Exhibit No.:	
Issue:	Noranda Rate Request
Witness:	Dale Boyles
Type of Exhibit:	Surrebuttal Testimony
Sponsoring Party:	Noranda Aluminum, Inc.
Case No.:	ER-2014-0258
Date Testimony Prepared:	February 6, 2015

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

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

Surrebuttal Testimony of

Dale W. Boyles

(NON-PROPRIETARY (NP) VERSION)

On behalf of

Noranda Aluminum, Inc.

February 6, 2015

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

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

STATE OF TENNESSEE)
) **SS**
COUNTY OF WILLIAMSON)

Affidavit of Dale W. Boyles

Dale Boyles, being first duly sworn, on his oath states:

1. My name is Dale W. Boyles. I am Chief Financial Officer of Noranda Aluminum, Inc., having its principal place of business at Suite 600, 801 Crescent Centre Drive, Franklin, Tennessee, 37067.

2. Attached hereto, and made a part hereof for all purposes, is my surrebuttal testimony, which was prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2014-0258.

3. I hereby swear and affirm that the testimony is true and correct.

Dale W. Boyles

Subscribed and sworn to before me this 6th day of February, 2015.

PAM MCCULLOUGH
STATE OF TENNESSEE NOTARY PUBLIC
WILLIAMSON COUNTY
My Commission Expires 02-28-2016

Notary Public

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Surrebuttal Testimony of Dale W. Boyles

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Dale W. Boyles. My business address is Suite 600, 801 Crescent Centre Drive, Franklin, Tennessee, 37067.

Q WHAT IS THE PURPOSE OF YOUR SURREBUTAL TESTIMONY?

A The purpose of this testimony is to respond to the rebuttal testimonies of Dr. Humphreys and Mr. Mudge, and because some of their criticisms of Noranda's proposal are echoed by Mr. Michels and Mr. Reed, those witnesses as well.

The fact that I do not address every point raised by these witnesses should not be interpreted as agreement with those points or those witnesses.

Q WOULD YOU PLEASE BRIEFLY SUMMARIZE YOUR DIRECT TESTIMONY?

A In my direct testimony, I addressed the electric rate for electricity used at the New Madrid Smelter and purchased from Ameren Missouri. I proposed an initial total rate of $32.50/MWh with no seasonal adjustments. I further proposed to

increase this total rate by one percent annually, and for this structure to remain in place for seven years. This proposed rate is a reduction from the current total rate of approximately $42.54.

As I explained in my direct testimony, every company, including Noranda, needs cash in order to run its business and needs a minimum level of liquidity in order to keep its doors open. **_____** Because of our significant power costs, which have increased $44 million a year since 2008, the Smelter, the largest user of electricity in Missouri, is in jeopardy unless Noranda receives its requested energy relief. It is undisputed in this case that the price of aluminum is extremely volatile and that the price hovers in price troughs more than price peaks. Nevertheless, companies like CRU forecast general aluminum LME trends that essentially provide the mean price without showing the high volatility in price that can be expected and for which companies should plan, the direction and duration of which have a dramatic effect on the smelter's viability.

In my direct testimony, I used our financial model and input various aluminum price volatility scenarios, using the actual historical aluminum price volatility from ten year periods starting in 1998, 1999, and 2000 to model volatility starting in 2016. **_____

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I also said, because of the negative impact high power rates on the Smelter's cost position, Noranda has relied on access to its revolving credit

agreement to sustain its business—the equivalent of paying for basic operations using our credit card. That ABL matures in February 2017 and it must be refinanced. Noranda also has additional borrowing that matures in 2019 that must be refinanced at that time. Successful refinancing of this debt is vital to the Smelter's viability. I expressed my opinion that without rate relief necessary to generate cash flows and liquidity, Noranda may be unable to refinance, or to only obtain financing at high cost and with restrictions and performance covenants that would increase the likelihood of default, thus continuing to challenge the viability of the Smelter. That opinion was confirmed by Tom Harris and Steve Schwartz. ** _____

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In short, my direct testimony demonstrated the need for rate relief now in order to make the Smelter viable in the short and long term.

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Q PLEASE SUMARIZE YOUR SURREBUTTAL?

A My surrebuttal responds to Dr. Humphreys, Mr. Mudge and, to a lesser extent, Mr. Michels and Mr. Reed, as follows:

- Since we know that aluminum prices will be volatile, it is entirely objective, reasonable, and prudent to rely on representative volatility scenarios based upon historical experience. In fact, for purposes of stress testing the sufficiency of a company's liquidity and viability, it would be inappropriate and imprudent to assume there will be no volatility as Ameren's witnesses do;
- The models reflected in my direct testimony are representative scenarios of likely outcomes; they do not reflect "worst case" volatility scenarios;
- ** _____ _____ _____ _____ _____ _____**
- Modeling volatility in aluminum prices is entirely consistent with our communications to investors and rating agencies, as we frequently refer to the volatility in aluminum prices in our public filings and quarterly earnings calls;
- Because of our liquidity constraints, particularly given the current environment of potential counterparties, Noranda has limited ability to protect itself from aluminum price volatility by using long-term or "strategic" hedges;

- The capital spending needs that Noranda has identified are very real. Without that level of capital spending, the Smelter is not viable.

