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MISSOURI PUBLIC SERVICE COMMISSION

File No. ER-2014-0258

REBUTTAL TESTIMONY

OF

ROBERT S. MUDGE

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a AMEREN MISSOURI

Washington, D.C.
January, 2015

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TABLE OF CONTENTS

I. INTRODUCTION 1

II. PURPOSE AND SUMMARY OF MY TESTIMONY 3

III. MR. BOYLES' NEGATIVE OUTLOOK FOR INCOME, CASH FLOW AND LIQUIDITY IS UNSUPPORTED AND INCONSISTENT WITH INDUSTRY OR PRIOR NORANDA PRACTICE 8

IV. THE CONCERNS OF DR. SCHWARTZ AND MR. HARRIS ABOUT NORANDA'S FUTURE VIABILITY ARE WHOLLY PREMISED ON MR. BOYLES' FORECAST OF ALUMINUM PRICES 24

V. MR. FAYNE'S FOCUS ON COMPARATIVE ELECTRICITY COSTS USES DATA SELECTIVELY AND IS THEREFORE MISLEADING 31

VI. CONCLUSION 45

REBUTTAL TESTIMONY

OF

ROBERT S. MUDGE

FILE NO. EC-2014-0258

I. INTRODUCTION

Q. Please state your name, position, business address, and the nature of your business.

A. My name is Robert S. Mudge. I am a Principal with *The Brattle Group, Inc.* My office address is 1850 M Street NW, Washington D.C. *The Brattle Group* is an economics and finance consulting firm with practice areas heavily focused on energy industry regulation and finance.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri").

Q. What is your professional and academic background?

A. I am currently a Principal and Treasurer of *The Brattle Group*, where I have worked since 2008. Prior to joining *The Brattle Group*, I was with another consulting firm, Charles River Associates, for 5 years. From 1989 to 2002, I was a banker at N.M. Rothschild, ABN AMRO, and Sanwa Bank focusing on energy project and corporate finance. I have an M.B.A. from the University of Chicago Graduate School of Business and a B.A. from Harvard College.

Q. Do you have experience with financial analysis?

A. Yes. I have advised energy clients on issues relating to asset valuation, acquisitions and divestitures, corporate restructuring, contract terminations or amendments, special capital needs, and bankruptcy. I have experience in analyzing contractual, regulatory, financing, and tax matters, and in estimating effects on cash flows, earnings, and end-user costs. With relevance to the matter at hand, I developed the financial model used to assess the impact of the $800 million "unwind" transaction concluded between Big Rivers Electric Corporation and E.On US in 2009, including lease termination, acquisition of generating assets, negotiation of power supply arrangements with aluminum smelters and other customers, and related financing arrangements. The model was used to support negotiation and secure regulatory approval, creditor consents, and to obtain an investment grade rating. I have assessed financial structuring, liquidity, and asset disposition issues (including closure) in separate litigation and arbitration settings for confidential clients. I have also provided business consulting services to a variety of institutions, including an investor-owned utility negotiating a transmission investment joint venture, independent power developers contemplating plant acquisitions and divestitures, and a pension fund manager assembling an energy project finance debt fund. As a banker, the bulk of my work was in connection with energy project financing as well as corporate mergers and acquisitions. I worked on numerous power project financings in the United States and abroad, as well as played a central role in developing financeable contract structures for large public/private infrastructure projects sponsored by the U.S. Department of Energy. Many of my consulting assignments have been related to project financing, including litigation cases where

the cost and terms of structured financings were at issue. In total, I have worked on more than 40 project finance-related engagements as a banker or consultant.

Q. Have you testified in other proceedings?

A. Yes. I have provided expert testimony before the Missouri Public Service Commission in File No. ER-2014-0224 ("Case 0224") on matters very similar to those that have now arisen in this case, as well as in proceedings before the Federal Energy Regulatory Commission, utility regulatory commissions in Kentucky, Michigan, and Alberta, the United States Tax Court, the Massachusetts Superior Court, the International Centre for Settlement of Investment Disputes, and the Maine Board of Environmental Protection, as well as in connection with arbitration proceedings.

II. PURPOSE AND SUMMARY OF MY TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to respond to the direct testimony provided on behalf of Noranda Aluminum, Inc. ("Noranda") by Dale Boyles, Steven Schwartz, and Thomas Harris, as well as by Henry Fayne.

Q. Please summarize the contentions you address.

A. Similar to the testimony of Layle K. Smith in Case 0224 (the "Smith Testimony"), Mr. Boyles' testimony (the "Boyles Testimony") asserts that, without a reduction in the rates at which Noranda purchases electricity for its New Madrid aluminum smelter in Southeast Missouri (the "Power Rates"), Noranda **[redacted]**

[redacted]

[redacted]**, as detailed below. As a consequence, again similar to Mr. Smith, Mr. Boyles cites a "substantial likelihood of imminent closure" of the New Madrid Smelter – referring to closure as "inevitable" absent a reduced electricity rate – but does not specify a time period.[1]

Almost entirely based on assumptions presented in the Boyles Testimony, Messrs. Schwartz and Harris echo Mr. Boyles' assertion that Noranda will not be in a position to refinance debt facilities in 2017 and 2019, again with the consequence of having to close the smelter.

Separately, Mr. Fayne has updated his testimony from Case 0224 and again seeks to create the impression that the New Madrid smelter is uncompetitive at current Power Rates and that Noranda's requested Power Rates are needed to make New Madrid financially viable.

Q. "Liquidity" was an important term in Case 0224 because of Noranda's focus on it in the Smith Testimony. Does this remain true in the current case?

A. Yes. Messrs. Boyles, Schwartz and Harris each cite liquidity as a key index of Noranda's operating and financial viability, among other metrics. Like Mr. Smith, Mr. Boyles defines "liquidity" as the sum of cash on hand plus borrowing capacity, in this case under a revolving credit facility (the "ABL" facility discussed in Case 0224). More details are provided in the discussion below.

[1] Noranda has not responded to Ameren Missouri requests for any analysis of the impact of closing New Madrid. Response to Data Request No. 51, attached hereto as Schedule RSM-R1.

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Q. Please summarize your responses to the assertions of Mr. Boyles, Dr. Schwartz and Mr. Harris.

A. My responses to these assertions are as follows:

- Mr. Boyles' assertions about near-term earnings, cash flow, and liquidity to some degree just repeat points made by Mr. Smith in Case 0224. They are not supported by the analysis contained in Mr. Boyles' testimony, Noranda responses to data requests, the record of Case 0224, or publicly available materials. Additionally, Mr. Boyles' arguments also rely on an unsubstantiated approach to forecasting aluminum prices not to my knowledge previously articulated by Noranda or used in Noranda's internal planning processes or by others in the industry. Ameren Missouri witness Dr. David Humphreys points out the logical and methodological flaws in Mr. Boyles' approach, explains that it is therefore not consistent with conventional industry practice, and explains why it does not reflect a reasonable expected case that should be used to model future revenues from aluminum sales.

- Mr. Boyles supports his assertion about liquidity with reference to an earnings and cash flow forecast for the seven-year period 2015 – 2021 (the "Seven-Year Period"). I observe that the methodology underlying Mr. Boyles' cash flow forecast departs fundamentally from Noranda's own prior analysis presented in Case 0224 as well that developed for key constituencies such as rating agencies (a point acknowledged by Noranda in its response to data requests in Case 0224). Based on Dr. Humphreys' testimony, I show that Mr. Boyles' unsupported approach results in a gross exaggeration of Noranda's financial challenges over that period. In contrast, the effect of adopting Dr. Humphreys' recommended approach to forecasting aluminum prices (essentially, using the published forecast of Noranda's own consultant, CRU) results in cumulative liquidity

hundreds of millions of dollars in excess of that shown in the Boyles Testimony. I conclude by showing that a cash flow forecast using more realistic assumptions does not require reduced Power Rates to maintain adequate liquidity.

- The conclusions of Dr. Schwartz and Mr. Harris about Noranda's future viability are almost entirely derivative of Mr. Boyles' assumptions about aluminum prices. Neither Dr. Schwartz nor Mr. Harris conduct an independent assessment of Mr. Boyles' aluminum price assumptions or refer to such an assessment conducted by a third party.

- In light of Dr. Humphreys' assessment, neither Dr. Schwartz nor Mr. Harris provide evidence or analysis suggesting that lenders or equity investors conducting an independent assessment could reasonably be expected to assume Mr. Boyles' aluminum price scenarios as an expected outcome, nor do Dr. Schwartz or Mr. Harris address the possibility that lenders and equity investors could instead reasonably be expected to view Mr. Boyles' aluminum price outlook as a "worst-case scenario" that could be managed by hedging.

- Dr. Schwartz and Mr. Harris are largely vague as to financial metrics necessary to make Noranda a viable entity capable of raising financing, though they both agree that Mr. Boyles' scenarios depicting a Power Rate Reduction (Cases B1 - B3, as described below) would make Noranda viable. In contrast, I show that a scenario incorporating CRU forecast aluminum prices would yield financial metrics—based on formulas established by Mr. Boyles—substantially more favorable to Noranda than his hypothetical Power Rate Reduction cases.

- Mr. Fayne's focus on electricity costs in isolation again presents data selectively and is hence misleading.

- The Fayne Testimony is opportunistic in selectively characterizing New Madrid's electricity costs in rank order relative to the average cost of other smelters. This allows the impression that New Madrid has higher relative electricity costs than it does.

- The Fayne Testimony does nothing to address a concern I expressed in Case 0224: that he compares smelter electricity costs without qualification for differential risks and costs embedded in other smelters' power supply arrangements that are necessary to place the electricity costs in context. As I observed in Case 0224, there is a wide diversity of such factors accompanying different smelter electricity costs, and hence that comparing electricity costs in isolation is an oversimplification.

- The Fayne Testimony continues to disregard New Madrid's competitiveness on the basis of overall costs, including alumina, labor, and other operations. Meanwhile, updated CRU data shows that Noranda's comparative cost position in the U.S. aluminum industry has improved since Case 0224. I show that New Madrid now enjoys the lowest costs of overall production and that relevant data does not support the conclusion that Noranda must have a much lower Power Rate to be competitive.

Q. Is this case materially different than Case 0224?

A. No, the material issue remains the financial viability of Noranda and the New Madrid smelter under different Power Rates. In this case, Noranda has taken a different approach to the assumptions that underlie its modeling, and in fact in a number of instances its new assumptions are inconsistent with the assumptions it just used about a year ago. Moreover, Noranda continues to make public statements about its financial condition and aluminum demand

and pricing that would not lead one to believe that it faces the kind of dire prospects depicted by Mr. Boyles, as was the case in Case 0224.[2]

III. MR. BOYLES' NEGATIVE OUTLOOK FOR INCOME, CASH FLOW AND LIQUIDITY IS UNSUPPORTED AND INCONSISTENT WITH INDUSTRY OR PRIOR NORANDA PRACTICE

Q. Please summarize Mr. Boyles' assertions about Noranda's liquidity requirements.

A. Like Mr. Smith in Case 0224, Mr. Boyles states that Noranda needs liquidity of at least ****[redacted]**** million "to have sufficient cash for uninterrupted operations."[3] Per Noranda's 10-Q for the period ended September 30, 2014, the Company's total available liquidity was ****[redacted]**** million. Mr. Boyles' analysis models liquidity at year-end 2014 at ****[redacted]**** million.[4]

Importantly, this relative trough in liquidity at year end 2014 is due to transitory factors. As Mr. Boyles points out, a key driver is capital outlays for the rod mill project at New Madrid, with project financing deferred until 2015.[5] Also, as Mr.

[2] Because the facts and analysis presented in my testimony in Case 0224 remains pertinent to Noranda's current request I have attached my testimony in that case to this testimony, marked as Schedule RSM-R2. For the same reason, I have attached the Commission's order in Case 0224 to my testimony as Schedule RSM-R3.

[3] Boyles Testimony, p. 7. As noted previously, Noranda defines liquidity as the sum of cash on hand plus borrowing capacity. More specifically, liquidity is defined in the Boyles workpapers as cash plus amounts available for borrowing under Noranda's asset-based revolving credit facility ("ABL"), less letters of credit outstanding, and any reduction in availability under the ABL relating to a Fixed Charge Coverage Reserve Ratio ("FCCR Ratio") below 1.0x.

[4] The year end 2014 assumption is consistent throughout Mr. Boyles' exhibits and work papers. Liquidity consists of ****[redacted]**** million in cash, plus ****[redacted]**** million in available borrowings under the ABL, less ****[redacted]**** million in letters of credit.

[5] Mr. Boyles' Enterprise Model reflects the assumption of a project financing of the rod mill in the amount of ****[redacted]**** million in 2015. This compares to ****[redacted]**** million of rod mill project financing reflected in the Enterprise Model presented by Mr. Smith and approximately contemporaneous correspondence with potential lenders.

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Boyles notes for 2014, "[o]ur operating results have been negatively impacted by an unusually high concentration of failures in reduction cells, or pots, in which the electrolysis process occurs."[6] While Noranda has experienced volatility in its daily cash balances, it has not run out of cash during the second half of 2014.[7]

To illustrate the future adverse impact of existing electricity rates claimed by Noranda, Mr. Boyles presents a series of earnings, cash flow, and liquidity forecasts for the Seven-Year Period 2015 – 2021 for which Noranda seeks rate relief (Exhibits A1 – A3). This is illustrated below in Table 1 using data from Boyles Exhibit A2, corresponding to a scenario in which 1) aluminum prices forecast by CRU have been adjusted by Noranda for historical volatility experienced over the ten-year period starting in 1999 (Case A2: 1999 Historical Volatility Curve, as discussed in more detail in Dr. Humphreys' testimony), and 2) current electricity rates are assumed by Noranda to escalate every eighteen months at 6.40% (No Power Rate Reduction). Noranda treats Case A2 as a "Base Case".

[6] Noranda's public statements and discovery responses indicate that Noranda is committed to repairing the failed pots and to being back at full production soon, which will allow it to take advantage of favorable aluminum prices available in the market.

[7] Noranda's Response to Ameren's Data Request 1.39.

Table 1 – Noranda Asserted Liquidity Derivation – Case A2: 1999 Historical Volatility Curve, No Power Rate Reduction *($ Millions)*

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In this hypothetical adverse scenario, liquidity (item C in Table 1) grows to **[redacted]** million in 2015 and remains above **[redacted]** million through 2017. Thereafter, liquidity is shown to drop below **[redacted]** million and then to a point at which additional capital would have to be raised (i.e., negative liquidity). In this scenario, Mr. Boyles states that smelter closure would be inevitable, albeit at an unspecified time, "because at some point in the aluminum pricing cycle, the Smelter is likely to exhaust its available cash resources and will not be able to attract new investment."[8] The outcomes for Boyles Cases A1 and A3 (Boyles Exhibits A1 and

[8] Boyles Testimony, page 20. Notably, in the current case as well as Case 0224, Ameren Missouri asked Noranda several data requests relating to the claim that the smelter was "subject to closure," including requests for documents that address, discuss, analyze or otherwise relate or pertain to the possibility of closure. I would note that Noranda produced no documents that describe a possible closure of the smelter in the circumstances presented in the liquidity forecasts presented in the Boyles or Smith testimony, nor do

A3) are substantially similar to that for Case A2, shown above, and summarized in my Schedules RSM-4 and RSM-5.

The above and other scenarios shown in Mr. Boyles' testimony are based on calculations in an Excel financial model accompanying the Boyles Testimony: "HC – Enterprise Model Liquidity Scenarios_with Macros – Dec 18 Final Edits - Clean.xlsm", (the "Enterprise Model").

Based on the above hypothetical scenario, Mr. Boyles argues, Noranda must obtain rate relief under its electricity supply arrangements in order to be in a position to refinance its debt facilities starting in 2017. The result of this scenario is illustrated below in Table 2 using data from Mr. Boyles' Exhibit B2 corresponding to the scenario "1999 Historical Volatility Curve, Power Rate Reduced to $32.50/ MWh."

the documents Noranda pointed to in response to other data requests. Similarly, in this case, Ameren Missouri has also asked for documentation analyzing the impact on Noranda of closing the smelter. Noranda indicates **[redacted]**. See also DR Response No. 51, attached to my testimony as Schedule RSM-R1.

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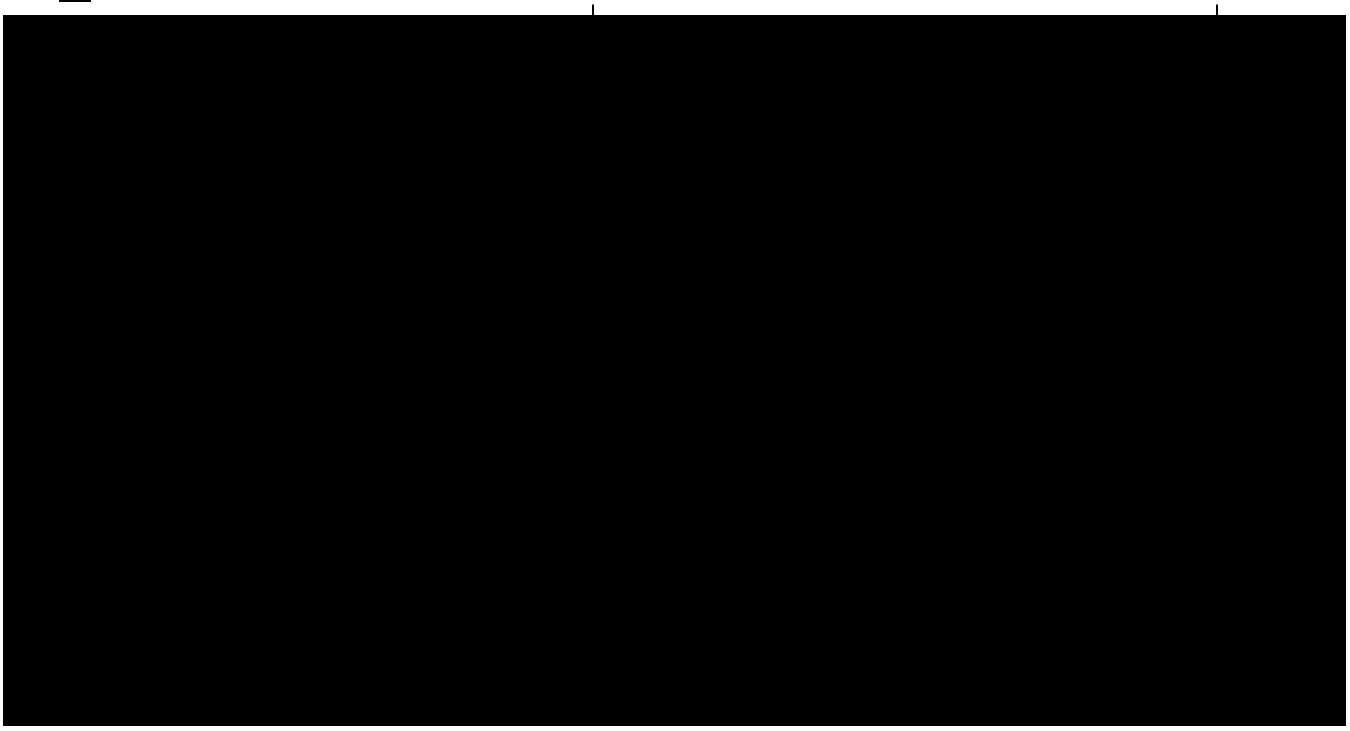
Table 2 – Noranda Asserted Liquidity Derivation: Case B2: 1999 Historical Volatility Curve, Power Rate Reduced to $32.50/ MWh *($ Millions)*

**



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In this scenario, with liquidity greater than **[redacted]** million in every year, Mr. Boyles states that "if Noranda receives the requested power rate ($32.50 plus a 1% annual escalator for a term of seven years), we believe the Smelter would be viable."[9] Mr. Boyles' testimony indicates that reduced electricity rates would contribute **[redacted]** million in additional cash flow available for capital expenditures over the Seven-Year Period, or an average of approximately **[redacted]** million per year.

[9] Boyles Testimony, p. 19.

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Q. Is Mr. Boyles' approach to forecasting earnings, cash flows, and liquidity consistent with approaches Noranda has previously presented to the Commission?

A. No. As I noted earlier, in order to make similar arguments offered by Mr. Smith in Case 0224 more persuasive, Mr. Boyles appears to be attempting a new approach with regard to expected levels of aluminum pricing (discussed further below and in the testimony of Dr. Humphreys). In forecast cash flow and liquidity terms, the broad outlines of the differences in approach can be seen graphically below in Figure 1:

Figure 1 – Boyles vs. Smith Liquidity Forecasts
(Without Power Rate Reductions)

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Figure 1 relates EBITDA (the red line), to Capex and other uses of cash (including taxes) over time for each of the Smith and Boyles analyses. In years when EBITDA does not clear those cash requirements (most years in the Noranda analyses without power rate reductions), cash is drawn down and liquidity declines.

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As Figure 1 shows, the Boyles analysis departs substantially in methodology and rationale from Smith:

- In 2015, Mr. Boyles recognizes the higher updated CRU outlook for aluminum prices (composed of both "LME"[10] and the "Midwest Premium"[11]), while Mr. Smith argued that the CRU forecast was inappropriate, and relied upon market forward prices for his modeling. In the Boyles Testimony, this increases modeled EBITDA, cash flow, and liquidity in 2015.

