amount of Securities of this series at the time Outstanding a direction inconsistent with such request and shall have failed to institute such proceeding for 60 calendar days after receipt of such notice, request, and offer of indemnity. The foregoing will apply to any suit instituted by the Holder of this Security for the enforcement of any payment of principal hereof or any premium or interest hereon on or after the respective due dates expressed herein.

No reference herein to the Indenture and no provision of this Security or of the Indenture will alter or impair the obligation of the Company, which is absolute and unconditional, to pay the principal of and any premium and interest on this Security at the times, place, and rate, and in the coin or currency, herein prescribed.

As provided in the Indenture and subject to certain limitations therein set forth, the transfer of this Security is registerable in the Security Register, upon surrender of this Security for registration of transfer at the office or agency of the Company in any place where the principal of and any premium and interest on this Security are payable, duly endorsed by, or accompanied by a written instrument of transfer in form satisfactory to the Company and the

Security Registrar duly executed by, the Holder hereof or his attorney duly authorized in writing, and thereupon one or more new Securities of this series and of like tenor, of authorized denominations and for the same aggregate principal amount, will be issued to the designated transferee or transferees.

The Securities of this series are issuable only in registered form without coupons in denominations of $1,000 and integral multiples thereof. As provided in the Indenture and subject to certain limitations therein set forth, Securities of this series are exchangeable for a like aggregate principal amount of Securities of this series and of like tenor of a different authorized denomination, as requested by the Holder surrendering the same.

No service charge will be made for any such registration of transfer or exchange, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection therewith.

Prior to due presentment of this Security for registration of transfer, the Company, the Trustee, and any agent of the Company or the Trustee may treat the Person in whose name this Security is registered as the owner hereof for all purposes, whether or not this Security shall be overdue, and neither the Company, the Trustee, nor any such agent will be affected by notice to the contrary.

The Indenture imposes certain limitations on the ability of the Company to, among other things, merge or consolidate with any other Person or sell, assign, transfer or lease all or substantially all of its properties or assets. All such covenants and limitations are subject to a number of important qualifications and exceptions. The Company must report periodically to the Trustee on compliance with the covenants in the Indenture.

A director, officer, employee or stockholder, as such, of the Company shall not have any liability for any obligations of the Company under this Security or the Indenture or for any claim based on, in respect of or by reason of, such obligations or their creation. Each Holder, by accepting a Security, waives and releases all such liability. The waiver and release are part of the consideration for the issuance of this Security.

[If applicable, insert — Pursuant to a recommendation promulgated by the Committee on Uniform Security Identification Procedures (“CUSIP”), the Company has caused CUSIP numbers to be printed on the Securities of this series as a convenience to the Holders of the Securities of this series. No representation is made as to the correctness or accuracy of such numbers as printed on the Securities of this series and reliance may be placed only on the other identification numbers printed hereon.]

All terms used in this Security that are defined in the Indenture will have the respective meanings assigned to them in the Indenture.

This Security shall be governed by, and construed in accordance with, the laws of the State of New York, without regard to conflicts of laws principles thereof.

C. The Trustee’s certificate of authentication will be in substantially the following form:

[Form of Trustee’s Certificate Of
Authentication for Securities]

Trustee’s Certificate of Authentication

This is one of the Securities of the series designated therein referred to in the within-mentioned Indenture.

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,
as Trustee

by ____________________________
Authorized Signatory

Dated:

D. Every Global Security authenticated and delivered hereunder will bear a legend in substantially the following form:

[Form of Legend for Global Securities]

THIS SECURITY IS A GLOBAL SECURITY WITHIN THE MEANING OF THE INDENTURE HEREINAFTER REFERRED TO AND IS REGISTERED IN THE NAME OF A DEPOSITARY OR A NOMINEE THEREOF. THIS SECURITY MAY NOT BE TRANSFERRED TO, OR REGISTERED OR EXCHANGED FOR SECURITIES REGISTERED IN THE NAME OF, ANY PERSON OTHER THAN THE DEPOSITARY OR A NOMINEE THEREOF, AND NO SUCH TRANSFER MAY BE REGISTERED, EXCEPT IN THE LIMITED CIRCUMSTANCES DESCRIBED IN THE INDENTURE. EVERY SECURITY AUTHENTICATED AND DELIVERED UPON REGISTRATION OF TRANSFER OF, OR IN EXCHANGE FOR, OR IN LIEU OF, THIS SECURITY WILL BE A GLOBAL SECURITY SUBJECT TO THE FOREGOING, EXCEPT IN SUCH LIMITED CIRCUMSTANCES.

E. All acts and things necessary to make the Securities, when the Securities have been executed by the Company and authenticated by the Trustee and delivered as provided in this Indenture, the valid, binding, and legal obligations of the Company and to constitute these presents a valid indenture and agreement according to its terms, have been done and performed, and the execution and delivery by the Company of this Indenture and the issue hereunder of the Securities have in all respects been duly authorized; and the Company, in the exercise of legal right and power in it vested, is executing and delivering this Indenture and proposes to make, execute, issue, and deliver the Securities.

F. The Subsidiary Guarantor's notation to be endorsed on each Security entitled to the benefits of a Subsidiary Guarantee will be in substantially the following form:

[Form of Notation of Subsidiary Guarantee]

For value received, each Subsidiary Guarantor (which term includes any successor Person under the Indenture) has, jointly and severally, unconditionally and irrevocably guaranteed, to the extent set forth in the Indenture[*, and the Board Resolution, supplemental indenture to the Indenture or Officer's Certificate with respect to this series of Securities,*] and subject to the provisions in the Indenture, dated as of December , 2010 (herein called the "Indenture"), between the Company, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee (herein called the "Trustee", which term includes any successor trustee under the Indenture), to each Holder with respect to this series of Securities and to the Trustee and its successors and assigns (a) the full and punctual payment of principal of and interest on such series of Securities when due, whether at maturity, by acceleration, by redemption or otherwise, and all other monetary obligations of the Company under the Indenture and such series of Securities and (b) in case of any extension of time of payment or renewal of any Securities or any of such other obligations, that the same will be promptly paid in full when due or performed in accordance with the terms of the extension or renewal, whether at stated maturity, by acceleration or otherwise. The obligations of the Subsidiary Guarantors to the Holders with respect to this series of Securities and to the Trustee pursuant to the Subsidiary Guarantee, the Indenture, and the Board Resolution, supplemental indenture to the Indenture or Officer's Certificate with respect to such series of Securities are expressly set forth in Article XIII of the Indenture [*insert applicable cross-references to Board Resolution/supplemental indenture/Officer's Certificate, if any*] and reference is hereby made to the Indenture [*and the Board Resolution/supplemental indenture/Officer's Certificate*] for the precise terms of the Subsidiary Guarantee. Each Holder with respect to this series of Securities, by accepting the same, agrees to and shall be bound by such provisions.

[NAME OF SUBSIDIARY GUARANTOR(S)]

By: ______________________________
Name:
Title:

Exhibit 4(n)

RTI INTERNATIONAL METALS, INC.,

THE SUBSIDIARY GUARANTORS

AND

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,

as Trustee

THIRD SUPPLEMENTAL INDENTURE

Dated as of April 17, 2013

TO THE INDENTURE

Dated as of December 14, 2010

1.625% Convertible Senior Notes due 2019

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EXHIBIT

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THIRD SUPPLEMENTAL INDENTURE, dated as of April 17, 2013 (this "**Supplemental Indenture**"), to the Indenture (defined below) among RTI INTERNATIONAL METALS, INC., an Ohio corporation (the "**Company**"), each of the Subsidiary Guarantors and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as Trustee under the Indenture (the "**Trustee**").

W I T N E S S E T H:

WHEREAS, the Company has heretofore executed and delivered to the Trustee an Indenture, dated as of December 14, 2010 (the "**Base Indenture**"), providing for the issuance from time to time of its Securities (as defined in the Base Indenture), to be issued in one or more series as therein provided;

WHEREAS, the Company has heretofore executed and delivered to the Trustee, pursuant to the terms of the Base Indenture, a First Supplemental Indenture, dated as of December 14, 2010 (the "**First Supplemental Indenture**") providing for the establishment of a series of the Company's Securities known as its 3.000% Convertible Senior Notes due 2015 (the " **2010 Notes**");

WHEREAS, the Company has heretofore executed and delivered to the Trustee, pursuant to the terms of the Base Indenture, a Second Supplemental Indenture, dated as of May 30, 2012 (the "**Second Supplemental Indenture**"), pursuant to which additional Subsidiary Guarantors unconditionally guaranteed all of the Company's obligations under the 2010 Notes pursuant to a Subsidiary Guarantee on the terms and conditions set forth therein;

WHEREAS, Sections 2.01, 2.02 and 10.01 of the Base Indenture provide that the Company, when authorized by a Board Resolution (as defined in the Base Indenture), and the Trustee may, without the consent of the Holders (as defined in the Base Indenture) of Securities, enter into one or more supplemental indentures to establish the form or terms of Securities of any series to be issued pursuant to the Base Indenture;

WHEREAS, pursuant to the terms of the Base Indenture, the Company desires to provide for the establishment of a new series of its Securities to be known as its 1.625% Convertible Senior Notes due 2019 (the "**Notes**"), the form of such Notes and the terms, provisions and conditions thereof to be set forth as provided in the Base Indenture and this Supplemental Indenture (together, the "**Indenture**");

WHEREAS, the Company has duly authorized the creation and issuance of the Notes under the Base Indenture, and has duly authorized the execution and delivery of this Supplemental Indenture to supplement the Base Indenture and to provide certain additional provisions as hereinafter described;

WHEREAS, each Subsidiary Guarantor has duly authorized the creation and issuance of the guarantee of the Company's obligations under the Notes and the Indenture as provided for herein; and

WHEREAS, the Company has requested that the Trustee execute and deliver this Supplemental Indenture, and all requirements necessary to make this Supplemental Indenture a valid instrument in accordance with its terms, and to make the Notes, when executed by the Company, endorsed by the Subsidiary Guarantors and authenticated and delivered by the Trustee, the valid and legally binding obligations of the Company and the Subsidiary Guarantors, and all acts and things necessary have been done and performed to make this Supplemental Indenture enforceable in accordance with its terms, and the execution and delivery of this Supplemental Indenture has been duly authorized in all respects.

NOW, THEREFORE, THIS SUPPLEMENTAL INDENTURE WITNESSETH:

That in order to declare the terms and conditions upon which the Notes are, and are to be, authenticated, issued and delivered, and in consideration of the premises and of the purchase and acceptance of the Notes by the Holders thereof, the Company and the Subsidiary Guarantors covenant and agree with the Trustee for the equal and proportionate benefit of the respective Holders from time to time of the Notes, as follows:

ARTICLE 1

DEFINITIONS

Section 1.01 *Definitions.* The terms defined in this Section 1.01 (except as herein otherwise expressly provided) for all purposes of this Supplemental Indenture shall have the respective meanings specified in this Section 1.01. Except to the extent superseded by a term defined in this Supplemental Indenture, all terms used in this Supplemental Indenture that are defined in the Base Indenture shall have the respective meanings set forth in the Base Indenture. The words "herein," "hereof," "hereunder," and words of similar import refer to this Supplemental Indenture as a whole and not to any particular Article, Section or other subdivision. The terms defined in this Article include the plural as well as the singular.

"**Additional Interest**" means all amounts, if any, payable pursuant to Section 5.02.

"**Additional Shares**" shall have the meaning specified in Section 8.03(a).

"**Base Indenture**" shall have the meaning specified in the recitals hereto.

"**Bid Solicitation Agent**" means the Person appointed by the Company to solicit bids for the Trading Price of the Notes in accordance with Section 8.01(b)(i). The Company shall initially act as the Bid Solicitation Agent, either directly or through a designated agent. The Trustee shall not act as Bid Solicitation Agent.

"**Business Day**" means any day other than a Saturday, a Sunday or a day on which the Federal Reserve Bank of New York is authorized or required by law or executive order to close or be closed.

"**Capital Stock**" means, for any entity, any and all shares, interests, rights to purchase, warrants, options, participations or other equivalents of or interests in (however designated) stock issued by that entity.

"**Cash Amount**" means the maximum dollar amount of the Conversion Obligation per $1,000 principal amount of Notes that can be settled in cash, as specified in the Settlement Notice related to any converted Notes.

"**Cash Settlement**" shall have the meaning specified in Section 8.02(a).

"**close of business**" means 5:00 p.m. (New York City time).

"**Combination Settlement**" shall have the meaning specified in Section 8.02(a).

"**Common Equity**" of any Person means Capital Stock of such Person that is generally entitled (a) to vote in the election of directors of such Person or (b) if such Person is not a corporation, to vote or otherwise participate in the selection of the governing body, partners, managers or others that will control the management or policies of such Person.

"**Common Stock**" means the common stock of the Company, par value $0.01 per share, subject to Section 8.07.

"**Continuing Directors**" means (i) individuals who on the date of original issuance of the Notes constituted the Board of Directors and (ii) any new directors whose election to the Board of Directors or whose nomination for election by the Company's shareholders was approved by at least a majority of the directors then still in office (or a duly constituted committee thereof), either who were directors on the date of original issuance of the Notes or whose election or nomination for election was previously so approved.

"**Conversion Agent**" shall have the meaning specified in Section 2.03.

"**Conversion Date**" shall have the meaning specified in Section 8.02(c).

"**Conversion Obligation**" shall have the meaning specified in Section 8.01(a).

"**Conversion Price**" means, as of any date, $1,000, *divided by* the Conversion Rate as of such date.

"**Conversion Rate**" means 24.5604 shares of Common Stock per $1,000 principal amount of Notes, as adjusted pursuant to Section 8.04.

"Credit Facility" means the Second Amended and Restated Credit Agreement, dated as of May 23, 2012, among RTI International Metals, Inc., and the guarantors and lenders party thereto as the same has been and may be amended, restated, supplemented, modified, renewed, refunded, replaced or refinanced (and whether or not with the same lenders and agents or other lenders, agents or financing sources).

“**Daily Cash Amount**” means, in respect of each $1,000 principal amount of Notes as to which a Combination Settlement applies, 2.5% of the applicable Cash Amount.

“**Daily Conversion Value**” means, for each of the 40 consecutive Trading Days during the relevant Observation Period, 2.5% of the product of (a) the Conversion Rate on such Trading Day and (b) the Daily VWAP of the Common Stock on such Trading Day.

“**Daily Settlement Amount**,” for each of the 40 consecutive Trading Days during the relevant Observation Period, shall consist of:

(a) cash in an amount equal to the lesser of (i) the Daily Cash Amount on such Trading Day and (ii) the Daily Conversion Value on such Trading Day; and

(b) if the Daily Conversion Value on such Trading Day exceeds the Daily Cash Amount, a number of shares of Common Stock equal to (i) the difference between such Daily Conversion Value and such Daily Cash Amount, *divided by* (ii) the Daily VWAP on such Trading Day.

“**Daily VWAP**” means, for each of the 40 consecutive Trading Days during the applicable Observation Period, the per share volume-weighted average price as displayed under the heading “Bloomberg VWAP” on Bloomberg page “RTI <equity> AQR” (or its equivalent successor if such page is not available) in respect of the period from the scheduled open of trading until the scheduled close of trading of the primary trading session on such Trading Day (or if such volume-weighted average price is unavailable, the market value of one share of the Common Stock on such Trading Day determined, using a volume-weighted average method, by a nationally recognized independent investment banking firm retained for this purpose by the Company). The “**Daily VWAP**” shall be determined without regard to after hours trading or any other trading outside of the regular trading session trading hours.

“**Defaulted Amounts**” means any amounts on any Note (including, without limitation, the Fundamental Change Purchase Price, principal and interest) that are payable but are not punctually paid or duly provided for in accordance herewith.

“**Distributed Property**” shall have the meaning specified in Section 8.04(c).

“**Distribution Effective Date**” means, with respect to a particular transaction, the first date on which shares of the Common Stock trade on the applicable exchange or in the applicable market, regular way, reflecting such transaction.

“**Effective Date**” shall have the meaning specified in Section 8.03(c).

“**Ex-Dividend Date**” means the first date on which shares of the Common Stock trade on the applicable exchange or in the applicable market, regular way, without the right to receive the issuance, dividend or distribution in question, from the Company or, if applicable, from the seller of Common Stock on such exchange or market (in the form of due bills or otherwise) as determined by such exchange or market.

“**Form of Assignment and Transfer**” shall mean the “Form of Assignment and Transfer” attached as Attachment 3 to the Form of Note attached hereto as Exhibit A.

“**Form of Fundamental Change Purchase Notice**” shall mean the “Form of Fundamental Change Purchase Notice” attached as Attachment 2 to the Form of Note attached hereto as Exhibit A.

“**Form of Notice of Conversion**” shall mean the “Form of Notice of Conversion” attached as Attachment 1 to the Form of Note attached hereto as Exhibit A.

“**Fundamental Change**” shall be deemed to have occurred at the time after the Notes are originally issued that any of the following occurs:

(1) a “person” or “group” within the meaning of Section 13(d) of the Exchange Act, other than the Company, its Subsidiaries and the employee benefit plans of the Company and its Subsidiaries, has become the direct or indirect “beneficial owner,” as defined in Rule 13d-3 under the Exchange Act, of shares of the Company’s Common Equity representing more than 50% of the voting power of the Company’s Common Equity; or

(2) consummation of (A) any recapitalization, reclassification or change of the Common Stock (other than changes resulting from a subdivision or combination or changes solely in par value) as a result of which the Common Stock would be converted into, or exchanged for, stock, other securities, other property or assets or (B) any share exchange, consolidation or merger involving the Company pursuant to which the Common Stock will be converted into cash, securities or other property or any sale, lease or other transfer in one transaction or a series of transactions of all or substantially all of the consolidated assets of the Company and its Subsidiaries, taken as a whole, to any Person other than one of the Company’s Subsidiaries; *provided*, *however*, that a transaction where the holders of all classes of the Company’s Common Equity immediately prior to such transaction that is a share exchange, consolidation or merger (each such holder, a “**Pre-Transaction Holder**”) own, directly or indirectly, more than 50% of all classes of Common Equity of the continuing or surviving corporation or transferee or the parent thereof immediately after such event shall not be a Fundamental Change, so long as the proportion of the respective ownership of each Pre-Transaction Holder does not substantially change solely pursuant to the terms of such transaction; or

(3) the shareholders of the Company approve any plan or proposal for the liquidation or dissolution of the Company; or

(4) the Common Stock (or other common stock underlying the Notes) ceases to be listed or quoted on any of the New York Stock Exchange, the NASDAQ Global Select Market or the NASDAQ Global Market (or any of their respective successors); or

(5) the first day on which a majority of the members of the Board of Directors does not consist of “Continuing Directors”;

provided, *however*, that a transaction or transactions described in clause (1) or (2) above shall not constitute a Fundamental Change, if at least 90% of the consideration received or to be received by the common shareholders of the Company, excluding cash payments for fractional shares, in connection with such transaction or transactions consists of shares of Publicly Traded Securities, and as a result of such transaction or transactions the Notes become convertible into such Publicly Traded Securities, excluding cash payments for fractional shares (subject to the provisions of Section 8.02(a)).

"**Fundamental Change Company Notice**" shall have the meaning specified in Section 9.01(c).

"**Fundamental Change Purchase Date**" shall have the meaning specified in Section 9.01(a).

"**Fundamental Change Purchase Notice**" shall have the meaning specified in Section 9.01(b)(i).

"**Fundamental Change Purchase Price**" shall have the meaning specified in Section 9.01(a).

"**Global Note**" means any Note issued in the form of a Global Security.

"**Interest Payment Date**" means each April 15 and October 15 of each year, beginning on October 15, 2013.

"**Last Reported Sale Price**" of the Common Stock on any date means the closing sale price per share (or if no closing sale price is reported, the average of the bid and ask prices or, if more than one in either case, the average of the average bid and the average ask prices) on that date as reported in composite transactions for the principal U.S. securities exchange on which the Common Stock is traded. If the Common Stock is not listed for trading on a U.S. national or regional securities exchange on the relevant date, the "**Last Reported Sale Price**" shall be the average of the last quoted bid and ask prices for the Common Stock in the over-the-counter market on the relevant date as reported by OTC Markets Group Inc. or a similar organization. If the Common Stock is not so quoted, the "**Last Reported Sale Price**" shall be the average of the mid-point of the last bid and ask prices for the Common Stock on the relevant date from each of at least three nationally recognized independent investment banking firms selected by the Company for this purpose.

"**Make-Whole Fundamental Change**" means any transaction or event that constitutes a Fundamental Change (as defined above and determined after giving effect to any and all exceptions to or exclusions from such definition, but without regard to the *proviso* in clause (2) of the definition thereof).

"**Market Disruption Event**" means (a) a failure by the primary United States national or regional securities exchange or market on which the Common Stock is listed or admitted for trading to open for trading during its regular trading session or (b) the occurrence or existence prior to 1:00 p.m., New York City time, on any Scheduled Trading Day for the Common Stock for more than one half-hour period in the aggregate during regular trading hours

of any suspension or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the relevant stock exchange or otherwise) in the Common Stock or in any options or futures contracts relating to the Common Stock.

"**Maturity Date**" means October 15, 2019.

"**Measurement Period**" shall have the meaning specified in Section 8.01(b)(i).

"**Merger Event**" shall have the meaning specified in Section 8.07(a).

"**Note**" or "**Notes**" shall have the meaning specified in the first paragraph of the recitals of this Supplemental Indenture.

"**Notice of Conversion**" shall have the meaning specified in Section 8.02(b).

"**Observation Period**" with respect to any Note surrendered for conversion means: (i) if the relevant Conversion Date occurs prior to April 15, 2019, and Cash Settlement or Combination Settlement applies, the 40 consecutive Trading Day period beginning on and including the third Trading Day immediately following such Conversion Date; and (ii) if the relevant Conversion Date occurs on or after April 15, 2019, regardless of the Settlement Method, the 40 consecutive Trading Days beginning on and including the 42nd Scheduled Trading Day immediately preceding the Maturity Date.

"**open of business**" means 9:00 a.m. (New York City time).

"Physical Note" means any Note that is not issued in the form of a Global Note.

"**Physical Settlement**" shall have the meaning specified in Section 8.02(a).

"**Pre-Transaction Holder**" shall have the meaning specified in the definition of "Fundamental Change."

"**Prospectus Supplement**" means the preliminary prospectus supplement dated April 11, 2013, as supplemented by the pricing term sheet dated April 11, 2013, relating to the offering and sale of the Notes.

"**Publicly Traded Securities**" means shares of common stock that are listed or quoted on any of the New York Stock Exchange, the NASDAQ Global Select Market or the NASDAQ Global Market (or any of their respective successors) or will be so listed or quoted when issued or exchanged in connection with a Fundamental Change described in clause (1) or (2) of the definition thereof.

"**Record Date**" means, with respect to any dividend, distribution or other transaction or event in which the holders of the Common Stock have the right to receive any cash, securities or other property or in which the Common Stock is exchanged for or converted into any combination of cash, securities or other property, the date fixed for determination of stockholders entitled to receive such cash, securities or other property (whether such date is fixed by the Board of Directors, by statute, by contract or otherwise).

“**Reference Property**” shall have the meaning specified in Section 8.07(a).

“**Regular Record Date**,” with respect to any Interest Payment Date, shall mean the April 1 or October 1 (whether or not such day is a Business Day) immediately preceding the applicable April 15 or October 15 Interest Payment Date, respectively.

“**Representatives**” means Barclays Capital Inc. and Citigroup Global Markets Inc.

“**Scheduled Trading Day**” means a day that is scheduled to be a Trading Day on the principal United States national or regional securities exchange or market on which the Common Stock is listed or admitted for trading. If the Common Stock is not so listed or admitted for trading, “**Scheduled Trading Day**” means a Business Day.

“**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“**Settlement Method**” means, with respect to any conversion of Notes, Physical Settlement, Cash Settlement or Combination Settlement, as elected (or deemed to have been elected) by the Company in accordance with Section 8.02(a).

“**Settlement Notice**” means the notice that the Company is required to deliver pursuant to clause (A) or (B) of Section 8.02(a)(ii) with respect to a conversion of the Notes, specifying the relevant Settlement Method and, if applicable, the related Cash Amount.

“**Spin-Off**” shall have the meaning specified in Section 8.04(c).

“**Stock Price**” shall have the meaning specified in Section 8.03(c).

“**Supplemental Indenture**” means this supplemental indenture.

“**Trading Day**” means a day on which (i) trading in the Common Stock generally occurs on the New York Stock Exchange or, if the Common Stock is not then listed on the New York Stock Exchange, on the principal other United States national or regional securities exchange on which the Common Stock is then listed or, if the Common Stock is not then listed on a United States national or regional securities exchange, on the principal other market on which the Common Stock is then traded and (ii) a Last Reported Sale Price for the Common Stock is available on such securities exchange or market; *provided* that if the Common Stock (or other security for which a closing sale price must be determined) is not so listed or traded, “**Trading Day**” means a Business Day; and *provided*, *further*, that for purposes of determining amounts due upon conversion only, “**Trading Day**” means a day on which (x) there is no Market Disruption Event and (y) trading in the Common Stock generally occurs on the New York Stock Exchange or, if the Common Stock is not then listed on the New York Stock Exchange, on the principal other United States national or regional securities exchange on which the Common Stock is then listed or, if the Common Stock is not then listed on a United States national or regional securities exchange, on the principal other market on which the Common Stock is then listed or admitted for trading, except that if the Common Stock is not so listed or admitted for trading, “**Trading Day**” means a Business Day.

"**Trading Price**" of the Notes on any date of determination means the average of the secondary market bid quotations obtained by the Bid Solicitation Agent for $5 million principal amount of Notes at approximately 3:30 p.m., New York City time, on such determination date from three independent nationally recognized securities dealers the Company selects for this purpose; *provided* that, if three such bids cannot reasonably be obtained by the Bid Solicitation Agent, but two such bids are obtained, then the average of such two bids shall be used, and if only one such bid can reasonably be obtained by the Bid Solicitation Agent, that one bid shall be used. If the Bid Solicitation Agent cannot reasonably obtain at least one bid for $5 million principal amount of Notes from a nationally recognized securities dealer on any determination date, then the Trading Price per $1,000 principal amount of Notes on such determination date shall be deemed to be less than 98% of the product of the Last Reported Sale Price of the Common Stock and the applicable Conversion Rate.

"**Trading Price Condition**" shall have the meaning specified in Section 8.01(b)(i).

"**Trigger Event**" shall have the meaning specified in Section 8.04(c).

"**Underwriters**" shall have the meaning specified in the definition of "Underwriting Agreement."

"**Underwriting Agreement**" means that certain Underwriting Agreement, dated as of April 11, 2013 among the Company, the Subsidiary Guarantors and the Representatives, as representatives of the several underwriters listed on Schedule II thereto (the "**Underwriters**").

"**unit of Reference Property**" shall have the meaning specified in Section 8.07(a).

"**Valuation Period**" shall have the meaning specified in Section 8.04(c).

Section 1.02 *References to Interest.* Unless the context otherwise requires, any reference to interest on, or in respect of, any Note in the Indenture shall be deemed to include Additional Interest if, in such context, Additional Interest is, was or would be payable pursuant to Section 5.02. Any express mention of Additional Interest in any provision hereof shall not be construed as excluding Additional Interest in those provisions hereof where such express mention is not made.

ARTICLE 2

ISSUE, DESCRIPTION, EXECUTION, REGISTRATION AND EXCHANGE OF NOTES

Section 2.01 *Designation and Amount.* The Notes shall be designated as the "1.625% Convertible Senior Notes due 2019." The aggregate principal amount of Notes that may be authenticated and delivered under this Indenture is limited to $402,500,000, subject to Section 2.04 and except for Notes authenticated and delivered upon registration or transfer of, or in exchange for, or in lieu of other Notes pursuant to Section 2.06, 3.05 or Section 10.06 of the Base Indenture or Section 8.02 and Section 9.03 hereof.

Section 2.02 *Subsidiary Guarantees.* Each Subsidiary listed on the signature page hereto shall constitute a Subsidiary Guarantor of the Notes, and the Subsidiary Guarantee of such Subsidiary Guarantor shall have the terms set forth in Article XIII of the Base Indenture as modified solely for purposes of the Notes as set forth in Article 10 of this Supplemental Indenture.

Section 2.03 *Conversion.* Upon the conditions set forth therein, the Notes shall be convertible into cash, shares of Common Stock or a combination of cash and shares of Common Stock pursuant to Article 8 of this Supplemental Indenture. The Company shall maintain an office or agency (the **"Conversion Agent"**) in the locations specified in Section 6.02 of the Base Indenture where Notes may be presented for conversion. The Company hereby designates the Trustee as the initial Conversion Agent in respect of the Notes.

Section 2.04 *Additional Notes; Repurchases.* The Company may, without the consent of the Holders and notwithstanding Section 2.01, reopen this Supplemental Indenture and issue additional Notes hereunder with the same terms and with the same CUSIP number as the Notes initially issued hereunder in an unlimited aggregate principal amount; *provided* that such additional Notes must be part of the same issue as the Notes initially issued hereunder for U.S. Federal income tax purposes. Prior to the issuance of any such additional Notes, the Company shall deliver to the Trustee a Company Order, an Officer's Certificate and an Opinion of Counsel. In addition, the Company may, to the extent permitted by law, and directly or indirectly (regardless of whether such Notes are surrendered to the Company), repurchase Notes in the open market or otherwise, whether by the Company or its Subsidiaries or through a private or public tender or exchange offer or through counterparties to private agreements, including by cash-settled swaps or other derivatives. The Company shall cause any Notes so repurchased (other than Notes repurchased pursuant to cash-settled swaps or other derivatives) to be surrendered to the Trustee for cancellation.

Section 2.05 *Form of Notes.* The Notes, the Subsidiary Guarantor's attestation and the Trustee's certificate of authentication to be borne by such Notes shall be substantially in the respective forms set forth in Exhibit A, the terms and provisions of which shall constitute, and are hereby expressly incorporated in and made, a part of this Indenture. To the extent applicable, the Company, each Subsidiary Guarantor and the Trustee, by their execution and delivery of this Indenture, expressly agree to such terms and provisions and to be bound thereby.

Section 2.06 *Date and Denomination of Notes; Payments of Interest and Defaulted Amounts.* (a) The Notes shall be issuable in registered form without coupons in denominations of $1,000 principal amount and integral multiples thereof. Each Note shall be dated the date of its authentication and shall bear interest from the date specified on the face of the Note. Accrued interest on the Notes shall be computed on the basis of a 360-day year composed of twelve 30-day months.

(b) The Person in whose name any Note (or its Predecessor Security) is registered on the Security Register at the close of business on any Regular Record Date with respect to any Interest Payment Date shall be entitled to receive the interest payable on such Interest Payment Date. Interest shall be payable at the office or agency of the Company maintained by the Company for such purposes in the Borough of Manhattan, The City of New

York, which shall initially be at 101 Barclay St., New York, NY 10286. The Company shall pay interest (i) on any Physical Notes to Holders holding Physical Notes having an aggregate principal amount of (A) $5,000,000 or less, by check mailed to the Holders of these Notes at their address as it appears in the Security Register and (B) more than $5,000,000, either by check mailed to such Holders or, upon application by such a Holder to the Security Registrar not later than the relevant Regular Record Date, by wire transfer in immediately available funds to that Holder's account within the United States, which application shall remain in effect until the Holder notifies, in writing, the Security Registrar to the contrary or (ii) on any Global Note by wire transfer of immediately available funds to the account of the Depositary or its nominee.

(c) Any Defaulted Amounts shall forthwith cease to be payable to the Holder on the relevant payment date but shall accrue interest per annum at the rate borne by the Notes *plus* one percent, subject to the enforceability thereof under applicable law, from, and including, such relevant payment date.

Section 2.07 *No Redemption at the Option of the Company.* The Notes shall not be redeemable prior to the Maturity Date at the option of the Company.

Section 2.08 *No Sinking Fund.* No sinking fund will be provided with respect to the Notes.

ARTICLE 3

SATISFACTION AND DISCHARGE

Section 3.01 *Satisfaction and Discharge.* Solely for purposes of the Notes, Section 12.01 of the Base Indenture shall be replaced in its entirety with the following:

> SECTION 12.01 Satisfaction and Discharge of Indenture. This Indenture shall upon request of the Company contained in an Officer's Certificate cease to be of further effect, and the Trustee, at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture, when (a) (i) all Securities theretofore authenticated and delivered (other than Securities which have been destroyed, lost or stolen and which have been replaced or paid as provided in Section 2.07) have been delivered to the Trustee for cancellation; or (ii) the Company has deposited with the Trustee or delivered to Holders, as applicable, after the Securities have become due and payable, whether at the Maturity Date, on any Fundamental Change Purchase Date, upon conversion or otherwise, cash and, in the case of conversion, cash, shares of Common Stock or a combination of cash and shares of Common Stock, as applicable, sufficient to pay all of the outstanding Securities or satisfy the Company's Conversion Obligation, as the case may be, and pay all other sums due and payable under this Indenture and the Supplemental Indenture for such Securities by the Company; and (b) the Company has delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture have been complied with. Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 9.06 shall survive.

ARTICLE 4

PARTICULAR COVENANTS OF THE COMPANY

Section 4.01 *Exchange Act Reports.* (a) The Company shall file with the Trustee within 30 days after the same are required to be filed with the Commission, copies of any documents or reports that the Company is required to file with the Commission pursuant to Section 13 or 15(d) of the Exchange Act (giving effect to any grace period provided by Rule 12b-25 under the Exchange Act). Any such document or report that the Company files with the Commission via the Commission's EDGAR system shall be deemed to be filed with the Trustee for purposes of this Section 4.01(a) at the time such documents are filed via the EDGAR system, provided that the Trustee shall have no responsibility whatsoever to determine if any such filing has occurred.

(b) Delivery of the reports and documents described in subsection (a) above to the Trustee is for informational purposes only, and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to conclusively rely on an Officer's Certificate).

ARTICLE 5

DEFAULTS AND REMEDIES

Section 5.01 *Events of Default.* Solely for purposes of the Notes, Section 8.01 of the Base Indenture shall be replaced in its entirety with the following:

SECTION 8.01. Event of Default. (a) The following events shall be "**Events of Default**" with respect to the Notes:

(i) default in any payment of interest (including Additional Interest, if any) on any Note when due and payable, and such default continues for a period of 30 days;

(ii) default in the payment of principal of any Note when due and payable on the Maturity Date, upon any required purchase in connection with a Fundamental Change, upon declaration of acceleration or otherwise;

(iii) failure by the Company to comply with its obligation to convert the Notes in accordance with this Indenture upon exercise of a Holder's conversion right and such failure continues for a period of ten calendar days following the date on which the conversion consideration was payable or deliverable, as the case may be, in connection with such conversion;

(iv) failure by the Company to issue a Fundamental Change Company Notice in accordance with Section 9.01(c) of the Supplemental Indenture for the Notes or notice of a specified corporate event in accordance with Section 8.01(b)(ii) or 8.01(b)(iii) of the Supplemental Indenture for the Notes, in each case when due and such failure continues for a period of ten calendar days following the date on which such Fundamental Change

Company Notice or such notice of a specified corporate event was required to be delivered under this Indenture;

(v) failure by the Company to comply with its obligations under Article XI;

(vi) failure by the Company for 60 days after written notice from the Trustee or the Holders of at least 25% in principal amount of the Notes then Outstanding has been received by the Company to comply with any of its other agreements contained in the Notes or this Indenture;

(vii) default by the Company or any Subsidiary of the Company with respect to any mortgage, agreement or other instrument under which there may be outstanding, or by which there may be secured or evidenced, any indebtedness for money borrowed in excess of $50 million in the aggregate of the Company and/or of any such Subsidiary, whether such indebtedness now exists or shall hereafter be created (i) resulting in such indebtedness becoming or being declared due and payable (unless such declaration has been rescinded) or (ii) constituting a failure to pay the principal of or interest on any such indebtedness when due and payable at its stated maturity, upon required repurchase, upon declaration of acceleration or otherwise;

(viii) a final judgment for the payment of $10 million or more (excluding any amounts covered by insurance) rendered against the Company or any Significant Subsidiary of the Company, which judgment is not discharged or stayed within 60 days after (i) the date on which the right to appeal thereof has expired if no such appeal has commenced, or (ii) the date on which all rights to appeal have been extinguished;

(ix) the Company or any Significant Subsidiary of the Company or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary shall commence a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to the Company or such Significant Subsidiary or such group of Subsidiaries or its or their debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of the Company or any such Significant Subsidiary or any such group of Subsidiaries or any substantial part of its or their property, or shall consent to any such relief or to the appointment of or taking possession by any such official in an involuntary case or other proceeding commenced against it or them, or shall make a general assignment for the benefit of creditors, or shall fail generally to pay its or their debts as they become due;

(x) an involuntary case or other proceeding shall be commenced against the Company or any Significant Subsidiary of the Company or any group of Subsidiaries of the Company that in the aggregate would constitute a Significant Subsidiary seeking liquidation, reorganization or other relief with respect to the Company or such Significant Subsidiary or such group of Subsidiaries or its or their debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of the Company or such Significant Subsidiary or such group of Subsidiaries or any substantial part of its or their

property, and such involuntary case or other proceeding shall remain undismissed and unstayed for a period of 30 consecutive days; or

(xi) except as permitted by this Indenture, any Subsidiary Guarantee shall be held in any judicial proceeding to be unenforceable or invalid for any reason or shall cease for any reason to be in full force and effect, or any Subsidiary Guarantor, or any Person acting on its behalf, shall deny or disaffirm such Subsidiary Guarantor's obligation under its Subsidiary Guarantee.

(b) In case one or more Events of Default shall have occurred and be continuing (whatever the reason for such Event of Default and whether it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body), then, and in each and every such case (other than an Event of Default specified in Section 8.01(ix) or Section 8.01(x) with respect to the Company or any of its Significant Subsidiaries or any group of its Subsidiaries that in the aggregate would constitute a Significant Subsidiary), unless the principal of all of the Notes shall have already become due and payable, either the Trustee or the Holders of at least 25% in aggregate principal amount of the Notes then Outstanding, by notice in writing to the Company (and to the Trustee if given by Holders), may, and the Trustee at the request of Holders of at least 25% in aggregate principal amount of the Notes then Outstanding shall, declare 100% of the principal of, and accrued and unpaid interest, if any, on, all the Notes to be due and payable, and upon any such declaration the same shall become and shall automatically be immediately due and payable, anything in this Indenture or in the Notes contained to the contrary notwithstanding. If an Event of Default specified in Section 8.01(ix) or Section 8.01(x) with respect to the Company or any of its Significant Subsidiaries or any group of its Subsidiaries that in the aggregate would constitute a Significant Subsidiary occurs and is continuing, 100% of the principal of, and accrued and unpaid interest, if any, on, all Notes shall become and shall automatically be immediately due and payable.

(c) Section 8.01(b), however, is subject to the conditions that if, at any time after the principal of the Notes shall have been so declared due and payable, and before any judgment or decree for the payment of the monies due shall have been obtained or entered as hereinafter provided, the Company shall pay or shall deposit with the Trustee a sum sufficient to pay installments of accrued and unpaid interest upon all Notes and the principal of any and all Notes that shall have become due otherwise than by acceleration (with interest on overdue installments of accrued and unpaid interest to the extent that payment of such interest is enforceable under applicable law, and on such principal at the rate borne by the Notes *plus* one percent at such time) and amounts due to the Trustee pursuant to Section 9.06, and if (1) rescission would not conflict with any judgment or decree of a court of competent jurisdiction and (2) any and all existing Events of Default under this Indenture, other than the nonpayment of the principal of and accrued and unpaid interest, if any, on Notes that shall have become due solely by such acceleration, shall have been cured or waived, then and in every such case the Holders of a majority of the aggregate principal amount of the Notes then Outstanding, by written notice to the Company and to the Trustee, may rescind and annul any consequence of any such Default or Events of Default, including such declaration and its consequences, and any

Event of Default arising therefrom shall be deemed to have been cured for every purpose of this Indenture; but no such rescission and annulment shall extend to or shall affect any subsequent Default or Event of Default, or shall impair any right consequent thereon.

(d) The Holders of a majority in aggregate principal amount of the Notes at the time Outstanding may on behalf of the Holders of all of the Notes, by written notice to the Company and the Trustee, waive any past Default or Event of Default hereunder except (i) a default in the payment of accrued and unpaid interest, if any, on, or the principal (including any Fundamental Change Purchase Price) of, the Notes when due that has not been cured pursuant to the provisions of Section 6.01, (ii) a failure by the Company to pay or deliver, as the case may be, the consideration due upon conversion of the Notes or (iii) a default in respect of a covenant or provision hereof which under Section 10.2 cannot be modified or amended without the consent of each Holder of an outstanding Note affected. Upon any such waiver the Company, the Trustee and the Holders of the Notes shall be restored to their former positions and rights hereunder; but no such waiver shall extend to any subsequent or other Default or Event of Default or impair any right consequent thereon. Whenever any Default or Event of Default hereunder shall have been waived as permitted by this Section 8.01, said Default or Event of Default shall for all purposes of the Notes and this Indenture be deemed to have been cured and to be not continuing; but no such waiver shall extend to any subsequent or other Default or Event of Default or impair any right consequent thereon.

Section 5.02 *Additional Interest*. Solely with respect to the Notes, the Base Indenture shall be amended by adding the following Section immediately after Section 8.11 of the Base Indenture:

SECTION 8.12. Additional Interest. Notwithstanding anything in this Indenture or in the Notes to the contrary, if the Company so elects, the sole remedy during the 90-day period specified below for an Event of Default relating to the Company’s failure to comply with its obligations as set forth in Section 4.01(a) or Section 4.01(b) of the Supplemental Indenture for the Notes shall, after the occurrence of such Event of Default, consist exclusively of the right to receive Additional Interest on the Notes at a rate equal to 0.25% per annum of the principal amount of the Notes outstanding for each day (x) during the 90-day period beginning on, and including, the occurrence of such Event of Default and (y) on which such Event of Default is continuing. If the Company so elects, such Additional Interest shall be payable in the same manner and on the same dates as regular interest on the Notes. On the 91st day after such Event of Default (if such Event of Default is not cured or waived prior to such 91st day), the Notes shall be subject to acceleration as provided in Section 8.01. For the avoidance of doubt, this Section 8.12 shall not affect the rights of Holders in the event of the occurrence of any Event of Default other than an Event of Default described in the first sentence of this Section 8.12. In the event the Company does not elect to pay Additional Interest following an Event of Default in accordance with this Section 8.12, the Notes shall be immediately subject to acceleration as provided in Section 8.01.

In order to elect to pay Additional Interest as the sole remedy during the first 90 days after the occurrence of any Event of Default described in the immediately

preceding paragraph, the Company must notify in writing all Holders of the Notes, the Trustee and the Paying Agent of such election prior to the beginning of such 90-day period. Upon the Company's failure to timely give such notice, the Notes shall be immediately subject to acceleration as provided in Section 8.01.

ARTICLE 6

SUPPLEMENTAL INDENTURES

Section 6.01 *Purposes for Which Supplemental Indentures May Be Entered into Without Consent of Holders.* Solely for purposes of the Notes, Section 10.01 of the Base Indenture shall be replaced in its entirety with the following:

SECTION 10.01. Purposes for Which Supplemental Indentures May Be Entered into Without Consent of Holders. The Company, and any Subsidiary Guarantor, when authorized by a Board Resolution, and the Trustee, at the Company's expense, may from time to time and at any time enter into an indenture or indentures supplemental hereto for one or more of the following purposes:

(a) to cure any ambiguity, omission, defect or inconsistency;

(b) to provide for the assumption by a Successor Company of the obligations of the Company under this Indenture and the Notes pursuant to Article XI or the assumption by a Successor Guarantor of the obligations of a Subsidiary Guarantor under this Indenture and its Subsidiary Guarantee pursuant to Article XIII;

(c) to add additional guarantees with respect to the Notes or to release any Subsidiary Guarantee in accordance with this Indenture;

(d) to secure the Notes;

(e) to add to the covenants for the benefit of the Holders or surrender any right or power conferred upon the Company or any Subsidiary Guarantor;

(f) to make any change that does not adversely affect the rights of the Holders of the Notes;

(g) to provide for the assumption by a successor trustee of the Trustee's obligations under this Indenture and the Notes in accordance with Article XI;

(h) to increase the Conversion Rate to the extent permitted by law and the rules of the New York Stock Exchange or any other securities exchange on which any of the securities of the Company are then listed, if the Board of Directors determines that such increase would be in the best interest of the Company;

(i) to provide for the conversion of the Notes in accordance with Section 8.07 of the Supplemental Indenture for the Notes;

(j) to conform the provisions of this Indenture or the Notes to the "Description of Notes" section of the Prospectus Supplement for the Notes; or

(k) to comply with any requirement of the Commission in connection with the qualification of this Indenture under the Trust Indenture Act.

Upon the written request of the Company, the Trustee is hereby authorized to join with the Company and the Subsidiary Guarantors in the execution of any such supplemental indenture, to make any further appropriate agreements and stipulations that may be therein contained, but the Trustee shall not be obligated to, but may in its discretion, enter into any supplemental indenture that affects the Trustee's own rights, duties or immunities under this Indenture or otherwise.

Any supplemental indenture authorized by the provisions of this Section 10.01 may be executed by the Company, any Subsidiary Guarantor and the Trustee without the consent of the Holders of any of the Notes at the time outstanding, notwithstanding any of the provisions of Section 10.02.

Section 6.02 *Modification of Indenture with Consent of Holders of at Least a Majority in Principal Amount of Outstanding Securities.* Solely for purposes of the Notes, Section 10.02 of the Base Indenture shall be replaced in its entirety with the following:

SECTION 10.02. Modification of Indenture with Consent of Holders of at Least a Majority in Principal Amount of Outstanding Securities. With the consent of the Holders of at least a majority of the aggregate principal amount of the Notes then Outstanding (including, without limitation, consents obtained in connection with a purchase of, or tender offer or exchange offer for, Notes), the Company and any Subsidiary Guarantor, when authorized by a Board Resolution, and the Trustee, at the Company's expense, may from time to time and at any time enter into an indenture or indentures supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or any supplemental indenture or of modifying in any manner the rights of the Holders; *provided*, *however*, that, without the consent of each Holder of an outstanding Note affected, no such supplemental indenture shall:

(a) reduce the percentage of the aggregate principal amount of Notes whose Holders must consent to an amendment of this Indenture or to waive any past Default or Event of Default;

(b) reduce the rate of or extend the stated time for payment of interest on any Note;

(c) reduce the principal of or extend the Maturity Date of any Note;

(d) make any change that impairs or adversely affects the conversion rights of any Notes;

(e) reduce the Fundamental Change Purchase Price of any Note or amend or modify in any manner adverse to the Holders the Company's obligation to make such payments, whether through an amendment or waiver of provisions in the covenants, definitions or otherwise;

(f) make any Note payable in a currency other than that stated in the Note;

(g) release or discharge any Subsidiary Guarantee except in accordance with this Indenture;

(h) change the ranking of the Notes;

(i) impair the right of any Holder to receive payment of principal of, and interest on, such Holder's Notes on or after the due dates therefor or to institute suit for the enforcement of any payment on or with respect to such Holder's Notes; or

(j) make any change to this proviso or to the waiver provisions in Section 8.01 of the Base Indenture.

Upon the written request of the Company, and upon the filing with the Trustee of evidence of the consent of Holders as aforesaid and subject to Section 10.03, the Trustee shall join with the Company and the Subsidiary Guarantors in the execution of such supplemental indenture unless such supplemental indenture affects the Trustee's own rights, duties or immunities under this Indenture or otherwise, in which case the Trustee may in its discretion, but shall not be obligated to, enter into such supplemental indenture.

The consent of the Holders is not necessary under this Section 10.02 to approve the particular form of any proposed supplemental indenture, but it shall be sufficient if the required number of Holders approve the substance thereof. After any such supplemental indenture becomes effective, the Company shall mail to the Holders a notice briefly describing such supplemental indenture; provided that the failure to give such notice to all the Holders, or any defect in such notice, shall not impair or affect the validity of the supplemental indenture.

ARTICLE 7

CONSOLIDATION, MERGER, SALE, OR TRANSFER

Section 7.01 *Consolidations and Mergers of Company and Sales Permitted Only on Certain Terms.* Solely for purposes of the Notes, Section 11.01(a) of the Base Indenture is hereby replaced in its entirety with the following:

SECTION 11.01. Consolidations and Mergers of Company and Sales Permitted Only on Certain Terms. (a) The Company shall not consolidate with or merge with or into any other Person, or transfer (by lease, assignment, sale, or otherwise) all or substantially all of its properties and assets to another Person unless (i) either (A) the Company shall be the continuing or surviving Person in such a consolidation or merger or

(B) the Person (if other than the Company) formed by such consolidation or into which the Company is merged or to which all or substantially all of the properties and assets of the Company are transferred (the Company or such other Person being referred to as the "**Surviving Person**") shall be a corporation organized and validly existing under the laws of the United States, any state thereof, or the District of Columbia, and shall expressly assume, by an indenture supplement, all the obligations of the Company under the Securities and the Indenture, (ii) immediately after the transaction and the incurrence or anticipated incurrence of any Indebtedness to be incurred in connection therewith, no Event of Default will exist, (iii) if as a result of such transaction the Notes become convertible into, or the Daily VWAP is calculated by reference to, common stock or other securities issued by a third party (subject to the provisions of Section 8.02 of the Supplemental Indenture for the Notes), such third party fully and unconditionally guarantees all obligations of the Company or such Surviving Person under the Notes and such supplemental indenture, unless such guarantee is not required for any shares of the Common Stock issuable upon conversion of the Notes to be freely tradable under U.S. securities law and (iv) an Officer's Certificate has been delivered to the Trustee to the effect that the conditions set forth in the preceding clauses (i) and (ii) have been satisfied and an Opinion of Counsel (from a counsel who shall not be an employee of the Company) has been delivered to the Trustee to the effect that the conditions set forth in the preceding clause (i) have been satisfied.

ARTICLE 8

CONVERSION OF NOTES

Section 8.01 *Conversion Privilege.* (a) Subject to and upon compliance with the provisions of this Article 8, each Holder of a Note shall have the right, at such Holder's option, to convert all or any portion (if the portion to be converted is $1,000 principal amount or an integral multiple thereof) of such Note (i) subject to satisfaction of one or more of the conditions described in Section 8.01(b), at any time prior to the close of business on the Business Day immediately preceding April 15, 2019, under the circumstances and during the periods set forth in Section 8.01(b), and (ii) regardless of whether any of the conditions set forth in Section 8.01(b) has been met, on or after April 15, 2019, and prior to the close of business on the second Scheduled Trading Day immediately preceding the Maturity Date, in each case, at the applicable Conversion Rate (subject to the settlement provisions of Section 8.02, the "**Conversion Obligation**").

(b)(i) Prior to the close of business on the Business Day immediately preceding April 15, 2019, the Notes shall be convertible during the five Business Day period immediately after any five consecutive Trading Day period (the "**Measurement Period**") in which the Trading Price per $1,000 principal amount of Notes, as determined following a request by a Holder of Notes in accordance with this subsection (b)(i) and the definition of Trading Price, for each Trading Day of such Measurement Period was less than 98% of the product of the Last Reported Sale Price of the Common Stock and the Conversion Rate on such Trading Day (the "**Trading Price Condition**"). The Trading Prices shall be determined by the Bid Solicitation Agent pursuant to this subsection (b)(i) and the definition of Trading Price. The Company shall provide written notice to the Bid Solicitation Agent of the three independent nationally

recognized securities dealers selected by the Company pursuant to the definition of Trading Price, along with appropriate contact information for each. The Bid Solicitation Agent shall have no obligation to determine the Trading Price of the Notes unless the Company has requested such determination, and the Company shall have no obligation to make such request unless a Holder provides the Company with reasonable evidence that the Trading Price per $1,000 principal amount of the Notes would be less than 98% of the product of the Last Reported Sale Price of the Common Stock and the applicable Conversion Rate, at which time the Company shall instruct the Bid Solicitation Agent to determine the Trading Price of the Notes in the manner described in this subsection (b)(i) and the definition of Trading Price beginning on the next Trading Day following the receipt of such evidence and on each successive Trading Day until the Trading Price per $1,000 principal amount of the Notes is greater than or equal to 98% of the product of the Last Reported Sale Price of the Common Stock and the Conversion Rate on such Trading Day. If the Company does not instruct the Bid Solicitation Agent to determine the Trading Price of the Notes, or if the Company gives such instruction to the Bid Solicitation Agent, and the Bid Solicitation Agent fails to make such determination, in each case when the Company or the Bid Solicitation Agent, as the case may be, is obligated to do so pursuant to the preceding sentence, then, in either case, the Trading Price per $1,000 principal amount of Notes shall be deemed to be less than 98% of the product of the Last Reported Sale Price of the Common Stock and the applicable Conversion Rate on each Trading Day of such failure. If the Trading Price Condition has been met, the Company shall so notify the Holders, the Trustee and the Conversion Agent (if other than the Trustee) within one Business Day. If, at any time after the Trading Price Condition has been met, the Trading Price per $1,000 principal amount of Notes is greater than or equal to 98% of the product of the Last Reported Sale Price of the Common Stock and the applicable Conversion Rate, the Company shall so notify the Holders, the Trustee and the Conversion Agent (if other than the Trustee) within one Business Day.

(ii) If, prior to the close of business on the Business Day immediately preceding April 15, 2019, the Company elects to:

(A) issue to all or substantially all holders of the Common Stock any rights, options or warrants entitling them, for a period of not more than 45 calendar days after the announcement date of such issuance, to subscribe for or purchase shares of the Common Stock, at a price per share that is less than the average of the Last Reported Sale Prices of the Common Stock for the ten consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the date of announcement of such issuance; or

(B) distribute to all or substantially all holders of the Common Stock the Company’s assets, debt securities or certain rights to purchase securities of the Company, which distribution has a value per share of the Common Stock, as reasonably determined by the Board of Directors, exceeding 10% of the Last Reported Sale Price of the Common Stock on the Trading Day preceding the date of announcement for such distribution,

then, in either case, the Company shall notify in writing all Holders of the Notes, the Trustee and the Conversion Agent (if other than the Trustee) at least 35 Scheduled Trading Days prior to the Ex-Dividend Date for such issuance or distribution. Once the Company has given such notice,

the Notes shall be convertible at any time until the earlier of (1) the close of business on the Business Day immediately preceding such Ex-Dividend Date and (2) the Company's announcement that such issuance or distribution will not take place, even if the Notes are not otherwise convertible at such time. Holders of the Notes shall not have the right to convert their Notes solely due to this Section 8.01(b)(ii) if each Holder will have the right to participate (as a result of holding the Notes, and at the same time and on the same terms as holders of Common Stock participate) in any of the transactions described in this Section 8.01(b)(ii) as if such Holder of the Notes held a number of shares of the Common Stock equal to (i) the applicable Conversion Rate, *multiplied by* (ii) (x) the principal amount of Notes held by such Holder *divided by* (y) $1,000, without having to convert its Notes.

(iii) If a transaction or event that constitutes a Fundamental Change or a Make-Whole Fundamental Change occurs prior to the close of business on the Business Day immediately preceding April 15, 2019, regardless of whether a Holder has the right to require the Company to purchase such Holder's Notes pursuant to Section 9.01, or if the Company is a party to a consolidation, merger, binding share exchange, sale, conveyance, transfer or lease of all or substantially all of the Company's assets, pursuant to which the Common Stock would be converted into cash, securities or other assets, the Notes may be surrendered for conversion at any time from or after the Business Day following the effective date of the transaction until 35 Trading Days after the effective date of such transaction or, if such transaction also constitutes a Fundamental Change, until the related Fundamental Change Purchase Date. The Company shall notify in writing all Holders, the Trustee and the Conversion Agent (if other than the Trustee) of such transaction no later than the effective date of such transaction.

(iv) Prior to the close of business on the Business Day immediately preceding April 15, 2019, the Notes shall be convertible during any calendar quarter commencing after June 30, 2013, (and only during such calendar quarter), if the Last Reported Sale Price of the Common Stock for at least 20 Trading Days (whether or not consecutive) during the period of 30 consecutive Trading Days ending on the last Trading Day of the immediately preceding calendar quarter is greater than or equal to 130% of the applicable Conversion Price on each applicable Trading Day. The Company shall determine at the beginning of each calendar quarter commencing after May 31, 2013 whether the Notes may be surrendered for conversion in accordance with this clause (iv) and shall notify in writing the Company and the Trustee on or prior to the fifth Business Day of the Notes becoming convertible in accordance with this clause (iv).

Section 8.02 *Conversion Procedure; Settlement Upon Conversion*. (a) Except as provided in Section 8.03(b), upon any conversion of any Note, the Company shall pay or deliver, as the case may be, to converting Holders, in respect of its Conversion Obligation, (i) shares of Common Stock, together with cash, if applicable, in lieu of any fractional share of Common Stock in accordance with subsection (i) of this Section 8.02 ("**Physical Settlement**"), (ii) a cash payment without any delivery of shares of Common Stock ("**Cash Settlement**"), or (iii) a combination of cash and shares of Common Stock, together with cash, if applicable, in lieu of any fractional share of Common Stock in accordance with subsection (i) of this Section 8.02 ("**Combination Settlement**"), at its election, as set forth in this Section 8.02.

(i) Prior to the close of business on the Business Day immediately preceding April 15, 2019, the Company shall use the same Settlement Method for all conversions occurring on the same Conversion Date, *provided* that, prior to April 15, 2019, the Company shall not have any obligation to use the same Settlement Method with respect to conversions that occur on different Conversion Dates.

(ii) For conversions:

(A) that occur prior to the close of business on the Business Day immediately preceding April 15, 2019, by the close of business on the Business Day following the Conversion Date, the Company shall deliver a notice to converting Holders of the relevant Settlement Method in respect of such Conversion Date and, if the Company elects Combination Settlement, the related Cash Amount; and

(B) that occur on or after April 15, 2019, the Company shall deliver a notice to all Holders of the relevant Settlement Method and, if the Company elects Combination Settlement, the related Cash Amount, prior to the close of business on the Business Day immediately preceding April 15, 2019 (which Settlement Method and Cash Amount, if applicable, will apply to all conversions on or after April 15, 2019).

Any Settlement Notice delivered pursuant to clause (A) or (B) of this Section 8.02(a)(ii) may not be revoked.

(iii) If the Company does not deliver a Settlement Notice with respect to any conversion of a Note in accordance with Section 8.02(a)(ii), then the Company shall be deemed to have elected Combination Settlement in respect of its Conversion Obligation and the related Cash Amount shall be deemed to be $1,000. If the Company delivers a Settlement Notice with respect to the conversion of a Note in accordance with Section 8.02(a)(ii) electing Combination Settlement as the Settlement Method and does not indicate the Cash Amount, such Cash Amount shall be deemed to be $1,000.

(iv) With respect to any shares of Common Stock that are issuable upon conversion:

(A) if Physical Settlement applies, the Person in whose name the certificate or certificates for such shares of Common Stock shall be registered shall become the holder of record of such shares of Common Stock as of the close of business on the relevant Conversion Date; and

(B) if Combination Settlement applies, the Person in whose name the certificate or certificates for such shares of Common Stock shall be registered shall become the holder of record of such shares of Common Stock as of the close of business on the last Trading Day of the related Observation Period.

Upon a conversion of Notes, the Holder who surrendered such Notes for conversion shall no longer be a Holder of such Notes.

(v) If Physical Settlement applies to any Notes surrendered for conversion, the Company shall deliver to the converting Holder (subject to Section 8.02(c)), for each $1,000 principal amount of Notes being converted, a number of shares of Common Stock equal to the applicable Conversion Rate as of the relevant Conversion Date, together with cash in lieu of fractional shares of Common Stock pursuant to Section 8.02(i). Subject to Section 8.03(b), the Company shall deliver such shares of Common Stock on the third Business Day following the Conversion Date.

(vi) If Cash Settlement applies to any Notes surrendered for conversion, the Company shall pay to the converting Holder, for each $1,000 principal amount of Notes being converted, an amount of cash equal to the sum of the Daily Conversion Values for each Trading Day during the relevant Observation Period. Subject to Section 8.03(b), the Company shall make such payment on the third Business Day following the last Trading Day of the applicable Observation Period.

(vii) If Combination Settlement applies to any Notes surrendered for conversion, the Company shall pay or deliver, as the case may be, to the converting Holder (subject to Section 8.02(c)) for each $1,000 principal amount of Notes being converted, the sum of the Daily Settlement Amounts for each Trading Day during the relevant Observation Period. Subject to Section 8.03(b), the Company shall deliver the cash and shares of Common Stock comprising its Conversion Obligation pursuant to the preceding sentence on the third Business Day following the last Trading Day of the applicable Observation Period.

(viii) The Daily Settlement Amounts (if applicable) and the Daily Conversion Values (if applicable) shall be determined by the Company promptly following the last day of the Observation Period. Promptly after such determination of the Daily Settlement Amounts or the Daily Conversion Values, as the case may be, and the amount of cash deliverable in lieu of any fractional share pursuant to Section 8.02(i), the Company shall notify in writing the Trustee and the Conversion Agent (if other than the Trustee) of the Daily Settlement Amounts or the Daily Conversion Values, as the case may be, and the amount of cash deliverable in lieu of fractional shares of Common Stock. The Trustee and the Conversion Agent (if other than the Trustee) shall have no responsibility for any such determination.

(b) Before any holder of a beneficial interest in a Global Note shall be entitled to convert such beneficial interest as set forth above, such holder shall comply with the procedures of the Depositary for converting a beneficial interest in a global note in effect at that time and, if required, pay funds equal to any interest payable on the next Interest Payment Date to which such holder is not entitled as set forth in Section 8.02(h) and, if required, all documentary, stamp or similar issue or transfer taxes, if any, as required by Section 8.02(d) or Section 8.02(e). In the case of a Physical Note, before the Holder thereof shall be entitled to convert such Note as set forth above, such Holder shall (1) complete, manually sign and deliver an irrevocable notice to the Conversion Agent as set forth in the Form of Notice of Conversion (or a facsimile thereof)

(a "**Notice of Conversion**") at the office of the Conversion Agent and state in writing therein the principal amount of such Note to be converted and the name or names (with addresses) in which such Holder wishes the certificate or certificates for any shares of Common Stock to be delivered upon settlement of the Conversion Obligation to be registered, (2) surrender such Note, duly endorsed to the Company or in blank at the office of the Conversion Agent, (3) if required, pay funds equal to any interest payable on the next Interest Payment Date to which such Holder is not entitled as set forth in Section 8.02(h), (4) if required, furnish appropriate endorsements and transfer documents and (5) if required, pay all documentary, stamp or similar issue or transfer taxes, if any, as required by Section 8.02(d) or Section 8.02(e). The Conversion Agent shall notify the Company of any conversion pursuant to this Article 8 on the Conversion Date for such conversion. No Notice of Conversion with respect to any Note may be delivered by the Holder thereof if such Holder has also delivered a Fundamental Change Purchase Notice to the Company in respect of such Note and not validly withdrawn such Fundamental Change Purchase Notice in accordance with Section 9.03.

If more than one Note shall be surrendered for conversion at one time by the same Holder, the Conversion Obligation with respect to such Notes shall be computed on the basis of the aggregate principal amount of the Notes (or specified portions thereof to the extent permitted thereby) so surrendered.

(c) A Note shall be deemed to have been converted immediately prior to the close of business on the date (the "**Conversion Date**") that the Holder has complied with the requirements set forth in subsection (b) above. If any shares of Common Stock are due to converting Holders, the Company shall issue or cause to be issued, and deliver to the Conversion Agent or to such Holder, or such Holder's nominee or nominees, certificates or a book-entry transfer through the Depositary for the full number of shares of Common Stock to which such Holder shall be entitled in satisfaction of the Company's Conversion Obligation.

(d) In case any Note shall be surrendered for partial conversion, the Company shall execute and the Trustee shall authenticate and deliver to or upon the written order of the Holder of the Note so surrendered a new Note or Notes in authorized denominations in an aggregate principal amount equal to the unconverted portion of the surrendered Note, without payment of any service charge by the converting Holder but, if required by the Company or Trustee, with payment of a sum sufficient to cover any transfer tax or similar governmental charge required by law or that may be imposed in connection therewith as a result of the name of the Holder of the new Notes issued upon such conversion being different from the name of the Holder of the old Notes surrendered for such conversion.

(e) If a Holder submits a Note for conversion in accordance with Section 8.02, the Company shall pay any documentary, stamp or similar issue or transfer tax due on the issue of any shares of Common Stock upon such conversion, unless such tax is due because such Holder requests such shares to be issued in a name other than such Holder's name, in which case such Holder shall pay such tax. The Conversion Agent may refuse to deliver the certificates representing the shares of Common Stock being issued in a name other than the Holder's name until the Trustee receives a sum sufficient to pay any such tax that is due by such Holder in accordance with the immediately preceding sentence.

(f) Except as provided in Section 8.04, no adjustment shall be made for dividends on any shares issued upon the conversion of any Note as provided in this Article 8.

(g) Upon the conversion of an interest in a Global Note, the Trustee, or the Custodian at the direction of the Trustee, shall make a notation on such Global Note as to the reduction in the principal amount represented thereby. The Company shall notify the Trustee in writing of any conversion of Notes effected through any Conversion Agent other than the Trustee.

(h) Upon conversion, a Holder shall not receive any separate cash payment or additional shares of Common Stock representing accrued and unpaid interest, if any, except as set forth below. Upon conversion of any Note, the Company's settlement of the Conversion Obligation with respect to such Note shall be deemed to satisfy in full its obligation to pay the principal amount of such Note and accrued and unpaid interest, if any, on such Note to, but not including, the Conversion Date. As a result, accrued and unpaid interest, if any, on such Note to, but not including, the Conversion Date shall be deemed to be paid in full rather than cancelled, extinguished or forfeited. Upon a conversion of Notes into a combination of cash and shares of Common Stock, accrued and unpaid interest, if any, shall be deemed to be paid first out of the cash paid upon such conversion. Notwithstanding the foregoing, if Notes are converted after the close of business on a Regular Record Date and prior to the open of business on the corresponding Interest Payment Date, Holders of such Notes as of the close of business on such Regular Record Date shall receive the full amount of interest payable on such Notes on the corresponding Interest Payment Date notwithstanding such conversion. Notes surrendered for conversion during the period from the close of business on any Regular Record Date to the open of business on the immediately following Interest Payment Date must be accompanied by funds equal to the amount of interest payable on the Notes so converted; *provided* that no such payment shall be required (1) if such Notes are surrendered for conversion after the close of business on the Regular Record Date immediately preceding the Maturity Date; (2) if the Company has specified a Fundamental Change Purchase Date that is after a Regular Record Date and on or prior to the second Scheduled Trading Day immediately following the corresponding Interest Payment Date; or (3) to the extent of any Defaulted Amounts, if any Defaulted Amounts exist at the time of conversion with respect to such Note.

(i) The Company shall not issue any fractional share of Common Stock upon conversion of the Notes and shall instead pay cash in lieu of any fractional share of Common Stock issuable upon conversion. If Physical Settlement applies, the amount of such cash shall be based on the Daily VWAP of the Common Stock on the relevant Conversion Date. If Combination Settlement applies, the amount of such cash shall be based on the Daily VWAP of the Common Stock on the last Trading Day of the applicable Observation Period. If Combination Settlement applies, for each Note surrendered for conversion the full number of shares of Common Stock that shall be issued upon conversion thereof shall be calculated on the basis of the aggregate Daily Settlement Amounts for the applicable Observation Period and any fractional shares of Common Stock remaining after such calculation shall be paid in cash. In addition, if more than one Note shall be surrendered for conversion at one time by the same Holder, the number of full shares of Common Stock, if any, that shall be issued upon conversion thereof shall be calculated on the basis of the aggregate principal amount of the Notes (or specified portions thereof) so surrendered.

Section 8.03 *Increased Conversion Rate Applicable to Certain Notes Surrendered in Connection with Make-Whole Fundamental Changes.* (a) If a Make-Whole Fundamental Change occurs prior to the Maturity Date and a Holder elects to convert its Notes in connection with such Make-Whole Fundamental Change, the Company shall, under the circumstances described below, increase the Conversion Rate for the Notes so surrendered for conversion by a number of additional shares of Common Stock (the "**Additional Shares**"), as described below. A conversion of Notes shall be deemed for these purposes to be "in connection with" such Make-Whole Fundamental Change if the relevant Notice of Conversion is received by the Conversion Agent from, and including, the Effective Date of the Make-Whole Fundamental Change up to, and including, the Business Day immediately prior to the related Fundamental Change Purchase Date (or, in the case of a Make-Whole Fundamental Change that would have been a Fundamental Change but for the *proviso* in clause (2) of the definition thereof, the 35th Trading Day immediately following the Effective Date of such Make-Whole Fundamental Change).

(b) Upon surrender of Notes for conversion in connection with a Make-Whole Fundamental Change pursuant to Section 8.01(b)(iii), the Company shall pay or deliver, as the case may be, shares of Common Stock, cash or a combination of cash and shares of Common Stock in accordance with Section 8.02; *provided*, *however*, that if, at the effective time of a Make-Whole Fundamental Change described in clause (2) of the definition of Fundamental Change, the Reference Property is comprised entirely of cash, for any conversion of Notes following the Effective Date of such Make-Whole Fundamental Change, the consideration due upon conversion shall be an amount of cash per $1,000 principal amount of converted Notes equal to the applicable Conversion Rate (including any adjustment for Additional Shares), *multiplied by* the Stock Price for such Make-Whole Fundamental Change. In such event, the Conversion Obligation shall be determined as of the relevant Conversion Date and paid to Holders in cash on the third Business Day following such Conversion Date. The Company shall notify the Holders of Notes of the Effective Date of any Make-Whole Fundamental Change and issue a press release announcing such Effective Date no later than five Business Days after such Effective Date.

(c) The number of Additional Shares, if any, by which the Conversion Rate shall be increased shall be determined by reference to the table in subsection (e) below, based on the date on which the Make-Whole Fundamental Change occurs or becomes effective (the "**Effective Date**") and the price (the "**Stock Price**") paid (or deemed paid) per share of the Common Stock in the Make-Whole Fundamental Change. If the holders of the Common Stock receive only cash in a Make-Whole Fundamental Change described in clause (2) of the definition of Fundamental Change, the Stock Price shall be the cash amount paid per share. Otherwise, the Stock Price shall be the average of the Last Reported Sale Prices of the Common Stock over the five Trading Day period ending on, and including, the Trading Day immediately preceding the Effective Date of the Make-Whole Fundamental Change.

(d) The Stock Prices set forth in the column headings of the table in subsection (e) below shall be adjusted as of any date on which the Conversion Rate is otherwise adjusted. The adjusted Stock Prices shall equal the Stock Prices applicable immediately prior to such adjustment, *multiplied by* a fraction, the numerator of which is the Conversion Rate immediately prior to the adjustment giving rise to the Stock Price adjustment and the denominator of which is

the Conversion Rate as so adjusted. The number of Additional Shares set forth in the table below shall be adjusted in the same manner and at the same time as the Conversion Rate as set forth in Section 8.04.

(e) The following table sets forth the number of Additional Shares to be added to the Conversion Rate pursuant to this Section 8.03 for each Stock Price and Effective Date set forth below:

	Stock Price									
Effective Date	**$30.16**	**$35.00**	**$40.72**	**$45.00**	**$50.00**	**$60.00**	**$70.00**	**$80.00**	**$90.00**	**$100.00**
April 17, 2013	8.5960	6.8136	5.1176	4.2118	3.4183	2.3604	1.7112	1.2868	0.9953	0.7871
October 15, 2014	8.5960	6.6754	4.8829	3.9430	3.1337	2.0839	1.4637	1.0725	0.8123	0.6315
October 15, 2015	8.5960	6.5077	4.6399	3.6770	2.8616	1.8323	1.2471	0.8913	0.6623	0.5077
October 15, 2016	8.5960	6.2476	4.2902	3.3054	2.4916	1.5057	0.9778	0.6748	0.4895	0.3697
October 15, 2017	8.5960	5.8383	3.7674	2.7654	1.9712	1.0761	0.6464	0.4244	0.3005	0.2257
October 15, 2018	8.5960	5.1531	2.9046	1.9039	1.1853	0.5090	0.2650	0.1683	0.1234	0.0981
October 15, 2019	8.5960	4.0111	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

The exact Stock Prices and Effective Dates may not be set forth in the table above, in which case:

(i) if the Stock Price is between two Stock Prices in the table above or the Effective Date is between two Effective Dates in the table, the number of Additional Shares shall be determined by a straight-line interpolation between the number of Additional Shares set forth for the higher and lower Stock Prices or the earlier and later Effective Dates based on a 365-day year, as applicable;

(ii) if the Stock Price is greater than $100.00 per share (subject to adjustment in the same manner as the Stock Prices set forth in the column headings of the table above pursuant to clause (d) above), no Additional Shares shall be added to the Conversion Rate; and

(iii) if the Stock Price is less than $30.16 per share (subject to adjustment in the same manner as the Stock Prices set forth in the column headings of the table above pursuant to clause (d) above), no Additional Shares shall be added to the Conversion Rate.

Notwithstanding the foregoing, in no event shall the total number of shares of Common Stock issuable upon conversion exceed 33.1564 per $1,000 principal amount of Notes, subject to adjustment in the same manner as the Conversion Rate pursuant to Section 8.04 and subject to Section 8.12.

(f) Nothing in this Section 8.03 shall prevent an adjustment to the Conversion Rate pursuant to Section 8.04 in respect of a Make-Whole Fundamental Change.

Section 8.04 *Adjustment of Conversion Rate.* The Conversion Rate shall be adjusted from time to time by the Company if any of the following events occurs, except that the Company shall not make any adjustment to the Conversion Rate if Holders of the Notes participate (other than in the case of a share split or share combination), at the same time and upon the same terms as holders of the Common Stock and solely as a result of holding the Notes, in any of the transactions described in this Section 8.04, without having to convert their Notes, as if they held a number of shares of Common Stock equal to (i) the Conversion Rate in effect immediately prior to the effective time for such adjustment, *multiplied by* (ii) (x) the principal amount of Notes held by such Holder *divided by* (y) $1,000.

(a) If the Company exclusively issues shares of Common Stock as a dividend or distribution on shares of the Common Stock, or if the Company effects a share split or share combination, the Conversion Rate shall be adjusted based on the following formula:

$$CR_1 = CR_0 x \frac{OS_1}{OS_0}$$

where,

CR_0 = the Conversion Rate in effect immediately prior to the open of business on the Ex-Dividend Date for such dividend or distribution, or immediately prior to the open of business on the Distribution Effective Date of such share split or share combination, as applicable;

CR_1 = the Conversion Rate in effect immediately after the open of business on such Ex-Dividend Date or Distribution Effective Date;

OS_0 = the number of shares of Common Stock outstanding immediately prior to the open of business on such Ex-Dividend Date or Distribution Effective Date; and

OS_1 = the number of shares of Common Stock outstanding immediately after giving effect to such dividend, distribution, share split or share combination.

Any adjustment made under this Section 8.04(a) shall become effective immediately after the open of business on the Ex-Dividend Date for such dividend or distribution, or immediately after the open of business on the Distribution Effective Date for such share split or share combination, as applicable. If any dividend or distribution of the type described in this Section 8.04(a) is declared but not so paid or made, the Conversion Rate shall be immediately readjusted, effective as of the date the Board of Directors determines not to pay such dividend or distribution, to the Conversion Rate that would then be in effect if such dividend or distribution had not been declared.

(b) If the Company issues to all or substantially all holders of the Common Stock any rights, options or warrants entitling them, for a period of not more than 45 calendar days after the announcement date of such issuance, to subscribe for or purchase shares of the Common Stock at a price per share that is less than the average of the Last Reported Sale Prices of the Common Stock for the ten consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the date of announcement of such issuance, the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{OS_0 + X}{OS_0 + Y}$$

where,

CR_0 = the Conversion Rate in effect immediately prior to the open of business on the Ex-Dividend Date for such issuance;

CR_1 = the Conversion Rate in effect immediately after the open of business on such Ex-Dividend Date;

OS_0 = the number of shares of Common Stock outstanding immediately prior to the open of business on such Ex-Dividend Date;

X = the total number of shares of Common Stock issuable pursuant to such rights, options or warrants; and

Y = the number of shares of Common Stock equal to the aggregate price payable to exercise such rights, options or warrants, *divided by* the average of the Last Reported Sale Prices of the Common Stock over the ten consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the date of announcement of the issuance of such rights, options or warrants.

Any increase made under this Section 8.04(b) shall be made successively whenever any such rights, options or warrants are issued and shall become effective immediately after the open of business on the Ex-Dividend Date for such issuance. To the extent that shares of the Common Stock are not delivered after the expiration of such rights, options or warrants, the Conversion Rate shall be decreased to the Conversion Rate that would then be in effect had the increase with respect to the issuance of such rights, options or warrants been made on the basis of delivery of only the number of shares of Common Stock actually delivered. If such rights, options or warrants are not so issued, the Conversion Rate shall be decreased to the Conversion Rate that would then be in effect if such Ex-Dividend Date for such issuance had not occurred.

For purposes of Section 8.01(b)(ii)(A) and this Section 8.04(b), in determining whether any rights, options or warrants entitle the holders thereof to subscribe for or purchase shares of Common Stock at less than such average of the Last Reported Sale Prices of the Common Stock for the ten consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the date of announcement for such issuance, and in determining the aggregate offering price of such shares of Common Stock, there shall be taken

into account any consideration received by the Company for such rights, options or warrants and any amount payable on exercise or conversion thereof, the value of such consideration, if other than cash, to be determined by the Board of Directors.

(c) If the Company distributes shares of its Capital Stock, evidences of its indebtedness, other assets or property of the Company or rights, options or warrants to acquire Capital Stock or other securities of the Company, to all or substantially all holders of the Common Stock, excluding (i) dividends, distributions or issuances as to which an adjustment was effected pursuant to Section 8.04(a) or Section 8.04(b), (ii) dividends or distributions paid exclusively in cash (as set forth in Section 8.04(d)), and (iii) Spin-Offs to which the provisions set forth below in this Section 8.04(c) shall apply (any of such shares of Capital Stock, evidences of indebtedness, other assets or property or rights, options or warrants to acquire Capital Stock or other securities of the Company, the "**Distributed Property**"), then the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 x \frac{SP_0}{SP_0 - FMV}$$

where,

CR_0	=	the Conversion Rate in effect immediately prior to the open of business on the Ex-Dividend Date for such distribution;
CR_1	=	the Conversion Rate in effect immediately after the open of business on such Ex-Dividend Date;
SP_0	=	the average of the Last Reported Sale Prices of the Common Stock over the ten consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the Ex-Dividend Date for such distribution; and
FMV	=	the fair market value (as determined by the Board of Directors) of the Distributed Property with respect to each outstanding share of Common Stock on the Ex-Dividend Date for such distribution.

If the Board of Directors determines the "FMV" (as defined above) of any distribution for purposes of this Section 8.04(c) by reference to the actual or when-issued trading market for any securities, it shall in doing so consider the prices in such market over the same period used in computing the Last Reported Sale Prices of the Common Stock over the ten consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the Ex-Dividend Date for such distribution. Notwithstanding the foregoing, if "FMV" (as defined above) is equal to or greater than "SP_0" (as defined above), in lieu of the foregoing increase, each Holder of a Note shall receive, in respect of each $1,000 principal amount thereof, at the same time and upon the same terms as holders of the Common Stock receive the Distributed Property, the amount and kind of Distributed Property such Holder would have received if such Holder owned a number of shares of Common Stock equal to the Conversion Rate in effect on the Ex-Dividend Date for such distribution.

Any increase made under the portion of this Section 8.04(c) above shall become effective immediately after the open of business on the Ex-Dividend Date for such distribution. If such distribution is not so paid or made, the Conversion Rate shall be decreased to the Conversion Rate that would then be in effect if such distribution had not been declared. If such a distribution of rights, options or warrants to acquire shares of Capital Stock or other securities of the Company is made, to the extent that shares of Capital Stock or other securities of the Company are not delivered after the expiration of such rights, options or warrants, the Conversion Rate shall be decreased to the Conversion Rate that would then be in effect had the increase with respect to the issuance of such rights, options or warrants been made on the basis of delivery of only the number of shares of Capital Stock or other securities of the Company actually delivered.

With respect to an adjustment pursuant to this Section 8.04(c) where there has been a payment of a dividend or other distribution on the Common Stock of shares of Capital Stock of any class or series, or similar equity interest, of or relating to a Subsidiary or other business unit of the Company, in each case listed on a national or regional securities exchange (a "**Spin-Off**"), the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{FMV_0 + MP_0}{MP_0}$$

where,

CR_0 = the Conversion Rate in effect immediately prior to the open of business on the Ex-Dividend Date for such Spin-Off;

CR_1 = the Conversion Rate in effect immediately after the open of business on the Ex-Dividend Date for such Spin-Off;

FMV_0 = the average of the Last Reported Sale Prices of the Capital Stock or similar equity interest distributed to holders of the Common Stock applicable to one share of the Common Stock (determined for purposes of the definition of Last Reported Sale Price as if such Capital Stock or similar equity interest were Common Stock) over the first ten consecutive Trading Day period beginning on, and including, the Ex-Dividend Date of the Spin-Off (the "**Valuation Period**"); and

MP_0 = the average of the Last Reported Sale Prices of the Common Stock over the Valuation Period.

The increase to the Conversion Rate under the preceding paragraph shall be determined on the last Trading Day of the Valuation Period but shall be given effect immediately after the open of business on the Ex-Dividend Date for such Spin-Off; *provided* that in respect of any conversion during the Valuation Period, references in the portion of this Section 8.04(c) related to Spin-Offs to 10 Trading Days shall be deemed replaced with such lesser number of Trading Days as have elapsed from, and including, the Ex-Dividend Date of such Spin-Off to, and including, the Conversion Date in determining the applicable Conversion Rate. If the Ex-Dividend Date for

such Spin-Off is less than 10 Trading Days prior to, and including, the end of the Observation Period in respect of any conversion, references in the portion of this Section 8.04(c) related to Spin-Offs to 10 Trading Days shall be deemed replaced, for purposes of calculating the affected daily Conversion Rates in respect of such conversion, with such lesser number of Trading Days as have elapsed from, and including, the Ex-Dividend Date for such Spin-Off to, and including, the last Trading Day of such Observation Period. If such Spin-Off is not made or completed, the Conversion Rate shall be decreased to the Conversion Rate that would then be in effect if such Spin-Off had not been declared.

