

BEFORE THE PUBLIC SERVICE COMMISSION

STATE OF MISSOURI

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TRANSCRIPT OF PROCEEDINGS

Evidentiary Hearing

May 2, 2011

Jefferson City, Missouri

Volume 21

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In The Matter Of Union )  
 Electric Company d/b/a )  
 AmerenUE's Tariff To Increase ) File No. ER-2011-0028  
 Its Annual Revenue For )  
 Electric Service )

MORRIS WOODRUFF, Presiding

CHIEF REGULATORY LAW JUDGE

KEVIN GUNN, Chairman,

JEFF DAVIS,

TERRY JARRETT,

ROBERT S. KENNEY

COMMISSIONERS.

REPORTED BY:

Tracy Taylor, CCR No. 939

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## A P P E A R A N C E S

1  
2 JAMES B. LOWERY, Attorney at Law  
MICHAEL TRIPP, Attorney at Law

3 Smith, Lewis, LLP  
111 S. 9th Street  
4 Columbia, Missouri 65201  
573.443.3141

5 FOR: AmerenUE

6 TOM BYRNE, Attorney at Law  
WENDY K. TATRO, Attorney at Law

7 1901 Chouteau Avenue  
St. Louis, Missouri 63109  
8 314.554.2514

FOR: AmerenUE

9  
10 RUSS MITTEN, Attorney at Law  
Brydon, Swearngen & England  
312 E. Capitol Avenue  
11 Jefferson City, Missouri 65102  
573.635.7166

12 FOR: AmerenUE

13 JENNIFER FRAZIER, Assistant Attorney General  
P.O. Box 899  
14 Jefferson City, Missouri 65102  
573.751.8803

15 FOR: Missouri Department of Natural Resources

16 LELAND CURTIS, Attorney at Law  
CARL LUMLEY, Attorney at Law

17 KEVIN O'KEEFE, Attorney at Law  
130 S. Bemiston Suite 200  
18 St. Louis, Missouri 63105  
314. 725. 8788

19 FOR: The Municipal Group

20 DIANA VULYSTEKE, Attorney at Law  
BRENT ROAM, Attorney at Law

21 CAROL ILES, Attorney at Law  
ED DOWNEY, Attorney at Law

22 MARK LEADLOVE, Attorney at Law  
Bryan Cave, LLP

23 211 N. Broadway, Suite 3600  
St. Louis, Missouri 63102  
24 314.259.2543

FOR: MIEC

25

1 JOHN COFFMAN, Attorney at Law  
871 Tuxedo Boulevard  
2 St. Louis, Missouri 63119  
573.424.6779  
3 FOR: AARP  
FOR: CONSUMERS COUNCIL OF MISSOURI  
4  
5 DAVID WOODSMALL, Attorney at Law  
Finnegan, Conrad & Peterson  
6 428 E. Capitol, Suite 300  
Jefferson City, Missouri 65101  
7 573.635.2700  
FOR: MEUA  
8  
9 THOMAS R. SCHWARZ, Attorney at Law  
Blitz, Bardgett & Deutsch  
10 308 E. High Street, Suite 301  
Jefferson City, Missouri 65101  
11 573.634.2500  
FOR: Missouri Retailers  
12  
13 LEWIS MILLS, Public Counsel  
PO Box 2230  
14 Jefferson City, Missouri 65102  
573.751.4857  
15 FOR: Office of Public Counsel  
16  
17 STEVE DOTTHEIM, Chief Deputy Counsel  
NATHAN WILLIAMS, Deputy Counsel  
JAIME OTT, Legal Counsel  
18 KEVIN THOMPSON, Chief Staff Counsel  
JENNIFER HERNANDEZ, Legal Counsel  
19 SARAH KLIETHERMES, Legal Counsel  
ERIC DEARMONT, Legal Counsel  
20 ANNETTE SLACK, Legal Counsel  
MEGHAN MCCLOWERY, Legal Counsel  
21 Public Service Commission  
200 Madison Street  
22 P.O. Box 309  
Jefferson City, MO 65102  
23 573.751.6514  
FOR: The Staff of the Missouri Public Service  
24 Commission  
25

1                   JUDGE WOODRUFF: And we'll get started  
2 today. Welcome back to Ameren rate case hearing. We  
3 are going to start today with the Taum Sauk issue.  
4 And we'll begin with mini openings and beginning with  
5 Ameren Missouri

6                   MR. LOWERY: Your Honor, can I take care  
7 of one minor housekeeping issue before we do that? On  
8 Thursday we had used Exhibit 139 which was admitted  
9 into the record but we didn't have copies because we  
10 didn't intend on using it. I have copies today and I  
11 will bring you now and to the other parties. That  
12 needs to be designated 139-P, however. It is a  
13 proprietary data request response. I'm sorry, it's  
14 DR 139, but it's 156. So 156-P is what it should be.

15                   JUDGE WOODRUFF: Right. Okay. And while  
16 he's doing that, Commissioner Kenney, can you hear us  
17 in St. Louis?

18                   COMMISSIONER KENNEY: Yes, I can. Thank  
19 you. You can hear me?

20                   JUDGE WOODRUFF: Loud and clear.

21                   COMMISSIONER KENNEY: Great. Thanks.

22                   COMMISSIONER DAVIS: Yeah, I got a  
23 couple -- I'm going to give you two back -- or I'll  
24 give you three back, Judge.

25                   JUDGE WOODRUFF: Okay.

1                   COMMISSIONER DAVIS: One for myself and  
2 one for the Chair.

3                   CHAIR GUNN: Thank you.

4                   JUDGE WOODRUFF: And this document has  
5 already been admitted into evidence so this is just a  
6 copy?

7                   MR. LOWERY: That's correct, your Honor.

8                   JUDGE WOODRUFF: All right. Let's go  
9 ahead and get started then with opening statements for  
10 Ameren.

11                  MR. BYRNE: Thank you, your Honor. May  
12 it please the Commission. We are here today to  
13 discuss Ameren Missouri's request to include  
14 approximately \$90 million of the almost \$500 million  
15 cost of the reconstruction of the upper reservoir of  
16 the Taum Sauk plant in rate base.