- In 2016 and after, however, Boyles departs from *both* the CRU forecast and market forwards and applies an arbitrarily derived discount to CRU prices for purposes of all cases in the Enterprise Model (represented above by Case A2). These arbitrary assumptions ultimately result in a much more adverse long run outcome than is suggested even by Mr. Smith's analysis.

Q. Is Mr. Boyles' approach to forecasting earnings, cash flows, and liquidity consistent with the information Noranda has provided and is providing to investors and debt rating agencies?

A. No. I am not aware that Mr. Boyles' current approach has been developed for any purpose other than the current case before the Commission. In fact, when asked if it had ever prepared such an analysis before, Noranda admitted that it had not,

[10] LME aluminum pricing refers to the world price for aluminum quoted on the London Metals Exchange. LME aluminum pricing drives the bulk of Noranda revenues for products sold.

[11] The Midwest Premium is a regional price adder realized by smelters in North America, hereafter referred to as "MWP".

although it tried to explain this away by claiming that it is common knowledge that aluminum prices are volatile.[12] Dr. Humphreys' testimony discusses that while it is true aluminum prices are volatile, it is not true that this kind of analysis is something one would undertake for forecast aluminum prices. Investor communications provided by Noranda in the course of and since Case 0224 are principally retrospective. Ameren Missouri requested copies of communications from Noranda to equity analysts and credit rating agencies in the current case as well as Case 0224 and Noranda produced no documents that reflect anything like the approach used by Mr. Boyles.[13]

Q. Do any other documents you have reviewed provide cash flow forecasts or other indicia of sustainable future operations in a manner similar to the Boyles Testimony?

A. The last such forecast of which I am aware is the presentation to Moody's Investors Service dated January 30, 2014. Importantly, Noranda's presentation to Moody's at that time based aluminum price assumptions on CRU forecasts for the LME and MWP. Again, that presentation bears no similarity to the approach taken by Mr. Boyles.

Q. How have CRU aluminum price forecasts evolved since that time?

[12] See Noranda's response to DR No. 2.72, attached to my testimony as Schedule RSM-R6.

[13] See responses to DR Nos. 41 and 42, attached to my testimony as Schedules RSM-R7 and RSM-R8. Surprisingly, Noranda produced just one document in response to these requests. I say "surprisingly" because my experience is that companies have more regular communications with analysts and credit rating agencies.

A. CRU forecasts in Q1 2014 and Q4 2014 **[redacted]**. The CRU forecast has, however, **[redacted]** than it was at the time Case 0224 was filed, as shown below in Figure 2.

Q. How does Mr. Boyles' forecast for Case A2 relate to the CRU forecasts referenced above?

A. Meanwhile, Mr. Boyles' aluminum price forecast for Case A2 (the sum of LME and MWP) is also shown in Figure 2. As noted by Dr. Humphreys, Mr. Boyles' forecast departs radically from the CRU forecast in adopting a specific shape based on a select historic 10-year period in a manner unsupported by logic or industry practice. In addition, the portion of Mr. Boyles' assumed aluminum price path that actually affects the Seven-Year Period over which earnings, cash flow and liquidity are measured (2016 – 2021) is deeply discounted.[14]

Figure 2 – CRU vs. Boyles Aluminum Price Forecasts (nominal $/ lb)

[14] In 2015, shown for reference, Mr. Boyles adopts the CRU forecast, as noted in his testimony.

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1 **Q. Have you examined what the outcome of Mr. Boyles' analysis would have been**
2 **had he incorporated the current CRU forecast for aluminum prices in his**
3 **calculations?**
4 A. Yes. Based on the Enterprise Model provided by Mr. Boyles I have substituted the
5 CRU forecast prices in lieu of those developed by Mr. Boyles for 2016 – 2021 as
6 described above. The results of making that change are summarized below in Table
7 3:

Table 3 – Noranda Enterprise Model: Based on CRU Aluminum Price Forecast as of Q3 2014, No Power Rate Reduction *($ Millions)*

**

[redacted]

**

As shown above in Table 3, incorporating CRU aluminum prices results in liquidity at or above **[redacted]** million in all years after 2015, and reaching approximately **[redacted]** million in 2021. I would note that this is true even if one accepts all of the other assumptions in Case A2 from the Enterprise Model Mr. Boyles used (including assumptions about capital expenditures that Noranda has still not identified or justified, as discussed further below).

For reference, a more direct comparison between Mr. Boyles' Cases A2 and B2, on the one hand, and Mr. Boyles' Enterprise Model incorporating CRU aluminum prices on the other, is provided below in Table 4, summarizing the scenarios over the Seven-Year Period 2015-2021:

Table 4 – Noranda Liquidity Derivation: Comparative Scenarios over Seven-Year Period 2015 – 2021 ***($ Millions)***

**

[redacted]

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The scenarios from the Boyles Testimony are shown in columns 1 and 2, above, with differences between them reflecting the **[redacted]** million net impact of lowering the Power Rate over the Seven-Year Period. Incorporating the CRU aluminum price assumptions, shown in column 3, yields much more robust cash flows, as well as somewhat greater borrowing capacity. This results in increased liquidity of

[redacted] million relative to the Boyles' Case A2, without any contribution from a Power Rate Reduction.[15]

Q. Based on the above, is Mr. Boyles' testimony any more persuasive than Mr. Smith's in Case 0224?

A. No. This is shown by Column 3 in the table above, which demonstrates that conforming Mr. Boyles' modeling to incorporate CRU aluminum pricing (the convention adopted by Noranda in its presentation to Moody's last year), but otherwise preserving all of Mr. Boyles' forecast assumptions, *Noranda could operate with no reduction in electricity costs and still maintain strong liquidity.* Note that the earnings, cash flow, and liquidity outcomes underlying Column 3 (as detailed in Table 3), are far more favorable than the case cited as acceptable by Mr. Boyles (Case B2).

Q. Why is it reasonable to forecast earnings, cash flows, and liquidity based on CRU forecast aluminum prices?

A. One reason, as noted above and in my testimony for Case 0224, is that Noranda has found it appropriate to rely on CRU forecasts in its communications with key audiences such as Moody's in the past. Mr. Boyles' approach represents an unexplained departure from prior practice.

[15] With liquidity at these levels Noranda should be able to use available cash to begin addressing its highly-leveraged capital structure, which would lower annual interest expense and otherwise strengthen its balance sheet. This would also put it in a position for borrowings in the future if it did experience future periods of aluminum price drops so that it could weather such periods.

More conclusively, however, Dr. Humphreys, a veteran economist with many years of relevant experience in the aluminum industry, has found that Mr. Boyles' approach to forecasting aluminum prices is flawed and arbitrary. Dr. Humphreys' key finding is that for purposes of forecasting probabilistically expected aluminum prices, there is no rationale or industry precedent for deviating from CRU's forecast methodology or outcome. As Dr. Humphreys points out, at most, Noranda's approach could be called a worst-case scenario, but it most certainly is not a reasonable expected case.

Q. Are there other aspects of Mr. Boyles' analysis that trouble you?

Yes. Mr. Boyles continues to make assumptions for future capital expenditures similar to Mr. Smith's. As I noted in my testimony in Case 0224, these assumptions depart from historical patterns, have not been featured in Noranda communication to external audiences, and remain in significant part unsubstantiated.

In particular, approximately **[redacted]** million in growth capital remains unspecified, with no discernible impact on production (unlike the rod mill, which clearly changes the Smelter's product mix in the Enterprise model), and remote in time (years 2019-2021). When the same issue arose in Case 0224 and when asked by Ameren Missouri in that case to list and describe its planned capital projects, Noranda responded that it looks only at a detailed listing of capital projects "for the current plan year."[16] Noranda also told Ameren Missouri that it was developing a 5-

[16] Noranda Response to DR No. 3-15, Case 0224.

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year capital expenditure plan, and expected to complete it by year end 2014.[17] In this case, Ameren Missouri again asked Noranda for its planned capital expenditures for the next five years. Noranda responded with specific plans for 2015 only.[18] Beyond that, Noranda has provided as a "workpaper" for the Boyles Testimony a "hopper" of projects, but the hopper lacks specifics and despite numerous requests Noranda has provided no financial justification for those projects.

As shown in Table 5 below, the net (after tax) impact of excluding the **[redacted]** million of "Unnamed Capex" would be to increase liquidity by **[redacted]** million.

[17] See the May 20, 2014 Strategic Planning Phase 1 presentation provided in Case 0224
[18] Noranda response to DR No. 1.10.

Table 5 – Noranda Liquidity Derivation: Comparative Scenarios over Seven-Year Period 2015 – 2021, Including Case Excluding Unnamed Capex *($ Millions)*

**

[redacted]

**

Otherwise, it is noteworthy that Noranda has waited until this time to specify its claims about "catch-up" sustaining capital. This represents a large capital outlay in the Enterprise Model–**[redacted]** million. Mr. Boyles argues in his testimony that deferrals of sustaining Capex justify the catch-up spending. However, notwithstanding general references to such deferrals in discovery responses, there is no analytical support for this assertion in Mr. Boyles' workpapers. Sustaining Capex

achieved target levels, at **[redacted]** million, in 2013, and fell at most **[redacted]** million below target in 2014. Clearly Noranda's claim of **[redacted]** million of "catch-up" requires more substantiation

IV. THE CONCERNS OF DR. SCHWARTZ AND MR. HARRIS ABOUT NORANDA'S FUTURE VIABILITY ARE WHOLLY PREMISED ON MR. BOYLES' FORECAST OF ALUMINUM PRICES

Q. Please summarize the principal conclusions of Dr. Schwartz's testimony.

A. Dr. Schwartz reviews Noranda's recent financial history and current forecasts, the latter in the form of the Enterprise Model developed by Mr. Boyles. Under the assumptions posited by Mr. Boyles, Dr. Schwartz concludes that, absent a Power Rate Reduction, Noranda **[redacted]**[19]

Q. How does Dr. Schwartz characterize Noranda's Enterprise Model underlying Mr. Boyles' testimony?

A. Dr. Schwartz states that he examined the Enterprise Model closely and concludes that "the model is economically reasonable and fairly presents the potential scenarios *that Noranda believes* are most likely to occur."[20] (emphasis added). Notably, Dr. Schwartz does not endorse or validate the scenarios as ones that are likely to

[19] Schwartz Testimony, page 19.
[20] Schwartz Testimony, page 16.

occur, but simply observes that Noranda *believes* they will. His observations about what Noranda believes of necessity must come from what Noranda told him.

Q Other than electricity rates, the sole variable differentiating the scenarios modeled by Mr. Boyles was aluminum prices. Did Dr. Schwartz perform an independent review of the aluminum price scenarios modeled by Mr. Boyles?

A. No. As explained by Dr. Schwartz, his analysis was based entirely on aluminum price assumptions formed by Noranda. As alternatives to Noranda's Base Case, derived from an historic volatility period starting in 1999, Dr. Schwartz limited his consideration of alternative aluminum price scenarios to the Noranda cases based on adjacent volatility periods, starting in 1998 and 2000. While Dr. Schwartz takes comfort that financial outcomes are similar under all the Noranda aluminum price scenarios and therefore his "conclusions are robust", that outcome is attributable to the extremely narrow range of aluminum price assumptions supplied by Noranda for Dr. Schwartz's review, as observed by Dr. Humphreys. Put another way, all Dr. Schwartz really says is that Noranda's Enterprise Model appears to work properly, appears to include the ability to model the right inputs and assumptions and appears to then produce the right results based on those assumptions. However, that tells us nothing about the reasonableness of the inputs to the model, which were entirely decided by Noranda.

Q. Does Dr. Schwartz provide evidence or analysis suggesting that lenders or equity investors could reasonably be expected to assume Mr. Boyles' aluminum

price scenarios as a likely outcome in their independent assessment of Noranda?

A. No. Dr. Schwartz asserts only that Noranda would have trouble raising new financing based on the earnings, cash flows, and liquidity that would result *assuming that Mr. Boyles' aluminum price scenarios actually occurred.* There is no basis to assume that investors would undertake such a flawed and unsupportable analysis, and Dr. Schwartz doesn't testify otherwise.

Dr. Schwartz does cite a recent Standard and Poor's Report on Noranda: "Noranda Aluminum Holding Corp. Rating Lowered to 'B-' from 'B'; Outlook is Stable" (the "S&P Report"). While cautionary as to potential volatility, the S&P Report reflects nothing as draconian as the Boyles' assumptions. Instead S&P bases its analysis on LME spot pricing in line with CRU over the next 2 years (**[redacted]** and **[redacted]** per pound in 2015 and 2016), and notes that "[t]he rating outlook is stable, reflecting our expectation that Nornada's adjusted leverage will decline…largely as a result of substantial EBITDA growth propelled by higher aluminum prices."[21]

Q. Does Dr. Schwartz address the possibility that lenders and equity investors could instead reasonably be expected to view Mr. Boyles' aluminum price outlook as a "worst-case scenario" to be managed by hedging, as discussed in Dr. Humphreys' testimony?

A. No. In fact, Dr. Schwartz allows the impression that lenders and equity investors would view Mr. Boyles' aluminum price forecasts as *expected* outcomes, and does

[21] S&P Report, page 2.

not address hedging. As Dr. Humphreys testifies, Mr. Boyles' forecasts do not reflect reasonable, expected cases.

Q. If lenders and equity investors did in reality routinely apply analysis similar to Mr. Boyles' aluminum price forecast (i.e. treating a worst-case scenario based on historic volatility as an expected outcome), does Dr. Schwartz address how Noranda has been able to attract capital at other points in its history, such as the leveraged buy-out ("LBO") in 2007 and the initial public offering ("IPO") in 2010?

A. No.

Q. Does Dr. Schwartz conduct any other analysis, apart from commenting on Noranda's recent history, on Mr. Boyles' constructed scenarios?

A. No.

Q. What earnings, cash flow, and liquidity criteria does Dr. Schwartz cite as necessary to make Noranda a viable entity capable of raising financing?

A. Dr. Schwartz does not undertake to specify threshold criteria for viability (such as the ****[redacted]**** million in liquidity cited by Messrs. Smith and Boyles). However, Dr. Schwartz does refer to Mr. Boyles' Case B2 as representing viable cash flows and liquidity, and thus presenting "a plausible financial case for a lender."[22]

[22] Schwartz Testimony, pages 22-23.

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Q. How might Dr. Schwartz have characterized Noranda's financing prospects and viability if Noranda had provided him with a financial model incorporating CRU forecast aluminum pricing, as shown in Table 3 above?

A. In that circumstance it is reasonable to expect that Dr. Schwartz would view Noranda's financing prospects and viability in positive terms. I base that conclusion on the fact that Dr. Schwartz has already characterized the much less favorable results depicted in Mr. Boyles' Case B2 (shown in Table 2, above, reflecting a Power Rate Reduction) as a plausible financial case for a lender.

Q. Please summarize the principal conclusions of Mr. Harris' testimony.

A. Mr. Harris relates the testimony of Mr. Boyles and Dr. Schwartz to Mr. Harris' knowledge of bank underwriting criteria to assess the likelihood that Noranda will be in a position to refinance its debt facilities in 2017 and 2019. Like Dr. Schwartz, Mr. Harris relies entirely on Mr. Boyles' "financial curves for primary aluminum prices and corresponding financial models" to arrive at his conclusion that Noranda requires rate relief.[23]

Q. Did Mr. Harris perform an independent review of the aluminum price scenarios modeled by Mr. Boyles?

A. No.

[23] Harris Testimony, page 3.

Q. Did Mr. Harris provide evidence or analysis suggesting that lenders or equity investors could reasonably be expected to assume Mr. Boyles' aluminum price scenarios as a likely outcome in their independent assessment of Noranda?

A. No. Like Dr. Schwartz, Mr. Harris asserts only that Noranda would have trouble raising new financing based on the earnings, cash flows, and liquidity that would result *assuming that Mr. Boyles' aluminum price scenarios actually occurred*

Q. What earnings, cash flow, and liquidity criteria does Mr. Harris cite as necessary to make Noranda a viable entity capable of raising financing?

A. Like Dr. Schwartz, Mr. Harris is vague on threshold financial metrics for Noranda's viability. However, again like Dr. Schwartz, Mr. Harris states that, under Mr. Boyles' Case B2, "I would expect Noranda would likely be able to refinance its ABL and other indebtedness as well as obtain financing for its important projects in the future."

Notably, Mr. Harris refers as well to Noranda's "leverage ratio", or debt as a multiple of EBITDA.[24] As Mr. Harris observes, the leverage ratio and variations thereof are widely used and form "a key measure of creditworthiness and financial health."[25] (A *low* leverage ratio indicates strong creditworthiness and vice versa.) Mr. Harris observes that under Mr. Boyles' Case B2, the leverage ratio would fit into a financeable range below 5.0x.[26]

[24] Harris Testimony, page 5.
[25] Harris Testimony, page 5.
[26] Harris Testimony, page 8.

Mr. Harris also cites additional standard metrics, such as EBITDA coverage of interest. (*High* EBITDA to interest expense coverage indicates strong creditworthiness and vice versa.)

Q. How might Mr. Harris have characterized Noranda's financing prospects and viability if Noranda had provided him with a financial model incorporating CRU forecast aluminum pricing, as shown in Table 3 above?

A. In that circumstance it is reasonable to expect that Mr. Harris would view Noranda's financing prospects and viability in positive terms. I base that conclusion on a comparison of key financial metrics calculated by Mr. Boyles' under his Case B2 (shown in Table 2, above, reflecting a Power Rate Reduction) and those obtainable under the same formulas in a scenario incorporating CRU forecast aluminum pricing (as shown in Table 3).

In the Enterprise Model, Mr. Boyles calculates credit metrics corresponding to those cited by Mr. Harris (see also page 1 of Exhibits A1-A3 and B1-B3 of the Boyles Testimony):

- Net total debt to Segment Profit – a variation on the leverage ratio cited by Mr. Harris, and
- EBITDA to interest expense coverage

The resulting credit metrics from Tables 2 and 3 are reproduced below in Table 6:

Table 6: Comparative Credit Metrics

From Table 2 - Case B2: 1999 Historical Volatility Curve, Power Rate Reduced to $32.50/ MWh

**

[redacted]

**

From Table 3 - Noranda Enterprise Model: Based on CRU Aluminum Price Forecast as of Q3 2014, No Power Rate Reduction

**

[redacted]

**

As indicated above, the credit metrics are significantly more favorable assuming CRU forecast aluminum prices (from Table 3) than a Power Rate Reduction (from Table 2): Net total debt to Segment Profit is generally *lower*, and EBITDA to interest expense coverage is generally *higher*.

V. MR. FAYNE'S FOCUS ON COMPARATIVE ELECTRICITY COSTS CONTINUES TO USE DATA SELECTIVELY AND IS THEREFORE MISLEADING

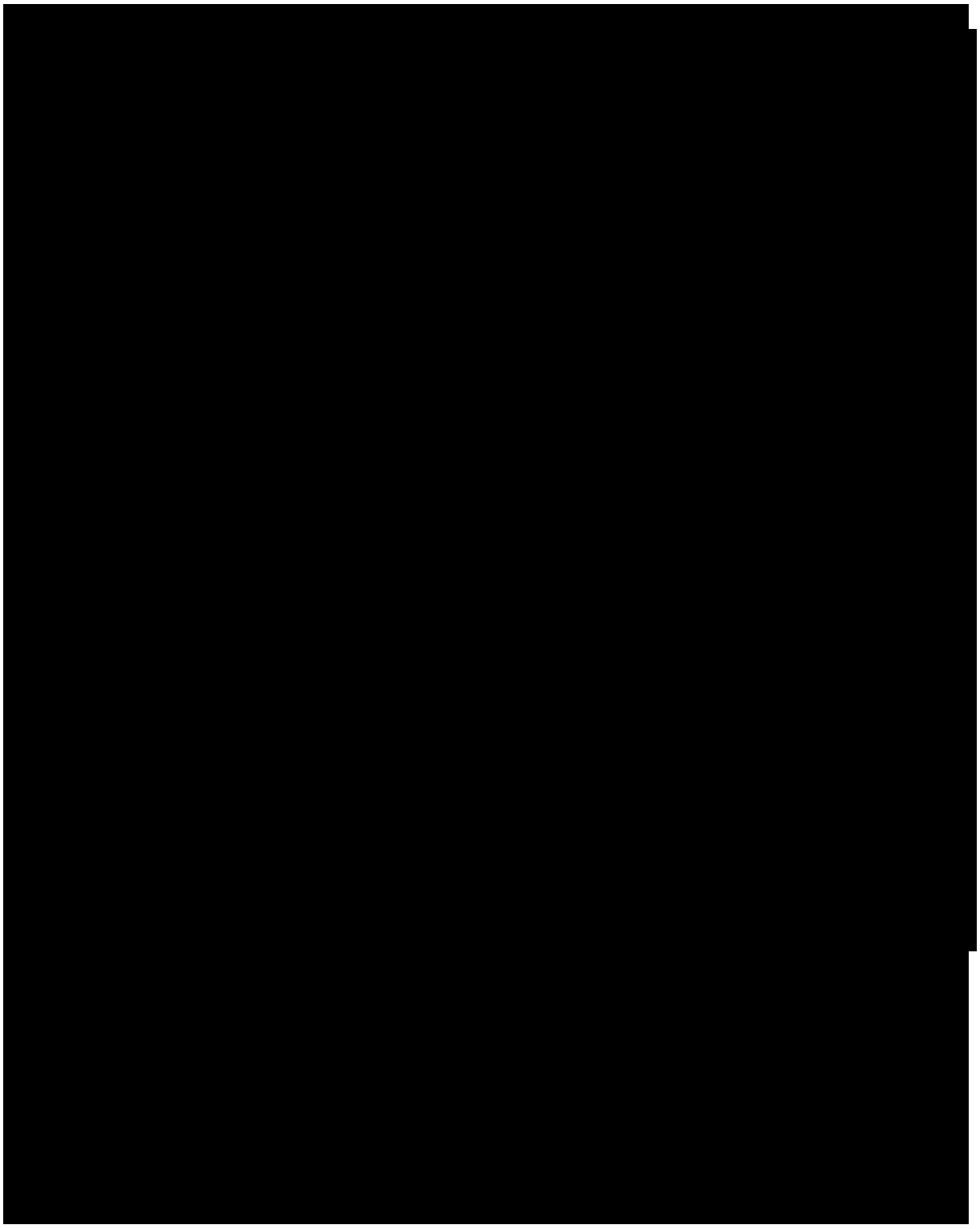
Q. Please summarize Mr. Fayne's assertions about comparative Power Rates.