(d) If any cash dividend or distribution is made to all or substantially all holders of the Common Stock, the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{SP_0}{SP_0 - C}$$

where,

CR_0 = the Conversion Rate in effect immediately prior to the open of business on the Ex-Dividend Date for such dividend or distribution;

CR_1 = the Conversion Rate in effect immediately after the open of business on the Ex-Dividend Date for such dividend or distribution;

SP_0 = the Last Reported Sale Price of the Common Stock on the Trading Day immediately preceding the Ex-Dividend Date for such dividend or distribution;

C = the amount in cash per share that the Company distributes to holders of the Common Stock.

Any such increase pursuant to this Section 8.04(d) shall become effective immediately after the open of business on the Ex-Dividend Date for such dividend or distribution. Notwithstanding the foregoing, if “C” (as defined above) is equal to or greater than “SP_0” (as defined above), in lieu of the foregoing increase, each Holder of a Note shall receive, for each $1,000 principal amount of Notes, at the same time and upon the same terms as holders of shares of the Common Stock, the amount of cash that such Holder would have received if such Holder owned a number of shares of Common Stock equal to the Conversion Rate on the Ex-Dividend Date for such cash dividend or distribution. If such dividend or distribution is not so paid, the Conversion Rate shall be decreased, effective as of the date the Board of Directors determines not to pay such dividend or distribution, to the Conversion Rate that would then be in effect if such dividend or distribution had not been declared.

(e) If the Company or any of its Subsidiaries makes a payment in respect of a tender offer or exchange offer for the Common Stock, and the cash and value of any other consideration included in the payment per share of the Common Stock exceeds the Last Reported Sale Price of the Common Stock on the Trading Day next succeeding the last date on which tenders or exchanges may be made pursuant to such tender or exchange offer, the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{AC + (SP_1 \times OS_1)}{OS_0 \times SP_1}$$

where,

CR_0 = the Conversion Rate in effect immediately prior to the open of business on the Trading Day next succeeding the date such tender or exchange offer expires;

CR_1 = the Conversion Rate in effect immediately after the open of business on the Trading Day next succeeding the date such tender or exchange offer expires;

AC = the aggregate value of all cash and any other consideration (as determined by the Board of Directors) paid or payable for shares of Common Stock purchased in such tender or exchange offer;

OS_0 = the number of shares of Common Stock outstanding immediately prior to the date such tender or exchange offer expires (prior to giving effect to the purchase of all shares of Common Stock accepted for purchase or exchange in such tender offer or exchange offer);

OS_1 = the number of shares of Common Stock outstanding immediately after the date such tender or exchange offer expires (after giving effect to the purchase of all shares of Common Stock accepted for purchase or exchange in such tender or exchange offer); and

SP_1 = the average of the Last Reported Sale Prices of the Common Stock over the ten consecutive Trading Day period commencing on, and including, the Trading Day next succeeding the date such tender or exchange offer expires.

The adjustment to the Conversion Rate under this Section 8.04(e) shall be determined at the close of business on the tenth Trading Day immediately following, and including, the Trading Day next succeeding the date such tender or exchange offer expires but shall be given effect immediately after the open of business on the Trading Day next succeeding the date such tender or exchange offer expires; *provided* that in respect of any conversion within the 10 Trading Days immediately following, and including, the Trading Day next succeeding the expiration date of any tender or exchange offer, references in this Section 8.04(e) to 10 Trading Days shall be deemed replaced with such lesser number of Trading Days as have elapsed from, and including, the Trading Day next succeeding the date that such tender or exchange offer expires to, and including, the Conversion Date for such conversion. If the Trading Day immediately following the date the tender or exchange offer expires is less than 10 Trading Days

prior to, and including, the end of the Observation Period in respect of any conversion, references in this Section 8.04(e) to 10 Trading Days shall be deemed replaced, for purposes of calculating the affected daily Conversion Rates in respect of that conversion, with such lesser number of Trading Days as have elapsed from, and including, the Trading Day immediately following the date such tender or exchange offer expires to, and including, the last Trading Day of such Observation Period. In the event that the Company is, or one of the Company's Subsidiaries is, obligated to purchase shares of the Common Stock pursuant to any such tender offer or exchange offer, but the Company is, or such Subsidiary is, permanently prevented by applicable law from effecting any such purchases, or any such purchases are rescinded, then the Conversion Rate shall be decreased to be the Conversion Rate which would then be in effect had the increase with respect to such tender or exchange offer been made on the basis of the number of shares of the Common Stock actually purchased or exchanged pursuant to such tender offer or exchange offer. Except as set forth in the preceding sentence, if the application of this Section 8.04(e) to any tender offer or exchange offer would result in a decrease in the Conversion Rate, no adjustment shall be made for such tender offer or exchange offer under this Section 8.04(e).

(f) Notwithstanding this Section 8.04 or any other provision of this Supplemental Indenture or the Notes, if a Conversion Rate adjustment becomes effective on any Ex-Dividend Date, and a Holder that has converted its Notes on or after such Ex-Dividend Date and on or prior to the related Record Date would be treated as the record holder of the Common Stock as of the related Conversion Date as described under Section 8.02(a)(iv) based on an adjusted Conversion Rate for such Ex-Dividend Date, then, notwithstanding the Conversion Rate adjustment provisions in this Section 8.04, the Conversion Rate adjustment relating to such Ex-Dividend Date shall not be made for such converting Holder. Instead, such Holder shall be treated as if such Holder were the record owner of a number of shares of Common Stock equal to the Conversion Rate on an unadjusted basis, for each $1,000 principal amount of Notes, and participate in the related dividend, distribution or other event giving rise to such adjustment.

(g) Except as stated herein, the Company shall not adjust the Conversion Rate for the issuance of shares of the Common Stock or any securities convertible into or exchangeable for shares of the Common Stock or the right to purchase shares of the Common Stock or such convertible or exchangeable securities.

(h) In addition to those adjustments required by Section 8.03 and clauses (a), (b), (c), (d) and (e) of this Section 8.04, and to the extent permitted by applicable law and the rules of the New York Stock Exchange and any other securities exchange on which any of the Company's securities are then listed, the Company from time to time may increase the Conversion Rate by any amount for a period of at least 20 Business Days if the Board of Directors determines that such increase would be in the Company's best interest. In addition, the Company may (but is not required to) increase the Conversion Rate to avoid or diminish any income tax to holders of Common Stock or rights to purchase Common Stock in connection with a dividend or distribution of shares (or rights to acquire shares) or similar event. Whenever the Conversion Rate is increased pursuant to either of the preceding two sentences, the Company shall mail to the Holder of each Note at its last address appearing on the Note Register a notice of such increase at least 15 days prior to the date the increased Conversion Rate takes effect, and such notice shall state the increased Conversion Rate and the period during which it will be in effect.

(i) Notwithstanding anything to the contrary in this Article 8, the Conversion Rate shall not be adjusted:

(i) upon the issuance of any shares of Common Stock pursuant to any present or future plan providing for the reinvestment of dividends or interest payable on the Company's securities and the investment of additional optional amounts in shares of Common Stock under any plan;

(ii) upon the issuance of any shares of Common Stock or options or rights to purchase those shares pursuant to any present or future employee, director or consultant benefit plan or program or employee agreement or arrangement of or assumed by the Company or any of the Company's Subsidiaries;

(iii) upon the issuance of any shares of the Common Stock pursuant to any option, warrant, right or exercisable, exchangeable or convertible security not described in clause (ii) of this subsection and outstanding as of the date the Notes were first issued, including the Company's 3.00% Convertible Senior Notes due 2015;

(iv) for a change solely in the par value of the Common Stock; or

(v) for accrued and unpaid interest, if any.

(j) All calculations and other determinations under this Article 8 shall be made by the Company and shall be made to the nearest one-ten thousandth (1/10,000) of a share. No adjustment to the Conversion Rate shall be required under this Section 8.04 unless such adjustment would require an increase or decrease of at least 1% of the Conversion Rate; *provided* that the Company shall carry forward any adjustments that are less than 1% of the Conversion Rate that the Company elects not to make and make such carried-forward adjustments upon (1) each of the 40 days of any Observation Period with respect any conversion of the Notes (or, in the case of Physical Settlement, any Conversion Date), (2) the occurrence of a Fundamental Change, (3) the Maturity Date and (4) such time as all adjustments that have not been made prior thereto would have the effect of adjusting the Conversion Rate by at least 1%.

(k) Whenever the Conversion Rate is adjusted as herein provided, the Company shall promptly file with the Trustee (and the Conversion Agent if not the Trustee) an Officers' Certificate setting forth the Conversion Rate after such adjustment and setting forth a brief statement of the facts requiring such adjustment. Unless and until a Responsible Officer of the Trustee shall have received such Officers' Certificate, the Trustee shall not be deemed to have knowledge of any adjustment of the Conversion Rate and may assume without inquiry that the last Conversion Rate of which it has knowledge is still in effect. Promptly after delivery of such certificate, the Company shall prepare a notice of such adjustment of the Conversion Rate setting forth the adjusted Conversion Rate and the date on which each adjustment becomes effective and shall mail such notice of such adjustment of the Conversion Rate to each Holder at its last address appearing on the Note Register provided for in this Indenture. Failure to deliver such notice shall not affect the legality or validity of any such adjustment.

(l) For purposes of this Section 8.04, the number of shares of Common Stock at any time outstanding shall not include shares held in the treasury of the Company so long as the

Company does not pay any dividend or make any distribution on shares of Common Stock held in the treasury of the Company, but shall include shares issuable in respect of scrip certificates issued in lieu of fractions of shares of Common Stock.

Section 8.05 *Adjustments of Prices.* Whenever any provision of this Indenture requires the Company to calculate the Last Reported Sale Prices, the Daily VWAPs, the Daily Conversion Values or the Daily Settlement Amounts over a span of multiple days (including an Observation Period and the period for determining the Stock Price for purposes of a Make-Whole Fundamental Change), the Board of Directors shall make appropriate adjustments to each to account for any adjustment to the Conversion Rate that becomes effective, or any event requiring an adjustment to the Conversion Rate where the Ex-Dividend Date of the event occurs, at any time during the period when the Last Reported Sale Prices, the Daily VWAPs, the Daily Conversion Values or the Daily Settlement Amounts are to be calculated.

Section 8.06 *Shares to Be Fully Paid.* The Company shall provide at all times, free from preemptive rights, out of its authorized but unissued shares or shares held in treasury, a number of shares of Common Stock equal to (a) 33.1564 subject to adjustment in the same manner as the Conversion Rate pursuant to Section 8.04 and subject to Section 8.12, *multiplied by* (b)(i) the aggregate principal amount of Notes then outstanding, *divided by* (ii) $1,000, for the purpose of providing for conversion of the Notes from time to time as such Notes are presented for conversion.

Section 8.07 *Effect of Recapitalizations, Reclassifications and Changes of Common Stock*. (a) In the case of:

(i) any recapitalization, reclassification or change of the Common Stock (other than changes resulting from a share split or share combination),

(ii) any consolidation, merger or combination involving the Company,

(iii) any sale, lease or other transfer to a third party of the consolidated assets of the Company substantially as an entirety or

(iv) any statutory share exchange,

in each case as a result of which the Common Stock would be converted into, or exchanged for, stock, other securities or other property or assets (including cash or any combination thereof) (any such event, a "**Merger Event**"), then, at and after the effective time of such Merger Event, the right to convert each $1,000 principal amount of Notes shall be changed into a right to convert such principal amount of Notes into the kind and amount of shares of stock or other securities or other property or assets (including cash or any combination thereof) that a holder of a number of shares of Common Stock equal to the Conversion Rate immediately prior to such Merger Event would have owned or been entitled to receive (the "**Reference Property**", with each "**unit of Reference Property**" meaning the kind and amount of Reference Property that a holder of one share of Common Stock is entitled to receive) upon such Merger Event and, prior to or at the effective time of such Merger Event, the Company or the successor or purchasing Person, as the case may be, shall execute with the Trustee a supplemental indenture providing for such change in the right to convert each $1,000 principal amount of Notes; *provided*, *however*,

that at and after the effective time of such Merger Event (A) the Company shall continue to have the right to determine the Settlement Method upon conversion of Notes in accordance with Section 8.02 and (B) (I) any amount payable in cash upon conversion of the Notes in accordance with Section 8.02 shall continue to be payable in cash, (II) any shares of Common Stock that the Company would have been required to deliver upon conversion of the Notes in accordance with Section 8.02 shall instead be deliverable in the amount and type of Reference Property that a holder of that number of shares of Common Stock would have been entitled to receive in such Merger Event and (III) the Daily VWAP shall be calculated based on the value of a unit of Reference Property.

If such Merger Event causes the Common Stock to be converted into, or exchanged for, the right to receive more than a single type of consideration (determined based in part upon any form of stockholder election), then (i) the Reference Property into which the Notes will be convertible or that will be used to calculate the Daily VWAP, as the case may be, shall be deemed to be the weighted average of the types and amounts of consideration received by the holders of Common Stock that affirmatively make such an election, and (ii) the unit of Reference Property for purposes of the immediately preceding paragraph shall refer to the consideration referred to in clause (i) attributable to one share of Common Stock. If the holders receive only cash in such Merger Event, then for all conversions that occur after the effective date of such Merger Event (x) the consideration due upon conversion of each $1,000 principal amount of Notes shall be solely cash in an amount equal to the Conversion Rate in effect on the Conversion Date (as may be increased by any Additional Shares pursuant to Section 8.03), *multiplied by* the price per share of Common Stock in such Merger Event and (y) the Company shall satisfy the Conversion Obligation by paying cash to converting Holders on the third Scheduled Trading Day immediately following the Conversion Date. The Company shall notify in writing all Holders, the Trustee and the Conversion Agent (if other than the Trustee) of such weighted average as soon as practicable after such determination is made.

Such supplemental indenture described in the second immediately preceding paragraph shall provide for adjustments that shall be as nearly equivalent as is possible to the adjustments provided for in this Article 8. If, in the case of any Merger Event, the Reference Property includes shares of stock, securities or other property or assets (including cash or any combination thereof) of a Person other than the successor or purchasing corporation, as the case may be, in such Merger Event, then such supplemental indenture shall also be executed by such other Person and shall contain such additional provisions to protect the interests of the Holders of the Notes as the Board of Directors shall reasonably consider necessary by reason of the foregoing, including to the extent required by the Board of Directors and practicable the provisions providing for the purchase rights set forth in Article 9.

(b) In the event the Company shall execute a supplemental indenture pursuant to Section 8.07(a), the Company shall promptly file with the Trustee an Officer’s Certificate briefly stating the reasons therefore, the kind or amount of cash, securities or property or asset that will comprise the Reference Property after any such Merger Event, any adjustment to be made with respect thereto and that all conditions precedent have been complied with, and shall promptly mail notice thereof to all Holders. The Company shall cause notice of the execution of such supplemental indenture to be mailed to each Holder, at its address appearing on the Note

Register provided for in this Indenture, within 20 days after execution thereof. Failure to deliver such notice shall not affect the legality or validity of such supplemental indenture.

(c) The Company shall not become a party to any Merger Event unless its terms are consistent with this Section 8.07. None of the foregoing provisions shall affect any right that a holder of Notes may have to convert its Notes into cash, shares of Common Stock or a combination of cash and shares of Common Stock, as applicable, as set forth in Section 8.01 and Section 8.02 prior to the effective date of such Merger Event.

(d) The above provisions of this Section shall similarly apply to successive Merger Events.

Section 8.08 *Certain Covenants.* (a) The Company covenants that all shares of Common Stock issued upon conversion of Notes will be fully paid and non-assessable by the Company and free from all taxes (except as otherwise provided in Section 8.02(e)), liens and charges with respect to the issue thereof.

(b) The Company covenants that, if any shares of Common Stock to be provided for the purpose of conversion of Notes hereunder require registration with or approval of any governmental authority under any federal or state law before such shares may be validly issued upon conversion, the Company will, to the extent then permitted by the rules and interpretations of the Commission, secure such registration or approval, as the case may be.

(c) The Company further covenants that if at any time the Common Stock shall be listed on any national or regional securities exchange or automated quotation system the Company will list and keep listed, so long as the Common Stock shall be so listed on such exchange or automated quotation system, any Common Stock issuable upon conversion of the Notes.

Section 8.09 *Responsibility of Trustee.* The Trustee and any other Conversion Agent shall not at any time be under any duty or responsibility to any Holder to determine the Conversion Rate (or any adjustment thereto) or whether any facts exist that may require any adjustment (including any increase) of the Conversion Rate, or with respect to the nature or extent or calculation of any such adjustment when made, or with respect to the method employed, or herein or in any supplemental indenture provided to be employed, in making the same. The Trustee and any other Conversion Agent shall not be accountable with respect to the validity or value (or the kind or amount) of any shares of Common Stock, or of any securities, property or cash that may at any time be issued or delivered upon the conversion of any Note; and the Trustee and any other Conversion Agent make no representations with respect thereto. Neither the Trustee nor any Conversion Agent shall be responsible for any failure of the Company to issue, transfer or deliver any shares of Common Stock or stock certificates or other securities or property or cash upon the surrender of any Note for the purpose of conversion or to comply with any of the duties, responsibilities or covenants of the Company contained in this Article 8. Without limiting the generality of the foregoing, neither the Trustee nor any Conversion Agent shall be under any responsibility to determine the correctness of any provisions contained in any supplemental indenture entered into pursuant to Section 8.07 relating either to the kind or amount of shares of stock or securities or property (including cash)

receivable by Holders upon the conversion of their Notes after any event referred to in such Section 8.07 or to any adjustment to be made with respect thereto, but, subject to the provisions of Section 9.01 of the Indenture may accept (without any independent investigation) as conclusive evidence of the correctness of any such provisions, and shall be protected in conclusively relying upon, the Officers' Certificate (which the Company shall be obligated to file with the Trustee prior to the execution of any such supplemental indenture) with respect thereto. Neither the Trustee nor the Conversion Agent shall be responsible for determining whether any event contemplated by Section 8.01(b) has occurred that makes the Notes eligible for conversion or no longer eligible therefor until the Company has delivered to the Trustee and the Conversion Agent the notices referred to in Section 8.01(b) with respect to the commencement or termination of such conversion rights, on which notices the Trustee and the Conversion Agent may conclusively rely, and the Company agrees to deliver such notices to the Trustee and the Conversion Agent immediately after the occurrence of any such event or at such other times as shall be provided for in Section 8.01(b).

Section 8.10 *Notice to Holders Prior to Certain Actions*. In case of any:

(a) action by the Company or one of its Subsidiaries that would require an adjustment in the Conversion Rate pursuant to Section 8.04 or Section 8.11; or

(b) Merger Event; or

(c) voluntary or involuntary dissolution, liquidation or winding-up of the Company or any of its Subsidiaries;

then, in each case (unless notice of such event is otherwise required pursuant to another provision of this Indenture), the Company shall cause to be filed with the Trustee and the Conversion Agent (if other than the Trustee) and to be mailed to each Holder at its address appearing on the Security Register, as promptly as possible but in any event at least 20 days prior to the applicable date hereinafter specified, a notice stating (i) the date on which a record is to be taken for the purpose of such action by the Company or one of its Subsidiaries or, if a record is not to be taken, the date as of which the holders of Common Stock of record are to be determined for the purposes of such action by the Company or one of its Subsidiaries, or (ii) the date on which such Merger Event, dissolution, liquidation or winding-up is expected to become effective or occur, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their Common Stock for securities or other property deliverable upon such Merger Event, dissolution, liquidation or winding-up. Failure to give such notice, or any defect therein, shall not affect the legality or validity of such action by the Company or one of its Subsidiaries, Merger Event, dissolution, liquidation or winding-up.

Section 8.11 *Stockholder Rights Plans.* To the extent that the Company has a rights plan in effect upon conversion of the Notes, each share of Common Stock, if any, issued upon such conversion shall be entitled to receive the appropriate number of rights, if any, and the certificates representing the Common Stock issued upon such conversion shall bear such legends, if any, in each case as may be provided by the terms of any such stockholder rights plan, as the same may be amended from time to time. If at the time of conversion, however, the rights have separated from the shares of Common Stock in accordance with the provisions of the

applicable stockholder rights plan so that the Holders would not be entitled to receive any rights in respect of Common Stock, if any, issuable upon conversion of the Notes, the Conversion Rate shall be adjusted at the time of separation as if the Company distributed to all holders of Common Stock, shares of Capital Stock of the Company, evidences of indebtedness, assets, property, rights, options or warrants as provided in Section 8.04(c), subject to readjustment in the event of the expiration, termination or redemption of such rights.

Section 8.12 *Limit on Issuance of Shares of Common Stock Upon Conversion.* Notwithstanding anything to the contrary in this Supplemental Indenture, if an event (other than a share split) occurs that results in an increase in the Conversion Rate that would potentially result in the issuance by the Company, upon conversion of the Notes, of 20% or more of the outstanding Common Stock immediately prior to the issuance of Notes, the Company shall, at its option, either obtain stockholder approval of any issuance of Common Stock upon conversion of the Notes in excess such limitation or deliver cash in lieu of any shares of Common Stock otherwise deliverable upon conversions in excess of such limitation based on the Daily VWAP of the Common Stock on each Trading Day of the relevant Observation Period in respect of which, in lieu of delivering shares of Common Stock, the Company delivers cash pursuant to this Section 8.12.

ARTICLE 9

PURCHASE OF NOTES AT OPTION OF HOLDERS

Section 9.01 *Purchase at Option of Holders Upon a Fundamental Change.* (a) If a Fundamental Change occurs at any time, then each Holder shall have the right, at such Holder's option, to require the Company to purchase for cash all of such Holder's Notes, or any portion of the principal amount thereof that is equal to $1,000 or an integral multiple of $1,000, on the date (the "**Fundamental Change Purchase Date**") specified by the Company, which shall not be less than 15 calendar days or more than 35 calendar days following the date of the Fundamental Change Company Notice at a purchase price equal to 100% of the principal amount of such Notes or such portion of the principal amount of Notes, as applicable, *plus* accrued and unpaid interest, if any, thereon up to but excluding the Fundamental Change Purchase Date (the "**Fundamental Change Purchase Price**"), unless the Fundamental Change Purchase Date occurs after a Regular Record Date and on or prior to the Interest Payment Date to which such Regular Record Date relates, in which case the Company shall instead pay the full amount of accrued and unpaid interest, if any, to Holders of record as of such Regular Record Date and the Fundamental Change Purchase Price shall be equal to 100% of the principal amount of Notes or portions thereof, as applicable, to be purchased pursuant to this Article 9.

(b) Purchases of Notes under this Section 9.01 shall be made, at the option of the Holder thereof, upon:

(i) delivery to the Paying Agent by such Holder of a duly completed notice (the "**Fundamental Change Purchase Notice**") in the form set forth in Attachment 2 to the Form of Note attached hereto as Exhibit A, if the Notes are Physical Notes, or in compliance with the Depositary's procedures for surrendering interests in Global Notes,

if the Notes are Global Notes, in each case on or before the close of business on the Business Day immediately preceding the Fundamental Change Purchase Date; and

(ii) delivery of the Notes, if the Notes are Physical Notes, to the Paying Agent at any time after delivery of the Fundamental Change Purchase Notice (together with all necessary endorsements for transfer) at the Corporate Trust Office of the Paying Agent, or book-entry transfer of the Notes, if the Notes are Global Notes, in compliance with the procedures of the Depositary, in each case such delivery being a condition to receipt by the Holder of the Fundamental Change Purchase Price therefor.

The Fundamental Change Purchase Notice in respect of any Notes to be purchased shall state:

(i) in the case of Physical Notes, the certificate numbers of the Notes to be delivered for purchase;

(ii) the portion of the principal amount of Notes to be purchased, which must be $1,000 or an integral multiple thereof; and

(iii) that the Notes are to be purchased by the Company pursuant to this Section 9.01;

provided, *however*, that if the Notes are Global Notes, the Fundamental Change Purchase Notice must comply with appropriate Depositary procedures.

Notwithstanding anything herein to the contrary, any Holder delivering to the Paying Agent the Fundamental Change Purchase Notice contemplated by this Section 9.01 shall have the right to withdraw, in whole or in part, such Fundamental Change Purchase Notice at any time prior to the close of business on the Business Day immediately preceding the Fundamental Change Purchase Date by delivery of a written notice of withdrawal to the Paying Agent in accordance with Section 9.02.

The Paying Agent shall promptly notify the Company of the receipt by it of any Fundamental Change Purchase Notice or written notice of withdrawal thereof.

(c) On or before the 10th calendar day after the occurrence of the effective date of a Fundamental Change, the Company shall provide to all Holders of Notes and the Trustee and the Paying Agent (if other than the Trustee) a notice (the "**Fundamental Change Company Notice**") of the occurrence of the effective date of such Fundamental Change and of the purchase right at the option of the Holders arising as a result thereof. Such notice shall be by first class mail or, in the case of Global Notes, in accordance with the applicable procedures of the Depositary. Simultaneously with providing such notice, the Company shall issue a press release containing the information set forth in such Fundamental Change Company Notice or publish such information on the Company's website or through such other public medium as the Company may use at that time. Each Fundamental Change Company Notice shall specify:

(i) the events causing the Fundamental Change;

(ii) the effective date of the Fundamental Change;

(iii) the last date on which a Holder may exercise the purchase right pursuant to this Article 9;

(iv) the Fundamental Change Purchase Price;

(v) the Fundamental Change Purchase Date;

(vi) the name and address of the Paying Agent and the Conversion Agent, if applicable;

(vii) the Conversion Rate and, if applicable, any adjustments to the Conversion Rate;

(viii) if applicable, that the Notes with respect to which a Fundamental Change Purchase Notice has been delivered by a Holder may be converted only if the Holder withdraws the Fundamental Change Purchase Notice in accordance with the terms of this Indenture; and

(ix) the procedures that Holders must follow to require the Company to purchase their Notes.

No failure of the Company to give the foregoing notices and no defect therein shall limit the Holders' purchase rights or affect the validity of the proceedings for the purchase of the Notes pursuant to this Section 9.01.

At the Company's written request, the Trustee shall give such notice in the Company's name and at the Company's expense; *provided*, *however*, that, in all cases, the text of such Fundamental Change Company Notice shall be prepared by the Company.

(d) Notwithstanding the foregoing, no Notes may be purchased by the Company on any date at the option of the Holders upon a Fundamental Change if the principal amount of the Notes has been accelerated, and such acceleration has not been rescinded, on or prior to such date (except in the case of an acceleration resulting from a Default by the Company in the payment of the Fundamental Change Purchase Price with respect to such Notes). The Paying Agent shall promptly return to the respective Holders thereof any Physical Notes held by it during the acceleration of the Notes and shall deem to be cancelled any instructions for book-entry transfer of the Notes to the Paying Agent in compliance with the procedures of the Depositary (except in the case of an acceleration resulting from a Default by the Company in the payment of the Fundamental Change Purchase Price with respect to such Notes), in which case, upon such return or cancellation, as the case may be, the Fundamental Change Purchase Notice with respect thereto shall be deemed to have been withdrawn.

Section 9.02 *Withdrawal of Fundamental Change Purchase Notice.* (a) A Fundamental Change Purchase Notice may be withdrawn (in whole or in part) by means of a written notice of withdrawal delivered to the Paying Agent in accordance with this Section 9.02

at any time prior to the close of business on the Business Day immediately preceding the Fundamental Change Purchase Date, specifying:

(i) the principal amount of the Notes with respect to which such notice of withdrawal is being submitted,

(ii) if such Notes are Physical Notes, the certificate numbers of such Notes, and

(iii) the principal amount, if any, of such Notes that remains subject to the original Fundamental Change Purchase Notice, which portion must be in principal amounts of $1,000 or an integral multiple of $1,000;

provided, *however*, that if the Notes are Global Notes, the notice must comply with appropriate procedures of the Depositary.

Section 9.03 *Deposit of Fundamental Change Purchase Price.* (a) The Company shall deposit with the Trustee (or other Paying Agent appointed by the Company, or if the Company is acting as its own Paying Agent, set aside, segregate and hold in trust as provided in Section 6.03 of the Indenture) on or prior to 11:00 a.m., New York City time, on the Fundamental Change Purchase Date an amount of money sufficient to purchase all of the Notes to be purchased at the appropriate Fundamental Change Purchase Price. Subject to receipt of funds and/or Notes by the Trustee (or other Paying Agent appointed by the Company), payment for Notes surrendered for purchase (and not withdrawn prior to the close of business on the Business Day immediately preceding the Fundamental Change Purchase Date) will be made on the later of (i) the Fundamental Change Purchase Date with respect to such Note (*provided* the Holder has satisfied the conditions in Section 9.01) and (ii) the time of book-entry transfer or the delivery of such Note to the Trustee (or other Paying Agent appointed by the Company) by the Holder thereof in the manner required by Section 9.01 by mailing checks for the amount payable to the Holders of such Notes entitled thereto as they shall appear in the Note Register, *provided*, *however*, that payments to the Depositary shall be made by wire transfer of immediately available funds to the account of the Depositary or its nominee. The Trustee shall, promptly after such payment and upon written demand by the Company, return to the Company any funds in excess of the Fundamental Change Purchase Price.

(b) If by 11:00 a.m. New York City time, on the Fundamental Change Purchase Date, the Trustee (or other Paying Agent appointed by the Company) holds money sufficient to make payment on all the Notes or portions thereof that are to be purchased on such Fundamental Change Purchase Date, then (i) such Notes shall cease to be outstanding, (ii) interest shall cease to accrue on such Notes (whether or not book-entry transfer of the Notes has been made or the Notes have been delivered to the Trustee or Paying Agent) and (iii) all other rights of the Holders of such Notes will terminate (other than the right to receive the Fundamental Change Purchase Price upon delivery of the Notes).

(c) Upon surrender of a Note that is to be purchased in part pursuant to Section 9.01, the Company shall execute and the Trustee shall authenticate and deliver to the Holder a new Note in an authorized denomination equal in principal amount to the non-purchased portion of the Note surrendered.

Section 9.04 *Covenant to Comply with Applicable Laws Upon Purchase of Notes*. In connection with any purchase offer pursuant to Section 9.01, the Company shall, if required thereby:

(a) comply with the provisions of Rule 13e-4, Rule 14e-1 and any other tender offer rules under the Exchange Act that may then be applicable;

(b) file a Schedule TO or any successor or similar schedule; and

(c) otherwise comply with all federal and state securities laws in connection with any offer by the Company to purchase the Notes;

in each case, so as to permit the rights and obligations under this Article 9 to be exercised in the time and in the manner specified in this Article 9.

ARTICLE 10

SUBSIDIARY GUARANTEES

Section 10.01 *Subsidiary Guarantees.* Each Subsidiary listed on the signature page hereto shall constitute a Subsidiary Guarantor of the Notes, and the Subsidiary Guarantee of such Subsidiary Guarantor shall have the terms set forth in Article XIII of the Base Indenture as modified solely for purposes of the Notes as set forth in this Article 10.

Section 10.02 *Future Subsidiary Guarantors.* If after the Issue Date, any Subsidiary of the Company incurs or guarantees any Obligations under the Credit Facility prior to the conversion, repurchase or maturity of the Notes, the Company shall concurrently cause such Subsidiary to (A) execute and deliver to the Trustee a supplemental indenture in a form reasonably satisfactory to the Trustee pursuant to which such Subsidiary shall fully and unconditionally guarantee all the Company's Obligations under the Notes and the Indenture in accordance with Article XIII of the Base Indenture as modified solely for purposes of the Notes as set forth in this Article 10 and (B) deliver to the Trustee an Opinion of Counsel to the effect that (i) such supplemental indenture and Subsidiary Guarantee has been duly executed and authorized and (ii) such supplemental indenture and Subsidiary Guarantee constitutes a valid, binding and enforceable obligation of such Subsidiary Guarantor, except insofar as enforcement thereof may be limited by bankruptcy, insolvency or similar laws (including, without limitation, all laws relating to fraudulent transfers) and except insofar as enforcement thereof is subject to general principles of equity. Any such Subsidiary Guarantee shall be pari passu in right of payment with the obligations of such Subsidiary under the Credit Facility.

Section 10.03 *Release of Subsidiary Guarantors.* Each Subsidiary Guarantee shall be automatically and unconditionally released and discharged and the Holders of the Notes will be deemed to have consented to such release without any action on the part of the Trustee or any holder of the Notes (a) upon such Subsidiary Guarantor ceasing to be an obligor under the Credit Facility; or (b) upon the sale or other disposition (including by way of consolidation or merger), in one transaction or a series of related transactions, of a majority of the total voting stock of such Subsidiary Guarantor, *provided* that in the case of this clause (b), after giving effect to such transaction, such entity is (1) no longer a Subsidiary of the Company and (2) no longer

an obligor under the Credit Facility. Upon the satisfaction of any such condition to the release of such Subsidiary Guarantee, upon Company Request, the Trustee shall execute and deliver any documents, instructions or instruments necessary to evidence such release.

ARTICLE 11

MISCELLANEOUS PROVISIONS

Section 11.01 *Ratification of Base Indenture*. The Base Indenture, as heretofore supplemented, as supplemented by this Supplemental Indenture, is in all respects ratified and confirmed, and this Supplemental Indenture shall be deemed part of the Base Indenture, as heretofore supplemented, in the manner and to the extent herein and therein provided.

Section 11.02 *Application of Supplemental Indenture*. The provisions of this Supplemental Indenture shall take effect immediately upon its execution in accordance with Section 10.04 of the Base Indenture; *provided*, *however*, that the provisions set forth in this Supplemental Indenture shall apply only in respect of the Notes issued under this Supplemental Indenture and not to any past or future series of Securities established under the Base Indenture or any other supplemental indenture.

Section 11.03 *Conflict with Base Indenture*. To the extent not expressly amended or modified by this Supplemental Indenture, the Base Indenture shall remain in full force and effect. If any provision of this Supplemental Indenture relating to the Notes is inconsistent with any provision of the Base Indenture, as heretofore supplemented, the provision of this Supplemental Indenture shall control.

Section 11.04 *Governing Law; Waiver of Jury Trial*. THIS SUPPLEMENTAL INDENTURE AND EACH NOTE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK. EACH OF THE COMPANY, THE SUBSIDIARY GUARANTORS AND THE TRUSTEE HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS INDENTURE, THE NOTES OR THE TRANSACTION CONTEMPLATED HEREBY.

Section 11.05 *No Security Interest Created*. Nothing in this Supplemental Indenture or in the Notes, expressed or implied, shall be construed to constitute a security interest under the Uniform Commercial Code or similar legislation, as now or hereafter enacted and in effect, in any jurisdiction.

Section 11.06 *Execution in Counterparts.* This Supplemental Indenture may be executed in two or more counterparts, each of which shall be an original, which when so executed shall constitute one and the same agreement. The exchange of copies of this Supplemental Indenture and of signature pages by facsimile or PDF transmission shall constitute effective execution and delivery of this Indenture as to the parties hereto and may be used in lieu

of the original Indenture for all purposes. Signatures of the parties hereto transmitted by facsimile or PDF shall be deemed to be their original signatures for all purposes.

Section 11.07 *Severability.* In the event any provision of this Supplemental Indenture or in the Notes shall be invalid, illegal or unenforceable, then (to the extent permitted by law) the validity, legality or enforceability of the remaining provisions shall not in any way be affected or impaired.

Section 11.08 *Calculations*. Except as otherwise provided herein, the Company shall be responsible for making all calculations called for under the Notes. These calculations include, but are not limited to, determinations of the Last Reported Sale Prices of the Common Stock, accrued interest payable on the Notes, the number of Additional Shares (if any) and the Conversion Rate of the Notes. The Company shall make all of these calculations in good faith and, absent manifest error, the Company's calculations shall be final and binding on Holders of Notes. The Company shall provide a schedule of its calculations to each of the Trustee and the Conversion Agent, and each of the Trustee and Conversion Agent is entitled to rely conclusively upon the accuracy of the Company's calculations without independent verification. The Trustee will forward the Company's calculations to any Holder of Notes upon the written request of that Holder at the sole cost and expense of the Company.

Section 11.09 *Trustee's Disclaimer*. The Trustee shall not be responsible for the validity or sufficiency of this Supplemental Indenture, nor for the recitals contained herein.

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed as of the date first written above.

RTI INTERNATIONAL METALS, INC.

By: /s/ William F. Strome
Name: William F. Strome
Title: Senior Vice President

RMI TITANIUM COMPANY

By: /s/ William F. Strome
Name: William F. Strome
Title: Treasurer

EXTRUSION TECHNOLOGY CORPORATION OF AMERICA

By: /s/ William F. Strome
Name: William F. Strome
Title: Treasurer

RTI FINANCE CORP.

By: /s/ William F. Strome
Name: William F. Strome
Title: Treasurer

RTI MARTINSVILLE, INC.

By: /s/ William F. Strome
Name: William F. Strome
Title: Treasurer

[signatures continued on next page]

RTI REMMELE MEDICAL, INC.

By: /s/ William F. Strome
Name: William F. Strome
Title: Treasurer

RTI REMMELE ENGINEERING, INC.

By: /s/ William F. Strome
Name: William F. Strome
Title: Treasurer

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,
as Trustee

By: /s/ Lawrence M. Kusch
Name: Lawrence M. Kusch
Title: Vice President

EXHIBIT A

FORM OF FACE OF NOTE

INCLUDE FOLLOWING LEGEND IF A GLOBAL NOTE

UNLESS THIS CERTIFICATE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITORY TRUST COMPANY, A NEW YORK CORPORATION ("DTC"), TO THE COMPANY OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE, OR PAYMENT, AND ANY CERTIFICATE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR IN SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT IS MADE TO CEDE & CO. OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC), ANY TRANSFER, PLEDGE, OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.

RTI INTERNATIONAL METALS, INC.

1.625% Convertible Senior Notes due 2019

No. [●]

CUSIP No. 74973W AB3
ISIN No. US74973WAB37

RTI INTERNATIONAL METALS, INC., a corporation duly organized and validly existing under the laws of the State of Ohio (the "**Company**," which term includes any Surviving Person under the Indenture referred to), for value received hereby promises to pay to [●]/[If Global Note: CEDE & CO.], or registered assigns, [$[●]([●] Dollars)/If Global Note: the principal sum as set forth in the "Schedule of Exchanges of Notes" attached hereto as Schedule A], in accordance with the rules and procedures of the Depositary, on October 15, 2019, and interest thereon as set forth below.

This Note shall bear interest at the rate of 1.625% per year from April 17, 2013, or from the most recent date on which interest has been paid or provided for to, but excluding, the next scheduled Interest Payment Date until October 15, 2019. Interest is payable semi-annually in arrears on each April 15 and October 15 commencing on October 15, 2013, to Holders of record at the close of business on the immediately preceding April 1 or October 1 (whether or not such day is a Business Day), respectively. Additional Interest will be payable as set forth in Section 5.02 of the within-mentioned Supplemental Indenture, and any reference to interest on, or in respect of, any Note therein shall be deemed to include Additional Interest if, in such context, Additional Interest is, was or would be payable pursuant to any of such Section 5.02 and any express mention of the payment of Additional Interest in any provision therein shall not be construed as excluding Additional Interest in those provisions thereof where such express mention is not made. Accrued interest on the Notes shall be computed on the basis of a 360-day year composed of twelve 30-day months.

Any Defaulted Amounts shall accrue interest per annum at the rate borne by the Notes *plus* one percent, subject to the enforceability thereof under applicable law, from, and including, the relevant payment date to, but excluding, the date on which such Defaulted Amounts shall have been paid by the Company.

The Company shall pay the principal of and interest on this Note, so long as such Note is a Global Note, in immediately available funds to the Depositary or its nominee, as the case may be, as the registered Holder of such Note. As provided in and subject to the provisions of the Indenture, the Company shall pay the principal of any Notes (other than Notes that are Global Notes) at the office or agency designated by the Company for that purpose in the Borough of Manhattan, The City of New York. The Company has initially designated the Trustee as its Paying Agent and Security Registrar in respect of the Notes and its agency in the Borough of Manhattan, The City of New York as a place where Notes may be presented for payment or for registration of transfer.

Reference is made to the further provisions of this Note set forth on the reverse hereof, including, without limitation, provisions giving the Holder of this Note the right to convert this Note into cash, shares of Common Stock or a combination of cash and shares of Common Stock, as applicable, on the terms and subject to the limitations set forth in the Indenture. Such further provisions shall for all purposes have the same effect as though fully set forth at this place.

This Note shall be construed in accordance with and governed by the laws of the State of New York.

In the case of any conflict between this Note and the Indenture, the provisions of the Indenture shall control.

This Note shall not be valid or become obligatory for any purpose until the certificate of authentication hereon shall have been manually signed by the Trustee or a duly authorized authenticating agent under the Indenture.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the Company has caused this Note to be duly executed.

RTI INTERNATIONAL METALS, INC.

By: ______________________________

Name:

Title:

Dated:

TRUSTEE'S CERTIFICATE OF AUTHENTICATION
THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,
as Trustee, certifies that this is one of the Notes described in the within-named Indenture.

By: ______________________________

Authorized Signatory

FORM OF REVERSE OF NOTE

RTI INTERNATIONAL METALS, INC.

1.625% Convertible Senior Notes due 2019

This Note is one of a duly authorized issue of Notes of the Company, designated as its 1.625% Convertible Senior Notes due 2019 (the "Notes"), limited to the aggregate principal amount of $402,500,000 all issued or to be issued under and pursuant to an Indenture dated as of December 14, 2010 (the "Base Indenture"), between the Company and The Bank of New York Mellon Trust Company, N.A. (the "Trustee") as supplemented by a Supplemental Indenture dated as of April 17, 2013 (the "Supplemental Indenture" and together with the Base Indenture, the "Indenture") among the Company, the Subsidiary Guarantors named therein and the Trustee, to which Indenture and all indentures supplemental thereto reference is hereby made for a description of the rights, limitations of rights, obligations, duties and immunities thereunder of the Trustee, the Company, the Subsidiary Guarantors and the Holders of the Notes. Additional Notes may be issued in an unlimited aggregate principal amount, subject to certain conditions specified in the Indenture.

In case an Event of Default, as defined in the Indenture, shall have occurred and be continuing, the principal of, and interest on, all Notes may be declared, by either the Trustee or Holders of at least 25% of the aggregate principal amount of Notes then outstanding, and upon said declaration shall become, due and payable, in the manner, with the effect and subject to the conditions and certain exceptions set forth in the Indenture.

Subject to the terms and conditions of the Indenture, the Company will make all payments and deliveries in respect of the Fundamental Change Purchase Price on the Fundamental Change Purchase Date and in respect of the principal amount on the Maturity Date, as the case may be, to the Holder who surrenders a Note to a Paying Agent to collect such payments in respect of the Note. The Company will pay cash amounts in money of the United States that at the time of payment is legal tender for payment of public and private debts.

The Indenture contains provisions permitting the Company, any Subsidiary Guarantor and the Trustee in certain circumstances, without the consent of the Holders of the Notes, and in certain other circumstances, with the consent of the Holders of not less than a majority of the aggregate principal amount of the Notes at the time outstanding, evidenced as in the Indenture provided, to execute supplemental indentures modifying the terms of the Indenture and the Notes as described therein. It is also provided in the Indenture that, subject to certain exceptions, the Holders of a majority of the aggregate principal amount of the Notes at the time outstanding may on behalf of the Holders of all of the Notes waive any past Default or Event of Default under the Indenture and its consequences.

No reference herein to the Indenture and no provision of this Note or of the Indenture shall alter or impair the obligation of the Company, which is absolute and unconditional, to pay the principal (including the Fundamental Change Purchase Price, if applicable) of and accrued and unpaid interest on this Note at the place, at the respective times, at the rate and in the lawful money herein prescribed.

The Notes are issuable in registered form without coupons in denominations of $1,000 principal amount and integral multiples thereof. At the office or agency of the Company referred to on the face hereof, and in the manner and subject to the limitations provided in the Indenture, Notes may be exchanged for a like aggregate principal amount of Notes of other authorized denominations, without payment of any service charge but, if required by the Company or Trustee, with payment of a sum sufficient to cover any transfer or similar tax that may be imposed in connection therewith as a result of the name of the Holder of the new Notes issued upon such exchange of Notes being different from the name of the Holder of the old Notes surrendered for such exchange.

The Notes are not subject to redemption through the operation of any sinking fund or otherwise.

Upon the occurrence of a Fundamental Change, the Holder has the right, at such Holder's option, to require the Company to purchase for cash all of such Holder's Notes or any portion thereof (in principal amounts of $1,000 or integral multiples thereof) on the Fundamental Change Purchase Date at a price equal to the Fundamental Change Purchase Price.

Subject to the provisions of the Indenture, the Holder hereof has the right, at its option, during certain periods and upon the occurrence of certain conditions specified in the Indenture, prior to the close of business on the second Scheduled Trading Day immediately preceding the Maturity Date, to convert any Notes or portion thereof that is $1,000 or an integral multiple thereof, into cash, shares of Common Stock or a combination of cash and shares of Common Stock, as applicable, at the Conversion Rate specified in the Indenture, as adjusted from time to time as provided in the Indenture.

Terms used in this Note and defined in the Indenture are used herein as therein defined.

ABBREVIATIONS

The following abbreviations, when used in the inscription of the face of this Note, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM = as tenants in common

UNIF GIFT MIN ACT = Uniform Gifts to Minors Act

CUST = Custodian

TEN ENT = as tenants by the entireties

JT TEN = joint tenants with right of survivorship and not as tenants in common

Additional abbreviations may also be used though not in the above list.

INCLUDE SCHEDULE A IF GLOBAL NOTE:

SCHEDULE A

SCHEDULE OF EXCHANGES OF NOTES

RTI INTERNATIONAL METALS, INC.

1.625% Convertible Senior Notes due 2019

The initial principal amount of this Global Note is [ ] ($[ ]). The following increases or decreases in this Global Note have been made:

Date of Exchange	Amount of decrease in Principal Amount of this Global Note	Amount of increase in Principal Amount of this Global Note	Principal Amount of this Global Note following such decrease or increase	Signature of authorized signatory of Trustee or Custodian

ATTACHMENT 1

RTI INTERNATIONAL METALS, INC.

1.625% Convertible Senior Notes due 2019

FORM OF NOTICE OF CONVERSION

To: RTI International Metals, Inc.

The undersigned registered owner of this Note hereby exercises the option to convert this Note, or the portion hereof (that is $1,000 principal amount or an integral multiple thereof) below designated, into cash, shares of Common Stock or a combination of cash and shares of Common Stock, as applicable, in accordance with the terms of the Indenture referred to in this Note, and directs that any cash payable and any shares of Common Stock issuable and deliverable upon such conversion, together with any cash for any fractional share, and any Notes representing any unconverted principal amount hereof, be issued and delivered to the registered Holder hereof unless a different name has been indicated below. If any shares of Common Stock or any portion of this Note not converted are to be issued in the name of a Person other than the undersigned, the undersigned will pay all documentary, stamp or similar issue or transfer taxes, if any, in accordance with Section 8.02(d) and Section 8.02(e) of the Supplemental Indenture. Any amount required to be paid to the undersigned on account of interest accompanies this Note.

Dated: ______________________________ ______________________________

____

Signature(s)

____

Signature Guarantee

Signature(s) must be guaranteed by an eligible Guarantor Institution (banks, stock brokers, savings and loan associations and credit unions) with membership in an approved signature guarantee medallion program pursuant to Securities and Exchange Commission Rule 17Ad-15 if shares of Common Stock are to be issued, or Notes are to be delivered, other than to and in the name of the registered holder.

Fill in for registration of shares if
to be issued, and Notes if to be delivered,
other than to and in the
name of the registered holder:

____
(Name)

____
(Street Address)

____
(City, State and Zip Code)
Please print name and address

Principal amount to be converted (if less than all): $

NOTICE: The above signature(s) of the Holder(s) hereof must correspond with the name as written upon the face of the Note in every particular without alteration or enlargement or any change whatever.

____
Social Security or Other Taxpayer
Identification Number

ATTACHMENT 2

RTI INTERNATIONAL METALS, INC.

1.625% Convertible Senior Notes due 2019

FORM OF FUNDAMENTAL CHANGE PURCHASE NOTICE

To: RTI International Metals, Inc.

The undersigned registered owner of this Note hereby acknowledges receipt of a notice from RTI International Metals, Inc. (the "**Company**") as to the occurrence of a Fundamental Change with respect to the Company and specifying the Fundamental Change Purchase Date and requests and instructs the Company to pay to the registered holder hereof in accordance with Section 9.01 of the Supplemental Indenture referred to in this Note (1) the entire principal amount of this Note, or the portion thereof (that is $1,000 principal amount or an integral multiple thereof) below designated, and (2) if such Fundamental Change Purchase Date does not fall during the period after a Regular Record Date and on or prior to the corresponding Interest Payment Date, accrued and unpaid interest, if any, thereon to, but excluding, such Fundamental Change Purchase Date.

In the case of Physical Notes, the certificate numbers of the Notes to be purchased are as set forth below:

Dated: ____________________

____
Signature(s)

____
Social Security or Other Taxpayer
Identification Number

Principal amount to be repaid (if less than all): $

NOTICE: The above signature(s) of the Holder(s) hereof must correspond with the name as written upon the face of the Note in every particular without alteration or enlargement or any change whatever.

ATTACHMENT 3

RTI INTERNATIONAL METALS, INC.

1.625% Convertible Senior Notes due 2019

FORM OF ASSIGNMENT AND TRANSFER

For value received hereby sell(s), assign(s) and transfer(s) unto (Please insert social security or Taxpayer Identification Number of assignee) the within Note, and hereby irrevocably constitutes and appoints attorney to transfer the said Note on the books of the Company, with full power of substitution in the premises.

Dated:

Signature(s)

Signature Guarantee

Signature(s) must be guaranteed by an eligible Guarantor Institution (banks, stock brokers, savings and loan associations and credit unions) with membership in an approved signature guarantee medallion program pursuant to Securities and Exchange Commission Rule 17Ad-15 if Notes are to be delivered, other than to and in the name of the registered holder.

NOTICE: The signature on the assignment must correspond with the name as written upon the face of the Note in every particular without alteration or enlargement or any change whatever.

[Form of Notation of Subsidiary Guarantee]

For value received, each Subsidiary Guarantor (which term includes any successor Person under the Indenture) has, jointly and severally, unconditionally and irrevocably guaranteed, to the extent set forth in the Indenture and Supplemental Indenture with respect to this series of Securities, and subject to the provisions in the Indenture dated as of December 14, 2010 (the "Base Indenture"), between the Company and The Bank of New York Mellon Trust Company, N.A. (the "Trustee") as supplemented by a Third Supplemental Indenture dated as of April 17, 2013 (the "Supplemental Indenture" and together with the Base Indenture, the "Indenture") among the Company, the Subsidiary Guarantors named therein and the Trustee, to each Holder with respect to this series of Securities and to the Trustee and its successors and assigns (a) the full and punctual payment of principal of and interest on such series of Securities when due, whether at maturity, by acceleration, by redemption or otherwise, and all other monetary obligations of the Company under the Indenture and such series of Securities and (b) in case of any extension of time of payment or renewal of any Securities or any of such other obligations, that the same will be promptly paid in full when due or performed in accordance with the terms of the extension or renewal, whether at stated maturity, by acceleration or otherwise. The obligations of the Subsidiary Guarantors to the Holders with respect to this series of Securities and to the Trustee pursuant to the Subsidiary Guarantee, the Indenture, and the Board Resolution, the Supplemental Indenture or Officer's Certificate with respect to such series of Securities are expressly set forth in Article XIII of the Indenture and Article 10 of the Supplemental Indenture and reference is hereby made to the Indenture and the Supplemental Indenture for the precise terms of the Subsidiary Guarantee.

[NAME OF SUBSIDIARY GUARANTOR(S)]

Exhibit 4(p)

ALCOA RETIREMENT SAVINGS PLAN

FOR

BARGAINING EMPLOYEES

AS AMENDED AND RESTATED
EFFECTIVE JANUARY 1, 2015

ALCOA RETIREMENT SAVINGS PLAN FOR BARGAINING EMPLOYEES

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ALCOA RETIREMENT SAVINGS PLAN FOR BARGAINING EMPLOYEES
AS AMENDED AND RESTATED
EFFECTIVE JANUARY 1, 2015

The Alcoa Retirement Savings Plan for Bargaining Employees (the "Bargaining Plan" or "Plan") is maintained pursuant to various collective bargaining agreements entered into between Alcoa Inc. (herein called "Alcoa") or its subsidiaries and the duly authorized bargaining representative for certain bargaining employees to provide said employees with any or all of the benefits described herein. The Bargaining Plan is a defined contribution, individual account plan which incorporates an Internal Revenue Code Section 401(k) wage reduction arrangement, intending to qualify under Section 401(a) of the Internal Revenue Code, for the exclusive benefit of its eligible employees.

Prior to January 1, 1993, the Bargaining Plan was known as the Alcoa Pre-Tax Savings Plan for Bargaining Employees. It had been initially adopted effective July 3, 1986, and was subsequently amended and restated from time to time thereafter, as described in Schedule A.

The Bargaining Plan is the survivor plan as the result of mergers with several Subsidiaries' plans. Schedule A attached hereto contains the details and provisions related to such mergers.

Effective January 1, 2002, the Alcoa Stock Fund was replaced with an employee stock ownership plan, within the meaning of Section 4975(e) of the Code. The assets held in the ESOP must be invested primarily in employer securities as defined in Code Section 409(l).

Effective January 1, 2011, the Plan was renamed the Alcoa Retirement Savings Plan for Bargaining Employees.

Effective January 1, 2015, the Plan is hereby amended and restated to incorporate provisions of Plan amendments adopted and new laws and regulations that have come into effect since the January 1, 2010, amendment and restatement of the Plan. The Plan is intended to be construed in accordance with any regulatory guidance issued with respect to such new laws and regulations.

DEFINITIONS

For the purpose of this Plan, unless a different meaning is plainly required by the context:

AFFILIATE means any non-corporate business entity or corporate business entity without voting stock, as such, which Alcoa and/or one or more Subsidiaries control in fact.

AFTER-TAX SAVINGS means such portions of the total amounts contributed to the Plan by a Participant in accordance with Section 2 that are not accorded favorable tax treatment under Section 401(k) of the Code, but not including contributions made by a Participant in excess of the annual limit on 401(k) contributions under Code Section 402(g) or in excess of the “average deferral percentage limit” of Section 401(k) (3) of the Code.

ALCOA means Alcoa Inc.

ALCOA STOCK FUND means the ESOP as described in Section 16(e), which became effective January 1, 2002.

AUTOMATIC ENROLLMENT or AUTOMATICALLY ENROLLED means the automatic default enrollment in the Plan described in Sections 1(b) and 2(c) and applicable to Eligible Employees who do not opt out of the Plan.

AUTOMATIC PRE-TAX RATE ESCALATION means the feature that is effective with Automatic Enrollment or that may be elected by a Participant, in which the rate of Payroll Deduction for Pre-Tax Savings is increased until a target Payroll Deduction rate is reached. The Automatic Pre-Tax Rate Escalation will increase effective April 1 of each year.

AUTOMATIC REBALANCING means the feature described in Section 8(d).

BARGAINING AGREEMENTS means the collective bargaining agreements entered into between a Participating Employer and one or more of the unions designated in Schedule B.

BENEFICIARY means the recipient or recipients designated by a Participant, in accordance with Section 22 of the Plan, to receive benefits in the event of the Participant’s death as either a primary beneficiary, or a contingent beneficiary who will receive benefits in the event the primary beneficiary predeceases the Participant.

BENEFITS MANAGEMENT COMMITTEE or COMMITTEE means the administrative committee of one or more persons appointed by the Board that interprets and administers the Plan in accordance with Section 19.

BOARD means the Board of Directors of Alcoa.

BROKERAGE ACCOUNT means the investment option whereby a Participant may invest and personally manage investments outside the Core Funds as described in Section 16(h).

BUSINESS DAY means any day on which the Plan Administrator, Designee and New York Stock Exchange is open for business.

CODE means the Internal Revenue Code of 1986, as amended.

COLA SAVINGS means the cost of living amounts determined in accordance with all hours worked by the participant as of the dates such amounts are calculated and allocated to a Participant's Pre-Tax Savings account for the next Payroll Period in which such amounts would have been paid to the Participant during a Plan Year, in lieu of the Participant receiving said amounts as wages. Such allocations shall be made in accordance with the terms and conditions of the Bargaining Agreements entered into between Alcoa and the Aluminum Workers, the Massena Office Workers, and the Davenport IBEW. Cola Savings shall be accorded favorable tax treatment under Section 401(k) of the Code.

COMPANY STOCK means common stock of Alcoa and any substituted security under Section 16.

CONTINUOUS SERVICE means, except as modified by the balance of this definition with respect to certain Participant populations, the period of continuous employment with Alcoa, a Subsidiary or Affiliate, either as a salaried employee or as an hourly-rated employee, commencing with the Participant's Employment Commencement Date or Reemployment Commencement Date. Continuous Service terminates on the Participant's Severance from Service Date. Continuous Service upon reemployment does not include any Continuous Service accrued prior to a termination of Continuous Service, except as follows:

A Participant who incurs a Severance from Service Date and thereafter has a Reemployment Commencement Date, will have his or her Continuous Service on the Severance from Service Date reinstated if the period between his or her Severance from Service Date and his or her Reemployment Commencement Date is less than the greater of (a) five years or (b) the aggregate number of years of Continuous Service earned before the Severance from Service Date.

CORE FUND means any investment vehicle (including the Alcoa Stock Fund and Target Maturity Funds) for Pre-Tax Savings, After-Tax Savings, Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions, Employer Retirement Income Contributions, or Retiree Medical Savings Contributions, but excluding the Brokerage Account. The Committee will determine the Core Funds, and may make changes to the composition of the funds from time to time.

CURRENT MARKET VALUE means with respect to any investment allocated to the accounts of any Participant in the Core Funds**,** the unitized value of the securities and cash of the investment in the applicable Fund as of a specified date, less any fees provided for in Section 21, valued in accordance with a procedure adopted by the investment manager for the Investment Fund and acceptable to the Benefits Management Committee.

DESIGNEE means such entity as may be chosen from time to time by the Plan Administrator and approved by the Benefits Management Committee to handle certain specified administration functions of the Plan.

EFFECTIVE DATE with respect to a distribution has the meaning prescribed in Section 13, with respect to a transfer has the meaning prescribed in Section 9 and with respect to a qualified domestic relations order has the meaning prescribed in Section 14.

ELIGIBLE COMPENSATION means: (i) the regular base salary and if applicable, the base salary adjustment (where commission payments constitute all or part of an employee's remuneration, the commissions actually paid as remuneration during a regular pay period will be used to determine the Eligible Compensation for such employee); (ii) the regular hourly wages and if applicable: cash cola, regular vacation pay, witness pay, holiday advance pay (for a holiday not worked), bereavement pay, shift differential, jury pay, job upgrades, schedule premium, income adjustments, and wage adjustments which are payable during such periods as the employee is an Eligible Employee as determined by the Participating Employers. In no event may the amount of Eligible Compensation for any Participant during any Plan Year, for any purposes under this Plan, exceed $265,000, as adjusted for any Plan Year for cost-of-living increases in accordance with Section 401(a)(17)(B) of the Code applicable to that calendar year.

In addition to the forgoing, for purposes of allocating Employer Retirement Income Contributions as indicated in Schedule B, Eligible Compensation will include any Variable Compensation Awards or incentive compensation payable during such periods as the employee is an Eligible Employee as determined by the Participating Employers.

In addition, Eligible Compensation will include additional amounts set forth in Section 2(a) or 2(d) for the limited purposes contained therein.

ELIGIBLE EMPLOYEE means any person who is a resident or citizen of the U.S., employed by a Participating Employer on a full-time or part-time basis, and who receives regular compensation in the form of: (1) a weekly, semimonthly or monthly salary, (2) periodic commissions, (3) an hourly wage, and who meets all of the following conditions:

(a) Is in a unit or group of employees covered by an applicable Bargaining Agreement which provides for participation in the Plan; or

(b) Is not in a group of employees excluded from coverage under the Plan by the Benefits Management Committee, or the appropriate governing body of a Participating Employer, which is uniform in application to all employees similarly situated.

(c) Is in a group of employees which is accorded coverage under the Plan by a resolution adopted by the Benefits Management Committee or Alcoa which is uniform in application to all employees similarly situated. Schedule B provides a list of such hourly employees.

Eligible Employees are designated in Schedule B as individuals employed by a participating Company (Company Code), at a specified location (Location Code), and included in a bargaining unit (Union Code) as indicated in Schedule B. A person employed as an expatriate at a location outside the United States will be deemed to be employed at the Company and location from which he or she is transferred.

A person who works at least 50 percent but less than 100 percent of the regular work schedule for the location where he or she is employed is employed on a part-time basis. A person who does not work on a regular schedule, or works less than fifty percent of the regular hours for the location where he or she is employed, or works fifty percent or more of the regular hours for the location but is hired for a specified period of time not to exceed twelve month, is employed on a temporary basis. A person employed by a Participating Employer on a temporary basis is subject to the above described terms and conditions and in addition must have at least one year of Continuous Service to become an Eligible Employee.

The following will in no case be Eligible Employees: agency, leased, contract employees and other individuals who are not on the payroll of the Company, as determined by the Company, without regard to any court, or agency decision determining common-law employment status. A “leased employee” of a Participating Employer is excluded from participation in the Plan. A “leased employee” means any person who is not an employee of any Participating Employer and who provides services if:

a) such services are provided pursuant to an agreement between the recipient Participating Employer and any other person or a leasing organization,

b) such person has performed such services for the recipient Participating Employer on a substantially full-time basis for a period of at least one year, and

c) such services are performed under the primary direction or control of the recipient Participating Employer, or as otherwise defined in Section 414(n) of the Code.

Any former leased employee, upon becoming an Eligible Employee, will receive Continuous Service credit for all prior service performed with the recipient Participating Employer as a leased employee prior to becoming an Eligible Employee.

EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (ERIC) means an amount equal to the percentage of Eligible Compensation specified in Section 5 that is contributed to Eligible Employees hired or rehired on or after March 1, 2006, or as indicated in Schedule B, to the Eligible Employees of a specified location without regard to date of hire or rehire.

EMPLOYMENT COMMENCEMENT DATE means the date on which an Eligible Employee is first employed by and performs an Hour of Service for Alcoa, a Subsidiary or an Affiliate on a full-time or part-time basis.

ERISA means the Employee Retirement Income Security Act of 1974 as amended.

ESOP or EMPLOYEE STOCK OWNERSHIP PLAN means the Alcoa Stock Fund as described in Section 16(e).

FINANCIAL HARDSHIP means an immediate and heavy financial need which a Participant is not able to meet from other reasonably available resources. An immediate and heavy financial need includes:

(a) Extraordinary medical expenses incurred by the Participant, the Participant's spouse, dependents of the Participant, or primary Beneficiary;

(b) Purchase, excluding mortgage payments, of a principal residence for the Participant;

(c) Payment of tuition for the next year of post-secondary education for the Participant, his or her spouse, children, dependents or primary Beneficiary;

(d) Expenses necessary to prevent eviction of the Participant from his principal residence, or foreclosure on the mortgage of the Participant's principal residence;

(e) Funeral expenses of a family member or primary Beneficiary; and

(f) All other expenses that the Internal Revenue Service will accept as an immediate and heavy financial need.

A withdrawal will be deemed to be necessary to satisfy an immediate and heavy financial need of a Participant if all of the following requirements are satisfied:

(i) The withdrawal is not in excess of the amount of the immediate and heavy financial need (including taxes on such withdrawal) of the Participant,

(ii) The Participant has obtained all distributions, other than hardship withdrawals, and all nontaxable loans currently available under all plans maintained by the Participating Employer (unless such a loan would contribute to the hardship),

(iii) The Plan, and all other qualified and non-qualified plans of deferred compensation maintained by all Participating Employers (other than health and welfare or contributory defined benefit plans), provide that the Participant's Savings will be suspended for at least 6 months after receipt of the hardship withdrawal, and

(iv) The Participant may not contribute Pre-Tax Savings to the Plan or make similar contributions to other plans maintained by the Participating Employer for the following taxable year in excess of the applicable limit under Section 402(g) of the Code for the following taxable year minus the Participant's Pre-Tax Savings for the taxable year of the hardship withdrawal.

Based upon the foregoing provisions, the Designee determines whether or not a Participant has incurred a Financial Hardship.

HOUR OF SERVICE means:

(a) Each hour for which an employee is paid or entitled to payment for the performance of duties for Alcoa, a Subsidiary or Affiliate;

(b) Each hour for which an Employee is paid or entitled to payment by Alcoa, a Subsidiary or Affiliate on account of a period during which no duties are performed, whether or not the employment relationship has terminated, due to vacation, holiday, illness, incapacity (including disability), layoff, jury duty, military duty, or leave of absence; and

(c) Each hour for which back pay, irrespective of mitigation of damages, is either awarded or agreed to by Alcoa, a Subsidiary or Affiliate excluding any hour credited under (a) or (b) above, which is credited to the computation period or periods to which the award, agreement or payment pertains, rather than to the computation period in which the award, agreement or payment is made.

INVESTMENT FUND means any Core Fund and the Brokerage Account.

KEY EMPLOYEE means any employee or former employee (including any deceased employee) who at any time during the Plan Year that includes the determination date, as defined in Section 416(g)(4)(c) of the Code, was i) an officer of a Participating Employer having annual compensation greater than $170,000 (as adjusted under Section 416(i)(1) of the Code, ii) a five percent owner of the Participating Employer, or iii) a one percent owner of a Participating Employer having annual compensation of more than $150,000. For purposes of this paragraph, compensation means compensation as defined in Section 415(c)(3) of the Code, but includes amounts contributed by the Participating Employer pursuant to a salary reduction agreement which are excludable from the Participant's gross income under Section 125, 402(a), Section 401(h), Section 401(b), and Section 132(f)(4).

LAYOFF or **LAID-OFF** means the absence from employment due to a reduction of a Participating Employer's work force due to lack of work, where it is intended that the Participant will be subject to recall. A Layoff ends on the earlier of the effective date of a recall or the date the Participant's service terminates, and such Layoff has continued for at least twenty-four months calculated from the first day of the Lay Off.

NEGOTIATED DEFERRAL CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(a).

NORMAL RETIREMENT AGE means the time a Participant attains age 65.

PARTICIPANT means:

(a) an Eligible Employee who has elected to participate in the Plan in accordance with the provisions of Section 1, who receives Employer Retirement Income Contributions, Restricted Discretionary Contributions, Negotiated Deferral Contributions, or Retiree Medical Savings Contributions, or who is Automatically Enrolled in the Plan. Such a person continues as a Participant so long as he or she has an account balance in the Plan. Notwithstanding the foregoing, a contractor, agency employee, temporary employee or "leased employee" as defined in Section 414(n) of the Code is not a Participant under the Plan, or

(b) an Eligible Employee who is employed with a Participating Employer on December 31 of any Plan Year where such Participating Employer has elected to make a Negotiated Deferral Contribution or Restricted Discretionary Contribution for that Plan Year.

PARTICIPATING EMPLOYER means Alcoa, except as specified hereafter, and any other entity in which Alcoa or one or more Subsidiaries or Affiliates have an ownership interest, and that is authorized by Alcoa to participate in the Plan and which adopts the Plan by proper action of its board of directors or other governing body, provided

that each said entity agrees to reimburse Alcoa from time to time upon demand for its proper portion of the expenses and contributions required to carry out the provisions hereof and of the agreement under which the assets of the Plan are held or managed. Schedule B lists applicable locations of Participating Employers.

PARTICIPATING EMPLOYER CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 3.

PARTICIPATION DATE means the date on which an Eligible Employee commences participation in the Plan.

PAYROLL DEDUCTIONS means the Pre-Tax Savings and After-Tax Savings based on a reduction of the Participants' Eligible Compensation for the applicable Payroll Period.

PAYROLL PERIOD means the regularly scheduled payroll cycles in which a Participant earns Eligible Compensation.

PERMANENT LAYOFF means an absence from employment due to a reduction of the work force by a Participating Employer due to lack of work, where it is intended that the Participant will not be subject to recall. A Participant's Continuous Service for purposes of the Plan will be terminated on the first day of Permanent Layoff.

PERMANENT SHUTDOWN means the permanent shutdown, as determined by a Participating Employer, of a plant, department or substantial portion thereof, of a Participating Employer at which a Participant who is affected thereby is employed.

PLAN means the Alcoa Retirement Savings Plan for Bargaining Employees as Amended and Restated effective January 1, 2015, and as may be amended from time to time.

PLAN ADMINISTRATOR means Alcoa.

PLAN YEAR means the calendar year.

PRE-TAX CATCH-UP CONTRIBUTIONS means contributions permitted under Section 414(v) of the Code, as described in Section 2(k) of the Plan.

PRE-TAX SAVINGS means the amount by which a Participant has elected to reduce his or her Eligible Compensation and defer the receipt thereof in accordance with Section 2, and the contribution of the said amount to the Plan, or an amount by which a Participant's Eligible Compensation is deferred and contributed to the Plan pursuant to Automatic Enrollment,.

PROPERLY RECEIVED means any request to participate, to change participation in the Plan, for suspension of Payroll Deductions, to discontinue Automatic Pre-Tax Rate Escalation, for a transfer between investments in accordance with Sections 8 or 9, to discontinue Automatic Investment Rebalancing, or a for a withdrawal in accordance with either Section 10 or 11, or submission of a beneficiary designation, consent or revocation in accordance with Section 22, made to the Plan Administrator or its Designee in a manner designated by the Plan in accordance with uniform rules established by the Plan Administrator.

QUALIFIED DEFAULT INVESTMENT ALTERNATIVE or QDIA means the Targeted Maturity Funds to which the Plan may direct the assets of a Participant's account in the absence of Participant investment direction. Each Participant's account will be invested in the appropriate Targeted Maturity Fund based on the Participant's year of birth.

REEMPLOYMENT COMMENCEMENT DATE means the date on which a Participant is first reemployed by a Participating Employer following a Severance from Service Date.

RESTRICTED DISCRETIONARY CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(b).

RETIREE MEDICAL SAVINGS CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(c).

RETIREMENT means termination of Continuous Service with rights to a pension other than a deferred vested pension benefit under a retirement plan of Alcoa and/or a Subsidiary and/or an Affiliate, termination of Continuous Service upon or after attainment of age 55 and completion of 10 years of Continuous Service, or Normal Retirement Age.

ROLLOVER CONTRIBUTION means an eligible rollover distribution as described in Section 402(c)(4) of the Code, or a direct transfer of an eligible rollover distribution as described in Section 401(a)(31) of the Code ("Direct Rollover") which is transferred to the Plan pursuant to Section 7.

SAVINGS means the total amount of Pre-Tax Savings and After-Tax Savings contributed to the Plan in accordance with Section 2.

SEVERANCE FROM SERVICE DATE means the date Continuous Service terminates and is the earliest of the date the Eligible Employee quits, retires, is discharged (including Permanent Layoffs), or dies, or the second anniversary of the first date he or she is absent from work for any other reason. Notwithstanding the foregoing, an employee will not be deemed to have terminated from Continuous Service until the second anniversary of the employee's absence, if the absence is due to the pregnancy of the Eligible Employee, the birth of a child of the Eligible Employee or the placement of a child

with the Eligible Employee in connection with adoption proceedings, or for purposes of caring for that child for a period beginning immediately following such birth or placement. The period between the first anniversary and second anniversary of the first day of absence will not constitute Continuous Service. Severance from Service Date will also mean the date on which a participant ceases employment with Alcoa or a Subsidiary in connection with a sale of assets or interest in a Participating Employer and commences employment with the purchaser of such assets or interest, provided there is no transfer to the purchaser of Plan assets and liabilities relating to such participant.

SUBSIDIARY means a corporation, a majority of whose voting stock is owned or controlled by Alcoa and/or one or more other Subsidiaries.

TARGETED MATURITY FUNDS means the investment vehicles that are pre-mixed funds consisting of varying asset allocations that follow an investment strategy based on a targeted retirement date. Targeted Maturity Funds are Core Funds.

TOTAL AND PERMANENT DISABILITY means disability by injury or disease which, on the basis of medical evidence satisfactory to a medical doctor chosen by the Benefits Management Committee, prevents the employee from engaging in any employment with Alcoa, a Subsidiary or Affiliate suitable to his or her training and experience and that will be permanent and continuous during the remainder of the employee’s life, and the employee is not otherwise employed by a Alcoa, a Subsidiary or Affiliate.

TRUSTEE means the Trustee or Trustees appointed by the Board in accordance with the provisions of Section 18.

U.S. means the United States of America.

VARIABLE COMPENSATION AWARDS means performance pay, profit sharing or gain sharing awards or other variable compensation awards as determined by the Participating Employer and approved by the Plan Administrator.

GENERAL PROVISIONS

SECTION 1. PARTICIPATION

An Eligible Employee participates in the Plan:

(a) by submitting an application or request for participation that is Properly Received, or by receiving Negotiated Deferral Contributions, Restricted Discretionary Contributions, Participating Employer Contributions, or Employer Retirement Income Contributions; or

(b) by being Automatically Enrolled sixty (60) days following Employment Commencement Date or Reemployment Commencement Date, or after an employee employed on a temporary basis becomes an Eligible Employee.

SECTION 2. EMPLOYEE SAVINGS

(a) An Eligible Employee may elect to pay into the Plan through Payroll Deductions properly authorized by such employee, a whole percentage of his or her Eligible Compensation in Pre-Tax Savings in an amount equal to one through twenty-five percent (25%), and After-Tax Savings equal to one through ten percent (10%), the aggregate of which cannot be greater than twenty-five percent (25%).

(b) An Eligible Employee subject to Automatic Enrollment will be subject to automatic Payroll Deductions equal to three percent of Eligible Compensation for any applicable payroll period, which will be contributed to the Plan as Pre-Tax Savings. Absent the Participant's election of investment funds, such Pre-Tax Savings will be deposited into the appropriate QDIA, as described in Section 8(a).

(c) Payroll Deductions for Pre-Tax Savings made pursuant to Automatic Enrollment are subject to Automatic Pre-Tax Rate Escalation whereby, providing the Participant has participated in the Plan at least ninety days, the Participant's Pre-Tax Savings rate will be increased by one percent on each April 1 after his or her Participation Date until the Pre-Tax Savings rate attains a target rate of six percent of Eligible Compensation. A Participant may change the percentage rate in whole percentages up to the maximum permitted by the Plan or opt out of Automatic Pre-Tax Rate Escalation at any time in a manner designated by the Plan Administrator that is Properly Received.

Any Participant may elect to begin or end Automatic Pre-Tax Savings Rate Escalation at any time in a manner designated by the Plan that is Properly Received. An election to begin Automatic Pre-Tax Saving Rate Escalation shall designate a beginning Pre-Tax Savings rate, a target rate up to the maximum permitted by the Plan, and an annual rate (in whole percentages) by which the Pre-Tax rate increases until the target rate is attained.

(d) Effective on the dates set forth in the chart immediately below, pursuant to the terms of the 2014 Master collective bargaining agreement between the Company and the United Steelworkers, ratified on June 6, 2014 (the "2014 Master Agreement"), and pursuant to the terms of the collective bargaining agreements between the Company and unions at such other locations identified below ("Other Locations"), Participants at the locations and represented by the unions listed below may defer as Pre-Tax Savings and/or Pre-Tax Catch-Up Contributions, a maximum of fifty percent (50%) of amounts earned under the applicable pay for performance plan (2015 or later plans only) in increments of ten percent (10%) and subject to the maximums allowable by the Code and Department of Treasury regulations. The amount of any such deferrals shall be included in the definition of Eligible Compensation for purposes of Pre-Tax Savings and/or Pre-Tax Catch-Up Contributions only and shall not be eligible for Participating Employer Contributions.

2014 Master Agreement Locations

Co. Code	Company Name	LOC	Location Name	Union Code	Union Name	Effective Date
010	Alcoa Inc.	ALC	Alcoa, Tennessee	193	USW 309 – SteelWorkers	March 1, 2015
010	Alcoa Inc.	BAD	Badin, North Carolina	192	USW 303 – SteelWorkers	March 1, 2015
010	Alcoa Inc.	DAV	Davenport, Iowa	293	USW 105 – SteelWorkers	March 1, 2015
010	Alcoa Inc.	LAF	Lafayette, Indiana	294	USW 115 – SteelWorkers	March 1, 2015
010	Alcoa Inc.	MAS	Massena, New York	295	USW 420 – SteelWorkers	March 1, 2015
010	Alcoa Inc.	PTC	Point Comfort, Texas	196	USW 4370 – SteelWorkers	March 1, 2015
010	Alcoa Inc.	ROK	Rockdale, Texas	198	USW 4895 – Steelworkers	March 1, 2015
010	Alcoa Inc.	WAR	Warrick (Newburgh, In)	292	USW 104 – SteelWorkers	March 1, 2015
010	Alcoa Inc.	WEN	Wenatchee, Washington	2AT	IBEW191 – Electricians	March 1, 2015
010	Alcoa Inc.	WEN	Wenatchee, Washington	4AT	SMW 66 - Sheet Metal Workers	March 1, 2015
010	Alcoa Inc.	WEN	Wenatchee, Washington	1AT	USW 310A – SteelWorkers	March 1, 2015
010	Alcoa Inc.	WEN	Wenatchee, Washington	3AT	IAM 1123 – Machinists	March 1, 2015
010	Alcoa Inc.	WEN	Wenatchee, Washington	5AT	BACW3-BrckLyrs & AlliedCrftsmn	March 1, 2015
837	Alcoa Power Generating, Inc.	BAD	Badin, North Carolina	192	USW 303 – SteelWorkers	March 1, 2015
R01	Reynolds Metals Company	ABY	Arkadelphia, AR (RMC-GUMSPRG)	1CY	USW 5073 – Steelworkers	March 1, 2015
R01	Reynolds Metals Company	MSY	Massena, New York (RMC St Law)	1NY	USW 450A – Steelworkers	March 1, 2015
R01	Reynolds Metals Company	LLY	Lake Charles, LA (RMC CARB)	1KY	USW 211-Steelworkers	March 1, 2015
010	Alcoa Inc.	ALC	Alcoa, Tennessee	401	BRKM 8- Brickmasons(ALC)	March 1, 2015
010	Alcoa Inc.	DAV	Davenport, Iowa	413	IBEW 1379-Electrians (DAV)	March 1, 2016

(e) Any employee contributions which have been contributed to a Participant's account under a qualified defined contribution plan of a Participating Employer which has been merged with this Plan, are credited to the Participant as Pre-Tax and After-Tax Savings Accounts, as applicable, as determined by the Plan Administrator, and thereafter be treated like Pre-Tax and After-Tax Savings with respect to withdrawals, loans, and investment options under the Plan. Any protected optional form of benefits provided under said qualified defined contribution plan will be maintained under the Plan.

(f) All Participating Employer Contributions and Negotiated Deferral Contributions, Restricted Discretionary Contributions, Employer Retirement Income Contributions, and Retiree Medical Savings Contributions are irrevocable, except that any such contribution which was made by a mistake of fact or conditioned upon qualification of the Plan or any amendment thereof under Section 401 of the Code or upon the deductibility of the contribution under Section 404 of the Code, will be returned to the Participating Employer within one year after the payment of the contribution made by mistake, the denial of the qualification or the disallowance of the deduction (to the extent disallowed), whichever is applicable.

(g) A Participant may change his or her election for Payroll Deductions, effective for the first full Payroll Period following the date that such request is Properly Received.

(h) A Participant may direct that Payroll Deductions for Savings be discontinued beginning with the first full Payroll Period following the date that such direction is Properly Received. A Participant may direct that such deductions be resumed beginning with the first full Payroll Period following the date that such direction is Properly Received, except as provided in the definition of Financial Hardship.

(i) Payroll Deductions are paid to the Trustee as soon as practicable, but no later than the period prescribed by the Department of Labor for depositing contributions.

(j) Additional limitations on Savings, Participating Employer Contributions, Negotiated Deferral Contributions and Restricted Discretionary Contributions are provided in Appendices A, B and C. Notwithstanding the foregoing, in the event it is determined by the Benefits Management Committee or its Designee that for any particular month the

maximum percentage of Eligible Compensation which a Participant may elect to pay into the Plan as Pre-Tax Savings must be reduced so as to prevent the actual percentage of Pre-Tax Savings for Participants who are Highly Compensated Employees from exceeding the elected percentage of Pre-Tax Savings of all other Participants, pursuant to the limitations in the Appendices, the maximum percentage of Pre-Tax Savings for said Highly Compensated Employees may be reduced, for any particular Month to the extent deemed necessary by the Benefits Management Committee or its designee. The said Participants' previously elected percentage of After-Tax Savings will not be affected in any manner by a reduction of the maximum percentage of Pre-Tax Savings in accordance with the foregoing.

(k) An Eligible Employee who meets the requirements listed below may make an election for a Plan Year to defer extra Pre-Tax Catch-Up Contributions in an amount that equals an annual maximum amount of six thousand dollars $6,000), or such other amount adjusted for cost-of-living increases as may be provided by the Secretary of the Treasury pursuant to Section 414(v) (2) (C) of the Code. Eligible Employees who meet the requirements are individuals who i) have attained 50 or will attain age 50 during the applicable Plan Year, ii) are contributing no less than six percent (6%) of Eligible Compensation in Pre-Tax Savings; and iii) have submitted an election to make Pre-Tax Catch-Up Contributions for applicable Plan Year.

In the case where a Participant is awarded back wages pursuant to a settlement or arbitration agreement by which the Participant is to be "made whole," in the case of an individual who is eligible to make Pre-Tax Catch-Up Contributions, the Participant may defer any portion of the awarded back wages up to the annual maximum amount of the Pre-Tax Catch-Up Contribution for the current Plan Year, provided an election to defer such amount is submitted prior to the date payment of the awarded back wages is made.

(l) In the case where a Participant is awarded back wages pursuant to a settlement or arbitration agreement by which the Participant is to be "made whole" with respect to such award, the Participant must contribute Pre-Tax Savings attributable to the back wages or portion of back wages awarded pertaining to the current Plan Year only ("Corrective Contributions"). The Corrective Contributions will be based on the percentage of Compensation for Pre-Tax Savings designated by the Participant in an election in effect, or defaulted to pursuant to section 2(b) and 2(c), on the date of the Participant's termination that preceded the period for which the award has been granted. Notwithstanding the foregoing, contributions of Corrective Contributions may not cause the Participant's Eligible Compensation to exceed the limitation on compensation imposed by Section 401(a)(17) of the Code, or the limitations described in Appendices A or B.

(m) A Participant who's compensation is suspended due to an absence from employment due to military leave protected by Uniformed Services Employment and Reemployment Rights Act of 1994 ("USERRA"), may upon his or her return to

employment contribute “make up” Pre-Tax Contributions equal to the amount he or she would have contributed except for the absence based upon the Participant’s election on file. Such make up contributions must be paid to the Plan during a period that does not exceed the lesser of three (3) times the length of time of the military leave or five (5) years, commencing from the date employment is resumed.

