

Exhibit No.:
Witness: Joseph H. Haslag
Type of Exhibit: Surrebuttal Testimony
Issues: Noranda Economic Impact
Sponsoring: Noranda Aluminum, Inc.
Party: EC-2014-0224
Case No.:

**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) **Case No. EC-2014-0224**
Missouri's Large Transmission)
Service Tariff to Decrease its)
Rate for Electric Service)
_____)

Surrebuttal Testimony of Joseph H. Haslag

On behalf of

Noranda Aluminum, Inc.

May 30, 2014

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

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Aluminum, Inc.'s Request for)
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STATE OF MISSOURI)
COUNTY OF BOONE) SS

Affidavit of Joseph H. Haslag

Joseph H. Haslag, being first duly sworn, on his oath states:

1. My name is Joseph H. Haslag. I am a professor in Economics at the University of Missouri. My business address is Department of Economics, University of Missouri, Columbia, Missouri 65211.
2. Attached hereto and made a part hereof for all purposes is my direct testimony, which was prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. EC-2014-0224
3. I hereby swear and affirm that the testimony is true and correct.

Joseph H. Haslag
Joseph H. Haslag
Joseph H. Haslag

Subscribed and sworn to before me this 28th day of May, 2014.

WILLIAM BRIAN COSTELLO
Notary Public - Notary Seal
STATE OF MISSOURI
County of Boone
My Commission Expires 5/6/2016
Commission # 12336498

William Brian Costello
Notary Public

**Before the
Missouri Public Service Commission**

Case No. EC-2014-0224

Prepared Surrebuttal Testimony of Joseph H. Haslag

1 **Q: Please state your name and business address.**

2 A: Joseph H. Haslag; Department of Economics, University of Missouri, Columbia,
3 MO 65211.

4 **Q: Did you file Direct testimony in this case?**

5 A: Yes.

6 **Q: What was the purpose of your Direct testimony?**

7 A: I explained my calculation of the economic impact that Noranda's New Madrid
8 Smelter has on the economy of the state of Missouri to assist the Commission in
9 understanding the consequences to Missouri's economy resulting from a closure
10 of Noranda's New Madrid Smelter.

11 **Q: What is the purpose of this Surrebuttal testimony?**

12 A: I respond to the testimony of Mr. William R. Davis, filed on behalf of Ameren
13 Missouri. Specifically, I respond to Mr. Davis' criticism of my calculation of impact
14 to the Missouri economy resulting from a closure of Noranda's New Madrid
15 Smelter.

16 **Q: What specifically are his criticisms?**

17 A: While Mr. Davis does in fact agree that the economic impacts of smelter closure
18 are "not unimportant" and generally agrees with my "conceptual framework"
19 (pages 11-2), he has the following criticisms starting at page 9 of his Rebuttal
20 testimony:

- 1 1. He calls the requested rate relief an inappropriate “subsidy” that he contends is
2 borne entirely by Ameren Missouri ratepayers, only a small percentage of
3 which live near the New Madrid smelter where the benefits of the smelter
4 accrue (pages 9-10);
- 5 2. He believes that the calculated impacts of smelter closure, stated on a
6 percentage rather than dollar basis, are insufficient to justify the requested rate
7 relief (pages 11-20);
- 8 3. He believes that my economic analysis should have, but did not, contemplate
9 the economic impact of increasing ratepayers’ rates (pages 12-3).

10 **Q: Do you agree with his criticisms?**

11 A: Absolutely not. I disagree with him on all three criticisms.

12 **Q: How do you respond to his first criticism?**

13 A: In the analysis described in my Direct Testimony, I determined that over a
14 generation—that is, over the next 25 years—the impact that the New Madrid
15 facility has on the Missouri economy is, after discounting, computed to be \$8.917
16 billion. If, instead, we compute the smelter’s impact over the next ten years, the
17 effect on Missouri’s real GDP is \$3.646 billion. In other words, Missouri’s economy
18 would forego nearly \$9 billion in economic activity over a generation, and \$3.646
19 billion over the next ten years if the Noranda Smelter were closed. In addition, I
20 computed the impact on the state’s net general revenue and local property tax; for
21 these two items, the impact of the smelter over a generation was \$338.87 million
22 and \$51.45 million respectively. I calculated that the net general revenue impact
23 and property tax impact of the smelter over the next ten years as \$138.35 million
24 and \$20.24 million respectively.

1 First, in voicing his criticism, Mr. Davis forgets that a substantial portion of the Net
2 General Revenue impact is in fact borne by Ameren Missouri ratepayers. As of the
3 end of 2013, there were 1,041,000 households served by Ameren in Missouri.
4 According to the Quick Facts by the U.S. Census Bureau, there are 2.46 persons
5 per household in Missouri.¹ This implies that there are 2,560,860 people served
6 by Ameren. Each Missourian is affected by a closure of the smelter in the form of
7 reduced state government expenditures for services. We can reasonably assume
8 that the burden of reduced Net General Revenue affects each person equally in
9 the form of reduced state government services. In 2013, Missouri's population
10 was 6,044,171. Therefore, the Ameren customer base accounts for 42.37 percent
11 of the state population. Accordingly, the cost of foregone State Government
12 services attributable to Ameren Missouri ratepayers will be 42.37 percent of the
13 reduction in state revenues collected.