A. The Fayne Testimony is centered on Exhibit HWF-1, which is reproduced below in Figure 3.

NP

Figure 3 – Reproduction of Exhibit HWF-1

**



**

Exhibit HWF-1 shows projected electricity costs in 2014 for the nine U.S. smelters operating in that year, including the smelter at New Madrid. The Fayne Testimony refers to Exhibit HWF-1 to assert the following:

> "[T]he electricity rate for the New Madrid Smelter is $42.5/MWh, which represents the second highest electricity rate among U.S. smelters for 2014, and a rate that is more than 39% higher than the average rate paid by non-U.S. smelters, excluding China. At the rate requested in this proceeding, New Madrid would be higher than the rate charged to the Massena smelter and would continue to be above the global average."

The implication of this is that the New Madrid Smelter has a high cost relative to other U.S smelters and to smelters in the rest of the world. Mr. Fayne asserts about New Madrid that "[i]f its costs are high relative to other producers, its continued viability is at risk…".[27]

Exhibit HWF-1 is similar, though not identical, to Exhibit HWF-1 provided in Direct Testimony Mr. Fayne filed in Case 0224. For the current proceeding, Mr. Fayne has updated Exhibit HWF-1 based on new CRU data. One key difference is the power rates reported by CRU for the Massena smelters. Previously CRU reported the power rates as **[redacted]**/MWh and **[redacted]**/MWh for Massena West and East respectively.[28] The more recent CRU data indicates that the smelters experienced large increases in power rates to **[redacted]**/MWh and **[redacted]**/MWh.

[27] Fayne Testimony, page 4.
[28] See Exhibit HWF-1 of Direct Testimony of Henry Fayne, File No. EC-2014-0224.

NP

Furthermore, in Case 0224, Mr. Fayne compared Noranda's requested power rate to that of other U.S. smelters in the "Pro forma" version of his exhibit. A similar comparison is absent from the current version of Exhibit HWF-1.

Q. Does Mr. Fayne definitively assert a connection between electricity costs and the economic viability of the New Madrid smelter?

A. No. As indicated above, Mr. Fayne simply allows the impression to exist. In this way, Mr. Fayne again implicitly concedes that a comparison of electricity costs in isolation is incomplete and does not demonstrate the relevant point in determining the likely future success of the New Madrid smelter, which does not depend solely on electricity costs.

Q. Is the above implication of the Fayne Testimony, that New Madrid is non-competitive because of excessive electricity costs, supported by the data highlighted in the Fayne Testimony?

A. No. The exclusive focus is on comparative electricity costs. Mr. Fayne does not attempt to make a comparison of production costs between New Madrid and the rest of the industry. Furthermore, the Fayne Testimony 1) highlights data selectively and 2) is presented out of context, and is hence misleading.

Q. How is data highlighted selectively?

A. The Fayne Testimony is opportunistic in characterizing New Madrid's electricity costs in rank order vs. the average cost of other smelters. For example, in the 2014 data in Exhibit HWF-1, the Fayne Testimony highlights New Madrid's electricity costs as the second most expensive of the nine U.S. smelters. However, as in Case

0224, the Fayne Testimony does not highlight that New Madrid's electricity was only somewhat more expensive than the U.S. average in 2014, by approximately **[redacted]**/ MWh or **[redacted]**.[29] While this is a greater premium to the U.S. average than reported by Mr. Fayne for 2013 in Case 0224 (**[redacted]**), this is in part because the U.S. average for 2014 incorporates significantly lower prices for the Seebree and Hawesville smelters than the 2013 average. Unlike 2013, these lower prices are based on market electricity purchases and come with greater risk than terms obtainable under long term contracts, as further discussed below.[30] They are therefore inappropriate benchmarks for assessing New Madrid's competitive posture.

Meanwhile, the requested $34/MWh rate appears to represent a more modest discount than that sought in Case 0224.[31] Mr. Boyles notes that the proposed rate is "better than no rate relief".[32] However, the adaptation of Exhibit HWF-1 in Table 7 below shows that the requested rate reduction would give New Madrid the second cheapest electricity rate among U.S. smelters and put New Madrid **[redacted]** below

[29] See Figure 3, above. Importantly, greater electricity costs at New Madrid are vastly outweighed by other economies such that overall costs at New Madrid are approximately **[redacted]**/ ton below the U.S. average, or 6.40% below the average, *even with* higher electricity costs, per Figure 4 below.

[30] The owner of Sebree and Hawesville, Century Aluminum, noted the following in its 10-Q filing date 11/5/14: "Hawesville and Sebree have market-based electrical power agreements…We are exposed to market price risk due to fluctuations in the price of power available on the MISO market."

[31] Includes the $1.50/MWh wheeling fee.

[32] Boyles Testimony, page 27.

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the U.S. average.[33] If Noranda's request is granted **[redacted]** will be the only currently operating smelter in the U.S. with cheaper power.[34]

Table 7 – Adaptation of Exhibit HWF-1

**

[redacted]

**

Q. Even if depicted accurately, is a comparison of electricity costs in isolation like Exhibit HWF-1 a definitive indicator of smelter viability?

A. No. The impact of electricity costs on smelter viability can only be meaningfully assessed in the context of all cost and risk factors. These fall into at least the following two categories: 1) additional costs and risks that are embedded in other

[33] Fayne Testimony page 3.

[34] The Massena West smelter has such cheap power because, as noted in CRU publications, it receives power sourced from a hydroelectric facility owned by a public power authority. Given the very low variable cost of generating hydro power, this public power authority is in a position to offer rates power to Massena West well below the level Ameren could ever be expected to offer New Madrid.

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smelter electricity supply arrangements, and 2) total costs of production, including major cost drivers such as alumina and labor, as well as cost offsets resulting from value-added premia.

Q. Is there evidence of additional costs and risks embedded in other smelter electricity supply arrangements?

A. Yes. Each U.S. smelter has a unique power agreement and most of the smelters have agreed to, or have potentially exposed themselves to, additional costs or risks in exchange for lower rates instead of simply obtaining an unconditional supply of lower cost power as Noranda requests here. I noted these in my testimony for Case 0224, as follows:

- *Investment commitments:* For the Massena and Ferndale smelters, Alcoa has agreed to make capital improvements of $600 million and $35 million respectively. By contrast, Noranda has made no commitments even if it were to receive the lower electricity rate requested in this case

- *Employment commitments:* Alcoa agreed to maintain 750 employees at Massena and to maintain employment at Ferndale (in proportion to electricity consumed). Again, Noranda has made no such commitments.

- *Closure penalties:* For the Wenatchee smelter, Alcoa signed an agreement in which it agreed to pay an $89 million capacity reservation charge, but over $66 million of that charge was deferred as long as the smelter continues to operate.[35] This in effect created a large penalty for closing the smelter in exchange for a lower Power Rate.

[35] Chelan County PUD News Release, "Alcoa Power Sales Contract Signed," July 14, 2008.

- *Market risk:* Three smelters are exposed to market electricity risk: Hawesville and Sebree recently won approval to terminate their contract with Big Rivers Electric Corporation and source power from the wholesale market, while Warrick self-supplies power through a coal-fired generation unit, with potential contingent exposure to the market. Thus, Hawesville, Sebree and Warrick cannot properly be characterized as "having" the rates Mr. Fayne cites because these market risks could significantly raise those rates. Since they have elected to source power from the wholesale market, the Hawesville and Sebree smelters are now exposed to the risk of price fluctuations in that market. Similarly, Warrick may be significantly threatened in the form of tightening environmental regulation affecting coal resources, as well as plant outages when market electricity must be purchased.

While the Fayne Testimony alludes to these conditions, they are not used to qualify the data in Exhibit HWF-1 or conclusions based on that data. Consequently, it is misleading to make claims about the relative ranking of the New Madrid smelter's electricity costs to the other U.S. smelters as if they all have fixed electricity prices when some of those prices are not fixed and where, in some cases, the smelters were required to make other commitments or expose themselves to other financial risks in order to gain modifications to their previous electric supply arrangements.

Q. Has Noranda proposed to undertake any investments or to guarantee a particular level of employment in exchange for their requested rate reduction in this case?

A. Such commitments are not reflected in Noranda's testimony. To my knowledge they have not made any such guarantees in exchange for their requested rate reduction in this case.

Q. What about total costs?

A. While electricity makes up a large portion of total costs for all aluminum smelters, there are many other significant cost components which can also vary greatly across facilities and affect overall viability. The Fayne Testimony itself makes this point: "[t]he cost of production will vary among smelters based on the cost of goods and services as well as the configuration of the plant."[36]

Q. Have you reviewed total cost data for New Madrid and other smelters?

A. Yes. Just as I had done in Case 0224, I consulted an updated report from the same source cited in the Fayne Testimony, CRU.[37] I compiled data provided by CRU on the balance of production costs (i.e. non-electricity) for each smelter in the U.S., as well as related parameters such as efficiency, and then integrated that data with the electricity costs cited in Exhibit HWF-1 of the Fayne Testimony to produce total costs on a dollar per ton basis.

[36] Fayne Testimony, page 3.

[37] CRU is an independent business analysis and consultancy group which concentrates solely on mining, metals and fertilizers. They provide data, business intelligence, and consulting services to clients in various industries. The aluminum industry is one of the key industries followed by CRU, and they collect data on the costs and productions processes of all smelters around the world. As Mr. Fayne states on page 3 of his direct testimony, they are "generally used in the industry as a source of such data." They provide data on the total cost of production expressed as $/ton. In Case 0224, Mr. Smith acknowledged that CRU is a reliable provider of industry data, and that they are "thoughtful" and "well regarded in the industry". Case 0224 Tr. p. 274, l. 21 to p. 275, l. 3.

The results are shown graphically below in Figure 4. Note that New Madrid is shown twice: on the basis of its requested cost of electricity, as well as based on its current power cost as given in Fayne's Exhibit HWF-1.

Figure 4 – U.S. Smelters – 2014 Total Costs

**

**

I draw the following conclusions from Figure 4:

- At current electricity rates, New Madrid already operates at the lowest total cost among U.S. smelters. This represents a significant change from the production costs reported in the Direct Testimony I

filed in Case 0224. At that time CRU data and the power rates reported in Mr. Fayne's "Pro forma" Exhibit HWF-1 indicated that New Madrid had the third cheapest production cost among U.S. smelters. The relative improvement in production cost experienced by New Madrid has been driven by increased labor and power costs at Massena West, as well as lower labor costs at New Madrid.

- If Noranda were granted the electricity rate it has requested in this proceeding, New Madrid would reduce its total costs an additional $134/ton, giving it total production costs almost 15% less than the U.S. average.

Q. What contributes to New Madrid's current cost advantage relative to other U.S. smelters?

A. According to the CRU data, the New Madrid smelter continues to benefit from the cheapest alumina supply in the nation. The CRU data also shows that **[redacted]** This effective offset to costs is shown in Figure 4 in the "Other" category.[38] Also, in 2014, New Madrid benefitted from labor costs **[redacted]** below the U.S. average.

Q. What does total cost data say about smelters that have retired?

A. As discussed in the Fayne Testimony, many smelters in the U.S. have closed in recent years. Mr. Fayne attributes that solely to electricity costs, but as I discuss below, this conclusion is not supported by cost data reported by CRU for recently

[38] Other costs shown in Figure 4 are an aggregation of several smaller cost categories reported in the CRU data. Importantly, CRU nets out from these costs the locational and value-added premiums received by each smelter. This netting in the derivation of total costs is maintained for purposes of comparability across the U.S. smelters.

closed smelters and therefore appears to be misleading. Instead, the CRU data shows that the closed smelters had overall cost disadvantages that significantly outweighed electricity cost handicaps.

In the course of Case 0224, I reviewed total costs for six smelters which had recently shut down in the U.S. These are the smelters in Rockdale, TX, Columbia Falls, WY, Alcoa, TN, Ravenswood, WV, Hannibal, OH, and Massena, NY (Massena East). These smelters have all closed down operations within the last six years.

For each of the above listed smelters I compared the total cost data provided by CRU for the last year of operation with the total costs for the currently operating smelters. Figure 5 reproduces this comparison in 2014 dollars.[39]

Figure 5 – Total Costs at Recently Closed Smelters

[39] I have adjusted historic data using the GDP deflator.

**

**

1 As shown in Figure 5, all of the six recently closed smelters had higher *total* costs
2 than any currently operating smelters, though not necessarily higher electricity costs.
3 Thus it remains difficult to understand how Mr. Fayne can continue to claim that the
4 reason the smelters shut down was due to high electricity costs, and high electricity
5 costs alone.

6 **Q. What does Noranda itself say about its cost competitiveness to key**
7 **constituencies?**

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Noranda acknowledges and draws attention to its favorable overall cost position in communications with key constituencies. In a recent example, Noranda provided a "Aluminum Smelter Business Costs Curve for 2014", based on CRU analysis, as part of a briefing for the rating agency Standard & Poor's in October 2014. The curve, reproduced below in Figure 6, puts New Madrid in the second lowest quartile on a cost basis relative to its global competitors.

Figure 6 - Aluminum Smelter Business Costs Curve for 2014[40]

**

[40] From: 3rd Quarter 2014 Preview – S&P, October 7, 2014.

VI. CONCLUSION

Q. Please summarize your response to Mr. Boyles' Testimony

A. Mr. Boyles introduces an unsubstantiated approach to forecasting aluminum prices not to my knowledge previously articulated by Noranda or used in Noranda's internal planning processes or by others in the industry. Ameren Missouri witness Dr. David Humphreys points out the logical and methodological flaws in Mr. Boyles' approach, explains that it is therefore not consistent with conventional industry practice, and explains why it does not reflect a reasonable expected case that should be used to model future revenues from aluminum sales.

I show that Mr. Boyles' unsupported approach results in a gross exaggeration of Noranda's financial challenges over the period he models cash flows (2015 – 2021). In contrast, the effect of adopting Mr. Humphreys' recommended approach to forecasting aluminum prices (essentially, using the published forecast of Noranda's own consultant, CRU) results in cumulative liquidity hundreds of millions of dollars in excess of that shown in the Boyles Testimony, without any need for a Power Rate Reduction.

Q. Please summarize your response to the testimony of Dr. Schwartz and Mr. Harris.

A. The conclusions of Dr. Schwartz and Mr. Harris about Noranda's future viability are almost entirely derivative of Mr. Boyles' assumptions about aluminum prices.

Neither Dr. Schwartz nor Mr. Harris conduct an independent assessment of Mr. Boyles' aluminum price assumptions or refer to such an assessment conducted by a third party.

In light of Dr. Humphreys' assessment, neither Dr. Schwartz nor Mr. Harris provide evidence or analysis suggesting that lenders or equity investors conducting an independent assessment could reasonably be expected to assume Mr. Boyles' aluminum price scenarios as an expected outcome, nor do Dr. Schwartz or Mr. Harris address the possibility that lenders and equity investors could instead reasonably be expected to view Mr. Boyles' aluminum price outlook as a "worst-case scenario" that could be managed by hedging.

Q. Please summarize your response to the Fayne Testimony.

A. As in Case 02224, Mr. Fayne's focus on electricity costs in isolation again presents data selectively and is hence misleading. Most importantly, the Fayne Testimony continues to disregard New Madrid's competitiveness on the basis of overall costs, as opposed to electricity costs in isolation. Meanwhile, updated CRU data shows that Noranda's comparative cost position in the U.S. aluminum industry has improved since Case 0224. I show that, per data reported by CRU, New Madrid now enjoys the lowest costs of overall production in the U.S. and that relevant data does not support the conclusion that Noranda must have a much lower Power Rate to be competitive.

Q. Does this conclude your testimony?

A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service.	)))	Case No. ER-2014-0258

AFFIDAVIT OF ROBERT S. MUDGE

STATE OF MISSOURI)
) **ss**
CITY OF ST. LOUIS)

Robert S. Mudge, being first duly sworn on his oath, states:

1. My name is Robert S. Mudge. I work in the City of Washington, D.C., and I am Chief Operating Officer of The Brattle Group.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 46 pages, and Schedule(s) RSM-R1 to RSM-R8, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Robert S. Mudge

Subscribed and sworn to before me this 14th day of January, 2015.

Notary Public

My commission expires: October 31, 2017

CHRISTINE MCCAFFREY
NOTARY PUBLIC
District of Columbia
My Commission Expires
October 31, 2017

CHRISTINE MCCAFFREY NOTARY PUBLIC DISTRICT OF COLUMBIA Exp. - 10/31/17

SCHEDULE RSM-R1

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

Exhibit No.:	
Issue(s):	Noranda Financial Position
Witness:	Robert S. Mudge
Sponsoring Party:	Union Electric Company
Type of Exhibit:	Rebuttal Testimony
Case No.:	EC-2014-0224
Date Testimony Prepared:	May 9, 2014

MISSOURI PUBLIC SERVICE COMMISSION

Case No. EC-2014-0224

REBUTTAL TESTIMONY

OF

ROBERT S. MUDGE

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a AMEREN MISSOURI

Washington, D.C.
May, 2014

NP

TABLE OF CONTENTS

I. INTRODUCTION 1

II. PURPOSE AND SUMMARY OF MY TESTIMONY 3

III. THE SMITH TESTIMONY OVERSTATES ANY LIQUIDITY ISSUES NORANDA MAY FACE 7

IV. HOW ADDITIONAL LIQUIDITY NEEDS, IF THEY DID EXIST, COULD BE ADDRESSED 33

V. MR. FAYNE'S FOCUS ON COMPARATIVE ELECTRICITY COSTS USES DATA SELECTIVELY AND IS THEREFORE MISLEADING 41

VI. CONCLUSION 52

REBUTTAL TESTIMONY

OF

ROBERT S. MUDGE

CASE NO. EC-2014-0224

I. INTRODUCTION

Q. Please state your name, position, business address, and the nature of your business.

A. My name is Robert S. Mudge. I am a Principal with *The Brattle Group, Inc.* My office address is 1850 M Street NW, Washington D.C. *The Brattle Group* is an economics and finance consulting firm with practice areas heavily focused on energy industry regulation and finance.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri").

Q. What is your professional and academic background?

A. I am currently a Principal and Chief Operating Officer of *The Brattle Group*, where I have worked since 2008. Prior to joining *The Brattle Group*, I was with another consulting firm, Charles River Associates, for 5 years. From 1989 to 2002, I was a banker at N.M. Rothschild, ABN AMRO, and Sanwa Bank focusing on energy project and corporate finance. I have an M.B.A. from the University of Chicago Graduate School of Business and a B.A. from Harvard College.

Q. Do you have experience with financial analysis?

A. Yes. I have advised energy clients on issues relating to asset valuation, acquisitions and divestitures, corporate restructuring, contract terminations or amendments, special capital needs, and bankruptcy. I have experience in analyzing contractual, regulatory, financing, and tax matters, and in estimating effects on cash flows, earnings, and end-user costs. With relevance to the matter at hand, I developed the financial model used to assess the impact of the $800 million "unwind" transaction concluded between Big Rivers Electric Corporation and E.On US in 2009, including lease termination, acquisition of generating assets, negotiation of power supply arrangements with aluminum smelters and other customers, and related financing arrangements. The model was used to support negotiation and secure regulatory approval, creditor consents, and to obtain an investment grade rating. I have assessed financial structuring, liquidity, and asset disposition issues (including closure) in separate litigation and arbitration settings for confidential clients. I have also provided business consulting services to a variety of institutions, including an investor-owned utility negotiating a transmission investment joint venture, independent power developers contemplating plant acquisitions and divestitures, and a pension fund manager assembling an energy project finance debt fund. As a banker, the bulk of my work was in connection with energy project financing as well as corporate mergers and acquisitions. I worked on numerous power project financings in the United States and abroad, as well as played a central role in developing financeable contract structures for large public/private infrastructure projects sponsored by the U.S. Department of Energy. Many of my consulting assignments have been related to project financing, including litigation cases where the cost and terms of structured

financings were at issue. In total, I have worked on more than 40 project finance-related engagements as a banker or consultant.