SECTION 3. PARTICIPATING EMPLOYER CONTRIBUTIONS (MATCH)

Participating Employer Contributions will be allocated under the Plan to the account of those Participants for whom Pre-Tax Savings are paid into the Plan for such Payroll Period in accordance with Section 2, where the applicable Bargaining Agreement provides. The contributions will be the specific amount for each dollar of the Participant’s Eligible Compensation he or she contributes to the Plan as Pre-Tax Savings up to six percent of the Participant’s Eligible Compensation. Schedule B provides a list of Participating Employers and Participating Employer Contributions. Participating Employer Contributions will be allocated to the account of Participants to whom Corrective Contributions have been made for the current Plan Year as described in Section 2(l) above.

The amount of all such Contributions are contributed on a Payroll Period basis by the Participating Employer out of current income or accumulated earnings. Beginning with the first Participating Employer contribution allocated to Participants’ accounts after January 1, 2014, all Participating Employer Contributions will be invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA).

All employer contributions which have been contributed to a Participant’s account under a qualified defined contribution plan of a Participating Employer which has been merged with this Plan, are credited to the Participant as Participating Employer Contributions and thereafter are treated like Participating Employer Contributions with respect to withdrawals, loans, and investment options under the Plan. Any protected optional form of benefits provided under said merged qualified defined contribution plan will be maintained under the Plan.

SECTION 4. NEGOTIATED DEFERRAL CONTRIBUTIONS, RESTRICTED DISCRETIONARY CONTRIBUTIONS, AND RETIREE MEDICAL SAVINGS CONTRIBUTIONS

(a) Negotiated Deferral Contributions consisting of mandatory COLA Savings shall be allocated to the Pre-Tax Savings account of each Eligible Employee employed on the end of each Payroll Period, in accordance with an applicable Bargaining Agreement. Negotiated Deferral Contributions will be made in an amount attributable to the period occurring in the current Plan Year for which an award of back wages is made pursuant to a settlement or arbitration agreement by which the Participant is to be “made whole” with respect to such award.

Notwithstanding the foregoing, Howmet Corporation will contribute Negotiated Contributions under the Plan to the accounts of its Whitehall, MI Eligible Employees on a monthly basis. Such Negotiated Deferral Contributions will be paid to the Trustee within the period of time specified by law.

(b) A Participating Employer for each Plan Year may contribute under the Plan to the account of those Eligible Employees who are employed with said Participating Employer on the last day of the Plan Year, a Restricted Discretionary Contribution in an amount determined in accordance with an applicable Bargaining Agreement, unless disapproved by the Benefits Management Committee. Restricted Discretionary Contributions will be allocated to Eligible Employees based on either uniform dollar amounts or whole or partial percentages of Eligible Compensation. A Participating Employer may elect to make one Restricted Discretionary Contribution for any Plan Year on or before December 31 of the Plan Year. The Restricted Discretionary Contribution will be paid to the Trustee no later than the date fixed by law for the filing of the Participating Employer's federal income tax return for the year for which the contribution is made, including any extensions of time granted by the Internal Revenue Service for filing the return. The Participating Employer may direct, but is not obligated to direct, the Trustee to promptly invest such amount in the Alcoa Stock Fund; otherwise, Restricted Discretionary Contributions will be invested in accordance with the provisions of Section 8(b).

(c) Participants covered by the collective bargaining agreement between the master collective bargainging between the Company and the United Steelworkers ratified on or after June 24, 2010 ("Master Agreement"), and Participants in other bargaining locations described in Schedule B who meet the eligibility requirements described below will receive Retiree Medical Savings Contributions to their accounts in an amount equal to $0.40 per hour worked. For purposes of determining Retiree Medical Savings Contributions, hours will be deemed credited with respect to any back pay awards and military leave, but will not include hours not worked, such as but not limited to, hours credited for vacation, holiday, jury or witness pay. Retiree Medical Savings Contributions will be contributed on a payroll basis and the Participant will not be required to be employed on the last day of the Plan Year as a condition to receive the contribution. Contributions will be paid to the Trustee within the period of time specified by law. Retiree Medical Savings Contributions are not subject to withdrawals, distributions prior to termination of employment, or loans. Retiree Medical Savings Contributions will be deposited in the appropriate QDIA, but may be transferred by the Participant from the QDIA to any elected Core Fund at any time.

Participants eligible for Retiree Medical Savings Contributions are Eligible Employees employed at the Master Agreement and other bargaining locations described in

the Retiree Medical Savings Contributions table in Schedule B who i) have completed one year of Continuous Service, and ii) have an Employment Commencement Date occurring or are rehired on or after July 1, 2010, regardless of the duration of the period the individual was separated from employment.

(d) An Eligible Employee who incurs an absence due to military leave protected by USERRA and eligible to receive Negotiated Deferral Contributions, Restricted Discretionary Contributions, or Retiree Medical Savings Contributions will receive those contributions based on the Eligible Compensation or applicable hours that would have been received had the individual remained actively employed during the period of military leave.

SECTION 5. EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (ERIC)

As of the dates indicated in Schedule B, Eligible Employees with an Employment Commencement Date or Reemployment Commencement Date employed on December 31, 2006 at a Company and Location, and part of a bargaining unit as designated in Schedule B, will receive an Employer Retirement Income Contribution in the amount of three percent of applicable Eligible Compensation for the Plan Year. Employer Retirement Income Contributions of three percent of Eligible Compensation will be made to the accounts of Participants on a Payroll Period basis, whether or not employed on the last day of the Plan Year. Notwithstanding the foregoing, Eligible Employees of certain locations and bargaining units designated in Schedule B will receive Employer Retirement Income Contributions as of the date indicated, regardless of the date of their Employment Commencement Date or Reemployment Commencement Date. An Eligible Employee who incurs an absence due to military leave protected by USERRA and eligible to receive Employer Retirement Income Contributions (“ERIC) will receive those contributions based on the Eligible Compensation that would have been received had the individual remained actively employed during the period of military leave.

Withdrawals of Employer Retirement Income Contributions are permitted by Participants who have attained age 59 ½.

SECTION 6. NONFORFEITURE OF PARTICIPATING EMPLOYER CONTRIBUTIONS, NEGOTIATED DEFERRAL CONTRIBUTIONS, RESTRICTED DISCRETIONARY CONTRIBUTIONS, EMPLOYER RETIREMENT INCOME CONTRIBUTIONS, AND RETIREE MEDICAL SAVINGS CONTRIBUTIONS

All Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions, Employer Retirement Income Contributions, and Retiree Medical Savings Contributions and any investment earnings attributable thereto held in a Participant’s account are nonforfeitable and are not subject to divestment.

SECTION 7. ROLLOVER CONTRIBUTIONS

An Eligible Employee of a Participating Employer who is or may become a Participant may, unless disapproved under objective procedures established by the Benefits Management Committee, make a Rollover Contribution to the Plan. An Eligible Employee's Rollover Contribution is credited to his or her account and thereafter treated like the Participant's Pre-Tax Savings with respect to withdrawals, loans and investment options under the Plan. The Plan does not accept Roth rollovers.

SECTION 8. INVESTMENTS

(a) Savings and Employer Retirement Income Contributions. Pre-Tax Savings (including Rollover Contributions), After-Tax Savings, and Employer Retirement Income Contributions will be invested, at the election of the Participant, in any of the Core Funds in one percent increments. Pre-Tax Savings of any Participant who is Automatically Enrolled and Employer Retirement Income Contributions made to the account of a Participant who has not made investment election will be contributed to the appropriate QDIA fund, based on the Participant's date of birth.

A Participant may change his or her current investment election or transfer assets deposited by the Plan into a QDIA fund any day of the Plan Year, to be effective for the next following Payroll Period, within the limitations otherwise provided in this Plan, by directing the Plan Administrator or its Designee to make such change which direction is Properly Received.

(b) Participating Employer Contributions, and Restricted Discretionary Contributions. All Participating Employer Contributions will be invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA). Restricted Discretionary Contributions may be invested in the Alcoa Stock Fund if directed by the Participating Employer, subject to Section 9, or otherwise invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA).

(c) Brokerage Account. A portion of Pre-Tax or After Tax Savings, and Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions, or Employer Retirement Income Contributions subject to transfer as provided in Section 9, or any other amounts invested in the Core Funds may be transferred in amounts of one thousand dollars ($1,000) or more and reallocated to a Brokerage Account, a self-directed brokerage account that allows a Participant to select and personally manage investment options not otherwise available under the Plan, in accordance with the provisions of Section 16. Any amounts to be withdrawn, loaned or distributed from a Brokerage Account must be first transferred back to the Core Funds, as described in Section 16(h).

(d) Automatic Rebalancing of Investments. A Participant may elect to have his or her account balance automatically rebalanced, or readjusted, at ninety-day intervals, to equal the percentage(s) directed by the Participant for investing such account balance in any Core Fund(s). The Participant may cancel Automatic Rebalancing at any time in a manner designated by the Plan Administrator that is Properly Received.

SECTION 9. TRANSFERS BETWEEN INVESTMENTS

(a) Transfer of Savings, Participating Employer, Negotiated Deferral, Restricted Discretionary Contributions, and Employer Retirement Income Contributions. A Participant may elect to transfer in whole percentage increments all or part of the Current Market Value of his or her Pre-Tax Savings, After Tax Savings, Negotiated Deferral Contributions, Restricted Discretionary Contributions, or Employer Retirement Income Contributions subject to the following:

(1) Transfers from any one or more Core Funds to the Brokerage Account may be made in amounts of one thousand dollars ($1,000) or more;

(2) Transfers may be made on a daily basis;

(3) Investment Fund transfers do not constitute a change in the Participant's current investment election; and

(4) Transfer provisions may be subject to restrictions imposed by mutual fund companies underlying the Core Funds.

(b) Effective Date of Transfer. The effective date of any transfer will be the date for which the appropriate direction to the Plan Administrator or its Designee has been Properly Received.

(c) Value of Transfer. The Current Market Value of Savings, Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions to be transferred into or out of an Investment Fund are determined in accordance with the value of the Investment Fund at the close of business of the Business Day on the Effective Date.

SECTION 10. WITHDRAWALS DURING EMPLOYMENT

Withdrawals are not permitted prior to the termination of the Participant's Continuous Service, except for the following:

(1) Upon attainment by the Participant of age 59 ½; or

(2) Upon a determination by the Plan Administrator or Designee that the Participant has suffered a Financial Hardship with respect to Pre-Tax Savings, and Employer Contributions contributed to the Plan prior to January 1, 2011.

A Participant may withdraw the Current Market Value of After-Tax Savings at any time (subject to a $250.00 minimum).

SECTION 11. DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT

(a) A Participant whose Continuous Service terminates is eligible to receive as a distribution the Current Market Value of all Savings, Participating Employer Contributions, Negotiated Deferral Conributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions made to the Participant's accounts. In the event a Participant who has terminated employment received a total distribution of the Current Market Value of his or her account under the Plan has a Reemployment Commencement Date, he or she will not be permitted to repay the distributed amount other than as a Rollover Contribution from an eligible retirement plan described in Sections 402(c) (4) and 401(a) (31) of the Code, as provided in Section 7.

(b) Direct Rollovers.

(i) Notwithstanding any provision of the Plan to the contrary that would otherwise limit a distributee's election under this subsection, a distributee may elect, at the time and in the manner prescribed by the Plan Administrator, and to have any portion of an eligible rollover distribution paid directly to an eligible retirement plan specified by the distributee in a direct rollover.

(ii) Definitions:

(1) Eligible rollover distribution: An eligible rollover distribution means any distribution to an employee of all or any portion of the balance to the credit of the employee in the Plan, and as otherwise described in this subsection (1). An eligible rollover distribution does not include any distribution that is one of a series of substantially equal periodic payments (not less frequently than annually) made for the life (or life expectancy) of the distributee or the joint lives (or joint life expectancies) of the distributee's designated beneficiary, or for a specified period of ten years or more; any distribution to the extent such distribution is required under Section 401(a)(9) of the Code; and any amount distributed on account of hardship.

(2) Eligible retirement plan: An eligible retirement plan is an individual retirement account or individual retirement annuity described in Sections 408(a) and 408(b) of the Code, a qualified trust described in Section 401(a) of the Code that accepts the distributee's eligible rollover distribution, an annuity plan or contract described

in Sections 403(a) and 403(b) of the Code, or an eligible plan under Section 457(b) of the Code that is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state that agrees to separately account for amounts transferred into such plan from this Plan. The definition of eligible retirement plan will also apply in the case of a distribution to a surviving spouse of a Participant, or spouse or former spouse who is the alternate payee under a qualified domestic relations order as defined in Section 414(p) of the Code. With respect to an eligible rollover distribution to a Participant's nonspouse Beneficiary, an eligible retirement plan is an individual retirement account or annuity described in Sections 408(a) and 408(b) of the Code established for the purpose of receiving such distribution, and identifying the deceased Participant and Beneficiary.

(3) Distributee: A distributee includes an employee or former employee. In addition, the employee's or former employee's surviving spouse and the employee's or former employee's spouse or former spouse who is an alternate payee under a qualified domestic relations order, as defined in Section 414(p) of the Code, are distributees with regard to the interest of the spouse or former spouse. A distributee includes the employee's or former employee's nonspouse Beneficiary.

(4) Direct Rollover: A direct rollover is a payment by the Plan to the eligible retirement plan specified by the distributee.

SECTION 12. PAYMENT OF DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT

(a) Subject to the following provisions of this Section, payment to a Participant or Beneficiary of the Current Market Value of all Savings, Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions and Employer Retirement Income Contributions in the Participant's account from any Investment Fund, other than the Alcoa Stock Fund, upon the Participant's termination of Continuous Service is made in cash. All amounts held in the Alcoa Stock Fund at the time of the Participant's termination of Continuous Service are paid in cash or Company Stock. Such payment will be made in accordance with the following rules:

(i) If the Current Market Value of all of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is less than one thousand dollars ($1,000), then a total distribution of all of the Participant's vested account balances will be made to the Participant at a time determined by the Plan. If the Current Market Value of all of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is greater than one thousand dollars ($1,000) but less than five thousand dollars ($5,000), and the Participant does not elect to have such distribution paid directly to an eligible retirement plan specified

by the Participant in a direct rollover or to receive the distribution directly in cash, then the distribution will be paid in a direct rollover to an individual retirement account designated by the Benefits Management Committee. The value of any delisted stock that is no longer publicly traded but that is held in the Participant's Brokerage Account shall not be considered for purposes of the preceding valuation. Any such delisted stock shall be distributed in-kind where the value of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is less than five thousand dollars ($5,000), in a direct rollover to an individual retirement account designated by the Benefits Management Committee. Upon such distribution of de-listed stock, the amounts distributed will be reported for income tax purposes using reasonable methods available at such time and determined by the Plan.

(ii) If the Current Market Value of all of the Participant's vested account balances in all defined contribution plans of Alcoa, the Subsidiaries and Affiliates exceeds five thousand dollars ($5,000), the distribution is made upon the consent of the Participant, or surviving spouse if applicable, and if no consent is given and no claim for benefits has been made, such distribution is made in total upon the later of December 31, 2015, or his or her attainment of age 69. Notwithstanding the foregoing, if a Participant attains age 70 prior to December 31, 2015, such distribution shall be made in total upon such Participant's attainment of age 70. Prior to the distribution of the total Current Market Value of the Participant's total account balance, the Participant, or the Beneficiary in the case of a Participant who dies with an account balance in the Plan, may request four partial distributions (subject to a $250.00 minimum) during each Plan Year in which the account balance is maintained in the Plan. Notwithstanding the foregoing, in the event that a claim for benefits is made, a distribution is made no later than the 60th day after the latest of the last day of the Plan Year in which occurs: (1) the date on which the Participant attains age 65, (2) occurs the tenth anniversary of the year in which the Participant commenced participation in the Plan, or (3) the Participant terminates his or her service with the Participating Employer.

(iii) If a distribution is one to which Sections 401(a)(11) and 417 of the Code do not apply, such distribution may commence less than 30 days after the notice required under Section 1.411(a)-11(c) of the Income Tax Regulations is given, provided that:

a. the Plan Administrator clearly informs the Participant that the Participant has a right to a period of at least 30 days after receiving the notice to consider the decision of whether or not to elect a distribution (and, if applicable a particular distribution option), and

b. the Participant, after receiving the notice, affirmatively elects a distribution.

(iv) If the Participant dies with an account balance in the Plan, the entire interest of the Participant will be distributed not later than 5 years after the death of the Participant.

(b) Upon any distribution of Company Stock from the Alcoa Stock Fund, the Trustee delivers to the recipient a certificate representing the number of whole shares of Company Stock being distributed and cash equal to the Current Market Value on the Effective Date of distribution of any fractional interest in a share being distributed. With respect to any shares of Company Stock which are to be sold for the account of the recipient, the Trustee may, at its option (1) purchase such shares for Plan purposes at the Current Market Value on the Effective Date of distribution, or (2) sell such shares on the open market for the account of the recipient.

(c) Notwithstanding the foregoing provisions of this Section, distribution of a Participant's account balances commences the April 1 next following the calendar year in which the Participant attains age 70-1/2 years after January 1, 1988 and in accordance with Section 12(b).

(d) Notwithstanding the foregoing, if a Participant is reemployed by a Participating Employer, then distribution of his or her account balances other than minimum required distributions under Section 401(a)(9) of the Code, if any, payable to him or her during the period of his or her reemployment is suspended until his or her subsequent termination from employment. Upon his or her subsequent termination from employment, the Participant's account balances are paid in accordance with the foregoing provisions of this Section 12.

(e) Notwithstanding paragraphs (a) and (b) above, in the event that any qualified defined contribution plan is merged with this Plan or this Plan is the surviving plan with respect to any assets of Participants of a merging plan which are transferred to this Plan, any distribution options contained in the merging plan which are not contained in this Plan may be continued to be distribution options available to the said Participant of the merging plan for distribution of his or her account, in accordance with Section 411(d)(6) of the Code.

SECTION 13. GENERAL PROVISIONS WITH RESPECT TO WITHDRAWALS

(a) Effective Date of Withdrawal. The Effective Date of any withdrawal from the Plan is the Business Day such request for withdrawal is Properly Received by the Plan Administrator or its Designee.

(b) Distribution Limitations. Distribution of all amounts payable under the Plan to a Participant commences:

(i) Not later than (1) the required distribution dates or (2) the required distribution date, without violating Treasury regulations, if any, over the life of the Participant or over the lives of the Participant and a Beneficiary, or over a period not extending beyond the life expectancy of the Participant and a Beneficiary.

(ii) If distribution of the Participant's interest in the Plan has begun in accordance with paragraph (i) (2) and the Participant dies before his or her entire interest is distributed, the Participant's remaining interest in the Plan will be distributed at least as rapidly as under the method of distribution stated under paragraph (i)(2) above being used on the date of the Participant's death. If the Participant dies before the distribution of his or her interest in the Plan has begun in accordance with paragraph (i) (2), the entire interest of the Participant will be distributed not later than five years after the death of the Participant.

For purposes of this paragraph (b), the "required distribution date" means the date prescribed by Treasury Regulations, as amended from time to time, which effective January 1, 1988, is April 1 of the calendar year following the calendar year in which the Participant attains age 70-1/2.

For the purposes of this paragraph (b), any amount paid to a minor child is treated as if it had been paid to the surviving spouse if such amount will become payable to the surviving spouse upon such child reaching majority or any other designated event as may be permitted by Treasury Regulations, if any.

(c) Appendix D, Minimum Distribution Requirements, provides Plan provisions to comply with Section 401(a)(9) of the Code and Treasury Regulations §1.401(a)(9)-2 through -9, as applicable, relating to required minimum distributions.

SECTION 14. NONASSIGNABILITY

Except as required under ERISA, no right or interest of any Participant or Beneficiary in the Plan or in such Participant's accounts is (a) assignable or transferable or subject to any lien in whole or in part, either directly or by operation of law or otherwise, including, but not by way of limitation, alienation, execution, levy, garnishment, attachment, pledge, bankruptcy or in any other manner other than a transfer as a result of death or mental incompetence, or (b) liable for, or subject to, any obligation or liability of such Participant or Beneficiary. Such portions of the Savings, Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions in the account of a Participant as are payable to another in accordance with the provisions of a "qualified domestic relations order," as defined in Section 414(p) of the Code and any applicable regulations thereunder, are distributed to the party designated in and in accordance with said order. The Effective Date of withdrawal for any such distribution is the first Business Day following the Plan Administrator's determination that the said order is in compliance with Section 414(p) of the Code and any applicable regulations thereunder, and such distribution is made as soon

as administratively practical thereafter. The Plan Administrator or Designee has promulgated procedures to determine whether a domestic relations order is a qualified domestic relations order. The procedures will be provided to a participant or alternate payee upon written request, or upon receipt of the domestic relations order by the Plan Administrator or Designee.

SECTION 15. EXTENT OF PARTICIPANT'S RIGHTS

(a) General. No person has any interest in or right to any part of the assets held under the Plan or the income thereon, except as and to the extent expressly provided in the Plan.

At the time of withdrawal by a Participant or Beneficiary, he or she will receive shares or cash. There is no guarantee that the Current Market Value of any investment will be equal to or greater than the amount of the Participant's Savings therein. This Plan is designed to comply with and operate under Section 404(c) of ERISA. A Participant and his or her Beneficiaries assume all risk in connection with any decrease in the value of any investments allocated to such Participant's account. For purposes of Section 404(c)(1) of ERISA, in the absence of Participant of Beneficiary investment direction, a Participant or Beneficiary shall be treated as having exercised control over the assets invested in any investment which qualifies as a QDIA in accordance with Section 404(c)(5) of ERISA and the regulations promulgated thereunder.

The Plan does not and should not be construed as conferring any rights upon any person for a continuation of employment, nor does it interfere with the rights of Alcoa or any Subsidiary or Affiliate to terminate the employment of any person or to take any personnel action affecting such person without regard to the effect which such action might have upon such person or his or her Beneficiaries as a prospective recipient of benefits under the Plan.

(b) Military Service. Notwithstanding any provision of this Plan to the contrary, contributions, benefits and service credit with respect to qualified military service will be provided in accordance with Section 414(u) of the Internal Revenue Code.

SECTION 16. MANAGEMENT OF FUNDS

(a) General. Savings, Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions paid to the Trustee are invested as provided in the Plan.

(b) Trustees and Investment Managers. The Board or its designee has the responsibility to appoint, review the performance of, and remove where deemed appropriate, one or more Trustees, and one or more investment managers, each of which is a bank, insurance company or other investment adviser qualified under Section 3(38) of

ERISA. The duties of each Trustee and manager, to the extent not set forth in the Plan, are set forth in a trust agreement or other written documents approved by the Board or its designee. Except as otherwise provided in such documents or in the Plan, each such investment manager has sole investment control and management responsibility with respect to those assets of the Plan for which it is designated the investment manager. The Board may delegate its authority to appoint an investment manager, to remove an investment manager, to approve and direct the execution by the proper officer or officers of Alcoa of amendments to agreements with any investment manager, and to review the performance of any such managers. Such delegation also includes the authority to approve written documents setting forth the duties of any manager and to direct the execution of investment management agreements by the proper officer or officers of Alcoa. No Trustee has any investment responsibility for any assets which are subject to the investment control of another investment manager, and as to such assets it only has custodial duties if it is the custodian.

(c) Designation of Investment Strategy. The Board may from time to time designate, as to part or all of the assets of the Plan, that a separate fund or funds be established. Except as otherwise provided in the Plan, as to each such separate fund the Board or its designee may specify the investment strategy to be employed and the investment manager is thereupon relieved of responsibility for assuring that the specified investment strategy creates suitable diversification of the overall assets of the Plan, provided that such investment manager has followed such specifications.

(d) (1) Acquisition of Fixed Income Investments by the Trustee. The Trustee will enter into investment arrangements with insurance companies, banks or money managers, as directed by an investment manager duly appointed by the Board or its designee for the Fixed Income Fund. The Trustee will invest all Savings and other amounts to be invested in the Fixed Income Fund in accordance with such directions.

(2) Accounting for Participant's Accounts. Participants' investments in the Fixed Income Fund are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in the Fixed Income Fund as may be acquired with funds (if any) in such Participant's accounts to be invested therein. Such allocations will be made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(e) (1) Acquisition of Company Stock by Trustee. The Savings, Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions to be invested in the Alcoa Stock Fund are used by the Trustee to purchase from time to time shares of Company Stock (i) from Alcoa, at the Current Market Value thereof, or (ii) to the extent Alcoa does make shares available for purchase by the Trustee for such purpose, on the open market unless Alcoa otherwise directs, or (iii) by the exercise of warrants or rights

as provided in this Section. The Trustee, to the extent reasonable, invests any cash held in the fund in cash equivalents (including commercial paper). The Trustee also holds for the purpose of allocation to the accounts of individual Participants as hereinafter provided (i) shares of such stock which the Trustee has acquired upon withdrawal by a Participant, and (ii) shares of such stock which the Trustee has acquired pursuant to Participants' elections to transfer investments under the provisions of Section 9. All shares of such stock purchased by the Trustee are carried in the accounts of the Trustee at the actual cost thereof, including any taxes, commissions, etc. which are not paid by the Participating Employer, incident to the purchase except that shares acquired upon the exercise of warrants or rights are carried at the Current Market Value of such shares on the date of such exercise.

(2) Allocation of Stock to Participants' Accounts. Participants' investments in the Alcoa Stock Fund are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in the Alcoa Stock Fund as may be acquired with funds (if any) in such Participants' accounts to be invested therein. Such allocations are made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(3) Allocation of Dividends to Participants' Accounts. In valuing the units, dividends are accounted for on the date the Board declares the dividend. Once received, dividends are invested in the Alcoa Stock Fund. A Participant may elect to receive an annual distribution of the dividends posted to their account during the Plan Year. Such election must be made prior to the last dividend record date in the Plan Year, and distribution will be made as soon as administratively practical following the date the final dividends are posted to the Participant's account. Distribution will be paid in a lump sum from the Alcoa Stock Fund. To the extent the Participant's account balance in the Alcoa Stock Fund is insufficient to pay the dividends, the balance of the distribution will be paid pro-rata from the Participant's other Core Fund investments.

(4) Warrants & Purchase Rights. A Participant has no right of request, direction or demand upon the Trustee to exercise in his or her behalf warrants or rights to purchase shares of common stock or other securities of Alcoa, except as otherwise determined by the Board. The Trustee, in its discretion, may exercise or sell any warrants or rights to purchase shares of Company Stock appertaining to shares of such stock held by the Trustee, and may sell any warrants or rights to purchase other securities of Alcoa appertaining to shares of such stock held by the Trustee.

(5) Stock Splits & Dividends. Shares of Company Stock received by the Trustee by reason of a stock split or stock dividend become part of the Alcoa Stock Fund.

(6) Voting. The Trustee exercises its voting rights in accordance with written directions of each Participant with respect to at least the number of whole shares of Company Stock held by it in the Participants' accounts on the record date for voting. With respect to all other shares of Company Stock held by the Trustee on the record date for voting (the "Other Shares"), including but not limited to, (i) fractional shares in the Participants' accounts (if they are not subject to direct voting), (ii) shares for which it has not received written directions from any Participant, and (iii) any shares which have not yet been allocated to Participants' accounts, the Trustee exercises its voting rights in the same proportion (for, against, abstain and so on) on each matter as it exercises its voting rights with respect to shares of Company Stock for which voting directions were received from all participants in all plans which participate in the Alcoa Stock Fund.

(f) (1) Acquisition of Other Investments by Trustee. Alcoa has and in the future will enter into investment arrangements with various investment managers. Any such arrangements must be approved by the Benefits Management Committee. Expenses incurred in connection with the purchase or sale of securities by the investment manager are paid from the applicable Investment Fund.

(2) Accounting for Participant's Accounts. Participants' investments in the Core Funds are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in each of the Core Funds as may be acquired with funds (if any) in such Participant's accounts to be invested therein. Such allocations will be made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(g) Transition Provision. Pending investment under an arrangement established pursuant to this Section, and pending distribution to Participants following withdrawal from such an arrangement, cash is invested by the Trustee in short-term fixed income securities or cash equivalents (including commercial paper) and the value of such securities or cash equivalents is allocated to the accounts of Participants in an equitable manner determined by the Benefits Management Committee.

(h) Brokerage Account. Participant's have the right to invest and personally manage investments outside of the Core Funds by investing through the Brokerage Account offered by a broker selected by the Plan ("Broker"). Investment options through the Brokerage Account are mutual funds (other than those already available as Core Funds), any taxable equity or fixed income security publicly traded in a U.S. security market (including American Depository Receipts), and money market funds. Pre-Tax Savings, After-Tax Savings, Rollover Contributions, Participating Employer Contributions, Negotiated Deferral Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions that are subject to transfer as provided in Section 9, may not be directly invested in the Brokerage Account, nor may withdrawals, distributions or loans be made directly from the Brokerage Account. Such transactions must be processed through the Core Funds.

(1) Restrictions of Trading in the Brokerage Account. Certain restrictions apply to investment vehicles that may be available through the Brokerage Account: Specifically, the following investments are not available through the Brokerage Account: Alcoa company stock (common or preferred) and bonds; funds currently available in the Core Funds; tax-free funds; securities of publicly traded limited partnerships; options contracts; purchase on short sales, futures, precious metals, and currencies; real estate (other than funds); annuities; life insurance policies; collectibles; commodities; foreign stocks (not American Depository Receipt); and margin trading and trade-away trades that are placed by another broker and settle with the Broker.

(2) Trading within the Brokerage Account. Investment purchases in the Brokerage Account may be made after such amounts are transferred from the Participant's Core Fund accounts. Transfers from Core Funds may be made as provided in Section 9. Transferred funds will be held in the Broker's money market fund until the Participant's buy orders are received by the Broker. Trades may be subject to initial and subsequent investment minimums required by a mutual fund.

Transfers are made out of the Brokerage Account and into the Core Funds from the Schwab money market fund. If there are insufficient funds to make the requested transfer, the participant must submit a sell order with Schwab. The proceeds of securities sold will be invested automatically in the Broker's money market fund and will be subsequently transferred out of the Brokerage Account to the Core Funds as directed by the Participant.

(3) Expenses Incurred by Trading and Voting. The Broker's standard commission schedule will be deducted from the Brokerage Account of the Participant who initiates the trades, and any other fees and expenses incurred through the Brokerage Account will be paid directly by the Participant.

The Broker will execute proxies for any securities held in the Brokerage Account in accordance with written directions of any Participant.

OTHER PROVISIONS OF THE PLAN

SECTION 17. LOANS

(a) A Participant may borrow a proportion of the Current Market Value of his or her Savings, Participating Employer, and Negotiated Deferral Contributions which are eligible for transfer under Section 9(b) of this Plan ("Eligible Loan Account Balance").

A Participant may not borrow Restricted Discretionary Contributions or Employer Retirement Income Contributions or Retiree Medical Savings Contributions. In addition, a Participant may not borrow Participating Employer Contributions made on or after January 1, 2011 or investment gains thereon.

Aa Participant shall pay a $100 processing fee, or such other amount as may be designated by the Plan Administrator, for each loan request. The fee will be included in the loan amount, subject to the limitations of this Section 17, and deducted prior to distribution of the loan.

(b) A loan to a Participant, when added to the balance of any other outstanding loans the Participant has under the Plan, cannot exceed the lesser of:

(1) $50,000 reduced to the extent of the highest outstanding loan balance of the Participant's loans outstanding during the 365-day period immediately preceding the date on which the loan is made; or

(2) 50% of the sum of the Participant's (A) Eligible Loan Account Balance, plus (B) Restricted Discretionary Contributions and vested portion of Employer Retirement Income Contributions balances.

A Participant may refinance any general purpose loan for any reason at any time (but only once in a twelve-month period), as may be permitted under the Code or ERISA.

(c) Each loan to a Participant is secured by a promissory note under which the Participant pledges and grants the Trustee an interest in the Participant's Eligible Loan Account Balance to the extent of the unpaid loan.

(d) All loans to Participants are treated as investments of plan assets in their respective accounts. All principal and interest associated with a Participant's repayment of a loan are credited to his or her Plan account.

(e) The Plan Administrator has developed a procedure in accordance with the Code and ERISA under which such loans from the Plan will be made available to Participants which procedure has been approved by the Benefits Management Committee.

(f) Loan repayments will be suspended under this Plan during a period of military service as permitted under Section 414(u) (4) of the Internal Revenue Code and the regulations promulgated under Section 72(p) of the Code. Upon the Participant's return to active employment, loan repayments will resume and the period of repayment extended in direct proportion of the Participant's period of absence for military leave.

SECTION 18. TRUST

All assets of the Plan are held in trust for the Plan, except as otherwise permitted by applicable law. Alcoa has entered into a trust agreement with a national banking

association which acts as Trustee under the Plan. The Board or its designee may, from time to time, amend such trust agreement (subject to its terms), remove such Trustee or any Successor Trustee and upon removal or resignation of a Trustee, appoint a Successor Trustee.

SECTION 19. ADMINISTRATION

(a) Duties of Plan Administrator. The Plan Administrator or its Designee are responsible for the preparation and the filing with governmental agencies and furnishing to Participants and Beneficiaries of all summaries, descriptions, annual and other reports, notices and other documents, and information which are required to be so prepared and filed or furnished under ERISA or the Code, retain appropriate records, and also have all of the other responsibilities and duties of the administrator of the Plan as set forth in ERISA, except as otherwise provided in the Plan. Each Participating Employer by whom a Participant is employed furnishes to the Plan Administrator or its Designee any records required for the foregoing.

(b) The Benefits Management Committee. Except as provided in Section 16 and in paragraph (a) of this Section, the complete authority to control and manage the operation and administration of the Plan is placed in the Benefits Management Committee, which consists of one or more persons appointed from time to time by the Board.

(c) Duties of Benefits Management Committee. Subject to the limitations of the Plan, the Benefits Management Committee has the discretionary authority to: (1) construe and interpret the Plan, (2) interpret administrative forms and other information, (3) make credibility findings, and (4) establish supplemental regulations for the administration of the Plan and the transaction of its business. All actions, determinations and interpretations of the Benefits Management Committee will be performed in a uniform and nondiscriminatory manner to all Participants in similar circumstances. All interpretations of the Plan and determinations of disputed questions made by the Benefits Management Committee are conclusive, final and binding upon the Participating Employers, Participants, Beneficiaries, other employees and any other individuals claiming rights under the Plan, subject to a claimant's request under paragraph (e) of this Section to have the Benefits Management Committee review the denial of a claim. When making an interpretation or determination, the Benefits Management Committee is entitled to rely upon information furnished by the individual, Participant, Beneficiary or Participating Employer, unless in accordance with an appeals procedure established by the Benefits Management Committee, the claimant establishes to the satisfaction of the Benefits Management Committee that Continuous Service, compensation or other records are erroneous.

(d) Application for Benefits. Each person applying for a benefit under the Plan must furnish all information required under procedures approved by the Benefits Management Committee.

(e) <u>Review of Denial of Benefits</u>. If any applicant's claim for benefits under the Plan is denied, the applicant will be notified in writing of such denial. Such notice will set forth the specific reasons for such denial and will be written in a manner calculated to be understood by the applicant. The applicant will be afforded a reasonable opportunity for a full and fair review by the Benefits Management Committee or its designee of the decision denying his or her claim for benefits, in accordance with a claims procedure which the Benefits Management Committee adopts. After the final determination of an appeal by the Benefits Management Committee or its Designee, the applicant must file any litigation arising out of the underlying facts or circumstances giving rise to such claim and appeal, under ERISA or otherwise, within one hundred eighty (180) days following the date of the final notice provided by the Benefits Management Committee or its Designee.

(f) <u>Extent of Benefits Management Committee's Responsibility</u>. The members of the Benefits Management Committee will act in a prudent manner in the performance of their duties. No member will be personally liable by virtue of any contract, agreement, bond or other instrument made or executed by or on behalf of such member as a member of the Benefits Management Committee. To the extent permitted by ERISA, no member of the Benefits Management Committee will be liable for any mistake of judgment made by himself or herself or any other member, nor for any loss, unless resulting from his or her own gross negligence or willful misconduct, and no member will be liable for the neglect, omissions or wrongdoing of any other member thereof, or of the agents or counsel of the Benefits Management Committee. To the extent permitted by law, Alcoa will indemnify and save harmless each member of the Benefits Management Committee against all expenses and liabilities arising out of his or her services as such, except for expenses and liabilities arising from such member's own gross negligence or willful misconduct as determined by the Board.

(g) <u>Relationship to Other Fiduciaries</u>. Each fiduciary in carrying out its responsibilities under the Plan may rely upon any direction, information or action of another fiduciary as being proper under this Plan or the documents under which the assets of the Plan are managed, and is not required to inquire into the propriety of any such direction, information, or action. It is intended under this Plan and such documents that each fiduciary is responsible for the proper exercise of its own powers, duties, responsibilities and obligations under this Plan and such documents and is not responsible for any act or failure to act of another fiduciary, except as otherwise provided by ERISA.

(h) <u>Multiple Fiduciaries</u>. Any person or group of persons may serve in more than one fiduciary capacity with respect to the Plan.

(i) <u>Further Allocation of Fiduciary Duties</u>. Any two or more fiduciaries named herein or appointed by the Board as provided herein may from time to time agree in writing with respect to the allocation of duties and responsibilities under the Plan, including fiduciary responsibilities, among the fiduciaries so agreeing, provided however that any reallocation of fiduciary responsibilities clearly allocated by the Plan or by the Board requires prior approval of the Board.

(j) Delegation of Fiduciary Duties. Any fiduciary named herein or appointed by the Board as provided herein may designate another person or persons to carry out any or all of the duties and fiduciary responsibilities which it has under the Plan and which are specified in such designation, except that no Trustee may delegate fiduciary responsibilities with respect to investment functions without the prior approval of the Board.

(k) Delegation of Ministerial Duties. Any fiduciary named herein, appointed by the Board as provided herein, or designated under paragraph (j) above may delegate ministerial duties as follows: employ one or more persons to render advice, including legal and accounting services, with regard to any responsibility such fiduciary has under the Plan, may appoint ministerial agents (including brokers or others who may execute investment transactions) and may delegate to others its clerical and other non-fiduciary functions.

(l) No Added Remuneration for Employees. No member of the Benefits Management Committee and no other person who renders services to or for the Plan may receive remuneration for services as such if he or she also is an employee of Alcoa, a Subsidiary or Affiliate.

SECTION 20. AMENDMENT, MODIFICATION, SUSPENSION OR TERMINATION

(a) Rights Reserved. Alcoa reserves the right (subject to the terms of the applicable Bargaining Agreement), by action of the Board or the Benefits Management Committee taken in accordance with the Board's or Benefits Management Committee's operating procedures, (1) to amend, modify, suspend or terminate the Plan or to suspend or completely discontinue contributions to the Plan, and (2) to terminate the Participation in the Plan of any Participating Employer or any designated group of Eligible Employees employed either within or outside the U.S. Any Participating Employer may terminate its participation in the Plan or suspend or discontinue its contributions under the Plan at any time upon 30 days prior written notice to the Plan Administrator. Such 30 day notice requirement may be waived by the Benefits Management Committee. No such amendment or other action relating to the Plan may reduce the amounts then credited to any Participant's account, or provide or have the effect of providing that the securities and funds held in trust for the Plan or the income thereof may be used for or devoted to purposes other than the exclusive benefit of Participants and their Beneficiaries and for the payment of expenses of the Plan.

(b) Sale of Assets, etc. In the event any assets of any business of any Participating Employer are transferred to another entity by sale, merger, consolidation or

otherwise, and the entity to which said assets are transferred has in effect, or thereupon establishes, a tax-qualified plan and related trust for the exclusive benefit of employees which qualify under the applicable provisions of the Code, all assets under the Plan, held in the accounts of Participants who continue in the employment of the transferee entity, may be transferred and paid, for their respective accounts, to the trust for the tax-qualified plan of said transferee entity, provided that any such transfer of investments will be effected in such manner as to preclude, for federal income tax purposes, a termination of the Plan or the constructive receipt of benefits thereunder with respect to said Participants.

(c) Transfer of Plan Assets.

(1) Notwithstanding the foregoing, in the event of any merger or consolidation of the Plan with, or a transfer of any of the assets and liabilities of the Plan to, any other plan, each affected Participant must (as if such plan were terminated immediately after such merger, consolidation or transfer) be entitled to a benefit under such other plan which is equal to or greater than the benefit he or she would have been entitled to receive under the Plan immediately prior to such merger, consolidation or transfer (as if the Plan had then terminated). In the event that assets are transferred to this Plan from any other plan sponsored by Alcoa or any Subsidiary or Affiliate, each Participant who has assets transferred from such plan or plans will be entitled to a benefit under this Plan which is equal to or greater than the benefit he or she had under such other plan. Any protected optional form of benefits provided under said plan will be maintained under this Plan. These provisions do not constitute a guaranty against investment losses.

(2) In the event a participant in a plan named below ("Alcoa Savings Plans ") becomes an Eligible Employee under this Plan, all of the participant's accounts in the applicable Alcoa Savings Plan will be transferred to analogous accounts in this Plan as soon as reasonably practical after the Plan Administrator or Designee receives notice.

Alcoa Retirement Savings Plan for Salaried Employees;

Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees; and

Alcoa Retirement Savings Plan for Fasteners Systems Employees.

(3) In the event a Participant ceases to be an Eligible Employee under this Plan and the Participant becomes an eligible employee under one of the Alcoa Savings Retirement Plans listed in (2) above, all of the Participant's accounts will be transferred to analogous accounts in the applicable Plan, as soon as reasonably practical after the Plan Administrator or Designee receives notice and the Participant ceases to be a Participant, and will be entitled to no further benefits under this Plan.

SECTION 21. ADMINISTRATIVE EXPENSES

Except as otherwise provided in the Plan, all costs and expenses incurred in administering the Plan, including the expenses of the Benefits Management Committee, the fees and expenses of the Trustee, the fees and charges payable under the investment arrangements, and other legal and administrative expenses, are paid by the Plan.

Investments in the Core Funds will be subject to an administrative expense fee, which will be used to pay the expenses of the Plan. Initially the fee will be set at five basis points per year, and will be charged on a daily basis. The fee will be periodically adjusted by the Plan Administrator based on the actual expenses of the Plan.

SECTION 22. SELECTION OF BENEFICIARIES

(a) Designation of Beneficiary. Subject to such administrative procedures as may be adopted from time to time, the Beneficiary with respect to all of the assets in the accounts of a Participant will be the Participant’s spouse if then living, or if not, the Participant’s estate. With the written notarized consent of a Participant’s spouse, a Participant may file with the Plan Administrator or its Designee a written designation of a Beneficiary or Beneficiaries other than his or her spouse. In the event the designation of such other Beneficiary is revoked in writing by the Participant, his or her spouse will become the Beneficiary of said assets until such time as the Participant, with his or her spouse’s written notarized consent, designates in writing another Beneficiary or Beneficiaries.

In the event a Participant certifies that he or she does not have a spouse, a Beneficiary or Beneficiaries with respect to all or part of the assets in the accounts of the Participant may be designated or revoked by the sole action of the Participant.

If there is no designated Beneficiary, or if no Beneficiary is living at the time of the Participant’s death, the Beneficiary is the Participant’s spouse if then living, or if not, the Participant’s estate.

Written designations of a primary Beneficiary or a, contingent Beneficiary to receive the assets of a Participant in the case where the primary Beneficiary is deceased, spousal consents, and revocations are made on a form or forms approved by the Plan Administrator. Any such written designation, consent or revocation become effective on the calendar day on which such designation, consent or revocation is Properly Received. After the death of a Participant, a properly designated Beneficiary may name his or her own Beneficiary to receive a distribution of the Beneficiary’s account balances when the Beneficiary is deceased (“Subsequent Beneficiary”). A Subsequent Beneficiary shall receive a total distribution of the Subsequent Beneficiary’s account balance within the greater of: (i) ninety (90) days after death of the Beneficiary who named such Beneficiary or (ii) five (5) years of the Participant’s death.

(b) Other Payments. In case of incapacity of a Participant or Beneficiary entitled to a benefit under the Plan, benefit payment are made to such person's legal representative who makes claim therefore, or if no such claim has been received, to such other person or persons as the Benefits Management Committee, utilizing objective criteria, selects from among dependents, next of kin, or friends. Any payment of a benefit under the Plan in accordance with the provisions of this Section is a complete discharge of any liability for the payment of such benefit under the Plan.

SECTION 23. PARTICIPANT'S STATEMENT

A statement showing each Participant's interest in each of the Plan's Investment Funds will be made available at least quarterly.

SECTION 24. EFFECTIVE DATE OF PLAN

The Plan is amended and restated effective January 1, 2015.

SECTION 25. CONSTRUCTION

It is intended that the Plan conform to the applicable requirements of ERISA and the Code, and that the Plan and related trust agreement are considered one if and to the extent necessary for compliance therewith. Except to the extent otherwise provided in ERISA and the Code, the Plan is construed, regulated and administered under the laws of the Commonwealth of Pennsylvania, including its applicable statute of limitations (as such may be superceded by any limitations period provided under the terms of the Plan).

APPENDIX A

LIMITATIONS AND DISCRIMINATION TESTING

1. Pre-Tax Savings for any Plan Year of a Participant is subject to the following limitations:

(a) The applicable limit as defined in Treasury Regulation section 1.402(g)-1(d) with respect to the Pre-Tax Savings of this Plan and elective deferrals of all other plans, contracts, or arrangements of the employer

(b) if the Participant is a Highly Compensated Employee with respect to any Participating Employer for that year, the amount that may be made on his or her behalf in compliance with the special discrimination tests of Sections 401(k) and 401(m) of the Code for that year, as applied separately to each Plan;

(c) the amount deductible by the Participating Employer for that year under Section 404 of the Code; and

(d) the maximum permitted amount under Appendix B of the Plan.

2. To conform the operation of the Plan to the requirements of Sections 401(k) and 401(m) of the Code and the limitations of Paragraphs (1)(a) and (1)(b) above with respect to any Participant, the Plan Administrator may, without that Participant's consent:

(a) prospectively modify or revoke his or her election to have Savings, Participating Employer Contributions, Negotiated Deferral Contributions, and Restricted Discretionary Contributions made on his or her behalf,

(b) distribute to him or her the amount by which the Pre-Tax Savings made on his or her behalf for any Year exceeds the limitation of Paragraph (1) (a) above for that year plus the amount of any income allocable to such excess (but not more than his Pre-Tax Savings account balance) by the April 15 next following the end of that Plan Year;

(c) distribute to him or her the amount by which the Pre-Tax Savings made on his or her behalf for any Plan Year exceeds the limitations of Paragraph (1)(b) above for that year (as determined in accordance with Section 401(k)(8)(B) of the Code) plus the amount of any income allocable to such excess (but not more than his Pre-Tax Savings account balance) by the end of the Plan Year following the Plan Year for which the amounts were contributed; and

(d) make appropriate adjustments to his or her Pre-Tax Savings account to reflect such distributions.

3. Such modification or revocation described in 2. above is made only if necessary under one of the following circumstances:

(a) to ensure that the discrimination tests of Section 401(k) of the Code governing permissible levels of Pre-Tax Savings contributions for both the ESOP and non-ESOP portions of the Plan are met for such Plan Year, or to ensure that one of the following Average Actual Deferral Percentage tests are met for both the ESOP and non-ESOP portions of the Plan for such Plan Year;

(b) to ensure that a Participant's annual additions for any calendar year will not exceed the limitations of Appendix B; or

(c) to ensure deductibility of the Employer's entire contribution to the Plan for federal income tax purposes.

4. Definitions. For purposes of this Appendix A, the following terms are defined as follows:

(a) "Actual Deferral Percentage" means the ratio, expressed as a percentage calculated to the nearest one-hundredth of one percent, of the amount of Pre-Tax Savings on behalf of an Eligible Employee for a Plan Year to the Eligible Employee's Compensation for the Plan Year, whether or not the employee was a Participant for the entire Plan Year. A Highly Compensated Employee's Savings include such savings for the Plan Year which is in excess of the limitations set forth in Section 415(c) (1) of the Code ("Excess Pre-Tax Savings"), but exclude Excess Pre-Tax Savings for Non Highly Compensated Employees. Any Eligible Employee who does not elect to make Pre-Tax Savings and who does not receive Qualified Matching Contributions for a Plan Year will have zero Actual Deferral Percentage for the Plan Year.

(b) "Average Actual Deferral Percentage" means, for the group of Eligible Employees, covered under a Bargaining Agreement, who are Highly Compensated Employees for a Plan Year or the group of Eligible Employees, covered under a Bargaining Agreement, who are Non-Highly Compensated Employees for the Plan Year, the average of the Actual Deferral Percentages of all Eligible Employees in such group for the Plan Year.

(c) "Average Contribution Percentage" means, for the group of Eligible Employees, other than those covered under a Bargaining Agreement, who are Highly Compensated Employees for **a** Plan Year or the group of Eligible Employees, other than those covered under a Bargaining Agreement, who are Non-Highly Compensated Employees for the Plan Year, the average of the Contribution Percentages of all Eligible Employees in such group for the Plan Year.

(d) “Contribution Percentage” means the ratio, expressed as a percentage calculated to the nearest one-hundredth of one percent, of the sum of Participating Employer Contributions and Negotiated Deferral Contributions (other than Qualified Matching Contributions treated as Elective Deferrals under paragraph 7 of this Appendix) and any After-Tax Savings on behalf of an Eligible Employee for a Plan Year to the Employee’s Compensation for the Plan Year, whether or not the employee was a Participant for the entire Plan Year. For these purposes, an Eligible Employee’s Contribution Percentage for any Plan Year is calculated by excluding any forfeitures of Excess Aggregate Contributions allocated to the Eligible Employee’s account for the Plan Year.

(e) “Compensation” means the total amount of compensation (within the meaning of Section 415(c) (3) of the Code, and subject to the limitation of Section 401(a) (17) of the Code) received by an employee from the Employer while an Eligible Employee under the Plan during the Plan Year. An Eligible Employee’s Compensation for a Plan Year includes all Pre-Tax Savings made to the plan for the Plan Year, and all other such employee savings made by the Employer for the Plan Year to any other plan on behalf of the employee that are not currently includible in the gross income of the employee under Sections 125, 132(f)(4), 402(a)(8), 402(h) or 403(b) of the Code, provided that Alcoa has elected to treat all such elective contributions as compensation with respect to all employees under all plans of the Participating Employer.

In applying the limitation of Section 401(a) (17) of the Code, effective January 1, 1997, the family aggregation rules under this Appendix no longer apply.

(f) “Eligible Employee” means, with respect to any Plan Year, any employee who is eligible to commence participation in the Plan under Section 1 of the Plan and to have Savings made to the Plan under Section 2 of the Plan for the Plan Year, regardless of whether any contributions are made to the Plan on behalf of the employee for the Plan Year.

(g) “Excess Contributions” means, with respect to any Plan Year, the excess of the aggregate amount of Pre-Tax Savings, including Qualified Matching Contributions treated as Elective Deferrals under paragraph 7 of this Appendix, actually made to the Plan on behalf of Highly Compensated Employees for the Plan Year over the maximum amount of such contributions permitted under paragraph 5 of this Appendix.

(h) “Excess Aggregate Contributions” means, with respect to any Plan Year, the excess of the aggregate amount of Participating Employer Contributions and any After-Tax Savings actually made to the Plan on behalf of Highly Compensated Employees for the Plan Year over the maximum amount of such contributions permitted under paragraph 9 of this Appendix.

(i) “Employer” means Alcoa Inc. and all other entities as required to be covered under Section 414(c) of the Code.

(j) “Family Member” means, with respect to any Eligible Employee, an individual described in Section 414(q) (6) (B) of the Code.

(k) “Highly Compensated Employee” includes, for any Plan Year, the following Employees:

(i) A Highly Compensated Active Employee includes any employee (other than employees who are non-resident aliens and receive no earned income from sources within the U.S.) who performs service for the Employer during the Determination Year and who during the Look-Back Year:

(1) was a 5 % owner (within the meaning pursuant to Section 416(i) (1) of the Code) at any time during the year or the preceding year, or

(2) for the preceding year received Compensation from the Employer in excess of $80,000 (as adjusted pursuant to Section 415(d) of the Code) for such year.

(ii) A Highly Compensated Former Employee means:

(1) any employee who was a Highly Compensated Employee when the employee separated from service, or

(2) any employee who was a Highly Compensated Employee at any time after attaining the age 55.

(l) “Non-Highly Compensated Employee” means, for any Plan Year, an employee who is not a Highly Compensated Employee.

(m) “Qualified Matching Contributions” means any Participating Employer Contributions to this Plan on behalf of Eligible Employees, provided that amounts attributable to such contributions are not distributable merely on account of the Employee’s hardship and are immediately vested.

5. Average Actual Deferral Percentage Test. For each Plan Year, the Plan must satisfy one of the following Average Actual Deferral Percentage tests with respect to Pre-Tax Savings, and Qualified Matching Contributions treated as Pre-Tax Savings under paragraph 7 of this Appendix, made to both the ESOP and non-ESOP portions of the Plan for the Plan Year:

(a) the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by 1.25; or

(b) the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by two, provided that the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year does not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees by more than two percentage points.

(c) The Average Actual Deferral Percentage Test for all contributions to the ESOP portion of the Plan will be computed separately under this Section.

6. Special Rules.

(a) Aggregation of Plans. In the event that this Plan satisfies the requirements of Section 401(a) (4), 401(k) or 410(b) of the Code only if aggregated with one or more other plans, or if one or more other plans satisfy the requirements of such sections of the Code only if aggregated with this Plan, then the provisions stated herein will be applied by determining the Actual Deferral Percentages of Employees as if all such plans (excluding other ESOPs) were a single plan. For plan years beginning after December 31, 1989, plans may be aggregated in order to satisfy Section 401(k) of the Code only if they have the same plan year. Notwithstanding the foregoing, certain plans will be treated as separate if mandatorily disaggregated under regulations under Section 401(k) of the Code.

(b) In the event the Plan does not pass the ADP test, the test will be disaggregated by removing from the test all participants who have not attained age 21 and completed one eligibility year within 6 months of the last day of the plan year.

(c) All ESOP portions of the Savings Plan shall be aggregated for ADP with the Non-ESOP portions of the Savings Plan.

7. Treatment of Qualified Matching Contributions. If any Qualified Matching Contributions are made on behalf of Eligible Employees for a Plan Year, Alcoa may elect, in accordance with the regulations of the Secretary of Treasury under Section 401(k) of the Code, to treat all or a portion of such Qualified Matching Contributions as Pre-Tax Savings for purposes of calculating the Actual Deferral Percentages of Eligible Employees for the Plan Year. Any such Qualified Matching Contributions for a Plan Year must be made no later than the end of the 12 month period immediately following the close of the Plan Year.

8. Correction of Excess Contributions.

(a) General Rule. If the Plan does not satisfy one of the Average Actual Deferral Percentage tests of paragraph 5 of this Appendix as of the end of a Plan Year, the Excess Contributions for the Plan Year will be corrected if the Excess Contributions for the Plan Year are timely recharacterized as employee After-Tax Savings contributions in accordance with subsection (c) below or timely distributed to Highly Compensated Employees in accordance with subsection (d) below.

(b) Allocation of Excess Contributions. Effective for Plan Years beginning after December 31, 1996, in the event the nondiscrimination requirements of paragraph 5 of this Appendix are not satisfied for a Plan Year, the “deferral percentage leveling method” described in the preceding paragraph is performed as a first step in order to determine the total dollar amount of Excess Contribution to be distributed: a calculation is made to determine the dollar amount of Elective Deferrals necessary to reduce the deferral percentage of the Highly Compensated Employee with the highest deferral percentage to be equal to the deferral percentage of the Highly Compensated Employee with the next highest deferral percentage, and where necessary, calculations are made to determine the dollar amounts of reductions of the deferral percentage of subsequent Highly Compensated Employees that may be required in order to satisfy the nondiscrimination requirements in paragraph 5 of this Appendix. The total dollar amount of Excess Contribution that must be distributed for the Plan Year is the sum of the dollar amounts so calculated for each Highly Compensated Employee whose deferral percentage is so reduced.

Distribution of the total amount of Excess Contribution determined in the paragraph above is made using the “dollar leveling method.” Excess Contributions of the Highly Compensated Employee with the largest dollar amount of contributions for the Plan Year shall be distributed to the extent necessary to cause that Highly Compensated Employee’s dollar amount of Excess Contributions to equal the dollar amount of Excess Contributions of the Highest Compensated Employee with the next highest dollar amount of Excess Contributions for the Plan Year. If the total amount distributed is less than the amount of total Excess Contribution, then both Highly Compensated Employees’ amounts are reduced to the same dollar level of the Highly Compensated Employee electing the third highest dollar amount and the dollar leveling process is repeated until the total dollar amount that should be reduced as calculated in the above paragraph is distributed. However, if reduction of a lesser amount of contributions would equal the total dollar amount of Excess Contributions that must be distributed for the Plan Year, the lesser amount is distributed.

A participant who has had his contributions reduced in accordance with this subparagraph shall have the amount of such reduction paid to him in cash as soon as practicable, subject to applicable payroll taxes. The amount of the Excess Contributions to be distributed shall be reduced by excess deferrals under 402(g) previously distributed for the Plan Year. The distributions of Excess Contributions shall include the income

allocable thereto, including both the income allocable for the Plan Year for which the Contributions were made and the income for the period between the end of that Plan Year and the date as of which the distribution is made. Effective January 1, 2008, the distribution of Excess Contributions shall include the income or loss allocable only for the Plan Year of the Excess Contributions, and will not include the income or loss for the period between the end of the Plan Year and the date distribution is made. In addition, any Company Matching Contributions associated with the Excess Contribution shall be treated as forfeiture and used to reduce the Employer's contribution under Section 3 of the Plan.

(c) Recharacterization of Excess Contributions. Any recharacterization of Excess Contributions as employee After-Tax Savings will be accomplished by the Plan Administrator in the manner provided in subsection (b) above within 2 ½ months after the close of the Plan Year, providing such notices and following such procedures as required by regulations of the Secretary of Treasury, and will be deemed to occur no earlier than the date on which the last Highly Compensated Employee is informed in writing of the amount of his or her recharacterized Excess Contributions and the consequences thereof. Any Excess Contributions that are recharacterized as employee after-tax contributions for a Plan Year will, in combination with other Participating Employer Contributions to the Plan for the Plan Year, satisfy the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year. Any recharacterized Excess Contributions remain nonforfeitable under the Plan and are subject to the same distribution requirements as Pre-Tax Savings. Recharacterized Excess Contributions are taxable to the Highly Compensated Employee for the year in which the Highly Compensated Employee could have originally elected to receive the Excess Contributions amount in cash.

(d) Distribution of Excess Contributions. If any Excess Contributions allocated to Highly Compensated Employees for a Plan Year are not corrected by recharacterization under (c) above, then such Excess Contributions, plus any income and minus any loss allocable thereto, will be distributed to Highly Compensated Employees no later than 12 months following the close of the Plan Year.

(e) Income or Loss Allocable to Excess Contributions. The income or loss allocable to the Excess Contributions referred to in subsection (d) above include the allocable income or loss for the Plan Year of the Excess Contributions and the allocable income or loss for the period between the end of the Plan Year and the distribution of the Excess Contributions, calculated as follows:

The income or loss allocable for the Plan Year of the Excess Contributions is determined by multiplying the total investment income or loss (including dividends, interest, realized gains or losses, and unrealized appreciation or depreciation) allocable to the Participant's Pre-Tax Savings and amounts treated as Pre-Tax Savings under paragraph 7 of this Appendix for the Plan Year by a fraction, the numerator of which is the Excess Contributions allocated to the Participant for the Plan Year, and the denominator of which is the total account balance attributable to the Participant's Pre-Tax Savings and amounts

treated as Pre-Tax Savings under paragraph 7 of this Appendix as of the end of the Plan Year, reduced by the investment gain (or increased by the investment loss) allocated to such total amount for the Plan Year.

Effective January 1, 2008, the income or loss allocable to the Excess Contributions referred to in subsection (d) above will include only the income or loss allocable for the Plan Year of the Excess Contributions, and not the income or loss for the period between the end of the Plan Year and the distribution of Excess Contributions.

(f) Coordination with Excess Pre-Tax Savings. The amount of any Excess Contributions to be recharacterized under subsection (c) above or distributed under subsection (d) above with respect to any Highly Compensated Employee for a Plan Year is reduced by any excess Pre-Tax Savings previously distributed to the Highly Compensated Employee for the employee's taxable year ending with or within the Plan Year.

(g) Accounting for Excess Contributions. The amount of Excess Contributions allocated to a Highly Compensated Employee for a Plan Year that is recharacterized under subsection (c) above or distributed under subsection (d) above is attributed first to the Participant's Pre-Tax Savings for the Plan Year and then, to the extent such Excess Contributions exceed the Participant's Pre-Tax Savings for the Plan Year, attributed to amounts treated as Pre-Tax Savings under paragraph 4 of this Appendix in proportion to the amounts of such contributions on behalf of the Participant for the Plan Year.

9. Average Contribution Percentage Tests. For each Plan Year for which Participating Employer Contributions are made to the Plan (other than Qualified Matching Contributions treated as Pre-Tax Savings for the Plan Year under paragraph 7 of this Appendix) or any After-Tax Savings are made to the Plan (including any Excess Contributions recharacterized as After-Tax Savings for the Plan Year under paragraph 8(c) of this Appendix), both the ESOP and non-ESOP portions of the Plan will satisfy one of the following Average Contribution Percentage tests for the Plan Year:

(a) the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by 1.25; or

(b) the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by two, provided that the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year does not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees by more than two percentage points.

(c) the Average Contribution Percentage Test applies separately to the ESOP portion of the Plan.

10. Special Rules.

(a) Aggregation of Plans. In the event that this Plan satisfies the requirements of Section 401(a) (4), 401(m) or 410(b) of the Code only if aggregated with one or more other plans, or if one or more other plans satisfy the requirements of such sections of the Code only if aggregated with this Plan, then the provisions stated herein will be applied by determining the Contribution Percentages of Employees as if all such plans were a single plan. For plan years beginning after December 31, 1989, plans may be aggregated to satisfy Section 401(m) of the Code only if they have the same plan year. Notwithstanding the foregoing, certain plans will be treated as separate if mandatorily disaggregated under regulations under Section 401(k) of the Code.

(b) In the event the Plan does not pass the ACP test, the test will be disaggregated by removing from the test all participants who have not attained age 21 and completed one eligibility year within 6 months of the last day of the plan year.

(c) All ESOP portions of the Savings Plan shall be aggregated for ACP with the Non-ESOP portions of the Savings Plan.

11. Treatment of Pre-Tax Savings as Participating Employer Contributions.

Alcoa may elect, in accordance with the regulations of the Secretary of Treasury under Section 401(m) of the Code, to treat all or a portion of the Pre-Tax Savings made on behalf of Eligible Employees for a Plan Year as Participating Employer Contributions for purposes of calculating the Contribution Percentages of Eligible Employees for the Plan Year. Any such Pre-Tax Savings for a Plan Year must be made no later than the end of the 12 month period immediately following the close of the Plan Year. Notwithstanding the preceding, Alcoa may elect to treat Pre-Tax Savings as Participating Employer Contributions for purposes of calculating Contribution Percentages only if one of the Average Actual Deferral Percentage Tests of paragraph 5 of this Appendix is satisfied before the Pre-Tax Savings are treated as Participating Employer Contribution for the Plan Year, and one of the Average Actual Deferral Percentage Tests of paragraph 5 of this Appendix continues to be satisfied for the Plan Year excluding the Pre-Tax Savings treated as Participating Employer Contributions for the Plan Year.

12. Correction of Excess Aggregate Contributions.

(a) General Rule. If the Plan does not satisfy one of the Average Contribution Percentages tests of paragraph 9 of this Appendix as of the end of a Plan Year, the Excess Aggregate Contributions for the Plan Year will be corrected by the Employer if the Excess Aggregate Contributions for the Plan Year are forfeited or timely distributed to Highly Compensated Employees in accordance with subsection (c) below.

(b) Allocation of Excess Aggregate Contributions. Effective as of January 1, 1997, in the event Excess Aggregate Contributions are made to the Plan for a Plan Year, the Contribution Percentage for the Highly Compensated Employee with the largest dollar amount of deferrals for the Plan Year will be reduced to minimum extent necessary either:

(i) to enable the Plan to satisfy one of the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year; or

(ii) to cause the Highly Compensated employee's Contribution Percentage to equal the next highest Contribution Percentage of any Highly Compensated Employee for the Plan Year.

This process is repeated until the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year is sufficiently reduced to enable the Plan to satisfy one of the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year. The amount of Excess Aggregate Contributions to be allocated to each Highly Compensated Employee for the Plan Year is equal the total After-Tax Savings and Participating Employer Contributions, including Pre-Tax Savings on behalf of the Highly Compensated Employee for the Plan Year minus the amount determined by multiplying the Highly Compensated Employee's reduced Contribution Percentage (as determined above) by the employee's Compensation for the Plan Year.

(c) Forfeiture or Distribution of Excess Aggregate Contributions. Excess Aggregate Contributions, plus any income or minus any loss allocable thereto, must be forfeited to the extent attributable under subsection (f) below to Participating Employer Contributions that are not vested, and otherwise distributed to Highly Compensated Employees no later than 12 months following the close of the Plan Year.

(d) Income or Loss Allocable to Excess Aggregate Contributions. The income or loss allocable to the Excess Aggregate Contributions referred to in subsection (c) above include the allocable income or loss for the Plan Year of the Excess Aggregate Contributions and the allocable income or loss for the period between the end of the Plan Year and the distribution of the Excess Aggregate Contributions, calculated as follows:

(i) the income or loss allocable for the Plan Year of the Excess Aggregate Contributions is determined by multiplying the total investment income or loss (including dividends, interest, realized gains or losses, and unrealized appreciation or depreciation) allocable to the Participant's After-tax Savings, Participating Employer Contributions, and any other amounts taken into account under this section for the Plan Year by a fraction, the numerator of which is the Excess Aggregate Contributions allocated to the Participant for the Plan Year, and the denominator of which is the total account balance attributable to the Participant's After-tax Savings, Participating Employer Contributions and other amounts taken into account under this section as of the end of the Plan Year, reduced by the investment gain (or increased by the investment loss) allocated to such total amount for the Plan Year;

(ii) the income or loss allocable to the period (if any) between the end of the Plan Year of the Excess Aggregate Contributions and the distribution of the Excess Aggregate Contributions by the Plan is determined by multiplying the total investment income or loss allocated to the Participant's Participating Employer Contributions and amounts treated as Participating Employer Contributions under paragraph 11 of this Appendix for such period by a fraction determined under the method described in (i) above. In the alternative, the income or loss allocable to the period between the end of the Plan Year of the Excess Aggregate Contributions and the distribution of the Excess Aggregate Contributions equals 10% of the income or loss allocable to the Participant's Excess Aggregate Contributions for the Plan Year (as determined under (i) above multiplied by the number of calendar months that elapse between the end of the Plan Year and the date of distribution. For these purposes, a distribution occurring on or before the fifteenth day of a calendar month is treated as having been made on the last day of the preceding calendar month, and a distribution occurring after the fifteenth date of a calendar month is treated as having been made on the first day of the following calendar month.

The income or loss will include only the income or loss allocable for the Plan Year of the Excess Aggregate Contributions, and not the income or loss for the period between the end of the Plan Year and the distribution of Excess Aggregate Contributions.

(e) Coordination with Excess Contributions. The determination of the amount of Excess Aggregate Contributions for a Plan Year is made after the determination of the amount of any Excess Contributions for the Plan Year.

(f) Accounting for Excess Aggregate Contributions. The amount of Excess Aggregate Contributions allocated to a Highly Compensated Employee for a Plan Year is attributed to Participating Employer Contributions and any amounts treated as Participating Employer Contributions in proportion to the amounts of such contributions on behalf of the Participant for the Plan Year.

13. Recordkeeping Requirements.

(a) Average Actual Deferral Percentage Tests. The Employer maintains records sufficient to demonstrate satisfaction of the Average Actual Deferral Percentage tests of paragraph 5 of this Appendix for each Plan Year, and the extent to which any Qualified Matching Contributions are treated as Pre-Tax Savings under paragraph 7 of this Appendix for purposes of such tests. The determination of Eligible Employees' Actual Deferral Percentages, and the disposition of all Pre-Tax Savings (and any Qualified Matching Contributions treated as Pre-Tax Savings under paragraph 7 of this Appendix) on behalf of Participants, must satisfy such other requirements as may be prescribed by the Secretary of Treasury.

(b) Average Contribution Percentage Tests. The Employer maintains records sufficient to demonstrate satisfaction of the Average Contribution Percentage tests of paragraph 9 of this Appendix for each Plan Year, and the extent to which any Pre-Tax Savings are treated as Participating Employer Contributions under paragraph 11 of this Appendix for purposes of such tests. The determination of Eligible Employees' Average Contribution Percentages, and the disposition of all Participating Employer Contributions (and any Pre-Tax Savings) on behalf of Participants, must satisfy such other requirements as may be prescribed by the Secretary of Treasury.

14. Distribution of Excess Elective Deferrals. Excess Elective Deferrals means Pre-Tax Savings that is includible in a Participant's gross income under Section 402(g) of the Code to the extent it exceeds the dollar limitation. Excess Elective Deferrals are treated as annual additions under the Plan unless such amounts are distributed no later than the first April 15th following the close of the Participant's taxable year. Excess Elective Deferrals are adjusted for any income or loss up to the date of distribution as calculated under paragraph 8(e) and 12(d) of this Appendix. A Participant is deemed to notify the Plan Administrator of Excess Elective Deferrals that arise by taking into account only those Elective Deferrals made to this Plan and any other plans of the Employer. A Participant may assign any Excess Elective Deferrals made by the Participant to any other plans other than those of the Employer by notifying the Plan Administrator on or before January 15th of the following year.

APPENDIX B

CODE SECTION 415 LIMITATIONS

The limitations imposed by Section 415 of the Code are hereby incorporated by reference. If there is any discrepancy between the provisions of this Plan and the provisions of Code Section 415 and the regulations thereunder, the discrepancy will be resolved in such a way to give full effect to the provisions of Code Section 415.

The maximum annual additions provided by the Plan will be exactly equal to the maximum amounts permitted under Code Section 415 and the regulations thereunder. In the event a Participant's annual additions for any Plan Year would exceed the maximum amount of annual additions permitted under Code Section 415, such Participant's Savings are automatically reduced, in whole or in part, by the amount required to eliminate such excess.

For purposes of applying the limitations described in this Appendix B, compensation will include any differential pay received by a Participant absent for military leave and any payment earned prior to a Participant's separation from employment that is paid within a period ending on the later of i) two and one-half months following the date the Participant separated from employment, or ii) the end of the Plan Year in which the date the Participant separated from employment ("Post-Separation Compensation"). Post-Separation Compensation will include any payments for vacation, sickness, or leave of absence that otherwise would have been included as compensation had the Participant remained employed.

APPENDIX C

TOP HEAVY RULES

(a) This Plan constitutes a "Top Heavy Plan" for a Plan Year if as of the last day of the preceding Plan Year the present value of the cumulative account balances under the Plan for Participants who are Key Employees exceed 60 percent of the present value of the aggregate of all account balances for all Participants in the Plan. A non-Key Employee means any Participant or former Participant who is not a Key Employee.

(b) This Plan constitutes a Top Heavy Plan for a Plan Year if the employee benefit plans which make up the group of plans of which this Plan is considered a part are such that, when aggregated, the sum of (1) the present value of the account balances of Key Employees under all defined contribution plans in the group, and (2) the present value of the cumulative accrued benefits of Key Employees under all defined benefit plans in the group exceed 60 percent of the sum of such amounts for all employees who participate in the plans in the said group.

(1) The group of plans in which this Plan is considered a part includes (A) all plans of Alcoa, the Subsidiaries and Affiliates which enable the particular plans in which a Key Employee participates to meet the qualification requirement of Section 401(a)(4) of the Code or Section 410 of the Code; and, (B) all plans which Alcoa, in its discretion, decides to include, provided that the inclusion of such plan or plans would not prevent the group of plans from meeting the qualification requirements of Sections 401(a)(4) and 410 of the Code. The date upon which the account balances are valued for purposes of calculating the top heavy ratio to determine whether or not the Plan is Top Heavy for a particular Plan Year is the determination date, which is the last day of the preceding Plan Year, or in the case of the first plan year of any plan, the last day of such plan year.

(2) Effective for Plan Years beginning on or after January 1, 2002, the amounts of account balances of an employee as of the determination date are increased by the distributions made with respect to the employee under the plan and any plan aggregated with the plan under Section 416(g)(2) of the Code during the one-year period ending on the determination date. The preceding sentence also applies to distributions under a terminated plan which, had it not been terminated, would have been aggregated with the plan under Section 416(g)(2)(A)(i) of the Code. In the case of a distribution made for a reason other than severance from employment, death, or disability, this provision is applied by substituting "five-year period" for "one-year period."

(3) Effective for Plan Years beginning on or after January 1, 2002, the accounts of any individual who has not performed services for the employer during the one-year period ending on the determination date are not taken into account.

(c) The following provisions are applicable to Participants for any Plan Year with respect to which the Plan is Top Heavy:

(1) The minimum Participating Employer Contribution for a Participant who is a non-Key Employee and has not separated from service at the end of the Plan Year must not be less than three percent of his or her Eligible Compensation for the Top Heavy Plan Year. If said allocation is less than three percent of his or her Eligible Compensation, then said allocation is the largest percentage allocated to a Key Employee for the Top Heavy Plan Year. In the event the highest rate allocated to a Key Employee for the Top Heavy Plan Year is less than three percent, Pre-Tax amounts contributed to the Plan are included in determining contributions made on behalf of Key Employees. Compensation for determining a minimum benefit, a minimum contribution and for all other Top Heavy purposes is the Participant's W-2 earnings for the calendar year that ends with the Plan Year.

Effective for Plan Years beginning on or after January 1, 2002, Participating Employer Contributions used to satisfy the minimum contribution requirements are treated as Participating Employer Contributions for purposes of the actual contribution percentage test and other requirements of Section 401(m) of the Code.

(2) With respect to benefits accruing during any Plan Year in which the Plan is Top Heavy, average compensation is limited to amounts not in excess of the amount permitted under Section 401(a)(17) of the Code. If the accrued benefit as of the end of the last Plan Year before the Plan became Top Heavy is greater than the accrued benefit determined by limiting compensation, that higher accrued benefit cannot be reduced.

(3) In the event the Plan is Top Heavy with respect to a Plan Year and ceases to be Top Heavy for a subsequent Plan Year the Participant's account balance in any such subsequent Plan Year is not less than the Participant's Pre-Tax Savings (subject to adjustment for earnings) computed as of the end of the most recent Plan Year for which the Plan was Top Heavy.

(d) Notwithstanding any of the above, if a non-Key Employee participates in this Plan and a defined benefit pension plan included in a required aggregation group which is top heavy, a minimum allocation of five percent of Section 415 compensation is provided under this Plan. The Plan will not be deemed Top Heavy if ninety percent is substituted for sixty percent in (b)(1) of this Appendix and Participating Employer provides additional contributions to the Plan on behalf of non-Key Employees who participate in both defined benefit and defined contribution plans maintained by a Participating Employer, in amounts at least equal to the amount set forth in Paragraph (c)(1) of this Appendix as modified by substituting "seven and one-half percent" for "three percent." If the non-Key Employee does not participate in a defined benefit plan maintained by Alcoa, a Subsidiary or Affiliate, such employee will receive an additional contribution of four percent.

APPENDIX D

MINIMUM DISTRIBUTION REQUIREMENTS.

Section 1. General Rules

1.1. Effective Date. The provisions of this Appendix D will apply for purposes of determining required minimum distributions for calendar years beginning with the 2003 calendar year.

1.2. Precedence. The requirements of this Appendix D will take precedence over any inconsistent provisions of the plan.

1.3. Requirements of Treasury Regulations Incorporated. All distributions required under this Appendix D will be determined and made in accordance with Section 401(a)(9) of the Code and Treasury regulations §§1.401)(a)(9)-2 through -9, which will override any inconsistent distribution provisions of the Plan. Distribution of any incidental death benefit requirements provided under the Plan will be a distribution for purposes of this Appendix D.

1.4. TEFRA Section 242(b)(2) Elections. Notwithstanding the other provisions of this Appendix D, distributions may be made under a designation made before January 1, 1984, in accordance with section 242(b)(2) of the Tax Equity and Fiscal Responsibility Act (TEFRA) and the provisions of the plan that relate to section 242(b)(2) of TEFRA.

Section 2. Time and Manner of Distribution.

2.1. Required Beginning Date. The participant’s entire interest will be distributed, or begin to be distributed, to the participant no later than the participant’s required beginning date.

2.2. Death of Participant Before Distributions Begin. If the participant dies before distributions begin and there is a designated beneficiary, the participant’s entire interest will be distributed to the designated beneficiary by December 31 of the calendar year containing the fifth anniversary of the participant’s death. If the participant’s surviving spouse is the participant’s sole designated beneficiary and the surviving spouse dies after the participant but before distributions to either the participant or the surviving spouse begin, this election will apply as if the surviving spouse were the participant. This election will apply to all distributions.

If there is no designated beneficiary as of September 30 of the year following the year of the participant’s death, the participant’s entire interest will be distributed by December 31 of the calendar year containing the fifth anniversary of the participant’s death.

2.3. Forms of Distribution. Unless the participant’s interest is distributed in the form of an annuity purchased from an insurance company or in a single sum on or before the required beginning date, as of the first distribution calendar year distributions will be made in accordance with sections 3 and 4 of this Appendix D. If the participant’s interest is distributed in the form of an annuity purchased from an insurance company, distributions thereunder will be made in accordance with the requirements of section 40l(a)(9) of the Code and the Treasury regulations.

Section 3. Required Minimum Distributions During Participant’s Lifetime.

3.1. Amount of Required Minimum Distribution For Each Distribution Calendar Year. During the participant’s lifetime, the minimum amount that will be distributed for each distribution calendar year is the lesser of:

(a) the quotient obtained by dividing the participant’s account balance by the distribution period in the Uniform Lifetime Table set forth in section 1.401(a)(9)-9 of the Treasury regulations, using the participant’s age as of the participant’s birthday in the distribution calendar year; or

(b) if the participant’s sole designated beneficiary for the distribution calendar year is the participant’s spouse, the quotient obtained by dividing the participant’s account balance by the number in the Joint and Last Survivor Table set forth in section 1.401(a)(9)-9 of the Treasury regulations, using the participant’s and spouse’s attained ages as of the participant’s and spouse’s birthdays in the distribution calendar year.

3.2. Lifetime Required Minimum Distributions Continue Through Year of Participant’s Death. Required minimum distributions will be determined under this section 3 beginning with the first distribution calendar year and up to and including the distribution calendar year that includes the participant’s date of death

Section 4. Required Minimum Distributions After Participant’s Death.

4.1. Death On or After Date Distributions Begin.

(a) Participant Survived by Designated Beneficiary. If the participant dies on or after the date distributions begin and there is a designated beneficiary, the minimum amount that will be distributed for each distribution calendar year after the year of the participant’s death is the quotient obtained by dividing the participant’s account balance by the longer of the remaining life expectancy of the

participant or the remaining life expectancy of the participant's designated beneficiary, determined as follows:

(1) The participant's remaining life expectancy is calculated using the age of the participant in the year of death, reduced by one for each subsequent year.

(2) If the participant's surviving spouse is the participant's sole designated beneficiary, the remaining life expectancy of the surviving spouse is calculated for each distribution calendar year after the year of the participant's death using the surviving spouse's age as of the spouse's birthday in that year. For distribution calendar years after the year of the surviving spouse's death, the remaining life expectancy of the surviving spouse is calculated using the age of the surviving spouse as of the spouse's birthday in the calendar year of the spouse's death, reduced by one for each subsequent calendar year.

(3) If the participant's surviving spouse is not the participant's sole designated beneficiary, the designated beneficiary's remaining life expectancy is calculated using the age of the beneficiary in the year following the year of the participant's death, reduced by one for each subsequent year.

(b) No Designated Beneficiary. If the participant dies on or after the date distributions begin and there is no designated beneficiary as of September 30 of the year after the year of the participant's death, the minimum amount that will be distributed for each distribution calendar year after the year of the participant's death is the quotient obtained by dividing the participant's account balance by the participant's remaining life expectancy calculated using the age of the participant in the year of death, reduced by one for each subsequent year.

4.2. Death Before Date Distributions Begin.

(a) Participant Survived by Designated Beneficiary. If the participant dies before the date distributions begin and there is a designated beneficiary, the minimum amount that will be distributed for each distribution calendar year after the year of the participant's death is the quotient obtained by dividing the participant's account balance by the remaining life expectancy of the participant's designated beneficiary, determined as provided in section 4.1.

(b) No Designated Beneficiary. If the participant dies before the date distributions begin and there is no designated beneficiary as of September 30 of the year following the year of the participant's death, distribution of the participant's entire interest will be completed by December 31 of the calendar year containing the fifth anniversary of the participant's death.

(c) Death of Surviving Spouse Before Distributions to Surviving Spouse Are Required to Begin. If the participant dies before the date distributions begin, the participant's surviving spouse is the participant's sole designated beneficiary, and the surviving spouse dies before distributions are required to begin to the surviving spouse under section 2.2, this section 4.2 will apply as if the surviving spouse were the participant.

Section 5. Definitions.

5.1. Designated beneficiary. The individual who is designated as the beneficiary under Section 22 of the plan and is the designated beneficiary under section 40l(a)(9) of the Internal Revenue Code and section 1.401(a)(9)-1, Q&A-4, of the Treasury regulations.

5.2. Distribution calendar year. A calendar year for which a minimum distribution is required. For distributions beginning before the participant's death, the first distribution calendar year is the calendar year immediately preceding the calendar year which contains the participant's required beginning date. For distributions beginning after the participant's death, the first distribution calendar year is the calendar year in which distributions are required to begin under section 2.2. The required minimum distribution for the participant's first distribution calendar year will be made on or before the participant's required beginning date. The required minimum distribution for other distribution calendar years, including the required minimum distribution for the distribution calendar year in which the participant's required beginning date occurs, will be made on or before December 31 of that distribution calendar year.

5.3. Life expectancy. Life expectancy as computed by use of the Single Life Table in section 1.401(a)(9)-9 of the Treasury regulations.