17                  Only one witness in this case has filed  
18 any testimony in opposition to inclusion of these  
19 costs; Office of the Public Counsel witness Ryan Kind.  
20 Mr. Kind argues that inclusion of these costs is  
21 contrary to the company's commitment to accept full  
22 responsibility for the effects of the failure of the  
23 Taum Sauk plant and to protect customers from bearing  
24 the costs of the failure.

25                  However, the evidence in this case will

1 show that Ameren Missouri has, in fact, accepted full  
2 responsibility for the plant's failure and that the  
3 company has fully protected its customers from the  
4 costs of the failure.

5 Earlier in this case Mr. Baxter, Ameren  
6 Missouri's CEO, again acknowledged that Ameren  
7 Missouri took full responsibility for the failure.  
8 Mr. Baxter acknowledged that it was Union Electric  
9 Company that had oversight responsibility for the  
10 original construction of the facility in 1963, which  
11 we now know was flawed. Mr. Baxter also acknowledged  
12 that the company failed to ensure that water level  
13 measuring devices were properly installed immediately  
14 prior to the incident.

15 In terms of protecting customers from  
16 bearing the costs of the failure, company witness Mark  
17 Birk quantified almost \$100 million in costs that the  
18 company's shareholders have absorbed to date.  
19 Specifically as the chart that Mr. Lowery put up  
20 shows, the company has absorbed \$15 million of the  
21 property insurance deductible, over \$5 million of  
22 costs expense that were related to the property  
23 insurance claim; the \$1 million liability insurance  
24 deductible; \$10 million in FERC fines; \$5 million in  
25 community contributions for areas of the community

1 down where the breach occurred; and over \$57 million  
2 in lost energy and capacity costs.

3 That last item stems from the fact that  
4 Ameren Missouri's rates in every rate case since the  
5 time of the failure have been set so that customers  
6 are credited with the full energy and capacity  
7 benefits that the Taum Sauk plant would have provided  
8 if it had been operating.

9 In addition to the \$93 million of items  
10 listed on that chart, Ameren Missouri has paid the  
11 entire cost of cleaning up the site, restoring Johnson  
12 Shut-Ins State Park and Campground and paying material  
13 liability claims. Although these additional costs  
14 that are not shown on the chart are the subject of  
15 pending insurance coverage and litigation, Ameren  
16 Missouri has committed that it will never seek  
17 recovery of any of these costs from customers  
18 regardless of the outcome of that litigation.

19 Ameren Missouri's settlement with the  
20 State of Missouri embodies its commitment to protect  
21 customers from the costs of the failure and that  
22 settlement permits Ameren Missouri to seek recovery of  
23 two types of allowable costs which are relevant to  
24 this proceeding, both subject to the Commission's  
25 audit.

1           First, Ameren Missouri is permitted to  
2 seek recovery of the cost of enhancements to the upper  
3 reservoir. This is logical because enhancements  
4 provide incremental benefits to customers which should  
5 be paid for.

6           Second, Ameren Missouri is permitted to  
7 seek recovery of costs that would have been incurred  
8 in the absence of the breach. The evidence will show  
9 that the \$90 million that the company seeks to include  
10 in rate-base qualifies under both categories.

11           First, in terms of enhancement, there are  
12 clearly more than \$90 million of enhancements to the  
13 new facility. Mr. Birk has enumerated some of the  
14 discrete enhancements of the new facility, including  
15 the overflow release structure, which Mr. Lowery is  
16 showing you on the -- on the picture of the new  
17 reservoir; significantly improved instrumentation; a  
18 drainage gallery that is embedded within the structure  
19 and runs around the perimeter of the structure; an  
20 improved grout curtain that limits leakage; an  
21 improved foundation that sits on bedrock and meets  
22 modern standards for being earthquake-proof.

23           Although you can't see all of these items  
24 in the picture because they're too far away, you can  
25 clearly see the difference between the foundation of



1 the old reservoir and the foundation of the new  
2 reservoir in the two pictures. The new reservoir's  
3 foundation is now solid enough to withstand  
4 earthquakes of the magnitude experienced in southeast  
5 Missouri in 1811 and 1812, which are the strongest  
6 earthquakes ever experienced in the United States.

7 But the most significant enhancement of  
8 the new reservoir is that it replaces an old  
9 reservoir, which was near the end of its life, with a  
10 new, safer, more substantial reservoir that will  
11 provide service for customers for the next 80 years or  
12 more.

13 The company has conservatively estimated  
14 that the capacity and energy value of the plant over  
15 its extended life is at least \$170 million in 2010  
16 dollars and likely is much more -- more than that.  
17 This is a benefit that far exceeds the \$90 million  
18 cost that is being proposed for inclusion in  
19 rate-base.

20 The evidence also shows that significant  
21 costs of retiring or replacing the upper reservoir  
22 would have been incurred in the absence of the breach.  
23 Dr. Paul Rizzo, an engineer and FERC dam safety expert  
24 with decades of experience, has testified that the  
25 enhanced FERC inspection program, which was begun by

1 FERC in the early 2000's and which would have been  
2 applied to the Taum Sauk facility for the first time  
3 in 2008, which is called the PFMA, would have revealed  
4 substantial structural problems in the dam and would  
5 have required Ameren Missouri to either shut down or  
6 substantially rebuild the dam.

7           In the absence of the breach, the full  
8 cost of the shutdown or rebuild, in either case far in  
9 excess of \$90 million, would have been the  
10 responsibility of ratepayers with no contribution from  
11 insurance proceeds. This is not speculation as the  
12 Office of the Public Counsel alleges. Based on his  
13 extensive dam engineering experience and deep  
14 understanding of the PFMA process, Dr. Rizzo is  
15 certain that this result would have occurred.

16           In contrast to Dr. Rizzo, we have the  
17 testimony of OPC witness Ryan Kind. The evidence will  
18 show that Mr. Kind is not an engineer, but that he is  
19 an economist; that he has no education, training or  
20 expertise relevant to dam construction or dam safety  
21 generally; that the only kind of training that he  
22 claims to have that would be relevant to the Taum Sauk  
23 plant is self-training; that he has no -- has had no  
24 involvement with FERC licensing or inspection  
25 processes; that he has done no quantitative analysis

1 to support his proposal; and that he has never even  
2 visited the Taum Sauk plant except when he was a  
3 child. Mr. Kind's recommendation to disallow  
4 100 percent of the cost of the Taum Sauk rebuild is  
5 completely unsupported by the evidence and should be  
6 rejected.