Q. Have you testified in other proceedings?

A. Yes. I have provided expert testimony in proceedings before the Federal Energy Regulatory Commission, utility regulatory commissions in Kentucky, Michigan, and Alberta, the United States Tax Court, the Massachusetts Superior Court, and the Maine Board of Environmental Protection, as well as in connection with arbitration proceedings.

II. PURPOSE AND SUMMARY OF MY TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to respond to the direct testimony provided on behalf of Noranda Aluminum, Inc. by Kip Smith, and by Henry Fayne. I also respond to the affidavit of Kip Smith submitted subsequent to his direct testimony.

Q. Please summarize the contentions you address.

A. Mr. Smith's Testimony (the "Smith Testimony") asserts that, without a reduction in the rates at which Noranda purchases electricity for its New Madrid aluminum smelter in Southeast Missouri (the "Power Rates"), "the New Madrid Smelter would have insufficient liquidity and be subject to closure **[redacted]**, resulting in the loss of all jobs at the smelter."[1] Mr. Smith's follow-up affidavit adds the assertion that

[1] Smith Testimony, p. 6.

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"Noranda's financial performance and outlook has continued to deteriorate"[2] since Mr. Smith's direct testimony, reports on the credit downgrade for Noranda issued by Moody's in March 2014, and reemphasizes the urgency of Noranda's request for reduced Power Rates. Separately, Mr. Fayne (the "Fayne Testimony") creates the impression that the New Madrid smelter is uncompetitive at current Power Rates and that Noranda's requested Power Rates are needed to put New Madrid "near the middle of the U.S. smelters".[3]

Q. "Liquidity" is an important term in this case because of Noranda's focus on it in the Smith Testimony. Before you respond to Messrs. Smith's and Fayne's assertions, please explain how Mr. Smith defines the term "liquidity".

A. The Smith Testimony defines "liquidity" as the sum of cash on hand plus borrowing capacity, in this case under a revolving credit facility. More details are provided in the discussion below.

Q. Please summarize your responses to Messrs. Smith's and Fayne's assertions.

A. My responses to these assertions are as follows:

- Mr. Smith's assertions about a near-term liquidity crisis are not reflected in the information Noranda has provided and is providing to investors and debt rating agencies. In my opinion, this significantly calls Mr. Smith's assertions into question, as one would expect a company like Noranda to provide to investors and credit rating agencies accurate information about material financial facts – here the

[2] Smith Affidavit, p. 1.

[3] Fayne Testimony, pp. 4-5.

claimed existence of an unavoidable, near-term liquidity crisis absent a substantial reduction in one of its largest costs.

- Mr. Smith supports his assertion about liquidity with reference to a cash flow forecast for the five-year period 2014 – 2018 (the "Five-Year Period"). I observe that the cash flow forecast in the Smith Testimony relies upon assumptions that are inconsistent with Noranda's own analysis developed contemporaneously for presentation to Moody's Investors Service (the "Moody's Presentation"), a point acknowledged by Noranda in its response to data requests.[4] Notably, the Moody's Presentation forecasts cumulative liquidity hundreds of millions of dollars in excess of those in the Smith Testimony. Equally important, I show that certain assumptions underlying the Smith Testimony (but not reflected in the Moody's Presentation) are internally inconsistent. I conclude by showing that a cash flow forecast using more realistic assumptions does not require reduced Power Rates to maintain adequate liquidity, as Mr. Smith himself defines it.

- Additionally, the Smith Testimony omits any consideration of raising additional debt or equity capital as a buffer against forecast or contingent liquidity needs. This ignores possibilities for project-specific financing such as Noranda is currently implementing for the rod mill project at New Madrid.

- As to equity, I show below that Noranda's 34% owner, the private equity firm Apollo Management, L.P. (collectively with affiliates, "Apollo"), has realized nearly $360 million in dividends and stock sale proceeds *in excess of* its initial investment in Noranda in 2007, as well as earning an additional $31 million in management fees. Indeed,

[4] Noranda response to Ameren Missouri data request 7.1. The referenced Moody's presentation (the "Moody's Presentation" is attached to this testimony as Schedule RSM-1.

Noranda's own management of its balance sheet (during the period since Apollo has been its controlling shareholder) is a significant factor in any liquidity challenges Noranda may face today. Had Apollo left more cash in the business, with less need for borrowing, Noranda would not be as highly-leveraged as it is today, would have lower debt costs, and would have greater liquidity. As a result, Apollo could contribute significant additional equity capital to Noranda today with little adverse impact on its already-realized and significant returns to date to help address perceived liquidity concerns.

- Mr. Smith's follow-up affidavit does not change the above conclusions. In particular, there is no information in the affidavit that changes Mr. Smith's liquidity analysis.

- Mr. Fayne's focus on electricity costs in isolation presents data selectively and is hence misleading.

- The Fayne Testimony is opportunistic in selectively characterizing New Madrid's electricity costs in rank order relative to the average cost of other smelters. This allows the impression that New Madrid has higher relative electricity costs than it does.

- The Fayne Testimony compares smelter electricity costs without qualification for differential risks and costs embedded in other smelters' power supply arrangements that are necessary to place the electricity costs in context. I observe that there is a wide diversity of such factors accompanying different smelter electricity costs, and hence that comparing electricity costs in isolation is an oversimplification.

- The Fayne Testimony does not consider New Madrid's competitiveness on the basis of overall costs, including alumina, labor, and other operations. I show that New Madrid is well below the U.S.

average on an overall cost basis and that relevant data does not support the conclusion that Noranda must have a much lower power rate to be competitive. I also show that, based on industry data, smelters that have closed recently in the U.S. have had significant cost disadvantages *unrelated* to electricity.

III. THE SMITH TESTIMONY OVERSTATES ANY LIQUIDITY ISSUES NORANDA MAY FACE

Q. Please summarize Mr. Smith's assertions about Noranda's liquidity requirements.

A. Mr. Smith states that Noranda needs liquidity of at least ** ** million for operations and ** ** million "to remain a competitive smelter."[5] Per Mr. Smith's calculations at the time of his direct testimony, Noranda liquidity stood at $177 million at year-end 2013.[6]

Mr. Smith also observes that "[m]arket conditions are creating short-term liquidity challenges throughout the aluminum industry."[7] In Noranda's case, Mr. Smith presents a cash flow forecast for the Five-Year Period 2014 – 2018 that depicts a result where Noranda's liquidity is below ** ** million by ** ** absent reduced electricity rates, even assuming cost reductions in other aspects of company operations. This is illustrated below in Table 1 using data from Exhibit A of the Smith

[5] Smith Testimony, p. 7. As noted previously, Noranda defines liquidity as the sum of cash on hand plus borrowing capacity. More specifically, liquidity is defined in both the Smith Testimony and the Moody's Presentation as cash plus amounts available for borrowing under Noranda's asset-based revolving credit facility ("ABL"), less letters of credit outstanding, and any reduction in availability under the ABL relating to a Fixed Charge Coverage Reserve Ratio ("FCCR Ratio") below 1.0x.

[6] This was the result of applying the formula in footnote 1: $79.4m + $151.7m - $34.6m -20.0m = $176.5m. Per subsequent Noranda investor presentations, the liquidity at year end 2013 was $196.5m (no FCCR deduction).

[7] Smith Testimony, p. 5.

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Testimony corresponding to the scenario "With Liquidity Actions, But No Power Rate Reduction":

Table 1 – Noranda Asserted Liquidity Derivation: With Liquidity Actions, But No Power Rate Reduction *($ Millions)*

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In this hypothetical scenario, with liquidity of ** [redacted] ** million at the end of 2015 (item C in Table 1), Mr. Smith asserts that "the New Madrid Smelter would have insufficient liquidity and be subject to closure ** [redacted] **, resulting in the loss of all jobs at the smelter."[8] The implication is that once liquidity drops below ** [redacted] **

[8] Smith Testimony, p. 6.

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million the smelter would be "subject to" closure, although Mr. Smith does not say that it would in fact close.[9]

The above and other scenarios shown in Exhibit A are based on calculations in an Excel financial model accompanying the Smith Testimony: "HC_Noranda Enterprise Model_01 30 2014.xlsx", (the "Enterprise Model").

Based on the above hypothetical scenario, Mr. Smith argues, Noranda must obtain rate relief under its electricity supply arrangements in order to "survive these short-term market conditions and to sustainably reinvest in the business."[10] The result of this scenario is illustrated below in Table 2 using data from Mr. Smith's Exhibit A corresponding to the scenario "With Liquidity Actions and $30 Power Rate":

[9] Ameren Missouri asked Noranda several data requests relating to the claim that the smelter was "subject to closure," including requests for documents that address, discuss, analyze or otherwise relate or pertain to the possibility of closure. I have attached Noranda's responses to my testimony as Schedule RSM-2 HC. I would note that Noranda produced no documents that describe a possible closure of the smelter in the circumstances presented in the Smith Testimony liquidity forecasts, nor do the documents Noranda pointed to in response to other data requests (most notably data request Nos. 1.1 and 1.5).

[10] Smith Testimony, p. 12.

Table 2 – Noranda Asserted Liquidity Derivation: With Liquidity Actions and $30 Power Rate
($ Millions)

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In this scenario, with liquidity greater than ** ** million in every year, Mr. Smith states that "Noranda has a sustainable future with this requested rate ('With Liquidity Actions and $30 Power Rate')."[11] Mr. Smith's testimony indicates that reduced electricity rates would contribute ** ** million in additional cash flow available for capital expenditures over the Five-Year Period, or an average of ** ** million per year.

[11] Smith Testimony, p. 12.

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Q. Are Mr. Smith's assertions about a near-term liquidity crisis in his testimony filed with the Commission consistent with the information Noranda has provided and is providing to investors and debt rating agencies?

A. No, they are not. I have thoroughly reviewed recent Noranda investor and rating agency presentations, and annual and quarterly filings with the Securities and Exchange Commission ("SEC"), (collectively, "Investor Communications").[12] Those documents, as well as documents provided with data request responses from Noranda in this case (also included in Schedule RSM-3 HC), suggest that the liquidity forecasts relied upon by Mr. Smith have not been used for any purpose other than in Noranda's efforts in this case to obtain a lower Power Rate.

Q. How does the Smith Testimony depart from information provided to investors and debt rating agencies?

A. The Smith Testimony paints a picture of an impending liquidity crisis—within Mr. Smith's definition of near-term, or 2 years[13]—that is absent from any Investor Communications or like documents. In particular, there are no suggestions that New Madrid might imminently be threatened by a cash shortfall.

To the contrary, recent Investor Communications convey a very different message. For example, Noranda's earnings presentation and conference call for Q1 2014, on

[12] Copies of the relevant Investor Communications are attached to this testimony as Schedule RSM-3 HC.

[13] Noranda response to Ameren Missouri data request 4.18.

February 19, 2014 emphasized as its final take away that Noranda has "a healthy balance sheet and a solid liquidity position". [14] The earnings call transcript elaborated:

> We ended the year with $79 million of cash combined with $117 million of availability under our ABL facility. We had $196 million of total liquidity at the end of the year. Our revolver was undrawn at year-end. We had no material funded debt maturities before 2019. We have no maintenance covenants under our credit facilities except for a requirement to maintain a minimum level of availability under the asset backed revolver to certain circumstances. We believe this flexible capital structure combined with our focus on managing controllable cost and working capital provides us with solid liquidity foundation as we work through the headwind presented by this portion of the commodity cycle.[15]

This data was corroborated in Noranda's 2013 Annual Report filed as form 10-K with the SEC on March 3, 2014.

The strong liquidity theme was echoed as recently as Noranda's earnings presentation and conference call for Q1 2014, on April 23, 2014, in which the company reported $191 million in liquidity (as Mr. Smith defines it as explained above). On that occasion, in response to an analyst question about expectations for liquidity at year-end 2014, Noranda Chief Financial Officer ("CFO") Dale Boyles responded: "I'm not seeing any material changes unless there's something that was unexpected."[16]

Separately, shortly prior to the earnings calls referenced above on January 30, 2014, Noranda had presented a confidential credit update to Moody's Investors' Service (the "Moody's Presentation") in which liquidity was naturally a core issue. The Moody's Presentation observed the following:

[14] Sch. RSM-3, p. 194.

[15] Sch. RSM-3, p. 193.

[16] Sch. RSM-3, p. 23.

- **“[redacted]**
- **[redacted]**
- **[redacted]”[17]**

As outlined below, under the analysis presented to Moody's just 13 days before the complaint was filed in this case, there was nothing suggesting a liquidity crisis for Noranda.

Q. Do the Investor Communications provide cash flow forecasts or other indicia of sustainable operations in a manner similar to the Smith Testimony?

A. No. The Investor Communications are principally retrospective.

Q. Do any other documents you have reviewed provide cash flow forecasts or other indicia of sustainable operations in a manner similar to the Smith Testimony?

A. Yes. Like Mr. Smith’s testimony, the Moody’s Presentation featured a five-year cash flow forecast. The Moody’s Presentation also reflected Noranda’s intention to seek lower electricity rates. However, the potential for lower electricity rates was not in any way shown as critical to Noranda’s survival. In fact, the Moody’s presentation showed liquidity above **[redacted]** million in all years, and reaching nearly **[redacted]** million in 2018, as summarized in Table 3 below:

[17] Sch. RSM-1, p. 6.

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Table 3 – Liquidity Derivation: Moody's Presentation by Noranda, January 31, 2014
($ Millions)

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For reference, a more direct comparison between the information in the Smith Testimony and Noranda's presentation to Moody's is provided below, summarizing the scenarios over the Five-Year Period 2014-2018:

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Table 4 – Noranda Liquidity Derivation: Comparative Scenarios over Five-Year Period 2014 – 2018 ***($ Millions)***

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The scenarios from the Smith Testimony are shown in columns 1 and 2, above, with differences between them reflecting the ** [redacted] ** million net impact of lowering the Power Rate over the Five-Year Period. The Moody's Presentation assumptions, shown in column 3, yield much more robust cash flows, as well as somewhat greater borrowing capacity. This results in increased liquidity of ** [redacted] ** million relative to the Smith Testimony.

Q. Does the information Noranda provided to Moody's support Noranda's assertions that it must have a $30 Power Rate?

A. No, it does not. This is shown by Column 4 in the table above, which demonstrates that under the assumptions used by Noranda itself in the Moody's Presentation, *Noranda could operate with no reduction in electricity costs and still maintain strong liquidity.*[18]

Q. Why do the forecasts in Smith Testimony and the Moody's Presentation have such different liquidity outcomes?

A. The Smith Testimony and the Moody's Presentation differ very materially in two key forecasting assumptions: 1) London Metals Exchange ("LME") aluminum pricing[19], and 2) capital expenditures. I review these differing assumptions in greater detail below.

Q. How do the Smith Testimony and the Moody's Presentation differ in terms of forecasted LME aluminum pricing?

A. The Smith Testimony selectively forecasts revenues–and hence cash flow available for capital expenditures–on the basis of LME aluminum pricing at a single point in time rather than the market outlook from an industry expert service that was referenced by Noranda for its presentation to Moody's. The basis for this is shown clearly in a graph featured in the Moody's Presentation and reproduced below in

[18] Note that there is asymmetrical impact from adjusting Power Rates between scenarios 1 and 2 vs. scenarios 3 and 4 on a net basis, based on the workings of cash sweeps in Noranda's financing arrangements.

[19] LME aluminum pricing refers to the world price for aluminum quoted on the London Metals Exchange. LME aluminum pricing drives the bulk of Noranda revenues for products sold.

Figure 1.[20] The graph shows forward aluminum prices quoted on the London Metals Exchange ("Forward LME") as of January 22, 2014, and various analysts' forecasts of the LME price.

Figure 1 – Forward LME and Analysts' Forecasts from Moody's Presentation

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[20] Sch. RSM-1.

The Smith Testimony adopts the Forward LME price for its forecast the lowest shown in Figure 1, while the Moody's Presentation uses the CRU forecast from CRU's Aluminum Market Outlook, December 2013.[21] Note that CRU is the same expert source of information that Mr. Fayne relies upon for most of the bases underlying the opinions he expresses in his testimony.

Q. What would be the dollar impact of adopting the CRU LME price forecast in the Enterprise Model?

A. I assess the dollar impact of adopting the CRU LME price forecast by incorporating it and related assumptions in the Enterprise Model. The outcome is shown below on a 5-year basis in Table 5:

[21] Notably, the Smith Testimony and the Moody's Presentation are based on the same forecast for the Midwest Premium, a regional price adder realized by smelters in North America.

Table 5 – Noranda Asserted Liquidity Derivation: Impact of CRU LME Price Forecast over Five-Year Period *($ Millions)*

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Adopting the CRU forecast data accounts for ** ** million of the total ** ** million difference between the Smith Testimony and Moody's Presentation as shown above in Table 5.

Q. How do the Smith Testimony and the Moody's Presentation differ in terms of forecast capital expenditures?

A. The Smith Testimony forecasts much higher levels of capital expenditures than are shown in the Moody's Presentation. Noranda's historic and forecast capital expenditures are shown below in Figure 2:

Figure 2 – Noranda Historic and Forecast Capital Expenditures

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As shown in Figure 2, the Smith Testimony forecasts capital expenditures significantly greater than those in the Moody's presentation, approximately ** ** million per year on average over the Five-Year Period for a total of ** ** million.[22] Importantly, the Smith Testimony forecasts capital expenditures that also

[22] Source: Calculated from Noranda response to Ameren Missouri data request 7.1.

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exceed historic levels (2007 – 2013) by an even greater margin, almost **[redacted]** million per year on average.

Q. What would be the dollar impact of adopting the Moody's capital expenditure forecast in the Enterprise Model?

A. I assess the dollar impact of adopting the Moody's capital expenditure forecast by incorporating it in the Enterprise Model (shown alongside the impact of adopting the CRU LME price forecast discussed above). The outcome is shown below on a 5-year basis in Table 6:

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Table 6 – Noranda Asserted Liquidity Derivation: Impact of CRU LME Price Forecast and Moody's Capital Expenditure Forecast *($ Millions)*

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Q. What are the forecast capital expenditures in the Smith Testimony for?

A. The capital expenditure assumptions underlying the Smith Testimony are reproduced from the Enterprise Model below in Table 7. Capital expenditures fall into two broad categories, as defined in the Smith Testimony:

- *Growth Capex*: Mr. Smith defines this as needed to "grow to support Noranda's customers and maintain Noranda's competitive position"[23], and
- *Sustaining/ Other Capex*: Mr. Smith defines this as needed to "support daily operations of its plants."[24]

Capital expenditures are also distributed across the business segments, as shown in Table 7.

[23] Smith Testimony, p. 10.

[24] Smith Testimony, p. 10. Note that industry data provider CRU defines Sustaining Capital for a smelter as follows: "[T]he capital expenditures required to keep the smelter operational to a reasonably competitive and functional level. This includes the material costs for replacement and major repair of cranes and other specialised vehicles, rectifiers, transformers, pollution control equipment, the floor in the potroom, and the building superstructure. Not all of these tasks are necessarily conducted annually, but smelters normally have an annual budget for indicative purposes."

Table 7 – Capital Expenditure Assumptions in Mr. Smith's Enterprise Model ($ Millions).

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Key observations from Table 7 include the following:

- A large portion of overall forecast capital expenditures consists of Growth Capex and therefore, by definition, is not needed to maintain and *sustain* Noranda's operations, including at the New Madrid smelter;[25]
- The bulk of Growth Capex (** ** million) is for "Unidentified Growth Projects," meaning that either Noranda doesn't know how it would spend these dollars, or is unwilling to disclose it;[26]

[25] Note that the Smith Testimony does not show that a lack of growth capital would make the smelter "subject to closure" in ** **, but rather a lack of liquidity generally.

[26] When asked in Ameren Missouri data request 3.15 to list and describe its planned capital projects for 2014 through 2018 and to identify whether each such project would consume "Sustaining" versus "Growth" capital, Noranda responded by providing a list of capital projects "for the current plan year" (i.e., for 2014). The list identifies one "Growth" project for the New Madrid smelter: The ** ** million rod mill project

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- The amounts allocated to Unidentified Growth Projects comprise most of the capex-related difference between the Moody's Presentation and the Smith Testimony;
- Forecast Sustaining Capex somewhat exceeds historic levels for total capex;
- Overall, the forecasts of annual capital spending on "Unidentified Growth Projects" for 2015-2018 in the Smith Testimony appear to have been estimated on a "back-calculated" basis, so that Noranda's total capital spending would amount to exactly **[redacted]** million per year, or **[redacted]** million for the 4-year period. By "back-calculated" I mean that the dollar amounts included for "Unidentified Growth Projects" were calculated as a "plug" or residual number to ensure that the total capital spending (across all projects) for each year would sum to the round figure of **[redacted]** million.