Q DO THE CRITISISMS PUT FORWARD IN THE REBUTTAL TESTIMONIES OF DR. HUMPHREYS, MR. MUDGE, MR. MICHELS AND MR. REED REGARDING THE USE OF VOLATILITY-ADJUSTED FORWARD ALUMINUM PRICE SCENARIOS HAVE ANY MERIT?

A No, they do not. Although these witnesses agree that aluminum prices are volatile, they suggest the Commissioners should consider non-volatility adjusted aluminum price forecasts, such as those routinely published by CRU. They claim it is too difficult to model volatility.

The type of analysis we performed is quite common as part of an enterprise's risk management. All types of enterprises frequently perform "stress test" analyses to determine their ability to survive certain events. Instead of preparing financial projections on a single point "best estimate" basis, an enterprise (and frequently its regulators, credit rating agencies, and certainly its lenders) perform stress testing based on a variety of representative scenarios.

- Often the scenario analyses involve simple rule-of-thumb scenarios: "What happens if volume drops by x%, what happens if price drops by y%, or what happens if costs rise by z%?" The types of scenarios historically considered by Noranda have been along those lines: "What happens if aluminum prices go to $x for six months and then bounce

back? What happens if aluminum prices stay at $x for a long period of time?"

- Stress testing models provide the ability to test an enterprise's current exposure to known historical scenarios.

Q HOW DID YOU DETERMINE WHICH SCENARIOS WERE CONSIDERED TO BE"REPRESENTATIVE"? ARE CLAIMS ACCURATE THAT NORANDA HAS PRESENTED "WORST CASE SCENARIOS", AS ASSERTED IN THE REBUTTAL TESTIMONIES OF DR. HUMPHREYS, MR. MUDGE, MR. MICHELS AND MR. REED?

A. The volatility scenarios presented in my direct testimony are sound and have a more than reasonable likelihood of occurring. They were defined to reflect a reasonable range of likely outcomes based on actual history. As discussed below with respect to the 2002 and 2003 periods, they certainly are not worst case scenarios as some of these witnesses state.

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This left us with the conclusion that the volatility curves of 1998 through 2001 were the most representative. We chose 1998, 1999, and 2000 as the three

scenarios to model and include as exhibits in my direct testimony because they had the advantage of being consecutive years, with distinct “high, medium, low” characteristics. But including 2001 would have been equally representative.

Q WHAT CONCLUSIONS DO YOU DRAW FROM THE YEARS CONSIDERED MOST REPRESENTATIVE?

A Attached as Schedule DB-1 is a summary spreadsheet I prepared to address the Rebuttal testimonies of Messrs Mudge, Humphries, Michels, and Reed. In that schedule, I show cash flow, ending cash, liquidity and net income for the seven volatility scenarios that do not directly contradict the qualifying screen referred to above. The conclusions that can be drawn are as follows:

- ** _____ _____ _____ _____**
- ** _____ _____ _____**
- ** _____ _____ _____ ** ** _____ _____**

Q WHY IS THE FINANCIAL MODEL APPROACH DIFFERENT IN THIS CASE THAN IT WAS IN EC-2014-0224?

A In the days before we filed our rate design petition in the 0224 case, aluminum prices hit what turned out to be their lowest point since the Global Financial Crisis. In essence, we did not need to prepare a "stress test" model because the forward curve was its own stress test, albeit one produced as a relatively straight line forecast with no volatility adjustments.

Subsequent to EC-2014-0224, we developed a more robust analysis which evaluates our financial performance under numerous scenarios to account for the uncertainty and volatility of the LME price of aluminum. It is not a single-point forecast. Rather it is a multi-scenario risk analysis that shows the company's financial performance under numerous sets of likely outcomes. These outcomes were filed as exhibits to my direct testimony.

Moreover, in addition to focusing on liquidity levels as a metric for determining the viability of the smelter, we looked at cash flow and our ability to obtain funds from external sources.

In short, rather than producing a single point "best estimate" forecast, we have demonstrated the risks we face by presenting sensitivity analyses based on a range of possible aluminum prices. **_____

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Q TO SUPPORT HIS USE OF THE CRU FORECAST WITH NO VOLATILITY CONSIDERATION, MR. MUDGE STATES THAT NORANDA HAS SUFFICIENT LIQUIDITY AND HAS NOT RUN OUT OF CASH SINCE JUNE. DO YOU AGREE?