7 Because the evidence shows that the new  
8 reservoir has significant enhancements that will  
9 benefit customers for decades to come and because the  
10 rebuild would have been required in the absence of the  
11 breach, the Commission should reject Mr. Kind's  
12 recommendation to exclude the \$90 million in  
13 reconstruction costs from Ameren Missouri's rate case.  
14 Thank you.

15 JUDGE WOODRUFF: Thank you, Mr. Byrne.  
16 You had a question?

17 CHAIR GUNN: I just had a quick -- a  
18 quick legal question. And I understand Ameren's  
19 position about the settlement agreement allowing these  
20 types of recoveries. Is there any requirement in the  
21 settlement agreement that the attorney general agree  
22 that these are the type of enhancements that would be  
23 acceptable and to have -- have there been  
24 conversations with the attorney general's office about  
25 recovery of -- of these particular enhancements?

1           MR. BYRNE: Well, there are -- there's no  
2 requirement that the attorney general approve the  
3 particular enhancements. I think that's left to the  
4 Commission to determine if there are enhancements.  
5 It's subject to Commission audit.

6           And there have been conversations. I  
7 really haven't been privy to those conversations,  
8 but -- in terms of when the settlement was negotiated  
9 and I think even after the settlement, I believe there  
10 have been conversations. I just haven't been privy to  
11 them.

12          CHAIR GUNN: And just to clarify what you  
13 just said, so the settlement agreement says that the  
14 Commission will make a determination whether the  
15 enhancements are appropriate. But does it -- does it  
16 deal with the threshold issue that what you are  
17 seeking is of the type that is allowable to be sought  
18 under the settlement agreement?

19          MR. BYRNE: The way I read the settlement  
20 agreement, Commissioner, is it allows -- allow--  
21 allowable costs are enhancements and the costs of --  
22 that would have been incurred in the absence of the  
23 breach. And I think the Commission has the power to  
24 determine whether -- whether costs fall into those  
25 categories. And it -- of course, it also has the

1       audit power to determine whether costs were prudently  
2       incurred.

3                   So if the Commission were to find that  
4       the -- that we were imprudent for some reason in -- in  
5       incurring a cost, then that would be permissible for  
6       the Commission to disallow it.

7                   CHAIR GUNN: Here's what I'm trying to  
8       avoid. I'm trying to avoid -- let's assume, just a  
9       hypothetical, that we say yes, they are enhancements  
10      and we say yes, that they were prudently incurred and  
11      we give you whatever the amount is that we give you.

12                  MR. BYRNE: Sure.

13                  CHAIR GUNN: And then we turn around and  
14      have -- face a lawsuit by the attorney general saying  
15      that there's a violation of the settlement agreement  
16      because these were not the type of costs that were  
17      envisioned that were able to be recovered by that.

18                  MR. BYRNE: Sure.

19                  CHAIR GUNN: So -- and -- and maybe the  
20      settlement agreement is -- is clear on it and I  
21      should -- I should go back and take a look at it. I  
22      just want to make sure that we don't run into that  
23      situation. So we're -- everybody's starting from the  
24      same page and starting from the --

25                  MR. BYRNE: Sure. And I think I have

1 maybe an answer to that. Part of the settlement  
2 agreement is we had to go notify the governor's  
3 office, the attorney general and I think the  
4 Department of Conservation prior to -- prior to filing  
5 any case in which we sought recovery of these costs.  
6 We had to provide a written notification, which we  
7 did, and we met with them.

8 Now, I personally did not meet with the  
9 attorney general, but I know representatives of Ameren  
10 Missouri did and said, Look, here's what we're going  
11 to do, we're seeking recovery of \$90 million of  
12 enhancements and costs that we thought would otherwise  
13 be incurred. And so -- so we did that have  
14 conversation. And -- and, of course --

15 CHAIR GUNN: All parties to the  
16 settlement agreement were notified of the rate case,  
17 were notified that you were coming in for these types  
18 of costs and -- and if there was -- and they had the  
19 opportunity to intervene?

20 MR. BYRNE: Yes. Absolutely.

21 CHAIR GUNN: And they've made filings,  
22 if -- if necessary?

23 MR. BYRNE: Absolutely.

24 CHAIR GUNN: So that's the threshold  
25 issue and then we can get to --

1 MR. BYRNE: Yes.

2 CHAIR GUNN: -- the other issues. Okay.

3 I'll ask your witness the other questions I have, but  
4 thank you very much. I appreciate it.

5 MR. BYRNE: Thank you, Commissioner.

6 COMMISSIONER DAVIS: Hold on, Mr. Byrne.

7 MR. BYRNE: Yes.

8 COMMISSIONER DAVIS: And I'm going to try  
9 to do this without going into -- into closed here, but  
10 the 94 million that you referenced in your opening  
11 statement, is that separate from the -- now, I've got  
12 Mr. Birk's testimony and it's marked HC so I'm not  
13 going to -- I don't know if this number is HC or not,  
14 so I'm not going to say it, but there is at the top of  
15 page 32 --

16 MR. BYRNE: Which -- which piece of  
17 testimony?

18 COMMISSIONER DAVIS: Mark Birk's direct  
19 testimony. I'm just trying to ascertain, is that --  
20 that 94 million referenced in your opening statement,  
21 is that included in the large number which would be  
22 found on line 2, page 32 of Mr. Birk's direct  
23 testimony?

24 MR. BYRNE: Yes. Not -- well, no, it  
25 isn't. The answer is -- let me put this back up for

1     you.

2                   COMMISSIONER DAVIS:  Okay.  So that is  
3     not included -- that's not in the 492?

4                   MR. BYRNE:  Hardly any of it is.  A lot  
5     of these are clean-up costs and FERC fines and items  
6     like that would not be included.  Now, the property  
7     claim deductible, part of that is -- is part of the  
8     capital costs.  The number that you're referring to,  
9     which I don't think is HC, Commissioner, is  
10    \$491 million.

11                   And that was -- that was the cost, at  
12    least at the time he filed the testimony, the number  
13    may have changed a little bit as -- as it was refined,  
14    but -- but that's the cost, the capital cost of  
15    rebuilding the upper reservoir.  And these costs on  
16    here, other than the property claim deductible, would  
17    not be capital costs associated with rebuilding the  
18    upper reservoir.  Those would be other costs that we  
19    absorbed to -- as a result of the breach.