5.4. Participant's account balance. The account balance as of the last valuation date in the calendar year immediately preceding the distribution calendar year (valuation calendar year) increased by the amount of any contributions made and allocated or forfeitures allocated to the account balance as of dates in the valuation calendar year after the valuation date and decreased by distributions made in the valuation calendar year after the valuation date. The account balance for the valuation calendar year includes any amounts rolled over or transferred to the plan either in the valuation calendar year or in the distribution calendar year if distributed or transferred in the valuation calendar year.

5.5 Required beginning date. The date specified in Section 13(b) of the Plan.

SCHEDULE A

MERGERS, TRANSFERS, AND RESTATEMENTS

Transfer of Bargaining Hourly Employees at Kawneer Chicago Service Center to Bargaining Savings Plan.

Effective February 1, 2010, the Hourly participants of Kawneer Company at the Chicago Service Center who had become a bargaining unit of the International Association of Machinists and Aerospace Workers (IAM District 8, Lodge 48) transferred from coverage under the Alcoa Retirement Savings Plan for Non-Bargaining Employees (formerly the Alcoa Savings Plan for Subsidiary and Affiliate Employees) ("Subsidiary Savings Plan") to coverage under this Plan. Pursuant to Section 20(d) (3) of the Plan, the accounts of the affected participants in the Subsidiary Savings Plan will be transferred to this Plan as soon as administratively feasible. Effective October 1, 2010, the Hourly participants at the Chicago Service Center (Location Code CHX, Union Code 46X) commenced eligibility to receive ERIC, regardless of the participant's Employment Commencement Date or Reemployment Commencement Date.

Transfer of Bargaining Hourly Employees at Hutchinson, Kansas to Bargaining Savings Plan.

Effective August 19, 2014, the hourly participants at the Hutchinson, Kansas location (Location Code HUT) of Alcoa Inc. (Company Code 010) who had become a bargaining unit of the United Steelworkers (Union Code 290-USW HUT) transferred from coverage under the Alcoa Retirement Savings Plan for Salaried Employees ("Salaried Savings Plan") to coverage under this Plan. Pursuant to Section 20(d) (3) of the Plan, the accounts of the affected participants in the Salaried Savings Plan will be transferred to this Plan as soon as administratively feasible.

2015 Restatement of Plan

The Plan was amended and restated effective January 1, 2015, to incorporate all amendments adopted to such date and to reflect provisions required by applicable law and regulatory guidance.

SCHEDULE B
Participating Employer Contributions (Match) and Employer Retirement Income Contributions (ERIC)

Company Code	Company Description	LOC	Location Description	Union Code	Union Description	Match	ERIC Effective Date
010	Alcoa Inc.	ALC	Alcoa, Tennessee	193	USW 309 - SteelWorkers	0.5000	N/A
010	Alcoa Inc.	ALC	Alcoa, Tennessee	401	BRKM8 - BrickMasons (ALC)	1.0000	N/A
010	Alcoa Inc.	CLE	Cleveland, Ohio	302 (includes formerly designated Union Code 303)	UAW 1050 – AutoWorkers, CLV	0.6000	Y Applicable only to those hired on or after 4/1/2009
010	Alcoa Inc.	CLE	Cleveland, Ohio	415 (includes formerly designated Union Code 41A)	IAM 5410 - Machinists (CLV)	0.0000	Y Applicable only to those hired on or after 1/1/2010
010	Alcoa Inc.	DAN	Danville, Illinois	190	USW 201B-1 - SteelWorkers (DAN)	0.8000	N/A
010	Alcoa Inc.	DAV	Davenport, Iowa	293	USW 105 - SteelWorkers	0.7500	N/A
010	Alcoa Inc.	DAV	Davenport, Iowa	413	IBEW1379 - Electricians (DAV)	0.7500	N/A
010	Alcoa Inc.	HUT	Hutchinson, Kansas	290	USW HUT-Steelworkers	1.00	Y
010	Alcoa Inc.	LAF	Lafayette, Indiana	294	USW 115 - SteelWorkers	0.7500	N/A
010	Alcoa Inc.	MAS	Massena, New York	295	USW 420 - SteelWorkers	0.7500	N/A
010	Alcoa Inc.	PTC	Point Comfort, Texas	196	USW 4370 - SteelWorkers	0.5000	N/A
010	Alcoa Inc.	ROK	Rockdale, Texas	198	USW 4895 - Steelworkers	0.5000	N/A
010	Alcoa Inc.	WAR	Warrick (Newburgh, In)	292	USW 104 - SteelWorkers	0.7500	N/A
010	Alcoa Inc.	WEN	Wenatchee, Washington	1AT	USW 310A - SteelWorkers	0.7500	N/A
010	Alcoa Inc.	WEN	Wenatchee, Washington	2AT	IBEW191 - Electricians	0.7500	N/A
010	Alcoa Inc.	WEN	Wenatchee, Washington	3AT	IAM 1123 - Machinists	0.7500	N/A
010	Alcoa Inc.	WEN	Wenatchee, Washington	4AT	SMW 66 - Sheet Metal Workers	0.7500	N/A
010	Alcoa Inc.	WEN	Wenatchee, Washington	5AT	BACW3-BrckLyrs & Allied Crftsmn	0.7500	N/A
837	Alcoa Power Generating, Inc.	BAD	Badin, North Carolina	192	USW 303 - SteelWorkers	0.5000	N/A
837	Alcoa Power Generating, Inc.	NBG	Newburgh, Indiana	56Y	IBEW 702 - Electrian	0.8500	N/A
837	Alcoa Power Generating, Inc.	TAP	Tapoco, North Carolina	193	USW 309 - SteelWorkers	0.5000	N/A
985	Alumax Mill Products, Inc.	TXX	Texarkana, Texas (Alumax)	15X	USW 9448 - SteelWorkers	0.7500	N/A
T13	Howmet Corporation	WMH	Whitehall, Michigan (Howmet)	30H	UAW 1243 – Auto Workers	0.5000	N/A

SCHEDULE B

Participating Employer Contributions (Match) and Employer Retirement Income Contributions (ERIC)

Company Code	Company Description	LOC	Location Description	Union Code	Union Description	Match	ERIC Effective Date
T41	Huck International, Inc.	KNK	Kingston, New York (Huck)	40K	IAM 1562-Machnsts (Kingston NY)	0.5000	N/A
979	Intalco Aluminum Corporation	FWX	Ferndale, Washington (AMX)	40X	IAM 2379 - Machinists(Intalco)	0.7500	N/A
988	Kawneer Company, Inc.	BPX	Bloomsburg, PA (Kawneer)	60X	USW 10-0615 Paperworkers(BPX)	0.6000	N/A
988	Kawneer Company, Inc.	CHX	Chicago, Illinois(Alumax-FIX)	46X	IAM District 8, Lodge 48 – effective Feb. 1, 2010	0.5000	N/A
					Effective October 1, 2010, regardless of date of hire	0.5000	Y
655	Pimalco, Inc.	CDL	Chandler, Arizona	137	USW 3937-9 - SteelWorkers(PIM)	0.5000	N/A
R01	Reynolds Metals Company	ABY	Arkadelphia, AR (RMC-GUMSPRG)	1CY	USW 5073 - Steelworkers	0.5000	N/A
R01	Reynolds Metals Company	LLY	Lake Charles, LA (RMC Carb)	1KY	USW 211 - Steelworkers	0.7500	N/A
R01	Reynolds Metals Company	MSY	Massena, New York (RMC St Law)	1NY	USW 450A - Steelworkers	0.7500	N/A
675	Valley Todeco Inc.	VTC	Valley Todeco, CA	1VT	United Auto Workers (UAW) Local 509	0.5000	N/A

SCHEDULE B
NEGOTIATED DEFERRAL CONTRIBUTIONS

(See Match/ERIC schedule above for company restructuring and cessation of participation effective dates)

Company	Work Location	Location Description	Union Code	Amount Per Hour Worked
010	DAV	Davenport, Iowa	293	0.536
010	DAV	Davenport, Iowa	413	0.536
010	LAF	Lafayette, Indiana	294	0.536
010	MAS	Massena, New York	295	0.536
010	WAR	Warrick (Newburgh, In)	292	0.536
010	WEN	Wenatchee, Washington	1AT	0.536
010	WEN	Wenatchee, Washington	2AT	0.536
010	WEN	Wenatchee, Washington	3AT	0.536
010	WEN	Wenatchee, Washington	4AT	0.536
010	WEN	Wenatchee, Washington	5AT	0.536
R01	LLY	Lake Charles, LA (RMC Carb)	1KY	0.536
R01	MSY	Massena, NY	1NY	0.536

SCHEDULE B
NEGOTIATED DEFERRAL CONTRIBUTIONS

Howmet Corporation (Company T13), Whitehall, MI (LOC WMH, Union Code 30H):

Participants hired on or after January 1, 1999 only:

$85.00 monthly automatic contributions effective April 1, 2014

$90.00 monthly automatic contributions effective April 1, 2015

$95.00 monthly automatic contributions effective April 1, 2017

SCHEDULE B
RESTRICTED DISCRETIONARY CONTRIBUTIONS

There are currently no Restricted Discretionary Contributions.

SCHEDULE B
RETIREE MEDICAL SAVINGS CONTRIBUTIONS

Pursuant to the Master Agreement and other bargaining agreements that so provide, Participants in the bargaining units below whom on or after the date indicated are hired or rehired, and who are not eligible for retiree medical coverage under a health and welfare plan of Alcoa, a Subsidiary or Affiliate with respect to their prior employment, will be eligible for Retiree Medical Savings Contributions described in Section 4(c):

Company Code	Company Description	Location (Loc)	Location Description	Union Code	Amount Per Hour Worked	Effective Date
837	Alcoa Power Generating	BAD	Badin, North Carolina	192	0.40	July 1, 2010
837	Alcoa Power Generating	TAP	Tapoco, North Carolina	193	0.40	July 1, 2010
010	Alcoa Inc.	ALC	Alcoa, Tennessee	193	0.40	July 1, 2010
010	Alcoa Inc.	ALC	Alcoa, Tennessee	401	0.40	September 2, 2010
010	Alcoa Inc.	BAD	Badin, North Carolina	192	0.40	July 1, 2010
010	Alcoa Inc.	DAV	Davenport, Iowa	293	0.40	July 1, 2010
010	Alcoa Inc.	DAV	Davenport, Iowa	413	0.40	August 16, 2010
010	Alcoa Inc.	LAF	Lafayette, Indiana	294	0.40	July 1, 2010
010	Alcoa Inc.	MAS	Massena, New York	295	0.40	July 1, 2010
010	Alcoa Inc.	PTC	Point Comfort, Texas	196	0.40	July 1, 2010
010	Alcoa Inc.	ROK	Rockdale, Texas	198	0.40	July 1, 2010
010	Alcoa Inc.	WAR	Warrick (Newburgh, In)	292	0.40	July 1, 2010
010	Alcoa Inc.	WEN	Wenatchee, Washington	1AT	0.40	July 1, 2010
R01	Reynolds Metals Company	ABY	Arkadelphia, AR (RMC-GUMSPRG)	1CY	0.40	July 1, 2010
R01	Reynolds Metals Company	LLY	Lake Charles, LA (RMC Carb)	1KY	0.40	July 1, 2010
R01	Reynolds Metals Company	MSY	Massena, New York (RMC St Law)	1NY	0.40	July 1, 2010

Exhibit 4(q)

ALCOA RETIREMENT SAVINGS PLAN

FOR

HOURLY NON-BARGAINING EMPLOYEES

AS AMENDED AND RESTATED
EFFECTIVE JANUARY 1, 2015

ALCOA RETIREMENT SAVINGS PLAN FOR HOURLY NON BARGAINING EMPLOYEES

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ALCOA RETIREMENT SAVINGS PLAN FOR HOURLY NON BARGAINING EMPLOYEES
AS AMENDED AND RESTATED
EFFECTIVE JANUARY 1, 2015

Alcoa Inc. (herein called “Alcoa”), has established the Alcoa Savings Plan for Subsidiary and Affiliate Employees (the “Subsidiary Plan”) a defined contribution, individual account, 401(k) plan intending to qualify under Section 401(a) of the Internal Revenue Code, for the exclusive benefit of its eligible employees. The purpose of the Subsidiary Plan has been to provide a method of savings by eligible salaried and non-bargaining hourly employees of certain Alcoa subsidiaries and affiliates to enable them to enhance their retirement benefits, and at the same time enable them to acquire a stock interest in the Company. The Alcoa Stock Fund is an employee stock ownership plan (“ESOP”), within the meaning of Section 4975(e) of the Code. The assets held in the ESOP must be invested primarily in employer securities as defined in Code Section 409(l).

Effective as of January 1, 2010, the Subsidiary Plan was amended and restated again to incorporate provisions of the Economic Growth and Tax Relief Reconciliation Act of 2001 and as amended by the Job Creation and Worker Assistance Act of 2002, the Pension Protection Act of 2006, the Heroes Earnings Assistance and Relief Tax Act of 2008 (“HEART”), and the Worker, Retiree, and Employer Recovery Act of 2008 (“WRERA”), and is intended as good faith compliance with the requirements of HEART, to be construed in accordance with the guidance issued thereunder.

Effective January 1, 2011, the Plan was renamed the Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees (“Hourly Non-Bargaining Savings Plan”) and is restructured as described hereafter: portions of the Plan are spun off and transferred to the Alcoa Retirement Savings Plan for Salaried Employees (formerly Alcoa Savings Plan for Non-Bargaining Employees), sponsored by Alcoa Inc.; and portions are spun off to the Alcoa Retirement Savings Plan for Fastener Systems and Commercial Windows Employees, sponsored by the Alcoa subsidiary, Alcoa Global Fasteners, Inc.

Effective as of close of business on December 31, 2012, the amounts standing to the credit in the salaried participants’ accounts from the Alcoa Retirement Savings Plan for Mill Products Employees will be transferred to the Alcoa Retirement Savings Plan for Salaried Employees and immediately thereafter the Alcoa Retirement Savings Plan for Mill Products Employees is merged into this Plan, and hourly participant’s accounts from the Mill Products Plan will be maintained in this Plan.

Effective January 1, 2015, the Plan is hereby amended and restated again to incorporate provisions of prior Plan amendments adopted since the January 1, 2010, amendment and restatement of the Plan as well as to reflect new laws and regulations that have come into effect since the January 1, 2010, amendment and restatement of the Plan. The Plan is intended to be construed in accordance with any regulatory guidance issued with respect to such new laws and regulations.

DEFINITIONS

For the purpose of this Plan, unless a different meaning is plainly required by the context:

AFFILIATE means any non-corporate business entity or corporate business entity without voting stock, as such, which Alcoa and/or one or more Subsidiaries control in fact.

AFTER-TAX SAVINGS means such portions of the total amounts contributed to the Plan by a Participant in accordance with Section 2 that are not accorded favorable tax treatment under Section 401(k) of the Code, but not including contributions made by a Participant in excess of the annual limit on 401(k) contributions under Code Section 402(g) or in excess of the "average deferral percentage limit" of Section 401(k)(3) of the Code.

ALCOA means Alcoa Inc.

ALCOA STOCK FUND means the ESOP as described in Section 16(e), which became effective January 1, 2002.

AUTOMATIC ENROLLMENT or AUTOMATICALLY ENROLLED means the automatic default enrollment in the Plan described in Sections 1(b) and 2(c) and applicable to Eligible Employees who do not opt out of the Plan.

AUTOMATIC PRE-TAX RATE ESCALATION means the feature that is effective with Automatic Enrollment or that may be elected by a Participant, in which the rate of Payroll Deduction for Pre-Tax Savings is increased until a target Payroll Deduction rate is reached. The Automatic Pre-Tax Rate Escalation will increase effective April 1 of each year.

AUTOMATIC REBALANCING means the feature described in Section 8(d).

BENEFICIARY means the recipient or recipients designated by a Participant, in accordance with Section 22 of the Plan, to receive benefits in the event of the Participant's death as either a primary beneficiary, or a contingent beneficiary who will receive benefits in the event the primary beneficiary predeceases the Participant.

BENEFITS MANAGEMENT COMMITTEE or COMMITTEE means the administrative committee of one or more persons appointed by the Board that interprets and administers the Plan in accordance with Section 19.

BOARD means the Board of Directors of Alcoa.

BROKERAGE ACCOUNT means the investment option whereby a Participant may invest and personally manage investments outside the Core Funds as described in Section 16(h).

BUSINESS DAY means any day on which the Plan Administrator, Designee and New York Stock Exchange is open for business.

CODE means the Internal Revenue Code of 1986, as amended.

COMPANY CONTRIBUTION means all Company Stock contributed to Participants' accounts under the Plan's provisions for periods prior to January 1, 1993.

COMPANY STOCK means common stock of Alcoa and any substituted security under Section 16.

CONTINUOUS SERVICE means, except as modified by the balance of this definition and as otherwise specifically provided in Schedule C with respect to certain Participant populations, the period of continuous employment with Alcoa, a Subsidiary or Affiliate, either as a salaried employee or as an hourly-rated employee, commencing with the Participant's Employment Commencement Date or Reemployment Commencement Date. Continuous Service terminates on the Participant's Severance from Service Date. Continuous Service upon reemployment does not include any Continuous Service accrued prior to a termination of Continuous Service, except as follows:

A Participant who incurs a Severance from Service Date and thereafter has a Reemployment Commencement Date, will have his or her Continuous Service on the Severance from Service Date reinstated if the period between his or her Severance from Service Date and his or her Reemployment Commencement Date is less than the greater of (a) five years or (b) the aggregate number of years of Continuous Service earned before the Severance from Service Date.

CORE FUND means any investment vehicle (including the Alcoa Stock Fund and Target Maturity Funds) for Pre-Tax Savings, After-Tax Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, or Employer Retirement Income Contributions, but excluding the Brokerage Account. The Committee will determine the Core Funds, and may make changes to the composition of the funds from time to time.

CURRENT MARKET VALUE means with respect to any investment allocated to the accounts of any Participant in the Core Funds**,** the unitized value of the securities and cash of the investment in the applicable Fund as of a specified date, less any fees provided for in Section 21, valued in accordance with a procedure adopted by the investment manager for the fund and acceptable to the Benefits Management Committee.

DESIGNEE means such entity as may be chosen from time to time by the Plan Administrator and approved by the Benefits Management Committee to handle certain specified administration functions of the Plan.

DISCRETIONARY CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(a).

EFFECTIVE DATE with respect to a distribution has the meaning prescribed in Section 13, with respect to a transfer has the meaning prescribed in Section 9 and with respect to a qualified domestic relations order has the meaning prescribed in Section 14.

ELIGIBLE COMPENSATION means: (i) the regular base salary and if applicable, the base salary adjustment (where commission payments constitute all or part of an employee's remuneration, the commissions actually paid as remuneration during a regular pay period will be used to determine the Eligible Compensation for such employee); (ii) the regular hourly wages and if applicable: cash cola, regular vacation pay, witness pay, holiday advance pay (for a holiday not worked), bereavement pay, shift differential, jury pay, job upgrades, schedule premium, income adjustments, and wage adjustments which are payable during such periods as the employee is an Eligible Employee as determined by the Participating Employers. In no event may the amount of Eligible Compensation for any Participant during any Plan Year, for any purposes under this Plan, exceed $265,000, as adjusted for any Plan Year for cost-of-living increases in accordance with Section 401(a)(17)(B) of the Code applicable to that calendar year.

In addition to the forgoing, for purposes of allocating Employer Retirement Income Contributions as indicated in Schedule B, Eligible Compensation will include any Variable Compensation Awards or incentive compensation payable during such periods as the employee is an Eligible Employee as determined by the Participating Employers.

ELIGIBLE EMPLOYEE means any person who meets all of the following conditions:

(a) (1) Is a resident or citizen of the U.S., employed by a Participating Employer at a participating Company (Company Code) and specified location (Location Code), as indicated in Schedule B (including individuals temporarily assigned to non-US locations); or

(2) Is not a U.S. resident or citizen, but is employed by a Participating Employer at a participating Company (Company Code) and specified location (Location Code), as indicated in Schedule B on a long term assignment and has been localized to that location's payroll and benefits; and

(b) Is a Full-time or Part-time Employee, and receives regular compensation in the form of: (1) a weekly, semimonthly or monthly salary, (2) periodic commissions, (3) an hourly wage; and

(c) Is not in a unit of employees covered by a collective bargaining agreement, unless such agreement provides for the application of the Plan to the employees in such unit and does not provide for supplemental unemployment benefits or similar benefits; and

(d) Is not in a group of employees excluded from coverage under the Plan by the Benefits Management Committee, or the appropriate governing body of a Participating Employer, which is uniform in application to all employees similarly situated; and

(e) Is not a U. S. resident or citizen who is on the Company's U.S. expatriate payroll and benefit program; and

(f) Is not an agency, leased, or contract employee (as determined by the Company, without regard to any court, or agency decision determining common-law employment status) or is an individual who is not on the payroll of the Company and receiving a W-2. A "leased employee" is defined in Section 414(n) of the Code and is excluded from participation in the Plan. (For purposes of this Plan only, any former leased employee, upon becoming an Eligible Employee, will receive Continuous Service credit for all prior service performed with the recipient Participating Employer as a leased employee prior to becoming an Eligible Employee.)

(g) Is a Temporary Employee who, in addition to meeting the above described terms and conditions (other than (b)), has at least one year of Continuous Service.

EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (also "ERIC") means an amount equal to the percentage of Eligible Compensation specified in Section 5 that is contributed to Eligible Employees hired or rehired on or after March 1, 2006, or as indicated in Schedule B, to the Eligible Employees of a specified location without regard to date of hire or rehire. Effective as of January 1, 2009, employees who i) whether or not citizens of the U.S., transfer from a location outside of the U.S. to a participating U. S. location and are localized, or ii) are not U.S. citizens and were participants in the Global Pension Plan as of December 31, 2008, will receive ERIC contributions without regard to original date of hire or rehire. For purposes of this paragraph, "localized" means to be paid from a U.S. location payroll.

Effective January 1, 2010, employees employed at a company and location that does not participate in Alcoa Retirement Plan I as of December 31, 2009, who were hired or rehired prior to March 1, 2006, and who transfer on or after January 1, 2010 to a company and location that receives ERIC under this Plan as indicated in Schedule B, will commence to receive ERIC contributions following the transfer, regardless of their date of hire.

EMPLOYMENT COMMENCEMENT DATE means the date on which an Eligible Employee is first employed by and performs an Hour of Service for Alcoa, a Subsidiary or an Affiliate as a Full-Time or Part-Time Employee, or with respect to an individual described in subsection (g) of the definition of Eligible Employee, a Temporary Employee.

ERISA means the Employee Retirement Income Security Act of 1974 as amended.

ESOP or EMPLOYEE STOCK OWNERSHIP PLAN means the Alcoa Stock Fund as described in Section 16(e).

FINANCIAL HARDSHIP means an immediate and heavy financial need which a Participant is not able to meet from other reasonably available resources. An immediate and heavy financial need includes:

(a) Extraordinary medical expenses incurred by the Participant, the Participant's spouse, dependents of the Participant, or primary Beneficiary;

(b) Purchase, excluding mortgage payments, of a principal residence for the Participant;

(c) Payment of tuition for the next year of post-secondary education for the Participant, his or her spouse, children , dependents or primary Beneficiary;

(d) Expenses necessary to prevent eviction of the Participant from his principal residence, or foreclosure on the mortgage of the Participant's principal residence;

(e) Funeral expenses of a family member or primary Beneficiary; and

(f) All other expenses that the Internal Revenue Service will accept as an immediate and heavy financial need.

A withdrawal will be deemed to be necessary to satisfy an immediate and heavy financial need of a Participant if all of the following requirements are satisfied:

(i) The withdrawal is not in excess of the amount of the immediate and heavy financial need (including taxes on such withdrawal) of the Participant,

(ii) The Participant has obtained all distributions, other than hardship withdrawals, and all nontaxable loans currently available under all plans maintained by the Participating Employer (unless such a loan would contribute to the hardship),

(iii) The Plan, and all other qualified and non-qualified plans of deferred compensation maintained by all Participating Employers (other than health and welfare or contributory defined benefit plans), provide that the Participant's Savings will be suspended for at least 6 months after receipt of the hardship withdrawal, and

(iv) The Participant may not contribute Pre-Tax Savings to the Plan or make similar contributions to other plans maintained by the Participating Employer for the following taxable year in excess of the applicable limit under Section 402(g) of the Code for the following taxable year minus the Participant's Pre-Tax Savings for the taxable year of the hardship withdrawal.

Based upon the foregoing provisions, the Designee determines whether or not a Participant has incurred a Financial Hardship.

FULL-TIME EMPLOYEE means an active employee who works 100 percent of a regular work schedule for the location where he or she is employed.

HOUR OF SERVICE means:

(a) Each hour for which an employee is paid or entitled to payment for the performance of duties for Alcoa, a Subsidiary or Affiliate;

(b) Each hour for which an Employee is paid or entitled to payment by Alcoa, a Subsidiary or Affiliate on account of a period during which no duties are performed, whether or not the employment relationship has terminated, due to vacation, holiday, illness, incapacity (including disability), layoff, jury duty, military duty, or leave of absence; and

(c) Each hour for which back pay, irrespective of mitigation of damages, is either awarded or agreed to by Alcoa, a Subsidiary or Affiliate, excluding any hour credited under (a) or (b) above, which is credited to the computation period or periods to which the award, agreement or payment pertains, rather than to the computation period in which the award, agreement or payment is made.

INVESTMENT FUND means any Core Fund and the Brokerage Account.

KEY EMPLOYEE means any employee or former employee (including any deceased employee) who at any time during the Plan Year that includes the determination date, as defined in Section 416(g)(4)(C) of the Code, was i) an officer of a Participating Employer having annual compensation greater than $170,000 (as adjusted under Section 416(i)(1) of the Code, ii) a five percent owner of the Participating Employer, or iii) a one percent owner of a Participating Employer having annual compensation of more than $150,000. For this purpose, annual compensation means compensation as defined in Section 415(c)(3) of the Code, but includes amounts contributed by the Participating Employer pursuant to a salary reduction agreement which are excludable from the Participant's gross income under Section 125, 402(a), Section 401(h), Section 401(b), and Section 132(f)(4).

LAYOFF or **LAID-OFF** means the absence from employment due to a reduction of a Participating Employer's work force due to lack of work, where it is intended that the Participant will be subject to recall and the Participant is not on been placed on a Temporary Layoff. A Layoff ends on the earlier of the effective date of a recall or the date the Participant's service terminates, and such Layoff has continued for at least twenty-four months calculated from the first day of the Lay Off.

NORMAL RETIREMENT AGE means the time a Participant attains age 65.

PART-TIME EMPLOYEE means an active employee who works at least 50 percent but less than 100 percent of the regular work schedule for the location where he or she is employed.

PARTICIPANT means:

(a) an Eligible Employee who has elected to participate in the Plan in accordance with the provisions of Section 1, or who receives Employer Retirement Income Contributions,

Discretionary Contributions or Restricted Discretionary Contributions, or who is Automatically Enrolled in the Plan. Such a person continues as a Participant so long as he or she has an account balance in the Plan. Notwithstanding the foregoing, a contractor, agency employee, temporary employee or "leased employee" as defined in Section 414(n) of the Code is not a Participant under the Plan, or

(b) an Eligible Employee who is employed with a Participating Employer on December 31 of any Plan Year where such Participating Employer has elected to make a Discretionary Contribution or Restricted Discretionary Contribution for that Plan Year.

PARTICIPATING EMPLOYER means Alcoa, except as specified hereafter, and any other entity in which Alcoa or one or more Subsidiaries or Affiliates have an ownership interest, and that is authorized by Alcoa to participate in the Plan and which adopts the Plan by proper action of its board of directors or other governing body, provided that each said entity agrees to reimburse Alcoa from time to time upon demand for its proper portion of the expenses and contributions required to carry out the provisions hereof and of the agreement under which the assets of the Plan are held or managed. Schedule B lists applicable locations of Participating Employers.

PARTICIPATING EMPLOYER CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 3.

PARTICIPATION DATE means the date on which an Eligible Employee commences participation in the Plan.

PAYROLL DEDUCTIONS means the Pre-Tax Savings and After-Tax Savings based on a reduction of the Participants' Eligible Compensation for the applicable Payroll Period.

PAYROLL PERIOD means the regularly scheduled payroll cycles in which a Participant earns Eligible Compensation.

PERMANENT LAYOFF means an absence from employment due to a reduction of the work force by a Participating Employer due to lack of work, where it is intended that the Participant will not be subject to recall. A Participant's Continuous Service for purposes of the Plan will be terminated on the first day of Permanent Layoff.

PERMANENT SHUTDOWN means the permanent shutdown, as determined by a Participating Employer, of a plant, department or substantial portion thereof, of a Participating Employer at which a Participant who is affected thereby is employed.

PLAN means the Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees.

PLAN ADMINISTRATOR means Alcoa.

PLAN YEAR means the calendar year.

PRE-TAX CATCH-UP CONTRIBUTIONS means contributions permitted under Section 414(v) of the Code, as described in Section 2(j) of the Plan.

PRE-TAX SAVINGS means the amount by which a Participant has elected to reduce his or her Eligible Compensation and defer the receipt thereof in accordance with Section 2 and the contribution of the said amount to the Plan, or an amount by which a Participant's Eligible Compensation is deferred and contributed to the Plan pursuant to Automatic Enrollment.

PROPERLY RECEIVED means any request to participate, request to change participation in the Plan, request for suspension of Payroll Deductions, a request for a transfer between investments in accordance with Sections 8 or 9, or a request for a withdrawal in accordance with either Section 10 or 11, or a Beneficiary designation, consent or revocation in accordance with Section 22, are Properly Received provided it is received by the Plan Administrator or its Designee in accordance with uniform rules established by the Plan Administrator.

QUALIFIED DEFAULT INVESTMENT ALTERNATIVE or QDIA means the Targeted Maturity Funds to which the Plan may direct the assets of a Participant's account in the absence of Participant investment direction. Each Participant's account will be invested in the appropriate Targeted Maturity Fund based on the Participant's year of birth.

REEMPLOYMENT COMMENCEMENT DATE means the date on which a Participant is first reemployed by a Participating Employer following a Severance from Service Date.

RESTRICTED DISCRETIONARY CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(b).

RETIREMENT means termination of Continuous Service with rights to a pension other than a deferred vested pension benefit under a retirement plan of Alcoa and/or a Subsidiary and/or an Affiliate, termination of Continuous Service upon or after attainment of age 55 and completion of 10 years of Continuous Service, or Normal Retirement Age

ROLLOVER CONTRIBUTION means an eligible rollover distribution as described in Section 402(c)(4) of the Code, or a direct transfer of an eligible rollover distribution as described in Section 401(a)(31) of the Code ("Direct Rollover") which is transferred to the Plan pursuant to Section 7.

SAVINGS means the total amount of Pre-Tax Savings and After-Tax Savings contributed to the Plan in accordance with Section 2.

SEVERANCE FROM SERVICE DATE means the date Continuous Service terminates and is the earliest of: (i) the first date the Eligible Employee quits, retires, is discharged (including Permanent Layoffs), or dies, (ii) the first anniversary of the first date the Eligibile Employee is absent from work due to a Temporary Layoff, or (iii) the second anniversary of the first date the Eligible Employee is absent from work for any other reason (including a disability).

Notwithstanding the foregoing, an employee will not be deemed to have terminated from Continuous Service until the second anniversary of the employee's absence, if the absence is due to the pregnancy of the Eligible Employee, the birth of a child of the Eligible Employee or the placement of a child with the Eligible Employee in connection with adoption proceedings, or for purposes of caring for that child for a period beginning immediately following such birth or placement. The period between the first anniversary and second anniversary of the first day of absence will not constitute Continuous Service. Severance from Service Date will also mean the date on which a participant ceases employment with Alcoa or a Subsidiary in connection with a sale of assets or interest in a Participating Employer and commences employment with the purchaser of such assets or interest, provided there is no transfer to the purchaser of Plan assets and liabilities relating to such participant.

SUBSIDIARY means a corporation a majority of whose voting stock is owned or controlled by Alcoa and/or one or more other Subsidiaries.

TARGETED MATURITY FUNDS means the investment vehicles that are pre-mixed funds consisting of varying asset allocations that follow an investment strategy based on a targeted retirement date. Targeted Maturity Funds are Core Funds.

TEMPORARY EMPLOYEE means a person who does not work on a regular schedule, or works less than fifty percent of the regular hours for the location where he or she is employed, or works fifty percent or more of the regular hours for the location but is hired for a specified period of time not to exceed twelve month.

TEMPORARY LAYOFF means an absence from employment due to a reduction of the work force by a Participating Employer due to lack of work, where it is intended that the Participant will not be subject to recall or the Participant has been designated as a temporary recall in the Company's human capital management system (currently, the Global People System), but where there is an expectation that the Participant may return to work within the calendar year. A Participant's Continuous Service will be terminated on the first anniversary of the first day of Temporary Layoff.

TOTAL AND PERMANENT DISABILITY means disability by injury or disease which, on the basis of medical evidence satisfactory to a medical doctor chosen by the Benefits Management Committee, prevents the employee from engaging in any employment with Alcoa, a Subsidiary or Affiliate suitable to his or her training and experience and will be permanent and continuous during the remainder of the employee's life, and the employee is not otherwise employed by Alcoa, a Subsidiary or Affiliate.

TRUSTEE means the Trustee or Trustees appointed by the Board in accordance with the provisions of Section 18.

U.S. means United States of America.

VARIABLE COMPENSATION AWARDS means performance pay, profit sharing or gain sharing awards or other variable compensation awards as determined by the Participating Employer and approved by the Plan Administrator.

GENERAL PROVISIONS

SECTION 1. PARTICIPATION

An Eligible Employee participates in the Plan:

(a) by submitting application or request for participation that is Properly Received, or by receiving Discretionary Contributions, Restricted Discretionary Contributions, Participating Employer Contributions, or Employer Retirement Income Contributions; or

(b) by being Automatically Enrolled sixty days following Employment Commencement Date or Reemployment Commencement Date, or after an employee employed on a temporary basis becomes an Eligible Employee.

(c) by being Automatically Enrolled sixty (60) days following the initial participation of a new Company or Location resulting from an acquisition or restructuring of a business unit.

SECTION 2. EMPLOYEE SAVINGS

(a) An Eligible Employee may elect to pay into the Plan through Payroll Deductions properly authorized by such employee, a whole percentage of his or her Eligible Compensation as Pre-Tax Savings in an amount equal to one through twenty-five percent (25%), and After-Tax Savings equal to one through ten percent (10%), the aggregate of which cannot be greater than twenty-five percent (25%).

(b) An Eligible Employee subject to Automatic Enrollment will be subject to automatic Payroll Deductions equal to three percent of Eligible Compensation for any applicable payroll period, which will be contributed to the Plan as Pre-Tax Savings. Absent the Participant's election of investment funds, such Pre-Tax Savings will be deposited into the appropriate QDIA, as described in Section 8(a).

(c) Payroll Deductions for Pre-Tax Savings made pursuant to Automatic Enrollment are subject to Automatic Pre-Tax Rate Escalation whereby, providing the Participant has participated in the Plan at least ninety days, the Participant's Pre-Tax Savings rate will be increased by one percent on each April 1 after his or her Participation Date until the Pre-Tax Savings rate attains a target rate of six percent of Eligible Compensation. A Participant may change the percentage rate in whole percentages up to the maximum permitted by the Plan or opt out of Automatic Pre-Tax Rate Escalation at any time in a manner designated by the Plan Administrator that is Properly Received.

Any Participant may elect to begin or end Automatic Pre-Tax Savings Rate Escalation at any time in a manner designated by the Plan that is Properly Received. An election to begin Automatic Pre-Tax Saving Rate Escalation shall designate a beginning Pre-Tax Savings rate, a target rate up to the maximum permitted by the Plan, and an annual rate (in whole percentages) by which the Pre-Tax rate increases until the target rate is attained.

(d) Any employee contributions which have been contributed to a Participant's account under a qualified defined contribution plan of a Participating Employer which has been merged with this Plan, are credited to the Participant as Pre-Tax and After-Tax Savings Accounts, as applicable, as determined by the Plan Administrator, and thereafter be treated like Pre-Tax and After-Tax Savings with respect to withdrawals, loans, and investment options under the Plan. Any protected optional form of benefits provided under said qualified defined contribution plan will be maintained under the Plan.

(e) All Participating Employer Contributions and Discretionary Contributions, and Restricted Discretionary Contributions and Employer Retirement Income Contributions are irrevocable, except that any such contribution which was made by a mistake of fact or conditioned upon qualification of the Plan or any amendment thereof under Section 401 of the Code or upon the deductibility of the contribution under Section 404 of the Code, will be returned to the Participating Employer within one year after the payment of the contribution made by mistake, the denial of the qualification or the disallowance of the deduction (to the extent disallowed), whichever is applicable.

(f) A Participant may change his or her election for Payroll Deductions, effective for the first full Payroll Period following the date that such request is Properly Received.

(g) A Participant may direct that Payroll Deductions for Savings be discontinued beginning with the first full Payroll Period following the date that such direction is Properly Received. A Participant may direct that such deductions be resumed beginning with the first full Payroll Period following the date that such direction is Properly Received, except as provided in the definition of Financial Hardship.

(h) Payroll Deductions are paid to the Trustee as soon as practicable, but no later than the period prescribed by the Department of Labor for depositing contributions.

(i) Additional limitations on Savings, Participating Employer Contributions, Discretionary Contributions and Restricted Discretionary Contributions are provided in Appendices A, B and C.

Notwithstanding the foregoing, in the event it is determined by the Benefits Management Committee or its designee that for any particular month the maximum percentage of Eligible Compensation which a Participant may elect to pay into the Plan as Pre-Tax Savings must be reduced so as to prevent the actual percentage of Pre-Tax Savings for Participants who are Highly Compensated Employees from exceeding the elected percentage of Pre-Tax Savings of all other Participants, pursuant to the limitations in the Appendices, the maximum percentage of Pre-Tax Savings for said Highly Compensated Employees may be reduced, for any particular

Month to the extent deemed necessary by the Benefits Management Committee or its designee. The said Participants' previously elected percentage of After-Tax Savings will not be affected in any manner by a reduction of the maximum percentage of Pre-Tax Savings in accordance with the foregoing.

(j) An Eligible Employee who meets the requirements listed below may make an election for a Plan Year to defer extra Pre-Tax Catch-Up Contributions in an amount that equals an annual maximum amount of six thousand dollars ($6,000), or such other amount adjusted for cost-of-living increases as may be provided by the Secretary of the Treasury pursuant to Section 414(v)(2) (C) of the Code. Eligible Employees who meet the requirements are individuals who i) have attained 50 or will attain age 50 during the applicable Plan Year; ii are contributing no less than six percent (6%) of Eligible Compensation in Pre-Tax Savings; and iii) have submitted an election to make Pre-Tax Catch-Up Contributions for applicable Plan Year.

(k) A Participant who's compensation is suspended due to an absence from employment due to military leave protected by Uniformed Services Employment and Reemployment Rights Act of 1994 ("USERRA"), may upon his or her return to employment contribute "make up" Pre-Tax Contributions equal to the amount he or she would have contributed except for the absence based upon the Participant's election on file. Such make up contributions must be paid to the Plan during a period that does not exceed the lesser of three (3) times the length of time of the military leave or five (5) years, commencing from the date employment is resumed.

SECTION 3. PARTICIPATING EMPLOYER CONTRIBUTIONS (MATCH)

Participating Employer Contributions will be allocated under the Plan to the account of those Participants for whom Pre-Tax Savings are paid into the Plan for such Payroll Period in accordance with Section 2, where the Participating Employer with whom the Participant is actively employed has elected to make such contributions. Beginning with the first Participating Employer contribution allocated to Participants' accounts after January 1, 2014, all Participating Employer Contributions will be invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA).

A Participating Employer may elect to make Participating Employer Contributions of a specific amount for each dollar of the Participant's Eligible Compensation he or she contributes to the Plan as Pre-Tax Savings up to six percent of the Participant's Eligible Compensation. Unless disapproved by the Benefits Management Committee, a Participating Employer's election to make or change a Participating Employer Contribution for current and future Plan Years may be made at any time during the Plan Year and continue until changed by the Participating Employer. Schedule B provides a list of Participating Employers and Participating Employer Contributions. Subject to the provisions of Section 6 relating to the application of forfeitures of Participating Employer Contributions, the amount of all such Contributions are contributed on a Payroll Period basis by the Participating Employer out of current income or accumulated earnings.

Any employer contributions which have been contributed to a Participant's account under a qualified defined contribution plan of a Participating Employer which has been merged with this Plan, are credited to the Participant as Participating Employer Contributions and thereafter be treated like Participating Employer Contributions with respect to withdrawals, loans, and investment options under the Plan. Any protected optional form of benefits provided under said merged qualified defined contribution plan will be maintained under the Plan.

SECTION 4. DISCRETIONARY CONTRIBUTIONS

(a) A Participating Employer for each Plan Year may contribute under the Plan to the account of those Eligible Employees who are employed with said Participating Employer on the last day of the Plan Year such amounts of Discretionary Contributions as its board of directors or in the case of an Affiliate, the appropriate governing entity determines, unless disapproved by the Benefits Management Committee. Discretionary Contributions are allocated to Eligible Employees based on either uniform dollar amounts or whole or partial percentages of Eligible Compensation. A Participating Employer may elect to make one Discretionary Contribution for any Plan Year on or before December 31 of said Plan Year and may direct the Trustee to promptly invest such amount in the Alcoa Stock Fund.

(b) A Participating Employer for each Plan Year may contribute under the plan to the account of those Eligible Employees who are employed with said Participating Employer on the last day of the Plan Year, Restricted Discretionary Contributions in an amount determined by its board of directors or in the case of an Affiliate, the appropriate governing entity, unless disapproved by the Benefits Management Committee. Restricted Discretionary Contributions will be allocated to Eligible Employees based on either uniform dollar amounts or whole or partial percentages of Eligible Compensation. A Participating Employer may elect to make one Restricted Discretionary Contribution for any Plan Year on or before December 31 of the Plan Year. The Restricted Discretionary Contribution will be paid to the Trustee no later than the date fixed by law for the filing of the Participating Employer's federal income tax return for the year for which the contribution is made, including any extensions of time granted by the Internal Revenue Service for filing the return. The Participating employer may direct, but is not obligated to direct, the Trustee to promptly invest such amount in the Alcoa Stock Fund; otherwise, Restricted Discretionary Contributions will be invested in accordance with the provisions of Section 8(b).

(c) An Eligible Employee who incurs an absence due to military leave protected by USERRA and eligible to receive Discretionary or Restricted Discretionary Contributions will receive those contributions based on the Eligible Compensation that would have been received had the individual remained actively employed during the period of military leave.

SECTION 5. EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (ERIC)

Employer Retirement Income Contributions of three percent of Eligible Compensation will be made to the accounts of Participants with an Employment Commencement Date or Reemployment Commencement Date occurring on or after March 1, 2006, on a Payroll Period basis. Notwithstanding the foregoing, Eligible Employees of certain locations designated in

Schedule B will receive Employer Retirement Income Contributions as of the date indicated, regardless of the date of their Employment Commencement Date or Reemployment Commencement Date.

An Eligible Employee who incurs an absence due to military leave protected by USERRA and eligible to receive Employer Retirement Income Contributions (“ERIC) will receive those contributions based on the Eligible Compensation that would have been received had the individual remained actively employed during the period of military leave.

Withdrawals of Employer Retirement Income Contributions are permitted by Participants who have attained age 59 ½.

Any person, i) whether or not a citizen of the U.S., who transfers from a location outside of the U.S. to a participating U.S. location, or ii) who is not a citizen of the U.S. and was a participant in the Global Pension Plan as of December 31, 2008 and transferred from a location outside of the U.S. to a participating U.S. location, will be eligible for Employer Retirement Income Contributions, regardless of the individuals date of hire.

SECTION 6. NONFORFEITURE OF PARTICIPATING EMPLOYER CONTRIBUTIONS, DISCRETIONARY CONTRIBUTIONS, RESTRICTED DISCRETIONARY CONTRIBUTIONS, AND EMLOYER RETIREMENT INCOME CONTRIBUTIONS

All Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions and any investment earnings attributable thereto held in a Participant’s account are nonforfeitable and are not subject to divestment.

SECTION 7. ROLLOVER CONTRIBUTIONS

An Eligible Employee of a Participating Employer who is or may become a Participant may, unless disapproved under objective procedures established by the Benefits Management Committee, make a Rollover Contribution to the Plan. An Eligible Employee’s Rollover Contribution is credited to his or her account and thereafter treated like the Participant’s Pre-Tax Savings with respect to withdrawals, loans and investment options under the Plan. The Plan does not accept Roth rollovers.

SECTION 8. INVESTMENTS

(a) <u>Savings and Employer Retirement Income Contributions</u>. Pre-Tax Savings (including Rollover Contributions), After-Tax Savings, and Employer Retirement Income Contributions will be invested, at the election of the Participant, in any of the Core Funds in one percent increments. Prior to June 1, 2008, Pre-Tax Savings of any Participant who is Automatically Enrolled and Employer Retirement Income Contributions made to the account of a Participant who has not made investment election will be contributed to the Fixed Income

Fund. Effective June 1, 2008, Pre-Tax Savings of any Participant who is Automatically Enrolled and Employer Retirement Income Contributions made to the account of a Participant who has not made investment election will be contributed to the appropriate QDIA fund, based on the Participant's date of birth.

A Participant may change his or her current investment election or transfer assets deposited by the Plan into a QDIA fund any day of the Plan Year, to be effective for the next following Payroll Period, within the limitations otherwise provided in this Plan, by directing the Plan Administrator or its Designee to make such change which direction is Properly Received.

(b) Participating Employer Contributions, Discretionary Contributions and Restricted Discretionary Contributions. All Participating Employer Contributions will be invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA). Discretionary Contributions, and Restricted Discretionary Contributions may be invested in the Alcoa Stock Fund if directed by the Participating Employer, subject to Section 9, or otherwise invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA).

(c) Brokerage Account. A portion of Pre-Tax or After Tax Savings, and Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, or Employer Retirement Income Contributions subject to transfer as provided in Section 9, or any other amounts invested in the Core Funds may be transferred in amounts of one thousand dollars ($1,000) or more and reallocated to a Brokerage Account, a self-directed brokerage account that allows a Participant to select and personally manage investment options not otherwise available under the Plan, in accordance with the provisions of Section 16. Any amounts to be withdrawn, loaned or distributed from a Brokerage Account must be first transferred back to the Core Funds, as described in Section 16(h).

(d) Automatic Rebalancing of Investments. A Participant may elect to have his or her account balance automatically rebalanced, or readjusted, at ninety-day intervals, to equal the percentage(s) directed by the Participant for investing such account balance in any Core Fund(s). The Participant may cancel Automatic Rebalancing at any time in a manner designated by the Plan Administrator that is Properly Received.

SECTION 9. TRANSFERS BETWEEN INVESTMENTS

(a) Transfers of Savings, Participating Employer, Discretionary, Restricted Discretionary and Employer Retirement Income Contributions. A Participant may elect to transfer in whole percentage increments or specified dollar amounts all or part of the Current Market Value of the Participants' Pre-Tax Savings, After Tax Savings, Participating Employer, Discretionary, Restricted Discretionary and Employer Retirement Income Contributions subject to the following:

(1) transfers from any one or more Core Funds to the Brokerage Account must be made in amounts of one thousand dollars ($1,000) or more;

(2) transfers may be made on a daily basis;

(3) investment Fund transfers do not constitute a change in the Participant's current investment election; and

(4) transfer provisions may be subject to restrictions imposed by mutual fund companies underlying the Core Funds.

(b) Effective Date of Transfer. The effective date of any transfer will be the date for which the appropriate direction to the Plan Administrator or its Designee has been Properly Received.

(c) Value of Transfer. The Current Market Value of Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions to be transferred into or out of an Investment Fund are determined in accordance with the value of the Investment Fund at the close of business of the Business Day on the Effective Date.

SECTION 10. WITHDRAWALS DURING EMPLOYMENT

Withdrawals are not permitted prior to the termination of the Participant's Continuous Service, except for the following:

(1) Upon attainment by the Participant of age 59 ½; or

(2) Upon a determination by the Plan Administrator or Designee that the Participant has suffered a Financial Hardship with respect to Pre-Tax Savings, and Employer Contributions contributed to the Plan prior to January 1, 2011.

A Participant may withdraw the Current Market Value of After-Tax Savings at any time (subject to a $250.00 minimum). Effective the first Business Day a Participant has attained three Years of Plan Participation, he or she may voluntarily withdraw all or a portion (subject to a $250.00 minimum) of the Current Market Value of Participating Employer Contributions and Discretionary Contributions mad to the Plan prior to January 1, 2011.

SECTION 11. DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT

(a) A Participant whose Continuous Service terminates is eligible to receive as a distribution the Current Market Value of all Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions made to the Participant's accounts. In the event a Participant who has terminated employment received a total distribution of the Current Market Value of his or her account under the Plan has a Reemployment Commencement Date, he or she will not be permitted to repay the distributed amount other than as a Rollover Contribution from an eligible retirement plan described in Sections 402(c)(4) and 401(a)(31) of the Code, as provided in Section 7.

(b) Direct Rollovers.

(i) Notwithstanding any provision of the Plan to the contrary that would otherwise limit a distributee's election under this subsection, a distributee may elect, at the time and in the manner prescribed by the Plan Administrator, to have any portion of an eligible rollover distribution paid directly to an eligible retirement plan specified by the distributee in a direct rollover.

(ii) Definitions:

(1) Eligible rollover distribution: An eligible rollover distribution means any distribution to an employee of all or any portion of the balance to the credit of the employee in the Plan, and as otherwise described in this subsection (1). An eligible rollover distribution does not include any distribution that is one of a series of substantially equal periodic payments (not less frequently than annually) made for the life (or life expectancy) of the distributee or the joint lives (or joint life expectancies) of the distributee's designated Beneficiary; or for a specified period of ten years or more; any distribution to the extent such distribution is required under Section 401(a)(9) of the Code; and any amount distributed on account of hardship.

(2) Eligible Retirement Plan: An eligible retirement plan is an individual retirement account or individual retirement annuity described in Sections 408(a) and 408(b) of the Code; a qualified trust described in Section 401(a) of the Code that accepts the distributee's eligible rollover distribution; an annuity plan or contract described in Sections 403(a) and 403(b) of the Code; or an eligible plan under Section 457(b) of the Code which is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state that agrees to separately account for amounts transferred into such plan from this plan. The definition of eligible retirement plan will also apply in the case of a distribution to a surviving spouse of a Participant or the spouse or former spouse who is the alternate payee under a qualified domestic relations order as defined in Section 414(p) of the Code. With respect to an eligible rollover distribution to a Participant's nonspouse Beneficiary, an eligible retirement plan is an individual retirement account or annuity described in Sections 408(a) and 408(b) of the Code established for the purpose of receiving such distribution, and identifying the deceased Participant and Beneficiary.

(3) Distributee: A distributee includes an employee or former employee. In addition, the employee's or former employee's surviving spouse and the employee's or former employee's spouse or former spouse who is an alternate payee under a qualified domestic relations order, as defined in Section 414(p) of the Code, are distributees with regard to the interest of the spouse or former spouse. A distributee includes the employee's or former employee's nonspouse Beneficiary, provided the transfer of the eligible rollover distribution is made as described in paragraph (4) below.

(4) Direct Rollover: A direct rollover is a payment by the Plan to the eligible retirement plan specified by the distributee.

SECTION 12. PAYMENT OF DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT

(a) Subject to the following provisions of this Section, payment to a Participant or Beneficiary of the Current Market Value of all Savings, Participating Employer Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions in the Participant's account from any Investment Fund, other than the Alcoa Stock Fund, upon the Participant's termination of Continuous Service is made in cash. All amounts held in the Alcoa Stock Fund at the time of the Participant's termination of Continuous Service are paid in cash or Company Stock. Such payment will be made in accordance with the following rules:

(i) If the Current Market Value of all of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is less than one thousand dollars ($1,000), then a total distribution of all of the Participant's vested account balances will be made to the Participant at a time determined by the Plan. If the Current Market Value of all of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates (i) is greater than one thousand dollars ($1,000) but less than five thousand dollars ($5,000), the distribution will be paid in a direct rollover to an individual retirement account designated by the Benefits Management Committee unless the Participant, or Beneficiary if applicable, elects to have such distribution paid directly to an eligible retirement plan specified by the Participant or Beneficiary in a direct rollover or to receive the distribution directly in cash. The value of any delisted stock that is no longer publicly traded but that is held in the Participant's Brokerage Account shall not be considered for purposes of the preceding valuation. Any such delisted stock shall be distributed in-kind where the value of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is less than five thousand dollars ($5,000), in a direct rollover to an individual retirement account designated by the Benefits Management Committee. Upon such distribution of de-listed stock, the amounts distributed will be reported for income tax purposes using reasonable methods available at such time and determined by the Plan.

(ii) If the Current Market Value of all of the Participant's vested account balances in all defined contribution plans of Alcoa, the Subsidiaries and Affiliates exceeds five thousand dollars ($5,000), the distribution is made upon the consent of the Participant, or surviving spouse if applicable, and if no consent is given and no claim for benefits has been made, such distribution is made in total upon upon the later of December 31, 2015, or his or her attainment of age 69. Notwithstanding the foregoing, if a Participant attains age 70 prior to December 31, 2015, such distribution shall be made in total upon such Participant's attainment of age 70. Prior to the distribution of the total Current Market Value of the Participant's total account balance, the Participant, or the Beneficiary in the case of a Participant who dies with an account balance in the Plan, may request four partial distributions (subject to a $250.00 minimum) during each Plan Year in which the account balance is maintained in the Plan. Notwithstanding the foregoing, in the event that a claim for benefits is made, a distribution is made no later than the 60th day after the latest of the last day of the Plan Year in which occurs:

(1) the date on which the Participant attains the earlier of age 65, (2) occurs the tenth anniversary of the year in which the Participant commenced participation in the Plan, or (3) the Participant terminates his or her service with the Participating Employer.

(iii) If a distribution is one to which Sections 401(a)(11) and 417 of the Code do not apply, such distribution may commence less than 30 days after the notice required under Section 1.411(a)-11(c) of the Income Tax Regulations is given, provided that:

a. the Plan Administrator clearly informs the Participant that the Participant has a right to a period of at least 30 days after receiving the notice to consider the decision of whether or not to elect a distribution (and, if applicable a particular distribution option), and

b. the Participant, after receiving the notice, affirmatively elects a distribution.

(iv) If the Participant dies with an account balance in the Plan, the entire interest of the Participant will be distributed not later than 5 years after the death of the Participant.

(b) Upon any distribution of Company Stock from the Alcoa Stock Fund, the Trustee delivers to the recipient a certificate representing the number of whole shares of Company Stock being distributed and cash equal to the Current Market Value on the Effective Date of distribution of any fractional interest in a share being distributed. With respect to any shares of Company Stock which are to be sold for the account of the recipient, the Trustee may, at its option (1) purchase such shares for Plan purposes at the Current Market Value on the Effective Date of distribution, or (2) sell such shares on the open market for the account of the recipient.

(c) Notwithstanding the foregoing provisions of this Section, distribution of a Participant's account balances commences the April 1 next following the calendar year in which the Participant attains age 70-1/2 years after January 1, 1988 and in accordance with Section 13(b).

(d) Notwithstanding the foregoing, if a Participant is reemployed by a Participating Employer, then distribution of his or her account balances other than minimum required distributions under Section 401(a)(9) of the Code, if any, payable to him or her during the period of his or her reemployment is suspended until his or her subsequent termination from employment. Upon his or her subsequent termination from employment, the Participant's account balances are paid in accordance with the foregoing provisions of this Section 12.

(e) Notwithstanding paragraphs (a) and (b) above, in the event that any qualified defined contribution plan is merged with this Plan or this Plan is the surviving plan with respect to any assets of Participants of a merging plan which are transferred to this Plan, any distribution options contained in the merging plan which are not contained in this Plan may be continued to be distribution options available to the said Participant of the merging plan for distribution of his or her account, in accordance with Section 411(d)(6) of the Code.

SECTION 13. GENERAL PROVISIONS WITH RESPECT TO WITHDRAWALS

(a) <u>Effective Date of Withdrawal</u>. The Effective Date of any withdrawal from the Plan is the Business Day such request for withdrawal is Properly Received by the Plan Administrator or its Designee.

(b) <u>Distribution Limitations</u>. Distribution of all amounts payable under the Plan to a Participant commences:

(i) Not later than (1) the required distribution dates or (2) the required distribution date, without violating Treasury regulations, if any, over the life of the Participant or over the lives of the Participant and a Beneficiary, or over a period not extending beyond the life expectancy of the Participant and a Beneficiary.

(ii) If distribution of the Participant's interest in the Plan has begun in accordance with paragraph (i)(2) and the Participant dies before his or her entire interest is distributed, the Participant's remaining interest in the Plan will be distributed at least as rapidly as under the method of distribution stated under paragraph (i)(2) above being used on the date of the Participant's death. If the Participant dies before the distribution of his or her interest in the Plan has begun in accordance with paragraph (i)(2), the entire interest of the Participant will be distributed not later than five years after the death of the Participant.

For purposes of this paragraph (b), the "required distribution date" means the date prescribed by Treasury Regulations, as amended from time to time, which effective January 1, 1988, is April 1 of the calendar year following the calendar year in which the Participant attains age 70-1/2.

For the purposes of this paragraph (b), any amount paid to a minor child is treated as if it had been paid to the surviving spouse if such amount will become payable to the surviving spouse upon such child reaching majority or any other designated event as may be permitted by Treasury Regulations, if any.

(c) Appendix D, Minimum Distribution Requirements, provides the Plan provisions to comply with Section 401(a)(9) of the Code and Treasury Regulations §1.401(a)(9)-2 through -9, as applicable, relating to required minimum distributions.

SECTION 14. NONASSIGNABILITY

Except as required under ERISA, no right or interest, of any Participant or Beneficiary in the Plan or in such Participant's accounts is (a) assignable or transferable or subject to any lien in whole or in part, either directly or by operation of law or otherwise, including, but not by way of limitation, alienation, execution, levy, garnishment, attachment, pledge, bankruptcy or in any other manner, other than a transfer as a result of death or mental incompetence, or (b) liable for, or subject to, any obligation or liability of such Participant or Beneficiary. Such portions of the

Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions in the account of a Participant as are payable to another in accordance with the provisions of a "qualified domestic relations order," as defined in Section 414(p) of the Code and any applicable regulations thereunder, are distributed to the party designated in and in accordance with said order. The Effective Date of withdrawal for any such distribution is the first Business Day following the Plan Administrator's determination that the said order is in compliance with Section 414(p) of the Code and any applicable regulations thereunder and such distribution is made as soon as administratively practical thereafter. The Plan Administrator or Designee has promulgated procedures to determine whether a domestic relations order is a qualified domestic relations order. The procedures will be provided to a participant or alternate payee upon written request, or upon receipt of the domestic relations order by the Plan Administrator or Designee.

SECTION 15. EXTENT OF PARTICIPANT'S RIGHTS

(a) <u>General</u>. No person has any interest in or right to any part of the assets held under the Plan or the income thereon, except as and to the extent expressly provided in the Plan.

At the time of withdrawal by a Participant or Beneficiary he or she will receive shares or cash. There is no guarantee that the Current Market Value of any investment will be equal to or greater than the amount of the Participant's Savings therein. This Plan is designed to comply with and operate under Section 404(c) of ERISA. A Participant and his or her Beneficiaries assume all risk in connection with any decrease in the value of any investments allocated to such Participant's account. For purposes of Section 404(c)(1) of ERISA, in the absence of Participant or Beneficiary investment direction, a Participant or Beneficiary shall be treated as having exercised control over the assets invested in any investment which qualifies as a QDIA in accordance with Section 404(c)(5) of ERISA and the regulations promulgated thereunder.

The Plan does not and should not be construed as conferring any rights upon any person for a continuation of employment, nor does it interfere with the rights of Alcoa or any Subsidiary or Affiliate to terminate the employment of any person or to take any personnel action affecting such person without regard to the effect which such action might have upon such person or his or her Beneficiaries as a prospective recipient of benefits under the Plan.

(b) <u>Military Service</u>. Notwithstanding any provision of this Plan to the contrary, contributions, benefits and service credit with respect to qualified military service will be provided in accordance with Section 414(u) of the Internal Revenue Code.

SECTION 16. MANAGEMENT OF FUNDS

(a) <u>General</u>. Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions paid to the Trustee are invested as provided in the Plan.

(b) <u>Trustees and Investment Managers</u>. The Board or its designee has the responsibility to appoint, review the performance of, and remove where deemed appropriate, one

or more Trustees, and one or more investment managers each of which is a bank, insurance company or other investment adviser qualified under Section 3(38) of ERISA. The duties of each Trustee and manager, to the extent not set forth in the Plan, are set forth in a trust agreement or other written documents approved by the Board or its designee. Except as otherwise provided in such documents or in the Plan, each such investment manager has sole investment control and management responsibility with respect to those assets of the Plan for which it is designated the investment manager. The Board may delegate its authority to appoint an investment manager, to remove an investment manager, to approve and direct the execution by the proper officer or officers of Alcoa of amendments to agreements with any investment manager and to review the performance of any such managers. Such delegation also includes the authority to approve written documents setting forth the duties of any manager and to direct the execution of investment management agreements by the proper officer or officers of Alcoa. No Trustee has any investment responsibility for any assets which are subject to the investment control of another investment manager and as to such assets it only has custodial duties if it is the custodian.

(c) Designation of Investment Strategy. The Board may from time to time designate, as to part or all of the assets of the Plan, that a separate fund or funds be established. Except as otherwise provided in the Plan, as to each such separate fund the Board or its designee may specify the investment strategy to be employed and the investment manager is thereupon relieved of responsibility for assuring that the specified investment strategy creates suitable diversification of the overall assets of the Plan, provided that such investment manager has followed such specifications.

(d) (1) Acquisition of Fixed Income Investments by the Trustee. The Trustee will enter into investment arrangements with insurance companies, banks or money managers, as directed by an investment manager duly appointed by the Board or its designee for the Fixed Income Fund. The Trustee will invest all Savings and other amounts to be invested in the Fixed Income Fund in accordance with such directions.

(2) Accounting for Participant's Accounts. Participants' investments in the Fixed Income Fund are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in the Fixed Income Fund as may be acquired with funds (if any) in such Participant's accounts to be invested therein. Such allocations will be made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(e) (1) Acquisition of Company Stock by Trustee. The Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions to be invested in the Alcoa Stock Fund are used by the Trustee to purchase from time to time shares of Company Stock (i) from Alcoa, at the Current Market Value thereof, or (ii) to the extent Alcoa does make shares available for purchase by the Trustee for such purpose, on the open market, unless Alcoa otherwise directs, or (iii) by the exercise of warrants or rights as provided in this Section. The Trustee, to the extent reasonable, invests any cash held in the fund in cash equivalents (including commercial paper).

The Trustee also holds for the purpose of allocation to the accounts of individual Participants as hereinafter provided (i) shares of such stock which the Trustee has acquired upon withdrawal by a Participant, and (ii) shares of such stock which the Trustee has acquired pursuant to Participants' elections to transfer investments under the provisions of Section 9. All shares of such stock purchased by the Trustee are carried in the accounts of the Trustee at the actual cost thereof, including any taxes, commissions, etc. which are not paid by the Participating Employer, incident to the purchase except that shares acquired upon the exercise of warrants or rights are carried at the Current Market Value of such shares on the date of such exercise.

(2) Allocation of Stock to Participants' Accounts. Participants' investments in the Alcoa Stock Fund are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in the Alcoa Stock Fund as may be acquired with funds (if any) in such Participants' accounts to be invested therein. Such allocations are made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(3) Allocation of Dividends to Participants' Accounts. In valuing the units, dividends are accounted for on the date the Board declares the dividend. Once received, dividends are invested in the Alcoa Stock Fund. A Participant may elect to receive an annual distribution of the dividends posted to their account during the Plan Year. Such election must be made prior to the last dividend record date in the Plan Year, and distribution will be made as soon as administratively practical following the date the final dividends are posted to the Participant's account. Distribution will be paid in a lump sum from the Alcoa Stock Fund. To the extent the Participant's account balance in the Alcoa Stock Fund is insufficient to pay the dividends, the balance of the distribution will be paid pro-rata from the Participant's other Core Fund investments.

(4) Warrants & Purchase Rights. A Participant has no right of request, direction or demand upon the Trustee to exercise in his or her behalf warrants or rights to purchase shares of common stock or other securities of Alcoa, except as otherwise determined by the Board. The Trustee, in its discretion, may exercise or sell any warrants or rights to purchase shares of Company Stock appertaining to shares of such stock held by the Trustee and may sell any warrants or rights to purchase other securities of Alcoa appertaining to shares of such stock held by the Trustee.

(5) Stock Splits & Dividends. Shares of Company Stock received by the Trustee by reason of a stock split or stock dividend become part of the Alcoa Stock Fund.

(6) Voting. The Trustee exercises its voting rights in accordance with written directions of each Participant with respect to at least the number of whole shares of Company Stock held by it in the Participants' accounts on the record date for voting.. With respect to all other shares of Company Stock held by the Trustee on the record date for voting (the "Other Shares"), including but not limited to, (i) fractional shares in the Participants' accounts (if they are not subject to direct voting), (ii) shares for which it has not received written directions from any Participant, and (iii) any shares which have not yet been allocated to Participants' accounts,

the Trustee exercises its voting rights in the same proportion (for, against, abstain and so on) on each matter as it exercises its voting rights with respect to shares of Company Stock for which voting directions were received from all participants in all plans which participate in the Alcoa Stock Fund.

(f) (1) Acquisition of Other Investments by Trustee. Alcoa has and in the future will enter into investment arrangements with various investment managers. Any such arrangements must be approved by the Benefits Management Committee. Expenses incurred in connection with the purchase or sale of securities by the investment manager are paid from the applicable Investment Fund.

(2) Accounting for Participant's Accounts. Effective January 1, 2011, Participants' investments in the Core Funds are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in each of the Core Funds as may be acquired with funds (if any) in such Participant's accounts to be invested therein. Such allocations will be made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(g) Transition Provision. Pending investment under an arrangement established pursuant to this Section and pending distribution to Participants following withdrawal from such an arrangement, cash is invested by the Trustee in short-term fixed income securities or cash equivalents (including commercial paper) and the value of such securities or cash equivalents is allocated to the accounts of Participants in an equitable manner determined by the Benefits Management Committee.

(h) Brokerage Account. Participant's have the right to invest and personally manage investments outside of the Core Funds by investing through the Brokerage Account offered by a broker selected by the Plan ("Broker"). Investment options through the Brokerage Account are mutual funds (other than those already available as Core Funds), any taxable equity or fixed income security publicly traded in a U.S. security market (including American Depository Receipts), and money market funds. Pre-Tax Savings, After-Tax Savings, Rollover Contributions, Participating Employer Contributions, Discretionary Contributions Restricted Discretionary Contributions, and Employer Retirement Income Contributions that are subject to transfer as provided in Section 9, may not be directly invested in the Brokerage Account, nor may withdrawals, distributions or loans be made directly from the Brokerage Account. Such transactions must be processed through the Core Funds.

(1) Restrictions of Trading in the Brokerage Account. Certain restrictions apply to investment vehicles that may be available through the Brokerage Account. Specifically, the following investments are not available through the Brokerage Account: Alcoa company stock (common or preferred) and bonds; funds currently available in the Core Funds; tax-free funds; securities of publicly traded limited partnerships; options contracts; purchase on short sales, futures, precious metals, and currencies; real estate (other than funds); annuities; life insurance policies; collectibles; commodities; foreign stocks (not American Depository Receipt); and margin trading and trade-away trades that are placed by another broker and settle with the Broker.

(2) <u>Trading within the Brokerage Account</u>. Investment purchases in the Brokerage Account may be made after such amounts are transferred from the Participant's Core Fund accounts. Transfers from Core Funds may be made as provided in Section 9. Transferred funds will be held in the Broker's money market fund until the Participant's buy orders are received by the Broker. Trades may be subject to initial and subsequent investment minimums required by a mutual fund.

Transfers are made out of the Brokerage Account and into the Core Funds from the Schwab Money Market Fund. If there are insufficient funds to make the requested transfer, the participant must submit a sell order with Schwab. The proceeds of securities sold will be invested automatically in the Broker's money market fund and will be subsequently transferred out of the Brokerage Account to the Core Funds as directed by the Participant.

(3) <u>Expenses Incurred by Trading and Voting</u>. The Broker's standard commission schedule will be deducted from the Brokerage Account of the Participant who initiates the trades, and any other fees and expenses incurred through the Brokerage Account will be paid directly by the Participant.

The Broker will execute proxies for any securities held in the Brokerage Account accounts in accordance with written directions of any Participant.

OTHER PROVISIONS OF THE PLAN

SECTION 17. LOANS

(a) A Participant may borrow a proportion of the Current Market Value of his or her Savings, Participating Employer and Discretionary Contributions which are eligible for transfer under Section 9 of this Plan ("Eligible Loan Account Balance").

A Participant may not borrow Restricted Discretionary Contributions or Employer Retirement Income Contributions. In addition, a Participant may not borrow Participating Employer Contributions, or Discretionary Contributions, made on or after January 1, 2011 or investment gains thereon.

A Participant shall pay a $100 processing fee, or such other amount as may be designated by the Plan Administrator, for each loan request. The fee will be included in the loan amount, subject to the limitations of this Section 17, and deducted prior to distribution of the loan.

(b) A loan to a Participant, when added to the balance of any other outstanding loans the Participant has under the Plan, cannot exceed the lesser of:

(1) $50,000 reduced to the extent of the highest outstanding loan balance of the Participant's loans outstanding during the 365 day period immediately preceding the date on which the loan is made; or

(2) 50% of the sum of the Participant's (A) Eligible Loan Account Balance, plus (B) Restricted Discretionary Contributions and vested portion of Employer Retirement Income Contributions balances.

A Participant may refinance any general purpose loan for any reason at any time (but only once in a twelve-month period), as may be permitted under the Code or ERISA.

(c) Each loan to a Participant is secured by a promissory note under which the Participant pledges and grants the Trustee an interest in the Participant's Eligible Loan Account Balance to the extent of the unpaid loan.

(d) All loans to Participants are treated as investments of plan assets in their respective accounts. All principal and interest associated with a Participant's repayment of a loan are credited to his or her Plan account.

(e) The Plan Administrator has developed a procedure in accordance with the Code and ERISA under which such loans from the Plan will be made available to Participants, which procedure has been approved by the Benefits Management Committee.

(f) Loan repayments will be suspended under this Plan during a period of military service as permitted under Section 414(u)(4) of the Internal Revenue Code and the regulations promulgated under Section72(p) of the Code. Upon the Participant's return to active employment, loan repayments will resume and the period of repayment extended in direct proportion of the Participant's period of absence for military leave.

SECTION 18. TRUST

All assets of the Plan are held in trust for the Plan, except as otherwise permitted by applicable law. Alcoa has entered into a trust agreement with a national banking association which acts as Trustee under the Plan. The Board or its designee may, from time to time, amend such trust agreement (subject to its terms), remove such Trustee or any Successor Trustee and upon removal or resignation of a Trustee, appoint a Successor Trustee.

SECTION 19. ADMINISTRATION

(a) <u>Duties of Plan Administrator</u>. The Plan Administrator or its Designee are responsible for the preparation and the filing with governmental agencies or the furnishing to Participants and Beneficiaries, of all summaries, descriptions, annual and other reports, notices and other documents and information which are required to be so prepared and filed or furnished under ERISA or the Code, retain appropriate records and also have all of the other responsibilities and duties of the administrator of the Plan as set forth in ERISA, except as otherwise provided in the Plan. Each Participating Employer by whom a Participant is employed furnishes to the Plan Administrator or its Designee any records required for the foregoing.

(b) The Benefits Management Committee. Except as provided in Section 16 and in paragraph (a) of this Section, the complete authority to control and manage the operation and administration of the Plan is placed in the Benefits Management Committee, which consists of one or more persons appointed from time to time by the Board.

(c) Duties of Benefits Management Committee. Subject to the limitations of the Plan, the Benefits Management Committee has the discretionary authority to: (1) construe and interpret the Plan, (2) interpret administrative forms and other information, (3) make credibility findings, and (4) establish supplemental regulations for the administration of the Plan and the transaction of its business. All actions, determinations and interpretations of the Benefits Management Committee will be performed in a uniform and nondiscriminatory manner to all Participants in similar circumstances. All interpretations of the Plan and determinations of disputed questions made by the Benefits Management Committee are conclusive, final and binding upon the Participating Employers, Participants, Beneficiaries, other employees and any other individuals claiming rights under the Plan, subject to a claimant's request under paragraph (e) of this Section to have the Benefits Management Committee review the denial of a claim. When making an interpretation or determination, the Benefits Management Committee is entitled to rely upon information furnished by the individual, Participant, Beneficiary or Participating Employer, unless in accordance with an appeals procedure established by the Benefits Management Committee the claimant establishes to the satisfaction of the Benefits Management Committee that Continuous Service, compensation or other records are erroneous.

(d) Application for Benefits. Each person applying for a benefit under the Plan must furnish all information required under procedures approved by the Benefits Management Committee.

(e) Review of Denial of Benefits. If any applicant's claim for benefits under the Plan is denied, the applicant will be notified in writing of such denial. Such notice will set forth the specific reasons for such denial and will be written in a manner calculated to be understood by the applicant. The applicant will be afforded a reasonable opportunity for a full and fair review by the Benefits Management Committee or its Designee of the decision denying his or her claim for benefits, in accordance with a claims procedure which the Benefits Management Committee adopts. After the final determination of an appeal by the Benefits Management Committee or its Designee, the applicant must file any litigation arising out of the underlying facts or circumstances giving rise to such claim and appeal, under ERISA or otherwise, within one hundred eighty (180) days following the date of the final notice provided by the Benefits Management Committee or its Designee.

(f) Extent of Benefits Management Committee's Responsibility. The members of the Benefits Management Committee will act in a prudent manner in the performance of their duties. No member will be personally liable by virtue of any contract, agreement, bond or other instrument made or executed by or on behalf of such member as a member of the Benefits Management Committee. To the extent permitted by ERISA, no member of the Benefits

Management Committee will be liable for any mistake of judgment made by himself or herself or any other member, nor for any loss, unless resulting from his or her own gross negligence or willful misconduct, and no member will be liable for the neglect, omissions or wrongdoing of any other member thereof, or of the agents or counsel of the Benefits Management Committee. To the extent permitted by law, Alcoa will indemnify and save harmless each member of the Benefits Management Committee against all expenses and liabilities arising out of his or her services as such, except for expenses and liabilities arising from such member's own gross negligence or willful misconduct as determined by the Board.

(g) Relationship to Other Fiduciaries. Each fiduciary in carrying out its responsibilities under the Plan may rely upon any direction, information or action of another fiduciary as being proper under this Plan or the documents under which the assets of the Plan are managed, and is not required to inquire into the propriety of any such direction, information or action. It is intended under this Plan and such documents that each fiduciary is responsible for the proper exercise of its own powers, duties, responsibilities and obligations under this Plan and such documents and is not responsible for any act or failure to act of another fiduciary, except as otherwise provided by ERISA.

(h) Multiple Fiduciaries. Any person or group of persons may serve in more than one fiduciary capacity with respect to the Plan.

(i) Further Allocation of Fiduciary Duties. Any two or more fiduciaries named herein or appointed by the Board as provided herein may from time to time agree in writing with respect to the allocation of duties and responsibilities under the Plan, including fiduciary responsibilities, among the fiduciaries so agreeing, provided however that any reallocation of fiduciary responsibilities clearly allocated by the Plan or by the Board requires prior approval of the Board.

(j) Delegation of Fiduciary Duties. Any fiduciary named herein or appointed by the Board as provided herein may designate another person or persons to carry out any or all of the duties and fiduciary responsibilities which it has under the Plan and which are specified in such designation except that no Trustee may delegate fiduciary responsibilities with respect to investment functions without the prior approval of the Board.

(k) Delegation of Ministerial Duties. Any fiduciary named herein, appointed by the Board as provided herein or designated under paragraph (j) above may delegate ministerial duties as follows: employ one or more persons to render advice, including legal and accounting services, with regard to any responsibility such fiduciary has under the Plan; may appoint ministerial agents (including brokers or others who may execute investment transactions); and may delegate to others its clerical and other non-fiduciary functions.

(l) No Added Remuneration for Employees. No member of the Benefits Management Committee and no other person who renders services to or for the Plan may receive remuneration for services as such if he or she also is an employee of Alcoa, a Subsidiary or Affiliate.

SECTION 20. AMENDMENT, MODIFICATION, SUSPENSION OR TERMINATION

(a) Rights Reserved. Alcoa reserves the right, by action of the Board or the Benefits Management Committee, taken in accordance with the Board's or Benefits Management Committee's operating procedures, (1) to amend, modify, suspend or terminate the Plan or to suspend or completely discontinue contributions to the Plan, and (2) to terminate the Participation in the Plan of any Participating Employer or any designated group of Eligible Employees employed either within or outside the U.S. Any Participating Employer may terminate its participation in the Plan or suspend or discontinue its contributions under the Plan at any time upon 30 days prior written notice to the Plan Administrator. Such 30 day notice requirement may be waived by the Benefits Management Committee. No such amendment or other action relating to the Plan may reduce the amounts then credited to any Participant's account, or provide or have the effect of providing that the securities and funds held in trust for the Plan or the income thereof may be used for or devoted to purposes other than the exclusive benefit of Participants and their Beneficiaries and for the payment of expenses of the Plan.

(b) Sale of Assets, etc. In the event any assets of any business of any Participating Employer are transferred to another entity by sale, merger, consolidation or otherwise, and the entity to which said assets are transferred has in effect, or thereupon establishes, a tax-qualified plan and related trust for the exclusive benefit of employees which qualify under the applicable provisions of the Code, all assets under the Plan, held in the accounts of Participants who continue in the employment of the transferee entity, may be transferred and paid, for their respective accounts, to the trust for the tax-qualified plan of said transferee entity, provided that any such transfer of investments will be effected in such manner as to preclude, for federal income tax purposes, a termination of the Plan or the constructive receipt of benefits thereunder with respect to said Participants.

(d) Transfer of Plan Assets.

(1) Notwithstanding the foregoing, in the event of any merger or consolidation of the Plan with, or a transfer of any of the assets and liabilities of the Plan to any other plan, each affected Participant must (as if such plan were terminated immediately after such merger, consolidation or transfer) be entitled to a benefit under such other plan which is equal to or greater than the benefit he or she would have been entitled to receive under the Plan immediately prior to such merger, consolidation or transfer (as if the Plan had then terminated). In the event that assets are transferred to this Plan from any other plan sponsored by Alcoa or any Subsidiary or Affiliate, each Participant who has assets transferred from such plan or plans will be entitled to a benefit under this Plan which is equal to or greater than the benefit he or she had under such other plan. Any protected optional form of benefits provided under said plan may be maintained under this Plan. These provisions do not constitute a guaranty against investment losses.

(2) In the event a participant in a plan named below ("Alcoa Savings Plans"), becomes an Eligible Employee under this Plan, all of the participant's accounts in the applicable Alcoa Savings Plan will be transferred to analogous accounts in this Plan as soon as reasonably practical after the Plan Administrator or Designee receives notice.

Alcoa Retirement Savings Plan for Bargaining Employees;

Alcoa Retirement Savings Plan for Salaried Employees; and

Alcoa Retirement Savings Plan for Fastening Systems Employees.

(3) In the event a Participant ceases to be an Eligible Employee under this Plan and the Participant becomes an eligible employee under one of the Alcoa Retirement Savings Plans listed in (2) above, all of the Participant's accounts will be transferred to analogous accounts in the applicable Plan, as soon as reasonably practical after the Plan Administrator or Designee receives notice and the Participant ceases to be a Participant, and will be entitled to no further benefits under this Plan.

SECTION 21. ADMINISTRATIVE EXPENSES

Except as otherwise provided in the Plan, all costs and expenses incurred in administering the Plan, including the expenses of the Benefits Management Committee, the fees and expenses of the Trustee, the fees and charges payable under the investment arrangements, and other legal and administrative expenses, are paid by the Plan.

Investments in the Core Funds will be subject to an administrative expense fee, which will be used to pay the expenses of the Plan. Initially the fee will be set at five basis points per year, and will be charged on a daily basis. The fee will be periodically adjusted by the Plan Administrator based on the actual expenses of the Plan.

SECTION 22. SELECTION OF BENEFICIARIES

(a) Designation of Beneficiary. Subject to such administrative procedures as may be adopted from time to time, the Beneficiary with respect to all of the assets in the accounts of a Participant will be Participant's spouse if then living, or if not, the Participant's estate. With the written notarized consent of a Participant's spouse, a Participant may file with the Plan Administrator or its Designee a written designation of a Beneficiary or Beneficiaries other than his or her spouse. In the event the designation of such other Beneficiary is revoked in writing by the Participant, his or her spouse will become the Beneficiary of said assets until such time as the Participant, with his or her spouse's written notarized consent, designates in writing another Beneficiary or Beneficiaries.

In the event a Participant certifies that he or she does not have a spouse, a Beneficiary or Beneficiaries with respect to all or part of the assets in the accounts of the Participant may be designated or revoked by the sole action of the Participant.

If there is no designated Beneficiary, or if no Beneficiary is living at the time of the Participant's death, the Beneficiary is the Participant's spouse if then living, or if not, the Participant's estate.

Written designations of a primary Beneficiary or a contingent Beneficiary to receive the assets of a Participant in the case where the primary Beneficiary is deceased, spousal consents, and revocations are made on a form or forms approved by the Plan Administrator. Any such written designation, consent or revocation become effective on the calendar day on which such designation, consent or revocation is Properly Received. After the death of a Participant, a properly designated Beneficiary may name his or her own Beneficiary to receive a distribution of the Beneficiary's account balances when the Beneficiary is deceased ("Subsequent Beneficiary"). A Subsequent Beneficiary shall receive a total distribution of the Subsequent Beneficiary's account balance within the greater of: (i) ninety (90) days after death of the Beneficiary who named such Beneficiary or (ii) five (5) years of the Participant's death.

(b) Other Payments. In case of incapacity of a Participant or Beneficiary entitled to a benefit under the Plan, benefit payment are made to such person's legal representative who makes claim therefore, or if no such claim has been received, to such other person or persons as the Benefits Management Committee, utilizing objective criteria, selects from among dependents, next of kin or friends. Any payment of a benefit under the Plan in accordance with the provisions of this Section is a complete discharge of any liability for the payment of such benefit under the Plan.

SECTION 23. PARTICIPANT'S STATEMENT

A statement showing each Participant's interest in each of the Plan's Investment Funds will be made available at least quarterly.