Q. Is there a clear rationale for the forecast spending on Unidentified Growth Projects in the Smith Testimony, Enterprise Model or elsewhere?

A. No. Descriptions of the Unidentified Growth Projects in the public materials Noranda provides to investors and debt rating agencies, as well as those provided in response to data requests, are sparse. The Smith Testimony refers to a **[redacted]** million project to enhance electrical efficiency at the New Madrid smelter, but notes that this project

mentioned above. In another response, Noranda notes, "Noranda looks only at a detailed listing of capital projects for the current plan year." … "Noranda is working on a project to develop a five year strategic plan, but this project will not be completed until Q4 of 2014." Letter from Diana M. Vuylsteke to Russell Mitten, April 24, 2014. Thus Noranda is claiming that larger-than-historic capital expenditures are driving it to a liquidity crisis that justifies rate relief, but Noranda hasn't even identified the capital projects on which all of these funds would be spent. I address that issue further, below.

is "currently on hold until the viability of the smelter is solidified".[27] This project is not explicitly described in other Noranda materials.

Q. Did you attempt to obtain more information about these Unidentified Growth Projects?

A. Yes. Ameren Missouri submitted several data requests to Noranda seeking this information.[28] Notably, discussion of future capital projects in monthly CEO reports and quarterly board presentations provided by Noranda in response to these data requests have been redacted. Consequently, Ameren Missouri is left with Mr. Smith's assertions that Noranda needs about ** ** million per year of additional capital to invest in growth projects, but has no identification of what those projects would be, and Noranda (in a letter from its attorney) claims that it hasn't developed a capital spending plan, even though Noranda's internal documents, which as noted were not provided to Ameren Missouri, address the topic of capital investment.

Q. In your experience as a banker and consultant, would you expect a company like Noranda to have plans at some level of specificity for capital expenditures claimed to be required over the upcoming five years?

[27] Smith Testimony, p. 14. ** ** This underscores management discretion in the timing of capital expenditures.

[28] Noranda was asked several data requests seeking documents that discuss, address, analyze or otherwise relate or pertain to capital investments, including those for growth. Noranda produced no documents that substantiate these Unidentified Growth Projects, nor do other data request responses Noranda directed Ameren Missouri to do so. I have attached these data request responses a Schedule RSM-4 HC to my testimony.

A. Yes, I would. Before the management of any company could expect its board to approve funding of capital expenditures of this level, I would expect that management would have to develop well-thought-out and supported justifications for the projects that would comprise such expenditures and the expected returns.[29] I would also expect any investment in "growth capital" to produce visible positive financial results for the company. Yet as I discuss below, despite asserting that it must have an additional ** ** million over the five year forecast period – and must have a $30 Power Rate to obtain those dollars – this Growth Capex appears to provide no financial benefit for Noranda.

Q. Are there specific examples of investments in growth projects at Noranda that would produce positive returns and cash flows for Noranda that support your contention that growth-related projects should improve financial results?

A. Yes. Contrast the Unidentified Growth Capex Noranda asserts it needs with the capital budget for expansion of a rod mill at the smelter I mentioned above (** ** million for ** ** as reflected in Table 7 above). The rod mill project is well articulated in Noranda's public and private documents (including the Moody's Presentation) and appears clearly motivated by associated increases in cash flow that it is expected to produce.[30] In the Enterprise Model, the Rod Mill investment is modeled to result in ** ** million pounds per year of additional "premium" value-added product with an associated increase in earnings before interest, taxes,

[29] Noranda confirms that it evaluates new "Growth" project investments with reference to the project's internal rate of return ("IRR"). Noranda response to Ameren Missouri data request 8.1. See further discussion of internal rates of return, below.

[30] The total project cost is cited as ** ** million in other documents.

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depreciation and amortization ("EBITDA") of approximately ** ** million per year starting in ** **. If the incremental EBITDA were maintained for ten years, that would represent a pre-tax IRR on capital invested of more than ** **.

Q. Did Noranda provide any information about the cash flows and returns the ** ** million of Unidentified Growth Projects would produce?

A. No. In fact, the Enterprise Model provided with the Smith Testimony does not appear to yield any production or cash flow improvement within the Five-Year Period, despite its assumption that Noranda would invest more than ** ** million in projects designed to create "growth." According to the model, no step-change in production levels or product mix occurs after the rod mill expansion project increases rod shipments in ** **. Smelter production in the Enterprise Model is modeled identically to that underlying the Moody's Presentation, even though a much greater capital expenditure is incurred in the Enterprise Model.

Q. Does the inclusion of a claimed need for ** ** million of Growth Capex in Mr. Smith's model with no resulting financial benefit to Noranda make sense?

A. No, it does not. In my opinion, including these Unidentified Growth Projects in Mr. Smith's model reflects a late-hour addition to the model used to support Noranda's assertions to the Commission, which are designed to secure the requested $30 Power Rate. This conclusion is strongly supported by the fact that the Unidentified Growth Projects produce no financial benefits for Noranda, according to the model, and by the fact that these Unidentified Growth Projects were not included in the modeling

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provided to Moody's less than two weeks before Noranda filed its complaint.[31] As earlier noted, it is also supported by the fact that Noranda has not identified what the projects are.

Q. What is the impact of including the Unidentified Growth Projects in Mr. Smith's model?

A. It artificially and unrealistically depresses cash flows making it appear that Noranda's liquidity situation is much worse than it really is (indeed, making it appear that Noranda's liquidity situation is poor, when that is not the case).

Q. Has Noranda offered any explanation for the difference in forecasting assumptions between the Smith Testimony and the Moody's Presentation?

A. Yes. In response to a data request, **[redacted]** (internal quotes added)[32] As to capital expenditures, **[redacted]**[33]

[31] In addition, capex for Unidentified Growth Projects is further disjointed in the Enterprise Model by not having been included in the Model's calculations of tax depreciation. That is, the Enterprise Model calculates and includes tax depreciation on other Capex at Noranda's U.S. facilities, but tax depreciation is not calculated or included for these Unidentified Growth Projects. This is both unrealistic and *understates* Noranda's after-tax cash flow, which further makes it appear that Noranda's liquidity position is worse than it really is.

[32] Noranda response to Ameren Missouri data request 7.1, p. 1.

[33] Noranda response to Ameren Missouri data request 7.1, p. 2.

Q. For purposes of this proceeding, would it be reasonable to adopt assumptions more in line with those made in the Moody's Presentation in lieu of those underlying Mr. Smith's testimony?

A. Yes. At minimum, the offering of such widely divergent forecasts by the same management team days apart raises significant questions regarding which one is more appropriate to rely upon for purposes of this proceeding. In the category of LME pricing, the CRU forecast exceeded the Forward LME price by a substantial margin, and other analyst estimates exceeded the Forward LME price by yet more. Noranda clearly ascribed sufficient credibility to the CRU LME forecast to use it as the basis for a presentation to a major investor credit rating agency. Because LME pricing and associated hedging costs are not within the control of management, I believe the range of LME price assumptions shown in the Moody's Presentation are viewed appropriately as sensitivity analyses. There is nothing in Noranda's explanation of the difference in forecasting assumptions between the Smith Testimony and the Moody's Presentation that should compel acceptance of the former for purposes of this proceeding.

Management *does* have discretion over the amount and pace of spending on capital expenditures—especially in the growth category. The mere fact that Noranda claims that it only includes announced growth projects in rating agency presentations does not address or mitigate the fact that the Unidentified Growth Project assumptions in the Smith Testimony are unsubstantiated, nor does it mitigate the fact that the model relied upon by Mr. Smith assumes expenditures on the growth projects but no benefits from them, which, if included, should improve Noranda's claimed liquidity picture.

For this reason, and based on the analysis above, I view the inclusion of the **[redacted]** million of Unidentified Growth Projects as an unwarranted and logically inconsistent burden on liquidity in the Enterprise Model. Importantly, if one excludes the impact of these Unidentified Growth Projects from the Enterprise Model relied upon by Mr. Smith, even by its own calculations Noranda has sufficient liquidity. Put another way, Noranda's assertions about its liquidity crisis depend upon these Unidentified Growth Projects, which themselves are speculative and unsupported.

Q. What do the Moody's Presentation assumptions imply about the claim that Noranda must have a reduced Power Rate to preserve minimum liquidity over the next 5 years?

- Clearly, the Moody's Presentation assumptions are incompatible with such a claim, since they yield a sustainable level of liquidity, as defined in the Smith Testimony, through the Five-Year Period.[34] This is true even if the Moody's forecast is adjusted downward for the assumption of lower Forward LME prices. This can be seen in Table 8, below:

[34] Ameren Missouri sent data requests to Noranda seeking documents that discuss, address, analyze, or otherwise relate or pertain to a minimum level of liquidity that Noranda claims it needs. I have attached Noranda's responses to this testimony as Schedule RSM-5 HC. I would note that Noranda did not produce any such documents, and that the other data request responses to which Noranda pointed Ameren Missouri in these responses (and the documents produced with these other responses) also do not provide analysis supporting the minimum liquidity requirement stipulated in the Smith Testimony.

Table 8 – Noranda Asserted Liquidity Derivation: Comparative Scenarios over Five-Year Period 2014 – 2018 (*Millions*)

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The original Moody's scenario—column 3 from Table 4—is reproduced above, yielding liquidity of ** [redacted] ** million at year-end 2018. The impact of adjusting the original Moody's scenario to remove the Power Rate reduction—column 4 from Table 4—is also reproduced above, yielding liquidity of ** [redacted] ** million at year-

end 2018. As a sensitivity analysis, column 5 above shows the impact of further stressing cash flows by adopting the assumption of lower Forward LME prices. Even then, using the lowest of all of alternative LME price sources discussed in the Moody's Presentation, Column 5 reflects liquidity comfortably over the threshold ** ** million Mr. Smith claims is needed to sustain operations.

IV. HOW ADDITIONAL LIQUIDITY NEEDS, IF THEY DID EXIST, COULD BE ADDRESSED.

Q. Could Noranda's claimed target liquidity level over the next 5 years require more capital than shown in the scenarios discussed above?

A. The Smith Testimony cites target liquidity of ** ** million, although it acknowledges that ** ** million is sufficient. Based on the target liquidity level of ** ** million, Noranda might need additional savings or capital infusions in some circumstances (such as the circumstance where LME prices are below those used by Noranda in support of the Moody's Presentation). Again, this assumes Noranda has additional liquidity needs at all, which, as explained above, in my opinion is not the case and certainly has not been justified by the analysis presented by Mr. Smith.

Q. But if it had to, could Noranda raise additional debt?

A. Yes, or so one would conclude from the Investor Communications including the Moody's Presentation. As noted above, the Moody's Presentation drew attention to Noranda's financial flexibility, stating that

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[redacted]** Noranda is in fact arranging project-specific financing for the rod mill expansion (as reflected in the Moody's presentation and elsewhere).[36] Project-specific financing could arguably be arranged for other capital projects as well, which would further improve Noranda's liquidity.

Q. As a practical matter, would it be feasible for Noranda to raise additional capital from its shareholders?

A. Yes. Noranda has a distinctive shareholder mix resulting from its having been acquired by Apollo in 2007 in a leveraged buyout transaction (the "LBO"). The LBO and subsequent transactions have resulted in an equity investment with low risk and highly remunerative returns to Apollo. Apollo has realized cash returns of $360 million in excess of its original investment, and still holds 34% of Noranda's equity. In addition, Apollo has been paid management fees totaling $31 million. Meanwhile, today, Noranda has the highest debt burden of the U.S. aluminum producers, used partly to fund recent dividends to equity holders, which is a reason for the liquidity concerns described in the Smith Testimony.

To the degree liquidity issues remain a concern of management, with a bearing on the value of Apollo's remaining stake, Apollo may be the party with *both* the most to gain and least to lose by making an additional capital contribution to Noranda at this stage, as further discussed below.

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[35] Sch. RSM-1, p. 6.

[36] Notably, no such financing is indicated in the Enterprise Model for the Unidentified Growth Projects. Instead, these projects fall into the category of "Non-financed capex". This means that the **[redacted]** million in spending on Unidentified Growth Projects is funded entirely from operating cash flows—with adverse impact on liquidity—when in a more realistic scenario it might likely be funded with incremental debt, subject to the specific characteristics of the projects.

Q. Please describe Apollo and its business.

A. Apollo is a private equity investment firm, commonly referred to in the industry as an "alternative investment" fund.[37] Private equity firms are specialized asset managers that invest money with the goal of earning a higher rate of return than the typical market investor. Private equity firms customarily, though not exclusively, invest in the equity of private (i.e., non-publicly traded) companies that may yield both greater risks and greater returns than publicly traded companies.

Private equity firms make investments through individual funds organized as limited partnerships. The private equity firm contributes its own money to the fund as well as the money of third party investors who share in the fund's returns. The funds have finite lives, typically ten years.[38] Prior to the expiration of the partnership, the fund will seek to "exit" its investments. The most common exit transactions are initial public offerings ("IPOs") and sales to other companies.

The companies in which the fund invests are frequently referred to as the fund's "portfolio companies." A portfolio company generates returns for investors in two ways. First, the fund receives dividends while it owns the portfolio company. These dividends are often much higher than the dividends typically paid by public companies. Second, the funds earn returns for their investors by selling portfolio companies for a gain (selling at a price higher than the fund's original acquisition

[37] Certain Apollo affiliates are also engaged in hedge fund activities.

[38] "The Illiquidity Puzzle: Theory and Evidence from Private Equity" (with Antoinette Schoar), *Journal of Financial Economics*, 72 (April 2004) 3-40.

cost). Private equity companies frequently also earn management fees from the portfolio companies.

Founded in 1990, Apollo raises, invests and manages funds on behalf of pension, endowment and sovereign wealth funds, as well as other institutional and individual investors. As of December 31, 2013, Apollo (across multiple investment funds) had total assets under management of $161 billion.[39]

Q. Please describe the Apollo Acquisition.

A. Noranda is a portfolio company of a fund affiliated with Apollo. Apollo acquired Noranda on May 18, 2007, in a deal valued at $1.165 billion. The deal consisted of $214.2 million of equity from Apollo and the balance from debt secured by Noranda assets and operations. Under this deal structure, Apollo's only capital initially at risk was the $214.2 million of equity. That fact is important because 25 days later, on June 12, 2007, Noranda *borrowed* money to pay Apollo a dividend of $214.2 million – an amount equal to the entirety of Apollo's capital at risk.[40] In other words, after only 25 days, Apollo no longer had any risk of losing money on its acquisition of Noranda.

Q. How has Noranda's debt and equity capitalization evolved since the Apollo acquisition?

A. Debt and equity since the LBO are shown below in Figure 3.

[39] Apollo Global Management, LLC, Form 10-K for the period ended December 31, 2013.

[40] Noranda paid a special dividend of $216.1 million on this date. $214.2 million was paid to Apollo and $1.9 million was paid to Noranda senior executives who also held a small amount of equity in the company.

Figure 3 – Noranda Balance Sheet Components Since the LBO

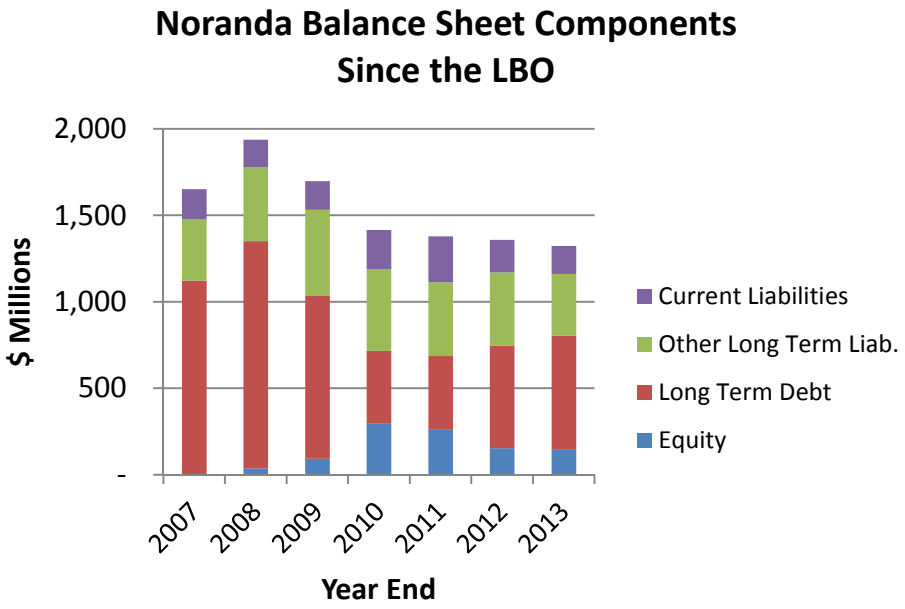

Figure 3 is based on data from Noranda's 10-K filings. As indicated, the company was nearly 100% debt capitalized at year end 2007, reflecting the LBO structure plus the subsequent debt-funded special dividend that reduced equity effectively to zero in that year. The acquisition debt was reduced via operating cash flow through 2010, when equity was raised via the IPO, raising $226 million and bringing total equity to nearly $300 million. Thereafter, however, debt increased and equity was eroded by more than $170 million in dividends to shareholders (of which $107.9 was the dividends to Apollo cited above). The ratio of long term liabilities to book capitalization stood at 87% at year-end 2013.

Q. How does this compare to other US aluminum producers?

A. It is extremely high. The ratio of long term liabilities to book capitalization at year-end 2013 stood at 59% for Alcoa and 36% for Century.

Q. Are you suggesting that Noranda's liquidity situation today, or any crisis it claims exists, could have been avoided?

A. Yes. Importantly, as I noted earlier, Apollo was still the controlling shareholder throughout the post-IPO period, and hence made the decision to incur debt to pay dividends to itself and the public shareholders. Had it not done so, or had it done so to a significantly less degree, Noranda's actual liquidity position today would be far better than it is.

Q. Please describe Apollo's returns on its investment in Noranda.

Following the acquisition, Noranda paid Apollo an additional dividend of $100.7 million on June 13, 2008. Then, as is typical for private equity investments, Noranda conducted an IPO of approximately 1/3 of its equity on May 19, 2010, to set the stage for Apollo's eventual exit. After the IPO, Apollo received an additional $107.9 million in dividends and $151.1 million from the secondary sale[41] of Noranda stock. In total, since the acquisition, Apollo has realized dividends of $422.8 million and realized stock sale proceeds of $151.1 million ($359.7 million in excess of its initial investment of $214.2 million) while still retaining a 34% ownership stake in the company. Apollo's initial investment and realization of returns over time are summarized below in Table 9. Importantly, Apollo has also realized an additional $31 million in management fees since the acquisition.

[41] The sales were "secondary" in the sense that they occurred after the IPO and there was already a public market for Noranda stock.

Table 9 – Pre-tax Cash Flows to Apollo from Noranda Investment

Apollo Return on Investment ($M)				
	Initial Investment	Dividends	Stock Sales	Net Investment
5/18/07	$ (214.20)	$ -	$ -	$ (214.20)
6/12/07	$ -	$ 214.20	$ -	$ 214.20
2008	$ -	$ 100.67	$ -	$ 100.67
2009	$ -	$ -	$ -	$ -
2010	$ -	$ -	$ -	$ -
2011	$ -	$ 44.13	$ -	$ 44.13
2012	$ -	$ 59.20	$ 106.10	$ 165.30
2013	$ -	$ 4.27	$ -	$ 4.27
2014	$ -	$ 0.33	$ 45.00	$ 45.33
Total	**$ (214.20)**	**$ 422.80**	**$ 151.10**	**$ 359.70**
Pre-Tax IRR				**340%**

For perspective, I have also undertaken to characterize Apollo's return in the form of an internal rate of return ("IRR"), a metric commonly used to evaluate the attractiveness of investments in many settings (including for private equity firms), which is shown for Apollo on a pre-tax basis. The IRR measures the *annual* rate of return of an investment, taking into account the timing of cash flows. Over time, an IRR really measures the same thing as an annual return on equity ("ROE") as it might occur in a public utility context or in the context of other industries. If the average annual ROE is 10%, and cost recovery for initial capital invested (or depreciation) occurs over ten years, then the IRR of that investment over ten years would be 10%.[42]

In the case of the Apollo investment, the IRR--calculated on a pre-tax basis--is an astronomical 340% through the stock sale just closed on March 17, 2014, as shown in

[42] This is a generic example. Note that *any particular* IRR calculation must be qualified for factors such as riskiness of the investment and whether it is applied to cash flows pre or post debt financing, and pre or post tax.

Table 9. This high IRR reflects the extremely short time frame in which Apollo's original investment of $214.2 million was recovered. The timing of cash flows can be mechanically analogized to a utility investment in which depreciation is recovered in 25 days, but an ROE continues to be earned on the original investment for a period of years.[43]

Q. You mentioned before that Apollo retains 34% of Noranda's stock. Why is this significant?

A. First, it is significant because under Noranda's corporate structure a 34% interest is a controlling interest, allowing Apollo to control Noranda's decisions. Second, to the degree Noranda management or Apollo view the value of Noranda equity as imperiled by liquidity concerns, Apollo is in a superb position to make additional capital investments critical to preserving the value of its 34% share, but with minimal adverse impact on its realized return to date.[44] Conversely, for Apollo to allow a liquidity crisis at Noranda to occur, potentially leading to the closure of New Madrid, would impair the value of its remaining investment.