20                   COMMISSIONER DAVIS:  All right.  So  
21    everything but the property claim deductible?

22                   MR. BYRNE:  Correct.  And you might want  
23    to ask Mr. Birk about that too.

24                   MR. LOWERY:  Commissioner, if you'll look  
25    on page -- just to try to answer your question --



1                   COMMISSIONER DAVIS: Yeah, I know there's  
2 another chart that's in there that --

3                   MR. LOWERY: I believe it's on page 39.  
4 I believe approximately \$6 million of that property  
5 insurance deductible relates to the construction. The  
6 rest does not.

7                   COMMISSIONER DAVIS: Okay. Okay. All  
8 right. And then, Mr. Byrne, let me just ask you, is  
9 Mr. Birk the -- the best witness to ask about the  
10 capacity additions in terms of the --

11                  MR. BYRNE: Yes, he is. He's -- he  
12 may -- yes, he is the best person to ask about this.  
13 Mr. Haro also is going to be testifying later in  
14 the -- later in the case and I know he worked on that.  
15 He's not a -- a witness on this issue, but -- but  
16 Mr. Birk can almost certainly answer it.

17                  COMMISSIONER DAVIS: Would Mr. Haro,  
18 would he be the best person to ask about like the  
19 value of the power or --

20                  MR. BYRNE: He's the one who calculated  
21 it. Mr. Birk knows about it, but Mr. Haro is the one  
22 who calculated it.

23                  COMMISSIONER DAVIS: Okay. All right.  
24 Thank you, Mr. Byrne.

25                  COMMISSIONER KENNEY: I have a question.

1 JUDGE WOODRUFF: Go ahead.

2 MR. BYRNE: Yes, Commissioner.

3 COMMISSIONER KENNEY: Mr. Byrne, how are  
4 you?

5 MR. BYRNE: Doing good.

6 COMMISSIONER KENNEY: Good. Is the term  
7 "enhancement" defined in the settlement agreement?

8 MR. BYRNE: No, your Honor, it's not.

9 COMMISSIONER KENNEY: Okay. And where  
10 can I find a copy of the settlement agreement? Is it  
11 filed in the case file as an attachment or is it --  
12 where can I find it?

13 MR. BYRNE: I have one with me. I don't  
14 believe that we filed it with the testimony. We  
15 can -- we can file it as an exhibit if you would like  
16 us to do that.

17 COMMISSIONER KENNEY: Would you do that?  
18 It's not -- it's not -- I'm assuming it's not  
19 confidential.

20 MR. BYRNE: No, it's not confidential.

21 COMMISSIONER KENNEY: Okay. Can we file  
22 it in EFIS as an exhibit?

23 MR. BYRNE: Sure.

24 JUDGE WOODRUFF: We'll give it a number.  
25 It will be 157. And if you would just go ahead and

1 file that in EFIS when you get the opportunity.

2 MR. BYRNE: Be glad to.

3 JUDGE WOODRUFF: I assume you want to  
4 offer it as an exhibit as well? So I'll ask if  
5 there's anyone who has any objection to its receipt?

6 Hearing none, it will be received.

7 (Ameren Exhibit No. 157 was received into  
8 evidence.)

9 JUDGE WOODRUFF: Thank you, Mr. Byrne.

10 COMMISSIONER KENNEY: Okay. Thank you.

11 JUDGE WOODRUFF: Opening for Staff.

12 MS. KLIETHERMES: Thank you. And,  
13 Mr. Chairman, to address your question, I believe that  
14 the attorney general's office has been involved in  
15 this case through attorney Jennie Frazier, who is not  
16 DNR's typical attorney. So I don't know if you were  
17 aware of that fact or not.

18 CHAIR GUNN: Thank you.

19 MS. KLIETHERMES: Ameren was driving a  
20 Pinto. It wasn't the nicest, the best or the safest,  
21 but it worked. Then Ameren wrecked the Pinto and was  
22 damn lucky nobody died. Ratepayers got an Impala.  
23 Staff has verified it's not another Pinto, but it  
24 isn't a Mercedes either.

25 The prudence question before the

1 Commission is whether in its construction of the new  
2 upper reservoir, Ameren acted imprudently and whether  
3 such imprudence, if any, resulted in harm to Ameren's  
4 ratepayers.

5           The prudence examination is not of  
6 Ameren's many failures regarding the old reservoir and  
7 Staff's prudence review was Ameren's construction of  
8 the new reservoir, not the destructive tragedy for the  
9 people of Reynolds County and the Missouri as a whole.

10           So would Ameren have bought an Impala if  
11 they hadn't totalled the Pinto? We don't know. We do  
12 know that the old plant is better than the new plant  
13 and we know that Staff's recommended rate-base does  
14 not include payments to various entities that Ameren  
15 agreed to make pursuant to the settle agreement --  
16 settlement agreement with the State of Missouri or  
17 dollars that insurance has covered.

18           And we know that Staff's job is to  
19 recommend just and reasonable rates. No more, no  
20 less. And Staff has done that here. Staff examined  
21 the transactions that Ameren undertook to build the  
22 new upper reservoir and looked for indications of  
23 imprudence in those transactions. Staff did not find  
24 imprudence in those transactions and no party has  
25 presented testimony that challenges Staff's

1 conclusions regarding those transactions.

2 Staff is not pleased with Ameren's  
3 history with Taum Sauk. I doubt that anyone is. But  
4 the appropriateness of displeasure is not the question  
5 before the Commission. The simple question is, is the  
6 new plant \$89 million better than the old? Staff  
7 recommends to the Commission that it is. And thus,  
8 the Commission is obligated to consider that  
9 89 million investment in its setting of just and  
10 reasonable rates.

11 JUDGE WOODRUFF: Thank you. Public  
12 Counsel?

13 MR. MILLS: Good morning. Both Staff and  
14 the company want this Commission to focus on the costs  
15 of the new reservoir. I think the Commission needs to  
16 take a step back and focus on why we're considering  
17 these costs in this case.

