

September 25, 2012

Via EDGAR and Facsimile

United States Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549-4631

Attention: W. John Cash,
Branch Chief

**Re: Alcoa Inc.
Form 10-K for Fiscal Year Ended December 31, 2011
Filed February 16, 2012
Response Letter Dated August 15, 2012
File No. 1-03610**

Dear Mr. Cash:

On behalf of Alcoa Inc. (the "Company"), set forth below are responses to the comments of the Staff (the "Staff") of the Securities and Exchange Commission (the "Commission") contained in the Staff's letter dated September 20, 2012 (the "Comment Letter"), relating to the Form 10-K for the fiscal year ended December 31, 2011 (file no. 1-03610) (the "2011 10-K"), filed by the Company on February 16, 2012. The headings and numbered paragraphs of this letter correspond to the headings and paragraph numbers contained in the Comment Letter, and to facilitate your review, we have reproduced the text of the Staff's comments in boldfaced print below.

FORM 10-K FOR FISCAL YEAR ENDED DECEMBER 31, 2011

Financial Statements

Note A – Summary of Significant Accounting Policies

- 1. As it appears you have determined the existence of proven mineral reserves within your organization, please revise in future filings beginning with your next quarterly report, all relevant accounting policy disclosures where proven mineral reserves are used in accounting measurements to clearly state that you amortize or determine such amounts using "proven mineral reserves."**

Response: In response to the Staff's comment, in future filings beginning with our next quarterly report (Form 10-Q for the quarterly period ended September 30, 2012), we will revise all relevant accounting policy disclosures where proven mineral reserves are used in accounting measurements to clearly state that we amortize or determine such amounts using "proven mineral reserves."

Engineering Comments

2. **We understand that you have agreed to provide production and reserve information for your mines. While you have agreed to provide this additional disclosure, you also indicate that you continue to believe that Alcoa is not engaged in significant mining operations. We are unable to agree with your conclusion. As comment 13 in our June 18, 2012 letter indicates, we view your mineral processing operations as an extension of your mining operations. Your mining/processing operations appear to be significant and have a material impact on the viability of your company, both from a supply and a cost basis. Consequently, we expect that you will provide complete Industry Guide 7 disclosure in your next annual report, in addition to the production and reserve information you plan to provide. If you have questions about the disclosure required under Industry Guide 7, please contact us at the numbers provided at the end of our letter.**

Response: In response to the Staff's comment, we will provide complete Industry Guide 7 disclosure in our next annual report (Form 10-K for the fiscal year ended December 31, 2012), in addition to the production and reserve information that we plan to provide, as indicated in our August 14, 2012 letter.

* * * * *

The Company acknowledges the following:

- the Company is responsible for the adequacy and accuracy of the disclosure in the filing;
- Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the Company may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

If you have any questions with respect to the foregoing, please contact me at (212) 836-2689 or Graeme Bottger, Vice President and Controller, at (412) 553-2169.

Sincerely,

/s/ Charles D. McLane, Jr.

Charles D. McLane, Jr.
Executive Vice President and
Chief Financial Officer