From another perspective, given that Apollo has already earned spectacular returns on its investment *even before considering the value of its 34% share*, a reduced Power Rate could be viewed as a windfall to Apollo funded by the other ratepayers of Ameren Missouri.

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[43] To put a finer point on this by analogy to a public utility, the utility would recover through rates from customers all of its investment in plant in just 25 days, but would leave the plant in its rate base for many years thereafter and earn a return on it, without lowering its rates to reflect that it had recovered the depreciation.

[44] Mathematically, because of the timing of Apollo's realized cash flows, it would require a very significant cash outflow at this stage to adversely affect returns to date.

V. MR. FAYNE'S FOCUS ON COMPARATIVE ELECTRICITY COSTS USES DATA SELECTIVELY AND IS THEREFORE MISLEADING

Q. Please summarize Mr. Fayne's assertions about comparative Electricity Costs.

A. The Fayne Testimony is centered around Exhibit HWF-1, which is reproduced below in Figure 4.

Figure 4 – Reproduction of Exhibit HWF-1

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Exhibit HWF-1 shows electricity costs in 2013 for the nine U.S. smelters operating in that year (the left-hand panel above) as well as a "Proforma" depiction of electricity costs for those nine smelters to reflect going-forward assumptions (the right-hand panel), including in particular the Power Rate requested for New Madrid.[45] The Fayne Testimony refers to Exhibit HWF-1 to assert the following:

> [T]he electricity rate for the New Madrid smelter is $41.2/MWh, which represents the fourth highest electricity rate among U.S. smelters for 2013, and a rate that is more than 39% higher than the average rate paid by non-U.S. smelters, excluding China. At the rate requested in this proceeding, New Madrid would fall near the middle of the U.S. smelters and still be above the global average.[46]

The implication of this is that the New Madrid Smelter has a high cost relative to other U.S. smelters and to smelters in the rest of the world. Mr. Fayne asserts about New Madrid that "[i]f its costs are high relative to other producers, its continued viability is at risk…".[47]

Q. Does Mr. Fayne definitively assert that the economic viability of the New Madrid smelter is threatened by its electricity costs?

A. No. As indicated above, Mr. Fayne simply allows the impression to exist. This is reinforced by the response to Ameren Missouri's data request clarifying that Mr. Fayne did not review total smelter costs.[48] In this way, Mr. Fayne implicitly concedes that a comparison of electricity costs in isolation is incomplete and does not

[45] The Proforma electricity costs also reflect market electricity purchases for the Hawesville and Sebree smelters, which have terminated their contractual supply arrangements. Based on responses to data requests, I understand that Mr. Fayne relied on an article from a local newspaper as the source of assumptions for market electricity costs.

[46] Fayne Testimony, p. 4.

[47] Fayne Testimony p. 5.

[48] Noranda responses to Ameren Missouri data requests 2.12 and 2.19.

demonstrate the relevant point in determining the likely future success of the New Madrid smelter, which does not depend solely on electricity costs.

Q. Is the above implication of the Fayne Testimony, that New Madrid is non-competitive because of excessive electricity costs, supported by the data highlighted in the Fayne Testimony?

A. No. Mr. Fayne's exclusive focus is on comparative electricity costs. Furthermore, the Fayne Testimony 1) highlights data selectively and 2) is presented out of context, and is therefore misleading.

Q. How is data highlighted selectively?

A. The Fayne Testimony is opportunistic in characterizing New Madrid's electricity costs in rank order as well as relative to the average cost of other smelters. For example, in the 2013 data in Exhibit HWF-1, the Fayne Testimony highlights New Madrid's electricity costs as the fourth most expensive of the nine U.S. smelters. By contrast, on a Proforma basis reflecting Noranda's requested $30 Power Rate, the Fayne Testimony says New Madrid would "fall near the middle of the U.S. smelters."[49] This creates the impression that the requested Power Rate reduction is needed to achieve equitable treatment for New Madrid.

What the Fayne Testimony does not highlight is that New Madrid's electricity was only slightly more expensive than the U.S. average in 2013, by only approximately 3%. Meanwhile, on a Proforma basis, as shown in the adaptation of Exhibit HWF-1

[49] Fayne Testimony, pp. 4-5.

in Table 10 below, the Noranda rate request would put New Madrid 13% below the U.S. average. This is true even depicting the Hawesville and Sebree smelters at assumed market electricity costs distinctly lower than 2013 levels on a Proforma basis.[50]

Table 10 – Adaptation of Proforma Results from Exhibit HWF-1

**

**

[50] Note also that, since Mr. Fayne filed his direct testimony Alcoa has shut down operations at the Massena East smelter. Therefore I have removed Massena East from the Proforma comparison.

Q. Even if depicted accurately, is a comparison of electricity costs in isolation like Exhibit HWF-1 a definitive indicator of smelter viability?

A. No. The impact of electricity costs on smelter viability can only be meaningfully assessed in the context of all cost and risk factors. These fall into at least the following two categories: 1) additional costs and risks that are embedded in other smelter electricity supply arrangements, and 2) total costs of production, including major cost drivers such as alumina[51] and labor, as well as cost offsets resulting from value-added premia.[52]

Q. Is there evidence of additional costs and risks embedded in other smelter electricity supply arrangements?

A. Yes. Each U.S. smelter has a unique power agreement and most of the smelters have agreed to, or have potentially exposed themselves to, additional costs or risks in exchange for lower rates instead of simply obtaining an unconditional supply of lower cost power. These include the following[53]:

- *Investment commitments:* For the Massena and Ferndale smelters, Alcoa has agreed to make capital improvements of $600 million and $35 million respectively. By contrast, Noranda has made no commitments even if it were to receive a lower electricity rate.

[51] Alumina is the raw material used to produce aluminum.

[52] As evidenced by Noranda's responses to a series of data requests, neither Noranda nor Mr. Fayne considered or even have information (unless it is in CRU data in their possession, which they refused to provide) about the cost of production at other smelters. I have attached those data request responses to my testimony as Schedule RSM-6. Without that cost information, Noranda cannot validly suggest, much less claim, that New Madrid's costs are high relative to other producers. As I discuss herein, the competitiveness and viability of the smelter, like any business, depends on overall costs and not just one cost.

[53] Based on CRU data and public information.

- *Employment commitments:* Alcoa agreed to maintain 750 employees at Massena and to maintain employment at Ferndale (in proportion to electricity consumed). Again, Noranda has made no such commitments.
- *Closure penalties:* For the Wenatchee smelter, Alcoa signed an agreement in which it agreed to pay an $89 million capacity reservation charge, but over $66 million of that charge was deferred as long as the smelter continues to operate.[54] This in effect created a large penalty for closing the smelter in exchange for a lower power rate.
- *Market risk:* Three smelters are exposed to market electricity risk: Hawesville and Sebree recently won approval to terminate their contract with Big Rivers Electric Corporation and source power from the wholesale market, while Warrick self-supplies power through a coal-fired generation unit, with potential contingent exposure to the market. Consequently, Hawesville, Sebree and Warrick cannot properly be characterized as "having" the rates Mr. Fayne cites because these market risks could significantly raise those rates. As noted above, the electricity cost for Hawesville and Sebree of $37/MWh reported in Exhibit HWF-1 was based on an article from a local newspaper and is subject to considerable uncertainty. Warrick may be significantly threatened by tightening environmental regulation affecting coal resources, as well as plant outages when market electricity must be purchased.

While the Fayne Testimony alludes to these arrangements, they are not used to qualify the data in Exhibit HWF-1 or conclusions based on that data. Consequently, it is misleading to make claims about the relative ranking of the New Madrid smelter's electricity costs to the other U.S. smelters as if they all have fixed electricity

[54] Chelan County PUD News Release, "Alcoa Power Sales Contract Signed," July 14, 2008.

prices when some of those prices are not fixed and where, in some cases, the smelters were required to make other commitments or expose themselves to other financial risks in order to gain modifications to their previous electric supply arrangements.

Q. Has Noranda proposed to undertake any investments or to guarantee a particular level of employment in exchange for their requested rate reduction?

A. No, to my knowledge it has not.

Q. What about total costs?

A. While electricity makes up a large portion of total costs for all aluminum smelters, there are many other significant cost components which can also vary greatly across facilities and affect overall viability. The Fayne Testimony itself makes this point: "[t]he cost of production will vary among smelters based on the cost of goods and services as well as the configuration of the plant. However, in general, the cost of alumina, labor and electricity account for 75%-80% of the cost, with alumina and electricity each compromising about one-third of the cost of production."[55]

Q. Have you compared total cost data for New Madrid to that of other Smelters?

A. Yes. For this purpose I consulted the same industry database cited in the Fayne Testimony, CRU.[56] I compiled data provided by CRU on the balance of production costs (i.e. non-electricity) for each smelter in the U.S., as well as related parameters

[55] Fayne Testimony, p. 3.

[56] CRU is an independent business analysis and consulting organization that concentrates solely on mining, metals and fertilizers. CRU provides data, business intelligence, and consulting services to clients in these industries. Aluminum is one of the key industries followed by CRU, and CRU collects data on the costs and production processes of all smelters around the world. As Mr. Fayne states in his direct testimony, CRU is "generally used in the industry as a source of such data."

such as efficiency, and then integrated that data with the electricity costs cited in the Proforma scenario of the Fayne Testimony to produce total costs on a dollar per ton basis.[57]

The results are shown graphically below in Figure 5. Note that New Madrid is shown twice: on the basis of its Proforma (requested) cost of electricity, as well as based on its current power cost.

Figure 5 – U.S. Smelters – 2013 Total Costs

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[57] Notably, other than Sebree and Hawesville, now purchasing power in the wholesale market, and the requested reduced Power Rate for New Madrid, the electricity cost data I reviewed from CRU is materially the same as that cited in Exhibit HWF-1.

NP

I draw the following conclusions from Figure 5:

- If Noranda were granted the electricity rate it has requested in this proceeding, New Madrid would have the lowest total costs of any smelter operating in the U.S.
- At current electricity rates, New Madrid operates at a lower total cost than the average U.S. smelter, and is the third cheapest producer of aluminum in the U.S.

Q. What contributes to New Madrid's current cost advantage relative to the average U.S. smelter?

A. According to the CRU data, the New Madrid smelter benefits from the cheapest alumina supply in the nation. New Madrid receives alumina delivered to the smelter at **[redacted]** per ton of alumina, translating into a cost of **[redacted]** per ton of aluminum as shown above in Figure 5. This is well below the 2013 average cost reported by CRU for currently operating smelters in the U.S. profiled in the Fayne Testimony, with a delivered cost of **[redacted]** per ton, or **[redacted]** per ton of aluminum. The CRU data also shows that New Madrid "subsidizes" its own costs by generating substantial value-added premia at the smelter. This effective offset to costs is shown in Figure 5 in the "Other" category, and is applied consistently for all the smelters in the CRU database.

Q. Why has New Madrid been able to benefit from such cheap alumina?

A. CRU reports that New Madrid has a substantial advantage over its peers in purchasing alumina. One component of this is delivery cost. Given that Noranda's Gramercy alumina refinery is located along the Mississippi River, no ocean freight is needed to transport alumina to the smelter in New Madrid. The only transportation

cost reported by CRU is the cost of moving alumina up the Mississippi by barge to New Madrid. This means that Noranda faces alumina delivery costs **[redacted]** cheaper than the average smelter in the U.S.

New Madrid also benefits from a very low “free on board” ("FOB") cost, prior to the cost of delivery.

Q. How are “Other” costs in Figure 5 calculated?

A. Other costs shown in Figure 5 are an aggregation of several smaller cost categories reported in the CRU data. This includes costs for fuel, carbon, bath materials, pot relining, maintenance, sustaining capital, working capital, marketing, financing, metal delivery, and other costs. In addition, CRU includes the cost of operating the cast house at each smelter. Importantly, CRU nets out from these costs the locational and value-added premiums received by each smelter. This netting in the derivation of total costs is maintained for purposes of comparability across the U.S. smelters.

Q. What does total cost data say about smelters that have retired?

A. As discussed in the Fayne Testimony, many smelters in the U.S. have closed in recent years. Mr. Fayne attributes that solely to electricity costs, but as I discuss below, this conclusion is not supported by cost data reported by CRU for recently closed smelters. Instead, the CRU data shows that the closed smelters had overall cost disadvantages that significantly outweighed electricity cost handicaps.

I reviewed total costs for six smelters which have recently shut down in the U.S. These are the smelters in Rockdale, TX, Columbia Falls, WY, Alcoa, TN,

Ravenswood, WV, Hannibal, OH, and Massena, NY (Massena East). These smelters have all closed down operations within the last six years.

For each of the above listed smelters I compared the total cost data provided by CRU for the last year of operation with the total costs for the currently operating smelters. Figure 6 presents this comparison.[58]

Figure 6 – Total Costs at Recently Closed Smelters

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As previously shown, the average cost for currently operating smelters in 2013 was ** **/ton, shown in Figure 6 above as a dark horizontal line. Notably, the highest cost smelter, Wenatchee, had total costs of ** **/ton.[59] Figure 6 shows that all of the six recently closed smelters had higher total costs than the current

[58] I have adjusted historic data using an assumed 2% inflation rate to approximate 2013 dollars.

[59] See Figure 5.

average when they closed, in 2013 dollars. Moreover, all of the smelters that have closed in the last six years have higher total costs than Wenatchee.

Additionally, I reviewed electricity costs reported by CRU at each of these recently closed smelters. Mr. Fayne asserts that in each case where a smelter has shut down in the U.S. since 1980, "the smelter shut down because of high power costs."[60] But Figure 6 shows that, in terms of dollars per ton, non-electricity factors were much more consequential. Thus it is hard to understand how Mr. Fayne can claim (with any basis) that the reason the smelters shut down was due to high electricity costs, and high electricity costs alone.

VI. CONCLUSION

Q. Please summarize your response to the Smith Testimony.

A. The Smith Testimony overstates any liquidity issues Noranda may face. I conclude this based on material inconsistencies between the Smith Testimony and prior and contemporaneous Investor Communications, as well as internal inconsistencies in the liquidity forecast provided by Mr. Smith. In particular, the liquidity forecast is premised on an unsubstantiated need to spend ** [redacted] ** million on "Unidentified Growth Capex". The Unidentified Growth Capex is both unspecified in any Noranda materials I have had the opportunity to review and is depicted in an unrealistic fashion in Mr. Smith's cash flow model by omitting any associated benefits that might reasonably be expected to motivate such an investment (as well as associated tax depreciation). Mr. Smith's own liquidity forecast shows that, absent the

[60] Fayne Testimony page 4.

Unidentified Growth Capex, there is no near term liquidity crisis requiring a Power Rate reduction.

Additionally, the Smith Testimony omits any consideration of raising additional debt or equity capital as a buffer against forecast or contingent liquidity needs. This ignores potential possibilities for additional project-specific financing such as Noranda has implemented in the past. More importantly, the Smith Testimony disregards the hundreds of millions in cash extracted from Noranda in recent years by its controlling shareholder, Apollo, and the strong incentives for Apollo to protect the value of its remaining 34% stake with additional investment (at low risk, in light of its returns to date).

Q. Please summarize your response to the Fayne Testimony.

A. Mr. Fayne's focus on comparative electricity costs uses data selectively and is therefore misleading. Also, importantly, Mr. Fayne does not definitively assert that the economic viability of the New Madrid smelter is threatened by its electricity costs, but merely allows that impression to exist. Among other things, the Fayne Testimony compares smelter electricity costs without qualification for differential risks and costs embedded in other smelters' power supply arrangements that are necessary to place the electricity costs in context.

Most significantly, however, the Fayne Testimony does not consider New Madrid's competitiveness on the basis of overall costs, including alumina, labor, and other operations. A review of data compiled by CRU, an independent business analysis and consulting organization also relied upon by Mr. Fayne, shows the following:

- If Noranda were granted the electricity rate it has requested in this proceeding, New Madrid would have the lowest *total* costs of any smelter operating in the U.S., and
- At current electricity rates, New Madrid operates at a lower total cost than the average U.S. smelter, and is the third cheapest producer of aluminum in the U.S.

The relevant data does not support the conclusion that Noranda must have a much lower power rate to be competitive.

Q. Does this conclude your testimony?

A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Noranda Aluminum, Inc.'s Request For Revisions to Union Electric Company d/b/a Ameren Missouri's Large Transmission Service Tariff to Decrease its Rate for Electric Service.	))))	**File No. EC-2014-0224**

AFFIDAVIT OF ROBERT MUDGE

STATE OF MASSACHUSETTS **)**
) ss
COUNTY OF BARNSTABLE **)**

Robert S. Mudge, being first duly sworn on his oath, states:

1. My name is Robert S. Mudge. I am employed by *The Brattle Group* as a Principal. *The Brattle Group* is an economics and finance consulting firm with practice areas heavily focused on energy industry regulation and finance.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Union Electric Company, d/b/a Ameren Missouri, consisting of 54 pages (and Schedules RSM-1 through RSM-6 if any), all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Robert S. Mudge

Subscribed and sworn to before me this 8 day of May, 2014.

Notary Public

My commission expires: June 8, 2018

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

Noranda Aluminum, Inc., et al.,	)	
	)	
Complainants,	)	
	)	
v.	)	**File No. EC-2014-0224**
	)	
Union Electric Company, d/b/a Ameren Missouri	)	
	)	
	)	
Respondent.	)	

REPORT AND ORDER

Issue Date: August 20, 2014

Effective Date: September 19, 2014

Schedule RSM-R3

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

Noranda Aluminum, Inc., et al.,	)	
	)	
Complainants,	)	
	)	
v.	)	**File No. EC-2014-0224**
	)	
Union Electric Company, d/b/a Ameren Missouri	)	
	)	
Respondent.	)	

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For the City of O'Fallon and the City of Ballwin.

CHIEF REGULATORY LAW JUDGE: Morris L. Woodruff

REPORT AND ORDER

Table of Contents

Appearances 1

Procedural History 4

Findings of Fact 5

Conclusions of Law 18

Decision 24

Ordered Paragraphs 28

The Missouri Public Service Commission, having considered all the competent and substantial evidence upon the whole record, makes the following findings of fact and conclusions of law. The positions and arguments of all of the parties have been considered by the Commission in making this decision. Failure to specifically address a piece of evidence, position, or argument of any party does not indicate that the Commission has failed to consider relevant evidence, but indicates rather that the omitted material was not dispositive of this decision.

Summary

In this case, Complainants seek a change in rate design to reduce the rate assessed to the Large Transmission Service Class, of which Noranda Aluminum, Inc. is the only customer and which is the lowest-cost rate class of all customer classes served by Ameren Missouri. This proposal asks the Commission to provide rate relief that departs from traditional cost-of-service ratemaking. Complainants' request is founded on three contentions: 1) Noranda Aluminum, Inc.'s aluminum smelter is crucial to Missouri's economy; 2) the smelter cannot be sustained without the rate relief requested; and 3) all Ameren Missouri ratepayers will directly benefit from the relief requested because granting that relief is more beneficial compared to

Noranda leaving the Ameren Missouri system.[1] While there is substantial evidence in the record regarding the impact of the smelter on southeast Missouri and on the state, the evidence does not support the second and third of Complainants' contentions. Accordingly, the Commission finds that the Complainants have failed to carry their burden to show that Ameren Missouri's rate design should be modified, contrary to traditional cost of service principles, in order to give a reduced rate to Noranda Aluminum, Inc. The complaint is, therefore, denied and dismissed.

Procedural History

On February 12, 2014,[2] Noranda Aluminum, Inc., joined by 37 individual customers of Union Electric Company, d/b/a Ameren Missouri, filed a rate design complaint and request for expedited review. The complaint asked the Commission to revise the rate Ameren Missouri is allowed to charge Noranda for operation of its aluminum smelter located near New Madrid, Missouri. The Complainants seek to reduce the rate charged to Noranda to $30 per MWh and to adjust the electric rates of Ameren Missouri's other ratepayers upward to make the rate changes revenue neutral to Ameren Missouri. The complaint alleges that unless Noranda receives the reduced rate it seeks, it will lack sufficient liquidity and may be forced to close.

As required by Commission rule 4 CSR 240-2.070, the Commission notified Ameren Missouri of the filing of the complaint and directed the utility to file is answer no later than March 17. Ameren Missouri filed its answer on March 17, along with a motion to dismiss the complaint. The Commission denied that motion to dismiss on April 16.

The Commission allowed the following parties to intervene: Consumers Council of Missouri; Continental Cement Company; the City of O'Fallon and the City of Ballwin; Wal-Mart Stores East, L.P. and Sam's East; the Missouri Industrial Energy Consumers; River Cement

[1] Initial Post-Hearing Brief of Noranda Aluminum, Inc., page 2.

[2] Date references are to 2014 unless otherwise indicated.