18 And the reason we're considering these  
19 costs in this case is because of AmerenUE's imprudence  
20 in managing the old Taum Sauk upper reservoir. I  
21 don't think there's any doubt about that. The  
22 evidence will show that Ameren was imprudent in  
23 running the old reservoir and that imprudence led to  
24 its collapse.

25 But for that collapse, we would not be

1 here today talking about the cost of the new  
2 reservoir. We might at some point in the future have  
3 been talking about a new reservoir, but we wouldn't be  
4 talking about these costs in this case. The only  
5 reason we're talking about these costs in this case is  
6 because of imprudence.

7 Because of that imprudence, this  
8 Commission can and should disallow the costs in excess  
9 of the insurance premium, because we're talking about  
10 costs not necessarily that are tied to discrete  
11 enhancements, but we're talking simply about the delta  
12 between what was spent and what the insurance covered.

13 First of all, that's the wrong way to  
14 approach costs. And second of all, those costs should  
15 not be allowed in this case at this time because they  
16 were the result of imprudence. Thank you.

17 CHAIR GUNN: Can I just ask a quick  
18 question?

19 MR. MILLS: Certainly.

20 CHAIR GUNN: So you're saying that just  
21 the premium should be allowed to be recovered or the  
22 premium and the deductible?

23 MR. MILLS: I'm saying none of it should  
24 be allowed to be recovered.

25 CHAIR GUNN: Not even the premium for the

1 insurance?

2 MR. MILLS: The premiums -- no. The  
3 premiums have been included in rates since the plant  
4 was built; all insurance premiums.

5 CHAIR GUNN: What about the deductible?

6 MR. MILLS: No.

7 CHAIR GUNN: Even though that's a  
8 function of -- that's a function of insurance? I mean  
9 that -- that was part of the contracts that they had  
10 with the -- with the premium.

11 MR. MILLS: But for the collapse, they  
12 would not have been paying that deductible. That's  
13 part of the -- the rebuild cost.

14 CHAIR GUNN: Okay. I just wanted to be  
15 clear. Thanks.

16 COMMISSIONER DAVIS: Mr. Mills, do you  
17 deny that there's additional capacity now available  
18 that wasn't there before?

19 MR. MILLS: There is some increment of  
20 additional capacity that is there now. I do not --  
21 don't know exactly what that is or what that  
22 translates to in terms of dollars.

23 COMMISSIONER DAVIS: Okay. So should the  
24 ratepayers get that for free?

25 MR. MILLS: In this instance, I believe

1 they should.

2 COMMISSIONER DAVIS: Well, all righty.

3 JUDGE WOODRUFF: Thank you, Mr. Mills.

4 AARP wish to make an opening?

5 MR. COFFMAN: May it please the  
6 Commission. Simply concur in all the statements made  
7 by Lewis Mills regarding this issue. Both my clients  
8 believe very strongly that Ameren was grossly  
9 negligent in allowing the collapse of the upper  
10 reservoir and that all consequences resulting from  
11 that collapse should be borne by the utility and its  
12 shareholders and not the ratepayers.

13 We disagree with the Staff that the issue  
14 here is what is -- what is a value in this reservoir  
15 above and beyond what the value of the original  
16 reservoir. We do not believe that it would need to  
17 have been built if it had not been destroyed.

18 I do agree with Staff that the issue is  
19 whether these are just and reasonable costs. We do  
20 not believe that in any way it can be characterized as  
21 just and reasonable to allow any of the consequential  
22 costs to be borne by the ratepayers. The ratepayers  
23 had nothing to do with this disaster.

24 The issue is also not whether there are  
25 enhancements. The Public Service Commission was not a



1 party to the attorney general's case, the case that  
2 was mentioned here. Enhancements is not part of the  
3 Commission's charge. Just and reasonable is the  
4 standard. That's all. Thank you.

5 JUDGE WOODRUFF: Thank you.

6 COMMISSIONER DAVIS: Hold up.

7 Mr. Coffman.

8 MR. COFFMAN: Sure.

9 COMMISSIONER DAVIS: So you don't -- you  
10 don't have any witnesses on this issue. Correct?

11 MR. COFFMAN: That's correct.

12 COMMISSIONER DAVIS: Okay. So let me ask  
13 you the same question I just asked Mr. Mills. What do  
14 we do with the additional generating capacity that  
15 Taum Sauk now has? Is that just AmerenUE's gift to --  
16 to the ratepayers or --

17 MR. COFFMAN: I think the question is,  
18 was the collapse of the reservoir the result of  
19 imprudence or the result of unreasonable actions by  
20 AmerenUE. And then once that decision has been made,  
21 the -- the rebuild costs are the consequence of that  
22 action.

23 I think it's turning the issue on its  
24 head to somehow look and say, well, was the rebuild  
25 some sort of a prudent response to the disaster. The

1 question is, was this a consequence of the -- the  
2 errors in judgment that caused the disaster.

3 COMMISSIONER DAVIS: Okay. So let's  
4 assume that it was a consequence, the rebuild is a  
5 consequence of imprudent behavior. Okay? You still  
6 have the uncontradicted testimony of Mr. Birk that  
7 says that three-quarters of the year you have  
8 100 megawatt hours per day of additional capacity and  
9 a quarter of the year you have 300 megawatt hours per  
10 day of additional capacity. So should the  
11 shareholders get to keep that and own it below the  
12 line?

13 MR. COFFMAN: Yes. I think -- I think  
14 actions have consequences.

15 COMMISSIONER DAVIS: Okay. So you're  
16 fine with them getting to keep that and own it below  
17 the line, that -- that additional capacity?

18 MR. COFFMAN: I think that the reservoir  
19 had to be built -- rebuilt because it was destroyed as  
20 a result of imprudent and unreasonable actions. And  
21 for that reason, all of the rebuild costs and the  
22 capacity should be borne by the shareholders and not  
23 the ratepayers.

24 COMMISSIONER DAVIS: So the question is,  
25 who owns the additional capacity?

1                   MR. COFFMAN: It is -- it is plant  
2 dedicated to serving Ameren's load. It's --

3                   COMMISSIONER DAVIS: It's plant dedicated  
4 to serving Ameren's load, but if the shareholders are  
5 paying for that additional 90 million, then don't the  
6 shareholders own that additional increment of  
7 capacity?

