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Witness: Paul C. Rizzo
Sponsoring Party: Union Electric Company
Type of Exhibit: Surrebuttal Testimony
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2011-0028

SURREBUTTAL TESTIMONY

OF

PAUL C. RIZZO

ON

BEHALF OF

**UNION ELECTRIC COMPANY
d/b/a Ameren Missouri**

St. Louis, Missouri
April, 2011

Ameren Exhibit No. 118
Date 5-2-11 Reporter TR
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PAUL C. RIZZO

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

2 A. My name is Paul C. Rizzo. My business address is 500 Penn Center Boulevard,
3 Pittsburgh, Pennsylvania.

4 **Q. By whom and in what capacity are you employed?**

5 A. I am employed as President and Chief Executive Officer of Paul C. Rizzo
6 Associates, Inc., an engineering and consulting firm specializing in dams and hydroelectric
7 projects.

8 **Q. On whose behalf are you submitting this testimony?**

9 A. I am submitting this testimony on behalf of Union Electric Company d/b/a
10 Ameren Missouri (“Ameren Missouri” or the “Company”).

11 **Q. Are you the same Paul C. Rizzo who filed direct testimony in this case?**

12 A. Yes, I am.

13 **Q. What is the purpose of your surrebuttal testimony?**

14 A. The purpose of my surrebuttal testimony is to respond to certain statements made
15 in the rebuttal testimony of Office of the Public Counsel witness Ryan Kind where he questions
16 portions of my direct testimony.

17 **Q. What statements made by Mr. Kind are you responding to?**

18 A. I will respond to several of Mr. Kind’s statements. My first comment is directed
19 toward the following statement made by Mr. Kind on page 8 of his rebuttal testimony:

1 **Q. WHAT IS YOUR RESPONSE TO THE TESTIMONY OF UE WITNESS**
2 **PAUL RIZZO?**

3
4 A. On page 2 of his testimony, Mr. Rizzo states that his testimony:
5
6 will explain the steps AmerenUE would have been
7 required to take by the Federal Energy Regulatory
8 Commission ("FERC") if the December 2005,
9 failure of the Upper Reservoir had not occurred.

10
11 Mr. Rizzo's use of the term "would have been required to take by
12 [FERC]" implies that he can predict these FERC requirements with
13 absolute certainty and I don't believe his testimony that follows is
14 able to reach the high bar that he established for himself.

15 **Q. How do you respond?**

16 A. I have been engaged in engineering design and construction of large dams, which
17 are regulated by the FERC, for 40 years. I have served on consulting boards dealing with
18 various issues related to dams, seismic design, and geotechnical engineering, including Boards
19 that interface directly with the FERC. In addition, my firm performed the Forensic Investigation
20 and Root Cause Analysis of the breach which gave us an insight as to the conditions of the
21 facility at the time of the breach. This information, coupled with a deep knowledge of FERC
22 regulations and requirements such as the FERC Dam Safety Guidelines and FERC Engineering
23 Guidelines for the Evaluation of Hydro power Projects, Chapter III – Gravity Dams, and my
24 thorough knowledge of the current Potential Failure Nodes Analysis ("PFMA") process, is the
25 basis of my expert opinions regarding the steps the Company would have had to take if the upper
26 reservoir had not failed in December 2005.

27 **Q. Are your opinions stated within a reasonable degree of engineering**
28 **certainty?**

29 A. Absolutely. Given my experience and knowledge in this area, I am able to state
30 my opinions with a high degree of confidence.

1 **Q. What is the next statement made by Mr. Kind to which you would like to**
2 **respond?**

3 A. My second comment is directed toward the following statement made by
4 Mr. Kind on pages 8 and 9 of his rebuttal testimony:

5 **Q. DOES MR RIZZO CONCLUDE THAT FERC INSPECTIONS WOULD**
6 **HAVE LED TO THE RETIREMENT OF THE TAUM SAUK GENERATING**
7 **FACILITY?**

8
9 A. Yes. On page 17 of his testimony, Mr. Rizzo asserts that the
10 original Taum Sauk generating facility was “near the end of its
11 useful life.” He reaches this conclusion based on his view that:

12
13 Even if the 2005 breach had not occurred, in my
14 opinion the facility would ultimately have been
15 retired as a result of the scheduled 2008 FERC
16 inspection

17
18 As I stated earlier in this testimony, UE’s 2005 IRP filing indicated
19 that the Company believed the Taum Sauk facility would be in
20 service for the entire 20 planning horizon. It appears that UE is
21 making different assessments of the useful life of the former Taum
22 Sauk facility when it is making a cost recovery request than when
23 it is making a resource planning filing to assess the need for
24 additional resources.

25
26 On page 18 of his testimony, Mr. Rizzo states:

27
28 beginning in 2003 the FERC began applying a
29 much more rigorous dam safety inspection process
30 that, in the absence of the breach, would have
31 applied to its next inspection of the Taum Sauk
32 Plant, scheduled for 2008. Specifically, FERC
33 began applying its Potential Failure Modes Analysis
34 (“PFMA”) Program to dam safety inspections.