Company; and the Missouri Retailers Association. In compliance with an expedited procedural schedule, the parties prefiled multiple rounds of testimony. In addition, the Commission held three local public hearings to collect testimony from interested members of the public. An evidentiary hearing was held on June 16 and 17. The parties filed initial post-hearing briefs on July 8, with reply briefs filed on July 16.[3]

Findings of Fact

1. Union Electric Company is an investor-owned electric utility, subject to the jurisdiction of this Commission and is the largest electric utility in Missouri.[4]

2. Noranda Aluminum, Inc., is a publicly-traded (NYSE) company that operates as an integrated aluminum manufacturer. It owns and operates an aluminum smelter near New Madrid, Missouri, and also owns and operates a bauxite mine in Jamaica, an alumina refinery in Louisiana, and rolling mills in Arkansas, North Carolina, and Tennessee.[5]

3. Noranda's New Madrid smelter processes alumina into molten aluminum, which is then processed into aluminum products such as billet, rod, foundry products, and primary ingots. The process of converting alumina into molten aluminum requires prodigious amounts of electricity.[6]

4. The New Madrid smelter uses approximately 480 MW of electricity, 24 hours per day, every day of the year. It does so with a 98 percent load factor, meaning the amount of electricity is uses varies very little from hour to hour. Noranda is Ameren Missouri's largest customer, and is the largest consumer of electricity in Missouri.[7]

5. When the New Madrid smelter is at full production, at current rates, Noranda

[3] United for Missouri filed an *amicus curiae* brief on July 8.

[4] Rate Design Complaint, Paragraph 3, admitted in Ameren Missouri's Answer.

[5] Smith Direct, Ex. 2, Pages 1-2, Lines 10-15, 1-2.

[6] Smith Direct, Ex. 2, Page 2, Lines 2-19.

[7] Smith Direct, Ex. 2, Page 9, Lines 17-22.

pays Ameren Missouri approximately $160 million in base rates for electricity each year, plus additional charges under Ameren Missouri's fuel adjustment clause.[8]

6. Noranda employs 888 workers at its New Madrid smelter and is the largest manufacturing employer in the southeast area of Missouri.[9] The smelter's estimated payroll in 2013 was $95 million, and its presence has a large economic impact on that economically depressed region, and upon the entire state.[10] The closure of the smelter could reduce the gross domestic product of the state of Missouri by nearly $9 billion over a 25 year period.[11]

7. The price Noranda receives for its basic aluminum product is set by world-wide market forces through the London Metal Exchange (LME).[12]

8. Noranda takes electric service from Ameren Missouri under the Large Transmission Service rate schedule. Noranda is the only customer that qualifies for membership in that rate class.[13] Under rates established in Ameren Missouri's last rate case, File No. ER-2012-0166, which became effective on January 2, 2013,[14] Noranda pays a base electric rate of $37.94 per MWh, plus an extra amount for the fuel adjustment clause rider, which is currently $3.50 per MWh, for a total of $41.44 per MWh.[15] In recognition of the fact that it costs Ameren Missouri less to serve Noranda, as established in the class cost of service studies presented in the last rate case, Noranda's current electric rate is lower than the rate for any other Ameren Missouri customer.

9. Noranda asks the Commission to reduce the rate it pays to $30 per MWh for a

[8] Smith Direct, Ex. 2, Page 10, Lines 7-10.

[9] Haslag Direct, Ex. 11, Page 5, Lines 13-14.

[10] Haslag Direct, Ex. 11, Page 18, Lines 6-8.

[11] Haslag Direct, Ex. 11, Page 18, Lines 6-8.

[12] Smith Direct, Ex. 2, Page 8, Lines 10-14.

[13] Scheperle Rebuttal, Ex. 200, Page 5, Lines 25-26.

[14] Scheperle Rebuttal, Ex. 200, Page 8, Lines 29-31.

[15] Scheperle Rebuttal, Ex. 200, Pages 4-5, Lines 30, 1-2.

fixed term of ten years, subject only to a rate increase of up to 2 percent at the time of each general rate increase granted to Ameren Missouri by the Commission during this period.[16] That rate would not be subject to Ameren Missouri's fuel adjustment clause. Noranda contends the $30 rate is "the highest rate Noranda could bear that allows the New Madrid Smelter to be viable."[17]

10. Noranda concedes that the $30 per MWh rate it requests for the next ten years is not based on cost of service principles.[18] Instead, it claims that it is facing a liquidity crisis and that a reduced rate is all it can afford if it is to remain competitive with the rest of the aluminum industry.

11. In his testimony to this Commission, Kip Smith, CEO of Noranda, offered a financial model to explain the company's claim that it is facing a short-term liquidity crisis and a long-term reinvestment challenge. The results of that financial model are reported in Exhibit A to Smith's direct testimony.[19] However, Noranda has designated that exhibit as highly confidential so the details of the financial model cannot be disclosed in this order. Noranda summarizes the results of that model by stating that without actions to improve its liquidity, including obtaining a reduced electric rate, Noranda would consume all its available liquidity by the end of 2015.[20]

12. On February 19, one week after Noranda filed its direct testimony in this case, Noranda reported to its investors that as of the end of 2013, it had a total liquidity of $196 million, representing $117 million available borrowing capacity under a revolving credit facility

[16] Smith Direct, Ex. 2, Page 3, Lines 12-17.

[17] Smith Direct, Ex. 2, Page 3, Lines 13-14.

[18] Transcript, Page 231, Lines 18-22.

[19] Smith Direct, Ex. 1.

[20] Smith Direct, Ex. 2, Page 12, Lines 3-20.

plus $79 million in cash.[21] At that time, Smith, speaking to investors at an earnings conference call, reported that "today we have a healthy balance sheet and a solid liquidity position."[22]

13. At the end of the first quarter of 2014, Noranda reported to its investors that it had a total liquidity of $191 million, representing $140 million of available borrowing capacity plus $51 million cash.[23] At that time, Dale Boyles, CFO of Noranda, told investors "We believe our flexible capital structure, combined with our focus on managing controllable costs and working capital, provides us with a solid liquidity foundation as we work through the headwinds presented by this portion of the commodity cycle."[24]

14. The assumptions used in the financial model that Noranda presented to the Commission to support its assertion that it is facing a liquidity crisis differ substantially from the assumptions used in the financial model that it presented to Moody's Investors Service on January 31, 2014, less than two weeks before it filed its complaint in this case. Again, the Moody's presentation is highly confidential so it cannot be described in detail in this order.[25] Far from showing a liquidity crisis, Noranda's presentation to Moody's showed adequate liquidity throughout the five-year-cash-flow forecast used in the financial model.[26]

15. The cash-flow forecast Noranda presented to Moody's is more favorable for two important reasons. First, the more pessimistic forecast Noranda presented to this Commission as a justification for a lower electric rate assumes that aluminum market prices will be lower than the anticipated prices used in the Moody's model. Second, the model

[21] Ex. 108.

[22] Ex. 109, page 3.

[23] Ex. 112.

[24] Ex. 111, Page 7.

[25] The Moody's presentation is attached to the testimony of Ameren Missouri witness, Robert Mudge, Ex. 102 HC, as Schedule RSM-1HC.

[26] Mudge Rebuttal, Ex. 102 HC, Page 13, Lines 16-21.

presented to the Commission assumes that Noranda will need to make substantially more in capital investments each year than was assumed for the Moody's presentation.[27]

16. For purposes of the cash flow model it presented to the Commission to support its claim of a liquidity crisis, Noranda assumed that future aluminum prices would be predicted by the Forward LME price. However, for the Moody's presentation, Noranda relied on a price forecast derived from CRU's Aluminum Market Outlook for December 2013.[28] Over the next several years, the CRU forecast of aluminum prices is significantly higher than the Forward LME price.[29]

17. The Forward LME price is established by the market to allow for trading of aluminum now for a future transaction price.[30] It is not a forecast of future aluminum prices, a fact upon which the witnesses for Noranda and Ameren Missouri agree.[31] Ameren Missouri's witness, Robert Mudge, explained that the CRU forecast is developed by:

> one of the most, if not the most respected data-gathering organizations in the industry who put together an econometric model that includes data about supply and demand, inventory, macroeconomic factors, interest rates. They have a large model they use to develop this, and they will be wrong. We don't know if they're too high or too low. But they actually produce something that is intended to forecast the price, by contrast to the LME Forwards."[32]

18. If the higher CRU forecast numbers were substituted for the lower Forward LME prices in Noranda's cash flow model, Noranda's liquidity outlook improves substantially.[33]

[27] Mudge Rebuttal, Ex. 102 HC, Page 16, Lines 9-12.

[28] Mudge Rebuttal, Ex. 102 HC, Page 18, Lines 1-5. The CRU Group is an industry consultant group, based in London that focuses on market analysis. Smith Surrebuttal, Ex. 4, Page 8, Footnote 8.

[29] Mudge Rebuttal, Ex. 102 HC, Page 17, Chart at Line 3. The chart and the prices it describes are highly confidential.

[30] Transcript, Page 902, Lines 7-17.

[31] Transcript, Page 974, Lines 1-13. See also, Smith Surrebuttal, Ex. 4, Page 6, Lines 7-13.

[32] Transcript, Page 974-975, Lines 18-25, 1-3.

[33] Mudge Rebuttal, Ex. 102, Page 22, Table 6. The table is highly confidential.

Noranda's witness does not dispute the accuracy of that calculation using that assumption.[34]

19. Noranda's liquidity projections assume that Noranda will need to make $100 million per year in sustaining capital investments for the company as a whole, not necessarily for just the New Madrid smelter.[35] However, for its Moody's presentation, Noranda assumed that it would make only $75 million per year in capital investments, which is the company's average level of capital investment over the last three years.[36] Noranda told its investors that its sustainable capital expenditures should be in the range of $65 to $75 million per year.[37] Most of the additional $25 million in capital expenditures Noranda claims it will need to make in the future are for unidentified growth projects.[38]

20. Including in the cash flow model the unidentified growth projects, for which Noranda asserts the need to make an additional $25 million per year in capital expenditures, does not yield any production or cash flow improvements within the five-year period of the forecast, when compared to the cash flow model presented to Moody's. Instead, smelter production in the model presented to the Commission is identical to that in the Moody's presentation, even though a much greater capital expenditure is incurred in the model presented to the Commission.[39]

21. The fundamental demand for aluminum is increasing and will generally support price increases.[40] But the straight LME aluminum price is not the only factor affecting the price Noranda receives for its aluminum products. The global LME aluminum price is adjusted

[34] Transcript, Pages 378-379, Lines 4-25, 1-7.

[35] Smith Surrebuttal, Ex. 4, Pages 11 and 12.

[36] Transcript, Page 308, Lines 1-14.

[37] Ex. 111, Page 6.

[38] Mudge Rebuttal, Ex. 102 HC, Page 24, Lines 6-8.

[39] Mudge Rebuttal, Ex. 102 HC, Page 28, Lines 6-13.

[40] Transcript, Page 248, Lines 17-20. *See also,* Noranda's 1st Quarter Earnings Conference Call, Ex. 112.

to include a Midwest Premium that is paid for all aluminum produced in the United States. The inclusion of regional premiums in the LME price is designed to encourage local supply by recognizing transportation differentials between regions of the world.[41] The Midwest Premium is also expected to remain strong.[42]

22. Noranda contends it must have a reduced electric rate to effectively compete with other aluminum smelters in the United States. The electricity rate paid by Noranda is the fourth highest electricity rate among the nine U.S. smelters in 2013.[43] However, the rate Noranda paid for electricity in 2013 was only about three percent above the average rate paid by U.S. smelters.[44]

23. Moreover, the cost of electricity is not the only factor that determines whether an aluminum smelter can compete. The cost of production will vary among smelters based on the cost of goods and services as well as the configuration of the plant. The cost of alumina, labor, and electricity account for 75 to 80 percent of a smelter's total cost, with alumina and electricity each comprising about one-third of the cost of production.[45] When the total cost of production at each smelter is taken into account, at current electricity rates, the New Madrid smelter operates at a total cost that is less than the average cost for a U.S. smelter. In fact, at current rates, it is the third cheapest producer of aluminum in the United States, largely because it benefits from the cheapest alumina supply in the nation. If Noranda were granted the $30 rate it requests, it would have the lowest total costs of any smelter operating in the United States.[46]

[41] Transcript, Pages 557-558, Lines 17-25, 1-2.
[42] Transcript, Pages 363-364, Lines 3-25, 1-3.
[43] Fayne Direct, Ex. 8, Page 4, Lines 18-21.
[44] Mudge Rebuttal, Ex. 102, Page 43, Lines 18-20.
[45] Fayne Direct, Ex. 8, Pages 3-4, Lines 20-23, 1.
[46] Mudge Rebuttal, Ex. 102, Page 49, Lines 1-19.

24. At the hearing, Smith testified that a few days before the hearing an event occurred that had a bearing on Noranda's liquidity position.[47] Smith's testimony was offered in camera so the details of the event cannot be described in this order. Even though the testimony was offered in camera, counsel for the Complainants said, in open court, during her opening statement, that "Noranda is currently out of cash and is paying its daily expenses by borrowing against an asset-backed loan. So the paychecks that will be issued this week to employees will be funded by debt."[48] Again, later in her argument, she said: "But the evidence shows that Noranda's clearly in a liquidity crisis. It's out of cash. It's paying its daily expenses on its asset-based loan, and its paying its employees from borrowed money."[49] Obviously, statements of counsel are not evidence. The Commission cites those statements merely to provide context for a matter that must otherwise remain highly confidential.

25. The facts of the event as actually described in the evidence are much less dire than they would appear from the statements of counsel. Noranda's cash flows can vary depending on the time of the month depending upon when its bills are due and when payments are received from customers that like to pay at the end of the month.[50] The fact that the event occurred does not have any broader implications on Noranda's long-term liquidity position.[51] Noranda has not informed its shareholders of any liquidity crisis or the liquidity event through an 8-K filing with the Securities and Exchange Commission.[52] The Commission

[47] Transcript, Pages 187-188, Lines 23-25, 1-18.

[48] Transcript, Page 49, Lines 19-23.

[49] Transcript, Page 66, Lines 6-10.

[50] Transcript, Pages 188-189, Lines 18-25, 1-8. Smith's testimony was offered in camera, but the statement as described does not contain any confidential information.

[51] Transcript, Page 909, Lines 1-11. Mudge offered a more detailed explanation of the possible causes of the event and their meaning for Noranda later in his testimony but that testimony was offered in camera and cannot be described in this order. Mudge's in camera testimony can be found at Pages 933, 934, 954, and 955 of the transcript.

[52] Transcript, Page 372, Lines 4-10.

finds that the event described by Smith does not change the analysis of Noranda's liquidity position as found by the Commission elsewhere in this order.

26. This is not the first time that Noranda has argued to the Commission that it must have a lower electric rate if its New Madrid smelter is to survive. In its Report and Order resolving Ameren Missouri's 2010 rate case, ER-2010-0036, the Commission noted that a nonunanimous stipulation and agreement that was opposed by one of the parties would have given Noranda a rate reduction, while all other Ameren Missouri customers paid substantially higher rates. The Commission stated "MIEC, and in particular, Noranda, attempt to justify these results by claiming that Noranda needs special rate consideration to remain competitive with other aluminum smelters in the United States, lest it be forced to close, resulting in economic devastation to Missouri."[53]

27. In 2010, the Commission rejected the stipulation and agreement that would have given Noranda a rate reduction while increasing rates paid by all other customers.[54] The New Madrid smelter did not close because of that decision, but in 2011, Noranda's board of directors voted to give its shareholders a special dividend totaling $44 million.[55]

28. Noranda was purchased from its previous owner by Apollo Management, L.P., a private equity investment fund, on May 18, 2007. In a deal valued at $1.165 billion, Apollo paid $214.2 million in equity and the balance was from debt secured by Noranda assets and operations. Twenty-five days later, on June 12, 2007, Noranda borrowed money to pay Apollo a dividend of $214.2 million. Thereafter, while still owning stock in the company, Apollo has fully recovered its investment and currently has no equity invested in the company. Noranda

[53] Ex. 120, Page 90.

[54] Ex. 120, Page 92.

[55] Mudge Rebuttal, Ex. 102, Page 39, Table 9.

was left with a capital structure of nearly 100 percent debt.[56]

29. But Apollo was not done taking cash out of Noranda. On June 13, 2008, Noranda paid Apollo another dividend of $100.7 million. Noranda conducted an Initial Public Offering (IPO) of one third of its equity in Noranda on May 19, 2010. After the IPO, Apollo received additional dividends of $107.9 million, as well as $151.1 million from the secondary sale of Noranda stock. In all, Apollo has realized dividends of $422.8 million and realized stock sale proceeds of $151.1 million, while still retaining 34 percent of Noranda's stock. In addition, Noranda has paid Apollo $31 million in management fees since the acquisition.[57] As of the end of 2013, Noranda's ratio of long term liabilities to book capitalization is 87 percent.[58]

30. Because of its debt, Noranda must pay roughly $50 million per year in interest payments.[59]

31. The Complainant's proposal to shift some of Noranda's electric costs to Ameren Missouri's other customers for a ten-year period gives Noranda a subsidy of at least $331 million. That amount is calculated by taking the difference between Noranda's current rate base of $37.94 per MWh and its proposed rate of $30.00 per MWh and multiplying that difference by Noranda expected electric load of 4.169 million MWh per year, for ten years.[60]

32. The basic subsidy of $331 million likely understates the actual subsidy Noranda would receive over the ten years it proposes to receive a reduced rate, because that calculation assumes no increases in Ameren Missouri's base rates over ten years and ignores the existence of Ameren Missouri's fuel adjustment clause. The Complainants proposed that Noranda be exempted from the fuel adjustment clause and that any increases in base rates

[56] Mudge Rebuttal, Ex. 102, Pages 36-37, Lines 7-18, 1-4.

[57] Mudge Rebuttal, Ex. 102, Page 38, Lines 8-19.

[58] Mudge Rebuttal, Ex. 102, Page 37, Lines 8-9.

[59] Transcript, Page 321, Lines 14-19.

[60] Michels Rebuttal, Ex. 104, Page 6, Lines 5-9.

be limited to two percent per increase. As a result, as the rates Ameren Missouri charges the rest of its customers increase, the amount of the subsidy received by Noranda would also increase.[61]

33. If it is assumed that Ameren Missouri's rates actually increase by six percent in June 2015, and six percent every 36 months thereafter, the total subsidy grows to $468 million. If it is assumed that Ameren Missouri's rate increases six percent every 24 months, the subsidy would be $529 million.[62] Of course, no one can know with certainty how much Ameren Missouri's costs, and consequently its rates, may rise over the next ten years, so the exact amount of the subsidy given to Noranda under the Complainants' proposal cannot be known.

34. Moreover, as a practical matter, it is unlikely that the subsidized rate given to Noranda could be ended after ten years. By that time, the rate Noranda would be paying would likely be even further below Ameren Missouri's actual cost to serve the company. If Ameren Missouri's general rates increased by six percent every other year, while Noranda's rates were allowed to increase by only two percent every other year, at the end of ten years, the rate Noranda pays would be nearly 34 percent below its cost of service.[63] Clearly, Noranda would not be willing, or able, to withstand a 34 percent rate increase in year eleven to return to cost-based rates. As a result, the subsidy could, in effect, become permanent.

35. The foundation for the Complainant's claim that the subsidy would benefit Ameren Missouri's other customers as well as Noranda is an assertion that while the rates paid by other customers would have to go up to pay the subsidy, those rates would climb even higher if the subsidy were not paid and Noranda closed the New Madrid smelter and stopped

[61] Michels Rebuttal, Ex. 104, Page 6, Lines 9-23.

[62] Michels Rebuttal, Ex. 104, Page 7, Lines 1-9.

[63] Davis Rebuttal, Ex. 100, Page 7, Lines 18-22.

taking electricity from Ameren Missouri.

36. The Complainant's witness, Maurice Brubaker, calculated that Ameren Missouri's net revenue would be reduced by approximately $60 million per year if the New Madrid smelter closed. In contrast, if the Complainant's proposal was implemented and the smelter remained open while paying a lower rate, Ameren Missouri's net revenue would be reduced by only $47.7 million, resulting in a net benefit to other customers.[64]

37. Brubaker's calculation was based on the calculation by another Complainants' witness, James Dauphinais, of the net costs that Ameren Missouri would avoid if the smelter closed and Noranda no longer took power from Ameren Missouri. In his direct testimony, Dauphinais estimated those net avoided costs to be $27.05 per MWh.[65] Brubaker then estimated that the difference between the avoided cost of $27.05 per MWh and the $30.00 per MWh would provide a benefit to other rate payers of roughly $12 million per year. To achieve the same $12 million per year benefit to other ratepayers, the same $2.95 difference would have to be added to whatever avoided cost was calculated.[66]

38. In his surrebuttal testimony, Dauphinais revised his calculation of Ameren Missouri's avoided cost to arrive at an estimate of between $27.91 and $28.49 per MWh.[67] That estimate is still below the $30 per MWh rate for Noranda proposed by the Complainants, but to achieve the $12 million per year benefit originally described by Brubaker, the rate would need to increase to between $30.86 and $31.44 per MWh.