8                   MR. COFFMAN: Own, but it is -- but it's  
9 dedicated to public service though. It's --

10                  COMMISSIONER DAVIS: Well, it's maybe  
11 dedicated.

12                  MR. COFFMAN: I don't believe this is in  
13 some sort of unregulated subsidiary. It's owned by  
14 AmerenUE, Ameren Missouri.

15                  COMMISSIONER DAVIS: So we're just going  
16 to --

17                  MR. COFFMAN: The ratepayers deserve the  
18 benefit of this plant.

19                  COMMISSIONER DAVIS: So they -- so  
20 basically the ratepayers get it for free?

21                  MR. COFFMAN: The ratepayers should be  
22 held harmless is -- that's our position and that's  
23 what we -- we thought Ameren had committed to do as  
24 well.

25                  COMMISSIONER DAVIS: Okay. Well, if we

1 back out that 100 megawatts and that 300 -- the  
2 100 megawatts in Mr. Birk's testimony that's  
3 three-quarters of the three and the 300 megawatts per  
4 day -- or per day for one quarter of the year, would  
5 you agree with me that the ratepayers would be held  
6 harmless?

7 MR. COFFMAN: No.

8 COMMISSIONER DAVIS: How is that  
9 possible?

10 MR. COFFMAN: The only way that the  
11 ratepayers are going to be held harmless is if they do  
12 not have to incur any rate increase as a result of the  
13 collapse or the rebuild of the Taum Sauk upper  
14 reservoir.

15 COMMISSIONER DAVIS: Okay. So --

16 MR. COFFMAN: That's our position.

17 COMMISSIONER DAVIS: -- your pro-- your  
18 position prevails and there is no rate increase.

19 Okay. So -- but once again, why should your -- why  
20 should the ratepayers get to keep the additional  
21 capacity increment if they are not paying for it and  
22 it would not have been there but for the rebuild?

23 I mean we're -- we're modeling it today  
24 like it was originally. So there's going to be an  
25 additional capacity increment on top of that. So I

1 mean is this -- is this their punishment?

2 MR. COFFMAN: We don't believe the record  
3 shows that that -- that it would have been a prudent  
4 and reasonable course to rebuild this plant if it had  
5 not been destroyed. We're not -- we're not --

6 COMMISSIONER DAVIS: So they shouldn't  
7 have rebuilt the plant?

8 MR. COFFMAN: We -- I don't think the  
9 evidence supports the notion that they would have  
10 rebuilt the plant in this manner. And it would simply  
11 be unjust and unreasonable for the ratepayers to pay  
12 that -- the cost of what -- of the rebuild, the total  
13 rebuild.

14 COMMISSIONER DAVIS: So -- okay. So if  
15 we don't put -- if we don't put the \$90 million in  
16 rate-base, can the share-- don't you think it's fair  
17 that the shareholders just to get to keep that  
18 additional capacity?

19 MR. COFFMAN: I'm not sure I understand  
20 the question. I mean keep it in something unregulated  
21 fashion?

22 COMMISSIONER DAVIS: Well, they I'm --  
23 I'm thinking back to what was that plant over in  
24 Kentucky? Joppa? I mean wouldn't this be analogous  
25 to that?

1                   MR. COFFMAN: Well, I'm not -- well, I  
2 don't -- I don't want to go down that road. I'm not  
3 real -- wasn't real pleased with the way that turned  
4 out.

5                   COMMISSIONER DAVIS: And that -- you  
6 would agree that that issue was -- was fully  
7 litigated, was it not?

8                   MR. COFFMAN: Yes.

9                   COMMISSIONER DAVIS: And it was appealed  
10 and there was a final decision. So -- and --

11                   MR. COFFMAN: But that didn't involve the  
12 prudence of destroying a plant.

13                   COMMISSIONER DAVIS: Okay.

14                   MR. COFFMAN: I mean if -- if Ameren  
15 prevails in this case, the ratepayers, in our opinion,  
16 will have suffered as a result of Ameren's imprudence.  
17 And that's our position. I understand that utility  
18 has a different perspective.

19                   COMMISSIONER DAVIS: Okay. And I'm  
20 just --

21                   MR. COFFMAN: And perhaps you do too.

22                   COMMISSIONER DAVIS: I'm just -- I'm just  
23 trying to figure out how -- how we should treat this.  
24 And I mean you're not denying that there is additional  
25 capacity available?

1 MR. COFFMAN: I mean I --

2 COMMISSIONER DAVIS: Would you --

3 MR. COFFMAN: I don't have any

4 evidence --

5 COMMISSIONER DAVIS: -- deny them fuel  
6 costs of filling up the -- the additional fuel costs  
7 of filling up the reservoir because they have more  
8 capacity there now? Would you deny them their  
9 additional fuel cost?

10 MR. COFFMAN: I'm -- I'm not sure about  
11 that. I'm not --

12 COMMISSIONER DAVIS: Well, I mean we're  
13 here in the hearing, Mr. Coffman. I mean when will  
14 you be sure?

15 MR. COFFMAN: Well, we believe that if --  
16 if AmerenUE is allowed any of the -- any of the costs  
17 of the rebuild of this new plant, it will mean the  
18 ratepayers will be punished for the result of  
19 something that they were not responsible for. And I  
20 don't believe the issue needs to be any more  
21 complicated than that.

22 COMMISSIONER DAVIS: All right.

23 MR. MILLS: Commissioner, can I -- can I  
24 re-answer the question that you asked me?

25 COMMISSIONER DAVIS: Sure.

1                   MR. MILLS: Because when you asked me you  
2 said capacity, but based on your additional questions  
3 to Mr. Coffman, I think you're really talking about  
4 the energy.

5                   COMMISSIONER DAVIS: Right.

6                   MR. MILLS: And that -- that's a  
7 different concept and I think perhaps we've gotten  
8 them a little confused.

9                   COMMISSIONER DAVIS: Well, I mean it's  
10 the cap-- it's the additional capacity that -- that  
11 produces additional energy that wasn't there before.

12                   MR. MILLS: Mr. Birk's testimony, and I  
13 think he'll probably confirm this on the stand, is  
14 that there is a slight increase in capacity that's  
15 unquantified at this time.

16                   There is additional energy available. If  
17 UE was operating without a fuel adjustment clause, all  
18 of that additional energy would go to shareholders.  
19 Because UE chooses to operate with a fuel adjustment  
20 clause, ratepayers get 95 percent of the benefit of  
21 that additional energy, as they should.