14 Second, as I understand the testimony in this case, ratepayers' rates will increase
15 if the smelter is forced to close (if Noranda's electric rate is not reduced). In
16 performing my analysis, I assumed that smelter closure was the case. I also
17 understand from the testimony that ratepayers will see electricity rates increase if
18 Noranda receives its requested rate. The net impact to ratepayers between the
19 two rate impact scenarios is the key. If the impact to ratepayers from a lower
20 Noranda rate is less than or equal to the impact to ratepayers from a smelter
21 shutdown, then the reduction in state GDP, general revenues or property tax
22 revenues resulting from smelter closure would represent an avoidable and
23 unnecessary impact.

¹ See <http://quickfacts.census.gov/qfd/states/29000.html> .

1 **Q: How do you respond to his second criticism?**

2 A: Mr. Davis merely takes large dollar impacts to the state economy or to state tax
3 collections and attempts to trivialize them by converting them to a percentage. The
4 fact that a \$626 million impact to GDP in one year represents .3% of state GDP in
5 that year, or that \$24 million in tax revenues represents .3% of total state general
6 revenue in that year, or that \$4.5 million to \$10.2 million represents 1-2% of the
7 unemployment insurance budget in a year, does not mean that those impacts are
8 not significant. Indeed, imagine the media coverage or the number of Missouri
9 DED press releases that would be issued if Missouri attracted a new employer
10 hiring 900 people.

11 **Q: How do you respond to his third criticism?**

12 A: On page 13, Mr. Davis assumes that Ameren Missouri ratepayers will pay \$331
13 million more on electricity, and accordingly \$331 million less on other goods and
14 services, over the next ten years if the proposed Noranda rate relief is granted. I
15 disagree. As far as I can tell, Mr. Davis did not take into account the Law of
16 Demand; in other words, the quantity demanded for Ameren-produced electricity
17 will likely decline if the price increases (all other things equal, including weather).
18 The mathematical implication is clear: the change in total expenditures is equal to
19 the sum of three components: (1) the product of the price and the change in
20 quantity; (2) the product of the quantity and the change in price; and (3) the product
21 of the change in price and the change in quantity. Based on what Mr. Davis
22 showed in his testimony, he considered only item (1) and ignored items (2) and (3).
23 In addition, it is interesting that Mr. Davis wrongly accuses me of not considering
24 how ratepayers will change their spending across the different types of consumer
25 goods if the proposed rate is granted and their rates increase. He states that this

1 alleged oversight **implies** that my quantitative conclusions overstate the net effect
2 on the state economy.

3 Mr. Davis' reasoning is as follows: by increasing rates to Ameren customers, they
4 will have less money to spend on other goods and services. Because of this
5 substitution, businesses selling these "other items" will realize lower sales. Such
6 sales losses, according to Mr. Davis, will partially offset the economic benefit of
7 keeping the smelter open that I computed. Therefore, he argues that these shifts
8 in spending that I allegedly did not consider caused me to overstate the economic
9 impact associated with smelter closure. Mr. Davis' logic implies that I understated
10 the economic impact because increased electric rates to other ratepayers from a
11 reduced rate for Noranda in order to keep its plant open would cause a spillover to
12 businesses selling "other items" so that their production would decline.

13 A simple illustration shows the error of his analysis. Consider a case in which the
14 price of gasoline increases. People respond to the price hike by decreasing the
15 amount of gasoline that they purchase. And, if the elasticity of demand for
16 gasoline is less than one, the total expenditures on gasoline will decline even
17 though the price per gallon increased. In the model economy I used for my Direct
18 Testimony, this kind of substitution within the market basket occurs. The people
19 making these purchases are paid for supplying labor and capital to the market.
20 Their income depends on only these two sources. Therefore, as long as they are
21 working and capital is employed within the boundaries of the State of Missouri,
22 their income allows them to afford whatever bundle of goods they choose. The
23 composition of production in Missouri can change as long as people are paid for
24 working and investing. The bottom line is that state GDP does not change in
25 response to a price change of one good. Rather, it is the amount of resources

1 employed and the value of what they produce that is captured in GDP, and its
2 counterpart, people's income.

3 Most importantly, the model I used for my Direct Testimony DID NOT ignore the
4 consequences of price changes when computing the economic impact on the
5 Missouri economy. In my model, people make decisions over time about how
6 much to consume and how much to save. Consumption consists of a market
7 basket of goods that includes lots of different goods and services. People decide
8 the composition of their consumption basket based on the prices of the individual
9 goods and services. All of that is embedded in my model economy. To say
10 otherwise, as Mr. Davis does, shows a profound misunderstanding of how the
11 economy works in my model.

12 My economic model recognizes that people see prices and decide how to divide
13 their income between saving and consumption. Their consumer purchases are
14 measured by the quantity of the market basket that they purchase. Note that the
15 make-up of that market basket can change over time; that is people can spend
16 more on food, less on cars, and so on. People decide how much to consume and
17 how much to save based on the return to saving. Over time, income (which is the
18 same as GDP) is either consumed or saved. Note that the part that is saved is
19 used to acquire more machines and more education—in other words, saving
20 equals investment—and future income increases as the returns from such
21 investment are paid to people owning those machines and attaining higher
22 education levels.

23 Mr. Davis does not offer an alternative model of the economy. He wrongly states
24 that I ignored the changes in composition of spending. Based on my model,

1 therefore, any claim that I overstate the economic impact because I ignore the
2 composition of consumer spending is patently false.

3 Q: **Does this conclude your testimony?**

4 A: Yes.