35
36 Surely UE’s resource planning experts would have been aware in
37 2005 of the new 2003 requirements for PFMA analysis and
38 incorporated the implications of this new FERC inspection process
39 into its resource planning if it was expected to impact (and
40 potentially require the retirement) one of UE’s major generation
41 facilities. However, not only did UE’s 2005 resource filing **not**
42 reflect a shortened life for the Taum Sauk facility, UE’s filing did

1 not even examine the impact of the new FERC inspections as an
2 uncertain factor that needed to be assessed in the risk analysis
3 portion of its 2005 IRP filing.

4 **Q. How do you respond?**

5 A. In order to be aware of and plan for the new PFMA process and its implications to
6 the facility, the Company would have had to perform an extensive investigation similar to the
7 Forensic Investigation. This would have been necessary in order to have a complete awareness
8 of the then-existing condition of the structure. Because such an extensive investigation had not
9 been done, the Company could not have been aware of the condition of the structure, and thus
10 could not have anticipated a shortened life of the facility. I would also note that if the Company
11 had performed such an investigation prior to the PFMA, the cost of the investigation plus any
12 repairs as a result of the investigation would presumably have been borne by the ratepayers. It
13 would also have been unusual for a company to have undertaken such an investigation prior to
14 the PFMA. Indeed, the purpose of the PFMA is, in part, to determine whether such an
15 investigation is needed.

16 **Q. What is the next statement made by Mr. Kind to which you would like to**
17 **respond?**

18 A. My third comment is directed toward the following statement made by Mr. Kind
19 on pages 8 and 9 of his rebuttal testimony:

20 **Q. WHAT IS THE BASIS FOR UE WITNESS PAUL RIZZO'S CONCLUSION**
21 **THAT A FERC INSPECTION SCHEDULED FOR 2008 WOULD HAVE**
22 **LED TO THE RETIREMENT OF THE TAUM SAUK GENERATING**
23 **FACILITY?**

24
25 A. On page 19 of his testimony, Mr. Rizzo lists six deficiencies that
26 he believes would have been identified through the PFMA process
27 (as part of the 2008 FERC inspection) that "in my opinion, would
28 have required AmerenUE to cease operating the Taum Sauk plant."
29 I disagree with Mr. Rizzo because many of these concerns would
30 have been identified earlier by FERC if UE had made a timely

1 report to FERC of (1) the September 25, 2005 "Niagara falls"
2 overtopping incident and (2) the unusual instrumentation readings
3 it observed on September 27, 2005. If UE had complied with
4 FERC regulations and made these reports, then these problems
5 would probably been identified and resolved prior to the 2008
6 inspection process that is the focus of Mr. Rizzo's testimony.
7

8 If UE had been complying with FERC reporting regulations, then
9 the upcoming 2008 inspection that Mr. Rizzo predicts would have
10 had such dire consequences could have had much different
11 outcomes than what is predicted by Mr. Rizzo. Since Mr. Rizzo's
12 predictions about the consequences of the 2008 inspection is
13 premised upon UE's irresponsible failure in September 2005 to
14 comply with FERC reporting requirement to report to the [FERC]
15 Regional Engineer any condition affecting the safety of a project or
16 project works, I do not find that Mr. Rizzo is making a compelling
17 case for recovery of Taum Sauk rebuilding costs. He is essentially
18 arguing that since UE failed to comply with important FERC
19 reporting requirements as problems arose with the Taum Sauk
20 facility in September of 2005 and problems were not address by
21 FERC at that time, then these issues would have all been identified
22 as part of the 2008 inspection process and resolved in the manner
23 that Mr. Rizzo predicts as part of that process.
24

25 Public Counsel's view is that if UE had complied with FERC
26 reporting requirements as issues arose in September of 2005, then
27 the FERC would have responded in order to protect the safety of
28 the public, making it much less likely that the Taum Sauk disaster
29 would have ever occurred. In that scenario, modifications to the
30 Taum Sauk plant may have led to cost recovery issues at some
31 point but such issues would have arisen in a context where UE was
32 complying with FERC regulations instead of the current case
33 where we are debating cost recovery associated with a catastrophic
34 failure of the upper reservoir that would have been much less
35 likely to ever occur if UE had complied with basic FERC reporting
36 requirements.

37 **Q. How do you respond to these statements?**

38 A. Most of the concerns or deficiencies I have cited would not have been identified
39 by FERC by the submittal of the incident reports indicated by Mr. Kind. Identification of these
40 concerns or deficiencies would have required an extensive investigation as indicated above.
41 Before the inception of the PFMA program and as indicated in my direct testimony, the

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1 inspection process focused on only a limited number of standard-based concerns such as the
2 hydraulic capacity of spillways and the stability of structures under a relatively narrow set of
3 pre-defined load conditions. The PFMA substantially broadened the scope of the evaluation to
4 include potential failure scenarios that may have been overlooked in past investigations. In fact,
5 a PFMA is an exercise to identify *all* potential failure modes under static loading, normal
6 operating conditions, as well as flood and earthquake conditions, including consideration of all
7 external loading conditions for water retaining structures. It is also an exercise in assessing
8 potential failure modes of enough significance to warrant visual observation, monitoring, and
9 remediation as appropriate.

10 **Q. Does this conclude your surrebuttal testimony?**

11 **A. Yes, it does.**