22                   So the question of whether there's  
23 additional capacity really isn't even presented in  
24 this case because we -- we don't have it quantified.  
25 There may be a slight increase. And in any event, I



1 don't think it's material with respect to the  
2 \$90 million.

3 COMMISSIONER DAVIS: Well, I mean it was  
4 in Mr. Birk's testimony.

5 MR. MILLS: It was 440 megawatts before,  
6 it's 440 megawatts now as far as they know. There may  
7 be some slight unquantified increase. They can get  
8 more energy out of it, but that's not the same as  
9 capacity.

10 COMMISSIONER DAVIS: Okay. Okay. They  
11 can get more energy out of it, but that's not the same  
12 as capacity.

13 MR. MILLS: Exactly.

14 COMMISSIONER DAVIS: Okay. Now I -- now  
15 I understand your point, Mr. Mills.

16 MR. MILLS: And with respect to the  
17 energy, if they did not have a fuel adjustment clause,  
18 yes, shareholders would get all of that, every penny  
19 of it. But as you pointed out in your question the  
20 other day, that might led them to some severe  
21 temptation --

22 COMMISSIONER DAVIS: Right.

23 MR. MILLS: -- and they might operate  
24 their plants imprudently again. So I suppose we're  
25 all lucky that they have a fuel adjustment clause and

1 we're not faced with that.

2 COMMISSIONER DAVIS: All right. You got  
3 me -- you got me -- you got me on the right path now.  
4 Thank you, Mr. Mills.

5 MR. MILLS: You're welcome.

6 JUDGE WOODRUFF: Commissioner Jarrett?

7 COMMISSIONER JARRETT: I have a question  
8 and it can be either Mr. Coffman or Mr. Mills. So we  
9 have what-- whatever you want to call it. We have  
10 more energy now being able to be produced out of this  
11 plant or possibly being produced out of this plant  
12 than before.

13 Let's say that Ameren had just built Taum  
14 Sauk, the rebuild, at exactly the same capacity,  
15 putting out exactly the same amount of energy. And  
16 then two years later, Ameren needs some excess and so  
17 they build a gas plant. And would you now be arguing  
18 that it would be imprudent for them to do that since  
19 they could have built it cheaper when they -- when  
20 they re-did Taum Sauk?

21 MR. MILLS: I'll -- well, first of all,  
22 I'll take that. One of the things that we have an  
23 issue with in this case is because the Taum Sauk  
24 rebuild was not a result of an Integrated Resource  
25 Planning process. Right now Ameren has significant

1 excess capacity so the situation you're describing  
2 is -- is unlikely.

3 COMMISSIONER JARRETT: Well, just answer  
4 my hypothetical. It's a hypothetical. Would -- would  
5 you both be in here arguing that it was imprudent  
6 because Ameren could have built that excess at Taum  
7 Sauk but chose not to and now two years later has to  
8 build a gas plant to make up for that?

9 MR. MILLS: Can I ask you to clarify the  
10 hypothetical?

11 COMMISSIONER JARRETT: Sure.

12 MR. MILLS: Did -- did they know at the  
13 time they rebuilt the plant that they were going to be  
14 short of capacity in two years?

15 COMMISSIONER JARRETT: Yeah. Let's say  
16 they knew it, but they knew you guys were going to --  
17 going to complain that it should be disallowed so they  
18 didn't. They didn't -- they didn't build it because  
19 they knew you would raise a fit about the prudence.

20 MR. MILLS: So at the time that they  
21 rebuilt it, they knew and -- and -- are you -- in your  
22 hypothetical, did OPC know as well?

23 COMMISSIONER JARRETT: OPC knows and --  
24 but also the company knows that OPC would fight it  
25 tooth and nail and -- and ask for disallowance and

1 appeal it to the Supreme Court so that's why they  
2 didn't do it.

3 MR. MILLS: And so your question is would  
4 OPC challenge their prudence two years later?

5 COMMISSIONER JARRETT: Yes.

6 MR. MILLS: Under -- under that  
7 hypothetical, I would have to say yes because they  
8 should have done it at the -- at the time when they  
9 were building Taum Sauk.

10 COMMISSIONER JARRETT: Thank you.

11 Mr. Coffman, if you have anything to add?

12 MR. COFFMAN: No. I have a hard time  
13 answering that hypothetical because the -- I believe  
14 that the inherent principle underlying utility  
15 regulation is that utility does not know in advance  
16 whether its actions will be rewarded with rate-base  
17 recovery. And it's that not knowing that creates the  
18 incentive that encourages cost effective behavior.  
19 But I don't disagree with Mr. Mills.

20 COMMISSIONER JARRETT: Thank you,  
21 gentlemen.

22 JUDGE WOODRUFF: I believe that's all the  
23 parties who wish to make opening statements, so we'll  
24 begin with the first witness, which will be Mr. Birk.

25 Good morning, Mr. Birk. And as I recall,

1 you testified on Thursday already. Correct?

2 THE WITNESS: That's correct.

3 JUDGE WOODRUFF: So you are still under  
4 oath.

5 THE WITNESS: Thank you.

6 JUDGE WOODRUFF: You may inquire when  
7 you're ready.

8 MR. BYRNE: Thank you, your Honor.

9 MARK BIRK testified as follows:

10 DIRECT EXAMINATION BY MR. BYRNE:

11 Q. Mr. Birk, would you please state your  
12 name and business address for the record.

13 A. Mark Christopher Birk, 1901 Chouteau,  
14 St. Louis, Missouri.

15 Q. And are you the same Mark Birk that filed  
16 direct, rebuttal and surrebuttal testimony in this  
17 case?

18 A. Yes, I am.

19 MR. BYRNE: Your Honor, Mr. Birk's  
20 testimony has already been received into evidence so I  
21 would simply tender Mr. Birk for cross-examination.

22 JUDGE WOODRUFF: All right. For  
23 cross-examination, we begin with AARP.

24 CROSS-EXAMINATION BY MR. COFFMAN:

25 Q. Good morning, Mr. Birk.

1 A. Good morning.

2 Q. I'm John Coffman. I'm representing AARP  
3 as well as the Consumers Council of Missouri. Do you  
4 believe that AmerenUE was responsible for the disaster  
5 that destroyed the Taum Sauk upper reservoir?