SECTION 24. EFFECTIVE DATE OF PLAN

The Plan is amended and restated effective January 1, 2015.

SECTION 25. CONSTRUCTION

It is intended that the Plan conform to the applicable requirements of ERISA and the Code, and that the Plan and related trust agreement are considered one if and to the extent necessary for compliance therewith. Except to the extent otherwise provided in ERISA and the Code, the Plan is construed, regulated and administered under the laws of the Commonwealth of Pennsylvania, including its applicable statute of limitations (as such may be superceded by any limitations period provided under the terms of the Plan).

APPENDIX A

LIMITATIONS AND DISCRIMINATION TESTING

1. Pre-Tax Savings for any Plan Year of a Participant is subject to the following limitations:

(a) The applicable limit as defined in Treasury Regulation section 1.402(g)-1(d) with respect to the Pre-Tax Savings of this Plan and elective deferrals of all other plans, contracts, or arrangements of the employer;

(b) if the Participant is a Highly Compensated Employee with respect to any Participating Employer for that year, the amount that may be made on his or her behalf in compliance with the special discrimination tests of Sections 401(k) and 401(m) of the Code for that year, as applied separately to each Plan;

(c) the amount deductible by the Participating Employer for that year under Section 404 of the Code; and

(d) the maximum permitted amount under Appendix B of the Plan.

2. To conform the operation of the Plan to the requirements of Sections 401(k) and 401(m) of the Code and the limitations of Paragraphs (1)(a) and (1)(b) above with respect to any Participant, the Plan Administrator may, without that Participant's consent:

(a) prospectively modify or revoke his or her election to have Savings, Participating Employer Contributions, Discretionary Contributions, and Restricted Discretionary Contributions made on his or her behalf,

(b) distribute to him or her the amount by which the Pre-Tax Savings made on his or her behalf for any Year exceeds the limitation of Paragraph (1)(a) above for that year plus the amount of any income allocable to such excess (but not more than his Pre-Tax Savings account balance) by the April 15 next following the end of that Plan Year;

(c) distribute to him or her the amount by which the Pre-Tax Savings made on his or her behalf for any Plan Year exceeds the limitations of Paragraph (1)(b) above for that year (as determined in accordance with Section 401(k)(8)(B) of the Code) plus the amount of any income allocable to such excess (but not more than his Pre-Tax Savings account balance) by the end of the Plan Year following the Plan Year for which the amounts were contributed; and

(d) make appropriate adjustments to his or her Pre-Tax Savings account to reflect such distributions.

3. Such modification or revocation described in 2. above is made only if necessary under one of the following circumstances:

(a) to ensure that the discrimination tests of Section 401(k) of the Code governing permissible levels of Pre-Tax Savings contributions for both the ESOP and non-ESOP portions of the Plan are met for such Plan Year, or to ensure that one of the following Average Actual Deferral Percentage tests are met for both the ESOP and non-ESOP portions of the Plan for such Plan Year;

(b) to ensure that a Participant's annual additions for any calendar year will not exceed the limitations of Appendix B; or

(c) to ensure deductibility of the Employer's entire contribution to the Plan for federal income tax purposes.

4. Definitions. For purposes of this Appendix A, the following terms are defined as follows:

(a) "Actual Deferral Percentage" means the ratio, expressed as a percentage calculated to the nearest one-hundredth of one percent, of the amount of Pre-Tax Savings on behalf of an Eligible Employee for a Plan Year to the Eligible Employee's Compensation for the Plan Year, whether or not the employee was a Participant for the entire Plan Year. A Highly Compensated Employee's Savings include such savings for the Plan Year which is in excess of the limitations set forth in Section 415(c)(1) of the Code ("Excess Pre-Tax Savings"), but exclude Excess Pre-Tax Savings for Non Highly Compensated Employees. Any Eligible Employee who does not elect to make Pre-Tax Savings and who does not receive Qualified Matching Contributions for a Plan Year will have zero Actual Deferral Percentage for the Plan Year.

(b) "Average Actual Deferral Percentage" means, for the group of Eligible Employees who are Highly Compensated Employees for a Plan Year or the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year, the average of the Actual Deferral Percentages of all Eligible Employees in such group for the Plan Year.

(c) "Average Contribution Percentage" means, for the group of Eligible Employees who are Highly Compensated Employees for a Plan Year or the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year, the average of the Contribution Percentages of all Eligible Employees in such group for the Plan Year.

(d) "Contribution Percentage" means the ratio, expressed as a percentage calculated to the nearest one-hundredth of one percent, of the sum of Participating Employer Contributions (other than Qualified Matching Contributions treated as Elective Deferrals under paragraph 7 of this Appendix) and any After-Tax Savings on behalf of an Eligible Employee for a Plan Year to the Employee's Compensation for the Plan Year, whether or not the employee was a Participant for the entire Plan Year. For these purposes, an Eligible Employee's Contribution Percentage for any Plan Year is calculated by excluding any forfeitures of Excess Aggregate Contributions allocated to the Eligible Employee's account for the Plan Year.

(e) “Compensation” means the total amount of compensation (within the meaning of Section 415(c)(3) of the Code, and subject to the limitation of Section 401(a)(17) of the Code) received by an employee from the Employer while an Eligible Employee under the Plan during the Plan Year. An Eligible Employee’s Compensation for a Plan Year includes all Pre-Tax Savings made to the plan for the Plan Year, and all other such employee savings made by the Employer for the Plan Year to any other plan on behalf of the employee that are not currently includible in the gross income of the employee under Sections 125, 132(f)(4), 402(a)(8), 402(h) or 403(b) of the Code, provided that Alcoa has elected to treat all such elective contributions as compensation with respect to all employees under all plans of the Participating Employer.

In applying the limitation of Section 401(a)(17) of the Code, effective January 1, 1997, the family aggregation rules under this Appendix no longer apply.

(f) “Eligible Employee” means, with respect to any Plan Year, any employee who is eligible to commence participation in the Plan under Section 1 of the Plan and to have Savings made to the Plan under Section 2 of the Plan for the Plan Year, regardless of whether any contributions are made to the Plan on behalf of the employee for the Plan Year.

(g) “Excess Contributions” means, with respect to any Plan Year, the excess of the aggregate amount of Pre-Tax Savings, including Qualified Matching Contributions treated as Elective Deferrals under paragraph 7 of this Appendix, actually made to the Plan on behalf of Highly Compensated Employees for the Plan Year over the maximum amount of such contributions permitted under paragraph 5 of this Appendix.

(h) “Excess Aggregate Contributions” means, with respect to any Plan Year, the excess of the aggregate amount of Participating Employer Contributions and any After-Tax Savings actually made to the Plan on behalf of Highly Compensated Employees for the Plan Year over the maximum amount of such contributions permitted under paragraph 9 of this Appendix.

(i) “Employer” means Alcoa Inc. and all other entities as required to be covered under Section 414(c) of the Code.

(j) “Family Member” means, with respect to any Eligible Employee, an individual described in Section 414(q)(6)(B) of the Code.

(k) “Highly Compensated Employee” includes, for any Plan Year, the following Employees:

(i) A Highly Compensated Active Employee includes any employee (other than employees who are non-resident aliens and receive no earned income from sources within the U.S.) who performs service for the Employer during the Determination Year and who during the Look-Back Year:

(1) was a 5 % owner (within the meaning pursuant to Section 416(i)(1) of the Code) at any time during the year or the preceding year, or

(2) for the preceding year received Compensation from the Employer in excess of $80,000 (as adjusted pursuant to Section 415(d) of the Code) for such year.

(ii) A Highly Compensated Former Employee means:

(1) any employee who was a Highly Compensated Employee when the employee separated from service, or

(2) any employee who was a Highly Compensated Employee at any time after attaining the age 55.

(l) "Non-Highly Compensated Employee" means, for any Plan Year, an employee who is not a Highly Compensated Employee.

(m) "Qualified Matching Contributions" means any Participating Employer Contributions to this Plan on behalf of Eligible Employees, provided that amounts attributable to such contributions are not distributable merely on account of the Employee's hardship and are immediately vested.

5. Average Actual Deferral Percentage Test. For each Plan Year, the Plan must satisfy one of the following Average Actual Deferral Percentage tests with respect to Pre-Tax Savings, and Qualified Matching Contributions treated as Pre-Tax Savings under paragraph 7 of this Appendix, made to both the ESOP and non-ESOP portions of the Plan for the Plan Year:

(a) the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by 1.25; or

(b) the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by two, provided that the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year does not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees by more than two percentage points.

(c) The Average Actual Deferral Percentage Test for all contributions to the ESOP portion of the Plan will be computed separately under this Section.

6. Special Rules.

(a) Aggregation of Plans. In the event that this Plan satisfies the requirements of Section 401(a)(4), 401(k) or 410(b) of the Code only if aggregated with one or more other plans, or if one or more other plans satisfy the requirements of such sections of the Code only if aggregated with this Plan, then the provisions stated herein will be applied by determining the Actual Deferral Percentages of Employees as if all such plans (excluding other ESOPs) were a single plan. For plan years beginning after December 31, 1989, plans may be aggregated in order to satisfy Section 401(k) of the Code only if they have the same plan year. Notwithstanding the foregoing, certain plans will be treated as separate if mandatorily disaggregated under regulations under Section 401(k) of the Code.

(b) In the event the Plan does not pass the ADP test, the test will be disaggregated by removing from the test all participants who have not attained age 21 and completed one eligibility year within 6 months of the last day of the plan year.

(c) All ESOP portions of the Savings Plan shall be aggregated for ADP with the Non-ESOP portions of the Savings Plan.

7. Treatment of Qualified Matching Contributions. If any Qualified Matching Contributions are made on behalf of Eligible Employees for a Plan Year, Alcoa may elect, in accordance with the regulations of the Secretary of Treasury under Section 401(k) of the Code, to treat all or a portion of such Qualified Matching Contributions as Pre-Tax Savings for purposes of calculating the Actual Deferral Percentages of Eligible Employees for the Plan Year. Any such Qualified Matching Contributions for a Plan Year must be made no later than the end of the 12 month period immediately following the close of the Plan Year.

8. Correction of Excess Contributions.

(a) General Rule. If the Plan does not satisfy one of the Average Actual Deferral Percentage tests of paragraph 5 of this Appendix as of the end of a Plan Year, the Excess Contributions for the Plan Year will be corrected if the Excess Contributions for the Plan Year are timely recharacterized as employee After-Tax Savings contributions in accordance with subsection (c) below or timely distributed to Highly Compensated Employees in accordance with subsection (d) below.

(b) Allocation of Excess Contributions. Effective for Plan Years beginning after December 31, 1996, in the event the nondiscrimination requirements of paragraph 5 of this Appendix are not satisfied for a Plan Year, the “deferral percentage leveling method” described in the preceding paragraph is performed as a first step in order to determine the total dollar amount of Excess Contribution to be distributed: a calculation is made to determine the dollar amount of Elective Deferrals necessary to reduce the deferral percentage of the Highly Compensated Employee with the highest deferral percentage to be equal to the deferral percentage of the Highly Compensated Employee with the next highest deferral percentage, and where necessary, calculations are made to determine the dollar amounts of reductions of the deferral percentage of subsequent Highly Compensated Employees that may be required in order

to satisfy the nondiscrimination requirements in paragraph 5 of this Appendix. The total dollar amount of Excess Contribution that must be distributed for the Plan Year is the sum of the dollar amounts so calculated for each Highly Compensated Employee whose deferral percentage is so reduced.

Distribution of the total amount of Excess Contribution determined in the paragraph above is made using the "dollar leveling method." Excess Contributions of the Highly Compensated Employee with the largest dollar amount of contributions for the Plan Year shall be distributed to the extent necessary to cause that Highly Compensated Employee's dollar amount of Excess Contributions to equal the dollar amount of Excess Contributions of the Highest Compensated Employee with the next highest dollar amount of Excess Contributions for the Plan Year. If the total amount distributed is less than the amount of total Excess Contribution, then both Highly Compensated Employees' amounts are reduced to the same dollar level of the Highly Compensated Employee electing the third highest dollar amount and the dollar leveling process is repeated until the total dollar amount that should be reduced as calculated in the above paragraph is distributed. However, if reduction of a lesser amount of contributions would equal the total dollar amount of Excess Contributions that must be distributed for the Plan Year, the lesser amount is distributed.

A participant who has had his contributions reduced in accordance with this subparagraph shall have the amount of such reduction paid to him in cash as soon as practicable, subject to applicable payroll taxes. The amount of the Excess Contributions to be distributed shall be reduced by excess deferrals under 402(g) previously distributed for the Plan Year. The distributions of Excess Contributions shall include the income allocable thereto, including both the income allocable for the Plan Year for which the Contributions were made and the income for the period between the end of that Plan Year and the date as of which the distribution is made. Effective January 1, 2008, the distribution of Excess Contributions shall include the income or loss allocable only for the Plan Year of the Excess Contributions, and will not include the income or loss for the period between the end of the Plan Year and the date distribution is made. In addition, any Company Matching Contributions associated with the Excess Contribution shall be treated as forfeiture and used to reduce the Employer's contribution under Section 3 of the Plan.

(c) Recharacterization of Excess Contributions. Any recharacterization of Excess Contributions as employee After-Tax Savings will be accomplished by the Plan Administrator in the manner provided in subsection (b) above within 2 ½ months after the close of the Plan Year, providing such notices and following such procedures as required by regulations of the Secretary of Treasury, and will be deemed to occur no earlier than the date on which the last Highly Compensated Employee is informed in writing of the amount of his or her recharacterized Excess Contributions and the consequences thereof. Any Excess Contributions that are recharacterized as employee after-tax contributions for a Plan Year will, in combination with other Participating Employer Contributions to the Plan for the Plan Year, satisfy the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year. Any recharacterized Excess Contributions remain nonforfeitable under the Plan and are subject to the same distribution requirements as Pre-Tax Savings. Recharacterized Excess Contributions are taxable to the Highly Compensated Employee for the year in which the Highly Compensated Employee could have originally elected to receive the Excess Contributions amount in cash.

(d) Distribution of Excess Contributions. If any Excess Contributions allocated to Highly Compensated Employees for a Plan Year are not corrected by recharacterization under (c) above, then such Excess Contributions, plus any income and minus any loss allocable thereto, will be distributed to Highly Compensated Employees no later than 12 months following the close of the Plan Year.

(e) Income or Loss Allocable to Excess Contributions. The income or loss allocable to the Excess Contributions referred to in subsection (d) above include the allocable income or loss for the Plan Year of the Excess Contributions and the allocable income or loss for the period between the end of the Plan Year and the distribution of the Excess Contributions, calculated as follows:

The income or loss allocable for the Plan Year of the Excess Contributions is determined by multiplying the total investment income or loss (including dividends, interest, realized gains or losses, and unrealized appreciation or depreciation) allocable to the Participant's Pre-Tax Savings and amounts treated as Pre-Tax Savings under paragraph 7 of this Appendix for the Plan Year by a fraction, the numerator of which is the Excess Contributions allocated to the Participant for the Plan Year, and the denominator of which is the total account balance attributable to the Participant's Pre-Tax Savings and amounts treated as Pre-Tax Savings under paragraph 7 of this Appendix as of the end of the Plan Year, reduced by the investment gain (or increased by the investment loss) allocated to such total amount for the Plan Year.

Effective January 1, 2008, the income or loss allocable to the Excess Contributions referred to in subsection (d) above will include only the income or loss allocable for the Plan Year of the Excess Contributions, and not the income or loss for the period between the end of the Plan Year and the distribution of Excess Contributions.

(f) Coordination with Excess Pre-Tax Savings. The amount of any Excess Contributions to be recharacterized under subsection (c) above or distributed under subsection (d) above with respect to any Highly Compensated Employee for a Plan Year is reduced by any excess Pre-Tax Savings previously distributed to the Highly Compensated Employee for the employee's taxable year ending with or within the Plan Year.

(g) Accounting for Excess Contributions. The amount of Excess Contributions allocated to a Highly Compensated Employee for a Plan Year that is recharacterized under subsection (c) above or distributed under subsection (d) above is attributed first to the Participant's Pre-Tax Savings for the Plan Year and then, to the extent such Excess Contributions exceed the Participant's Pre-Tax Savings for the Plan Year, attributed to amounts treated as Pre-Tax Savings under paragraph 4 of this Appendix in proportion to the amounts of such contributions on behalf of the Participant for the Plan Year.

9. Average Contribution Percentage Tests. For each Plan Year for which Participating Employer Contributions are made to the Plan (other than Qualified Matching Contributions

treated as Pre-Tax Savings for the Plan Year under paragraph 7 of this Appendix) or any After-Tax Savings are made to the Plan (including any Excess Contributions recharacterized as After-Tax Savings for the Plan Year under paragraph 8(c) of this Appendix), both the ESOP and non-ESOP portions of the Plan will satisfy one of the following Average Contribution Percentage tests for the Plan Year:

(a) the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by 1.25; or

(b) the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by two, provided that the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year does not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees by more than two percentage points.

(c) the Average Contribution Percentage Test applies separately to the ESOP portion of the Plan.

10. Special Rules.

(a) Aggregation of Plans. In the event that this Plan satisfies the requirements of Section 401(a)(4), 401(m) or 410(b) of the Code only if aggregated with one or more other plans, or if one or more other plans satisfy the requirements of such sections of the Code only if aggregated with this Plan, then the provisions stated herein will be applied by determining the Contribution Percentages of Employees as if all such plans were a single plan. For plan years beginning after December 31, 1989, plans may be aggregated to satisfy Section 401(m) of the Code only if they have the same plan year. Notwithstanding the foregoing, certain plans will be treated as separate if mandatorily disaggregated under regulations under Section 401(k) of the Code.

(b) In the event the Plan does not pass the ACP test, the test will be disaggregated by removing from the test all participants who have not attained age 21 and completed one eligibility year within 6 months of the last day of the plan year.

(c) All ESOP portions of the Savings Plan shall be aggregated for ACP with the Non-ESOP portions of the Savings Plan.

11. Treatment of Pre-Tax Savings as Participating Employer Contributions.

Alcoa may elect, in accordance with the regulations of the Secretary of Treasury under Section 401(m) of the Code, to treat all or a portion of the Pre-Tax Savings made on behalf of Eligible Employees for a Plan Year as Participating Employer Contributions for purposes of

calculating the Contribution Percentages of Eligible Employees for the Plan Year. Any such Pre-Tax Savings for a Plan Year must be made no later than the end of the 12 month period immediately following the close of the Plan Year. Notwithstanding the preceding, Alcoa may elect to treat Pre-Tax Savings as Participating Employer Contributions for purposes of calculating Contribution Percentages only if one of the Average Actual Deferral Percentage Tests of paragraph 5 of this Appendix is satisfied before the Pre-Tax Savings are treated as Participating Employer Contribution for the Plan Year, and one of the Average Actual Deferral Percentage Tests of paragraph 5 of this Appendix continues to be satisfied for the Plan Year excluding the Pre-Tax Savings treated as Participating Employer Contributions for the Plan Year.

12. Correction of Excess Aggregate Contributions.

(a) General Rule. If the Plan does not satisfy one of the Average Contribution Percentages tests of paragraph 9 of this Appendix as of the end of a Plan Year, the Excess Aggregate Contributions for the Plan Year will be corrected by the Employer if the Excess Aggregate Contributions for the Plan Year are forfeited or timely distributed to Highly Compensated Employees in accordance with subsection (c) below.

(b) Allocation of Excess Aggregate Contributions. Effective as of January 1, 1997, in the event Excess Aggregate Contributions are made to the Plan for a Plan Year, the Contribution Percentage for the Highly Compensated Employee with the largest dollar amount of deferrals for the Plan Year will be reduced to minimum extent necessary either:

(i) to enable the Plan to satisfy one of the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year; or

(ii) to cause the Highly Compensated employee's Contribution Percentage to equal the next highest Contribution Percentage of any Highly Compensated Employee for the Plan Year.

This process is repeated until the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year is sufficiently reduced to enable the Plan to satisfy one of the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year. The amount of Excess Aggregate Contributions to be allocated to each Highly Compensated Employee for the Plan Year is equal the total After-Tax Savings and Participating Employer Contributions, including Pre-Tax Savings on behalf of the Highly Compensated Employee for the Plan Year minus the amount determined by multiplying the Highly Compensated Employee's reduced Contribution Percentage (as determined above) by the employee's Compensation for the Plan Year.

(c) Forfeiture or Distribution of Excess Aggregate Contributions. Excess Aggregate Contributions, plus any income or minus any loss allocable thereto, must be forfeited to the extent attributable under subsection (f) below to Participating Employer Contributions that are not vested, and otherwise distributed to Highly Compensated Employees no later than 12 months following the close of the Plan Year.

(d) Income or Loss Allocable to Excess Aggregate Contributions. The income or loss allocable to the Excess Aggregate Contributions referred to in subsection (c) above include the allocable income or loss for the Plan Year of the Excess Aggregate Contributions and the allocable income or loss for the period between the end of the Plan Year and the distribution of the Excess Aggregate Contributions, calculated as follows:

(i) the income or loss allocable for the Plan Year of the Excess Aggregate Contributions is determined by multiplying the total investment income or loss (including dividends, interest, realized gains or losses, and unrealized appreciation or depreciation) allocable to the Participant's After-tax Savings, Participating Employer Contributions, and any other amounts taken into account under this section for the Plan Year by a fraction, the numerator of which is the Excess Aggregate Contributions allocated to the Participant for the Plan Year, and the denominator of which is the total account balance attributable to the Participant's After-tax Savings, Participating Employer Contributions and other amounts taken into account under this section as of the end of the Plan Year, reduced by the investment gain (or increased by the investment loss) allocated to such total amount for the Plan Year;

(ii) the income or loss allocable to the period (if any) between the end of the Plan Year of the Excess Aggregate Contributions and the distribution of the Excess Aggregate Contributions by the Plan is determined by multiplying the total investment income or loss allocated to the Participant's Participating Employer Contributions and amounts treated as Participating Employer Contributions under paragraph 11 of this Appendix for such period by a fraction determined under the method described in (i) above. In the alternative, the income or loss allocable to the period between the end of the Plan Year of the Excess Aggregate Contributions and the distribution of the Excess Aggregate Contributions equals 10% of the income or loss allocable to the Participant's Excess Aggregate Contributions for the Plan Year (as determined under (i) above multiplied by the number of calendar months that elapse between the end of the Plan Year and the date of distribution. For these purposes, a distribution occurring on or before the fifteenth day of a calendar month is treated as having been made on the last day of the preceding calendar month, and a distribution occurring after the fifteenth date of a calendar month is treated as having been made on the first day of the following calendar month.

The income or loss will include only the income or loss allocable for the Plan Year of the Excess Aggregate Contributions, and not the income or loss for the period between the end of the Plan Year and the distribution of Excess Aggregate Contributions.

(e) Coordination with Excess Contributions. The determination of the amount of Excess Aggregate Contributions for a Plan Year is made after the determination of the amount of any Excess Contributions for the Plan Year.

(f) Accounting for Excess Aggregate Contributions. The amount of Excess Aggregate Contributions allocated to a Highly Compensated Employee for a Plan Year is attributed to Participating Employer Contributions and any amounts treated as Participating Employer Contributions in proportion to the amounts of such contributions on behalf of the Participant for the Plan Year.

13. Recordkeeping Requirements.

(a) Average Actual Deferral Percentage Tests. The Employer maintains records sufficient to demonstrate satisfaction of the Average Actual Deferral Percentage tests of paragraph 5 of this Appendix for each Plan Year, and the extent to which any Qualified Matching Contributions are treated as Pre-Tax Savings under paragraph 7 of this Appendix for purposes of such tests. The determination of Eligible Employees' Actual Deferral Percentages, and the disposition of all Pre-Tax Savings (and any Qualified Matching Contributions treated as Pre-Tax Savings under paragraph 7 of this Appendix) on behalf of Participants, must satisfy such other requirements as may be prescribed by the Secretary of Treasury.

(b) Average Contribution Percentage Tests. The Employer maintains records sufficient to demonstrate satisfaction of the Average Contribution Percentage tests of paragraph 9 of this Appendix for each Plan Year, and the extent to which any Pre-Tax Savings are treated as Participating Employer Contributions under paragraph 11 of this Appendix for purposes of such tests. The determination of Eligible Employees' Average Contribution Percentages, and the disposition of all Participating Employer Contributions (and any Pre-Tax Savings) on behalf of Participants, must satisfy such other requirements as may be prescribed by the Secretary of Treasury.

14. Distribution of Excess Elective Deferrals. Excess Elective Deferrals means Pre-Tax Savings that is includible in a Participant's gross income under Section 402(g) of the Code to the extent it exceeds the dollar limitation. Excess Elective Deferrals are treated as annual additions under the Plan unless such amounts are distributed no later than the first April 15th following the close of the Participant's taxable year. Excess Elective Deferrals are adjusted for any income or loss up to the date of distribution as calculated under paragraph 8(e) and 12(d) of this Appendix. A Participant is deemed to notify the Plan Administrator of Excess Elective Deferrals that arise by taking into account only those Elective Deferrals made to this Plan and any other plans of the Employer. A Participant may assign any Excess Elective Deferrals made by the Participant to any other plans other than those of the Employer by notifying the Plan Administrator on or before January 15th of the following year.

APPENDIX B

CODE SECTION 415 LIMITATIONS

The limitations imposed by Section 415 of the Code are hereby incorporated by reference. If there is any discrepancy between the provisions of this Plan and the provisions of Code Section 415 and the regulations thereunder, the discrepancy will be resolved in such a way to give full effect to the provisions of Code Section 415.

The maximum annual additions provided by the Plan will be exactly equal to the maximum amounts permitted under Code Section 415 and the regulations thereunder. In the event a Participant's annual additions for any Plan Year would exceed the maximum amount of annual additions permitted under Code Section 415, such Participant's Savings are automatically reduced, in whole or in part, by the amount required to eliminate such excess.

For purposes of applying the limitations described in this Appendix B, compensation will include any differential pay received by a Participant absent for military leave and any payment earned prior to a Participant's separation from employment that is paid within a period ending on the later of i) two and one-half months following the date the Participant separated from employment, or ii) the end of the Plan Year in which the date the Participant separated from employment ("Post-Separation Compensation"). Post-Separation Compensation will include any payments for vacation, sickness, or leave of absence that otherwise would have been included as compensation had the Participant remained employed.

APPENDIX C

TOP HEAVY RULES

(a) This Plan constitutes a "Top Heavy Plan" for a Plan Year if as of the last day of the preceding Plan Year the present value of the cumulative account balances under the Plan for Participants who are Key Employees exceed 60 percent of the present value of the aggregate of all account balances for all Participants in the Plan. A non-Key Employee means any Participant or former Participant who is not a Key Employee.

(b) This Plan constitutes a Top Heavy Plan for a Plan Year if the employee benefit plans which make up the group of plans of which this Plan is considered a part are such that, when aggregated, the sum of (1) the present value of the account balances of Key Employees under all defined contribution plans in the group, and (2) the present value of the cumulative accrued benefits of Key Employees under all defined benefit plans in the group exceed 60 percent of the sum of such amounts for all employees who participate in the plans in the said group.

(1) The group of plans in which this Plan is considered a part includes (A) all plans of Alcoa, the Subsidiaries and Affiliates which enable the particular plans in which a Key Employee participates to meet the qualification requirement of Section 401(a)(4) of the Code or Section 410 of the Code; and, (B) all plans which Alcoa, in its discretion, decides to include, provided that the inclusion of such plan or plans would not prevent the group of plans from meeting the qualification requirements of Sections 401(a)(4) and 410 of the Code. The date upon which the account balances are valued for purposes of calculating the top heavy ratio to determine whether or not the Plan is Top Heavy for a particular Plan Year is the determination date, which is the last day of the preceding Plan Year, or in the case of the first plan year of any plan, the last day of such plan year.

(2) Effective for Plan Years beginning on or after January 1, 2002, the amounts of account balances of an employee as of the determination date are increased by the distributions made with respect to the employee under the plan and any plan aggregated with the plan under Section 416(g)(2) of the Code during the one-year period ending on the determination date. The preceding sentence also applies to distributions under a terminated plan which, had it not been terminated, would have been aggregated with the plan under Section 416(g)(2)(A)(i) of the Code. In the case of a distribution made for a reason other than severance from employment, death, or disability, this provision is applied by substituting "five-year period" for "one-year period."

(3) Effective for Plan Years beginning on or after January 1, 2002, the accounts of any individual who has not performed services for the employer during the one-year period ending on the determination date are not taken into account.

(c) The following provisions are applicable to Participants for any Plan Year with respect to which the Plan is Top Heavy:

(1) The minimum Participating Employer Contribution for a Participant, who is a non-Key Employee and has not separated from service at the end of the Plan Year, must not be less than three percent of his or her Eligible Compensation for the Top Heavy Plan Year. If said allocation is less than three percent of his or her Eligible Compensation, then said allocation is the largest percentage allocated to a Key Employee for the Top Heavy Plan Year. In the event the highest rate allocated to a Key Employee for the Top Heavy Plan Year is less than three percent, Pre-Tax amounts contributed to the Plan are included in determining contributions made on behalf of Key Employees. Compensation for determining a minimum benefit, a minimum contribution and for all other Top Heavy purposes is the Participant's W-2 earnings for the calendar year that ends with the Plan Year.

Effective for Plan Years beginning on or after January 1, 2002, Participating Employer Contributions used to satisfy the minimum contribution requirements are treated as Participating Employer Contributions for purposes of the actual contribution percentage test and other requirements of Section 401(m) of the Code.

(2) With respect to benefits accruing during any Plan Year in which the Plan is Top Heavy, average compensation is limited to amounts not in excess of the amount permitted under Section 401(a)(17) of the Code. If the accrued benefit as of the end of the last Plan Year before the Plan became Top Heavy is greater than the accrued benefit determined by limiting compensation, that higher accrued benefit cannot be reduced.

(3) In the event the Plan is Top Heavy with respect to a Plan Year and ceases to be Top Heavy for a subsequent Plan Year, the Participant's account balance in any such subsequent Plan Year is not less than the Participant's Pre-Tax Savings (subject to adjustment for earnings) computed as of the end of the most recent Plan Year for which the Plan was Top Heavy.

(d) Notwithstanding any of the above, if a non-Key Employee participates in this Plan and a defined benefit pension plan included in a required aggregation group which is top heavy, a minimum allocation of five percent of Section 415 compensation is provided under this Plan. The Plan will not be deemed Top Heavy if ninety percent is substituted for sixty percent in (b)(1) of this Appendix and Participating Employer provides additional contributions to the Plan on behalf of non-Key Employees who participate in both defined benefit and defined contribution plans maintained by a Participating Employer, in amounts at least equal to the amount set forth in Paragraph (c)(1) of this Appendix as modified by substituting "seven and one-half percent" for "three percent." If the non-Key Employee does not participate in a defined benefit plan maintained by Alcoa, a Subsidiary or Affiliate, such employee will receive an additional contribution of four percent.

(e) For Plan Years in which the Plan meets the safe harbor alternative method of discrimination testing described in Paragraph 16 of Appendix A, the term "Top Heavy Plan" described in this Appendix C does not apply.

APPENDIX D

MINIMUM DISTRIBUTION REQUIREMENTS

Section 1. General Rules

1.1. Effective Date. The provisions of this Appendix D will apply for purposes of determining required minimum distributions for calendar years beginning with the 2003 calendar year.

1.2. Precedence. The requirements of this Appendix D will take precedence over any inconsistent provisions of the Plan.

1.3. Requirements of Treasury Regulations Incorporated. All distributions required under this Appendix D will be determined and made in accordance with section 401(a)(9) of the Internal Revenue Code and Treasury regulations §§1.401)(a)(9)-2 through -9, which will override any inconsistent distribution provisions of the Plan. Distribution of any incidental death benefit requirements provided under the Plan will be a distribution for purposes of this Appendix D.

1.4. TEFRA Section 242(b)(2) Elections. Notwithstanding the other provisions of this Appendix D, distributions may be made under a designation made before January 1, 1984, in accordance with section 242(b)(2) of the Tax Equity and Fiscal Responsibility Act (TEFRA) and the provisions of the Plan that relate to section 242(b)(2) of TEFRA.

Section 2. Time and Manner of Distribution.

2.1. Required Beginning Date. The Participant's entire interest will be distributed, or begin to be distributed, to the Participant no later than the Participant's required beginning date.

2.2. Death of Participant Before Distributions Begin. If the Participant dies before distributions begin and there is a designated Beneficiary, the Participant's entire interest will be distributed to the designated Beneficiary by December 31 of the calendar year containing the fifth anniversary of the Participant's death. If the Participant's surviving spouse is the Participant's sole designated Beneficiary and the surviving spouse dies after the Participant but before distributions to either the Participant or the surviving spouse begin, this election will apply as if the surviving spouse were the Participant. This election will apply to all distributions.

If there is no designated Beneficiary as of September 30 of the year following the year of the Participant's death, the Participant's entire interest will be distributed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

2.3. Forms of Distribution. Unless the Participant's interest is distributed in the form of an annuity purchased from an insurance company or in a single sum on or before the required beginning date, as of the first distribution calendar year distributions will be

made in accordance with sections 3 and 4 of this Appendix D. If the Participant's interest is distributed in the form of an annuity purchased from an insurance company, distributions thereunder will be made in accordance with the requirements of section 40l(a)(9) of the Code and the Treasury regulations.

Section 3. Required Minimum Distributions During Participant's Lifetime.

3.1. Amount of Required Minimum Distribution For Each Distribution Calendar Year. During the Participant's lifetime, the minimum amount that will be distributed for each distribution calendar year is the lesser of:

(a) the quotient obtained by dividing the Participant's account balance by the distribution period in the Uniform Lifetime Table set forth in section 1.401(a)(9)-9 of the Treasury regulations, using the Participant's age as of the Participant's birthday in the distribution calendar year; or

(b) if the Participant's sole designated Beneficiary for the distribution calendar year is the Participant's spouse, the quotient obtained by dividing the Participant's account balance by the number in the Joint and Last Survivor Table set forth in section 1.401(a)(9)-9 of the Treasury regulations, using the Participant's and spouse's attained ages as of the Participant's and spouse's birthdays in the distribution calendar year.

3.2. Lifetime Required Minimum Distributions Continue Through Year of Participant's Death. Required minimum distributions will be determined under this section 3 beginning with the first distribution calendar year and up to and including the distribution calendar year that includes the Participant's date of death

Section 4. Required Minimum Distributions After Participant's Death.

4.1. Death On or After Date Distributions Begin.

(a) Participant Survived by Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is a designated Beneficiary, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the longer of the remaining life expectancy of the Participant or the remaining life expectancy of the Participant's designated Beneficiary, determined as follows:

(1) The Participant's remaining life expectancy is calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

(2) If the Participant's surviving spouse is the Participant's sole designated Beneficiary, the remaining life expectancy of the surviving spouse is calculated for each distribution calendar year after the year of the Participant's death using the surviving spouse's age as of the spouse's birthday in that year. For distribution calendar years after the year of the surviving spouse's death, the remaining life

expectancy of the surviving spouse is calculated using the age of the surviving spouse as of the spouse's birthday in the calendar year of the spouse's death, reduced by one for each subsequent calendar year.

(3) If the Participant's surviving spouse is not the Participant's sole designated Beneficiary, the designated Beneficiary's remaining life expectancy is calculated using the age of the Beneficiary in the year following the year of the Participant's death, reduced by one for each subsequent year.

(b) No Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is no designated Beneficiary as of September 30 of the year after the year of the Participant's death, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the Participant's remaining life expectancy calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

4.2. Death Before Date Distributions Begin.

(a) Participant Survived by Designated Beneficiary. If the Participant dies before the date distributions begin and there is a designated Beneficiary, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the remaining life expectancy of the Participant's designated Beneficiary, determined as provided in section 4.1.

(b) No Designated Beneficiary. If the Participant dies before the date distributions begin and there is no designated Beneficiary as of September 30 of the year following the year of the Participant's death, distribution of the Participant's entire interest will be completed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

(c) Death of Surviving Spouse Before Distributions to Surviving Spouse Are Required to Begin. If the Participant dies before the date distributions begin, the Participant's surviving spouse is the Participant's sole designated Beneficiary, and the surviving spouse dies before distributions are required to begin to the surviving spouse under section 2.2, this section 4.2 will apply as if the surviving spouse were the Participant.

Section 5. Definitions.

5.1. Designated Beneficiary. The individual who is designated as the Beneficiary under Section 22 of the Plan and is the designated Beneficiary under section 40l(a)(9) of the Internal Revenue Code and section 1.401(a)(9)-1, Q&A-4, of the Treasury regulations.

5.2. Distribution calendar year. A calendar year for which a minimum distribution is required. For distributions beginning before the Participant's death, the first distribution calendar year is the calendar year immediately preceding the calendar year which contains the Participant's required beginning date. For distributions beginning after the Participant's death, the first distribution calendar year is the calendar year in which distributions are required to begin under section 2.2. The required minimum distribution for the Participant's first distribution calendar year will be made on or before the Participant's required beginning date. The required minimum distribution for other distribution calendar years, including the required minimum distribution for the distribution calendar year in which the Participant's required beginning date occurs, will be made on or before December 31 of that distribution calendar year.

5.3. Life expectancy. Life expectancy as computed by use of the Single Life Table in section 1.401(a)(9)-9 of the Treasury regulations.

5.4. Participant's account balance. The account balance as of the last valuation date in the calendar year immediately preceding the distribution calendar year (valuation calendar year) increased by the amount of any contributions made and allocated or forfeitures allocated to the account balance as of dates in the valuation calendar year after the valuation date and decreased by distributions made in the valuation calendar year after the valuation date. The account balance for the valuation calendar year includes any amounts rolled over or transferred to the Plan either in the valuation calendar year or in the distribution calendar year if distributed or transferred in the valuation calendar year.

5.5 Required beginning date. The date specified in section 13(b) of the Plan.

SCHEDULE A

MERGERS, TRANSFERS, AND RESTATEMENTS

Alcoa Savings Plans Restructuring and Redesign

Effective January 1, 2011, the savings plans sponsored by Alcoa Inc. were restructured and redesigned as follows:

This Alcoa Savings Plan for Subsidiary and Affiliate Employees is restructured and renamed the Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees ("Hourly Non-Bargaining Savings Plan");

On that same date, the assets and liabilities with respect to salaried employees in this Plan are spun off and transferred to the Alcoa Retirement Savings Plan for Salaried Employees, prior to January 1, 2011 named the Alcoa Savings Plan for Non-Bargaining Employees ("Salaried Savings Plan"); and

Participants in the Plan employed by Alcoa Global Fasteners, Inc. are spun off from this Plan to the Alcoa Retirement Savings Plan for Fastener Systems and Commercial Windows Employees ("FS and CW Plan"), a new plan sponsored by the Subsidiary, Alcoa Global Fasteners, Inc.

Transfer of B&C Salaried Employees

Effective as of the close of business on December 31, 2010, the B & C Research Defined Contribution Plan was merged into this Plan, and effective January 1, 2011, the accounts of salaried Participants were spun off and transferred to the Alcoa Retirement Savings Plan for Salaried Employees (prior to January 1, 2011 known as the Alcoa Savings Plan for Non-Bargaining Employees).

Transfer of TRACO Hourly Employees' Accounts from the Alcoa Retirement Savings Plan for Fastener Systems and Commercial Windows Employees to This Plan

Effective January 1, 2012, the amounts standing to the credit in the in the Alcoa Retirement Savings Plan for Fastener Systems and Commercial Windows Employees ("FS-CW Savings Plan") for Alcoa Commercial Windows LLC ("TRACO") Hourly employees were transferred to this Plan, and the liability to pay the benefits of the transferred TRACO employees that were accrued under the FS-CW Savings Plan became the liability of this Plan.

For purposes of transferring the TRACO Hourly Participants' Accounts, each participant's account balance in the investment funds of the FS-CW Savings Plan are automatically transferred to the identical funds in this Plan.

Merger of the Alcoa Retirement Savings Plan for Mill Products Employees.

Effective as of close of business on December 31, 2012, the amounts standing to the credit in the salaried participants' accounts from the Alcoa Retirement Savings Plan for Mill Products Employees will be transferred to the Alcoa Retirement Savings Plan for Salaried Employees and immediately thereafter the Alcoa Retirement Savings Plan for Mill Products Employees

will be merged into this Plan and hourly participant's accounts will be maintained in this Plan. Each such hourly participant's account balance in the investment funds of the Mill Products Plan are automatically transferred to the identical funds in this Plan.

2015 Restatement of Plan

The Plan was amended and restated effective January 1, 2015, to incorporate all amendments adopted to such date and to reflect provisions required by applicable law and regulatory guidance.

Transfer of Certain Firth Rixson Inc., Employee Savings Plan Participants

Effective December 31, 2015, certain actively employed hourly Participants at the Midway, Georgia (Location Code: MDW) location of Firth Rixson Forging LLC (Company Code: 809) covered under the Firth Rixson Inc., Employee Savings Plan ("Firth Plan") were spun off and transferred from the Firth Plan to this Plan effective January 1, 2016. Upon the cessation of their participation in the Firth Plan, the account balances in the Firth Plan for these Participants were transferred to accounts in this Plan, and each Participant's account balance in this Plan was initially invested in the QDIA based on the Participant's age at the time of the transfer. Each Participant's pre-tax deferral election on file with the Firth Plan will transfer to the Plan without further action on the part of the participant; provided, however, that any pre-tax deferral election on file in excess of twenty-five percent (25%) will be limited and modified to equal twenty-five percent (25%) due to the existing maximum pre-tax deferral election in the Plan. New hires into this group also will participate in this Plan.

SCHEDULE B
ALCOA RETIREMENT SAVINGS PLAN FOR HOURLY NON-BARGAINING EMPLOYEES
PARTICIPATING EMPLOYER CONTRIBUTIONS (MATCH) AND
EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (ERIC)
EFFECTIVE ON OR AFTER JANUARY 1, 2015

Company Code	Company Description	*EE Type	LOC	Location Description	Match	ERIC
828	Alcoa Commercial Windows LLC	H	TRA	Traco, Alcoa Commercial Windows LLC	0.5000	Y
010	Alcoa Inc.	H	CLC	Chillicothe, Ohio (ASL)	0.5000	N
010	Alcoa Inc.	H	GCD	Goose Creek, SC (effective November 30, 2014)	1.0000	N
010	Alcoa Inc.	H	LAF	Lafayette, Indiana	1.0000	N
010	Alcoa Inc.	H	POD	Ponder, Texas (ASL)	0.5000	N
010	Alcoa Inc.	H	STS	San Antonio, Texas	1.0000	Y
010	Alcoa Inc.	H	WAR	Warrick (Newburgh, In)	0.5000	N
010	Alcoa Inc.	H	WEN	Wenatchee, Washington	0.5000	N
985	Alumax Mill Products, Inc.	H	LNX	Lancaster, Pennsylvania (Alumax)	1.000	N
631	B&C Castings Inc.	H	BCC	Barberton, Ohio	0.5000	Y
627	B & C Research, Inc.	H	BRT	Barberton, OH	0.5000	N
809	Firth Rixson Forgings LLC	H	MDW	Midway, Georgia (effective January 1, 2016)	1.0000	Y‡
721	Halethorpe Extrusions, Inc.	H	BAL	Baltimore, Maryland	1.0000	Y
T23	Howmet Aluminum Casting, Inc.	E	DRH	Del Rio, Texas (Howmet)	1.0000	Y
T48	Howmet Castings & Services Inc	E	DJY	Dover, New Jersey (Howmet-HDC)	1.0000	Y
T48	Howmet Castings & Services Inc	H	DJY	Dover, New Jersey (Howmet-HDC)	1.0000	N
T48	Howmet Castings & Services Inc	E	DNH	Dover, New Jersey (Howmet-HAD)	1.0000	Y
T48	Howmet Castings & Services Inc	H	DNH	Dover, New Jersey (Howmet-HAD)	1.0000	N
T48	Howmet Castings & Services Inc	E	HVH	Hampton, Virginia (Howmet)	1.0000	Y
T48	Howmet Castings & Services Inc	H	HVH	Hampton, Virginia (Howmet)	1.0000	N
T48	Howmet Castings & Services Inc	H	LIH	Laporte, Indiana (Howmet)	1.0000	N
T48	Howmet Castings & Services Inc	E	LIH	Laporte, Indiana (Howmet)	1.0000	Y
T48	Howmet Castings & Services Inc	H	MSH	Morristown, Tennessee (Howmet)	1.0000	N
T48	Howmet Castings & Services Inc	E	WCH	Winstead, Connecticut (Howmet)	1.0000	Y
T48	Howmet Castings & Services Inc	H	WTH	Wichita Falls, Texas (Howmet)	1.0000	N
T48	Howmet Castings & Services Inc	E	WTH	Wichita Falls, Texas (Howmet)	1.0000	Y
T13	Howmet Corporation	E	HVH	Hampton, Virginia (Howmet)	1.0000	Y

SCHEDULE B
ALCOA RETIREMENT SAVINGS PLAN FOR HOURLY NON-BARGAINING EMPLOYEES
PARTICIPATING EMPLOYER CONTRIBUTIONS (MATCH) AND
EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (ERIC)
EFFECTIVE ON OR AFTER JANUARY 1, 2015

Company Code	Company Description	*EE Type	LOC	Location Description	Match	ERIC
T13	Howmet Corporation	H	HVH	Hampton, Virginia (Howmet)	1.0000	N
T13	Howmet Corporation	E	LIH	Laporte, Indiana (Howmet)	1.0000	Y
T13	Howmet Corporation	H	LIH	Laporte, Indiana (Howmet)	1.0000	N
T13	Howmet Corporation	E	WMH	Whitehall, Michigan (Howmet)	1.0000	Y
T15	Howmet TMP Corporation	H	CLH	Cleveland, Ohio (Howmet)	1.0000	Y (for new hires and rehires on or after 1-1-2010)
T15	Howmet TMP Corporation	E	CLH	Cleveland, Ohio (Howmet)	1.0000	Y
988	Kawneer Company, Inc.	H	AUX	Atlanta Service Center (Alumax)	0.5000	N
988	Kawneer Company, Inc.	H	BTX	Jessup, Maryland (BTX)	0.5000	N
988	Kawneer Company, Inc.	H	CHX	Chicago, Ilinois (Alumax-FIX)	0.5000	N
988	Kawneer Company, Inc.	H	CLX	Cleveland, Ohio (Alumax)	0.5000	N
988	Kawneer Company, Inc.	H	HUX	Houston, Texas (Alumax)	0.5000	N
988	Kawneer Company, Inc.	H	IVX	Irving (Dallas), Texas (Alumax)	0.5000	N
988	Kawneer Company, Inc.	H	KAX	Kansas City, Missouri (Alumax)	0.5000	N
988	Kawneer Company, Inc.	H	ORX	Orlando, Florida (Alumax)	0.5000	N
988	Kawneer Company, Inc.	H	SAX	Springdale, Arkansas (Kawneer)	0.5000	N
988	Kawneer Company, Inc.	H	SKX	Salt Lake, Utah (Alumax)	0.5000	N
988	Kawneer Company, Inc.	H	SSX	Seattle, Washington (Alumax)	0.5000	N
988	Kawneer Company, Inc.	H	VGX	Visalia, California (Kawneer)	0.5000	N
R01	Reynolds Metals Company	H	EGY	Eastman, Georgia (RMC)	1.0000	Y
T14	Turbine Componenets Corporation	H	BCH	Branford, Connecticut (Howmet)	1.0000	N
T14	Turbine Componenets Corporation	E	BCH	Branford, Connecticut (Howmet)	1.0000	Y

‡ Regardless of hire date

RESTRICTED DISCRETIONARY CONTRIBUTIONS

There are no employee groups currently accruing Restricted Discretionary Contributions.

Exhibit 4(r)

ALCOA RETIREMENT SAVINGS PLAN

FOR

FASTENER SYSTEMS EMPLOYEES

EFFECTIVE JANUARY 1, 2015

ALCOA RETIREMENT SAVINGS PLAN FOR FASTENER SYSTEMS EMPLOYEES

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ALCOA RETIREMENT SAVINGS PLAN FOR FASTENER SYSTEMS EMPLOYEES
EFFECTIVE JANUARY 1, 2015

The Alcoa Retirement Savings Plan for Fastener Systems Employees (the “FS Plan” or “Plan”) was established as the Alcoa Retirement Savings Plan for Fastener Systems and Commercial Windows Employees effective January 1, 2011, by Alcoa Global Fasteners, Inc. (herein called “AGF”) for the benefit of its eligible employees and the employees of Participating Employers. The FS Plan is a defined contribution, individual account 401(k) plan intended to qualify under Section 401(a) of the Internal Revenue Code. The purpose of the FS Plan is to provide retirement benefits, and at the same time enable Participants to acquire a stock interest in Alcoa Inc. Alcoa Stock Fund is an employee stock ownership plan, within the meaning of Section 4975(e) of the Code. The assets held in the ESOP must be invested primarily in employer securities as defined in Code Section 409(l).

Effective January 1, 2015, the Plan is hereby amended and restated to incorporate Plan amendments and new laws and regulations that have come into effect since January 1, 2011, the original effective date of the Plan. The Plan is intended to be construed in accordance with any regulatory guidance issued with respect to such new laws and regulations.

DEFINITIONS

For the purpose of this Plan, unless a different meaning is plainly required by the context:

AFFILIATE means any non-corporate business entity or corporate business entity without voting stock, as such, which Alcoa and/or one or more Subsidiaries control in fact.

AFTER-TAX SAVINGS means such portions of the total amounts contributed to the Plan by a Participant in accordance with Section 2 that are not accorded favorable tax treatment under Section 401(k) of the Code, but not including contributions made by a Participant in excess of the annual limit on 401(k) contributions under Code Section 402(g) or in excess of the “average deferral percentage limit” of Section 401(k)(3) of the Code.

ALCOA means Alcoa Inc., the parent company of AGF.

ALCOA STOCK FUND means the ESOP as described in Section 16(e).

AUTOMATIC ENROLLMENT or AUTOMATICALLY ENROLLED means the automatic default enrollment in the Plan described in Sections 1(b) and 2(c) and applicable to Eligible Employees who do not opt out of the Plan.

AUTOMATIC PRE-TAX RATE ESCALATION means the feature that is effective with Automatic Enrollment or that may be elected by a Participant, in which the rate of Payroll Deduction for Pre-Tax Savings is increased until a target Payroll Deduction rate is reached. The Automatic Pre-Tax Rate Escalation will increase effective April 1 of each year.

AUTOMATIC REBALANCING means the feature described in Section 8(d).

BENEFICIARY means the recipient or recipients designated by a Participant, in accordance with Section 22 of the Plan, to receive benefits in the event of the Participant's death as either a primary beneficiary, or a contingent beneficiary who will receive benefits in the event the primary beneficiary predeceases the Participant.

BENEFITS MANAGEMENT COMMITTEE or COMMITTEE means the administrative committee of one or more persons appointed by the Board that interprets and administers the Plan in accordance with Section 19.

BOARD means the Board of Directors of AGF.

BROKERAGE ACCOUNT means the investment option whereby a Participant may invest and personally manage investments outside the Core Funds as described in Section 16(h).

BUSINESS DAY means any day on which the Plan Administrator, Designee and New York Stock Exchange is open for business.

CODE means the Internal Revenue Code of 1986, as amended.

COMPANY STOCK means common stock of Alcoa and any substituted security under Section 16.

CONTINUOUS SERVICE means, except as modified by the balance of this definition and as otherwise specifically provided in Schedule C with respect to certain Participant populations, the period of continuous employment with AGF, Alcoa, its Subsidiary or Affiliate, either as a salaried employee or as an hourly-rated employee, commencing with the Participant's Employment Commencement Date or Reemployment Commencement Date. Continuous Service terminates on the Participant's Severance from Service Date. Continuous Service upon reemployment does not include any Continuous Service accrued prior to a termination of Continuous Service, except as follows:

A Participant who incurs a Severance from Service Date and thereafter has a Reemployment Commencement Date, will have his or her Continuous Service on the Severance from Service Date reinstated if the period between his or her Severance from Service Date and his or her Reemployment Commencement Date is less than the greater of (a) five years or (b) the aggregate number of years of Continuous Service earned before the Severance from Service Date.

CORE FUND means any investment vehicle (including the Alcoa Stock Fund and Target Maturity Funds) for Pre-Tax Savings, After-Tax Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, or Employer Retirement Income Contributions, but excluding the Brokerage Account. The Committee will determine the Core Funds, and may make changes to the composition of the funds from time to time.

CURRENT MARKET VALUE means with respect to any investment allocated to the accounts of any Participant in the Core Funds**,** the unitized value of the securities and cash of the investment in the applicable Fund as of a specified date, less any fees provided for in Section 21, valued in accordance with a procedure adopted by the investment manager for the fund and acceptable to the Benefits Management Committee.

DESIGNEE means such entity as may be chosen from time to time by the Plan Administrator and approved by the Benefits Management Committee to handle certain specified administration functions of the Plan.

DISCRETIONARY CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(a).

EFFECTIVE DATE with respect to a distribution has the meaning prescribed in Section 13, with respect to a transfer has the meaning prescribed in Section 9 and with respect to a qualified domestic relations order has the meaning prescribed in Section 14.

ELIGIBLE COMPENSATION means: (i) the regular base salary and if applicable, the base salary adjustment (where commission payments constitute all or part of an employee's remuneration, the commissions actually paid as remuneration during a regular pay period will be used to determine the Eligible Compensation for such employee); (ii) the regular hourly wages and if applicable: cash cola, regular vacation pay, witness pay, holiday advance pay (for a holiday not worked), bereavement pay, shift differential, jury pay, job upgrades, schedule premium, income adjustments, and wage adjustments which are payable during such periods as the employee is an Eligible Employee as determined by the Participating Employers. In no event may the amount of Eligible Compensation for any Participant during any Plan Year, for any purposes under this Plan, exceed $265,000, as adjusted for any Plan Year for cost-of-living increases in accordance with Section 401(a)(17)(B) of the Code applicable to that calendar year.

ELIGIBLE EMPLOYEE means any person who meets all of the following conditions:

(a) (1) Is a resident or citizen of the U.S., employed by a Participating Employer at a participating Company (Company Code) and specified location (Location Code), as indicated in Schedule B (including individuals temporarily assigned to non-US locations); or

(2) Is not a U.S. resident or citizen, but is employed by a Participating Employer at a participating Company (Company Code) and specified location (Location Code), as indicated in Schedule B on a long term assignment and has been localized to that location's payroll and benefits; and

(b) Is a Full-time or Part-time Employee, and receives regular compensation in the form of: (1) a weekly, semimonthly or monthly salary, (2) periodic commissions, (3) an hourly wage; and

(c) Is not in a unit of employees covered by a collective bargaining agreement, unless such agreement provides for the application of the Plan to the employees in such unit and does not provide for supplemental unemployment benefits or similar benefits; and

(d) Is not in a group of employees excluded from coverage under the Plan by the Benefits Management Committee, or the appropriate governing body of a Participating Employer, which is uniform in application to all employees similarly situated; and

(e) Is not a U. S. resident or citizen who is on the Company's U.S. expatriate payroll and benefit program; and

(f) Is not an agency, leased, or contract employee (as determined by the Company, without regard to any court, or agency decision determining common-law employment status) or is an individual who is not on the payroll of the Company and receiving a W-2. A "leased employee" is defined in Section 414(n) of the Code and is excluded from participation in the Plan. (For purposes of this Plan only, any former leased employee, upon becoming an Eligible Employee, will receive Continuous Service credit for all prior service performed with the recipient Participating Employer as a leased employee prior to becoming an Eligible Employee.)

(g) Is a Temporary Employee who, in addition to meeting the above described terms and conditions (other than (b)), has at least one year of Continuous Service.

EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (also "ERIC") means an amount equal to the percentage of Eligible Compensation specified in Section 5 that is contributed to Eligible Employees hired or rehired on or after March 1, 2006, or as indicated in Schedule B, to the Eligible Employees of a specified location who i) whether or not citizens of the U.S., transfer from a location outside of the U.S. to a participating U. S. location and is localized, or ii) are not U.S. citizens and were participants in the Global Pension Plan as of December 31, 2008, will receive ERIC contributions without regard to original date of hire or rehire. For purposes of this paragraph, "localized" means to be paid from a U.S. location payroll.

Employees employed at a company and location that does not participate in Alcoa Retirement Plan I as of December 31, 2009, who were hired or rehired prior to March 1, 2006, and who transfer on or after January 1, 2010 to a company and location that receives ERIC under this Plan as indicated in Schedule B, will commence to receive ERIC contributions following the transfer, regardless of their date of hire.

EMPLOYMENT COMMENCEMENT DATE means the date on which an Eligible Employee is first employed by and performs an Hour of Service for AGF, Alcoa, its Subsidiary or an Affiliate as a Full-Time or Part-Time Employee, or with respect to an individual described in subsection (g) of the definition of Eligible Employee, a Temporary Employee.

ERISA means the Employee Retirement Income Security Act of 1974 as amended.

ESOP or EMPLOYEE STOCK OWNERSHIP PLAN means the Alcoa Stock Fund as described in Section 16(e).

FINANCIAL HARDSHIP means an immediate and heavy financial need which a Participant is not able to meet from other reasonably available resources. An immediate and heavy financial need includes:

(a) Extraordinary medical expenses incurred by the Participant, the Participant's spouse, dependents of the Participant, or primary Beneficiary;

(b) Purchase, excluding mortgage payments, of a principal residence for the Participant;

(c) Payment of tuition for the next year of post-secondary education for the Participant, his or her spouse, children , dependents or primary Beneficiary;

(d) Expenses necessary to prevent eviction of the Participant from his principal residence, or foreclosure on the mortgage of the Participant's principal residence;

(e) Funeral expenses of a family member or primary Beneficiary; and

(f) All other expenses that the Internal Revenue Service will accept as an immediate and heavy financial need.

A withdrawal will be deemed to be necessary to satisfy an immediate and heavy financial need of a Participant if all of the following requirements are satisfied:

(i) The withdrawal is not in excess of the amount of the immediate and heavy financial need (including taxes on such withdrawal) of the Participant,

(ii) The Participant has obtained all distributions, other than hardship withdrawals, and all nontaxable loans currently available under all plans maintained by the Participating Employer (unless such a loan would contribute to the hardship),

(iii) The Plan, and all other qualified and non-qualified plans of deferred compensation maintained by all Participating Employers (other than health and welfare or contributory defined benefit plans), provide that the Participant's Savings will be suspended for at least 6 months after receipt of the hardship withdrawal, and

(iv) The Participant may not contribute Pre-Tax Savings to the Plan or make similar contributions to other plans maintained by the Participating Employer for the following taxable year in excess of the applicable limit under Section 402(g) of the Code for the following taxable year minus the Participant's Pre-Tax Savings for the taxable year of the hardship withdrawal.

Based upon the foregoing provisions, the Designee determines whether or not a Participant has incurred a Financial Hardship.

FULL-TIME EMPLOYEE means an active employee who works 100 percent of a regular work schedule for the location where he or she is employed.

HOUR OF SERVICE means:

(a) Each hour for which an employee is paid or entitled to payment for the performance of duties for AGF, Alcoa, its Subsidiary or Affiliate;

(b) Each hour for which an Employee is paid or entitled to payment by AGF, Alcoa, its Subsidiary or Affiliate on account of a period during which no duties are performed, whether or not the employment relationship has terminated, due to vacation, holiday, illness, incapacity (including disability), layoff, jury duty, military duty, or leave of absence; and

(c) Each hour for which back pay, irrespective of mitigation of damages, is either awarded or agreed to by AGF, Alcoa, its Subsidiary or Affiliate, excluding any hour credited under (a) or (b) above, which is credited to the computation period or periods to which the award, agreement or payment pertains, rather than to the computation period in which the award, agreement or payment is made.

INVESTMENT FUND means any Core Fund and the Brokerage Account.

KEY EMPLOYEE means any employee or former employee (including any deceased employee) who at any time during the Plan Year that includes the determination date, as defined in Section 416(g)(4)(C) of the Code, was i) an officer of a Participating Employer having annual compensation greater than $170,000 (as adjusted under Section 416(i)(1) of the Code, ii) a five percent owner of the Participating Employer, or iii) a one percent owner of a Participating Employer having annual compensation of more than $150,000. For this purpose, annual compensation means compensation as defined in Section 415(c)(3) of the Code, but includes amounts contributed by the Participating Employer pursuant to a salary reduction agreement which are excludable from the Participant's gross income under Section 125, 402(a), Section 401(h), Section 401(b), and Section 132(f)(4).

LAYOFF or **LAID-OFF** means the absence from employment due to a reduction of a Participating Employer's work force due to lack of work, where it is intended that the Participant will be subject to recall and the Participant has not been placed on a Temporary Layoff. A Layoff ends on the earlier of the effective date of a recall or the date the Participant's service terminates in the case where such Layoff has continued for at least twenty-four months calculated from the first day of the Lay Off.

NORMAL RETIREMENT AGE means the date a Participant attains age 65.

PART-TIME EMPLOYEE means an active employee who works at least 50 percent but less than 100 percent of the regular work schedule for the location where he or she is employed.

PARTICIPANT means:

(a) an Eligible Employee who has elected to participate in the Plan in accordance with the provisions of Section 1, or who receives Employer Retirement Income Contributions, Discretionary Contributions or Restricted Discretionary Contributions, or who is Automatically Enrolled in the Plan. Such a person continues as a Participant so long as he or she has an account balance in the Plan. Notwithstanding the foregoing, a contractor, agency employee, temporary employee or "leased employee" as defined in Section 414(n) of the Code is not a Participant under the Plan, or

(b) an Eligible Employee who is employed with a Participating Employer on December 31 of any Plan Year where such Participating Employer has elected to make a Discretionary Contribution or Restricted Discretionary Contribution for that Plan Year.

PARTICIPATING EMPLOYER means AGF, except as specified hereafter, and any other entity in which Alcoa or one or more Subsidiaries or Affiliates have an ownership interest, and that is authorized by AGF to participate in the Plan and which adopts the Plan by proper action of its board of directors or other governing body, provided that each said entity agrees to reimburse AGF from time to time upon demand for its proper portion of the expenses and contributions required to carry out the provisions hereof and of the agreement under which the assets of the Plan are held or managed. Schedule B lists applicable locations of Participating Employers.

PARTICIPATING EMPLOYER CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 3.

PARTICIPATION DATE means the date on which an Eligible Employee commences participation in the Plan.

PAYROLL DEDUCTIONS means the Pre-Tax Savings and After-Tax Savings based on a reduction of the Participants' Eligible Compensation for the applicable Payroll Period.

PAYROLL PERIOD means the regularly scheduled payroll cycles in which a Participant earns Eligible Compensation.

PERMANENT LAYOFF means an absence from employment due to a reduction of the work force by a Participating Employer due to lack of work, where it is intended that the Participant will not be subject to recall. A Participant's Continuous Service for purposes of the Plan will be terminated on the first day of Permanent Layoff.

PERMANENT SHUTDOWN means the permanent shutdown, as determined by a Participating Employer, of a plant, department or substantial portion thereof, of a Participating Employer at which a Participant who is affected thereby is employed.

PLAN means the Alcoa Retirement Savings Plan for Fastener Systems Employees, effective January 1, 2015, and as may be amended from time to time.

PLAN ADMINISTRATOR means AGF.

PLAN YEAR means the calendar year.

PRE-TAX CATCH-UP CONTRIBUTIONS means contributions permitted under Section 414(v) of the Code, as described in Section 2(j) of the Plan.

PRE-TAX SAVINGS means the amount by which a Participant has elected to reduce his or her Eligible Compensation and defer the receipt thereof in accordance with Section 2 and the contribution of the said amount to the Plan, or an amount by which a Participant's Eligible Compensation is deferred and contributed to the Plan pursuant to Automatic Enrollment.

PROPERLY RECEIVED means any request to participate, request to change participation in the Plan, request for suspension of Payroll Deductions, a request for a transfer between investments in accordance with Sections 8 or 9, or a request for a withdrawal in accordance with either Section 10 or 11, or a Beneficiary designation, consent or revocation in accordance with Section 22, are Properly Received provided it is received by the Plan Administrator or its Designee in accordance with uniform rules established by the Plan Administrator.

QUALIFIED DEFAULT INVESTMENT ALTERNATIVE or QDIA means the Targeted Maturity Funds to which the Plan may direct the assets of a Participant's account in the absence of Participant investment direction. Each Participant's account will be invested in the appropriate Targeted Maturity Fund based on the Participant's year of birth.

REEMPLOYMENT COMMENCEMENT DATE means the date on which a Participant is first reemployed by a Participating Employer following a Severance from Service Date.

RESTRICTED DISCRETIONARY CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(b).

RETIREMENT means termination of Continuous Service with rights to a pension other than a deferred vested pension benefit under a retirement plan of Alcoa and/or a Subsidiary and/or an Affiliate, termination of Continuous Service upon or after attainment of age 55 and completion of 10 years of Continuous Service, or Normal Retirement Age.

ROLLOVER CONTRIBUTION means an eligible rollover distribution as described in Section 402(c)(4) of the Code, or a direct transfer of an eligible rollover distribution as described in Section 401(a)(31) of the Code ("Direct Rollover") which is transferred to the Plan pursuant to Section 7.

SAVINGS means the total amount of Pre-Tax Savings and After-Tax Savings contributed to the Plan in accordance with Section 2.

SEVERANCE FROM SERVICE DATE means the date Continuous Service terminates and is the earliest of: (i) the first date the Eligible Employee quits, retires, is discharged (including Permanent Layoffs), or dies, (ii) the first anniversary of the first date the Eligibile Employee is absent from work due to a Temporary Layoff, or (iii) the second anniversary of the first date the Eligible Employee is absent from work for any other reason (including a disability). Notwithstanding the foregoing, an employee will not be deemed to have terminated from Continuous Service until the second anniversary of the employee's absence, if the absence is due to the pregnancy of the Eligible Employee, the birth of a child of the Eligible Employee or the placement of a child with the Eligible Employee in connection with adoption proceedings, or for purposes of caring for that child for a period beginning immediately following such birth or placement. The period between the first anniversary and second anniversary of the first day of absence will not constitute Continuous Service. Severance from Service Date will also mean the date on which a participant ceases employment with AGF, Alcoa or its Subsidiary in connection with a sale of assets or interest in a Participating Employer and commences employment with the purchaser of such assets or interest, provided there is no transfer to the purchaser of Plan assets and liabilities relating to such participant.

SUBSIDIARY means a corporation a majority of whose voting stock is owned or controlled by Alcoa and/or one or more other Subsidiaries.

TARGETED MATURITY FUNDS means the investment vehicles that are pre-mixed funds consisting of varying asset allocations that follow an investment strategy based on a targeted retirement date. Targeted Maturity Funds are Core Funds.

TEMPORARY EMPLOYEE means a person who does not work on a regular schedule, or works less than fifty percent of the regular hours for the location where he or she is employed, or works fifty percent or more of the regular hours for the location but is hired for a specified period of time not to exceed twelve month.

TEMPORARY LAYOFF means an absence from employment due to a reduction of the work force by a Participating Employer due to lack of work, where it is intended that the Participant will not be subject to recall or the Participant has been designated as a temporary recall in the Company's human capital management system (currently, the Global People System), but where there is an expectation that the Participant may return to work within the calendar year. A Participant's Continuous Service will be terminated on the first anniversary of the first day of Temporary Layoff.

TOTAL AND PERMANENT DISABILITY means disability by injury or disease which, on the basis of medical evidence satisfactory to a medical doctor chosen by the Benefits Management Committee, prevents the employee from engaging in any employment with AGF,

Alcoa, a Subsidiary or Affiliate suitable to his or her training and experience and will be permanent and continuous during the remainder of the employee's life, and the employee is not otherwise employed by AGF, Alcoa, a Subsidiary or Affiliate.

TRUSTEE means the Trustee or Trustees appointed by the Board in accordance with the provisions of Section 18.

U.S. means United States of America.

GENERAL PROVISIONS

SECTION 1. PARTICIPATION

An Eligible Employee participates in the Plan:

(a) by submitting application or request for participation that is Properly Received, or by receiving Discretionary Contributions, Restricted Discretionary Contributions, Participating Employer Contributions, or Employer Retirement Income Contributions; or

(b) by being Automatically Enrolled sixty (60) days following Employment Commencement Date or Reemployment Commencement Date, or after an employee employed on a temporary basis becomes an Eligible Employee.

(c) by being Automatically Enrolled sixty (60) days following the initial participation of a new Company or Location resulting from an acquisition or restructuring of a business unit.

SECTION 2. EMPLOYEE SAVINGS

(a) An Eligible Employee may elect to pay into the Plan through Payroll Deductions properly authorized by such employee, a whole percentage of his or her Eligible Compensation in Pre-Tax Savings in an amount equal to one through twenty-five percent (25%), and After-Tax Savings equal to one through ten percent (10%), the aggregate of which cannot be greater than twenty-five percent (25%).

(b) An Eligible Employee subject to Automatic Enrollment will be subject to automatic Payroll Deductions equal to three percent of Eligible Compensation for any applicable payroll period, which will be contributed to the Plan as Pre-Tax Savings. Absent the Participant's election of investment funds, such Pre-Tax Savings will be deposited into the appropriate QDIA, as described in Section 8(a).

(c) Payroll Deductions for Pre-Tax Savings made pursuant to Automatic Enrollment are subject to Automatic Pre-Tax Rate Escalation whereby, providing the Participant has participated in the Plan at least ninety days, the Participant's Pre-Tax Savings rate will be increased by one percent on each April 1 after his or her Participation Date until the Pre-Tax Savings rate attains a target rate of six percent of Eligible Compensation. A Participant may

change the percentage rate in whole percentages up to the maximum permitted by the Plan or opt out of Automatic Pre-Tax Rate Escalation at any time in a manner designated by the Plan Administrator that is Properly Received.

Any Participant may elect to begin or end Automatic Pre-Tax Savings Rate Escalation at any time in a manner designated by the Plan that is Properly Received. An election to begin Automatic Pre-Tax Saving Rate Escalation shall designate a beginning Pre-Tax Savings rate, a target rate up to the maximum permitted by the Plan, and an annual rate (in whole percentages) by which the Pre-Tax rate increases until the target rate is attained.

(d) Any employee contributions which have been contributed to a Participant's account under a qualified defined contribution plan of a Participating Employer which has been merged with this Plan, are credited to the Participant as Pre-Tax and After-Tax Savings Accounts, as applicable, as determined by the Plan Administrator, and thereafter be treated like Pre-Tax and After-Tax Savings with respect to withdrawals, loans, and investment options under the Plan. Any protected optional form of benefits provided under said qualified defined contribution plan will be maintained under the Plan.

(e) All Participating Employer Contributions and Discretionary Contributions, and Restricted Discretionary Contributions and Employer Retirement Income Contributions are irrevocable, except that any such contribution which was made by a mistake of fact or conditioned upon qualification of the Plan or any amendment thereof under Section 401 of the Code or upon the deductibility of the contribution under Section 404 of the Code, will be returned to the Participating Employer within one year after the payment of the contribution made by mistake, the denial of the qualification or the disallowance of the deduction (to the extent disallowed), whichever is applicable.

(f) A Participant may change his or her election for Payroll Deductions, effective for the first full Payroll Period following the date that such request is Properly Received.

(g) A Participant may direct that Payroll Deductions for Savings be discontinued beginning with the first full Payroll Period following the date that such direction is Properly Received. A Participant may direct that such deductions be resumed beginning with the first full Payroll Period following the date that such direction is Properly Received, except as provided in the definition of Financial Hardship.

(h) Payroll Deductions are paid to the Trustee as soon as practicable, but no later than the period prescribed by the Department of Labor for depositing contributions.

(i) Additional limitations on Savings, Participating Employer Contributions, Discretionary Contributions and Restricted Discretionary Contributions are provided in Appendices A, B and C.

Notwithstanding the foregoing, in the event it is determined by the Benefits Management Committee or its Designee that for any particular month the maximum percentage of Eligible Compensation which a Participant may elect to pay into the Plan as Pre-Tax Savings must be

reduced so as to prevent the actual percentage of Pre-Tax Savings for Participants who are Highly Compensated Employees from exceeding the elected percentage of Pre-Tax Savings of all other Participants, pursuant to the limitations in the Appendices, the maximum percentage of Pre-Tax Savings for said Highly Compensated Employees may be reduced, for any particular Month to the extent deemed necessary by the Benefits Management Committee or its designee. The said Participants' previously elected percentage of After-Tax Savings will not be affected in any manner by a reduction of the maximum percentage of Pre-Tax Savings in accordance with the foregoing.

(j) An Eligible Employee who meets the requirements listed below may make an election for a Plan Year to defer extra Pre-Tax Catch-Up Contributions in an amount that equals an annual maximum amount of six thousand dollars ($6,000), or such other amount adjusted for cost-of-living increases as may be provided by the Secretary of the Treasury pursuant to Section 414(v)(2) (C) of the Code. Eligible Employees who meet the requirements are individuals who i) have attained 50 or will attain age 50 during the applicable Plan Year; ii) are contributing no less than six percent (6%) of Eligible Compensation in Pre-Tax Savings; and iii) have submitted an election to make Pre-Tax Catch-Up Contributions for applicable Plan Year.

(k) A Participant who's compensation is suspended due to an absence from employment due to military leave protected by Uniformed Services Employment and Reemployment Rights Act of 1994 ("USERRA"), may upon his or her return to employment contribute "make up" Pre-Tax Contributions equal to the amount he or she would have contributed except for the absence based upon the Participant's election on file. Such make up contributions must be paid to the Plan during a period that does not exceed the lesser of three times the length of time of the military leave or five years, commencing from the date employment is resumed.

SECTION 3. PARTICIPATING EMPLOYER CONTRIBUTIONS (MATCH)

Participating Employer Contributions will be allocated under the Plan to the account of those Participants for whom Pre-Tax Savings are paid into the Plan for such Payroll Period in accordance with Section 2, where the Participating Employer with whom the Participant is actively employed has elected to make such contributions. Beginning with the first Participating Employer contribution allocated to Participants' accounts after January 1, 2014, all Participating Employer Contributions will be invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA).

(a) A Participating Employer may elect to make Participating Employer Contributions of a specific amount for each dollar of the Participant's Eligible Compensation he or she contributes to the Plan as Pre-Tax Savings up to six percent of the Participant's Eligible Compensation. Unless disapproved by the Benefits Management Committee, a Participating Employer's election to make or change a Participating Employer Contribution for current and future Plan Years may be made at any time during the Plan Year and continue until changed by the Participating Employer. Schedule B provides a list of Participating Employers and Participating Employer Contributions. The amount of all such Contributions are contributed on a Payroll Period basis by the Participating Employer out of current income or accumulated earnings.

Any employer contributions which have been contributed to a Participant's account under a qualified defined contribution plan of a Participating Employer which has been merged with this Plan, are credited to the Participant as Participating Employer Contributions and thereafter be treated like Participating Employer Contributions with respect to withdrawals, loans, and investment options under the Plan. Any protected optional form of benefits provided under said merged qualified defined contribution plan will be maintained under the Plan.

SECTION 4. DISCRETIONARY CONTRIBUTIONS

(a) A Participating Employer for each Plan Year may contribute under the Plan to the account of those Eligible Employees who are employed with said Participating Employer on the last day of the Plan Year such amounts of Discretionary Contributions as its board of directors or in the case of an Affiliate, the appropriate governing entity determines, unless disapproved by the Benefits Management Committee. Discretionary Contributions are allocated to Eligible Employees based on either uniform dollar amounts or whole or partial percentages of Eligible Compensation. A Participating Employer may elect to make one Discretionary Contribution for any Plan Year on or before December 31 of said Plan Year and may direct, but is not obligated to direct, the Trustee to promptly invest such amount in the Alcoa Stock Fund.

(b) A Participating Employer for each Plan Year may contribute under the plan to the account of those Eligible Employees who are employed with said Participating Employer on the last day of the Plan Year, Restricted Discretionary Contributions in an amount determined by its board of directors or in the case of an Affiliate, the appropriate governing entity, unless disapproved by the Benefits Management Committee. Restricted Discretionary Contributions will be allocated to Eligible Employees based on either uniform dollar amounts or whole or partial percentages of Eligible Compensation. A Participating Employer may elect to make one Restricted Discretionary Contribution for any Plan Year on or before December 31 of the Plan Year. The Restricted Discretionary Contribution will be paid to the Trustee no later than the date fixed by law for the filing of the Participating Employer's federal income tax return for the year for which the contribution is made, including any extensions of time granted by the Internal Revenue Service for filing the return. The Participating employer may direct, but is not obligated to direct, the Trustee to promptly invest such amount in the Alcoa Stock Fund; otherwise, Restricted Discretionary Contributions will be invested in accordance with the provisions of Section 8(b).

Effective as of June 27, 2011, a nonrecurring Discretionary Contribution in the amount of $500 will be made on behalf of each Participant employed by Valley Todeco Inc. (Company 675) at Valley Todeco, CA (LOC VTC). The contribution will be invested in the applicable QDIA, and may be transferred to any elected Core Fund at any time thereafter.

(c) An Eligible Employee who incurs an absence due to military leave protected by USERRA and eligible to receive Discretionary or Restricted Discretionary Contributions will receive those contributions based on the Eligible Compensation that would have been received had the individual remained actively employed during the period of military leave.

SECTION 5. EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (ERIC)

Employer Retirement Income Contributions of three percent of Eligible Compensation will be made to the accounts of Participants with an Employment Commencement Date or Reemployment Commencement Date occurring on or after March 1, 2006, on a Payroll Period basis. Notwithstanding the foregoing, Eligible Employees of certain locations designated in Schedule B will receive Employer Retirement Income Contributions as of the date indicated, regardless of the date of their Employment Commencement Date or Reemployment Commencement Date.

An Eligible Employee who incurs an absence due to military leave protected by USERRA and eligible to receive Employer Retirement Income Contributions ("ERIC) will receive those contributions based on the Eligible Compensation that would have been received had the individual remained actively employed during the period of military leave.

Withdrawals of Employer Retirement Income Contributions are permitted by Participants who have attained age 59 ½.

Any person, i) whether or not a citizen of the U.S., who transfers from a location outside of the U.S. to a participating U.S. location, or ii) who is not a citizen of the U.S. and was a participant in the Global Pension Plan as of December 31, 2008 and transferred from a location outside of the U.S. to a participating U.S. location, will be eligible for Employer Retirement Income Contributions, regardless of the individuals date of hire.

SECTION 6. NONFORFEITURE OF PARTICIPATING EMPLOYER CONTRIBUTIONS, DISCRETIONARY CONTRIBUTIONS RESTRICTED DISCRETIONARY CONTRIBUTIONS, AND EMLOYER RETIREMENT INCOME CONTRIBUTIONS

All Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contribution, and any investment earnings attributable thereto held in a Participant's account are nonforfeitable and not subject to divestment.

SECTION 7. ROLLOVER CONTRIBUTIONS

An Eligible Employee of a Participating Employer who is or may become a Participant may, unless disapproved under objective procedures established by the Benefits Management Committee, make a Rollover Contribution to the Plan. An Eligible Employee's Rollover Contribution is credited to his or her account and thereafter treated like the Participant's Pre-Tax Savings with respect to withdrawals, loans and investment options under the Plan. The Plan does not accept Roth rollovers.

SECTION 8. INVESTMENTS

(a) <u>Savings and Employer Retirement Income Contributions</u>. Pre-Tax Savings (including Rollover Contributions), After-Tax Savings, and Employer Retirement Income Contributions will be invested, at the election of the Participant, in any of the Core Funds in one percent increments. Pre-Tax Savings of any Participant who is Automatically Enrolled and Employer Retirement Income Contributions made to the account of a Participant who has not made investment election will be contributed to the appropriate QDIA fund, based on the Participant's date of birth.

A Participant may change his or her current investment election or transfer assets deposited by the Plan into a QDIA fund any day of the Plan Year, to be effective for the next following Payroll Period, within the limitations otherwise provided in this Plan, by directing the Plan Administrator or its Designee to make such change which direction is Properly Received.

(b) <u>Participating Employer Contributions, Discretionary Contributions and Restricted Discretionary Contributions</u>. All Participating Employer Contributions will be invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA). Discretionary Contributions, and Restricted Discretionary Contributions may be invested in the Alcoa Stock Fund if directed by the Participating Employer, subject to Section 9, or otherwise invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA).

(c) <u>Brokerage Account.</u> A portion of Pre-Tax or After Tax Savings, and Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, or Employer Retirement Income Contributions subject to transfer as provided in Section 9, or any other amounts invested in the Core Funds may be transferred in amounts of one thousand dollars ($1,000) or more and reallocated to a Brokerage Account, a self-directed brokerage account that allows a Participant to select and personally manage investment options not otherwise available under the Plan, in accordance with the provisions of Section 16. Any amounts to be withdrawn, loaned or distributed from a Brokerage Account must be first transferred back to the Core Funds, as described in Section 16(h).

(d) <u>Automatic Rebalancing of Investments</u>. A Participant may elect to have his or her account balance automatically rebalanced, or readjusted, at ninety-day intervals, to equal the percentage(s) directed by the Participant for investing such account balance in any Core Fund(s). The Participant may cancel Automatic Rebalancing at any time in a manner designated by the Plan Administrator that is Properly Received.

SECTION 9. TRANSFERS BETWEEN INVESTMENTS

<u>(a) Transfers of Savings, Participating Employer, Discretionary, Restricted Discretionary and Employer Retirement Income Contributions</u>. A Participant may elect to

transfer in whole percentage increments or specified dollar amounts all or part of the Current Market Value of the Participants' Pre-Tax Savings, After Tax Savings, Participating Employer, Discretionary, Restricted Discretionary and Employer Retirement Income Contributions subject to the following:

(1) transfers from any one or more Core Funds to the Brokerage Account must be made in amounts of one thousand dollars ($1,000) or more;

(2) transfers may be made on a daily basis;

(3) investment Fund transfers do not constitute a change in the Participant's current investment election; and

(4) transfer provisions may be subject to restrictions imposed by mutual fund companies underlying the Core Funds.

(b) Effective Date of Transfer. The effective date of any transfer will be the date for which the appropriate direction to the Plan Administrator or its Designee has been Properly Received.

(c) Value of Transfer. The Current Market Value of Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions to be transferred into or out of an Investment Fund are determined in accordance with the value of the Investment Fund at the close of business of the Business Day on the Effective Date.