39. Using different inputs and relying on more recent price assumptions, Ameren Missouri's witness, Matt Michels estimated Ameren Missouri's avoided costs to be $33.89 per

[64] Brubaker Direct, Ex. 16, Pages 6-7, Lines 10-21, 1-4.

[65] Dauphinais Direct, Ex. 13, Page 3, Lines 16-19.

[66] Michels Rebuttal, Ex. 104, Page 29, Lines 5-10.

[67] Dauphinais Surrebuttal, Ex. 15, Page 5, Lines 17-23.

MWh as of May 1, 2014. To give other ratepayers the $12 million annual benefit initially described by Brubaker, Noranda's rate would need to be set at $36.84 per MWh, just $1.10 per MWh less than Noranda's current base rate.[68]

40. Similarly, Staff's witness, Sarah Kliethermes, using different inputs and different price assumptions, calculated that Ameren Missouri's cost to serve Noranda at the time she prepared her testimony is roughly $31.50.[69] She estimated that a rate set at that amount would allow Ameren Missouri to recover its costs at that time, but would not contribute to Ameren Missouri's common costs. Thus, in order for other customers to be better off with Noranda on Ameren Missouri's system than they would be if Noranda left the system, Noranda would have to pay some amount greater than $31.50 for its electric service. To give other ratepayers the $12 million annual benefit of contributions to common costs previously described would require a rate to be set at no less than $34.45 per MWh.

41. Ms. Kliethermes' calculation is the most persuasive of the three calculations. Mr. Dauphinais' calculation was less persuasive because his initial calculation, presented in his direct testimony, relies heavily on a single year of electric price information from a period when such prices were relatively depressed.[70] Electric prices are the largest component, approximately 95 percent, of the calculation.[71] In his revised calculation for his surrebuttal testimony, he relies on a three-year average of those prices, but purports to normalize away the higher electric costs experienced in the unusually cold winter of January – March 2014.[72] Such normalization is not appropriate because while the extreme cold associated with a polar vortex may not reoccur frequently, other, not necessarily weather-related, anomalies will occur

[68] Michels Rebuttal, Ex. 104, Page 29, Lines 10-15.

[69] Transcript, Page 791, Lines 16-20.

[70] Dauphinais Surrebuttal, Ex. 15, Page 8, Lines 20-21.

[71] Transcript, Page 904, Lines 11-15.

[72] Dauphinais Surrebuttal, Ex. 15, Page 9, Lines 10-14.

and have an impact on electric prices.[73] Normalizing the one such anomaly that happened to occur in the three years examined unfairly understates the expected electric prices.

42. None of the proposed measurements of cost to serve seek to determine Ameren Missouri's fully embedded cost to serve Noranda. That amount was determined in the class cost of service study presented in Ameren Missouri's last rate case and was in the $36 range at that time.[74] No party challenges that determination in this case.

43. The value of all three calculations of Ameren Missouri's cost to serve Noranda is limited because they are based on historical values, with no attempt to determine how the cost to serve might change over the next ten years for which Noranda asks that it be given a non-cost-based rate. Dauphinais testified that he was not even attempting to project what costs might be in the future; he was merely attempting to determine a reasonable cost at this time, with the understanding that Noranda's rates would be reviewed and adjusted in Ameren Missouri's next rate case.[75]

44. Following questioning by Public Counsel, Smith offered two commitments that Noranda would make if the Commission granted it the reduced rate it sought. First, he committed to continue to employ 888 full-time employees at the smelter while the special rate remains in effect. Second, he committed to invest a total of $350 million in capital expenditures over the ten-year period of the rate design.[76]

Conclusions of Law

A. Union Electric Company, d/b/a Ameren Missouri is an electrical corporation as that term is defined at Section 386.020(15), RSMo (Supp. 2013). As an electrical corporation,

[73] Transcript, Pages 714-716.

[74] Transcript, Page 754, Lines 9-15.

[75] Transcript, Page 712, Lines 4-12.

[76] Transcript, Pages 629-630, Lines 25, 1-12.

Ameren Missouri is subject to regulation by this Commission as described in Chapters 386 and 393, RSMo.

B. Noranda Aluminum, Inc., is not a regulated utility and is not subject to the jurisdiction of this Commission.

C. Section 386.390.1, RSMo 2000 establishes the standards for bringing complaints before this Commission. The relevant part of section states:

> Complaint may be made by the commission of its own motion, or by the public counsel or any corporation or person, chamber of commerce, board of trade, or any civic, commercial, mercantile, traffic, agricultural or manufacturing association or organization, or any body politic or municipal corporation, by petition or complaint in writing, setting forth any act or thing done or omitted to be done by any corporation, person or public utility, including any rule, regulation or charge heretofore established or fixed by or for any corporation, person or public utility, in violation, or claimed to be in violation of any provision of law, or of any rule or order or decision of the commission;

The section goes on to state:

> Provided that no complaint shall be entertained by the commission, except upon its own motion, as to the reasonableness of any rates or charges of any gas, electrical, water, sewer, or telephone corporation, unless the same be signed by the public counsel or the mayor or president of chairman of the board of alderman or a majority of the council, commission or other legislative body of any city, town, village or county, within which the alleged violation occurred, or not less than twenty-five consumers or purchasers, or prospective consumers or purchasers, of such gas, electricity, water, sewer or telephone service.

This complaint alleges that the rate Ameren Missouri charges to Noranda for electricity is unreasonable because Noranda cannot afford to pay that rate. As required by the second part of the statutory section, the complaint is signed by not less than twenty-five customers, and, therefore, complies with the statutory requirements.

D. This action is a complaint against Ameren Missouri. So, the Complainants, as the party asserting the affirmative of an issue, bear the burden of proving the allegations made

in their complaint.[77]

E. The complaint alleges that the rate Ameren Missouri charges Noranda, a rate established by this Commission in Ameren Missouri's most recent rate case, is now unreasonable because without a reduction in its electric rates, Noranda would have insufficient liquidity to remain viable and would be subject to closure. Those are the allegations the Complainants must prove to prevail in their complaint. But even if the Complainants are able to prove those allegations, there are other questions about whether the Commission can grant the relief they request.

F. Section 393.130, RSMo (Supp. 2013) establishes the requirements for the provision of service by regulated utilities. In general, it requires that all charges for utility service must be "just and reasonable" and not more than allowed by law or order of this Commission. Subsection 2 of that statute further states:

> No … electrical corporation … shall directly or indirectly by any special rate, rebate, drawback or other device or method, charge, demand collect or receive from any person or corporation a greater or less compensation for … electricity …, except as authorized in this chapter, than it charges, demands, collects or receives from any other person or corporation for doing a like and contemporaneous service with respect thereto under the same or substantially similar circumstances or conditions.

Subsection 3 adds:

> No … electrical corporation … shall make or grant any undue or unreasonable preference or advantage to any person, corporation or locality, or to any particular description of service in any respect whatsoever, or subject any particular person, corporation or locality or any particular description of service to any undue or unreasonable prejudice or disadvantage in any respect whatsoever.

G. In sum, the statute says that utilities cannot give any "undue or unreasonable" preference to any particular customer, or class of customers. The leading case interpreting

[77] *State ex rel. GS Technologies Operating Co., Inc. v. Pub. Serv. Comm'n*, 116 S.W.3d 680 (Mo. App. W.D. 2003). *See also, AG Processing, Inc. v. KCP&L Greater Missouri Operations Company*, 385 S.W.3d 511 (Mo. App. W.D. 2012).

the meaning of "undue or unreasonable" preference is *State ex rel. Laundry v. Public Service Commission*,[78] a 1931 decision by the Missouri Supreme Court. The *Laundry* decision arose from a complaint brought before the Commission by two laundry companies contending that they should be allowed to receive water service at the same reduced rate made available to ten manufacturing customers. The court found that the special manufacturing rate had been put in place by the utility to try to draw more business into its service area. In its decision, the Supreme Court found that the laundries were similarly situated to the manufacturing customers and should have been allowed to take water at the reduced manufacturer's rate.

H. The *Laundry* decision merely decides that in the facts described in that case, the laundries should have qualified for the industrial rate. However, Ameren Missouri cites to an even earlier Commission decision that the *Laundry* court quoted extensively for the proposition that all economic development rates are forbidden by the controlling statute. That Commission decision, *Civic League of St. Louis v. City of St. Louis*,[79] does indeed sharply criticize a water rate imposed by the City of St. Louis for the purpose of encouraging manufacturing enterprises to locate within the city, and orders the city to revise those rates to avoid discrimination. However, the criticism was that the rates imposed by the City of St. Louis were set below the cost of service and that they were unreasonably low. In the words of the Commission:

> The establishment of the truth of such averment (that rates to manufacturers were below the cost of service) would reveal not only unquestionably unjust discrimination, but also an unreasonable low rate to this class (the manufacturers), and intolerable oppression upon the general metered water users in that they would be compelled to pay in part for water and service furnished to the favored class. The exercise of power crystallized into legislation that unjustly discriminates between users of water in this manner, in effect deprives those discriminated against of the use of their property without adequate compensation or due process of law, and turns it over to the favored

[78] 34 S.W.2d 37 (Mo 1931)

[79] 4 Mo. P.S.C. 412 (1916).

> class. It is in essence a species of taxation which takes the private property of the general or public metered water users for the private use of metered water users engaged in manufacturing. This is an abuse of power.[80]

While this decision speaks more directly to the propriety of below-cost rates, it does not necessarily contradict the principle set forth in *Laundry* that the Commission may set preferential rates as long as the preference is reasonably related to the cost of service and is not unduly or unreasonably preferential.[81] No party has identified any subsequent court decision that would go as far as proscribing all economic development type rates.

I. Instead, the courts that have examined this issue have made fact-based inquiries about the statutory proscription against unjust and unreasonable rates and undue or unreasonable preference or disadvantage.[82] So how does the Commission determine whether a given rate is unduly or unreasonably preferential or disadvantageous? In a general rate case, the parties will submit one or more class cost of service studies. Such studies are designed to determine the amount of cost that each class of customer causes, and then recommend how rates should be established to maintain the principle that those causing the costs should be responsible for paying rates sufficient to recover those costs.

J. That does not mean all customers should pay the same rate. On the contrary, a single rate for all customers would likely be unjust because different customers cause different amounts of costs. So, Ameren Missouri's current rates recognize several different rate classes, including the Large Transmission Service class, of which Noranda is the only member. However, the rates charged to each customer class are firmly based on cost-

[80] *Civic League* at 455-456.

[81] ". . . that principle of equality does forbid any difference in charge which is not based upon difference in service, and, even when based upon difference of service, must have some reasonable relation to the amount of difference, and cannot be so great as to produce an unjust discrimination." *Laundry* at 45.

[82] *For example see, State ex rel. City of Joplin v. Pub. Serv. Comm'n,* 186 S.W.3d 290 (Mo. App. W.D. 2005).

causation principles.

K. The Complainants argue that the Commission should throw out cost causation principles in order to allow Noranda a lower rate based not on costs, but rather on what it says it can afford to pay. The Complainants must shoulder a very heavy burden to show that such a rate would not be unduly or unreasonably preferential.

L. Ameren Missouri also challenges the sufficiency of the Complainant's case on the basis that they are attempting to alter rates based on consideration of only a single factor, in other words, they are asking the Commission to engage in single-issue ratemaking.

M. At its heart, the argument against single-issue ratemaking is based on the requirement that the Commission examine all relevant factors. That requirement is based on section 393.270.4, RSMo 2000, which states:

> In determining the price to be charged for gas, electricity, or water the commission may consider all facts which in its judgment have any bearing upon a proper determination of the question, although not set forth in the complaint and not within the allegations contained therein, …

In interpreting that statute, Missouri's courts have found that when adjusting rates, the Commission is required to consider all relevant factors.[83]

N. The Complainants contend that because they are not asking the Commission to change Ameren Missouri's revenue requirement there is no need to produce evidence to establish the utility's current cost of service. Instead, they believe the only relevant factor is Noranda's ability to pay its electric rate. However, if Ameren Missouri's revenue requirement is to remain unchanged, then any reduction in the amount of revenue Ameren Missouri is allowed to collect from Noranda must necessarily be collected from the other rate-paying customers.

[83] *State Ex Rel. Missouri Water Co. v Pub. Serv. Comm'n*, 308 S.W.2d 704, 718-719 (Mo. 1957). *See also*, *State ex rel. Utility Consumers Council of Missouri v. Pub. Serv. Comm'n*, 585 S.W.2d 41 (Mo. 1979).

O. Public Counsel argues that the Commission could simply reduce Noranda's rate without collecting the resulting shortfall from other customers; essentially requiring Ameren's shareholders to absorb that cost. As Public Counsel points out, there is nothing in Missouri law that would allow the rates paid by other ratepayers to be automatically raised when Noranda's rates are decreased.[84]

P. Public Counsel suggests that Ameren Missouri somehow has a burden to respond to Noranda's complaint by establishing that rates for other ratepayers should be increased to make up for Noranda's rate decrease. However, this is the Complainants' complaint, and only the Complainant's have a burden to prove their complaint. That burden cannot shift to the respondent utility.[85] Thus, any failure to establish that the rates Ameren Missouri charges to its other customers should be increased is a failure by the Complainants to meet the burden that is placed on them.

Decision

The Complainants have the burden of proving the rate Noranda currently pays, the rate established by this Commission in Ameren Missouri's 2012 rate case, is now unreasonable because without a reduction in its electric rates, Noranda would have insufficient liquidity to remain viable and would be subject to closure. Noranda framed this burden when it argued that the Commission must conclude its smelter is crucial to Missouri's economy, that the smelter cannot be sustained without the proposed reduced rate, and other ratepayers will benefit more from the reduced rate that they would from Noranda leaving Ameren Missouri's system. The Commission is fully persuaded that Noranda is important for the economy of

[84] Post Hearing Brief of the Office of the Public Counsel, Page 7. The Commission acknowledges that OPC's position may have changed after the briefs were filed, as is apparent through the stipulations filed in July and August.

[85] *AG Processing, Inc. v. KCP&L Greater Missouri Operations Co.,* 385 S.W.3d 511 (Mo. App. W.D. 2012).

southeast Missouri and for Missouri as a whole. However, after considering all the evidence presented, the Commission concludes that the Complainants have not met their burden in that they have not shown Noranda is suffering from a liquidity crisis, and they have not shown Ameren Missouri's other customers will be better off if the Commission granted the requested relief.

Liquidity Crisis

The Complainants have not established that Noranda is facing a liquidity crisis. By filing its complaint and demanding an expedited procedural schedule, and by proclaiming at the hearing that Noranda had run out of cash, the Complainants sought to show ~~imply~~ that Noranda was facing an emergency that must be addressed quickly if the New Madrid smelter is to be saved. However, the evidence presented at the hearing did not establish a short-term need for immediate rate relief.

Indeed, the rate relief demanded by Noranda is not designed to address a short-term crisis. Rather, in the complaint, Noranda seeks a subsidized rate that it insists must remain in place for a period of ten years if the smelter is to remain viable. The complaint does not suggest that after ten years Noranda would be able to return to a cost-based rate, and the evidence suggests that by that time Ameren Missouri's rates would have increased to a level that would make an immediate return to such rates highly unlikely. Therefore, the rate Noranda would likely be a permanently subsidized rate financed by Ameren Missouri's other ratepayers.

Even when considering the longer-term viability of the smelter, the Complainants have failed to prove that a subsidized rate is needed. The financial model that Noranda presented as the basis for its claim for subsidization is severely flawed. By relying on Forward LME prices rather than more realistic forecasts from CRU that take into account a strong fundamental demand for aluminum, Noranda's model understates the likely future price of

aluminum. Further, the financial model that Noranda submitted to this Commission assumes that the company will need to make $25 million per year in additional unidentified capital investments that it has not made in the past and that Noranda did not claim a need to make when it described its financial projections to Moody's a few weeks before it filed this complaint.

In sum, the Commission believes the financial projections Noranda has presented to its investors, and to Wall Street in general, cast considerable doubt on the financial projections it presented to this Commission.[86]

Benefit of Reduced Rate

The Complainants argue that Ameren Missouri's other ratepayers would be better off if Noranda pays a $30 per MWh rate, with limited upward adjustments, for ten years than they would be if the smelter closes and Noranda no longer makes a contribution to Ameren Missouri's common costs. But the evidence shows that Ameren Missouri's marginal cost to serve Noranda today is above $30 per MWh, likely in the range of $31.50. Even Noranda's witnesses concede that the marginal cost would likely increase in future years and would need to be adjusted in future rate cases. That means the Complainants are asking the Commission to establish a rate for Noranda that would be subsidized by Ameren Missouri's other ratepayers and that would not benefit those other ratepayers. Thus, even if Complainants had succeeded in proving a liquidity crisis, they failed to establish that Ameren's other customers would benefit from the rate reduction Noranda proposed.

Although Noranda's witnesses testified that it absolutely needs a $30 per MWh rate, sustained over ten years with only limited increases, to remain viable, the Complainants have

[86] To the extent that Noranda is experiencing financial liquidity problems, it seems likely that these problems are largely self-inflicted. The former owner of Noranda, and still its principal shareholder, Apollo Management, L.P., took $422.8 million in cash dividends from the company after it acquired the company. Noranda had to borrow money to pay the dividends, leaving it with a current debt to equity ratio of 87 percent. Under those circumstances it is not surprising that Noranda has some cash liquidity issues, especially considering the roughly $50 million per year in interest payments Noranda must pay on that debt.

also suggested that the Commission could craft some sort of unspecified compromise terms under which Noranda's electric rate is modified.[87] Because this is a complaint, however, the Complainants bear the burden of proof regarding the relief they seek in that complaint, not some other relief that the Commission might craft on their behalf.

Missouri law forbids a utility to charge a rate that gives an undue or unreasonable preference to any particular customer or class of customers, and the Commission cannot lawfully approve such a rate. Since the Complainants are asking the Commission to order Ameren Missouri to charge Noranda a rate that is not based on the utility's cost to serve that customer, they bear the burden of proving that such a subsidized rate is just and reasonable and is not an undue or unreasonable preference to a particular customer. The Complainants have not carried that burden.

The Commission usually determines whether a rate design - the means by which the responsibility to pay the utility's revenue requirement is distributed among the utility's customer classes – is just and reasonable by examining a class cost of service study to determine the amount of costs that should be assigned to each class on the principle that the class that causes the cost should pay that cost. The Complainants did not present a class cost of service study in this case, nor did any other party. The Commission will not state that a class cost of service study is absolutely indispensable to sustain a complaint case, but here it would be instructive. In the absence of a class cost of service study, it is impossible to

[87] After the record closed, after briefs were filed, and after the Commission publically began its deliberations at an agenda meeting, the Complainant's and other parties filed a series of non-unanimous stipulations and agreements, which have been formally opposed by Ameren Missouri and by Staff. Those stipulations and agreement propose specific compromise terms by which Noranda's rates would be set at a level above $30 per MWh, subject to various conditions and commitments. Since those stipulations and agreements have been opposed, under Commission Rule 4 CSR 240-2.115(2)(D), they can only be treated as revised positions of the signatory parties. The Commission finds their proposals intriguing - and encourages the parties to continue to pursue negotiations on a compromise position as it could be considered in Ameren Missouri's current rate case, File No. ER-2014-0258.

determine whether Ameren Missouri's current rates are now unjust and unreasonable.

Giving a subsidized rate to Noranda would necessarily mean that Ameren Missouri's other customers would ultimately have to foot the bill.[88] No doubt the New Madrid smelter is very important to the economic health of the entire state of Missouri. The Commission sympathizes with Noranda's employees and the residents of the New Madrid area who testified at the local public hearings in this case. The Commission certainly does not want the smelter to close. But the Commission determines that the evidence presented in this case does not warrant a departure from cost-of-service ratemaking. The Complainants have not demonstrated a liquidity crisis nor adequately demonstrated that Ameren Missouri's remaining ratepayers would be better off if Noranda took service at its requested rate than they would be if Noranda exited Ameren Missouri's system. Finally, and importantly, a request for an economic development subsidy of this magnitude is more properly directed to the Missouri General Assembly.

After carefully considering all the evidence and the arguments of the parties, the Commission finds and concludes that the rate design complaint must be denied and dismissed.

THE COMMISSION ORDERS THAT:

1. The complaint brought by Noranda Aluminum, Inc. and the other complainants is denied and dismissed.

[88] Even if Public Counsel's argument were accepted and it were determined that rates on other customer classes could not be raised in this complaint case, Ameren's shareholders would only be required to absorb that cost until new rates are established in Ameren Missouri's next general rate case, which is already pending and will likely result in new rates in May of 2015.

2. This report and order shall become effective on September 19, 2014.

BY THE COMMISSION

Morris L. Woodruff
Secretary

R. Kenney, Chm., Stoll, W. Kenney,
Hall and Rupp, CC., concur;
and certify compliance with the
provision of Section 536.080, RSMo

Dated at Jefferson City, Missouri,
on this 20th day of August, 2014.

SCHEDULE RSM-R4

IS DEEMED

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IN ITS ENTIRETY

SCHEDULE RSM-R5
IS DEEMED
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SCHEDULE RSM-R6
HAS BEEN DEEMED
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SCHEDULE RSM-R7
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SCHEDULE RSM-R8
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