A No, Mr. Mudge is incorrect.

In our response to DR 1.39 which lists our cash balances since June and that Mr. Mudge references in his Rebuttal, we made it clear we had to borrow against our revolving credit agreement and deposit the borrowed funds into our cash account so we could meet our daily obligations such as Ameren's utility bill, raw materials, and payroll.

In that time, the amount of our total available liquidity, defined as the cash we have on hand and to which we have access through our revolving credit agreement, has ** ——————————————————**.

With no rate relief, our liquidity will likely **————————**.

Access to available borrowings to cover daily expenses of running the business and to account for short-term fluctuations in economic activity such as customer demand is necessary and prudent. However it is not a sustainable action over the long term for a company due to the incremental cost and higher debt leverage.

Q MR. MUDGE CLAIMS THAT YOUR APPROACH TO MODELLING VOLATILITY IS CONTRARY TO YOUR COMMUNICATIONS TO INVESTORS AND RATING AGENCIES? DO YOU AGREE?

A No, I do not.

First, as a public company, it is uncommon for us to share forecasts with external parties; our public disclosures provide investors and other financial statement users the information they need to prepare their own models. We know that many credit and equity analysts do this with some regularity. Moody's is the exception because of an informal historical practice of providing them with a financial model they can use to check their own work. That event was discussed at great length in the 0224 case; we gave Moody's the CRU projections, but it downgraded Noranda anyway.

Second, as a public company, we discuss volatility as a risk in our business. For example, the following language appears as the first risk factor in our 2013 Form 10-K:

> "Our operating results depend substantially on the market for primary aluminum, a cyclical commodity whose prices have historically been volatile […]. Primary aluminum prices are subject to regional and global market supply and demand and other related factors. Such factors include production activities by competitors, production costs in major production regions, economic conditions, interest rates, nonmarket political pressures, speculative activities by market participants and currency exchange rates. Extended periods of industry overcapacity may result in a weak pricing environment and margin compression for aluminum producers, including Noranda."

Q IS THERE ANY MERIT TO DR. HUMPHREYS CONTENTION THAT NORANDA CAN ADDRESS THE VOLATILITY ISSUE BY HEDGING THE ALUMINUM PRICE?

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Q IS THERE ANY MERIT TO THE POSITION OF THE ABOVE AMEREN WITNESSES THAT NORANDA WILL NOT NEED TO INVEST $100 MILLION PER YEAR IN CAPITAL SPENDING, THUS FREEING UP A SUBSTANTIAL AMOUNT OF CASH AND INCREASED LIQUIDITY?

A No.

Mr. Mudge has no basis, and to his credit attempts no substantive explanation, for his assertion that a capital intensive business such as ours would require significantly lower levels of capital investment. He ignores the workpaper provided in my direct testimony that lists a hopper of projects totaling more than **_______________________________**, simply because we have not yet performed financial justification analysis on individual projects which are three to seven years away.

Frankly, as Noranda's CFO I believe I am in a better position than Mr. Mudge to know what level of capital spending is required to sustain the Smelter. As one who regularly visits our sites, participates in frequent business reviews, evaluates spending requests, and prioritizes competing demands for limited resources, I know firsthand the necessity of projects such as those identified in the hopper Mr. Mudge so readily discards.

Based on my knowledge of Noranda's capital needs, the spending levels described below, and repeated from my direct testimony, are accurate.

Type of Capital	Expected Range
Sustaining capital—the investment required to support each business's daily operations	$70 to $75 million
Growth capital—the investment to implement productivity and improvements and to support Noranda's existing customers and maintain Noranda's existing competitive position.	$20 to $25 million
Total Capital Spending	**$90 to $100 million**

Q DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A Yes, it does.

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Realized Sow Price	2015F	2016F	2017F	2018F	2019F	2020F	2021F
1994	1.08	1.22	1.46	1.21	1.31	1.13	1.14
1995	1.08	1.43	1.19	1.29	1.11	1.12	1.26
1996	1.08	1.19	1.29	1.10	1.11	1.26	1.16
1997	1.08	1.22	1.04	1.05	1.19	1.09	1.03
1998	1.08	0.99	1.00	1.13	1.04	0.99	1.04
1999	1.08	0.95	1.07	0.98	0.93	0.98	1.19
2000	1.08	1.05	0.97	0.91	0.96	1.17	1.26
2001	1.08	0.94	0.89	0.93	1.14	1.22	1.60
2002	1.08	0.85	0.89	1.08	1.16	1.53	1.52
2003	1.08	0.86	1.04	1.12	1.47	1.47	1.44
2004	1.08	1.01	1.09	1.43	1.43	1.40	0.94