SECTION 10. WITHDRAWALS DURING EMPLOYMENT

Effective with respect to the Current Market Value of Pre-Tax Savings, Discretionary Contributions, Restricted Discretionary Contributions, and Participating Employer Contributions made to the Plan or a prior plan from which the account of a Participant has been transferred after on or after January 1, 2011, withdrawals during employment are permitted upon attainment by the Participant of age 59 ½. Notwithstanding, withdrawals are permitted during employment prior to attainment of age 59 ½ with respect to the Current Market Value of any Pre-Tax Savings transferred to this Plan from a prior plan, provided the following conditions are met:

i) the Pre-Tax Savings were contributed to the prior plan before January 1, 2011; and

ii) the Plan Administrator or Designee has determined that the Participant has suffered a Financial Hardship.

A Participant may withdraw the Current Market Value of After-Tax Savings at any time (subject to a $250.00 minimum). A Participant who has attained three years of Plan participation may voluntarily withdraw all or a portion (subject to a $250.00 minimum) of the Current Market Value of Participating Employer Contributions and Discretionary Contributions made prior to January 1, 2011, to a prior plan from which the Participant has been transferred.

SECTION 11. DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT

(a) A Participant whose Continuous Service terminates is eligible to receive as a distribution the Current Market Value of all Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions made to the Participant's accounts. In the event a Participant who has terminated employment received a total distribution of the Current Market Value of his or her account under the Plan has a Reemployment Commencement Date, he or she will not be permitted to repay the distributed amount other than as a Rollover Contribution from an eligible retirement plan described in Sections 402(c)(4) and 401(a)(31) of the Code, as provided in Section 7.

(b) Direct Rollovers.

(i) Notwithstanding any provision of the Plan to the contrary that would otherwise limit a distributee's election under this subsection, a distributee may elect, at the time and in the manner prescribed by the Plan Administrator, to have any portion of an eligible rollover distribution paid directly to an eligible retirement plan specified by the distributee in a direct rollover.

(ii) Definitions:

(1) Eligible rollover distribution: An eligible rollover distribution means any distribution to an employee of all or any portion of the balance to the credit of the employee in the Plan, and as otherwise described in this subsection (1). An eligible rollover distribution does not include any distribution that is one of a series of substantially equal periodic payments (not less frequently than annually) made for the life (or life expectancy) of the distributee or the joint lives (or joint life expectancies) of the distributee's designated Beneficiary; or for a specified period of ten years or more; any distribution to the extent such distribution is required under Section 401(a)(9) of the Code; and any amount distributed on account of hardship.

(2) Eligible Retirement Plan: An eligible retirement plan is an individual retirement account or individual retirement annuity described in Sections 408(a) and 408(b) of the Code; a qualified trust described in Section 401(a) of the Code that accepts the distributee's eligible rollover distribution; an annuity plan or contract described in Sections 403(a) and 403(b) of the Code; or an eligible plan under Section 457(b) of the Code which is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state that agrees to separately account for amounts transferred into such plan from this plan. The definition of eligible retirement plan will also apply in the case of a distribution to a surviving spouse of a Participant or the spouse or former spouse who is the alternate payee under a qualified domestic relations order as defined in Section 414(p) of the Code. With respect to an eligible rollover distribution to a Participant's nonspouse Beneficiary,

an eligible retirement plan is an individual retirement account or annuity described in Sections 408(a) and 408(b) of the Code established for the purpose of receiving such distribution, and identifying the deceased Participant and Beneficiary.

(3) Distributee: A distributee includes an employee or former employee. In addition, the employee's or former employee's surviving spouse and the employee's or former employee's spouse or former spouse who is an alternate payee under a qualified domestic relations order, as defined in Section 414(p) of the Code, are distributees with regard to the interest of the spouse or former spouse. A distributee includes the employee's or former employee's nonspouse Beneficiary, provided the transfer of the eligible rollover distribution is made as described in paragraph (4) below.

(4) Direct Rollover: A direct rollover is a payment by the Plan to the eligible retirement plan specified by the distributee.

SECTION 12. PAYMENT OF DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT

(a) Subject to the following provisions of this Section, payment to a Participant or Beneficiary of the Current Market Value of all Savings, Participating Employer Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions in the Participant's account from any Investment Fund, other than the Alcoa Stock Fund, upon the Participant's termination of Continuous Service is made in cash. All amounts held in the Alcoa Stock Fund at the time of the Participant's termination of Continuous Service are paid in cash or Company Stock. Such payment will be made in accordance with the following rules:

(i) If the Current Market Value of all of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is less than one thousand dollars ($1,000), then a total distribution of all of the Participant's vested account balances will be made to the Participant at a time determined by the Plan. If the Current Market Value of all of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates (i) is greater than $1,000 but less than $5,000, the distribution will be paid in a direct rollover to an individual retirement account designated by the Benefits Management Committee unless the Participant, or Beneficiary if applicable, elects to have such distribution paid directly to an eligible retirement plan specified by the Participant or Beneficiary in a direct rollover or to receive the distribution directly in cash. The value of any delisted stock that is no longer publicly traded but that is held in the Participant's Brokerage Account shall not be considered for purposes of the preceding valuation. Any such delisted stock shall be distributed in-kind where the value of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is less than five thousand dollars ($5,000), in a direct rollover to an individual retirement account designated by the Benefits Management Committee. Upon such distribution of de-listed stock, the amounts distributed will be reported for income tax purposes using reasonable methods available at such time and determined by the Plan.

(ii) If the Current Market Value of all of the Participant's vested account balances in all defined contribution plans of Alcoa, the Subsidiaries and Affiliates exceeds five thousand dollars ($5,000), the distribution is made upon the consent of the Participant, or surviving spouse if applicable, and if no consent is given and no claim for benefits has been made, such distribution is made in total upon the later of December 31, 2015, or his or her attainment of age 69. Notwithstanding the foregoing, if a Participant attains age 70 prior to December 31, 2015, such distribution shall be made in total upon such Participant's attainment of age 70. Prior to the distribution of the total Current Market Value of the Participant's total account balance, the Participant, or the Beneficiary in the case of a Participant who dies with an account balance in the Plan, may request four partial distributions (subject to a $250.00 minimum) during each Plan Year in which the account balance is maintained in the Plan. Notwithstanding the foregoing, in the event that a claim for benefits is made, a distribution is made no later than the 60th day after the latest of the last day of the Plan Year in which occurs: (1) the date on which the Participant attains the earlier of age 65, (2) occurs the tenth anniversary of the year in which the Participant commenced participation in the Plan, or (3) the Participant terminates his or her service with the Participating Employer.

(iii) If a distribution is one to which Sections 401(a)(11) and 417 of the Code do not apply, such distribution may commence less than 30 days after the notice required under Section 1.411(a)-11(c) of the Income Tax Regulations is given, provided that:

a. the Plan Administrator clearly informs the Participant that the Participant has a right to a period of at least 30 days after receiving the notice to consider the decision of whether or not to elect a distribution (and, if applicable a particular distribution option), and

b. the Participant, after receiving the notice, affirmatively elects a distribution.

(iv) If the Participant dies with an account balance in the Plan, the entire interest of the Participant will be distributed not later than 5 years after the death of the Participant.

(b) Upon any distribution of Company Stock from the Alcoa Stock Fund, the Trustee delivers to the recipient a certificate representing the number of whole shares of Company Stock being distributed and cash equal to the Current Market Value on the Effective Date of distribution of any fractional interest in a share being distributed. With respect to any shares of Company Stock which are to be sold for the account of the recipient, the Trustee may, at its option (1) purchase such shares for Plan purposes at the Current Market Value on the Effective Date of distribution, or (2) sell such shares on the open market for the account of the recipient.

(c) Notwithstanding the foregoing provisions of this Section, distribution of a Participant's account balances commences the April 1 next following the calendar year in which the Participant attains age 70-1/2 years after January 1, 1988 and in accordance with Section 13(b).

(d) Notwithstanding the foregoing, if a Participant is reemployed by a Participating Employer, then distribution of his or her account balances other than minimum required distributions under Section 401(a)(9) of the Code, if any, payable to him or her during the period of his or her reemployment is suspended until his or her subsequent termination from employment. Upon his or her subsequent termination from employment, the Participant's account balances are paid in accordance with the foregoing provisions of this Section 12.

(e) Notwithstanding paragraphs (a) and (b) above, in the event that any qualified defined contribution plan is merged with this Plan or this Plan is the surviving plan with respect to any assets of Participants of a merging plan which are transferred to this Plan, any distribution options contained in the merging plan which are not contained in this Plan may be continued to be distribution options available to the said Participant of the merging plan for distribution of his or her account, in accordance with Section 411(d)(6) of the Code.

SECTION 13. GENERAL PROVISIONS WITH RESPECT TO WITHDRAWALS

(a) Effective Date of Withdrawal. The Effective Date of any withdrawal from the Plan is the Business Day such request for withdrawal is Properly Received by the Plan Administrator or its Designee.

(b) Distribution Limitations. Distribution of all amounts payable under the Plan to a Participant commences:

(i) Not later than (1) the required distribution dates or (2) the required distribution date, without violating Treasury regulations, if any, over the life of the Participant or over the lives of the Participant and a Beneficiary, or over a period not extending beyond the life expectancy of the Participant and a Beneficiary.

(ii) If distribution of the Participant's interest in the Plan has begun in accordance with paragraph (i)(2) and the Participant dies before his or her entire interest is distributed, the Participant's remaining interest in the Plan will be distributed at least as rapidly as under the method of distribution stated under paragraph (i)(2) above being used on the date of the Participant's death. If the Participant dies before the distribution of his or her interest in the Plan has begun in accordance with paragraph (i)(2), the entire interest of the Participant will be distributed not later than five years after the death of the Participant.

For purposes of this paragraph (b), the "required distribution date" means the date prescribed by Treasury Regulations, as amended from time to time, which effective January 1, 1988, is April 1 of the calendar year following the calendar year in which the Participant attains age 70-1/2.

For the purposes of this paragraph (b), any amount paid to a minor child is treated as if it had been paid to the surviving spouse if such amount will become payable to the surviving spouse upon such child reaching majority or any other designated event as may be permitted by Treasury Regulations, if any.

(c) Appendix D, Minimum Distribution Requirements, provides the Plan provisions to comply with Section 401(a)(9) of the Code and Treasury Regulations §1.401(a)(9)-2 through -9, as applicable, relating to required minimum distributions.

SECTION 14. NONASSIGNABILITY

Except as required under ERISA, no right or interest, of any Participant or Beneficiary in the Plan or in such Participant's accounts is (a) assignable or transferable or subject to any lien in whole or in part, either directly or by operation of law or otherwise, including, but not by way of limitation, alienation, execution, levy, garnishment, attachment, pledge, bankruptcy or in any other manner, other than a transfer as a result of death or mental incompetence, or (b) liable for, or subject to, any obligation or liability of such Participant or Beneficiary. Such portions of the Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions in the account of a Participant as are payable to another in accordance with the provisions of a "qualified domestic relations order," as defined in Section 414(p) of the Code and any applicable regulations thereunder, are distributed to the party designated in and in accordance with said order. The Effective Date of withdrawal for any such distribution is the first Business Day following the Plan Administrator's determination that the said order is in compliance with Section 414(p) of the Code and any applicable regulations thereunder and such distribution is made as soon as administratively practical thereafter. The Plan Administrator or Designee has promulgated procedures to determine whether a domestic relations order is a qualified domestic relations order. The procedures will be provided to a participant or alternate payee upon written request, or upon receipt of the domestic relations order by the Plan Administrator or Designee.

SECTION 15. EXTENT OF PARTICIPANT'S RIGHTS

(a) General. No person has any interest in or right to any part of the assets held under the Plan or the income thereon, except as and to the extent expressly provided in the Plan.

At the time of withdrawal by a Participant or Beneficiary he or she will receive shares or cash. There is no guarantee that the Current Market Value of any investment will be equal to or greater than the amount of the Participant's Savings therein. This Plan is designed to comply with and operate under Section 404(c) of ERISA. A Participant and his or her Beneficiaries assume all risk in connection with any decrease in the value of any investments allocated to such Participant's account. For purposes of Section 404(c)(1) of ERISA, in the absence of Participant or Beneficiary investment direction, a Participant or Beneficiary shall be treated as having exercised control over the assets invested in any investment which qualifies as a QDIA in accordance with Section 404(c)(5) of ERISA and the regulations promulgated thereunder.

The Plan does not and should not be construed as conferring any rights upon any person for a continuation of employment, nor does it interfere with the rights of Alcoa or any Subsidiary or Affiliate to terminate the employment of any person or to take any personnel action affecting such person without regard to the effect which such action might have upon such person or his or her Beneficiaries as a prospective recipient of benefits under the Plan.

(b) Military Service. Notwithstanding any provision of this Plan to the contrary, contributions, benefits and service credit with respect to qualified military service will be provided in accordance with Section 414(u) of the Internal Revenue Code.

SECTION 16. MANAGEMENT OF FUNDS

(a) General. Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions paid to the Trustee are invested as provided in the Plan.

(b) Trustees and Investment Managers. The Board or its designee has the responsibility to appoint, review the performance of, and remove where deemed appropriate, one or more Trustees, and one or more investment managers each of which is a bank, insurance company or other investment adviser qualified under Section 3(38) of ERISA. The duties of each Trustee and manager, to the extent not set forth in the Plan, are set forth in a trust agreement or other written documents approved by the Board or its designee. Except as otherwise provided in such documents or in the Plan, each such investment manager has sole investment control and management responsibility with respect to those assets of the Plan for which it is designated the investment manager. The Board may delegate its authority to appoint an investment manager, to remove an investment manager, to approve and direct the execution by the proper officer or officers of AGF of amendments to agreements with any investment manager and to review the performance of any such managers. Such delegation also includes the authority to approve written documents setting forth the duties of any manager and to direct the execution of investment management agreements by the proper officer or officers of AGF. No Trustee has any investment responsibility for any assets which are subject to the investment control of another investment manager and as to such assets it only has custodial duties if it is the custodian.

(c) Designation of Investment Strategy. The Board may from time to time designate, as to part or all of the assets of the Plan, that a separate fund or funds be established. Except as otherwise provided in the Plan, as to each such separate fund the Board or its designee may specify the investment strategy to be employed and the investment manager is thereupon relieved of responsibility for assuring that the specified investment strategy creates suitable diversification of the overall assets of the Plan, provided that such investment manager has followed such specifications.

(d) (1) Acquisition of Fixed Income Investments by the Trustee. The Trustee will enter into investment arrangements with insurance companies, banks or money managers, as directed by an investment manager duly appointed by the Board or its designee for the Fixed Income Fund. The Trustee will invest all Savings and other amounts to be invested in the Fixed Income Fund in accordance with such directions.

(2) Accounting for Participant's Accounts. Participants' investments in the Fixed Income Fund are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in the Fixed Income Fund as may be acquired with funds (if any) in such Participant's accounts to be invested therein. Such allocations will be made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(e) (1) Acquisition of Company Stock by Trustee. The Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions to be invested in the Alcoa Stock Fund are used by the Trustee to purchase from time to time shares of Company Stock (i) from Alcoa, at the Current Market Value thereof, or (ii) to the extent Alcoa does make shares available for purchase by the Trustee for such purpose, on the open market, unless Alcoa otherwise directs, or (iii) by the exercise of warrants or rights as provided in this Section. The Trustee, to the extent reasonable, invests any cash held in the fund in cash equivalents (including commercial paper). The Trustee also holds for the purpose of allocation to the accounts of individual Participants as hereinafter provided (i) shares of such stock which the Trustee has acquired upon withdrawal by a Participant, and (ii) shares of such stock which the Trustee has acquired pursuant to Participants' elections to transfer investments under the provisions of Section 9. All shares of such stock purchased by the Trustee are carried in the accounts of the Trustee at the actual cost thereof, including any taxes, commissions, etc. which are not paid by the Participating Employer, incident to the purchase except that shares acquired upon the exercise of warrants or rights are carried at the Current Market Value of such shares on the date of such exercise.

(2) Allocation of Stock to Participants' Accounts. Participants' investments in the Alcoa Stock Fund are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in the Alcoa Stock Fund as may be acquired with funds (if any) in such Participants' accounts to be invested therein. Such allocations are made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(3) Allocation of Dividends to Participants' Accounts. In valuing the units, dividends are accounted for on the date the Board declares the dividend. Once received, dividends are invested in the Alcoa Stock Fund. A Participant may elect to receive an annual distribution of the dividends posted to their account during the Plan Year. Such election must be made prior to the last dividend record date in the Plan Year, and distribution will be made as soon as administratively practical following the date the final dividends are posted to the Participant's account. Distribution will be paid in a lump sum from the Alcoa Stock Fund. To the extent the Participant's account balance in the Alcoa Stock Fund is insufficient to pay the dividends, the balance of the distribution will be paid pro-rata from the Participant's other Core Fund investments.

(4) Warrants & Purchase Rights. A Participant has no right of request, direction or demand upon the Trustee to exercise in his or her behalf warrants or rights to purchase shares of common stock or other securities of Alcoa, except as otherwise determined by the Board. The Trustee, in its discretion, may exercise or sell any warrants or rights to purchase shares of Company Stock appertaining to shares of such stock held by the Trustee and may sell any warrants or rights to purchase other securities of Alcoa appertaining to shares of such stock held by the Trustee.

(5) <u>Stock Splits & Dividends</u>. Shares of Company Stock received by the Trustee by reason of a stock split or stock dividend become part of the Alcoa Stock Fund.

(6) <u>Voting</u>. The Trustee exercises its voting rights in accordance with written directions of each Participant with respect to at least the number of whole shares of Company Stock held by it in the Participants' accounts on the record date for voting. With respect to all other shares of Company Stock held by the Trustee on the record date for voting (the "Other Shares"), including but not limited to, (i) fractional shares in the Participants' accounts (if they are not subject to direct voting), (ii) shares for which it has not received written directions from any Participant, and (iii) any shares which have not yet been allocated to Participants' accounts, the Trustee exercises its voting rights in the same proportion (for, against, abstain and so on) on each matter as it exercises its voting rights with respect to shares of Company Stock for which voting directions were received from all participants in all plans which participate in the Alcoa Stock Fund.

(f) (1) <u>Acquisition of Other Investments by Trustee</u>. Alcoa has and in the future will enter into investment arrangements with various investment managers. Any such arrangements must be approved by the Benefits Management Committee. Expenses incurred in connection with the purchase or sale of securities by the investment manager are paid from the applicable Investment Fund.

(2) <u>Accounting for Participant's Accounts</u>. Participants' investments in the Core Funds are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in each of the Core Funds as may be acquired with funds (if any) in such Participant's accounts to be invested therein. Such allocations will be made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(g) <u>Transition Provision</u>. Pending investment under an arrangement established pursuant to this Section and pending distribution to Participants following withdrawal from such an arrangement, cash is invested by the Trustee in short-term fixed income securities or cash equivalents (including commercial paper) and the value of such securities or cash equivalents is allocated to the accounts of Participants in an equitable manner determined by the Benefits Management Committee.

(h) <u>Brokerage Account</u>. Participant's have the right to invest and personally manage investments outside of the Core Funds by investing through the Brokerage Account offered by a broker selected by the Plan ("Broker"). Investment options through the Brokerage Account are mutual funds (other than those already available as Core Funds), any taxable equity or fixed income security publicly traded in a U.S. security market (including American Depository Receipts), and money market funds. Pre-Tax Savings, After-Tax Savings, Rollover Contributions, Participating Employer Contributions, Discretionary Contributions Restricted Discretionary Contributions, and Employer Retirement Income Contributions that are subject to

transfer as provided in Section 9, may not be directly invested in the Brokerage Account, nor may withdrawals, distributions or loans be made directly from the Brokerage Account. Such transactions must be processed through the Core Funds.

(1) <u>Restrictions of Trading in the Brokerage Account</u>. Certain restrictions apply to investment vehicles that may be available through the Brokerage Account. Specifically, the following investments are not available through the Brokerage Account: Alcoa company stock (common or preferred) and bonds; funds currently available in the Core Funds; tax-free funds; securities of publicly traded limited partnerships; options contracts; purchase on short sales, futures, precious metals, and currencies; real estate (other than funds); annuities; life insurance policies; collectibles; commodities; foreign stocks (not American Depository Receipt); and margin trading and trade-away trades that are placed by another broker and settle with the Broker.

(2) <u>Trading within the Brokerage Account</u>. Investment purchases in the Brokerage Account may be made after such amounts are transferred from the Participant's Core Fund accounts. Transfers from Core Funds may be made as provided in Section 9. Transferred funds will be held in the Broker's money market fund until the Participant's buy orders are received by the Broker. Trades may be subject to initial and subsequent investment minimums required by a mutual fund.

Transfers are made out of the Brokerage Account and into the Core Funds from the Schwab Money Market Fund. If there are insufficient funds to make the requested transfer, the participant must submit a sell order with Schwab. The proceeds of securities sold will be invested automatically in the Broker's money market fund and will be subsequently transferred out of the Brokerage Account to the Core Funds as directed by the Participant.

(3) <u>Expenses Incurred by Trading and Voting</u>. The Broker's standard commission schedule will be deducted from the Brokerage Account of the Participant who initiates the trades, and any other fees and expenses incurred through the Brokerage Account will be paid directly by the Participant.

The Broker will execute proxies for any securities held in the Brokerage Account accounts in accordance with written directions of any Participant.

OTHER PROVISIONS OF THE PLAN

SECTION 17. LOANS

(a) A Participant may borrow a proportion of the Current Market Value of his or her Savings, and the Current Market Value of his or her Participating Employer and Discretionary Contributions that were contributed to a prior plan before January 1, 2011 and transferred to this Plan, and which are eligible for transfer under Section 9 of this Plan ("Eligible Loan Account Balance").

A Participant may not borrow Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions or Employer Retirement Income Contributions made to this Plan, on or after January 1, 2011, or investment gains thereon.

A Participant shall pay a $100 processing fee, or such other amount as may be designated by the Plan Administrator, for each loan request. The fee will be included in the loan amount, subject to the limitations of this Section 17, and deducted prior to distribution of the loan.

(b) A loan to a Participant, when added to the balance of any other outstanding loans the Participant has under the Plan, cannot exceed the lesser of:

(1) $50,000 reduced to the extent of the highest outstanding loan balance of the Participant's loans outstanding during the 365 day period immediately preceding the date on which the loan is made; or

(2) 50% of the sum of the Participant's (A) Eligible Loan Account Balance, plus (B) Restricted Discretionary Contributions and vested portion of Employer Retirement Income Contributions balances.

A Participant may refinance any general purpose loan for any reason at any time (but only once in a twelve-month period), as may be permitted under the Code or ERISA.

(c) Each loan to a Participant is secured by a promissory note under which the Participant pledges and grants the Trustee an interest in the Participant's Eligible Loan Account Balance to the extent of the unpaid loan.

(d) All loans to Participants are treated as investments of plan assets in their respective accounts. All principal and interest associated with a Participant's repayment of a loan are credited to his or her Plan account.

(e) The Plan Administrator has developed a procedure in accordance with the Code and ERISA under which such loans from the Plan will be made available to Participants, which procedure has been approved by the Benefits Management Committee.

(f) Loan repayments will be suspended under this Plan during a period of military service as permitted under Section 414(u)(4) of the Internal Revenue Code and the regulations promulgated under Section72(p) of the Code. Upon the Participant's return to active employment, loan repayments will resume and the period of repayment extended in direct proportion of the Participant's period of absence for military leave.

SECTION 18. TRUST

All assets of the Plan are held in trust for the Plan, except as otherwise permitted by applicable law. Alcoa has entered into a trust agreement with a national banking association which acts as Trustee under the Plan. The Alcoa Board of Directors or its designee may, from time to time, amend such trust agreement (subject to its terms), remove such Trustee or any Successor Trustee and upon removal or resignation of a Trustee, appoint a Successor Trustee.

SECTION 19. ADMINISTRATION

(a) Duties of Plan Administrator. The Plan Administrator or its Designee are responsible for the preparation and the filing with governmental agencies or the furnishing to Participants and Beneficiaries, of all summaries, descriptions, annual and other reports, notices and other documents and information which are required to be so prepared and filed or furnished under ERISA or the Code, retain appropriate records and also have all of the other responsibilities and duties of the administrator of the Plan as set forth in ERISA, except as otherwise provided in the Plan. Each Participating Employer by whom a Participant is employed furnishes to the Plan Administrator or its Designee any records required for the foregoing.

(b) The Benefits Management Committee. Except as provided in Section 16 and in paragraph (a) of this Section, the complete authority to control and manage the operation and administration of the Plan is placed in the Benefits Management Committee, which consists of one or more persons appointed from time to time by the Board.

(c) Duties of Benefits Management Committee. Subject to the limitations of the Plan, the Benefits Management Committee has the discretionary authority to: (1) construe and interpret the Plan, (2) interpret administrative forms and other information, (3) make credibility findings, and (4) establish supplemental regulations for the administration of the Plan and the transaction of its business. All actions, determinations and interpretations of the Benefits Management Committee will be performed in a uniform and nondiscriminatory manner to all Participants in similar circumstances. All interpretations of the Plan and determinations of disputed questions made by the Benefits Management Committee are conclusive, final and binding upon the Participating Employers, Participants, Beneficiaries, other employees and any other individuals claiming rights under the Plan, subject to a claimant’s request under paragraph (e) of this Section to have the Benefits Management Committee review the denial of a claim. When making an interpretation or determination, the Benefits Management Committee is entitled to rely upon information furnished by the individual, Participant, Beneficiary or Participating Employer, unless in accordance with an appeals procedure established by the Benefits Management Committee the claimant establishes to the satisfaction of the Benefits Management Committee that Continuous Service, compensation or other records are erroneous.

(d) Application for Benefits. Each person applying for a benefit under the Plan must furnish all information required under procedures approved by the Benefits Management Committee.

(e) Review of Denial of Benefits. If any applicant’s claim for benefits under the Plan is denied, the applicant will be notified in writing of such denial. Such notice will set forth the specific reasons for such denial and will be written in a manner calculated to be understood by the applicant. The applicant will be afforded a reasonable opportunity for a full and fair review

by the Benefits Management Committee or its Designee of the decision denying his or her claim for benefits, in accordance with a claims procedure which the Benefits Management Committee adopts. After the final determination of an appeal by the Benefits Management Committee or its Designee, the applicant must file any litigation arising out of the underlying facts or circumstances giving rise to such claim and appeal, under ERISA or otherwise, within one hundred eighty (180) days following the date of the final notice provided by the Benefits Management Committee or its Designee.

(f) Extent of Benefits Management Committee's Responsibility. The members of the Benefits Management Committee will act in a prudent manner in the performance of their duties. No member will be personally liable by virtue of any contract, agreement, bond or other instrument made or executed by or on behalf of such member as a member of the Benefits Management Committee. To the extent permitted by ERISA, no member of the Benefits Management Committee will be liable for any mistake of judgment made by himself or herself or any other member, nor for any loss, unless resulting from his or her own gross negligence or willful misconduct, and no member will be liable for the neglect, omissions or wrongdoing of any other member thereof, or of the agents or counsel of the Benefits Management Committee. To the extent permitted by law, AGF will indemnify and save harmless each member of the Benefits Management Committee against all expenses and liabilities arising out of his or her services as such, except for expenses and liabilities arising from such member's own gross negligence or willful misconduct as determined by the Board.

(g) Relationship to Other Fiduciaries. Each fiduciary in carrying out its responsibilities under the Plan may rely upon any direction, information or action of another fiduciary as being proper under this Plan or the documents under which the assets of the Plan are managed, and is not required to inquire into the propriety of any such direction, information or action. It is intended under this Plan and such documents that each fiduciary is responsible for the proper exercise of its own powers, duties, responsibilities and obligations under this Plan and such documents and is not responsible for any act or failure to act of another fiduciary, except as otherwise provided by ERISA.

(h) Multiple Fiduciaries. Any person or group of persons may serve in more than one fiduciary capacity with respect to the Plan.

(i) Further Allocation of Fiduciary Duties. Any two or more fiduciaries named herein or appointed by the Board as provided herein may from time to time agree in writing with respect to the allocation of duties and responsibilities under the Plan, including fiduciary responsibilities, among the fiduciaries so agreeing, provided however that any reallocation of fiduciary responsibilities clearly allocated by the Plan or by the Board requires prior approval of the Board.

(j) Delegation of Fiduciary Duties. Any fiduciary named herein or appointed by the Board as provided herein may designate another person or persons to carry out any or all of the duties and fiduciary responsibilities which it has under the Plan and which are specified in such designation except that no Trustee may delegate fiduciary responsibilities with respect to investment functions without the prior approval of the Board.

(k) <u>Delegation of Ministerial Duties</u>. Any fiduciary named herein, appointed by the Board as provided herein or designated under paragraph (j) above may delegate ministerial duties as follows: employ one or more persons to render advice, including legal and accounting services, with regard to any responsibility such fiduciary has under the Plan; may appoint ministerial agents (including brokers or others who may execute investment transactions); and may delegate to others its clerical and other non-fiduciary functions.

(l) <u>No Added Remuneration for Employees</u>. No member of the Benefits Management Committee and no other person who renders services to or for the Plan may receive remuneration for services as such if he or she also is an employee of AGF, Alcoa, a Subsidiary or Affiliate.

SECTION 20. AMENDMENT, MODIFICATION, SUSPENSION OR TERMINATION

(a) <u>Rights Reserved</u>. AGF reserves the right, by action of the Board or the Benefits Management Committee, taken in accordance with the Board's or Benefits Management Committee's operating procedures, (1) to amend, modify, suspend or terminate the Plan or to suspend or completely discontinue contributions to the Plan, and (2) to terminate the Participation in the Plan of any Participating Employer or any designated group of Eligible Employees employed either within or outside the U.S. Any Participating Employer may terminate its participation in the Plan or suspend or discontinue its contributions under the Plan at any time upon 30 days prior written notice to the Plan Administrator. Such 30 day notice requirement may be waived by the Benefits Management Committee. No such amendment or other action relating to the Plan may reduce the amounts then credited to any Participant's account, or provide or have the effect of providing that the securities and funds held in trust for the Plan or the income thereof may be used for or devoted to purposes other than the exclusive benefit of Participants and their Beneficiaries and for the payment of expenses of the Plan.

(b) <u>Sale of Assets, etc.</u> In the event any assets of any business of any Participating Employer are transferred to another entity by sale, merger, consolidation or otherwise, and the entity to which said assets are transferred has in effect, or thereupon establishes, a tax-qualified plan and related trust for the exclusive benefit of employees which qualify under the applicable provisions of the Code, all assets under the Plan, held in the accounts of Participants who continue in the employment of the transferee entity, may be transferred and paid, for their respective accounts, to the trust for the tax-qualified plan of said transferee entity, provided that any such transfer of investments will be effected in such manner as to preclude, for federal income tax purposes, a termination of the Plan or the constructive receipt of benefits thereunder with respect to said Participants.

(c) <u>Transfer of Plan Assets</u>.

(1) Notwithstanding the foregoing, in the event of any merger or consolidation of the Plan with, or a transfer of any of the assets and liabilities of the Plan to any other plan, each affected Participant must (as if such plan were terminated immediately after such merger, consolidation or transfer) be entitled to a benefit under such other plan which is

equal to or greater than the benefit he or she would have been entitled to receive under the Plan immediately prior to such merger, consolidation or transfer (as if the Plan had then terminated). In the event that assets are transferred to this Plan from any other plan sponsored by Alcoa or any Subsidiary or Affiliate, each Participant who has assets transferred from such plan or plans will be entitled to a benefit under this Plan which is equal to or greater than the benefit he or she had under such other plan. Any protected optional form of benefits provided under said plan may be maintained under this Plan. These provisions do not constitute a guaranty against investment losses.

(2) In the event a participant in a plan named below ("Alcoa Retirement Savings Plans"), becomes an Eligible Employee under this Plan, all of the participant's accounts in the applicable Alcoa Retirement Savings Plan will be transferred to analogous accounts in this Plan as soon as reasonably practical after the Plan Administrator or Designee receives notice.

Alcoa Retirement Savings Plan for Bargaining Employees;

Alcoa Retirement Savings Plan for Salaried Employees; and

Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees.

(3) In the event a Participant ceases to be an Eligible Employee under this Plan and the Participant becomes an eligible employee under one of the Alcoa Retirement Savings Plans listed in (2) above, all of the Participant's accounts will be transferred to analogous accounts in the applicable Alcoa Retirement Savings Plan, as soon as reasonably practical after the Plan Administrator or Designee receives notice and the Participant ceases to be a Participant, and will be entitled to no further benefits under this Plan.

SECTION 21. ADMINISTRATIVE EXPENSES

Except as otherwise provided in the Plan, all costs and expenses incurred in administering the Plan, including the expenses of the Benefits Management Committee, the fees and expenses of the Trustee, the fees and charges payable under the investment arrangements, and other legal and administrative expenses, are paid by the Plan.

Investments in the Core Funds will be subject to an administrative expense fee, which will be used to pay the expenses of the Plan. Initially the fee will be set at five basis points per year, and will be charged on a daily basis. The fee will be periodically adjusted by the Plan Administrator based on the actual expenses of the Plan.

SECTION 22. SELECTION OF BENEFICIARIES

(a) Designation of Beneficiary. Subject to such administrative regulations as may be adopted from time to time, the Beneficiary with respect to all of the assets in the accounts of a Participant will be Participant's spouse if then living, or if not, the Participant's estate. With the written notarized consent of a Participant's spouse, a Participant may file with the Plan Administrator or its Designee a written designation of a Beneficiary or Beneficiaries other than his or her spouse. In the event the designation of such other Beneficiary is revoked in writing by

the Participant, his or her spouse will become the Beneficiary of said assets until such time as the Participant, with his or her spouse's written notarized consent, designates in writing another Beneficiary or Beneficiaries.

In the event a Participant certifies that he or she does not have a spouse, a Beneficiary or Beneficiaries with respect to all or part of the assets in the accounts of the Participant may be designated or revoked by the sole action of the Participant.

If there is no designated Beneficiary, or if no Beneficiary is living at the time of the Participant's death, the Beneficiary is the Participant's spouse if then living, or if not, the Participant's estate.

Written designations of a primary Beneficiary or a contingent Beneficiary to receive the assets of a Participant in the case where the primary Beneficiary is deceased, spousal consents, and revocations are made on a form or forms approved by the Plan Administrator. Any such written designation, consent or revocation become effective on the calendar day on which such designation, consent or revocation is Properly Received. After the death of a Participant, a properly designated Beneficiary may name his or her own Beneficiary to receive a distribution of the Beneficiary's account balances when the Beneficiary is deceased ("Subsequent Beneficiary"). A Subsequent Beneficiary shall receive a total distribution of the Subsequent Beneficiary's account balance within the greater of: (i) ninety (90) days after death of the Beneficiary who named such Beneficiary or (ii) five (5) years of the Participant's death.

(b) Other Payments. In case of incapacity of a Participant or Beneficiary entitled to a benefit under the Plan, benefit payment are made to such person's legal representative who makes claim therefore, or if no such claim has been received, to such other person or persons as the Benefits Management Committee, utilizing objective criteria, selects from among dependents, next of kin or friends. Any payment of a benefit under the Plan in accordance with the provisions of this Section is a complete discharge of any liability for the payment of such benefit under the Plan.

SECTION 23. PARTICIPANT'S STATEMENT

A statement showing each Participant's interest in each of the Plan's Investment Funds will be made available at least quarterly.

SECTION 24. EFFECTIVE DATE OF PLAN

This Plan is effective January 1, 2015.

SECTION 25. CONSTRUCTION

It is intended that the Plan conform to the applicable requirements of ERISA and the Code, and that the Plan and related trust agreement are considered one if and to the extent necessary for compliance therewith. Except to the extent otherwise provided in ERISA and the Code, the Plan is construed, regulated and administered under the laws of the Commonwealth of Pennsylvania, including its applicable statute of limitations (as such may be superceded by any limitations period provided under the terms of the Plan).

APPENDIX A

LIMITATIONS AND DISCRIMINATION TESTING

1. Pre-Tax Savings for any Plan Year of a Participant is subject to the following limitations:

(a) The applicable limit as defined in Treasury Regulation section 1.402(g)-1(d) with respect to the Pre-Tax Savings of this Plan and elective deferrals of all other plans, contracts, or arrangements of the employer;

(b) if the Participant is a Highly Compensated Employee with respect to any Participating Employer for that year, the amount that may be made on his or her behalf in compliance with the special discrimination tests of Sections 401(k) and 401(m) of the Code for that year, as applied separately to each Plan;

(c) the amount deductible by the Participating Employer for that year under Section 404 of the Code; and

(d) the maximum permitted amount under Appendix B of the Plan.

2. To conform the operation of the Plan to the requirements of Sections 401(k) and 401(m) of the Code and the limitations of Paragraphs (1)(a) and (1)(b) above with respect to any Participant, the Plan Administrator may, without that Participant's consent:

(a) prospectively modify or revoke his or her election to have Savings, Participating Employer Contributions, Discretionary Contributions, and Restricted Discretionary Contributions made on his or her behalf,

(b) distribute to him or her the amount by which the Pre-Tax Savings made on his or her behalf for any Year exceeds the limitation of Paragraph (1)(a) above for that year plus the amount of any income allocable to such excess (but not more than his Pre-Tax Savings account balance) by the April 15 next following the end of that Plan Year;

(c) distribute to him or her the amount by which the Pre-Tax Savings made on his or her behalf for any Plan Year exceeds the limitations of Paragraph (1)(b) above for that year (as determined in accordance with Section 401(k)(8)(B) of the Code) plus the amount of any income allocable to such excess (but not more than his Pre-Tax Savings account balance) by the end of the Plan Year following the Plan Year for which the amounts were contributed; and

(d) make appropriate adjustments to his or her Pre-Tax Savings account to reflect such distributions.

3. Such modification or revocation described in 2. above is made only if necessary under one of the following circumstances:

(a) to ensure that the discrimination tests of Section 401(k) of the Code governing permissible levels of Pre-Tax Savings contributions for both the ESOP and non-ESOP portions of the Plan are met for such Plan Year, or to ensure that one of the following Average Actual Deferral Percentage tests are met for both the ESOP and non-ESOP portions of the Plan for such Plan Year;

(b) to ensure that a Participant's annual additions for any calendar year will not exceed the limitations of Appendix B; or

(c) to ensure deductibility of the Employer's entire contribution to the Plan for federal income tax purposes.

4. Definitions. For purposes of this Appendix A, the following terms are defined as follows:

(a) "Actual Deferral Percentage" means the ratio, expressed as a percentage calculated to the nearest one-hundredth of one percent, of the amount of Pre-Tax Savings on behalf of an Eligible Employee for a Plan Year to the Eligible Employee's Compensation for the Plan Year, whether or not the employee was a Participant for the entire Plan Year. A Highly Compensated Employee's Savings include such savings for the Plan Year which is in excess of the limitations set forth in Section 415(c)(1) of the Code ("Excess Pre-Tax Savings"), but exclude Excess Pre-Tax Savings for Non Highly Compensated Employees. Any Eligible Employee who does not elect to make Pre-Tax Savings and who does not receive Qualified Matching Contributions for a Plan Year will have zero Actual Deferral Percentage for the Plan Year.

(b) "Average Actual Deferral Percentage" means, for the group of Eligible Employees who are Highly Compensated Employees for a Plan Year or the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year, the average of the Actual Deferral Percentages of all Eligible Employees in such group for the Plan Year.

(c) "Average Contribution Percentage" means, for the group of Eligible Employees who are Highly Compensated Employees for a Plan Year or the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year, the average of the Contribution Percentages of all Eligible Employees in such group for the Plan Year.

(d) "Contribution Percentage" means the ratio, expressed as a percentage calculated to the nearest one-hundredth of one percent, of the sum of Participating Employer Contributions (other than Qualified Matching Contributions treated as Elective Deferrals under paragraph 7 of this Appendix) and any After-Tax Savings on behalf of an Eligible Employee for a Plan Year to the Employee's Compensation for the Plan Year, whether or not the employee was a Participant for the entire Plan Year. For these purposes, an Eligible Employee's Contribution Percentage for any Plan Year is calculated by excluding any forfeitures of Excess Aggregate Contributions allocated to the Eligible Employee's account for the Plan Year.

(e) "Compensation" means the total amount of compensation (within the meaning of Section 415(c)(3) of the Code, and subject to the limitation of Section 401(a)(17) of the Code) received by an employee from the Employer while an Eligible Employee under the Plan during the Plan Year. An Eligible Employee's Compensation for a Plan Year includes all Pre-Tax Savings made to the plan for the Plan Year, and all other such employee savings made by the Employer for the Plan Year to any other plan on behalf of the employee that are not currently includible in the gross income of the employee under Sections 125, 132(f)(4), 402(a)(8), 402(h) or 403(b) of the Code, provided that AGF has elected to treat all such elective contributions as compensation with respect to all employees under all plans of the Participating Employer.

In applying the limitation of Section 401(a)(17) of the Code, effective January 1, 1997, the family aggregation rules under this Appendix no longer apply.

(f) "Eligible Employee" means, with respect to any Plan Year, any employee who is eligible to commence participation in the Plan under Section 1 of the Plan and to have Savings made to the Plan under Section 2 of the Plan for the Plan Year, regardless of whether any contributions are made to the Plan on behalf of the employee for the Plan Year.

(g) "Excess Contributions" means, with respect to any Plan Year, the excess of the aggregate amount of Pre-Tax Savings, including Qualified Matching Contributions treated as Elective Deferrals under paragraph 7 of this Appendix, actually made to the Plan on behalf of Highly Compensated Employees for the Plan Year over the maximum amount of such contributions permitted under paragraph 5 of this Appendix.

(h) "Excess Aggregate Contributions" means, with respect to any Plan Year, the excess of the aggregate amount of Participating Employer Contributions and any After-Tax Savings actually made to the Plan on behalf of Highly Compensated Employees for the Plan Year over the maximum amount of such contributions permitted under paragraph 9 of this Appendix.

(i) "Employer" means AGF and all other entities as required to be covered under Section 414(c) of the Code.

(j) "Family Member" means, with respect to any Eligible Employee, an individual described in Section 414(q)(6)(B) of the Code.

(k) "Highly Compensated Employee" includes, for any Plan Year, the following Employees:

(i) A Highly Compensated Active Employee includes any employee (other than employees who are non-resident aliens and receive no earned income from sources within the U.S.) who performs service for the Employer during the Determination Year and who during the Look-Back Year:

(1) was a 5 % owner (within the meaning pursuant to Section 416(i)(1) of the Code) at any time during the year or the preceding year, or

(2) for the preceding year received Compensation from the Employer in excess of $80,000 (as adjusted pursuant to Section 415(d) of the Code) for such year.

(ii) A Highly Compensated Former Employee means:

(1) any employee who was a Highly Compensated Employee when the employee separated from service, or

(2) any employee who was a Highly Compensated Employee at any time after attaining the age 55.

(l) “Non-Highly Compensated Employee” means, for any Plan Year, an employee who is not a Highly Compensated Employee.

(m) “Qualified Matching Contributions” means any Participating Employer Contributions to this Plan on behalf of Eligible Employees, provided that amounts attributable to such contributions are not distributable merely on account of the Employee’s hardship and are immediately vested.

5. Average Actual Deferral Percentage Test. For each Plan Year, the Plan must satisfy one of the following Average Actual Deferral Percentage tests with respect to Pre-Tax Savings, and Qualified Matching Contributions treated as Pre-Tax Savings under paragraph 7 of this Appendix, made to both the ESOP and non-ESOP portions of the Plan for the Plan Year:

(a) the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by 1.25; or

(b) the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by two, provided that the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year does not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees by more than two percentage points.

(c) The Average Actual Deferral Percentage Test for all contributions to the ESOP portion of the Plan will be computed separately under this Section.

For Plan Years in which the Plan is operated in accordance with the safe harbor requirements of Section 401(k)(12) of the Code, Section 5 of this Appendix A does not apply.

6. Special Rules.

(a) Aggregation of Plans. In the event that this Plan satisfies the requirements of Section 401(a)(4), 401(k) or 410(b) of the Code only if aggregated with one or more other plans, or if one or more other plans satisfy the requirements of such sections of the Code only if aggregated with this Plan, then the provisions stated herein will be applied by determining the Actual Deferral Percentages of Employees as if all such plans (excluding other ESOPs) were a single plan. For plan years beginning after December 31, 1989, plans may be aggregated in order to satisfy Section 401(k) of the Code only if they have the same plan year. Notwithstanding the foregoing, certain plans will be treated as separate if mandatorily disaggregated under regulations under Section 401(k) of the Code.

(b) In the event the Plan does not pass the ADP test, the test will be disaggregated by removing from the test all participants who have not attained age 21 and completed one eligibility year within 6 months of the last day of the plan year.

(c) All ESOP portions of the Savings Plan shall be aggregated for ADP with the Non-ESOP portions of the Savings Plan.

7. Treatment of Qualified Matching Contributions. If any Qualified Matching Contributions are made on behalf of Eligible Employees for a Plan Year, AGF may elect, in accordance with the regulations of the Secretary of Treasury under Section 401(k) of the Code, to treat all or a portion of such Qualified Matching Contributions as Pre-Tax Savings for purposes of calculating the Actual Deferral Percentages of Eligible Employees for the Plan Year. Any such Qualified Matching Contributions for a Plan Year must be made no later than the end of the 12 month period immediately following the close of the Plan Year.

8. Correction of Excess Contributions.

(a) General Rule. If the Plan does not satisfy one of the Average Actual Deferral Percentage tests of paragraph 5 of this Appendix as of the end of a Plan Year, the Excess Contributions for the Plan Year will be corrected if the Excess Contributions for the Plan Year are timely recharacterized as employee After-Tax Savings contributions in accordance with subsection (c) below or timely distributed to Highly Compensated Employees in accordance with subsection (d) below.

(b) Allocation of Excess Contributions. Effective for Plan Years beginning after December 31, 1996, in the event the nondiscrimination requirements of paragraph 5 of this Appendix are not satisfied for a Plan Year, the “deferral percentage leveling method” described in the preceding paragraph is performed as a first step in order to determine the total dollar amount of Excess Contribution to be distributed: a calculation is made to determine the dollar amount of Elective Deferrals necessary to reduce the deferral percentage of the Highly Compensated Employee with the highest deferral percentage to be equal to the deferral percentage of the Highly Compensated Employee with the next highest deferral percentage, and where necessary, calculations are made to determine the dollar amounts of reductions of the deferral percentage of subsequent Highly Compensated Employees that may be required in order

to satisfy the nondiscrimination requirements in paragraph 5 of this Appendix. The total dollar amount of Excess Contribution that must be distributed for the Plan Year is the sum of the dollar amounts so calculated for each Highly Compensated Employee whose deferral percentage is so reduced.

Distribution of the total amount of Excess Contribution determined in the paragraph above is made using the "dollar leveling method." Excess Contributions of the Highly Compensated Employee with the largest dollar amount of contributions for the Plan Year shall be distributed to the extent necessary to cause that Highly Compensated Employee's dollar amount of Excess Contributions to equal the dollar amount of Excess Contributions of the Highest Compensated Employee with the next highest dollar amount of Excess Contributions for the Plan Year. If the total amount distributed is less than the amount of total Excess Contribution, then both Highly Compensated Employees' amounts are reduced to the same dollar level of the Highly Compensated Employee electing the third highest dollar amount and the dollar leveling process is repeated until the total dollar amount that should be reduced as calculated in the above paragraph is distributed. However, if reduction of a lesser amount of contributions would equal the total dollar amount of Excess Contributions that must be distributed for the Plan Year, the lesser amount is distributed.

A participant who has had his contributions reduced in accordance with this subparagraph shall have the amount of such reduction paid to him in cash as soon as practicable, subject to applicable payroll taxes. The amount of the Excess Contributions to be distributed shall be reduced by excess deferrals under 402(g) previously distributed for the Plan Year. The distributions of Excess Contributions shall include the income allocable thereto, including both the income allocable for the Plan Year for which the Contributions were made and the income for the period between the end of that Plan Year and the date as of which the distribution is made. Effective January 1, 2008, the distribution of Excess Contributions shall include the income or loss allocable only for the Plan Year of the Excess Contributions, and will not include the income or loss for the period between the end of the Plan Year and the date distribution is made. In addition, any Company Matching Contributions associated with the Excess Contribution shall be treated as forfeiture and used to reduce the Employer's contribution under Section 3 of the Plan.

(c) Recharacterization of Excess Contributions. Any recharacterization of Excess Contributions as employee After-Tax Savings will be accomplished by the Plan Administrator in the manner provided in subsection (b) above within 2 ½ months after the close of the Plan Year, providing such notices and following such procedures as required by regulations of the Secretary of Treasury, and will be deemed to occur no earlier than the date on which the last Highly Compensated Employee is informed in writing of the amount of his or her recharacterized Excess Contributions and the consequences thereof. Any Excess Contributions that are recharacterized as employee after-tax contributions for a Plan Year will, in combination with other Participating Employer Contributions to the Plan for the Plan Year, satisfy the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year. Any recharacterized Excess Contributions remain nonforfeitable under the Plan and are subject to the same distribution requirements as Pre-Tax Savings. Recharacterized Excess Contributions are taxable to the Highly Compensated Employee for the year in which the Highly Compensated Employee could have originally elected to receive the Excess Contributions amount in cash.

(d) Distribution of Excess Contributions. If any Excess Contributions allocated to Highly Compensated Employees for a Plan Year are not corrected by recharacterization under (c) above, then such Excess Contributions, plus any income and minus any loss allocable thereto, will be distributed to Highly Compensated Employees no later than 12 months following the close of the Plan Year.

(e) Income or Loss Allocable to Excess Contributions. The income or loss allocable to the Excess Contributions referred to in subsection (d) above include the allocable income or loss for the Plan Year of the Excess Contributions and the allocable income or loss for the period between the end of the Plan Year and the distribution of the Excess Contributions, calculated as follows:

The income or loss allocable for the Plan Year of the Excess Contributions is determined by multiplying the total investment income or loss (including dividends, interest, realized gains or losses, and unrealized appreciation or depreciation) allocable to the Participant's Pre-Tax Savings and amounts treated as Pre-Tax Savings under paragraph 7 of this Appendix for the Plan Year by a fraction, the numerator of which is the Excess Contributions allocated to the Participant for the Plan Year, and the denominator of which is the total account balance attributable to the Participant's Pre-Tax Savings and amounts treated as Pre-Tax Savings under paragraph 7 of this Appendix as of the end of the Plan Year, reduced by the investment gain (or increased by the investment loss) allocated to such total amount for the Plan Year.

The income or loss allocable to the Excess Contributions referred to in subsection (d) above will include only the income or loss allocable for the Plan Year of the Excess Contributions, and not the income or loss for the period between the end of the Plan Year and the distribution of Excess Contributions.

(f) Coordination with Excess Pre-Tax Savings. The amount of any Excess Contributions to be recharacterized under subsection (c) above or distributed under subsection (d) above with respect to any Highly Compensated Employee for a Plan Year is reduced by any excess Pre-Tax Savings previously distributed to the Highly Compensated Employee for the employee's taxable year ending with or within the Plan Year.

(g) Accounting for Excess Contributions. The amount of Excess Contributions allocated to a Highly Compensated Employee for a Plan Year that is recharacterized under subsection (c) above or distributed under subsection (d) above is attributed first to the Participant's Pre-Tax Savings for the Plan Year and then, to the extent such Excess Contributions exceed the Participant's Pre-Tax Savings for the Plan Year, attributed to amounts treated as Pre-Tax Savings under paragraph 4 of this Appendix in proportion to the amounts of such contributions on behalf of the Participant for the Plan Year.

9. Average Contribution Percentage Tests. For each Plan Year for which Participating Employer Contributions are made to the Plan (other than Qualified Matching Contributions

treated as Pre-Tax Savings for the Plan Year under paragraph 7 of this Appendix) or any After-Tax Savings are made to the Plan (including any Excess Contributions recharacterized as After-Tax Savings for the Plan Year under paragraph 8(c) of this Appendix), both the ESOP and non-ESOP portions of the Plan will satisfy one of the following Average Contribution Percentage tests for the Plan Year:

(a) the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by 1.25; or

(b) the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by two, provided that the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year does not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees by more than two percentage points.

(c) the Average Contribution Percentage Test applies separately to the ESOP portion of the Plan.

10. Special Rules.

(a) Aggregation of Plans. In the event that this Plan satisfies the requirements of Section 401(a)(4), 401(m) or 410(b) of the Code only if aggregated with one or more other plans, or if one or more other plans satisfy the requirements of such sections of the Code only if aggregated with this Plan, then the provisions stated herein will be applied by determining the Contribution Percentages of Employees as if all such plans were a single plan. For plan years beginning after December 31, 1989, plans may be aggregated to satisfy Section 401(m) of the Code only if they have the same plan year. Notwithstanding the foregoing, certain plans will be treated as separate if mandatorily disaggregated under regulations under Section 401(k) of the Code.

(b) Effective as of January 1, 2002, in the event the Plan does not pass the ACP test, the test will be disaggregated by removing from the test all participants who have not attained age 21 and completed one eligibility year within 6 months of the last day of the plan year.

(c) Effective with plan years after January 1, 2006, all ESOP portions of the Savings Plan shall be aggregated for ACP with the Non-ESOP portions of the Savings Plan.

11. Treatment of Pre-Tax Savings as Participating Employer Contributions.

AGF may elect, in accordance with the regulations of the Secretary of Treasury under Section 401(m) of the Code, to treat all or a portion of the Pre-Tax Savings made on behalf of Eligible Employees for a Plan Year as Participating Employer Contributions for purposes of

calculating the Contribution Percentages of Eligible Employees for the Plan Year. Any such Pre-Tax Savings for a Plan Year must be made no later than the end of the 12 month period immediately following the close of the Plan Year. Notwithstanding the preceding, AGF may elect to treat Pre-Tax Savings as Participating Employer Contributions for purposes of calculating Contribution Percentages only if one of the Average Actual Deferral Percentage Tests of paragraph 5 of this Appendix is satisfied before the Pre-Tax Savings are treated as Participating Employer Contribution for the Plan Year, and one of the Average Actual Deferral Percentage Tests of paragraph 5 of this Appendix continues to be satisfied for the Plan Year excluding the Pre-Tax Savings treated as Participating Employer Contributions for the Plan Year.

12. Correction of Excess Aggregate Contributions.

(a) General Rule. If the Plan does not satisfy one of the Average Contribution Percentages tests of paragraph 9 of this Appendix as of the end of a Plan Year, the Excess Aggregate Contributions for the Plan Year will be corrected by the Employer if the Excess Aggregate Contributions for the Plan Year are forfeited or timely distributed to Highly Compensated Employees in accordance with subsection (c) below.

(b) Allocation of Excess Aggregate Contributions. Effective as of January 1, 1997, in the event Excess Aggregate Contributions are made to the Plan for a Plan Year, the Contribution Percentage for the Highly Compensated Employee with the largest dollar amount of deferrals for the Plan Year will be reduced to minimum extent necessary either:

(i) to enable the Plan to satisfy one of the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year; or

(ii) to cause the Highly Compensated employee’s Contribution Percentage to equal the next highest Contribution Percentage of any Highly Compensated Employee for the Plan Year.

This process is repeated until the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year is sufficiently reduced to enable the Plan to satisfy one of the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year. The amount of Excess Aggregate Contributions to be allocated to each Highly Compensated Employee for the Plan Year is equal the total After-Tax Savings and Participating Employer Contributions, including Pre-Tax Savings on behalf of the Highly Compensated Employee for the Plan Year minus the amount determined by multiplying the Highly Compensated Employee’s reduced Contribution Percentage (as determined above) by the employee’s Compensation for the Plan Year.

(c) Forfeiture or Distribution of Excess Aggregate Contributions. Excess Aggregate Contributions, plus any income or minus any loss allocable thereto, must be forfeited to the extent attributable under subsection (f) below to Participating Employer Contributions that are not vested, and otherwise distributed to Highly Compensated Employees no later than 12 months following the close of the Plan Year.

(d) **Income or Loss Allocable to Excess Aggregate Contributions.** The income or loss allocable to the Excess Aggregate Contributions referred to in subsection (c) above include the allocable income or loss for the Plan Year of the Excess Aggregate Contributions and the allocable income or loss for the period between the end of the Plan Year and the distribution of the Excess Aggregate Contributions, calculated as follows:

(i) the income or loss allocable for the Plan Year of the Excess Aggregate Contributions is determined by multiplying the total investment income or loss (including dividends, interest, realized gains or losses, and unrealized appreciation or depreciation) allocable to the Participant's After-tax Savings, Participating Employer Contributions, and any other amounts taken into account under this section for the Plan Year by a fraction, the numerator of which is the Excess Aggregate Contributions allocated to the Participant for the Plan Year, and the denominator of which is the total account balance attributable to the Participant's After-tax Savings, Participating Employer Contributions and other amounts taken into account under this section as of the end of the Plan Year, reduced by the investment gain (or increased by the investment loss) allocated to such total amount for the Plan Year;

(ii) the income or loss allocable to the period (if any) between the end of the Plan Year of the Excess Aggregate Contributions and the distribution of the Excess Aggregate Contributions by the Plan is determined by multiplying the total investment income or loss allocated to the Participant's Participating Employer Contributions and amounts treated as Participating Employer Contributions under paragraph 11 of this Appendix for such period by a fraction determined under the method described in (i) above. In the alternative, the income or loss allocable to the period between the end of the Plan Year of the Excess Aggregate Contributions and the distribution of the Excess Aggregate Contributions equals 10% of the income or loss allocable to the Participant's Excess Aggregate Contributions for the Plan Year (as determined under (i) above multiplied by the number of calendar months that elapse between the end of the Plan Year and the date of distribution. For these purposes, a distribution occurring on or before the fifteenth day of a calendar month is treated as having been made on the last day of the preceding calendar month, and a distribution occurring after the fifteenth date of a calendar month is treated as having been made on the first day of the following calendar month.

The income or loss will include only the income or loss allocable for the Plan Year of the Excess Aggregate Contributions, and not the income or loss for the period between the end of the Plan Year and the distribution of Excess Aggregate Contributions.

(e) Coordination with Excess Contributions. The determination of the amount of Excess Aggregate Contributions for a Plan Year is made after the determination of the amount of any Excess Contributions for the Plan Year.

(f) Accounting for Excess Aggregate Contributions. The amount of Excess Aggregate Contributions allocated to a Highly Compensated Employee for a Plan Year is attributed to Participating Employer Contributions and any amounts treated as Participating Employer Contributions in proportion to the amounts of such contributions on behalf of the Participant for the Plan Year.

13. Recordkeeping Requirements.

(a) Average Actual Deferral Percentage Tests. The Employer maintains records sufficient to demonstrate satisfaction of the Average Actual Deferral Percentage tests of paragraph 5 of this Appendix for each Plan Year, and the extent to which any Qualified Matching Contributions are treated as Pre-Tax Savings under paragraph 7 of this Appendix for purposes of such tests. The determination of Eligible Employees' Actual Deferral Percentages, and the disposition of all Pre-Tax Savings (and any Qualified Matching Contributions treated as Pre-Tax Savings under paragraph 7 of this Appendix) on behalf of Participants, must satisfy such other requirements as may be prescribed by the Secretary of Treasury.

(b) Average Contribution Percentage Tests. The Employer maintains records sufficient to demonstrate satisfaction of the Average Contribution Percentage tests of paragraph 9 of this Appendix for each Plan Year, and the extent to which any Pre-Tax Savings are treated as Participating Employer Contributions under paragraph 11 of this Appendix for purposes of such tests. The determination of Eligible Employees' Average Contribution Percentages, and the disposition of all Participating Employer Contributions (and any Pre-Tax Savings) on behalf of Participants, must satisfy such other requirements as may be prescribed by the Secretary of Treasury.

14. Distribution of Excess Elective Deferrals. Excess Elective Deferrals means Pre-Tax Savings that is includible in a Participant's gross income under Section 402(g) of the Code to the extent it exceeds the dollar limitation. Excess Elective Deferrals are treated as annual additions under the Plan unless such amounts are distributed no later than the first April 15th following the close of the Participant's taxable year. Excess Elective Deferrals are adjusted for any income or loss up to the date of distribution as calculated under paragraph 8(e) and 12(d) of this Appendix. A Participant is deemed to notify the Plan Administrator of Excess Elective Deferrals that arise by taking into account only those Elective Deferrals made to this Plan and any other plans of the Employer. A Participant may assign any Excess Elective Deferrals made by the Participant to any other plans other than those of the Employer by notifying the Plan Administrator on or before January 15th of the following year.

APPENDIX B

CODE SECTION 415 LIMITATIONS

The limitations imposed by Section 415 of the Code are hereby incorporated by reference. If there is any discrepancy between the provisions of this Plan and the provisions of Code Section 415 and the regulations thereunder, the discrepancy will be resolved in such a way to give full effect to the provisions of Code Section 415.

The maximum annual additions provided by the Plan will be exactly equal to the maximum amounts permitted under Code Section 415 and the regulations thereunder. In the event a Participant's annual additions for any Plan Year would exceed the maximum amount of annual additions permitted under Code Section 415, such Participant's Savings are automatically reduced, in whole or in part, by the amount required to eliminate such excess.

For purposes of applying the limitations described in this Appendix B, compensation will include any differential pay received by a Participant absent for military leave and any payment earned prior to a Participant's separation from employment that is paid within a period ending on the later of i) two and one-half months following the date the Participant separated from employment, or ii) the end of the Plan Year in which the date the Participant separated from employment ("Post-Separation Compensation"). Post-Separation Compensation will include any payments for vacation, sickness, or leave of absence that otherwise would have been included as compensation had the Participant remained employed.

APPENDIX C

TOP HEAVY RULES

(a) This Plan constitutes a "Top Heavy Plan" for a Plan Year if as of the last day of the preceding Plan Year the present value of the cumulative account balances under the Plan for Participants who are Key Employees exceed 60 percent of the present value of the aggregate of all account balances for all Participants in the Plan. A non-Key Employee means any Participant or former Participant who is not a Key Employee.

(b) This Plan constitutes a Top Heavy Plan for a Plan Year if the employee benefit plans which make up the group of plans of which this Plan is considered a part are such that, when aggregated, the sum of (1) the present value of the account balances of Key Employees under all defined contribution plans in the group, and (2) the present value of the cumulative accrued benefits of Key Employees under all defined benefit plans in the group exceed 60 percent of the sum of such amounts for all employees who participate in the plans in the said group.

(1) The group of plans in which this Plan is considered a part includes (A) all plans of Alcoa, the Subsidiaries and Affiliates which enable the particular plans in which a Key Employee participates to meet the qualification requirement of Section 401(a)(4) of the Code or Section 410 of the Code; and, (B) all plans which Alcoa, in its discretion, decides to include, provided that the inclusion of such plan or plans would not prevent the group of plans from meeting the qualification requirements of Sections 401(a)(4) and 410 of the Code. The date upon which the account balances are valued for purposes of calculating the top heavy ratio to determine whether or not the Plan is Top Heavy for a particular Plan Year is the determination date, which is the last day of the preceding Plan Year, or in the case of the first plan year of any plan, the last day of such plan year.

(2) The amounts of account balances of an employee as of the determination date are increased by the distributions made with respect to the employee under the plan and any plan aggregated with the plan under Section 416(g)(2) of the Code during the one-year period ending on the determination date. The preceding sentence also applies to distributions under a terminated plan which, had it not been terminated, would have been aggregated with the plan under Section 416(g)(2)(A)(i) of the Code. In the case of a distribution made for a reason other than separation from service, death, or disability, this provision is applied by substituting "five-year period" for "one-year period."

(3) The accounts of any individual who has not performed services for the employer during the one-year period ending on the determination date are not taken into account.

(c) The following provisions are applicable to Participants for any Plan Year with respect to which the Plan is Top Heavy:

(1) The minimum Participating Employer Contribution for a Participant who is a non-Key Employee and has not separated from service at the end of the Plan Year, must not

be less than three percent of his or her Eligible Compensation for the Top Heavy Plan Year. If said allocation is less than three percent of his or her Eligible Compensation, then said allocation is the largest percentage allocated to a Key Employee for the Top Heavy Plan Year. In the event the highest rate allocated to a Key Employee for the Top Heavy Plan Year is less than three percent, Pre-Tax amounts contributed to the Plan are included in determining contributions made on behalf of Key Employees. Compensation for determining a minimum benefit, a minimum contribution and for all other Top Heavy purposes is the Participant's W-2 earnings for the calendar year that ends with the Plan Year.

Participating Employer Contributions used to satisfy the minimum contribution requirements are treated as Participating Employer Contributions for purposes of the actual contribution percentage test and other requirements of Section 401(m) of the Code.

(2) With respect to benefits accruing during any Plan Year in which the Plan is Top Heavy, average compensation is limited to amounts not in excess of the amount permitted under Section 401(a)(17) of the Code. If the accrued benefit as of the end of the last Plan Year before the Plan became Top Heavy is greater than the accrued benefit determined by limiting compensation, that higher accrued benefit cannot be reduced.

(3) In the event the Plan is Top Heavy with respect to a Plan Year and ceases to be Top Heavy for a subsequent Plan Year, the Participant's account balance in any such subsequent Plan Year is not less than the Participant's Pre-Tax Savings (subject to adjustment for earnings) computed as of the end of the most recent Plan Year for which the Plan was Top Heavy.

(d) Notwithstanding any of the above, if a non-Key Employee participates in this Plan and a defined benefit pension plan included in a required aggregation group which is top heavy, a minimum allocation of five percent of Section 415 compensation is provided under this Plan. The Plan will not be deemed Top Heavy if ninety percent is substituted for sixty percent in (b)(1) of this Appendix and Participating Employer provides additional contributions to the Plan on behalf of non-Key Employees who participate in both defined benefit and defined contribution plans maintained by a Participating Employer, in amounts at least equal to the amount set forth in Paragraph (c)(1) of this Appendix as modified by substituting "seven and one-half percent" for "three percent." If the non-Key Employee does not participate in a defined benefit plan maintained by Alcoa, a Subsidiary or Affiliate, such employee will receive an additional contribution of four percent.

(e) For Plan Years in which the Plan meets the safe harbor alternative method of discrimination testing described in Paragraph 16 of Appendix A, the term "Top Heavy Plan" described in this Appendix C does not apply.

APPENDIX D

MINIMUM DISTRIBUTION REQUIREMENTS

Section 1. General Rules

1.1. Effective Date. The provisions of this Appendix D will apply for purposes of determining required minimum distributions.

1.2. Precedence. The requirements of this Appendix D will take precedence over any inconsistent provisions of the Plan.

1.3. Requirements of Treasury Regulations Incorporated. All distributions required under this Appendix D will be determined and made in accordance with section 401(a)(9) of the Internal Revenue Code and Treasury regulations §§1.401)(a)(9)-2 through -9, which will override any inconsistent distribution provisions of the Plan. Distribution of any incidental death benefit requirements provided under the Plan will be a distribution for purposes of this Appendix D.

1.4. TEFRA Section 242(b)(2) Elections. Notwithstanding the other provisions of this Appendix D, distributions may be made under a designation made before January 1, 1984, in accordance with section 242(b)(2) of the Tax Equity and Fiscal Responsibility Act (TEFRA) and the provisions of the Plan that relate to section 242(b)(2) of TEFRA.

Section 2. Time and Manner of Distribution.

2.1. Required Beginning Date. The Participant's entire interest will be distributed, or begin to be distributed, to the Participant no later than the Participant's required beginning date.

2.2. Death of Participant Before Distributions Begin. If the Participant dies before distributions begin and there is a designated Beneficiary, the Participant's entire interest will be distributed to the designated Beneficiary by December 31 of the calendar year containing the fifth anniversary of the Participant's death. If the Participant's surviving spouse is the Participant's sole designated Beneficiary and the surviving spouse dies after the Participant but before distributions to either the Participant or the surviving spouse begin, this election will apply as if the surviving spouse were the Participant. This election will apply to all distributions.

If there is no designated Beneficiary as of September 30 of the year following the year of the Participant's death, the Participant's entire interest will be distributed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

2.3. Forms of Distribution. Unless the Participant's interest is distributed in the form of an annuity purchased from an insurance company or in a single sum on or before the required beginning date, as of the first distribution calendar year distributions will be

made in accordance with sections 3 and 4 of this Appendix D. If the Participant's interest is distributed in the form of an annuity purchased from an insurance company, distributions thereunder will be made in accordance with the requirements of section 40l(a)(9) of the Code and the Treasury regulations.

Section 3. Required Minimum Distributions During Participant's Lifetime.

3.1. Amount of Required Minimum Distribution For Each Distribution Calendar Year. During the Participant's lifetime, the minimum amount that will be distributed for each distribution calendar year is the lesser of:

(a) the quotient obtained by dividing the Participant's account balance by the distribution period in the Uniform Lifetime Table set forth in section 1.401(a)(9)-9 of the Treasury regulations, using the Participant's age as of the Participant's birthday in the distribution calendar year; or

(b) if the Participant's sole designated Beneficiary for the distribution calendar year is the Participant's spouse, the quotient obtained by dividing the Participant's account balance by the number in the Joint and Last Survivor Table set forth in section 1.401(a)(9)-9 of the Treasury regulations, using the Participant's and spouse's attained ages as of the Participant's and spouse's birthdays in the distribution calendar year.

3.2. Lifetime Required Minimum Distributions Continue Through Year of Participant's Death. Required minimum distributions will be determined under this section 3 beginning with the first distribution calendar year and up to and including the distribution calendar year that includes the Participant's date of death

Section 4. Required Minimum Distributions After Participant's Death.

4.1. Death On or After Date Distributions Begin.

(a) Participant Survived by Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is a designated Beneficiary, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the longer of the remaining life expectancy of the Participant or the remaining life expectancy of the Participant's designated Beneficiary, determined as follows:

(1) The Participant's remaining life expectancy is calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

(2) If the Participant's surviving spouse is the Participant's sole designated Beneficiary, the remaining life expectancy of the surviving spouse is calculated for each distribution calendar year after the year of the Participant's death using the surviving spouse's age as of the spouse's birthday in that year. For distribution

calendar years after the year of the surviving spouse's death, the remaining life expectancy of the surviving spouse is calculated using the age of the surviving spouse as of the spouse's birthday in the calendar year of the spouse's death, reduced by one for each subsequent calendar year.

(3) If the Participant's surviving spouse is not the Participant's sole designated Beneficiary, the designated Beneficiary's remaining life expectancy is calculated using the age of the Beneficiary in the year following the year of the Participant's death, reduced by one for each subsequent year.

(b) No Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is no designated Beneficiary as of September 30 of the year after the year of the Participant's death, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the Participant's remaining life expectancy calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

4.2. Death Before Date Distributions Begin.

(a) Participant Survived by Designated Beneficiary. If the Participant dies before the date distributions begin and there is a designated Beneficiary, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the remaining life expectancy of the Participant's designated Beneficiary, determined as provided in section 4.1.

(b) No Designated Beneficiary. If the Participant dies before the date distributions begin and there is no designated Beneficiary as of September 30 of the year following the year of the Participant's death, distribution of the Participant's entire interest will be completed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

(c) Death of Surviving Spouse Before Distributions to Surviving Spouse Are Required to Begin. If the Participant dies before the date distributions begin, the Participant's surviving spouse is the Participant's sole designated Beneficiary, and the surviving spouse dies before distributions are required to begin to the surviving spouse under section 2.2, this section 4.2 will apply as if the surviving spouse were the Participant.

Section 5. Definitions.

5.1. Designated Beneficiary. The individual who is designated as the Beneficiary under Section 22 of the Plan and is the designated Beneficiary under section 40l(a)(9) of the Internal Revenue Code and section 1.401(a)(9)-1, Q&A-4, of the Treasury regulations.

5.2. Distribution calendar year. A calendar year for which a minimum distribution is required. For distributions beginning before the Participant's death, the first distribution calendar year is the calendar year immediately preceding the calendar year which contains the Participant's required beginning date. For distributions beginning after the Participant's death, the first distribution calendar year is the calendar year in which distributions are required to begin under section 2.2. The required minimum distribution for the Participant's first distribution calendar year will be made on or before the Participant's required beginning date. The required minimum distribution for other distribution calendar years, including the required minimum distribution for the distribution calendar year in which the Participant's required beginning date occurs, will be made on or before December 31 of that distribution calendar year.

5.3. Life expectancy. Life expectancy as computed by use of the Single Life Table in section 1.401(a)(9)-9 of the Treasury regulations.

5.4. Participant's account balance. The account balance as of the last valuation date in the calendar year immediately preceding the distribution calendar year (valuation calendar year) increased by the amount of any contributions made and allocated or forfeitures allocated to the account balance as of dates in the valuation calendar year after the valuation date and decreased by distributions made in the valuation calendar year after the valuation date. The account balance for the valuation calendar year includes any amounts rolled over or transferred to the Plan either in the valuation calendar year or in the distribution calendar year if distributed or transferred in the valuation calendar year.

5.5 Required beginning date. The date specified in section 13(b) of the Pla

SCHEDULE A

MERGERS, TRANSFERS, AND RESTATEMENTS

Alcoa Savings Plans Restructuring and Redesign

Effective January 1, 2011, the savings plans sponsored by Alcoa Inc. were restructured and redesigned and the Participants covered under the Alcoa Savings Plan for Subsidiaries and Affiliate Employees were spun off and transferred from that plan to this Plan.

Merger of Alcoa Commercial Windows LLC 401(K) Retirement Savings Plan

Effective January 1, 2011, the Alcoa Commercial Windows LLC 401(k) Plan was merged into this Plan.

Transfer of TRACO Salaried and Hourly Employees from to the Salaried and Hourly Non-Bargaining Plans

Effective as of the end of business on December 31, 2011, upon the cessation of their participation in this Plan, the amounts standing to the credit in accounts in this Plan for Alcoa Commercial Windows LLC (“TRACO”) Salaried and Hourly Participants are transferred to accounts under the Alcoa Retirement Savings Plan for Salaried Employees (“Salaried Savings Plan”) and the Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees (“Hourly Non-Bargaining Plan”), respectively, and the liability to pay the benefits of the TRACO employees that were accrued under this Plan become the liability of the Salaried and the Hourly Non-Bargaining Plans.

For purposes of transferring the TRACO Salaried and Hourly Participants’ Accounts, each participant’s account balance in the investment funds of this Plan are automatically transferred to the identical funds in the Salaried and Hourly Non-Bargaining Plans.

Conversion of Certain Employees Tucson, Arizona; Tracy, California; and Waco, Texas from Salaried to Hourly

Effective after August 1, 2015, certain salaried employees of Huck International, Inc. (Company Code: T41) located in Tucson, Arizona (Location Code: TAK) and Waco, Texas (Location Code: WTK) and certain salaried employees of Alcoa Global Fasteners, Inc. (Company Code: 86) located in Tracy California (Location Code: TCA), will convert from salaried (S) to hourly (H) employees and will continue to participate in the Plan.

2015 Restatement of Plan

The Plan was amended and restated effective January 1, 2015, to incorporate all amendments adopted to such date and to reflect provisions required by applicable law and regulatory guidance.

Transfer of Certain Firth Rixson Inc., Employee Savings Plan Participants

Effective December 31, 2015, certain actively employed Participants covered under the Firth Rixson Inc., Employee Savings Plan (“Firth Plan”) were spun off and transferred from the Firth Plan to this Plan effective January 1, 2016. Upon the cessation of their participation in the Firth Plan, the account balances in the Firth Plan for these Participants were transferred to accounts in this Plan, and each Participant’s account balance in this Plan was initially

invested in the QDIA based on the Participant's age at the time of the transfer. Each Participant's pre-tax deferral election on file with the Firth Plan will transfer to the Plan without further action on the part of the participant; provided, however, that any pre-tax deferral election on file in excess of twenty-five percent (25%) will be limited and modified to equal twenty-five percent (25%) due to the existing maximum pre-tax deferral election in the Plan. New hires into this group also will participate in this Plan.

SCHEDULE B
ALCOA RETIREMENT SAVINGS PLAN FOR FASTENER SYSTEMS EMPLOYEES

PARTICIPATING EMPLOYERS, PARTICIPATING EMPLOYER CONTRIBUTIONS (MATCH), AND EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (ERIC)

Company Code	Company Description	*EE Type	LOC	Location Description	Match	ERIC
86	Alcoa Global Fasteners, Inc.	S	CAC	Carmel, Indiana (Recoil)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	H	COA	City of Industry,CA(Fairchild)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	S	COA	City of Industry,CA(Fairchild)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	H	FUL	Fullerton,CA (Fairchild 1)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	S	FUL	Fullerton,CA (Fairchild 1)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	H	FUN	Fullerton,CA (Fairchild 2)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	S	FUN	Fullerton,CA (Fairchild 2)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	H	SBD	South Bay,CA (Fairchild)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	S	SBD	South Bay,CA (Fairchild)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	H	SIV	Simi Valley,CA (Fairchild)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	S	SIV	Simi Valley,CA (Fairchild)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	H	STG	Stoughton,MA(Marson)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	S	STG	Stoughton,MA(Marson)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	H	TRC	Torrance,California(Fairchild)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	S	TRC	Torrance,California(Fairchild)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	H	TCA	Tracy, California (effective August 1, 2015)	0.5000	Y
86	Alcoa Global Fasteners, Inc.	S	TCA	Tracy, California	0.5000	Y
810	Firth Rixson, Inc.	H	ROC	Rochester, New York (effective January 1, 2016)	0.5000	Y
810	Firth Rixson, Inc.	S	ROC	Rochester, New York (effective January 1, 2016)	0.5000	Y
814	Forged Metals, Inc.	H	FON	Fontana, California (effective January 1, 2016)	0.5000	Y‡
814	Forged Metals, Inc.	S	FON	Fontana, California (effective January 1, 2016)	0.5000	Y‡
673	Republic Fastener Mfg. Corp.	H	NPP	Newbury Park, CA (Republic)	0.5000	Y‡
673	Republic Fastener Mfg Corp.	S	NPP	Newbury Park, California (Republic)	0.5000	Y‡

674	J.W. Manufacturing, Inc.	H	NPJ	Newbury Park, CA (JW MFG)	0.5000	Y‡
674	J.W. Manufacturing, Inc.	S	NPJ	Newbury Park, California (JW MFG)	0.5000	Y‡
T31	Huck Patents, Inc.	S	CCK	Carson, California (Huck)	0.5000	Y
T31	Huck Patents, Inc.	S	TAK	Tucson, Arizona (Huck)	0.5000	Y
T41	Huck International, Inc.	H	CCK	Carson, California (Huck)	0.5000	Y
T41	Huck International, Inc.	S	CCK	Carson, California (Huck)	0.5000	Y
T41	Huck International, Inc.	S	KNK	Kingston, New York (Huck)	0.5000	Y
T41	Huck International, Inc.	H	TAK	Tucson, Arizona (Huck) (Effective August 1, 2015)	0.5000	Y
T41	T41 - Huck International, Inc.	S	TAK	Tucson, Arizona (Huck)	0.5000	y
T41	Huck International, Inc.	H	WTK	Waco, Texas (Huck) (Effective August 1, 2015)	0.5000	Y
T41	Huck International, Inc.	S	WTK	Waco, Texas (Huck)	0.5000	Y
812	Schlosser Forge Company	H	FNT	Fontana, California (effective January 1, 2016)	0.5000	Y‡
812	Schlosser Forge Company	S	FNT	Fontana, California (effective January 1, 2016)	0.5000	Y‡
812	Schlosser Forge Company	H	RCH	Rancho Cucamonga, California (effective January 1, 2016)	0.5000	Y‡
812	Schlosser Forge Company	S	RCH	Rancho Cucamonga, California (effective January 1, 2016)	0.5000	Y‡
812	Schlosser Forge Company	H	RNV	Reno, Nevada (effective January 1, 2016)	0.5000	Y‡
812	Schlosser Forge Company	S	RNV	Reno, Nevada (effective January 1, 2016)	0.5000	Y‡
675	Valley Todeco Inc.	H	VTC	Valley Todeco, CA	0.5000	Y‡
675	Valley Todeco Inc.	S	VTC	Valley Todeco, CA	0.5000	Y‡

* S = Salaried, H = Hourly
‡ Irrespective of date of hire

DISCRETIONARY CONTRIBUTIONS

There are no employees currently accruing Discretionary Contributions.

RESTRICTED DISCRETIONARY CONTRIBUTIONS

There are no employee groups currently accruing Restricted Discretionary Contributions.

ALCOA RETIREMENT SAVINGS PLAN

FOR

SALARIED EMPLOYEES

AS AMENDED AND RESTATED
EFFECTIVE JANUARY 1, 2015

ALCOA RETIREMENT SAVINGS PLAN FOR SALARIED EMPLOYEES

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ALCOA RETIREMENT SAVINGS PLAN FOR SALARIED EMPLOYEES
AS AMENDED AND RESTATED
EFFECTIVE JANUARY 1, 2015

Alcoa Inc. (herein called "Alcoa") established the Alcoa Retirement Savings Plan for Salaried Employees (the "Salaried Plan" or "Plan") for the exclusive benefit of its eligible employees. The Plan is a defined contribution, individual account 401(k) plan intended to qualify under Section 401(a) of the Internal Revenue Code. The purpose of the Plan is to provide retirement benefits, and to enable Participants to acquire a stock interest in the Company.

The Plan was initially adopted effective May 1, 1958, and was subsequently amended and restated from time to time thereafter, as described in Schedule A. The Plan is the survivor plan as the result of its merger with several subsidiaries' plans. Schedule A attached hereto contains the details and provisions related to such mergers. Effective January 1, 2002 the Alcoa Stock Fund was replaced with an employee stock ownership plan, within the meaning of Section 4975(e) of the Code. The assets held in the ESOP must be invested primarily in employer securities as defined in Code Section 409(l).

Effective January 1, 2011, the Plan was renamed the Alcoa Retirement Savings Plan for Salaried Employees and was restructured to satisfy the safe harbor discrimination requirements under Section 401(k)(12) and 401(m)(11) of the Code. Effective January 1, 2015, the Plan is hereby amended and restated again to incorporate provisions of prior Plan amendments adopted since the January 1, 2010, restatement of the Plan as well as to reflect new laws and regulations that have come into effect since the January 1, 2010, restatement of the Plan. The Plan is intended to be construed in accordance with any regulatory guidance issued with respect to such new laws and regulations.

DEFINITIONS

For the purpose of this Plan, unless a different meaning is plainly required by the context:

AFFILIATE means any non-corporate business entity or corporate business entity without voting stock, as such, which Alcoa and/or one or more Subsidiaries control in fact.

AFTER-TAX SAVINGS means such portions of the total amounts contributed to the Plan by a Participant in accordance with Section 2 that are not accorded favorable tax treatment under Section 401(k) of the Code, but not including contributions made by a Participant in excess of the annual limit on 401(k) contributions under Code Section 402(g) or in excess of the "average deferral percentage limit" of Section 401(k)(3) of the Code.

ALCOA means Alcoa Inc.

ALCOA STOCK FUND means the ESOP as described in Section 16(e), which became effective January 1, 2002.

AUTOMATIC ENROLLMENT or AUTOMATICALLY ENROLLED means the automatic default enrollment in the Plan described in Sections 1(b) and 2(c) and applicable to Eligible Employees who do not opt out of the Plan.

AUTOMATIC PRE-TAX RATE ESCALATION means the feature that is effective with Automatic Enrollment or that may be elected by a Participant, in which the rate of Payroll Deduction for Pre-Tax Savings is increased until a target Payroll Deduction rate is reached. The Automatic Pre-Tax Rate Escalation will increase effective April 1 of each year.

AUTOMATIC REBALANCING means the feature described in Section 8(d).

BENEFICIARY means the recipient or recipients designated by a Participant, in accordance with Section 22 of the Plan, to receive benefits in the event of the Participant's death as either a primary beneficiary, or a contingent beneficiary who will receive benefits in the event the primary beneficiary predeceases the Participant.

BENEFITS MANAGEMENT COMMITTEE or COMMITTEE means the administrative committee of one or more persons appointed by the Board that interprets and administers the Plan in accordance with Section 19.

BOARD means the Board of Directors of Alcoa.

BROKERAGE ACCOUNT means the investment option whereby a Participant may invest and personally manage investments outside the Core Funds as described in Section 16(h).

BUSINESS DAY means any day on which the Plan Administrator, Designee and New York Stock Exchange is open for business.

CODE means the Internal Revenue Code of 1986, as amended.

COMPANY CONTRIBUTION means all Company Stock contributed to Participants' accounts under the Plan's provisions for periods prior to January 1, 1993.

COMPANY STOCK means common stock of Alcoa and any substituted security under Section 16.

CONTINUOUS SERVICE means, except as modified by the balance of this definition and as otherwise specifically provided in Schedule C with respect to certain Participant populations, the period of continuous employment with Alcoa, a Subsidiary or Affiliate, either as a salaried employee or as an hourly-rated employee, commencing with the Participant's Employment Commencement Date or Reemployment Commencement Date. Continuous Service terminates on the Participant's Severance from Service Date. Continuous Service upon reemployment does not include any Continuous Service accrued prior to a termination of Continuous Service, except as follows:

A Participant who incurs a Severance from Service Date and thereafter has a Reemployment Commencement Date, will have his or her Continuous Service on the Severance from Service Date reinstated if the period between his or her Severance from Service Date and his or her Reemployment Commencement Date is less than the greater of (a) five years or (b) the aggregate number of years of Continuous Service earned before the Severance from Service Date.

CORE FUND means any investment vehicle (including the Alcoa Stock Fund and Target Maturity Funds) for Pre-Tax Savings, After-Tax Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, or Employer Retirement Income Contributions, but excluding the Brokerage Account. The Committee will determine the Core Funds, and may make changes to the composition of the funds from time to time.

CURRENT MARKET VALUE means, with respect to any investment allocated to the accounts of any Participant in the Core Funds**,** the unitized value of the securities and cash of the investment in the applicable Fund as of a specified date, less any fees provided for in Section 21, valued in accordance with a procedure adopted by the investment manager for the fund and acceptable to the Benefits Management Committee.

DESIGNEE means such entity as may be chosen from time to time by the Plan Administrator and approved by the Benefits Management Committee to handle certain specified administration functions of the Plan.

DISCRETIONARY CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(a).

EFFECTIVE DATE with respect to a distribution has the meaning prescribed in Section 13, with respect to a transfer has the meaning prescribed in Section 9 and with respect to a qualified domestic relations order has the meaning prescribed in Section 14.

ELIGIBLE COMPENSATION means: (i) the regular base salary and if applicable, the base salary adjustment (where commission payments constitute all or part of an employee's remuneration, the commissions actually paid as remuneration during a regular pay period will be used to determine the Eligible Compensation for such employee); (ii) the regular hourly wages and if applicable: cash cola, regular vacation pay, witness pay, holiday advance pay (for a holiday not worked), bereavement pay, shift differential, jury pay, job upgrades, schedule premium, income adjustments, and wage adjustments which are payable during such periods as the employee is an Eligible Employee as determined by the Participating Employers. In no event may the amount of Eligible Compensation for any Participant during any Plan Year, for any purposes under this Plan, exceed $265,000, as adjusted for any Plan Year for cost-of-living increases in accordance with Section 401(a)(17)(B) of the Code applicable to that calendar year. Eligible Compensation does not include signing bonuses or other one-time special bonus payments.

In addition to the forgoing, for purposes of allocating Employer Retirement Income Contributions as indicated in Schedule B, Eligible Compensation will include any Variable Compensation Awards or incentive compensation payable during such periods as the employee is an Eligible Employee as determined by the Participating Employers.

ELIGIBLE EMPLOYEE means any person who meets all of the following conditions:

(a) (1) Is a resident or citizen of the U.S., employed by a Participating Employer at a participating Company (Company Code) and specified location (Location Code), as indicated in Schedule B (including individuals temporarily assigned to non-US locations); or

(2) Is not a U.S. resident or citizen, but is employed by a Participating Employer at a participating Company (Company Code) and specified location (Location Code), as indicated in Schedule B on a long term assignment and has been localized to that location's payroll and benefits; and

(b) Is a Full-time or Part-time Employee, and receives regular compensation in the form of: (1) a weekly, semimonthly or monthly salary, (2) periodic commissions, (3) an hourly wage; and

(c) Is not in a unit of employees covered by a collective bargaining agreement, unless such agreement provides for the application of the Plan to the employees in such unit and does not provide for supplemental unemployment benefits or similar benefits; and

(d) Is not in a group of employees excluded from coverage under the Plan by the Benefits Management Committee, or the appropriate governing body of a Participating Employer, which is uniform in application to all employees similarly situated; and

(e) Is not a U. S. resident or citizen who is on the Company's U.S. expatriate payroll and benefit program; and

(f) Is not an agency, leased, or contract employee (as determined by the Company, without regard to any court, or agency decision determining common-law employment status) or is an individual who is not on the payroll of the Company and receiving a W-2. A "leased employee" is defined in Section 414(n) of the Code and is excluded from participation in the Plan. (For purposes of this Plan only, any former leased employee, upon becoming an Eligible Employee, will receive Continuous Service credit for all prior service performed with the recipient Participating Employer as a leased employee prior to becoming an Eligible Employee.)

(g) Is a Temporary Employee who, in addition to meeting the above described terms and conditions (other than (b)), has at least one year of Continuous Service.

EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (also "ERIC") means an amount equal to the percentage of Eligible Compensation specified in Section 5 that is contributed to Eligible Employees hired or rehired on or after March 1, 2006, or as indicated in Schedule B, to the Eligible Employees of a specified location without regard to date of hire or rehire. Employees, i) who whether or not citizens of the U.S., transfer from a location outside of the U.S. to a participating U. S. location and are localized, or ii) who are not U.S. citizens and were participants in the Global Pension Plan as of December 31, 2008, will receive ERIC contributions without regard to original date of hire or rehire. For purposes of this paragraph, "localized" means to be paid from a U.S. location payroll.

Employees employed at a company and location that does not participate in Alcoa Retirement Plan I as of December 31, 2009, who were hired or rehired prior to March 1, 2006, and who transfer on or after January 1, 2010 to a company and location that receives ERIC under this Plan as indicated in Schedule B, will commence to receive ERIC contributions following the transfer, regardless of their date of hire.

EMPLOYMENT COMMENCEMENT DATE means the date on which an Eligible Employee is first employed by and performs an Hour of Service for Alcoa, a Subsidiary or an Affiliate as a Full-Time or Part-Time Employee, or with respect to an individual described in subsection (g) of the definition of Eligible Employee, a Temporary Employee.

ERISA means the Employee Retirement Income Security Act of 1974 as amended.

ESOP or EMPLOYEE STOCK OWNERSHIP PLAN means the Alcoa Stock Fund as described in Section 16(e).

FINANCIAL HARDSHIP means an immediate and heavy financial need which a Participant is not able to meet from other reasonably available resources. An immediate and heavy financial need includes:

(a) Extraordinary medical expenses incurred by the Participant, the Participant's spouse, dependents of the Participant, or primary Beneficiary;

(b) Purchase, excluding mortgage payments, of a principal residence for the Participant;

(c) Payment of tuition for the next year of post-secondary education for the Participant, his or her spouse, children , dependents or primary Beneficiary;

(d) Expenses necessary to prevent eviction of the Participant from his principal residence, or foreclosure on the mortgage of the Participant's principal residence;

(e) Funeral expenses of a family member or primary Beneficiary; and

(f) All other expenses that the Internal Revenue Service will accept as an immediate and heavy financial need.

A withdrawal will be deemed to be necessary to satisfy an immediate and heavy financial need of a Participant if all of the following requirements are satisfied:

(i) The withdrawal is not in excess of the amount of the immediate and heavy financial need (including taxes on such withdrawal) of the Participant,

(ii) The Participant has obtained all distributions, other than hardship withdrawals, and all nontaxable loans currently available under all plans maintained by the Participating Employer (unless such a loan would contribute to the hardship),

(iii) The Plan, and all other qualified and non-qualified plans of deferred compensation maintained by all Participating Employers (other than health and welfare or contributory defined benefit plans), provide that the Participant's Savings will be suspended for at least 6 months after receipt of the hardship withdrawal, and

(iv) The Participant may not contribute Pre-Tax Savings to the Plan or make similar contributions to other plans maintained by the Participating Employer for the following taxable year in excess of the applicable limit under Section 402(g) of the Code for the following taxable year minus the Participant's Pre-Tax Savings for the taxable year of the hardship withdrawal.

Based upon the foregoing provisions, the Designee determines whether or not a Participant has incurred a Financial Hardship.

FULL-TIME EMPLOYEE means an active employee who works 100 percent of a regular work schedule for the location where he or she is employed.

HOUR OF SERVICE means:

(a) Each hour for which an employee is paid or entitled to payment for the performance of duties for Alcoa, a Subsidiary or Affiliate;

(b) Each hour for which an Employee is paid or entitled to payment by Alcoa, a Subsidiary or Affiliate on account of a period during which no duties are performed, whether or not the employment relationship has terminated, due to vacation, holiday, illness, incapacity (including disability), layoff, jury duty, military duty, or leave of absence; and

(c) Each hour for which back pay, irrespective of mitigation of damages, is either awarded or agreed to by Alcoa, a Subsidiary or Affiliate, excluding any hour credited under (a) or (b) above, which is credited to the computation period or periods to which the award, agreement or payment pertains, rather than to the computation period in which the award, agreement or payment is made.

INVESTMENT FUND means any Core Fund and the Brokerage Account.

KEY EMPLOYEE means any employee or former employee (including any deceased employee) who at any time during the Plan Year that includes the determination date, as defined in Section 416(g)(4)(C) of the Code, was i) an officer of a Participating Employer having annual compensation greater than $170,000 (as adjusted under Section 416(i)(1) of the Code, ii) a five percent owner of the Participating Employer, or iii) a one percent owner of a Participating Employer having annual compensation of more than $150,000. For this purpose, annual compensation means compensation as defined in Section 415(c)(3) of the Code, but includes amounts contributed by the Participating Employer pursuant to a salary reduction agreement which are excludable from the Participant’s gross income under Section 125, 402(a), Section 401(h), Section 401(b), and Section 132(f)(4).

LAYOFF or **LAID-OFF** means the absence from employment due to a reduction of a Participating Employer’s work force due to lack of work, where it is intended that the Participant will be subject to recall and the Participant has not been placed on a Temporary Layoff. A Layoff ends on the earlier of the effective date of a recall or the date the Participant’s service terminates, and such Layoff has continued for at least twenty-four months calculated from the first day of the Lay Off.

NORMAL RETIREMENT AGE means the date a Participant attains age 65.

PART-TIME EMPLOYEE means an active employee who works at least 50 percent but less than 100 percent of the regular work schedule for the location where he or she is employed.

PARTICIPANT means:

(a) an Eligible Employee who has elected to participate in the Plan in accordance with the provisions of Section 1, or who receives Employer Retirement Income Contributions,

Discretionary Contributions or Restricted Discretionary Contributions, or who is Automatically Enrolled in the Plan. Such a person continues as a Participant so long as he or she has an account balance in the Plan. Notwithstanding the foregoing, a contractor, agency employee, temporary employee or “leased employee” as defined in Section 414(n) of the Code is not a Participant under the Plan, or

(b) an Eligible Employee who is employed with a Participating Employer on December 31 of any Plan Year where such Participating Employer has elected to make a Discretionary Contribution or Restricted Discretionary Contribution for that Plan Year.

PARTICIPATING EMPLOYER means Alcoa, except as specified hereafter, and any other entity in which Alcoa or one or more Subsidiaries or Affiliates have an ownership interest, and that is authorized by Alcoa to participate in the Plan and which adopts the Plan by proper action of its board of directors or other governing body, provided that each said entity agrees to reimburse Alcoa from time to time upon demand for its proper portion of the expenses and contributions required to carry out the provisions hereof and of the agreement under which the assets of the Plan are held or managed. Schedule B lists applicable locations of Participating Employers.

PARTICIPATING EMPLOYER CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 3.

PARTICIPATION DATE means the date on which an Eligible Employee commences participation in the Plan.

PAYROLL DEDUCTIONS means the Pre-Tax Savings and After-Tax Savings based on a reduction of the Participants’ Eligible Compensation for the applicable Payroll Period.

PAYROLL PERIOD means the regularly scheduled payroll cycles in which a Participant earns Eligible Compensation.

PERMANENT LAYOFF means an absence from employment due to a reduction of the work force by a Participating Employer due to lack of work, where it is intended that the Participant will not be subject to recall. A Participant’s Continuous Service for purposes of the Plan will be terminated on the first day of Permanent Layoff.

PERMANENT SHUTDOWN means the permanent shutdown, as determined by a Participating Employer, of a plant, department or substantial portion thereof, of a Participating Employer at which a Participant who is affected thereby is employed.

PLAN means the Alcoa Retirement Savings Plan for Salaried Employees as Amended and Restated effective as of January 1, 2015, and as may be amended from time to time.

PLAN ADMINISTRATOR means Alcoa.

PLAN YEAR means the calendar year.

PRE-TAX CATCH-UP CONTRIBUTIONS means contributions permitted under Section 414(v) of the Code, as described in Section 2(k) of the Plan.

PRE-TAX SAVINGS means the amount by which a Participant has elected to reduce his or her Eligible Compensation and defer the receipt thereof in accordance with Section 2 and the contribution of the said amount to the Plan, or an amount by which a Participant's Eligible Compensation is deferred and contributed to the Plan pursuant to Automatic Enrollment.

PROPERLY RECEIVED means any request to participate, request to change participation in the Plan, request for suspension of Payroll Deductions, a request for a transfer between investments in accordance with Sections 8 or 9, or a request for a withdrawal in accordance with either Section 10 or 11, or a Beneficiary designation, consent or revocation in accordance with Section 22, are Properly Received provided it is received by the Plan Administrator or its Designee in accordance with uniform rules established by the Plan Administrator.

QUALIFIED DEFAULT INVESTMENT ALTERNATIVE or QDIA means the Targeted Maturity Funds to which the Plan may direct the assets of a Participant's account in the absence of Participant investment direction. Each Participant's account will be invested in the appropriate Targeted Maturity Fund based on the Participant's year of birth.

REEMPLOYMENT COMMENCEMENT DATE means the date on which a Participant is first reemployed by a Participating Employer following a Severance from Service Date.

RESTRICTED DISCRETIONARY CONTRIBUTIONS means amounts contributed by a Participating Employer as determined under Section 4(b).

RETIREMENT means termination of Continuous Service with rights to a pension other than a deferred vested pension benefit under a retirement plan of Alcoa and/or a Subsidiary and/or an Affiliate, termination of Continuous Service upon or after attainment of age 55 and completion of 10 years of Continuous Service, or Normal Retirement Age

ROLLOVER CONTRIBUTION means an eligible rollover distribution as described in Section 402(c)(4) of the Code, or a direct transfer of an eligible rollover distribution as described in Section 401(a)(31) of the Code ("Direct Rollover") which is transferred to the Plan pursuant to Section 7.

SAFE HARBOR NOTICE means the notice described in Section 3(b) required for a Plan Year in which the Plan is operated as a safe harbor plan, that informs Participants of their rights and obligations under the Plan, including, but not limited to a description of the safe harbor Participating Employer Contributions, withdrawal and vesting provisions.

SAVINGS means the total amount of Pre-Tax Savings and After-Tax Savings contributed to the Plan in accordance with Section 2.

SEVERANCE FROM SERVICE DATE means the date Continuous Service terminates and is the earliest of: (i) the first date the Eligible Employee quits, retires, is discharged (including Permanent Layoffs), or dies, (ii) the first anniversary of the first date the Eligibile Employee is absent from work due to a Temporary Layoff, or (iii) the second anniversary of the first date the Eligible Employee is absent from work for any other reason (including a disability). Notwithstanding the foregoing, an employee will not be deemed to have terminated from Continuous Service until the second anniversary of the employee's absence, if the absence is due to the pregnancy of the Eligible Employee, the birth of a child of the Eligible Employee or the placement of a child with the Eligible Employee in connection with adoption proceedings, or for purposes of caring for that child for a period beginning immediately following such birth or placement. The period between the first anniversary and second anniversary of the first day of absence will not constitute Continuous Service. Severance from Service Date will also mean the date on which a participant ceases employment with Alcoa or a Subsidiary in connection with a sale of assets or interest in a Participating Employer and commences employment with the purchaser of such assets or interest, provided there is no transfer to the purchaser of Plan assets and liabilities relating to such participant.

SUBSIDIARY means a corporation a majority of whose voting stock is owned or controlled by Alcoa and/or one or more other Subsidiaries.

TARGETED MATURITY FUNDS means the investment vehicles that are pre-mixed funds consisting of varying asset allocations that follow an investment strategy based on a targeted retirement date. Targeted Maturity Funds are Core Funds.

TEMPORARY EMPLOYEE means a person who does not work on a regular schedule, or works less than fifty percent of the regular hours for the location where he or she is employed, or works fifty percent or more of the regular hours for the location but is hired for a specified period of time not to exceed twelve month.

TEMPORARY LAYOFF means an absence from employment due to a reduction of the work force by a Participating Employer due to lack of work, where it is intended that the Participant will not be subject to recall or the Participant has been designated as a temporary recall in the Company's human capital management system (currently, the Global People System), but where there is an expectation that the Participant may return to work within the calendar year. A Participant's Continuous Service will be terminated on the first anniversary of the first day of Temporary Layoff.

TOTAL AND PERMANENT DISABILITY means disability by injury or disease which, on the basis of medical evidence satisfactory to a medical doctor chosen by the Benefits Management Committee, prevents the employee from engaging in any employment with Alcoa, a Subsidiary or Affiliate suitable to his or her training and experience and will be permanent and continuous during the remainder of the employee's life, and the employee is not otherwise employed by Alcoa, a Subsidiary or Affiliate.

TRUSTEE means the Trustee or Trustees appointed by the Board in accordance with the provisions of Section 18.

U.S. means the United States of America.

VARIABLE COMPENSATION AWARDS means performance pay, profit sharing or gain sharing awards or other variable compensation awards as determined by the Participating Employer and approved by the Plan Administrator.

GENERAL PROVISIONS

SECTION 1. PARTICIPATION

An Eligible Employee participates in the Plan:

(a) by submitting application or request for participation that is Properly Received, or by receiving Discretionary Contributions, Restricted Discretionary Contributions, Participating Employer Contributions, or Employer Retirement Income Contributions; or

(b) by being Automatically Enrolled sixty (60) days following Employment Commencement Date or Reemployment Commencement Date, or after an employee employed on a temporary basis becomes an Eligible Employee.

(c) by being is Automatically Enrolled sixty (60) days following the initial participation of a new Company or Location resulting from an acquisition or restructuring of a business unit.

SECTION 2. EMPLOYEE SAVINGS

(a) An Eligible Employee may elect to pay into the Plan through Payroll Deductions properly authorized by such employee, a whole percentage of his or her Eligible Compensation in an amount equal to one through twenty-five percent (25%), and After-Tax Savings equal to one through ten percent (10%), the aggregate of which cannot be greater than twenty-five percent (25%).

(b) An Eligible Employee subject to Automatic Enrollment will be subject to automatic Payroll Deductions equal to three percent of Eligible Compensation for any applicable payroll period, which will be contributed to the Plan as Pre-Tax Savings. Absent the Participant's election of investment funds, such Pre-Tax Savings will be deposited into the appropriate QDIA, as described in Section 8(a).

(c) Payroll Deductions for Pre-Tax Savings made pursuant to Automatic Enrollment are subject to Automatic Pre-Tax Rate Escalation whereby, providing the Participant has participated in the Plan at least ninety days, the Participant's Pre-Tax Savings rate will be increased by one percent on each April 1 after his or her Participation Date until the Pre-Tax Savings rate attains a target rate of six percent of Eligible Compensation. A Participant may

change the percentage rate in whole percentages up to the maximum permitted by the Plan or opt out of Automatic Pre-Tax Rate Escalation at any time in a manner designated by the Plan Administrator that is Properly Received.

Any Participant may elect to begin or end Automatic Pre-Tax Savings Rate Escalation at any time in a manner designated by the Plan that is Properly Received. An election to begin Automatic Pre-Tax Saving Rate Escalation shall designate a beginning Pre-Tax Savings rate, a target rate up to the maximum permitted by the Plan, and an annual rate (in whole percentages) by which the Pre-Tax rate increases until the target rate is attained.

(d) Any employee contributions which have been contributed to a Participant's account under a qualified defined contribution plan of a Participating Employer which has been merged with this Plan, are credited to the Participant as Pre-Tax and After-Tax Savings Accounts, as applicable, as determined by the Plan Administrator, and thereafter be treated like Pre-Tax and After-Tax Savings with respect to withdrawals, loans, and investment options under the Plan. Any protected optional form of benefits provided under said qualified defined contribution plan will be maintained under the Plan.

(e) All Participating Employer Contributions and Discretionary Contributions, and Restricted Discretionary Contributions and Employer Retirement Income Contributions are irrevocable, except that any such contribution which was made by a mistake of fact or conditioned upon qualification of the Plan or any amendment thereof under Section 401 of the Code or upon the deductibility of the contribution under Section 404 of the Code, will be returned to the Participating Employer within one year after the payment of the contribution made by mistake, the denial of the qualification or the disallowance of the deduction (to the extent disallowed), whichever is applicable.

(f) A Participant may change his or her election for Payroll Deductions, effective for the first full Payroll Period following the date that such request is Properly Received.

(g) A Participant may direct that Payroll Deductions for Savings be discontinued beginning with the first full Payroll Period following the date that such direction is Properly Received. A Participant may direct that such deductions be resumed beginning with the first full Payroll Period following the date that such direction is Properly Received, except as provided in the definition of Financial Hardship.

(h) Payroll Deductions are paid to the Trustee as soon as practicable, but no later than the period prescribed by the Department of Labor for depositing contributions.

(i) Additional limitations on Savings, Participating Employer Contributions, Discretionary Contributions and Restricted Discretionary Contributions are provided in Appendices A, B and C. For Plan Years in which the Plan is operated in accordance with the safe harbor requirements of Sections 401(a)(12) and 401(m)(11) of the Code, Sections 5 and 9 of Appendix A do not apply with respect to Pre-Tax Savings and Participating Employer Contributions except as otherwise provided in Appendix A.

Notwithstanding the foregoing, in the event it is determined by the Benefits Management Committee or its Designee that for any particular month the maximum percentage of Eligible Compensation which a Participant may elect to pay into the Plan as Pre-Tax Savings must be reduced so as to prevent the actual percentage of Pre-Tax Savings for Participants who are Highly Compensated Employees from exceeding the elected percentage of Pre-Tax Savings of all other Participants, pursuant to the limitations in the Appendices, the maximum percentage of Pre-Tax Savings for said Highly Compensated Employees may be reduced, for any particular Month to the extent deemed necessary by the Benefits Management Committee or its designee. The said Participants' previously elected percentage of After-Tax Savings will not be affected in any manner by a reduction of the maximum percentage of Pre-Tax Savings in accordance with the foregoing.

(j) An Eligible Employee who meets the requirements listed below may make an election for a Plan Year to defer extra Pre-Tax Catch-Up Contributions in an amount that equals an annual maximum amount of six thousand dollars ($6,000), or such other amount adjusted for cost-of-living increases as may be provided by the Secretary of the Treasury pursuant to Section 414(v)(2) (C) of the Code. Eligible Employees who meet the requirements are individuals who i) have attained 50 or will attain age 50 during the applicable Plan Year; ii) are contributing no less than six percent (6%) of Eligible Compensation in Pre-Tax Savings; and iii) have submitted an election to make Pre-Tax Catch-Up Contributions for applicable Plan Year.

(k) A Participant who's compensation is suspended due to an absence from employment due to military leave protected by Uniformed Services Employment and Reemployment Rights Act of 1994 ("USERRA"), may upon his or her return to employment contribute "make up" Pre-Tax Contributions equal to the amount he or she would have contributed except for the absence based upon the Participant's election on file. Such make up contributions must be paid to the Plan during a period that does not exceed the lesser of three (3) times the length of time of the military leave or five (5) years, commencing from the date employment is resumed.

SECTION 3. PARTICIPATING EMPLOYER CONTRIBUTIONS (MATCH)

Participating Employer Contributions will be allocated under the Plan to the account of those Participants for whom Pre-Tax Savings are paid into the Plan for such Payroll Period in accordance with Section 2, where the Participating Employer with whom the Participant is actively employed has elected to make such contributions. Beginning with the first Participating Employer contribution allocated to Participants' accounts after January 1, 2014, all Participating Employer Contributions will be invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA).

(a) Schedule B provides a list of Participating Employers and Participating Employer Contributions. The amount of all such Contributions are contributed on a Payroll Period basis by the Participating Employer out of current income or accumulated earnings.

(b) Any employer contributions which have been contributed to a Participant's account under a qualified defined contribution plan of a Participating Employer which has been

merged with this Plan, are credited to the Participant as Participating Employer Contributions and thereafter be treated like Participating Employer Contributions with respect to withdrawals, loans, and investment options under the Plan. Any protected optional form of benefits provided under said merged qualified defined contribution plan will be maintained under the Plan.

(c) Safe Harbor Participating Employer Contributions. Participating Employer Contributions will satisfy the safe harbor requirements of Sections 401(k)(12) and 401(m)(11) of the Code. For safe harbor purposes, Participating Employer Contributions will be allocated under the Plan on a payroll basis in an amount equal to 100% of each dollar of Pre-Tax Savings and Pre-Tax Catch-Up Contributions up to six percent of the Participant's Eligible Compensation.

SECTION 4. DISCRETIONARY CONTRIBUTIONS

(a) A Participating Employer for each Plan Year may contribute under the Plan to the account of those Eligible Employees who are employed with said Participating Employer on the last day of the Plan Year such amounts of Discretionary Contributions as its board of directors or in the case of an Affiliate, the appropriate governing entity determines, unless disapproved by the Benefits Management Committee. Discretionary Contributions are allocated to Eligible Employees based on either uniform dollar amounts or whole or partial percentages of Eligible Compensation. A Participating Employer may elect to make one Discretionary Contribution for any Plan Year on or before December 31 of said Plan Year and may direct, but is not obligated to direct, the Trustee to promptly invest such amount in the Alcoa Stock Fund.

(b) A Participating Employer for each Plan Year may contribute under the plan to the account of those Eligible Employees who are employed with said Participating Employer on the last day of the Plan Year, Restricted Discretionary Contributions in an amount determined by its board of directors or in the case of an Affiliate, the appropriate governing entity, unless disapproved by the Benefits Management Committee. Restricted Discretionary Contributions will be allocated to Eligible Employees based on either uniform dollar amounts or whole or partial percentages of Eligible Compensation. A Participating Employer may elect to make one Restricted Discretionary Contribution for any Plan Year on or before December 31 of the Plan Year. The Restricted Discretionary Contribution will be paid to the Trustee no later than the date fixed by law for the filing of the Participating Employer's federal income tax return for the year for which the contribution is made, including any extensions of time granted by the Internal Revenue Service for filing the return. The Participating employer may direct, but is not obligated to direct, the Trustee to promptly invest such amount in the Alcoa Stock Fund; otherwise, Restricted Discretionary Contributions will be invested in accordance with the provisions of Section 8(b).

(c) An Eligible Employee who incurs an absence due to military leave protected by USERRA and eligible to receive Discretionary or Restricted Discretionary Contributions will receive those contributions based on the Eligible Compensation that would have been received had the individual remained actively employed during the period of military leave.

SECTION 5. EMPLOYER RETIREMENT INCOME CONTRIBUTIONS (ERIC)

Employer Retirement Income Contributions of three percent of Eligible Compensation will be made to the accounts of Participants with an Employment Commencement Date or Reemployment Commencement Date occurring on or after March 1, 2006, on a Payroll Period basis. Notwithstanding the foregoing, Eligible Employees of certain locations designated in Schedule B will receive Employer Retirement Income Contributions as of the date indicated, regardless of the date of their Employment Commencement Date or Reemployment Commencement Date.

An Eligible Employee who incurs an absence due to military leave protected by USERRA and eligible to receive Employer Retirement Income Contributions (“ERIC) will receive those contributions based on the Eligible Compensation that would have been received had the individual remained actively employed during the period of military leave.

Withdrawals of Employer Retirement Income Contributions are permitted by Participants who have attained age 59 ½.

Any person, i) whether or not a citizen of the U.S., who transfers from a location outside of the U.S. to a participating U.S. location, or ii) who is not a citizen of the U.S. and was a participant in the Global Pension Plan as of December 31, 2008 and transferred from a location outside of the U.S. to a participating U.S. location, will be eligible for Employer Retirement Income Contributions, regardless of the individuals date of hire.

SECTION 6. NONFORFEITURE OF PARTICIPATING EMPLOYER CONTRIBUTIONS, DISCRETIONARY CONTRIBUTIONS RESTRICTED DISCRETIONARY CONTRIBUTIONS, AND EMLOYER RETIREMENT INCOME CONTRIBUTIONS

All Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contribution, and any investment earnings attributable thereto held in a Participant’s account are nonforfeitable and not subject to divestment.

SECTION 7. ROLLOVER CONTRIBUTIONS

An Eligible Employee of a Participating Employer who is or may become a Participant may, unless disapproved under objective procedures established by the Benefits Management Committee, make a Rollover Contribution to the Plan. An Eligible Employee’s Rollover Contribution is credited to his or her account and thereafter treated like the Participant’s Pre-Tax Savings with respect to withdrawals, loans and investment options under the Plan. The Plan does not accept Roth rollovers.

SECTION 8. INVESTMENTS

(a) <u>Savings and Employer Retirement Income Contributions</u>. Pre-Tax Savings (including Rollover Contributions), After-Tax Savings, and Employer Retirement Income Contributions will be invested, at the election of the Participant, in any of the Core Funds in one percent increments. Pre-Tax Savings of any Participant who is Automatically Enrolled and Employer Retirement Income Contributions made to the account of a Participant who has not made investment election will be contributed to the appropriate QDIA fund, based on the Participant's date of birth.

A Participant may change his or her current investment election or transfer assets deposited by the Plan into a QDIA fund any day of the Plan Year, to be effective for the next following Payroll Period, within the limitations otherwise provided in this Plan, by directing the Plan Administrator or its Designee to make such change which direction is Properly Received.

(b) <u>Participating Employer Contributions, Discretionary Contributions and Restricted Discretionary Contributions</u>. All Participating Employer Contributions will be invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA). Discretionary Contributions, and Restricted Discretionary Contributions may be invested in the Alcoa Stock Fund if directed by the Participating Employer, subject to Section 9, or otherwise invested in the same Core Funds elected by the Participant for his or her current Savings (or if none, then in the QDIA).

(c) <u>Brokerage Account.</u> A portion of Pre-Tax or After Tax Savings, and Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, or Employer Retirement Income Contributions subject to transfer as provided in Section 9, or any other amounts invested in the Core Funds may be transferred in amounts of one thousand dollars ($1,000) or more and reallocated to a Brokerage Account, a self-directed brokerage account that allows a Participant to select and personally manage investment options not otherwise available under the Plan, in accordance with the provisions of Section 16. Any amounts to be withdrawn, loaned or distributed from a Brokerage Account must be first transferred back to the Core Funds, as described in Section 16(h).

(d) <u>Automatic Rebalancing of Investments</u>. A Participant may elect to have his or her account balance automatically rebalanced, or readjusted, at ninety-day intervals, to equal the percentage(s) directed by the Participant for investing such account balance in any Core Fund(s). The Participant may cancel Automatic Rebalancing at any time in a manner designated by the Plan Administrator that is Properly Received.

SECTION 9. TRANSFERS BETWEEN INVESTMENTS

(a) <u>Transfers of Savings, Participating Employer, Discretionary, Restricted Discretionary and Employer Retirement Income Contributions</u>. A Participant may elect to transfer in whole percentage increments or specified dollar amounts all or part of the Current Market Value of the Participants' Pre-Tax Savings, After Tax Savings, Participating Employer,

Discretionary, Restricted Discretionary and Employer Retirement Income Contributions subject to the following:

(1) transfers from any one or more Core Funds to the Brokerage Account must be made in amounts of one thousand dollars ($1,000) or more;

(2) transfers may be made on a daily basis;

(3) investment Fund transfers do not constitute a change in the Participant's current investment election;

(4) transfer provisions may be subject to restrictions imposed by mutual fund companies underlying the Core Funds.

(b) **Effective Date of Transfer.** The effective date of any transfer will be the date for which the appropriate direction to the Plan Administrator or its Designee has been Properly Received.

(c) **Value of Transfer.** The Current Market Value of Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions to be transferred into or out of an Investment Fund are determined in accordance with the value of the Investment Fund at the close of business of the Business Day on the Effective Date.

SECTION 10. WITHDRAWALS DURING EMPLOYMENT

Withdrawals are not permitted prior to the termination of the Participant's Continuous Service, except for the following:

(1) Upon attainment by the Participant of age 59 ½; or

(2) Upon a determination by the Plan Administrator or Designee that the Participant has suffered a Financial Hardship with respect to Pre-Tax Savings, and Employer Contributions contributed to the Plan prior to January 1, 2011.

A Participant may withdraw the Current Market Value of After-Tax Savings at any time (subject to a $250.00 minimum). Effective the first Business Day a Participant has attained three years of Plan participation, he or she may voluntarily withdraw all or a portion (subject to a $250.00 minimum) of the Current Market Value of Participating Employer Contributions and Discretionary Contributions made to the Plan prior to January 1, 2011.

SECTION 11. DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT

(a) A Participant whose Continuous Service terminates is eligible to receive as a distribution the Current Market Value of all Savings, Participating Employer Contributions,

Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions made to the Participant's accounts. In the event a Participant who has terminated employment received a total distribution of the Current Market Value of his or her account under the Plan has a Reemployment Commencement Date, he or she will not be permitted to repay the distributed amount other than as a Rollover Contribution from an eligible retirement plan described in Sections 402(c)(4) and 401(a)(31) of the Code, as provided in Section 7.

(b) Direct Rollovers.

(i) Notwithstanding any provision of the Plan to the contrary that would otherwise limit a distributee's election under this subsection, a distributee may elect, at the time and in the manner prescribed by the Plan Administrator, to have any portion of an eligible rollover distribution paid directly to an eligible retirement plan specified by the distributee in a direct rollover.

(ii) Definitions:

(1) Eligible rollover distribution: An eligible rollover distribution means any distribution to an employee of all or any portion of the balance to the credit of the employee in the Plan, and as otherwise described in this subsection (1). An eligible rollover distribution does not include any distribution that is one of a series of substantially equal periodic payments (not less frequently than annually) made for the life (or life expectancy) of the distributee or the joint lives (or joint life expectancies) of the distributee's designated Beneficiary; or for a specified period of ten years or more; any distribution to the extent such distribution is required under Section 401(a)(9) of the Code; and any amount distributed on account of hardship.

(2) Eligible Retirement Plan: An eligible retirement plan is an individual retirement account or individual retirement annuity described in Sections 408(a) and 408(b) of the Code; a qualified trust described in Section 401(a) of the Code that accepts the distributee's eligible rollover distribution; an annuity plan or contract described in Sections 403(a) and 403(b) of the Code; or an eligible plan under Section 457(b) of the Code which is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state that agrees to separately account for amounts transferred into such plan from this plan. The definition of eligible retirement plan will also apply in the case of a distribution to a surviving spouse of a Participant or the spouse or former spouse who is the alternate payee under a qualified domestic relations order as defined in Section 414(p) of the Code. With respect to an eligible rollover distribution to a Participant's nonspouse Beneficiary, an eligible retirement plan is an individual retirement account or annuity described in Sections 408(a) and 408(b) of the Code established for the purpose of receiving such distribution, and identifying the deceased Participant and Beneficiary.

(3) Distributee: A distributee includes an employee or former employee. In addition, the employee's or former employee's surviving spouse and the employee's or former employee's spouse or former spouse who is an alternate payee under a

qualified domestic relations order, as defined in Section 414(p) of the Code, are distributees with regard to the interest of the spouse or former spouse. A distributee includes the employee's or former employee's nonspouse Beneficiary, provided the transfer of the eligible rollover distribution is made as described in paragraph (4) below.

(4) Direct Rollover: A direct rollover is a payment by the Plan to the eligible retirement plan specified by the distributee.

SECTION 12. PAYMENT OF DISTRIBUTIONS UPON TERMINATION OF EMPLOYMENT

(a) Subject to the following provisions of this Section, payment to a Participant or Beneficiary of the Current Market Value of all Savings, Participating Employer Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions in the Participant's account from any Investment Fund, other than the Alcoa Stock Fund, upon the Participant's termination of Continuous Service is made in cash. All amounts held in the Alcoa Stock Fund at the time of the Participant's termination of Continuous Service are paid in cash or Company Stock. Such payment will be made in accordance with the following rules:

(i) If the Current Market Value of all of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is less than one thousand dollars ($1,000), then a total distribution of all of the Participant's vested account balances will be made to the Participant at a time determined by the Plan. If the Current Market Value of all of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates (i) is greater than one thousand dollars ($1,000) but less than five thousand dollars ($5,000), the distribution will be paid in a direct rollover to an individual retirement account designated by the Benefits Management Committee unless the Participant, or Beneficiary if applicable, elects to have such distribution paid directly to an eligible retirement plan specified by the Participant or Beneficiary in a direct rollover or to receive the distribution directly in cash. The value of any delisted stock that is no longer publicly traded but that is held in the Participant's Brokerage Account shall not be considered for purposes of the preceding valuation. Any such delisted stock shall be distributed in-kind where the value of the Participant's vested account balances (not including Rollover Contributions) in all qualified defined contribution plans of Alcoa, the Subsidiaries and Affiliates is less than five thousand dollars ($5,000), in a direct rollover to an individual retirement account designated by the Benefits Management Committee. Upon such distribution of de-listed stock, the amounts distributed will be reported for income tax purposes using reasonable methods available at such time and determined by the Plan.

(ii) If the Current Market Value of all of the Participant's vested account balances in all defined contribution plans of Alcoa, the Subsidiaries and Affiliates exceeds five thousand dollars ($5,000), the distribution is made upon the consent of the Participant, or surviving spouse if applicable, and if no consent is given and no claim for benefits has been made, such distribution is made in total upon the later of December 31, 2015, or his or her attainment of age 69. Notwithstanding the foregoing, if a Participant attains age 70 prior to

December 31, 2015, such distribution shall be made in total upon such Participant's attainment of age 70. Prior to the distribution of the total Current Market Value of the Participant's total account balance, the Participant, or the Beneficiary in the case of a Participant who dies with an account balance in the Plan, may request four partial distributions (subject to a $250.00 minimum) during each Plan Year in which the account balance is maintained in the Plan. Notwithstanding the foregoing, in the event that a claim for benefits is made, a distribution is made no later than the 60th day after the latest of the last day of the Plan Year in which occurs: (1) the date on which the Participant attains the earlier of age 65, (2) occurs the tenth anniversary of the year in which the Participant commenced participation in the Plan, or (3) the Participant terminates his or her service with the Participating Employer.

(iii) If a distribution is one to which Sections 401(a)(11) and 417 of the Code do not apply, such distribution may commence less than 30 days after the notice required under Section 1.411(a)-11(c) of the Income Tax Regulations is given, provided that:

a. the Plan Administrator clearly informs the Participant that the Participant has a right to a period of at least 30 days after receiving the notice to consider the decision of whether or not to elect a distribution (and, if applicable a particular distribution option), and

b. the Participant, after receiving the notice, affirmatively elects a distribution.

(iv) If the Participant dies with an account balance in the Plan, the entire interest of the Participant will be distributed not later than 5 years after the death of the Participant.

(b) Upon any distribution of Company Stock from the Alcoa Stock Fund, the Trustee delivers to the recipient a certificate representing the number of whole shares of Company Stock being distributed and cash equal to the Current Market Value on the Effective Date of distribution of any fractional interest in a share being distributed. With respect to any shares of Company Stock which are to be sold for the account of the recipient, the Trustee may, at its option (1) purchase such shares for Plan purposes at the Current Market Value on the Effective Date of distribution, or (2) sell such shares on the open market for the account of the recipient.

(c) Notwithstanding the foregoing provisions of this Section, distribution of a Participant's account balances commences the April 1 next following the calendar year in which the Participant attains age 70-1/2 years after January 1, 1988 and in accordance with Section 13(b).

(d) Notwithstanding the foregoing, if a Participant is reemployed by a Participating Employer, then distribution of his or her account balances other than minimum required distributions under Section 401(a)(9) of the Code, if any, payable to him or her during the period of his or her reemployment is suspended until his or her subsequent termination from employment. Upon his or her subsequent termination from employment, the Participant's account balances are paid in accordance with the foregoing provisions of this Section 12.

(e) Notwithstanding paragraphs (a) and (b) above, in the event that any qualified defined contribution plan is merged with this Plan or this Plan is the surviving plan with respect to any assets of Participants of a merging plan which are transferred to this Plan, any distribution options contained in the merging plan which are not contained in this Plan may be continued to be distribution options available to the said Participant of the merging plan for distribution of his or her account, in accordance with Section 411(d)(6) of the Code.

SECTION 13. GENERAL PROVISIONS WITH RESPECT TO WITHDRAWALS

(a) Effective Date of Withdrawal. The Effective Date of any withdrawal from the Plan is the Business Day such request for withdrawal is Properly Received by the Plan Administrator or its Designee.

(b) Distribution Limitations. Distribution of all amounts payable under the Plan to a Participant commences:

(i) Not later than (1) the required distribution dates or (2) the required distribution date, without violating Treasury regulations, if any, over the life of the Participant or over the lives of the Participant and a Beneficiary, or over a period not extending beyond the life expectancy of the Participant and a Beneficiary.

(ii) If distribution of the Participant's interest in the Plan has begun in accordance with paragraph (i)(2) and the Participant dies before his or her entire interest is distributed, the Participant's remaining interest in the Plan will be distributed at least as rapidly as under the method of distribution stated under paragraph (i)(2) above being used on the date of the Participant's death. If the Participant dies before the distribution of his or her interest in the Plan has begun in accordance with paragraph (i)(2), the entire interest of the Participant will be distributed not later than five years after the death of the Participant.

For purposes of this paragraph (b), the "required distribution date" means the date prescribed by Treasury Regulations, as amended from time to time, which effective January 1, 1988, is April 1 of the calendar year following the calendar year in which the Participant attains age 70-1/2.

For the purposes of this paragraph (b), any amount paid to a minor child is treated as if it had been paid to the surviving spouse if such amount will become payable to the surviving spouse upon such child reaching majority or any other designated event as may be permitted by Treasury Regulations, if any.

(c) Appendix D, Minimum Distribution Requirements, provides the Plan provisions to comply with Section 401(a)(9) of the Code and Treasury Regulations §1.401(a)(9)-2 through -9, as applicable, relating to required minimum distributions.

SECTION 14. NONASSIGNABILITY

Except as required under ERISA, no right or interest, of any Participant or Beneficiary in the Plan or in such Participant's accounts is (a) assignable or transferable or subject to any lien in whole or in part, either directly or by operation of law or otherwise, including, but not by way of limitation, alienation, execution, levy, garnishment, attachment, pledge, bankruptcy or in any other manner, other than a transfer as a result of death or mental incompetence, or (b) liable for, or subject to, any obligation or liability of such Participant or Beneficiary. Such portions of the Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions in the account of a Participant as are payable to another in accordance with the provisions of a "qualified domestic relations order," as defined in Section 414(p) of the Code and any applicable regulations thereunder, are distributed to the party designated in and in accordance with said order. The Effective Date of withdrawal for any such distribution is the first Business Day following the Plan Administrator's determination that the said order is in compliance with Section 414(p) of the Code and any applicable regulations thereunder and such distribution is made as soon as administratively practical thereafter. The Plan Administrator or Designee has promulgated procedures to determine whether a domestic relations order is a qualified domestic relations order. The procedures will be provided to a participant or alternate payee upon written request, or upon receipt of the domestic relations order by the Plan Administrator or Designee.

SECTION 15. EXTENT OF PARTICIPANT'S RIGHTS

(a) General. No person has any interest in or right to any part of the assets held under the Plan or the income thereon, except as and to the extent expressly provided in the Plan.

At the time of withdrawal by a Participant or Beneficiary he or she will receive shares or cash. There is no guarantee that the Current Market Value of any investment will be equal to or greater than the amount of the Participant's Savings therein. This Plan is designed to comply with and operate under Section 404(c) of ERISA. A Participant and his or her Beneficiaries assume all risk in connection with any decrease in the value of any investments allocated to such Participant's account. For purposes of Section 404(c)(1) of ERISA, in the absence of Participant or Beneficiary investment direction, a Participant or Beneficiary shall be treated as having exercised control over the assets invested in any investment which qualifies as a QDIA in accordance with Section 404(c)(5) of ERISA and the regulations promulgated thereunder.

The Plan does not and should not be construed as conferring any rights upon any person for a continuation of employment, nor does it interfere with the rights of Alcoa or any Subsidiary or Affiliate to terminate the employment of any person or to take any personnel action affecting such person without regard to the effect which such action might have upon such person or his or her Beneficiaries as a prospective recipient of benefits under the Plan.

(b) Military Service. Notwithstanding any provision of this Plan to the contrary, contributions, benefits and service credit with respect to qualified military service will be provided in accordance with Section 414(u) of the Internal Revenue Code.

SECTION 16. MANAGEMENT OF FUNDS

(a) <u>General</u>. Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions paid to the Trustee are invested as provided in the Plan.

(b) <u>Trustees and Investment Managers</u>. The Board or its designee has the responsibility to appoint, review the performance of, and remove where deemed appropriate, one or more Trustees, and one or more investment managers each of which is a bank, insurance company or other investment adviser qualified under Section 3(38) of ERISA. The duties of each Trustee and manager, to the extent not set forth in the Plan, are set forth in a trust agreement or other written documents approved by the Board or its designee. Except as otherwise provided in such documents or in the Plan, each such investment manager has sole investment control and management responsibility with respect to those assets of the Plan for which it is designated the investment manager. The Board may delegate its authority to appoint an investment manager, to remove an investment manager, to approve and direct the execution by the proper officer or officers of Alcoa of amendments to agreements with any investment manager and to review the performance of any such managers. Such delegation also includes the authority to approve written documents setting forth the duties of any manager and to direct the execution of investment management agreements by the proper officer or officers of Alcoa. No Trustee has any investment responsibility for any assets which are subject to the investment control of another investment manager and as to such assets it only has custodial duties if it is the custodian.

(c) <u>Designation of Investment Strategy</u>. The Board may from time to time designate, as to part or all of the assets of the Plan, that a separate fund or funds be established. Except as otherwise provided in the Plan, as to each such separate fund the Board or its designee may specify the investment strategy to be employed and the investment manager is thereupon relieved of responsibility for assuring that the specified investment strategy creates suitable diversification of the overall assets of the Plan, provided that such investment manager has followed such specifications.

(d) (1) <u>Acquisition of Fixed Income Investments by the Trustee</u>. The Trustee will enter into investment arrangements with insurance companies, banks or money managers, as directed by an investment manager duly appointed by the Board or its designee for the Fixed Income Fund. The Trustee will invest all Savings and other amounts to be invested in the Fixed Income Fund in accordance with such directions.

(2) <u>Accounting for Participant's Accounts</u>. Participants' investments in the Fixed Income Fund are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in the Fixed Income Fund as may be acquired with funds (if any) in such Participant's accounts to be invested therein. Such allocations will be made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(e) (1) Acquisition of Company Stock by Trustee. The Savings, Participating Employer Contributions, Discretionary Contributions, Restricted Discretionary Contributions, and Employer Retirement Income Contributions to be invested in the Alcoa Stock Fund are used by the Trustee to purchase from time to time shares of Company Stock (i) from Alcoa, at the Current Market Value thereof, or (ii) to the extent Alcoa does make shares available for purchase by the Trustee for such purpose, on the open market, unless Alcoa otherwise directs, or (iii) by the exercise of warrants or rights as provided in this Section. The Trustee, to the extent reasonable, invests any cash held in the fund in cash equivalents (including commercial paper). The Trustee also holds for the purpose of allocation to the accounts of individual Participants as hereinafter provided (i) shares of such stock which the Trustee has acquired upon withdrawal by a Participant, and (ii) shares of such stock which the Trustee has acquired pursuant to Participants' elections to transfer investments under the provisions of Section 9. All shares of such stock purchased by the Trustee are carried in the accounts of the Trustee at the actual cost thereof, including any taxes, commissions, etc. which are not paid by the Participating Employer, incident to the purchase except that shares acquired upon the exercise of warrants or rights are carried at the Current Market Value of such shares on the date of such exercise.

(2) Allocation of Stock to Participants' Accounts. Participants' investments in the Alcoa Stock Fund are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in the Alcoa Stock Fund as may be acquired with funds (if any) in such Participants' accounts to be invested therein. Such allocations are made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(3) Allocation of Dividends to Participants' Accounts. In valuing the units, dividends are accounted for on the date the Board declares the dividend. Once received, dividends are invested in the Alcoa Stock Fund. A Participant may elect to receive an annual distribution of the dividends posted to their account during the Plan Year. Such election must be made prior to the last dividend record date in the Plan Year, and distribution will be made as soon as administratively practical following the date the final dividends are posted to the Participant's account. Distribution will be paid in a lump sum from the Alcoa Stock Fund. To the extent the Participant's account balance in the Alcoa Stock Fund is insufficient to pay the dividends, the balance of the distribution will be paid pro-rata from the Participant's other Core Fund investments.

(4) Warrants & Purchase Rights. A Participant has no right of request, direction or demand upon the Trustee to exercise in his or her behalf warrants or rights to purchase shares of common stock or other securities of Alcoa, except as otherwise determined by the Board. The Trustee, in its discretion, may exercise or sell any warrants or rights to purchase shares of Company Stock appertaining to shares of such stock held by the Trustee and may sell any warrants or rights to purchase other securities of Alcoa appertaining to shares of such stock held by the Trustee.

(5) Stock Splits & Dividends. Shares of Company Stock received by the Trustee by reason of a stock split or stock dividend become part of the Alcoa Stock Fund.

(6) <u>Voting</u>. The Trustee exercises its voting rights in accordance with written directions of each Participant with respect to at least the number of whole shares of Company Stock held by it in the Participants' accounts on the record date for voting. With respect to all other shares of Company Stock held by the Trustee on the record date for voting (the "Other Shares"), including but not limited to, (i) fractional shares in the Participants' accounts (if they are not subject to direct voting), (ii) shares for which it has not received written directions from any Participant, and (iii) any shares which have not yet been allocated to Participants' accounts, the Trustee exercises its voting rights in the same proportion (for, against, abstain and so on) on each matter as it exercises its voting rights with respect to shares of Company Stock for which voting directions were received from all participants in all plans which participate in the Alcoa Stock Fund.

(f) (1) <u>Acquisition of Other Investments by Trustee</u>. Alcoa has and in the future will enter into investment arrangements with various investment managers. Any such arrangements must be approved by the Benefits Management Committee. Expenses incurred in connection with the purchase or sale of securities by the investment manager are paid from the applicable Investment Fund.

(2) <u>Accounting for Participant's Accounts</u>. Effective January 1, 2011, Participants' investments in the Core Funds are accounted for on a unit basis. The Trustee allocates to the accounts of each Participant such units in each of the Core Funds as may be acquired with funds (if any) in such Participant's accounts to be invested therein. Such allocations will be made in a uniform manner as determined by the Benefits Management Committee. Transfers and withdrawals are valued based on the Current Market Value per unit on the Effective Date of the transfer or withdrawal.

(g) <u>Transition Provision</u>. Pending investment under an arrangement established pursuant to this Section and pending distribution to Participants following withdrawal from such an arrangement, cash is invested by the Trustee in short-term fixed income securities or cash equivalents (including commercial paper) and the value of such securities or cash equivalents is allocated to the accounts of Participants in an equitable manner determined by the Benefits Management Committee.

(h) <u>Brokerage Account</u>. Participant's have the right to invest and personally manage investments outside of the Core Funds by investing through the Brokerage Account offered by a broker selected by the Plan ("Broker"). Investment options through the Brokerage Account are mutual funds (other than those already available as Core Funds), any taxable equity or fixed income security publicly traded in a U.S. security market (including American Depository Receipts), and money market funds. Pre-Tax Savings, After-Tax Savings, Rollover Contributions, Participating Employer Contributions, Discretionary Contributions Restricted Discretionary Contributions, and Employer Retirement Income Contributions that are subject to transfer as provided in Section 9, may not be directly invested in the Brokerage Account, nor may withdrawals, distributions or loans be made directly from the Brokerage Account. Such transactions must be processed through the Core Funds.

(1) <u>Restrictions of Trading in the Brokerage Account</u>. Certain restrictions apply to investment vehicles that may be available through the Brokerage Account. Specifically, the following investments are not available through the Brokerage Account: Alcoa company stock (common or preferred) and bonds; funds currently available in the Core Funds; tax-free funds; securities of publicly traded limited partnerships; options contracts; purchase on short sales, futures, precious metals, and currencies; real estate (other than funds); annuities; life insurance policies; collectibles; commodities; foreign stocks (not American Depository Receipt); and margin trading and trade-away trades that are placed by another broker and settle with the Broker.

(2) <u>Trading within the Brokerage Account</u>. Investment purchases in the Brokerage Account may be made after such amounts are transferred from the Participant's Core Fund accounts. Transfers from Core Funds may be made as provided in Section 9. Transferred funds will be held in the Broker's money market fund until the Participant's buy orders are received by the Broker. Trades may be subject to initial and subsequent investment minimums required by a mutual fund.

Transfers are made out of the Brokerage Account and into the Core Funds from the Schwab Money Market Fund. If there are insufficient funds to make the requested transfer, the participant must submit a sell order with Schwab. The proceeds of securities sold will be invested automatically in the Broker's money market fund and will be subsequently transferred out of the Brokerage Account to the Core Funds as directed by the Participant.

(3) <u>Expenses Incurred by Trading and Voting</u>. The Broker's standard commission schedule will be deducted from the Brokerage Account of the Participant who initiates the trades, and any other fees and expenses incurred through the Brokerage Account will be paid directly by the Participant.

The Broker will execute proxies for any securities held in the Brokerage Account accounts in accordance with written directions of any Participant.

OTHER PROVISIONS OF THE PLAN

SECTION 17. LOANS

(a) A Participant may borrow a proportion of the Current Market Value of his or her Savings, Participating Employer and Discretionary Contributions which are eligible for transfer under Section 9 of this Plan ("Eligible Loan Account Balance").

A Participant may not borrow Restricted Discretionary Contributions or Employer Retirement Income Contributions. In addition, a Participant may not borrow Participating Employer Contributions, or Discretionary Contributions, made on or after January 1, 2011 or investment gains thereon.

A Participant shall pay a $100 processing fee, or such other amount as may be designated by the Plan Administrator, for each loan request. The fee will be included in the loan amount, subject to the limitations of this Section 17, and deducted prior to distribution of the loan.

(b) A loan to a Participant, when added to the balance of any other outstanding loans the Participant has under the Plan, cannot exceed the lesser of:

(1) $50,000 reduced to the extent of the highest outstanding loan balance of the Participant's loans outstanding during the 365 day period immediately preceding the date on which the loan is made; or

(2) 50% of the sum of the Participant's (A) Eligible Loan Account Balance, plus (B) Restricted Discretionary Contributions and vested portion of Employer Retirement Income Contributions balances.

A Participant may refinance any general purpose loan for any reason at any time (but only once in a twelve-month period), as may be permitted under the Code or ERISA.

(c) Each loan to a Participant is secured by a promissory note under which the Participant pledges and grants the Trustee an interest in the Participant's Eligible Loan Account Balance to the extent of the unpaid loan.

(d) All loans to Participants are treated as investments of plan assets in their respective accounts. All principal and interest associated with a Participant's repayment of a loan are credited to his or her Plan account.

(e) The Plan Administrator has developed a procedure in accordance with the Code and ERISA under which such loans from the Plan will be made available to Participants, which procedure has been approved by the Benefits Management Committee.

(f) Loan repayments will be suspended under this Plan during a period of military service as permitted under Section 414(u)(4) of the Internal Revenue Code and the regulations promulgated under Section72(p) of the Code. Upon the Participant's return to active employment, loan repayments will resume and the period of repayment extended in direct proportion of the Participant's period of absence for military leave.

SECTION 18. TRUST

All assets of the Plan are held in trust for the Plan, except as otherwise permitted by applicable law. Alcoa has entered into a trust agreement with a national banking association which acts as Trustee under the Plan. The Board or its designee may, from time to time, amend such trust agreement (subject to its terms), remove such Trustee or any Successor Trustee and upon removal or resignation of a Trustee, appoint a Successor Trustee.

SECTION 19. ADMINISTRATION

(a) Duties of Plan Administrator. The Plan Administrator or its Designee are responsible for the preparation and the filing with governmental agencies or the furnishing to Participants and Beneficiaries, of all summaries, descriptions, annual and other reports, notices and other documents and information which are required to be so prepared and filed or furnished under ERISA or the Code, retain appropriate records and also have all of the other responsibilities and duties of the administrator of the Plan as set forth in ERISA, except as otherwise provided in the Plan. Each Participating Employer by whom a Participant is employed furnishes to the Plan Administrator or its Designee any records required for the foregoing.

(b) The Benefits Management Committee. Except as provided in Section 16 and in paragraph (a) of this Section, the complete authority to control and manage the operation and administration of the Plan is placed in the Benefits Management Committee, which consists of one or more persons appointed from time to time by the Board.

(c) Duties of Benefits Management Committee. Subject to the limitations of the Plan, the Benefits Management Committee has the discretionary authority to: (1) construe and interpret the Plan, (2) interpret administrative forms and other information, (3) make credibility findings, and (4) establish supplemental regulations for the administration of the Plan and the transaction of its business. All actions, determinations and interpretations of the Benefits Management Committee will be performed in a uniform and nondiscriminatory manner to all Participants in similar circumstances. All interpretations of the Plan and determinations of disputed questions made by the Benefits Management Committee are conclusive, final and binding upon the Participating Employers, Participants, Beneficiaries, other employees and any other individuals claiming rights under the Plan, subject to a claimant's request under paragraph (e) of this Section to have the Benefits Management Committee review the denial of a claim. When making an interpretation or determination, the Benefits Management Committee is entitled to rely upon information furnished by the individual, Participant, Beneficiary or Participating Employer, unless in accordance with an appeals procedure established by the Benefits Management Committee the claimant establishes to the satisfaction of the Benefits Management Committee that Continuous Service, compensation or other records are erroneous.

(d) Application for Benefits. Each person applying for a benefit under the Plan must furnish all information required under procedures approved by the Benefits Management Committee.

(e) Review of Denial of Benefits. If any applicant's claim for benefits under the Plan is denied, the applicant will be notified in writing of such denial. Such notice will set forth the specific reasons for such denial and will be written in a manner calculated to be understood by the applicant. The applicant will be afforded a reasonable opportunity for a full and fair review by the Benefits Management Committee or its Designee of the decision denying his or her claim for benefits, in accordance with a claims procedure which the Benefits Management Committee adopts. After the final determination of an appeal by the Benefits Management Committee or its Designee, the applicant must file any litigation arising out of the underlying facts or circumstances giving rise to such claim and appeal, under ERISA or otherwise, within one hundred eighty (180) days following the date of the final notice provided by the Benefits Management Committee or its Designee.

(f) <u>Extent of Benefits Management Committee's Responsibility</u>. The members of the Benefits Management Committee will act in a prudent manner in the performance of their duties. No member will be personally liable by virtue of any contract, agreement, bond or other instrument made or executed by or on behalf of such member as a member of the Benefits Management Committee. To the extent permitted by ERISA, no member of the Benefits Management Committee will be liable for any mistake of judgment made by himself or herself or any other member, nor for any loss, unless resulting from his or her own gross negligence or willful misconduct, and no member will be liable for the neglect, omissions or wrongdoing of any other member thereof, or of the agents or counsel of the Benefits Management Committee. To the extent permitted by law, Alcoa will indemnify and save harmless each member of the Benefits Management Committee against all expenses and liabilities arising out of his or her services as such, except for expenses and liabilities arising from such member's own gross negligence or willful misconduct as determined by the Board.

(g) <u>Relationship to Other Fiduciaries</u>. Each fiduciary in carrying out its responsibilities under the Plan may rely upon any direction, information or action of another fiduciary as being proper under this Plan or the documents under which the assets of the Plan are managed, and is not required to inquire into the propriety of any such direction, information or action. It is intended under this Plan and such documents that each fiduciary is responsible for the proper exercise of its own powers, duties, responsibilities and obligations under this Plan and such documents and is not responsible for any act or failure to act of another fiduciary, except as otherwise provided by ERISA.

(h) <u>Multiple Fiduciaries</u>. Any person or group of persons may serve in more than one fiduciary capacity with respect to the Plan.

(i) <u>Further Allocation of Fiduciary Duties</u>. Any two or more fiduciaries named herein or appointed by the Board as provided herein may from time to time agree in writing with respect to the allocation of duties and responsibilities under the Plan, including fiduciary responsibilities, among the fiduciaries so agreeing, provided however that any reallocation of fiduciary responsibilities clearly allocated by the Plan or by the Board requires prior approval of the Board.

(j) <u>Delegation of Fiduciary Duties</u>. Any fiduciary named herein or appointed by the Board as provided herein may designate another person or persons to carry out any or all of the duties and fiduciary responsibilities which it has under the Plan and which are specified in such designation except that no Trustee may delegate fiduciary responsibilities with respect to investment functions without the prior approval of the Board.

(k) <u>Delegation of Ministerial Duties</u>. Any fiduciary named herein, appointed by the Board as provided herein or designated under paragraph (j) above may delegate ministerial duties as follows: employ one or more persons to render advice, including legal and accounting services, with regard to any responsibility such fiduciary has under the Plan; may appoint ministerial agents (including brokers or others who may execute investment transactions); and may delegate to others its clerical and other non-fiduciary functions.

(l) <u>No Added Remuneration for Employees</u>. No member of the Benefits Management Committee and no other person who renders services to or for the Plan may receive remuneration for services as such if he or she also is an employee of Alcoa, a Subsidiary or Affiliate.

SECTION 20. AMENDMENT, MODIFICATION, SUSPENSION OR TERMINATION

(a) <u>Rights Reserved</u>. Alcoa reserves the right, by action of the Board or the Benefits Management Committee, taken in accordance with the Board's or Benefits Management Committee's operating procedures, (1) to amend, modify, suspend or terminate the Plan or to suspend or completely discontinue contributions to the Plan, and (2) to terminate the Participation in the Plan of any Participating Employer or any designated group of Eligible Employees employed either within or outside the U.S. Any Participating Employer may terminate its participation in the Plan or suspend or discontinue its contributions under the Plan at any time upon 30 days prior written notice to the Plan Administrator. Such 30 day notice requirement may be waived by the Benefits Management Committee. No such amendment or other action relating to the Plan may reduce the amounts then credited to any Participant's account, or provide or have the effect of providing that the securities and funds held in trust for the Plan or the income thereof may be used for or devoted to purposes other than the exclusive benefit of Participants and their Beneficiaries and for the payment of expenses of the Plan.

(b) <u>Sale of Assets, etc.</u> In the event any assets of any business of any Participating Employer are transferred to another entity by sale, merger, consolidation or otherwise, and the entity to which said assets are transferred has in effect, or thereupon establishes, a tax-qualified plan and related trust for the exclusive benefit of employees which qualify under the applicable provisions of the Code, all assets under the Plan, held in the accounts of Participants who continue in the employment of the transferee entity, may be transferred and paid, for their respective accounts, to the trust for the tax-qualified plan of said transferee entity, provided that any such transfer of investments will be effected in such manner as to preclude, for federal income tax purposes, a termination of the Plan or the constructive receipt of benefits thereunder with respect to said Participants.

(c) <u>Transfer of Plan Assets</u>.

(1) Notwithstanding the foregoing, in the event of any merger or consolidation of the Plan with, or a transfer of any of the assets and liabilities of the Plan to any other plan, each affected Participant must (as if such plan were terminated immediately after such merger, consolidation or transfer) be entitled to a benefit under such other plan which is equal to or greater than the benefit he or she would have been entitled to receive under the Plan immediately prior to such merger, consolidation or transfer (as if the Plan had then terminated). In the event that assets are transferred to this Plan from any other plan sponsored by Alcoa or any Subsidiary or Affiliate, each Participant who has assets transferred from such plan or plans will be entitled to a benefit under this Plan which is equal to or greater than the benefit he or she had under such other plan. Any protected optional form of benefits provided under said plan may be maintained under this Plan. These provisions do not constitute a guaranty against investment losses.

(2) In the event a participant in a plan named below (“Alcoa Savings Plans”), becomes an Eligible Employee under this Plan, all of the participant’s accounts in the applicable Alcoa Savings Plan will be transferred to analogous accounts in this Plan as soon as reasonably practical after the Plan Administrator or Designee receives notice.

Alcoa Retirement Savings Plan for Bargaining Employees;

Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees; and

Alcoa Retirement Savings Plan for Fastener Systems Employees.

(3) In the event a Participant ceases to be an Eligible Employee under this Plan and the Participant becomes an eligible employee under one of the Alcoa Retirement Savings Plans listed in (2) above, all of the Participant’s accounts will be transferred to analogous accounts in the applicable Plan, as soon as reasonably practical after the Plan Administrator or Designee receives notice and the Participant ceases to be a Participant, and will be entitled to no further benefits under this Plan.

SECTION 21. ADMINISTRATIVE EXPENSES

Except as otherwise provided in the Plan, all costs and expenses incurred in administering the Plan, including the expenses of the Benefits Management Committee, the fees and expenses of the Trustee, the fees and charges payable under the investment arrangements, and other legal and administrative expenses, are paid by the Plan.

Investments in the Core Funds will be subject to an administrative expense fee, which will be used to pay the expenses of the Plan. Initially the fee will be set at five basis points per year, and will be charged on a daily basis. The fee will be periodically adjusted by the Plan Administrator based on the actual expenses of the Plan.

SECTION 22. SELECTION OF BENEFICIARIES

(a) Designation of Beneficiary. Subject to such administrative procecures as may be adopted from time to time, the Beneficiary with respect to all of the assets in the accounts of a Participant will be Participant’s spouse if then living, or if not, the Participant’s estate. With the written notarized consent of a Participant’s spouse, a Participant may file with the Plan Administrator or its Designee a written designation of a Beneficiary or Beneficiaries other than his or her spouse. In the event the designation of such other Beneficiary is revoked in writing by the Participant, his or her spouse will become the Beneficiary of said assets until such time as the Participant, with his or her spouse’s written notarized consent, designates in writing another Beneficiary or Beneficiaries.

In the event a Participant certifies that he or she does not have a spouse, a Beneficiary or Beneficiaries with respect to all or part of the assets in the accounts of the Participant may be designated or revoked by the sole action of the Participant.

If there is no designated Beneficiary, or if no Beneficiary is living at the time of the Participant's death, the Beneficiary is the Participant's spouse if then living, or if not, the Participant's estate.

Written designations of a primary Beneficiary or a contingent Beneficiary to receive the assets of a Participant in the case where the primary Beneficiary is deceased, spousal consents, and revocations are made on a form or forms approved by the Plan Administrator. Any such written designation, consent or revocation becomes effective on the calendar day on which such designation, consent or revocation is Properly Received. After the death of a Participant, a properly designated Beneficiary may name his or her own Beneficiary to receive a distribution of the Beneficiary's account balances when the Beneficiary is deceased ("Subsequent Beneficiary"). A Subsequent Beneficiary shall receive a total distribution of the Subsequent Beneficiary's account balance within the later of: (i) ninety (90) days after death of the Beneficiary who named such Beneficiary or (ii) five (5) years of the Participant's death.

(b) Other Payments. In case of incapacity of a Participant or Beneficiary entitled to a benefit under the Plan, benefit payment are made to such person's legal representative who makes claim therefore, or if no such claim has been received, to such other person or persons as the Benefits Management Committee, utilizing objective criteria, selects from among dependents, next of kin or friends. Any payment of a benefit under the Plan in accordance with the provisions of this Section is a complete discharge of any liability for the payment of such benefit under the Plan.

SECTION 23. PARTICIPANT'S STATEMENT

A statement showing each Participant's interest in each of the Plan's Investment Funds will be made available at least quarterly.

SECTION 24. EFFECTIVE DATE OF PLAN

The Plan is amended and restated effective January 1, 2015.

SECTION 25. CONSTRUCTION

It is intended that the Plan conform to the applicable requirements of ERISA and the Code, and that the Plan and related trust agreement are considered one if and to the extent necessary for compliance therewith. Except to the extent otherwise provided in ERISA and the Code, the Plan is construed, regulated and administered under the laws of the Commonwealth of Pennsylvania, including its applicable statute of limitations (as such may be superceded by any limitations period provided under the terms of the Plan).

APPENDIX A

LIMITATIONS AND DISCRIMINATION TESTING

1. Pre-Tax Savings for any Plan Year of a Participant is subject to the following limitations:

(a) The applicable limit as defined in Treasury Regulation section 1.402(g)-1(d) with respect to the Pre-Tax Savings of this Plan and elective deferrals of all other plans, contracts, or arrangements of the employer;

(b) if the Participant is a Highly Compensated Employee with respect to any Participating Employer for that year, the amount that may be made on his or her behalf in compliance with the special discrimination tests of Sections 401(k) and 401(m) of the Code for that year, as applied separately to each Plan;

(c) the amount deductible by the Participating Employer for that year under Section 404 of the Code; and

(d) the maximum permitted amount under Appendix B of the Plan.

2. To conform the operation of the Plan to the requirements of Sections 401(k) and 401(m) of the Code and the limitations of Paragraphs (1)(a) and (1)(b) above with respect to any Participant, the Plan Administrator may, without that Participant's consent:

(a) prospectively modify or revoke his or her election to have Savings, Participating Employer Contributions, Discretionary Contributions, and Restricted Discretionary Contributions made on his or her behalf,

(b) distribute to him or her the amount by which the Pre-Tax Savings made on his or her behalf for any Year exceeds the limitation of Paragraph (1)(a) above for that year plus the amount of any income allocable to such excess (but not more than his Pre-Tax Savings account balance) by the April 15 next following the end of that Plan Year;

(c) distribute to him or her the amount by which the Pre-Tax Savings made on his or her behalf for any Plan Year exceeds the limitations of Paragraph (1)(b) above for that year (as determined in accordance with Section 401(k)(8)(B) of the Code) plus the amount of any income allocable to such excess (but not more than his Pre-Tax Savings account balance) by the end of the Plan Year following the Plan Year for which the amounts were contributed; and

(d) make appropriate adjustments to his or her Pre-Tax Savings account to reflect such distributions.

3. Such modification or revocation described in 2. above is made only if necessary under one of the following circumstances:

(a) to ensure that the discrimination tests of Section 401(k) of the Code governing permissible levels of Pre-Tax Savings contributions for both the ESOP and non-ESOP portions of the Plan are met for such Plan Year, or to ensure that one of the following Average Actual Deferral Percentage tests are met for both the ESOP and non-ESOP portions of the Plan for such Plan Year;

(b) to ensure that a Participant's annual additions for any calendar year will not exceed the limitations of Appendix B; or

(c) to ensure deductibility of the Employer's entire contribution to the Plan for federal income tax purposes.

4. Definitions. For purposes of this Appendix A, the following terms are defined as follows:

(a) "Actual Deferral Percentage" means the ratio, expressed as a percentage calculated to the nearest one-hundredth of one percent, of the amount of Pre-Tax Savings on behalf of an Eligible Employee for a Plan Year to the Eligible Employee's Compensation for the Plan Year, whether or not the employee was a Participant for the entire Plan Year. A Highly Compensated Employee's Savings include such savings for the Plan Year which is in excess of the limitations set forth in Section 415(c)(1) of the Code ("Excess Pre-Tax Savings"), but exclude Excess Pre-Tax Savings for Non Highly Compensated Employees. Any Eligible Employee who does not elect to make Pre-Tax Savings and who does not receive Qualified Matching Contributions for a Plan Year will have zero Actual Deferral Percentage for the Plan Year.

(b) "Average Actual Deferral Percentage" means, for the group of Eligible Employees who are Highly Compensated Employees for a Plan Year or the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year, the average of the Actual Deferral Percentages of all Eligible Employees in such group for the Plan Year.

(c) "Average Contribution Percentage" means, for the group of Eligible Employees who are Highly Compensated Employees for a Plan Year or the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year, the average of the Contribution Percentages of all Eligible Employees in such group for the Plan Year.

(d) "Contribution Percentage" means the ratio, expressed as a percentage calculated to the nearest one-hundredth of one percent, of the sum of Participating Employer Contributions (other than Qualified Matching Contributions treated as Elective Deferrals under paragraph 7 of this Appendix) and any After-Tax Savings on behalf of an Eligible Employee for a Plan Year to the Employee's Compensation for the Plan Year, whether or not the employee was a Participant for the entire Plan Year. For these purposes, an Eligible Employee's Contribution Percentage for any Plan Year is calculated by excluding any forfeitures of Excess Aggregate Contributions allocated to the Eligible Employee's account for the Plan Year.

(e) “Compensation” means the total amount of compensation (within the meaning of Section 415(c)(3) of the Code, and subject to the limitation of Section 401(a)(17) of the Code) received by an employee from the Employer while an Eligible Employee under the Plan during the Plan Year. An Eligible Employee’s Compensation for a Plan Year includes all Pre-Tax Savings made to the plan for the Plan Year, and all other such employee savings made by the Employer for the Plan Year to any other plan on behalf of the employee that are not currently includible in the gross income of the employee under Sections 125, 132(f)(4), 402(a)(8), 402(h) or 403(b) of the Code, provided that Alcoa has elected to treat all such elective contributions as compensation with respect to all employees under all plans of the Participating Employer.

In applying the limitation of Section 401(a)(17) of the Code, effective January 1, 1997, the family aggregation rules under this Appendix no longer apply.

(f) “Eligible Employee” means, with respect to any Plan Year, any employee who is eligible to commence participation in the Plan under Section 1 of the Plan and to have Savings made to the Plan under Section 2 of the Plan for the Plan Year, regardless of whether any contributions are made to the Plan on behalf of the employee for the Plan Year.

(g) “Excess Contributions” means, with respect to any Plan Year, the excess of the aggregate amount of Pre-Tax Savings, including Qualified Matching Contributions treated as Elective Deferrals under paragraph 7 of this Appendix, actually made to the Plan on behalf of Highly Compensated Employees for the Plan Year over the maximum amount of such contributions permitted under paragraph 5 of this Appendix.

(h) “Excess Aggregate Contributions” means, with respect to any Plan Year, the excess of the aggregate amount of Participating Employer Contributions and any After-Tax Savings actually made to the Plan on behalf of Highly Compensated Employees for the Plan Year over the maximum amount of such contributions permitted under paragraph 9 of this Appendix.

(i) “Employer” means Alcoa Inc. and all other entities as required to be covered under Section 414(c) of the Code.

(j) “Family Member” means, with respect to any Eligible Employee, an individual described in Section 414(q)(6)(B) of the Code.

(k) “Highly Compensated Employee” includes, for any Plan Year, the following Employees:

(i) A Highly Compensated Active Employee includes any employee (other than employees who are non-resident aliens and receive no earned income from sources within the U.S.) who performs service for the Employer during the Determination Year and who during the Look-Back Year:

(1) was a 5 % owner (within the meaning pursuant to Section 416(i)(1) of the Code) at any time during the year or the preceding year, or

(2) for the preceding year received Compensation from the Employer in excess of $80,000 (as adjusted pursuant to Section 415(d) of the Code) for such year.

(ii) A Highly Compensated Former Employee means:

(1) any employee who was a Highly Compensated Employee when the employee separated from service, or

(2) any employee who was a Highly compensated Employee at any time after attaining the age 55.

(l) “Non-Highly Compensated Employee” means, for any Plan Year, an employee who is not a Highly Compensated Employee.

(m) “Qualified Matching Contributions” means any Participating Employer Contributions to this Plan on behalf of Eligible Employees, provided that amounts attributable to such contributions are not distributable merely on account of the Employee’s hardship and are immediately vested.

5. Average Actual Deferral Percentage Test. For each Plan Year, the Plan must satisfy one of the following Average Actual Deferral Percentage tests with respect to Pre-Tax Savings, and Qualified Matching Contributions treated as Pre-Tax Savings under paragraph 7 of this Appendix, made to both the ESOP and non-ESOP portions of the Plan for the Plan Year:

(a) the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by 1.25; or

(b) the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by two, provided that the Average Actual Deferral Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year does not exceed the Average Actual Deferral Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees by more than two percentage points.

(c) The Average Actual Deferral Percentage Test for all contributions to the ESOP portion of the Plan will be computed separately under this Section.

For Plan Years in which the Plan is operated in accordance with the safe harbor requirements of Section 401(k)(12) of the Code, Section 5 of this Appendix A does not apply.

6. Special Rules.

(a) Aggregation of Plans. In the event that this Plan satisfies the requirements of Section 401(a)(4), 401(k) or 410(b) of the Code only if aggregated with one or more other plans, or if one or more other plans satisfy the requirements of such sections of the Code only if aggregated with this Plan, then the provisions stated herein will be applied by determining the Actual Deferral Percentages of Employees as if all such plans (excluding other ESOPs) were a single plan. For plan years beginning after December 31, 1989, plans may be aggregated in order to satisfy Section 401(k) of the Code only if they have the same plan year. Notwithstanding the foregoing, certain plans will be treated as separate if mandatorily disaggregated under regulations under Section 401(k) of the Code.

(b) In the event the Plan does not pass the ADP test, the test will be disaggregated by removing from the test all participants who have not attained age 21 and completed one eligibility year within 6 months of the last day of the plan year.

(c) All ESOP portions of the Savings Plan shall be aggregated for ADP with the Non-ESOP portions of the Savings Plan.

7. Treatment of Qualified Matching Contributions. If any Qualified Matching Contributions are made on behalf of Eligible Employees for a Plan Year, Alcoa may elect, in accordance with the regulations of the Secretary of Treasury under Section 401(k) of the Code, to treat all or a portion of such Qualified Matching Contributions as Pre-Tax Savings for purposes of calculating the Actual Deferral Percentages of Eligible Employees for the Plan Year. Any such Qualified Matching Contributions for a Plan Year must be made no later than the end of the 12 month period immediately following the close of the Plan Year.

8. Correction of Excess Contributions.

(a) General Rule. If the Plan does not satisfy one of the Average Actual Deferral Percentage tests of paragraph 5 of this Appendix as of the end of a Plan Year, the Excess Contributions for the Plan Year will be corrected if the Excess Contributions for the Plan Year are timely recharacterized as employee After-Tax Savings contributions in accordance with subsection (c) below or timely distributed to Highly Compensated Employees in accordance with subsection (d) below.

(b) Allocation of Excess Contributions. Effective for Plan Years beginning after December 31, 1996, in the event the nondiscrimination requirements of paragraph 5 of this Appendix are not satisfied for a Plan Year, the “deferral percentage leveling method” described in the preceding paragraph is performed as a first step in order to determine the total dollar amount of Excess Contribution to be distributed: a calculation is made to determine the dollar amount of Elective Deferrals necessary to reduce the deferral percentage of the Highly Compensated Employee with the highest deferral percentage to be equal to the deferral percentage of the Highly Compensated Employee with the next highest deferral percentage, and where necessary, calculations are made to determine the dollar amounts of reductions of the deferral percentage of subsequent Highly Compensated Employees that may be required in order

to satisfy the nondiscrimination requirements in paragraph 5 of this Appendix. The total dollar amount of Excess Contribution that must be distributed for the Plan Year is the sum of the dollar amounts so calculated for each Highly Compensated Employee whose deferral percentage is so reduced.

Distribution of the total amount of Excess Contribution determined in the paragraph above is made using the “dollar leveling method.” Excess Contributions of the Highly Compensated Employee with the largest dollar amount of contributions for the Plan Year shall be distributed to the extent necessary to cause that Highly Compensated Employee’s dollar amount of Excess Contributions to equal the dollar amount of Excess Contributions of the Highest Compensated Employee with the next highest dollar amount of Excess Contributions for the Plan Year. If the total amount distributed is less than the amount of total Excess Contribution, then both Highly Compensated Employees’ amounts are reduced to the same dollar level of the Highly Compensated Employee electing the third highest dollar amount and the dollar leveling process is repeated until the total dollar amount that should be reduced as calculated in the above paragraph is distributed. However, if reduction of a lesser amount of contributions would equal the total dollar amount of Excess Contributions that must be distributed for the Plan Year, the lesser amount is distributed.

A participant who has had his contributions reduced in accordance with this subparagraph shall have the amount of such reduction paid to him in cash as soon as practicable, subject to applicable payroll taxes. The amount of the Excess Contributions to be distributed shall be reduced by excess deferrals under 402(g) previously distributed for the Plan Year. The distributions of Excess Contributions shall include the income allocable thereto, including both the income allocable for the Plan Year for which the Contributions were made and the income for the period between the end of that Plan Year and the date as of which the distribution is made. Effective January 1, 2008, the distribution of Excess Contributions shall include the income or loss allocable only for the Plan Year of the Excess Contributions, and will not include the income or loss for the period between the end of the Plan Year and the date distribution is made. In addition, any Company Matching Contributions associated with the Excess Contribution shall be treated as forfeiture and used to reduce the Employer’s contribution under Section 3 of the Plan.

(c) Recharacterization of Excess Contributions. Any recharacterization of Excess Contributions as employee After-Tax Savings will be accomplished by the Plan Administrator in the manner provided in subsection (b) above within 2 ½ months after the close of the Plan Year, providing such notices and following such procedures as required by regulations of the Secretary of Treasury, and will be deemed to occur no earlier than the date on which the last Highly Compensated Employee is informed in writing of the amount of his or her recharacterized Excess Contributions and the consequences thereof. Any Excess Contributions that are recharacterized as employee after-tax contributions for a Plan Year will, in combination with other Participating Employer Contributions to the Plan for the Plan Year, satisfy the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year. Any recharacterized Excess Contributions remain nonforfeitable under the Plan and are subject to the same distribution requirements as Pre-Tax Savings. Recharacterized Excess Contributions are taxable to the Highly Compensated Employee for the year in which the Highly Compensated Employee could have originally elected to receive the Excess Contributions amount in cash.

(d) Distribution of Excess Contributions. If any Excess Contributions allocated to Highly Compensated Employees for a Plan Year are not corrected by recharacterization under (c) above, then such Excess Contributions, plus any income and minus any loss allocable thereto, will be distributed to Highly Compensated Employees no later than 12 months following the close of the Plan Year.

(e) Income or Loss Allocable to Excess Contributions. The income or loss allocable to the Excess Contributions referred to in subsection (d) above include the allocable income or loss for the Plan Year of the Excess Contributions and the allocable income or loss for the period between the end of the Plan Year and the distribution of the Excess Contributions, calculated as follows:

The income or loss allocable for the Plan Year of the Excess Contributions is determined by multiplying the total investment income or loss (including dividends, interest, realized gains or losses, and unrealized appreciation or depreciation) allocable to the Participant's Pre-Tax Savings and amounts treated as Pre-Tax Savings under paragraph 7 of this Appendix for the Plan Year by a fraction, the numerator of which is the Excess Contributions allocated to the Participant for the Plan Year, and the denominator of which is the total account balance attributable to the Participant's Pre-Tax Savings and amounts treated as Pre-Tax Savings under paragraph 7 of this Appendix as of the end of the Plan Year, reduced by the investment gain (or increased by the investment loss) allocated to such total amount for the Plan Year.

Effective January 1, 2008, the income or loss allocable to the Excess Contributions referred to in subsection (d) above will include only the income or loss allocable for the Plan Year of the Excess Contributions, and not the income or loss for the period between the end of the Plan Year and the distribution of Excess Contributions.

(f) Coordination with Excess Pre-Tax Savings. The amount of any Excess Contributions to be recharacterized under subsection (c) above or distributed under subsection (d) above with respect to any Highly Compensated Employee for a Plan Year is reduced by any excess Pre-Tax Savings previously distributed to the Highly Compensated Employee for the employee's taxable year ending with or within the Plan Year.

(g) Accounting for Excess Contributions. The amount of Excess Contributions allocated to a Highly Compensated Employee for a Plan Year that is recharacterized under subsection (c) above or distributed under subsection (d) above is attributed first to the Participant's Pre-Tax Savings for the Plan Year and then, to the extent such Excess Contributions exceed the Participant's Pre-Tax Savings for the Plan Year, attributed to amounts treated as Pre-Tax Savings under paragraph 4 of this Appendix in proportion to the amounts of such contributions on behalf of the Participant for the Plan Year.

9. Average Contribution Percentage Tests. For each Plan Year for which Participating Employer Contributions are made to the Plan (other than Qualified Matching Contributions

treated as Pre-Tax Savings for the Plan Year under paragraph 7 of this Appendix) or any After-Tax Savings are made to the Plan (including any Excess Contributions recharacterized as After-Tax Savings for the Plan Year under paragraph 8(c) of this Appendix), both the ESOP and non-ESOP portions of the Plan will satisfy one of the following Average Contribution Percentage tests for the Plan Year:

(a) the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by 1.25; or

(b) the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year will not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees for the Plan Year multiplied by two, provided that the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year does not exceed the Average Contribution Percentage for the group of Eligible Employees who are Non-Highly Compensated Employees by more than two percentage points.

(c) For Plan Years in which the Plan is operated in accordance with the safe harbor requirements of Sections 401(k)(12) and 401(m)(11) of the Code with respect to Participating Employer Contributions only, Section 9 of this Appendix A does not apply. Notwithstanding the foregoing sentence, the Plan Administrator may include Participating Employer Contributions, or any other employer contributions that meet the definition of qualified non-elective contributions, in the Average Contribution Percentage Tests for any Plan Year, to the extent that such inclusion is permitted under the law and would improve the Average Contribution Percentage testing results. The Average Contribution Percentage Test applies separately to the ESOP portion of the Plan.

10. Special Rules.

(a) Aggregation of Plans. In the event that this Plan satisfies the requirements of Section 401(a)(4), 401(m) or 410(b) of the Code only if aggregated with one or more other plans, or if one or more other plans satisfy the requirements of such sections of the Code only if aggregated with this Plan, then the provisions stated herein will be applied by determining the Contribution Percentages of Employees as if all such plans were a single plan. For plan years beginning after December 31, 1989, plans may be aggregated to satisfy Section 401(m) of the Code only if they have the same plan year. Notwithstanding the foregoing, certain plans will be treated as separate if mandatorily disaggregated under regulations under Section 401(k) of the Code.

(b) In the event the Plan does not pass the ACP test, the test will be disaggregated by removing from the test all participants who have not attained age 21 and completed one eligibility year within 6 months of the last day of the plan year.

(c) All ESOP portions of the Savings Plan shall be aggregated for ACP with the Non-ESOP portions of the Savings Plan.

11. Treatment of Pre-Tax Savings as Participating Employer Contributions.

Alcoa may elect, in accordance with the regulations of the Secretary of Treasury under Section 401(m) of the Code, to treat all or a portion of the Pre-Tax Savings made on behalf of Eligible Employees for a Plan Year as Participating Employer Contributions for purposes of calculating the Contribution Percentages of Eligible Employees for the Plan Year. Any such Pre-Tax Savings for a Plan Year must be made no later than the end of the 12 month period immediately following the close of the Plan Year. Notwithstanding the preceding, Alcoa may elect to treat Pre-Tax Savings as Participating Employer Contributions for purposes of calculating Contribution Percentages only if one of the Average Actual Deferral Percentage Tests of paragraph 5 of this Appendix is satisfied before the Pre-Tax Savings are treated as Participating Employer Contribution for the Plan Year, and one of the Average Actual Deferral Percentage Tests of paragraph 5 of this Appendix continues to be satisfied for the Plan Year excluding the Pre-Tax Savings treated as Participating Employer Contributions for the Plan Year.

12. Correction of Excess Aggregate Contributions.

(a) General Rule. If the Plan does not satisfy one of the Average Contribution Percentages tests of paragraph 9 of this Appendix as of the end of a Plan Year, the Excess Aggregate Contributions for the Plan Year will be corrected by the Employer if the Excess Aggregate Contributions for the Plan Year are forfeited or timely distributed to Highly Compensated Employees in accordance with subsection (c) below.

(b) Allocation of Excess Aggregate Contributions. Effective as of January 1, 1997, in the event Excess Aggregate Contributions are made to the Plan for a Plan Year, the Contribution Percentage for the Highly Compensated Employee with the largest dollar amount of deferrals for the Plan Year will be reduced to minimum extent necessary either:

(i) to enable the Plan to satisfy one of the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year; or

(ii) to cause the Highly Compensated employee's Contribution Percentage to equal the next highest Contribution Percentage of any Highly Compensated Employee for the Plan Year.

This process is repeated until the Average Contribution Percentage for the group of Eligible Employees who are Highly Compensated Employees for the Plan Year is sufficiently reduced to enable the Plan to satisfy one of the Average Contribution Percentage tests of paragraph 9 of this Appendix for the Plan Year. The amount of Excess Aggregate Contributions to be allocated to each Highly Compensated Employee for the Plan Year is equal the total After-Tax Savings and Participating Employer Contributions, including Pre-Tax Savings on behalf of the Highly Compensated Employee for the Plan Year minus the amount determined by multiplying the Highly Compensated Employee's reduced Contribution Percentage (as determined above) by the employee's Compensation for the Plan Year.

(c) Forfeiture or Distribution of Excess Aggregate Contributions. Excess Aggregate Contributions, plus any income or minus any loss allocable thereto, must be forfeited to the extent attributable under subsection (f) below to Participating Employer Contributions that are not vested, and otherwise distributed to Highly Compensated Employees no later than 12 months following the close of the Plan Year.

(d) Income or Loss Allocable to Excess Aggregate Contributions. The income or loss allocable to the Excess Aggregate Contributions referred to in subsection (c) above include the allocable income or loss for the Plan Year of the Excess Aggregate Contributions and the allocable income or loss for the period between the end of the Plan Year and the distribution of the Excess Aggregate Contributions, calculated as follows:

(i) the income or loss allocable for the Plan Year of the Excess Aggregate Contributions is determined by multiplying the total investment income or loss (including dividends, interest, realized gains or losses, and unrealized appreciation or depreciation) allocable to the Participant's After-tax Savings, Participating Employer Contributions, and any other amounts taken into account under this section for the Plan Year by a fraction, the numerator of which is the Excess Aggregate Contributions allocated to the Participant for the Plan Year, and the denominator of which is the total account balance attributable to the Participant's After-tax Savings, Participating Employer Contributions and other amounts taken into account under this section as of the end of the Plan Year, reduced by the investment gain (or increased by the investment loss) allocated to such total amount for the Plan Year;

(ii) the income or loss allocable to the period (if any) between the end of the Plan Year of the Excess Aggregate Contributions and the distribution of the Excess Aggregate Contributions by the Plan is determined by multiplying the total investment income or loss allocated to the Participant's Participating Employer Contributions and amounts treated as Participating Employer Contributions under paragraph 11 of this Appendix for such period by a fraction determined under the method described in (i) above. In the alternative, the income or loss allocable to the period between the end of the Plan Year of the Excess Aggregate Contributions and the distribution of the Excess Aggregate Contributions equals 10% of the income or loss allocable to the Participant's Excess Aggregate Contributions for the Plan Year (as determined under (i) above multiplied by the number of calendar months that elapse between the end of the Plan Year and the date of distribution. For these purposes, a distribution occurring on or before the fifteenth day of a calendar month is treated as having been made on the last day of the preceding calendar month, and a distribution occurring after the fifteenth date of a calendar month is treated as having been made on the first day of the following calendar month.

The income or loss will include only the income or loss allocable for the Plan Year of the Excess Aggregate Contributions, and not the income or loss for the period between the end of the Plan Year and the distribution of Excess Aggregate Contributions.

(e) Coordination with Excess Contributions. The determination of the amount of Excess Aggregate Contributions for a Plan Year is made after the determination of the amount of any Excess Contributions for the Plan Year.

(f) Accounting for Excess Aggregate Contributions. The amount of Excess Aggregate Contributions allocated to a Highly Compensated Employee for a Plan Year is attributed to Participating Employer Contributions and any amounts treated as Participating Employer Contributions in proportion to the amounts of such contributions on behalf of the Participant for the Plan Year.

13. Recordkeeping Requirements.

(a) Average Actual Deferral Percentage Tests. The Employer maintains records sufficient to demonstrate satisfaction of the Average Actual Deferral Percentage tests of paragraph 5 of this Appendix for each Plan Year, and the extent to which any Qualified Matching Contributions are treated as Pre-Tax Savings under paragraph 7 of this Appendix for purposes of such tests. The determination of Eligible Employees' Actual Deferral Percentages, and the disposition of all Pre-Tax Savings (and any Qualified Matching Contributions treated as Pre-Tax Savings under paragraph 7 of this Appendix) on behalf of Participants, must satisfy such other requirements as may be prescribed by the Secretary of Treasury.

(b) Average Contribution Percentage Tests. The Employer maintains records sufficient to demonstrate satisfaction of the Average Contribution Percentage tests of paragraph 9 of this Appendix for each Plan Year, and the extent to which any Pre-Tax Savings are treated as Participating Employer Contributions under paragraph 11 of this Appendix for purposes of such tests. The determination of Eligible Employees' Average Contribution Percentages, and the disposition of all Participating Employer Contributions (and any Pre-Tax Savings) on behalf of Participants, must satisfy such other requirements as may be prescribed by the Secretary of Treasury.

14. Distribution of Excess Elective Deferrals. Excess Elective Deferrals means Pre-Tax Savings that is includible in a Participant's gross income under Section 402(g) of the Code to the extent it exceeds the dollar limitation. Excess Elective Deferrals are treated as annual additions under the Plan unless such amounts are distributed no later than the first April 15th following the close of the Participant's taxable year. Excess Elective Deferrals are adjusted for any income or loss up to the date of distribution as calculated under paragraph 8(e) and 12(d) of this Appendix. A Participant is deemed to notify the Plan Administrator of Excess Elective Deferrals that arise by taking into account only those Elective Deferrals made to this Plan and any other plans of the Employer. A Participant may assign any Excess Elective Deferrals made by the Participant to any other plans other than those of the Employer by notifying the Plan Administrator on or before January 15th of the following year.

15. Safe Harbor Alternative Discrimination Testing. Effective on and after January 1, 2011, the Average Actual Deferral Percentage Test in section 5, and Average Contribution Percentage Test in section 9 of this Appendix A with respect to Participating Employer

Contributions only, will be treated as satisfied for a Plan Year providing the following requirements are met:

(a) Participating Employer Contributions equal to 100% of each dollar of Pre-Tax Savings up to six percent of the Participant's Eligible Compensation are made on behalf of each Participant as described in Section 3(b) of the Plan, or the safe harbor contribution requirements of Section 401(k)(12)(B) or (C) and Section 401(m)(13)(B) are otherwise met;

(b) within the period commencing no earlier than ninety days but no later than thirty days before the beginning of each Plan year, the Plan Administrator provides to each Eligible Employee the written notice described in Treasury Regulation Section 1.401(k)-3 of their rights and obligations under the Plan, including, but not limited to a description of the safe harbor Participating Employer Contributions, withdrawal and vesting provisions; and

(c) the Participating Employer Contributions contributed to the Plan on or after January 1, 2011, described in subparagraph (a) are nonforfeitable and may not be distributed before the earliest of the following to occur: the Participant's Severance from Service Date, attainment of age 59 ½, or date of the Plan's termination.

APPENDIX B

CODE SECTION 415 LIMITATIONS

The limitations imposed by Section 415 of the Code are hereby incorporated by reference. If there is any discrepancy between the provisions of this Plan and the provisions of Code Section 415 and the regulations thereunder, the discrepancy will be resolved in such a way to give full effect to the provisions of Code Section 415.

The maximum annual additions provided by the Plan will be exactly equal to the maximum amounts permitted under Code Section 415 and the regulations thereunder. In the event a Participant's annual additions for any Plan Year would exceed the maximum amount of annual additions permitted under Code Section 415, such Participant's Savings are automatically reduced, in whole or in part, by the amount required to eliminate such excess.

For purposes of applying the limitations described in this Appendix B, compensation will include any differential pay received by a Participant absent for military leave and any payment earned prior to a Participant's separation from employment that is paid within a period ending on the later of i) two and one-half months following the date the Participant separated from employment, or ii) the end of the Plan Year in which the date the Participant separated from employment ("Post-Separation Compensation"). Post-Separation Compensation will include any payments for vacation, sickness, or leave of absence that otherwise would have been included as compensation had the Participant remained employed.

APPENDIX C

TOP HEAVY RULES

(a) This Plan constitutes a "Top Heavy Plan" for a Plan Year if as of the last day of the preceding Plan Year the present value of the cumulative account balances under the Plan for Participants who are Key Employees exceed 60 percent of the present value of the aggregate of all account balances for all Participants in the Plan. A non-Key Employee means any Participant or former Participant who is not a Key Employee.

(b) This Plan constitutes a Top Heavy Plan for a Plan Year if the employee benefit plans which make up the group of plans of which this Plan is considered a part are such that, when aggregated, the sum of (1) the present value of the account balances of Key Employees under all defined contribution plans in the group, and (2) the present value of the cumulative accrued benefits of Key Employees under all defined benefit plans in the group exceed 60 percent of the sum of such amounts for all employees who participate in the plans in the said group.

(1) The group of plans in which this Plan is considered a part includes (A) all plans of Alcoa, the Subsidiaries and Affiliates which enable the particular plans in which a Key Employee participates to meet the qualification requirement of Section 401(a)(4) of the Code or Section 410 of the Code; and, (B) all plans which Alcoa, in its discretion, decides to include, provided that the inclusion of such plan or plans would not prevent the group of plans from meeting the qualification requirements of Sections 401(a)(4) and 410 of the Code. The date upon which the account balances are valued for purposes of calculating the top heavy ratio to determine whether or not the Plan is Top Heavy for a particular Plan Year is the determination date, which is the last day of the preceding Plan Year, or in the case of the first plan year of any plan, the last day of such plan year.

(2) Effective for Plan Years beginning on or after January 1, 2002, the amounts of account balances of an employee as of the determination date are increased by the distributions made with respect to the employee under the plan and any plan aggregated with the plan under Section 416(g)(2) of the Code during the one-year period ending on the determination date. The preceding sentence also applies to distributions under a terminated plan which, had it not been terminated, would have been aggregated with the plan under Section 416(g)(2)(A)(i) of the Code. In the case of a distribution made for a reason other than severance from employment, death, or disability, this provision is applied by substituting "five-year period" for "one-year period."

(3) Effective for Plan Years beginning on or after January 1, 2002, the accounts of any individual who has not performed services for the employer during the one-year period ending on the determination date are not taken into account.

(c) The following provisions are applicable to Participants for any Plan Year with respect to which the Plan is Top Heavy:

(1) The minimum Participating Employer Contribution for a Participant, who is a non-Key Employee and has not separated from service at the end of the Plan Year, must not be less than three percent of his or her Eligible Compensation for the Top Heavy Plan Year. If said allocation is less than three percent of his or her Eligible Compensation, then said allocation is the largest percentage allocated to a Key Employee for the Top Heavy Plan Year. In the event the highest rate allocated to a Key Employee for the Top Heavy Plan Year is less than three percent, Pre-Tax amounts contributed to the Plan are included in determining contributions made on behalf of Key Employees. Compensation for determining a minimum benefit, a minimum contribution and for all other Top Heavy purposes is the Participant's W-2 earnings for the calendar year that ends with the Plan Year.

Effective for Plan Years beginning on or after January 1, 2002, Participating Employer Contributions used to satisfy the minimum contribution requirements are treated as Participating Employer Contributions for purposes of the actual contribution percentage test and other requirements of Section 401(m) of the Code.

(2) With respect to benefits accruing during any Plan Year in which the Plan is Top Heavy, average compensation is limited to amounts not in excess of the amount permitted under Section 401(a)(17) of the Code. If the accrued benefit as of the end of the last Plan Year before the Plan became Top Heavy is greater than the accrued benefit determined by limiting compensation, that higher accrued benefit cannot be reduced.

(3) In the event the Plan is Top Heavy with respect to a Plan Year and ceases to be Top Heavy for a subsequent Plan Year, the Participant's account balance in any such subsequent Plan Year is not less than the Participant's Pre-Tax Savings (subject to adjustment for earnings) computed as of the end of the most recent Plan Year for which the Plan was Top Heavy.

(d) Notwithstanding any of the above, if a non-Key Employee participates in this Plan and a defined benefit pension plan included in a required aggregation group which is top heavy, a minimum allocation of five percent of Section 415 compensation is provided under this Plan. The Plan will not be deemed Top Heavy if ninety percent is substituted for sixty percent in (b)(1) of this Appendix and Participating Employer provides additional contributions to the Plan on behalf of non-Key Employees who participate in both defined benefit and defined contribution plans maintained by a Participating Employer, in amounts at least equal to the amount set forth in Paragraph (c)(1) of this Appendix as modified by substituting "seven and one-half percent" for "three percent." If the non-Key Employee does not participate in a defined benefit plan maintained by Alcoa, a Subsidiary or Affiliate, such employee will receive an additional contribution of four percent.

(e) For Plan Years in which the Plan meets the safe harbor alternative method of discrimination testing described in Paragraph 16 of Appendix A, the term "Top Heavy Plan" described in this Appendix C does not apply.

APPENDIX D

MINIMUM DISTRIBUTION REQUIREMENTS

Section 1. General Rules

1.1. Effective Date. The provisions of this Appendix D will apply for purposes of determining required minimum distributions for calendar years beginning with the 2003 calendar year.

1.2. Precedence. The requirements of this Appendix D will take precedence over any inconsistent provisions of the Plan.

1.3. Requirements of Treasury Regulations Incorporated. All distributions required under this Appendix D will be determined and made in accordance with section 401(a)(9) of the Internal Revenue Code and Treasury regulations §§1.401)(a)(9)-2 through -9, which will override any inconsistent distribution provisions of the Plan. Distribution of any incidental death benefit requirements provided under the Plan will be a distribution for purposes of this Appendix D.

1.4. TEFRA Section 242(b)(2) Elections. Notwithstanding the other provisions of this Appendix D, distributions may be made under a designation made before January 1, 1984, in accordance with section 242(b)(2) of the Tax Equity and Fiscal Responsibility Act (TEFRA) and the provisions of the Plan that relate to section 242(b)(2) of TEFRA.

Section 2. Time and Manner of Distribution.

2.1. Required Beginning Date. The Participant’s entire interest will be distributed, or begin to be distributed, to the Participant no later than the Participant’s required beginning date.

2.2. Death of Participant Before Distributions Begin. If the Participant dies before distributions begin and there is a designated Beneficiary, the Participant’s entire interest will be distributed to the designated Beneficiary by December 31 of the calendar year containing the fifth anniversary of the Participant’s death. If the Participant’s surviving spouse is the Participant’s sole designated Beneficiary and the surviving spouse dies after the Participant but before distributions to either the Participant or the surviving spouse begin, this election will apply as if the surviving spouse were the Participant. This election will apply to all distributions.

If there is no designated Beneficiary as of September 30 of the year following the year of the Participant’s death, the Participant’s entire interest will be distributed by December 31 of the calendar year containing the fifth anniversary of the Participant’s death.

2.3. Forms of Distribution. Unless the Participant’s interest is distributed in the form of an annuity purchased from an insurance company or in a single sum on or before the required beginning date, as of the first distribution calendar year distributions will be

made in accordance with sections 3 and 4 of this Appendix D. If the Participant's interest is distributed in the form of an annuity purchased from an insurance company, distributions thereunder will be made in accordance with the requirements of section 40l(a)(9) of the Code and the Treasury regulations.

Section 3. Required Minimum Distributions During Participant's Lifetime.

3.1. Amount of Required Minimum Distribution For Each Distribution Calendar Year. During the Participant's lifetime, the minimum amount that will be distributed for each distribution calendar year is the lesser of:

(a) the quotient obtained by dividing the Participant's account balance by the distribution period in the Uniform Lifetime Table set forth in section 1.401(a)(9)-9 of the Treasury regulations, using the Participant's age as of the Participant's birthday in the distribution calendar year; or

(b) if the Participant's sole designated Beneficiary for the distribution calendar year is the Participant's spouse, the quotient obtained by dividing the Participant's account balance by the number in the Joint and Last Survivor Table set forth in section 1.401(a)(9)-9 of the Treasury regulations, using the Participant's and spouse's attained ages as of the Participant's and spouse's birthdays in the distribution calendar year.

3.2. Lifetime Required Minimum Distributions Continue Through Year of Participant's Death. Required minimum distributions will be determined under this section 3 beginning with the first distribution calendar year and up to and including the distribution calendar year that includes the Participant's date of death

Section 4. Required Minimum Distributions After Participant's Death.

4.1. Death On or After Date Distributions Begin.

(a) Participant Survived by Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is a designated Beneficiary, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the longer of the remaining life expectancy of the Participant or the remaining life expectancy of the Participant's designated Beneficiary, determined as follows:

(1) The Participant's remaining life expectancy is calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

(2) If the Participant's surviving spouse is the Participant's sole designated Beneficiary, the remaining life expectancy of the surviving spouse is calculated for each distribution calendar year after the year of the Participant's death using the surviving spouse's age as of the spouse's birthday in that year. For distribution calendar years after the year of the surviving spouse's death, the remaining life

expectancy of the surviving spouse is calculated using the age of the surviving spouse as of the spouse's birthday in the calendar year of the spouse's death, reduced by one for each subsequent calendar year.

(3) If the Participant's surviving spouse is not the Participant's sole designated Beneficiary, the designated Beneficiary's remaining life expectancy is calculated using the age of the Beneficiary in the year following the year of the Participant's death, reduced by one for each subsequent year.

(b) No Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is no designated Beneficiary as of September 30 of the year after the year of the Participant's death, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the Participant's remaining life expectancy calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

4.2. Death Before Date Distributions Begin.

(a) Participant Survived by Designated Beneficiary. If the Participant dies before the date distributions begin and there is a designated Beneficiary, the minimum amount that will be distributed for each distribution calendar year after the year of the Participant's death is the quotient obtained by dividing the Participant's account balance by the remaining life expectancy of the Participant's designated Beneficiary, determined as provided in section 4.1.

(b) No Designated Beneficiary. If the Participant dies before the date distributions begin and there is no designated Beneficiary as of September 30 of the year following the year of the Participant's death, distribution of the Participant's entire interest will be completed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

(c) Death of Surviving Spouse Before Distributions to Surviving Spouse Are Required to Begin. If the Participant dies before the date distributions begin, the Participant's surviving spouse is the Participant's sole designated Beneficiary, and the surviving spouse dies before distributions are required to begin to the surviving spouse under section 2.2, this section 4.2 will apply as if the surviving spouse were the Participant.

Section 5. Definitions.

5.1. Designated Beneficiary. The individual who is designated as the Beneficiary under Section 22 of the Plan and is the designated Beneficiary under section 40l(a)(9) of the Internal Revenue Code and section 1.401(a)(9)-1, Q&A-4, of the Treasury regulations.

5.2. Distribution calendar year. A calendar year for which a minimum distribution is required. For distributions beginning before the Participant's death, the first distribution calendar year is the calendar year immediately preceding the calendar year which contains the Participant's required beginning date. For distributions beginning after the Participant's death, the first distribution calendar year is the calendar year in which distributions are required to begin under section 2.2. The required minimum distribution for the Participant's first distribution calendar year will be made on or before the Participant's required beginning date. The required minimum distribution for other distribution calendar years, including the required minimum distribution for the distribution calendar year in which the Participant's required beginning date occurs, will be made on or before December 31 of that distribution calendar year.

5.3. Life expectancy. Life expectancy as computed by use of the Single Life Table in section 1.401(a)(9)-9 of the Treasury regulations.

5.4. Participant's account balance. The account balance as of the last valuation date in the calendar year immediately preceding the distribution calendar year (valuation calendar year) increased by the amount of any contributions made and allocated or forfeitures allocated to the account balance as of dates in the valuation calendar year after the valuation date and decreased by distributions made in the valuation calendar year after the valuation date. The account balance for the valuation calendar year includes any amounts rolled over or transferred to the Plan either in the valuation calendar year or in the distribution calendar year if distributed or transferred in the valuation calendar year.

5.5 Required beginning date. The date specified in section 13(b) of the Plan.

SCHEDULE A

MERGERS, TRANSFERS, AND RESTATEMENTS

Plan Restatement and Transfer of Administrative Services to Hewitt Associates.

Effective November 1, 1992, the Plan was amended to prohibit loans, withdrawals, distributions, hardship withdrawals or transfers until January 1, 1993.

Merger with Alcoa Savings Plan for Subsidiaries and Affiliated Locations

Effective December 31, 1992, the Alcoa Inc. Savings Plan for Subsidiaries and Affiliated Locations was merged into this Plan.

Merger of the Alcoa Recycling Company, Inc. 401(k) Savings Plan

Effective January 1, 1993, the Alcoa Recycling Company, Inc. 401(k) Savings Plan was merged into this Plan.

Plan Restatement Effective January 1, 1994 and Merger with Alcoa Packaging Machinery, Inc. Savings Plan for Salaried Employees and H-C Industries, Inc. Employees 401(k) Savings Plan,.

Effective January 1, 1994, the Alcoa Packaging Machinery, Inc. Savings Plan for Salaried Employees ("APM Plan") and the H-C Industries, Inc. Employees 401(k) Savings Plan ("H-C Industries Plan") were merged into this Plan and the Plan was amended to prohibit withdrawals, loans, distributions, hardship withdrawals or transfers by Participant's whose accounts were transferred from the APM Plan or the H-C Industries Plan until April 4, 1994, or such earlier date as is administratively practical. Also effective January 1, 1994, the Plan was restated to incorporate the provisions of the Tax Reform Act of 1986, The Omnibus Budget Reconciliation Act of 1986, The Omnibus Budget Reconciliation Act of 1987, The Technical and Miscellaneous Revenue Act of 1988, The Omnibus Budget Reconciliation Act of 1989, The Unemployment Compensation Amendments Act of 1992 and the Omnibus Budget Reconciliation Act of 1993.

Merger of the Alcoa Savings Plan for Stolle Employees.

(a) Effective March 31, 1997, the amounts standing to the credit in the participants' accounts in the Alcoa Savings Plan for Stolle Employees (the "Stolle Plan") were fully vested, and transferred to this Plan, and the liability to pay such benefits thereupon become a liability of this Plan. Accordingly, the participants of the Stolle Plan became Participants of this Plan and each have an accrued benefit in the Plan immediately after the merger which is equal to the benefit such Participant was entitled to receive from the Stolle Plan immediately before the merger. Effective January 1, 2002, these account balances were transferred to the Alcoa Savings Plan for Subsidiary and Affiliate Employees.

(b) In lieu of the normal form of distribution of a lump-sum payment under this Plan, Participants whose accounts were transferred from the Stolle Plan may elect to have their benefits distributed in one of the following optional forms:

(1) Payments over a period certain in monthly, quarterly, semiannual or annual cash installments after first having (A) segregated the aggregate amount

thereof in a separate, federally insured savings account, certificate of deposit in a bank or savings and loan association, money market certificate or other liquid short-term security or (B) purchased a nontransferable annuity contract providing for such payment. The period over which such payment is to be made will not extend beyond the Participant's life expectancy (or the life expectancy of the Participant and his designated Beneficiary).

(2) Purchase of or providing an annuity. However, such annuity may not be in any form that will provide for payments over a period extending beyond either the life of the Participant (or the lives of the Participant and his spouse) or the life expectancy of the Participant (or the life expectancy of the Participant and his spouse). The joint and survivor annuity is equal in value to a single life annuity. Such joint and survivor benefits following the Participant's death continues to the Participant's spouse during the spouse's lifetime at a rate equal to 50% of the rate at which such benefits were payable to the Participant. The Participant may elect to receive a smaller annuity benefit with continuation of payments of the Beneficiary at a rate of seventy-five percent (75%) or one hundred percent (100%) of the rate payable to a Participant during his lifetime. An unmarried Participant may elect to receive the value of this benefit in the form of a life annuity.

Merger of the Alcoa Fujikura, Ltd. Savings Plan.

On June 1, 1997 Eligible Employees of Alcoa Fujikura, Ltd. ("AFL employees") commenced participation in this Plan and the Alcoa Savings Plan for Bargaining Employees ("Bargaining Plan"). On the same date, the Company adopted the Alcoa Fujikura, Ltd. Savings Plan (AFL Frozen Plan), the frozen successor plan of the merged Alcoa Fujikura, Ltd. Salaried 401(k) Savings Plan and the Alcoa Fujikura Ltd. Hourly 401(k) Plan. Effective October 25, 1999, the AFL Frozen Plan was merged into this Plan, which is the surviving plan, and the amounts standing to the credit in participants' accounts in the AFL Frozen Plan were transferred to the Plan. Immediately thereafter, the assets of AFL employees covered under a collective bargaining agreement that are equivalent to their AFL Frozen Plan account balances immediately before the merger, were transferred from this Plan to the Bargaining Plan.

Merger with the Alcoa Savings Plan for Alcoa Automotive Castings Employees.

Effective August 31, 2001, the amounts standing to the credit in the participants' accounts in the A-CMI Profit Sharing Plan and Trust ("A-CMI Plan") were transferred to this Plan. Accordingly, the participants of the A-CMI Plan became Participants of this Plan and each had an account in the Plan immediately after the merger equal to the benefit such Participant was entitled to receive from the A-CMI Plan immediately before the merger. Immediately thereafter, the accounts of bargaining employees were transferred from this Plan to the Alcoa Savings Plan for Bargaining Employees and liability to pay the benefits of the bargaining employees that were accrued under the A-CMI Plan became the liability of that Plan.

Plan Restatement, Effective January 1, 2001

The Non-Bargaining Plan was amended and restated to incorporate provisions of the Retirement Protection Act of 1994, the Uniformed Services Employment and Re-employment Rights Act of 1994, the Small Business and Job Protection Act of 1996, the Taxpayer Relief Act of 1997, the IRS Restructuring and Reform Act of 1998, and the Community Renewal Tax Relief Act of 2000 ("GUST"). In addition, the restatement reflected certain provisions of the Economic Growth and Tax Relief Reconciliation Act of 2001 ("EGTRRA") that become effective January 1, 2002, and was intended as good faith compliance with the requirements of EGTRRA, to be construed in accordance with EGTRRA and guidance issued thereunder. The restated Plan also reflected the merger into it of several Subsidiaries' plans, as described in Schedule A attached hereto.

Alcoa Savings Plan for Subsidiary and Affiliate Employees

Effective January 1, 2002, Alcoa adopted the Alcoa Savings Plan for Subsidiary and Affiliate Employees ("Subsidiary Plan"), and certain subsidiaries ceased to participate in this Plan and began to Participate in the Subsidiary Plan. Effective January 1, 2002, the amounts standing to the credit in the Participant's Accounts for the following subsidiaries was transferred to the Subsidiary Plan, and each had an account in the Subsidiary Plan equal to the benefit such Participant was entitled to receive from this Plan immediately before the transfer:

Alcoa Building Products, Inc.
Six "R" Communications, L.L.C.
MinTel Communications, L.L.C.
Quality Control Services, L.L.C.
T.I.C.S. Corporation
Excel Extrusions Inc.
ISAC
Noyes Fiber Systems, Inc.
Tele-Tech Company, Inc.
Digisys Corp.

Merger with the Reynolds Metals Company Savings and Investment Plan (Plan 028) and the Employees Savings Plan (Plan 041)

Effective May 1, 2002, the amounts standing to the credit in the participants' accounts in the Reynolds Metals Savings and Investment Plan (Plan 028) and the Employee's Savings Plan (Plan 041) ("collectively, the RMC Savings Plans") were transferred to this Plan and liability to pay the benefits of the employees that were accrued under the Plans 028 and 041 became the liability of this Plan.

Transfer to Alcoa Savings Plan for Subsidiary and Affiliate Employees

Effective as of close of business on June 30, 2002, the subsidiaries below ceased to participate in this Plan and transferred to Alcoa Savings Plan for Subsidiary and Affiliate Employees:

Baker's Choice Products Inc.
Mt. Vernon Plastics Corporation
Cage Graphic Arts
Lanscape, Inc.

Southern Graphic Systems, Inc. (following hourly employees' locations):

Armonk, New York
Ashland, Virginia
Atlanta, GA
Battle Creek, Michigan
Clarksville, Indiana
Dayton, Kentucky
Dallas, Texas
Elgin, Illinois
Exton, Pennsylvania
Framingham, MA
Franklin, Tennessee
Fulton, New York
Greensboro, NC
McBee, South Carolina
Newport, Kentucky
Richmond, Virginia
St. Louis, Missouri
West Monroe, Louisiana
Wilmington, NC
Louisville, Kentucky

Merger with the Southern Plastics, Inc. Pension Plan.

Effective July 1, 2002, the Southern Plastics Inc. Pension Plan ("Southern Plastics Plan") was merged with this Plan, and the amounts standing to the credit in the in the Southern Plastics Plan were transferred to this Plan, and the liability to pay the benefits of the employees that were accrued under the Southern Plastics Plan became the liability of this Plan.

For purposes of transferring the Participant's Accounts, each participant's account balance in the investment funds of the Southern Plastics Plan were automatically transferred to the funds in the Alcoa Savings Plan having similar objectives and levels of risk, as indicated below:

Southern Plastics Plan Investment Fund	Alcoa Plan Investment Fund
Stable Value Option	Fixed Income Fund
Aetna Money Market Fund	Fixed Income Fund
Aetna Ascent Fund	Fixed Income Fund
Aetna Crossroads Fund	Fixed Income Fund
Aetna Legacy Fund	Fixed Income Fund
Aetna Bond Fund	Vanguard Total Bond Market
Aetna Growth & Income Fund	Investment Company of America
Aetna Index Plus Large Cap Fund	Vanguard Institutional Index
Aetna Growth Fund	AMCAP
AIM Balanced Fund	American Balanced
AIM Value Fund	Fixed Income Fund
Fidelity Growth Opportunities	Vanguard Institutional Index
Oppenhiemer Main Street Growth and Income	Investment Company of America

Merger with Alumax Thrift Plan for Salaried Employees and Alumax Thrift Plan for Hourly Employees

Effective as of November 1, 2003, the Alumax Thrift Plan for Salaried Employees and the Alumax Thrift Plan for Hourly Employees ("Alumax Thrift Plans") were merged into this Plan, and immediately thereafter all participant accounts with the exception of the employees of the locations listed below were transferred to the Alcoa Savings Plan for Subsidiary and Affiliate Employees ("Subsidiary and Affiliate Plan"), and the assets and liabilities related to those accounts became the assets and liabilities of the Subsidiary and Affiliate Plan.

Participating Alumax Thrift Plans Locations

Alcoa Foils Inc.	Russellville, AK St. Louis, MO (salaried)
Alumax Mill Products Inc.	Lancaster, PA Texarkana, TX (salaried)
Alumax of South Carolina, Inc.	Goose Creek, SC
Eastalco Aluminum Company	Frederick, MD (salaried)
Intalco Aluminum Corporation	Ferndale, WA (salaried)

Upon transfer of the Alumax Thrift Plans assets, each participant's account balance was invested in the identical Investment Fund under this Plan as it had been invested in the Alumax Thrift Plans. Where there was no identical investment vehicle in this Plan, those portions of Participants' accounts were transferred to the fund in the Alcoa Savings Plan having similar objectives and level of risk, as indicated below:

Alumax Thrift Fund	Alcoa Savings Plan Fund
Vanguard Money Market Prime Fund	Fixed Income Fund
Vanguard Retirement Savings Trust Fund	Fixed Income Fund
Intalco GIC Fund (frozen)	Fixed Income Fund

Furthermore, upon the merger of the Alumax Thrift Plans into this Plan, all existing loans under the Alumax Thrift Plans became loans under this Plan, regardless of whether the number of such outstanding loans exceeded the allowable number of loans permitted under this Plan.

Sale of Specialty Chemicals Business and Transfer of Participant Accounts to Plan of Buyer

Effective as of February 27, 2004, the Company's Specialty Chemicals Business was sold to Almatis, Inc. Pursuant to the agreement of sale between the Company and Almatis, the assets and liabilities attributable to the employees of the locations listed below were transferred to the plan(s) of Almatis as of April 15, 2004:

Bauxite, Arkansas
Dalton, Georgia
Houston, Texas
Leetsdale, Pennsylvania
Palm Harbor, Florida
Port Allen, Louisiana
Vidalia, Louisiana

Sale of AFL Telecommunications Business and Transfer of Participant Accounts to Plan of Buyer

On March 31, 2005, Alcoa Fujikura, Ltd. ("AFL") completed a transaction with its partner, Fujikura, Ltd. of Japan ("Fujikura"), in which Fujikura obtained complete ownership of the AFL telecommunications business through a share exchange by Fujikura of all of its AFL shares for all shares in AFL Telecommunications LLC, a new subsidiary ("AFL Tele"). Effective June 1, 2005, the account balances and liabilities with respect to the accounts in this Plan of employees who became employees of AFL Tele were transferred to the AFL Telecommunications LLC Savings and Incentive Plan, the plan of AFL Tele.

Company and Location	LOC
Alcoa Fujikura Ltd.	
Franklin,TN (AFL)	FTN
Spartanburg, SC	SPA

Soft Alloy Extrusions Divestiture

On June 8, 2007 ("Closing Date"), a new joint venture**,** Sapa AB**,** was formed that combined Alcoa's Soft Alloy Extrusions business with Sapa Profiles Extruded Aluminum Business (Sapa), with the result that Sapa holds the majority controlling interest ("Soft Alloy Extrusions Divestiture"). Due to the Soft Alloy Extrusions Divestiture, the assets of the following locations were divested by the Company as indicated below:

a. All actively employed salaried and hourly employees of the Delhi, Louisiana location (LOC DEL) of Tifton Aluminum Company (Company Code 672), ceased to Eligible Employees under this Plan when they became employed by Delhi Extrusions LLC, a subsidiary of the new joint venture, at the close of business on June 7, 2007.

b. All salaried employees of Louisville, Kentucky Plant #15 (LOC LYY) of Reynolds Metals Company (Company Code R01), ceased to be Eligible Employees under this Plan when they became employed by Sapa Heat Exchanger Tubes Louisville Inc., a subsidiary of the new joint venture, as of the close of business on, June 7, 2007.

c. Assets and liabilities with respect to Participants in the locations in the paragraph above will be transferred as soon as administratively practicable following the Closing Date from this Plan to the Alcoa Extrusions, Inc. Savings Plan, the tax qualified plan established by the new joint venture.

P&C Divestiture

On February 29, 2008 ("Closing Date"), the Company's packaging and consumer products businesses were sold to The Rank Group, a New Zealand corporation ("P&C Divestiture"), and one hundred percent of the voting stock of each of the subsidiaries listed below was sold

("P&C Divestiture Companies"). Effective as of the close of business on the Closing Date, the P&C Divestiture Companies were no longer authorized to participate in, and their employees ceased to be Eligible Employees for purposes of this Plan:

Alcoa Closure Systems International, Inc.,
Alcoa Flexible Packaging LLC (formerly Alcoa Flexible Packaging LLC),
Alcoa Packaging Machinery Inc.,
Reynolds Food Packaging LLC, and
Southern Plastics, Inc.

The P&C Divestiture also includes assets of the Company's subsidiaries Alcoa Service Corporation and Reynolds Metals Company. Effective as of the close of business on the Closing Date, the active employees of the locations below ceased to be Eligible Employees for purposes of this Plan:

Company Code	Company Description	LOC	Location Description
680	Alcoa Service Corporation	IND	Indianapolis, Indiana
R01	Reynolds Metals Company	HSY	Hot Springs, Arkansas (RMC)
R01	Reynolds Metals Company	LXY	Louisville, Kentucky (Plt #1)
R01	Reynolds Metals Company	RIY	Richmond, VA (Pkg & Consumer)
R01	Reynolds Metals Company	RFY	Richmond, Virginia (Rich Foil)
R01	Reynolds Metals Company	RTY	Richmond, Virginia (Pk Tech)

Alcoa Properties, Inc. Participation

Effective January 1, 2008, employees previously employed at Burlington, Vermont by Alcoa International Holdings Company were transferred to Alcoa Properties, Inc., and continued to have the same benefit levels under the Plan.

AEES Divestiture

On June 12, 2009 ("Closing Date"), one hundred percent of the voting stock or ownership interest of the Company's subsidiaries, AEES Inc. and Alcoa Electrical and Electronic Solutions Limited Partnership were sold to Platinum Equity ("AEES Divestiture"). Effective as of the close of business on the Closing Date, the employees of these subsidiaries were no longer authorized to participate in, and ceased to be Eligible Employees for purposes of this Plan. Following the sale, assets and liabilities relating to the employees who became employed by the buyer in the AEES Divestiture were transferred to the buyer's plan as soon as was administratively feasible.

Alcoa Savings Plans Restructuring and Redesign

Effective January 1, 2011, the savings plans sponsored by Alcoa Inc. were restructured and redesigned as follows:

This Alcoa Savings Plan for Non-Bargaining Employees is restructured and renamed the Alcoa Retirement Savings Plan for Salaried Employees ("Salaried Savings Plan");

On that same date, the assets and liabilities with respect to hourly non-bargaining employees in this Plan are spun off and transferred to the Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees, prior to January 1, 2011 named the Alcoa Savings Plan for Subsidiary and Affiliate Employees ("Hourly Non-Bargaining Plan");

Salaried participants in the Hourly Non-Bargaining Plan are spun off from that plan and transferred to this Plan;

Participants in this Plan employed by Alumax Mill Products, Inc. are spun off from this Plan to the Alcoa Retirement Savings Plan for Mill Products Employees ("Mill Products Plan"), a new plan sponsored by the Subsidiary, Alumax Mill Products, Inc.

Upon their redesign on January 1, 2011, this Plan and the Mill Products Plan are intended to satisfy the safe harbor provisions of Sections 401(k)(12) and 401(m)(11) of the Code.

Alcoa Defense Inc. Participation

Effective October 1, 2011, employees of Alcoa Defense Inc. commenced participation in this Plan.

Alcoa Oil & Gas LLC Participation

Effective December 1, 2011, employees employed at the Woodlands, TX location of Alcoa Oil & Gas LLC commenced participation in this Plan.

Transfer of TRACO Salaried Employees from Alcoa Retirement Savings Plan for Fastener Systems and Commercial Windows Employees to This Plan

Effective January 1, 2012, the amounts standing to the credit in the in the Alcoa Retirement Savings Plan for Fastener Systems and Commercial Windows Employees ("FS-CW Savings Plan") for Alcoa Commercial Windows LLC ("TRACO") Salaried employees were transferred to this Plan, and the liability to pay the benefits of the transferred TRACO employees that were accrued under the FS-CW Savings Plan became the liability of this Plan.

Participating Employer Contributions (Match) for each TRACO participant under this Plan will be increased to the safe-harbor amount specified in Section 3(c). For purposes of transferring the TRACO Salaried Participants' Accounts, each participant's account balance in the investment funds of the FS-CW Savings Plan are automatically transferred to the identical funds in this Plan.

Move of the AACT Headquarters of Howmet Corporation

Effective January 1, 2012, salaried employees of Howmet Corporation (Company Code T13) at the Independence, OH location (Location Code AAC) moved to Harvard Avenue in Cleveland, OH and were assigned a new Location Code of CLE.

Move of Alcoa Inc. employees from the Cleveland, OH location to the Alcoa Commercial Windows LLC (dba TRACO) facility in Cranberry Township, Pennsylvania

Effective April 1, 2012, salaried employees of Alcoa Inc. (Company Code 010) at the Cleveland, Ohio location (CLE) moved to the Commercial Windows LLC (dba TRACO) facility in Cranberry Township, Pennsylvania and were assigned a new location code of CBB.

Evermore Recycling LLC Participation

Effective September 1, 2012, employees of Evermore Recycling LLC commenced participation in this Plan.

Transfer of Salaried Participants from the Alcoa Retirement Savings Plan for Mill Products Employees.

Effective as of close of business on December 31, 2012, the amounts standing to the credit in the salaried participants' accounts from the Alcoa Retirement Savings Plan for Mill Products Employees will be transferred to this Plan, and immediately thereafter the Mill Products Plan will be merged into the Non-Bargaining Plan. Each such salaried participant's account balance in the investment funds of the Mill Products Plan are automatically transferred to the identical funds in this Plan.

Participation of United Steelworkers Employees of Alcoa Inc., in Hutchinson, KS.

Effective August 16, 2013, certain persons already participating in the Plan who belonged to the newly-formed United Steelworkers collective bargaining unit at the Company's (Company Code 010) Hutchinson, Kansas facility (Location Code HUT) were assigned to new temporary Location Code HHT during the period while the initial collective bargaining agreement was being negotiated and continued to be eligible to participate in the Plan. Effective after close of business on August 18, 2014, participation in the Plan by such employees ceased due to their reclassification as hourly employees of Location Code HUT (Union Code: 290-USW) and participation in the Alcoa Retirement Savings Plan for Bargaining Employees ("Bargaining Savings Plan"). Pursuant to Section 20(d)(3) of the Plan, the accounts of the affected participants in this Plan will be transferred to the Bargaining Savings Plan as soon as administratively feasible.

Participation of Salaried Alcoa Inc., Employees in La Porte, Indiana

Effective August 1, 2014, salaried employees of Alcoa Inc. (Company Code 010) located in La Porte, Indiana (Location Code LIH) began to participate in the Plan.

Transfer of certain Alcoa Inc., employees at the facility in Detroit, Michigan to Alcoa Automotive – IAFC, Inc. (after October 31, 2014 known as Alcoa Engineered Structures Inc.)

Effective March 1, 2013, certain salaried employees of Alcoa Inc. (Company Code 010) located at the Detroit, Michigan, facility had their employment transferred to Alcoa Automotive – IAFC, Inc. (Company Code R70) and were assigned to new Company Code R70. Effective October 31, 2014, Alcoa Automotive – IAFC, Inc., changed its corporate name to Alcoa Engineered Structures Inc.

2015 Restatement of Plan

The Plan was amended and restated effective January 1, 2015, to incorporate all amendments adopted to such date and to reflect provisions required by applicable law and regulatory guidance.

Transfer of Certain Firth Rixson Inc., Employee Savings Plan Participants

Effective December 31, 2015, certain actively employed salaried Participants at the Midway, Georgia (Location Code: MDW) location of Firth Rixson Forging LLC (Company Code: 809) covered under the Firth Rixson Inc., Employee Savings Plan ("Firth Plan") were spun off and transferred from the Firth Plan to this Plan effective January 1, 2016. Upon the cessation of their participation in the Firth Plan, the account balances in the Firth Plan for these Participants were transferred to accounts in this Plan, and each Participant's account balance in this Plan was initially invested in the QDIA based on the Participant's age at the time of the transfer. Each Participant's pre-tax deferral election on file with the Firth Plan will transfer to the Plan without further action on the part of the participant; provided, however, that any pre-tax deferral election on file in excess of twenty-five percent (25%) will be limited and modified to equal twenty-five percent (25%) due to the existing maximum pre-tax deferral election in the Plan. New hires into this group also will participate in this Plan.

SCHEDULE B
ALCOA RETIREMENT SAVINGS PLAN FOR SALARIED EMPLOYEES
PARTICIPATING EMPLOYERS AND EMPLOYER RETIREMENT INCOME CONTRIBUTIONS
(ERIC)

Company Code	Company Description	*EE Type	LOC	Location Description	ERIC
835	Alcoa Allowance Management Inc.	S	NBA	Newburgh, Indiana (AAMI)	**Y**
760	Alcoa Defense Inc.	S	ARV	Arlington, VA	**Y**
760	Alcoa Defense Inc.	S	ATC	Alcoa Technical Center	**Y**
760	Alcoa Defense Inc.	S	PIT	Pittsburgh, Pennsylvania	**Y**
760	Alcoa Defense Inc.	S	RMC	Richmond, Virginia	**Y**
19J	Alcoa DiMarc Inc.	S	NBG	Newburgh, Indiana	**Y**
19J	Alcoa DiMarc Inc.	S	ROK	Rockdale, Texas	**Y**
010	Alcoa Inc.	S	ALC	Alcoa, Tennessee	**Y**
010	Alcoa Inc.	S	ARV	Arlington, Virginal	**Y**
010	Alcoa Inc.	S	ATC	Alcoa Center, Pennsylvania	**Y**
010	Alcoa Inc.	S	ATL	Atlanta, Georgia	**Y**
010	Alcoa Inc.	S	BAD	Badin, North Carolina	**Y**
010	Alcoa Inc.	S	BAX	Bauxite, Arkansas (Alcoa)	**Y**
010	Alcoa Inc.	S	BRB	Barberton, Ohio	**Y**
010	Alcoa Inc.	S	CBB	Alcoa Commercial Windows LLC (dba TRACO) Cranberry Township, Pennsylvania	**Y**
010	Alcoa Inc.	S	CDL	Chandler, Arizona	**Y**
010	Alcoa Inc.	S	CHI	Chicago, Illinois	**Y**
010	Alcoa Inc.	S	CHP	Chicago, Illinois (AEP)	**Y**
010	Alcoa Inc.	S	CIN	Cincinnati, Ohio	**Y**
010	Alcoa Inc.	S	CLC	Chillicothe, Ohio (ASL)	**N**
010	Alcoa Inc.	S	CLE	Cleveland, Ohio	**Y**
010	Alcoa Inc.	S	CLI	Clarion, Pennsylvania	**N**
010	Alcoa Inc.	S	CNC	Charlotte, North Carolina	**Y**
010	Alcoa Inc.	S	DAL	Dallas, Texas	**Y**
010	Alcoa Inc.	S	DAN	Danville, Illinois	**Y**
010	Alcoa Inc.	S	DAV	Davenport, Iowa	**Y**
010	Alcoa Inc.	S	DET	Detroit, Michigan	**Y**
010	Alcoa Inc.	S	FDM	Frederick, Maryland	**Y**
010	Alcoa Inc.	S	GCD	Goose Creek, SC	**Y**
010	Alcoa Inc.	S	GNS	Goose Creek, South Carolina	**Y**
010	Alcoa Inc.	S	GRV	Greenville, SC	**Y***

* ERIC APPLIES TO GRV EMPLOYEES HIRED ON OR AFTER 4/1/10 OR TRANSFERS EMPLOYEES NOT ELIGIBLE FOR ANOTHER PLAN OF THE COMPANY

010	Alcoa Inc.	S	HOT	Houston, Texas (Alcoa)	**Y**
010	Alcoa Inc.	S	HUT	Hutchinson, Kansas	**Y**
010	Alcoa Inc.	S	AAC	Independence, Ohio (AACT HQ)	**Y**
010	Alcoa Inc.	S	IND	Indianapolis, Indiana	**Y**
010	Alcoa Inc.	S	KNO	Knoxville, Tennessee	**Y**
010	Alcoa Inc.	S	LAC	Lancaster, Pennsylvania	**Y**
010	Alcoa Inc.	S	LAF	Lafayette, Indiana	**Y**
010	Alcoa Inc.	S	LIH	La Porte, IN	**Y**
010	Alcoa Inc.	S	LIY	Livonia, Michigan	**Y**
010	Alcoa Inc.	S	LOS	Los Angeles, California	**Y**
010	Alcoa Inc.	S	LVY	Lebanon, Virginia (RMC Whls)	**Y**
010	Alcoa Inc.	S	MAS	Massena, New York	**Y**
010	Alcoa Inc.	S	MLR	Mount Laurel, New Jersey	**Y**
010	Alcoa Inc.	S	NAS	Nashville, Tennessee	**Y**
010	Alcoa Inc.	S	NKE	New Kensington, Pennsylvania	**Y**
010	Alcoa Inc.	S	NYC	New York, New York	**Y**
010	Alcoa Inc.	S	OKM	Okemos, Michigan	**Y**
010	Alcoa Inc.	S	PHI	Philadelphia, Pennsylvania	**Y**
010	Alcoa Inc.	S	PIT	Pittsburgh, Pennsylvania	**Y**
010	Alcoa Inc.	S	POD	Ponder, Texas (ASL)	**N**
010	Alcoa Inc.	S	PTC	Point Comfort, Texas	**Y**
010	Alcoa Inc.	S	RHV	Richmond, Virginia	**Y**
010	Alcoa Inc.	S	ROK	Rockdale, Texas	**Y**
010	Alcoa Inc.	S	SEA	Seattle, Washington	**Y**
010	Alcoa Inc.	S	SLB	Salisbury, North Carolina (ASL)	**N**
010	Alcoa Inc.	S	SPA	Spartanburg, South Carolina	**Y**
010	Alcoa Inc.	S	SPN	Sparks, Nevada	**Y**
010	Alcoa Inc.	S	STS	San Antonio, Texas	**Y**
010	Alcoa Inc.	S	WAR	Warrick (Newburgh, In)	**Y**
010	Alcoa Inc.	S	WAS	Washington DC	**Y**
010	Alcoa Inc.	S	WEM	West Mifflin, Pennsylvania	**Y**
010	Alcoa Inc.	S	WEN	Wenatchee, Washington	**Y**
828	Alcoa Commercial Windows LLC	S	TRA	Traco, Alcoa Commercial Windows LLC	**Y**
R70	Alcoa Engineered Structures Inc. (prior to October 31, 2014, known as Alcoa Automotive -IAFC, Inc.)	S	AIY	Auburn, Indiana (RAMCO)	**Y**
R70	Alcoa Engineered Structures Inc. (prior to October 31, 2014, known as Alcoa Automotive -IAFC, Inc.)	S	DET	Detroit, Michigan	**Y**
960	Alcoa Oil & Gas LLC	S	AOG	The Woodlands, TX	**Y**

837	Alcoa Power Generating, Inc.	S	BAD	Badin, North Carolina	**Y**
837	Alcoa Power Generating, Inc.	S	NBG	Newburgh, Indiana	**Y**
837	Alcoa Power Generating, Inc.	S	TAP	Tapoco, North Carolina	**Y**
340	Alcoa Properties, Inc.	S	BLT	Burlington, Vermont	**Y**
796	Alcoa-SIE Cargo Conversions	S	SCC	Simi Valley, CA (SIE Cargo)	**Y**
985	Alumax Mill Products, Inc.	S	LNX	Lancaster, Pennsylvania (Alumax)	**Y**
985	Alumax Mill Products, Inc.	S	TXX	Texarkana, Texas (Alumax)	**Y**
627	B & C Research, Inc.	S	BRT	Barberton, Ohio	**N**
631	B&C Castings Inc.	S	BCC	Barberton, Ohio	**Y**
974	Eastalco Aluminum Company	S	FMX	Frederick, Maryland (AMX)	**Y**
030	Evermore Recycling LLC	S	ENA	US ENA Nashville, TN	**Y**
809	Firth Rixson Forgings LLC	S	MDW	Midway, Georgia (effective January 1, 2016)	**Y‡**
721	Halethorpe Extrusions, Inc.	S	BAL	Baltimore, Maryland	**Y**
T19	Halethorpe Services, Inc.	S	LAF	Lafayette, Indiana	**Y**
T23	Howmet Aluminum Casting, Inc.	S	DRH	Del Rio, Texas (Howmet)	**Y**
T48	Howmet Castings & Services Inc	S	DJY	Dover, New Jersey (Howmet-HDC)	**Y**
T48	Howmet Castings & Services Inc	S	DNH	Dover, New Jersey (Howmet-HAD)	**Y**
T48	Howmet Castings & Services Inc	S	HVH	Hampton, Virginia (Howmet)	**Y**
T48	Howmet Castings & Services Inc	S	LIH	Laporte, Indiana (Howmet)	**Y**
T48	Howmet Castings & Services Inc	S	MSH	Morristown, Tennessee(Howmet)	**Y**
T48	Howmet Castings & Services Inc	S	WCH	Winsted, Connecticut (Howmet)	**Y**
T48	Howmet Castings & Services Inc	S	WTH	Wichita Falls, Texas (Howmet)	**Y**
T13	Howmet Corporation	S	AAC	Independence, Ohio (AACT HQ)	**Y**
T13	Howmet Corporation	S	CLE	Cleveland, Ohio	**Y**
T13	Howmet Corporation	S	DJY	Dover, New Jersey (Howmet-HDC)	**Y**
T13	Howmet Corporation	S	ECH	East Hartford, CT (Howmet)	**Y**
T13	Howmet Corporation	S	HVH	Hampton, Virginia (Howmet)	**Y**
T13	Howmet Corporation	S	LIH	Laporte, Indiana (Howmet)	**Y**
T13	Howmet Corporation	S	MSH	Morristown, Tennessee(Howmet)	**Y**
T13	Howmet Corporation	S	TMH	Tempe, Arizona (Howmet)	**Y**
T13	Howmet Corporation	S	WMH	Whitehall, Michigan (Howmet)	**Y**
T15	Howmet TMP Corporation	S	CLH	Cleveland, Ohio (Howmet)	**Y**
T17	Howmet Transport Services, Inc.	S	LIH	Laporte, Indiana (Howmet)	**Y**
979	Intalco Aluminum Corporation	S	FWX	Ferndale, Washington (AMX)	**Y**
988	Kawneer Company, Inc.	S	AUX	Atlanta Service Center(Alumax)	**Y**

988	Kawneer Company, Inc.	S	BPX	Bloomsburg, PA (Kawneer)	**Y**
988	Kawneer Company, Inc.	S	BTX	Jessup, Maryland (BTX)	**Y**
988	Kawneer Company, Inc.	S	CHX	Chicago, Illinois (Alumax-FIX)	**Y**
988	Kawneer Company, Inc.	S	CLX	Cleveland, Ohio (Alumax)	**Y**
988	Kawneer Company, Inc.	S	GSX	Greenwood, Indiana (Kawneer)	**Y**
988	Kawneer Company, Inc.	S	HUX	Houston, Texas (Alumax)	**Y**
988	Kawneer Company, Inc.	S	HVX	Harrisonburg, Virginia (Kawneer	**Y**
988	Kawneer Company, Inc.	S	IVX	Irving (Dallas), Texas (Alumax	**Y**
988	Kawneer Company, Inc.	S	KAX	Kansas City, Missouri (Alumax)	**Y**
988	Kawneer Company, Inc.	S	NGX	Norcross, Georgia (Kawneer)	**Y**
988	Kawneer Company, Inc.	S	ORX	Orlando, Florida (Alumax)	**Y**
988	Kawneer Company, Inc.	S	SAX	Springdale, Arkansas (Kawneer)	**Y**
988	Kawneer Company, Inc.	S	SKX	Salt Lake, Utah (Alumax)	**Y**
988	Kawneer Company, Inc.	S	SSX	Seattle, Washington (Alumax)	**Y**
988	Kawneer Company, Inc.	S	VGX	Visalia, California (Kawneer)	**Y**
646	Northwest Alloys, Inc.	S	ADD	Addy, Washington	**Y**
655	Pimalco Inc.	S	CDL	Chandler, Arizona	**Y**
R08	RB Sales Company Limited	S	ROK	Rockdale, Texas	**Y**
R01	Reynolds Metals Company	S	ABY	Arkadelphia, AR (RMC-GUMSPRG)	**Y**
R01	Reynolds Metals Company	S	EGY	Eastman, Georgia (RMC)	**Y**
R01	Reynolds Metals Company	S	LIY	Livonia, Michigan	**Y**
R01	Reynolds Metals Company	S	LLY	Lake Charles, LA (RMC Carb)	**Y**
R01	Reynolds Metals Company	S	MSY	Massena, New York (RMC St Law)	**Y**
R01	Reynolds Metals Company	S	RMC	Richmond, Virginia (RMC)	**Y**
R01	Reynolds Metals Company	S	TOY	Troutdale, Oregon (RMC Plt)	**N**
R73	Reynolds Wheels Intl (VA)	S	LVY	Lebanon, Virginia (RMC Whls)	**N**
T14	Turbine Components Corporation	S	BCH	Branford, Connecticut (Howmet)	**Y**

* S = Salaried.

‡ Regardless of hire date.

SCHEDULE B
ALCOA RETIREMENT SAVINGS PLAN FOR SALARIED EMPLOYEES

DISCRETIONARY CONTRIBUTIONS

Pimalco, Inc.

7.09% of each Eligible Employees Eligible Compensation for the Plan Year for Eligible Employees hired or rehired prior to March 1, 2006.

Effective January 1, 2010, employees hired or rehired prior to March 1, 2006,

i) who are covered and actively accruing pension service under Retirement Plan I on or after January 1, 2010, or

ii) who transfer to Pimalco Inc.,

are not eligible for the 7.09% Discretionary Contribution.

RESTRICTED DISCRETIONARY CONTRIBUTIONS

There are no employee groups currently accruing Restricted Discretionary Contributions.

Exhibit 10(kkk)

AMENDMENT TO ALCOA INC.
EMPLOYEES' EXCESS BENEFITS PLAN C

Pursuant to Section 5.1 of the Alcoa Inc. Employees' Excess Benefits Plan C ("Plan"), the Plan is amended effective August 11, 2014, as follows:

1. The definition of a "Participant" in Section 1.1(I) shall be amended to reflect the Company's replacement of Job Grades with Job Bands effective as of August 11, 2014, as follows (with new language underlined and deleted language ~~stricken~~):

I. "Participant" means any employee of the Company or any Subsidiary who meets one or more of the following requirements:

(1) retires or dies while covered under Excess B, or

(2) has Additional Compensation and is a participant in Plan I, or

(3) on or after January 1, 1989, and before August 11, 2014, retires, dies or terminates while covered under Plan I, and immediately prior to retirement, death or termination is in a job grade of 19 or above, ~~or an equivalent of such job grades as determined by the Company.~~ or

(4) on or after August 11, 2014, retires, dies or terminates while covered under Plan I, and immediately prior to retirement, death or termination is in a job band of 35 or above, or an equivalent of such job bands as determined by the Company.

2. In all other respects, the Plan is ratified and confirmed.

Exhibit 10(lll)

AMENDMENT TO THE
ALCOA DEFERRED COMPENSATION PLAN

Pursuant to Article X of the Alcoa Deferred Compensation Plan ("Plan"), the plan is amended as of August 11, 2014, as follows:

1. The final two sentences of the definition of "Eligible Employee" shall be amended to reflect the Company's replacement of Job Grades with Job Bands effective as of August 11, 2014, as follows (with new language underlined and deleted language stricken):

> Effective January 1, 2013, only employees, who are in a job grade 21 or higher or effective August 11, 2014, employees who are in a job band of 40 or higher (or under a comparable level of compensation band), as determined by the Company, are eligible to participate in the Plan. All Credits, including Earnings Credits in the accounts of former Eligible Employees who are not in a job grade of 21 or higher or effective August 11, 2014, a job band of 40 or higher (or under a comparable level of compensation band) will continue to be maintained under all Plan provisions.

2. In all other respects, the Plan is ratified and confirmed.

Exhibit 10(mmm)

AMENDMENT TO THE
ALCOA DEFERRED COMPENSATION PLAN

Pursuant to Article X of the Alcoa Deferred Compensation Plan (“Plan”), the plan is amended as of January 1, 2016, as follows:

1. The definitions of “Additional Salary Reduction Credits”, “Credits”, “Employer Contribution Credits”, “Matching Company Credits”, “Post-2004 Credits”, “Salary” and “Salary Reduction Credits” in Article I – Definitions shall be amended to add the following to the end thereof:

“In no circumstance shall any portion of an Employee’s sales incentive payments be included for the preceding purposes.”

2. In all other respects, the Plan is ratified and confirmed.

Exhibit 12

COMPUTATIONS OF RATIO OF EARNINGS TO FIXED CHARGES AND RATIO OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS
(in millions, except ratios)

For the year ended December 31,	2015	2014	2013	2012	2011
Earnings:					
Income (loss) from continuing operations before income taxes	$248	$ 497	$(1,816)	$324	$1,063
Noncontrolling interests' share of earnings of majority-owned subsidiaries without fixed charges	-	-	-	-	-
Equity loss (income)	6	18	(12)	(99)	(127)
Fixed charges added to earnings	534	512	493	533	568
Distributed income of less than 50 percent-owned persons	152	86	89	101	100
Amortization of capitalized interest:					
Consolidated	42	47	46	44	43
Proportionate share of 50 percent-owned persons	-	-	-	-	-
Total earnings	$982	$1,160	$(1,200)	$903	$1,647
Fixed Charges:					
Interest expense:					
Consolidated	$498	$ 473	$ 453	$490	$ 524
Proportionate share of 50 percent-owned persons	-	-	-	-	-
	498	473	453	490	524
Amount representative of the interest factor in rents:					
Consolidated	36	39	40	43	44
Proportionate share of 50 percent-owned persons	-	-	-	-	-
	36	39	40	43	44
Fixed charges added to earnings	534	512	493	533	568
Interest capitalized:					
Consolidated	57	56	99	93	102
Proportionate share of 50 percent-owned persons	-	-	-	-	-
	57	56	99	93	102
Preferred stock dividend requirements of majority-owned subsidiaries	-	-	-	-	-
Total fixed charges	$591	$ 568	$ 592	$626	$ 670
Pretax earnings required to pay preferred stock dividends*	107	32	3	3	3
Combined total fixed charges and preferred stock dividends	698	600	595	629	673
Ratio of earnings to fixed charges	1.7	2.0	(A)	1.4	2.5
Ratio of earnings to combined fixed charges and preferred stock dividends	1.4	1.9	(B)	1.4	2.4

* Based on a U.S. statutory tax rate of 35%

(A) For the year ended December 31, 2013, there was a deficiency of earnings to cover the fixed charges of $1,792.

(B) For the year ended December 31, 2013, there was a deficiency of earnings to cover the fixed charges of $1,795.

Exhibit 21

SUBSIDIARIES OF THE REGISTRANT
(As of December 31, 2015)

Name	State or Country of Organization
Alcoa Domestic LLC	Delaware
Alcoa Securities Corporation	Delaware
Howmet International Inc.	Delaware
Howmet Holdings Corporation	Delaware
Howmet Corporation	Delaware
Howmet Castings & Services, Inc.	Delaware
Alcoa International Holdings Company	Delaware
Alcoa Australian Holdings Pty. Ltd.	Australia
Alcoa of Australia Limited 1	Australia
Alcoa (China) Investment Company Ltd.	China
Alcoa Luxembourg S.à r.l.	Luxembourg
Alcoa à Íslandi ehf	Iceland
Alcoa Fjarðaál sf	Iceland
Alcoa Inversiones España S.L.	Spain
Alcoa Alumínio S.A.	Brazil
Alcoa World Alumina Brasil Ltda.[1]	Brazil
Alcoa Holding GmbH	Germany
Alcoa Inespal, SL	Spain
Alúmina Española, S.A. 1	Spain
Alumínio Español, S.A.	Spain
Alcoa Inversiones Internacionales S.L.	Spain
Alcoa-Köfém Kft	Hungary
Alcoa Rus Investment Holdings LLC	Russia
ZAO Alcoa SMZ	Russia
Howmet SAS	France
Alcoa Holding France SAS	France
Norsk Alcoa Holdings AS	Norway
Norsk Alcoa AS	Norway
Alcoa Norway ANS	Norway
Alcoa UK Holdings Limited	United Kingdom
Alcoa Manufacturing (G.B.) Limited	United Kingdom
Alcoa Power Generating Inc.[2]	Tennessee
Alcoa World Alumina LLC [1,3]	Delaware
Alumax Inc.	Delaware
Alumax Mill Products, Inc.	Delaware
Aluminerie Lauralco, Inc.	Delaware
Alcoa-Lauralco Management Company	Nova Scotia
Laqmar Québec G.P.	Canada
Alcoa-Aluminerie de Deschambault L.P.	Canada
Cordant Technologies Holding Company	Delaware
Alcoa Global Fasteners, Inc.	Delaware
Huck International, Inc.	Delaware
FR Acquisition Corporation U.S., Inc.	Delaware
JFB Firth Rixson, Inc.	Delaware
Reynolds Metals Company	Delaware
Reynolds Bécancour, Inc.	Delaware
Reynolds International, Inc.	Delaware
RMCC Company	Delaware
Alcoa Canada Ltd.	Canada
Alcoa Ltd.	Canada
RTI International Metals, Inc.	Ohio
RMI Titanium Company, LLC	Ohio

The names of particular subsidiaries have been omitted because, considered in the aggregate as a single subsidiary, they would not constitute, as of the end of the year covered by this report, a “significant subsidiary” as that term is defined in Regulation S-X under the Securities Exchange Act of 1934.

1 Owned directly or indirectly 60% by the registrant and 40% by Alumina Limited.

2 Registered to do business in Tennessee under the name APG Trading, in Indiana under the name of AGC, in North Carolina under the name of Yadkin, in New York under the name of Long Sault and in Washington under the name of Colockum.

3 Registered to do business in Alabama, Arkansas, California, Florida, Georgia, Louisiana, North Carolina, Pennsylvania and Texas under the name of Alcoa World Chemicals.

Exhibit 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (Nos. 333-197371 and 333-201055) and Form S-8 (Nos. 333-32516, 333-106411, 333-128445, 333-146330, 333-153369, 333-155668, 333-159123, 333-168428, 333-170801, 333-182899, 333-189882, 333-205829, and 333-203275) of Alcoa Inc. and its subsidiaries of our report dated February 19, 2016 relating to the consolidated financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Pittsburgh, Pennsylvania
February 19, 2016

Exhibit 24

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each of the undersigned Directors of Alcoa Inc. (the "Company") hereby constitutes and appoints WILLIAM F. OPLINGER, ROBERT S. COLLINS, PETER HONG and AUDREY STRAUSS, or any of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution, to do any and all acts and things and to execute any and all instruments that said attorneys-in-fact and agents, or any of them, may deem necessary or advisable or may be required:

(1) To enable the Company to comply with the Securities Exchange Act of 1934, as amended (the "1934 Act"), and any rules, regulations or requirements of the Securities and Exchange Commission (the "Commission") in respect thereof, in connection with the filing under the 1934 Act of the Company's Annual Report on Form 10-K for the year ended December 31, 2015 (the "2015 Annual Report"), including specifically, but without limiting the generality of the foregoing, power and authority to sign the name of each of the undersigned in the capacity of Director of the Company to the 2015 Annual Report to be filed with the Commission and to any instruments or documents filed as part of or in connection with the 2015 Annual Report, including any amendments or supplements thereto;

(2) To enable the Company to comply with the Securities Act of 1933, as amended (the "1933 Act"), and any rules, regulations or requirements of the Commission in respect thereof, in connection with the registration under the 1933 Act during 2016 of the offer and sale or delivery of shares of common stock of the Company to be issued under the 2013 Alcoa Stock Incentive Plan, as such plan may be amended and/or restated from time to time (including any amendments thereto or restatements thereof, the "2013 Plan"), the 2009 Alcoa Stock Incentive Plan (the "2009 Plan"), the 2004 Alcoa Stock Incentive Plan (the "2004 Plan"), the Alcoa Stock Incentive Plan (the "Stock Incentive Plan") or the Long Term Stock Incentive Plan of Aluminum Company of America (the "Long Term Stock Incentive Plan"), including specifically, but without limiting the generality of the foregoing, power and authority to sign the name of each of the undersigned in the capacity of Director of the Company to any registration statement on Form S-8, or on such other form as may be appropriate, to be filed with the Commission in respect of said shares and the 2016 Plan, the 2013 Plan, the 2009 Plan, the 2004 Plan, the Stock Incentive Plan or the Long Term Stock Incentive Plan, or any of them, to any and all pre-effective amendments, post-effective amendments and supplements to any such registration statement, and to any instruments or documents filed as part of or in connection with any such registration statement or any such amendments or supplements thereto; and

(3) To enable the Company to comply with the 1933 Act, and any rules, regulations or requirements of the Commission in respect thereof, in connection with the registration under the 1933 Act during 2016 of the offer and sale or delivery of shares of common stock of the Company to be issued under the Company's employee retirement savings plans (together with interests in such plans), including, without limitation, the Alcoa Retirement Savings Plan for Bargaining Employees, the Alcoa Retirement Savings Plan for Salaried Employees, the Alcoa Retirement Savings Plan for Hourly Non-Bargaining Employees, the Alcoa Retirement Savings Plan for Fastener Systems Employees, and employee retirement or other savings plans sponsored by the Company or its subsidiaries or entities acquired by the Company from time to time (the "Plans"), including specifically, but without limiting the generality of the foregoing, power and authority to sign the name of each of the undersigned in the capacity of Director of the Company to any registration statement on Form S-8, or on such other form as may be appropriate, to be filed with the Commission in respect of said shares and the Plans (or interests in such Plans), or any of them, to

any and all pre-effective amendments, post-effective amendments and supplements to any such registration statement, and to any instruments or documents filed as part of or in connection with any such registration statement or any such amendments or supplements thereto; and

granting unto each of said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as the undersigned might or could do in person, and each of the undersigned hereby ratifies and confirms all that said attorneys-in-fact and agents, or any of them, shall do or cause to be done by virtue hereof.

This power of attorney will be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania. The execution of this power of attorney is not intended to, and does not, revoke any prior powers of attorney. This power of attorney may be signed in any number of counterparts, each of which shall constitute an original and all of which, taken together, shall constitute one power of attorney.

IN WITNESS WHEREOF, each of the undersigned has subscribed these presents this 19th day of February 2016.

/s/ Arthur D. Collins, Jr. Arthur D. Collins, Jr.	/s/ L. Rafael Reif L. Rafael Reif
/s/ Kathryn S. Fuller Kathryn S. Fuller	/s/ Carol L. Roberts Carol L. Roberts
/s/ Sean O. Mahoney Sean O. Mahoney	/s/ Patricia F. Russo Patricia F. Russo
/s/ Michael G. Morris Michael G. Morris	/s/ Ulrich R. Schmidt Ulrich R. Schmidt
/s/ E. Stanley O'Neal E. Stanley O'Neal	/s/ Martin Sorrell Martin Sorrell
/s/ James W. Owens James W. Owens	/s/ Ratan N. Tata Ratan N. Tata
/s/ John C. Plant John C. Plant	/s/ Ernesto Zedillo Ernesto Zedillo

Certifications

I, Klaus Kleinfeld, certify that:

1. I have reviewed this annual report on Form 10-K of Alcoa Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 19, 2016

/s/ Klaus Kleinfeld

Name: Klaus Kleinfeld
Title: Chairman and Chief Executive Officer

I, William F. Oplinger, certify that:

1. I have reviewed this annual report on Form 10-K of Alcoa Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 19, 2016

/s/ William F. Oplinger

Name: William F. Oplinger
Title: Executive Vice President and Chief Financial Officer

Exhibit 32

Certification
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), each of the undersigned officers of Alcoa Inc., a Pennsylvania corporation (the "Company"), does hereby certify that:

The Annual Report on Form 10-K for the year ended December 31, 2015 (the "Form 10-K") of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 19, 2016

/s/ Klaus Kleinfeld
Name: Klaus Kleinfeld
Title: Chairman and Chief Executive Officer

Dated: February 19, 2016

/s/ William F. Oplinger
Name: William F. Oplinger
Title: Executive Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

The foregoing certification is being furnished to the Securities and Exchange Commission as an exhibit to the Form 10-K and shall not be considered filed as part of the Form 10-K.

Exhibit 95

Mine Safety

At Alcoa, management strives to work safely in a manner that protects and promotes the health and well-being of the company's employees, contractors, and the communities in which Alcoa operates because it is fundamentally the right thing to do. Despite uncertainties and economic challenges, Alcoa remains committed to living its values and managing risks accordingly. In 2015, 44.4% of Alcoa's global locations reported no recordable injuries, and 79.1 % reported zero lost workdays. In Alcoa's 2015 Employee Global Voices Survey, "If I see a situation that is unsafe, I can stop work." received the highest overall rating (at 92% favorable) by employees participating in the survey.

Alcoa's health and safety systems are anchored by committed people who are actively engaged and effectively support a safe work environment, safe work methods, and overall production system stability. Each day, people at all levels proactively monitor and intervene to defend against weaknesses that develop in Alcoa's safety systems by identifying potential hazards and error-likely situations and responding to eliminate or control them.

In the table below there are disclosures involving Point Comfort, TX alumina refinery. All citations have been or are being addressed. None constituted an imminent danger.

Dodd-Frank Act Disclosure of Mine Safety and Health Administration Safety Data

Certain of Alcoa's U.S. facilities are subject to regulation by the Mine Safety and Health Administration (MSHA) under the U.S. Federal Mine Safety and Health Act of 1977 (the "Mine Act"). The MSHA inspects these facilities on a regular basis and issues various citations and orders when it believes a violation has occurred under the Mine Act. Whenever the MSHA issues a citation or order, it also generally proposes a civil penalty, or fine, related to the alleged violation. Citations or orders can be contested and appealed, and as part of that process, are often reduced in severity and amount, and are sometimes dismissed.

Management believes the following mine safety disclosures meet the requirements of section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act").

Mine Safety Data. The table and other data below present mine safety information related to Alcoa's U.S. facilities subject to MSHA regulation, as required by section 1503(a)(1) of the Dodd-Frank Act. The following data reflects citations and orders received from the MSHA during the year ended December 31, 2015, as reflected in the MSHA system on December 31, 2015, and the proposed penalties received from the MSHA during such period.

Mine or Operating Name/ MSHA Identification Number[1]	Section 104 S&S Citations[3] (#)	Section 104(b) Orders[4] (#)	Section 104(d) Citations and Orders[5] (#)	Section 110(b)(2) Violations[6] (#)	Section 107(a) Orders[7] (#)	Total Dollar Value of MSHA Assessments Pro-posed[8] ($)	Total Number of Mining Related Fatalities (#)	Received Notice of Pattern of Violations Under Section 104(e) (yes/no)	Received Notice of Potential to Have Pattern Under Section 104(e) (yes/no)	Legal Actions Pending as of Last Day of Period (#)	Legal Actions Initiated During Period (#)	Legal Actions Resolved During Period (#)
Point Comfort, TX Alumina Refinery[2]	30	1	10	0	0	$ 290,774	0	No	No	8	9	8

(1) The MSHA assigns an identification number to each mine or operation and may or may not assign separate identification numbers to related facilities. The information provided in this table is presented by mine or operation rather than the MSHA identification number because that is how Alcoa manages and operates its business, and management believes that this presentation is more useful to investors.

(2) Under the Interagency Agreement dated March 29, 1979 between the MSHA, the U.S. Department of Labor, and The Occupational Safety and Health Administration, alumina refineries (such as Alcoa's Point Comfort facility) are subject to MSHA jurisdiction.

(3) Represents the total number of citations issued under section 104 of the Mine Act, for violations of mandatory health or safety standards that could significantly and substantially contribute to a serious injury if left unabated. This includes the citations listed under the column headed §104(d).

(4) Represents the total number of orders issued under section 104(b) of the Mine Act, which represents a failure to abate a citation under section 104(a) within the period prescribed by the MSHA. This results in an order of immediate withdrawal from the area of the mine affected by the condition until the MSHA determines that the violation has been abated.

(5) Represents the total number of citations and orders issued under section 104(d) of the Mine Act for unwarrantable failure to comply with mandatory health or safety standards.

(6) Represents the total number of flagrant violations identified under section 110(b)(2) of the Mine Act.

(7) Represents the total number of imminent danger orders issued under section 107(a) of the Mine Act.

(8) Amounts represent the total dollar value of proposed assessments received.

During the year ended December 31, 2015, none of the company's mining operations received written notice from the MSHA of a pattern of, or the potential to have a pattern of, violations of mandatory health or safety standards that are of such nature as could have significantly and substantially contributed to the cause and effect of mine health or safety hazards under section 104(e) of the Mine Act.

The Federal Mine Safety and Health Review Commission (the "Commission") is an independent adjudicative agency that provides administrative trial and appellate review of legal disputes arising under the Mine Act. As of December 31, 2015, Alcoa has a total of eight matters pending before the Commission. Seven of these matters concern contests of citations or orders issued under the Mine Act (two of these seven actions were originally filed in 2014, and still pending at the end of 2015), along with the contests of the proposed penalties for each of these. One of these matters concerns a Complaint of Retaliation filed by an employee, which was dismissed by an Administrative Law Judge, but which has been appealed by the employee to the Commission.