6 A. Yes. I believe we -- we made -- as was  
7 mentioned before, we have accepted full responsibility  
8 for the incident, yes.

9 Q. And when you say "full responsibility,"  
10 does that imply and do you agree that no other party  
11 was responsible for that disaster?

12 A. I believe that -- that as was -- as was  
13 mentioned earlier, you know, we were -- AmerenUE was  
14 responsible for the construction -- the initial  
15 construction of the facility and we were also  
16 responsible for the operation and maintenance, so no  
17 one else was responsible.

18 Q. Okay. And do you agree with the -- the  
19 list of errors in judgment that was submitted in the  
20 Staff case ES-2007-0474 by Mr. Voss --

21 A. I believe --

22 Q. -- the attachment that is Attachment A to  
23 Ryan Kind's testimony on this issue?

24 A. I don't have that in front of me, but --  
25 but I believe Mr. Voss had indicated that, you know,

1 that there was poor communication between ops and  
2 engineering, a lack of understanding of the design  
3 basis and the severity of the problem wasn't -- wasn't  
4 really known at the time.

5 Q. And those are the first three items  
6 listed. And then item four was problems with initial  
7 construction; is that correct?

8 A. That's correct. That's correct.

9 Q. And within that category of problems with  
10 initial construction was the failure to include an  
11 overflow release structure. Was that one of the  
12 design errors, in your opinion?

13 A. In my opinion, you know, when the  
14 facility was built in 1963, I don't believe that was a  
15 state-of-the-art design at that point. So I believe  
16 there were a number of pump storage facilities that  
17 were built around that timeframe that did not include  
18 overflow release structures.

19 And, you know, as you mentioned, this has  
20 been --

21 Q. Excuse me, Mr. Birk. Just answer my  
22 initial question. Do -- in your opinion, was that an  
23 error, not to include an overflow release structure?

24 A. I think if you look at it from today's  
25 design basis, you know, one of the things that -- from

1 a state-of-the-art design today would be an overflow  
2 release structure. As I mentioned before, back in the  
3 '60s when it was built -- by the way, I was not born  
4 in 1963 nor am I civil engineer, so, you know, I'm  
5 really not qualified to answer whether that was a  
6 design error at that time, but at that time it was not  
7 state-of-the-art.

8 Q. Did you -- did you ever have occasion to  
9 review the design qualities or criteria of the Taum  
10 Sauk upper reservoir before the disaster?

11 A. No, I did not.

12 Q. What -- what was your area of  
13 responsibility over the Taum Sauk upper reservoir  
14 prior to the disaster?

15 A. I was responsible for -- for the  
16 operation and maintenance of the -- of the power  
17 plants on the Ameren Missouri side, excluding  
18 Callaway.

19 Q. Do you feel you have any personal  
20 responsibility for the disaster in -- in that  
21 capacity?

22 A. Oh, I believe I do, yes.

23 Q. Any specific responsibility that you  
24 could clarify?

25 A. Well, I think -- I think as Mr. Voss



1 alluded to earlier, you know, when we went through  
2 this in 2007, you know, as part of the docket that the  
3 Commission investigated, I think -- I think that  
4 recognition of the severity of the problem that was  
5 occurring was something that, sure, in hindsight I --  
6 I would have loved to have been able to identify that  
7 it was more severe than -- than what we all thought at  
8 the time.

9 Q. Have you read the -- the Staff  
10 investigation case, the -- that was docketed as  
11 Commission Case No. ES-2007-0474?

12 A. Back at the time. I have not read it in  
13 the last several years.

14 Q. But at some point did you read through  
15 that?

16 A. Yeah. But I don't -- I don't fully  
17 recall all that at this point.

18 MR. COFFMAN? You Honor, could I at this  
19 point ask the Commission to take administrative notice  
20 of its -- of that particular case, the incident  
21 investigation docket?

22 JUDGE WOODRUFF: What aspect of the case?  
23 I don't want to take notice of an entire case file.

24 MR. COFFMAN: Well, I would like to have  
25 the Staff incident report recognized through

1 administrative notice in this case, but it's not a  
2 large case. I don't know -- I would request that  
3 the -- you know, all the filings from all the parties.  
4 I don't want to just pick Staff or just AmerenUE's  
5 filings.

6 I would prefer to have the entire case  
7 file included into this case through administrative  
8 notice. It would cut down on my questions and I think  
9 allow things to move along.

10 JUDGE WOODRUFF: I'll ask the parties for  
11 a response to that.

12 MR. BYRNE: That seems to me to be an  
13 awfully broad request, your Honor. Frankly, I'd just  
14 as soon have Mr. Coffman ask his questions rather than  
15 incorporate thousands of pages of --

16 JUDGE WOODRUFF: I'm also not sure of  
17 what exactly is in that document. If we're talking  
18 about the Staff report, that's one thing. If we're  
19 talking about an entire case file, that's something  
20 entirely different.

21 MR. COFFMAN: Well, I'll limit my request  
22 then to the Staff initial incident report that is  
23 discussed in the testimony.

24 JUDGE WOODRUFF: Any objection to  
25 receiving that or taking notice of that?

1 MR. BYRNE: No, your Honor.

2 JUDGE WOODRUFF: What case file was that  
3 also in?

4 MR. COFFMAN: ES-2007-0474.

5 JUDGE WOODRUFF: And that would be  
6 available on EFIS, I'm assuming?

7 MR. COFFMAN: Yes.

8 JUDGE WOODRUFF: The Commission will take  
9 administrative notice of the -- of the Commission  
10 Staff's initial report in that case file.

11 MR. COFFMAN: Thank you.

12 BY MR. COFFMAN:

13 Q. Mr. Birk, were you involved in the  
14 attorney general case that led up to the November '07  
15 consent agreement?

16 A. Involved? Can you -- can you -- I don't  
17 understand your question. What do you mean by  
18 "involved"? Can you please clarify that?

19 Q. Did you review the legal pleadings and  
20 documents that were part of that case?

21 A. No, I did not.

22 Q. Have you reviewed the November '07  
23 consent agreement?

24 A. I have reviewed the state settlement,  
25 yes, if -- if that's what you're referring to.

1 Q. And you would agree with me that the  
2 Public Service Commission was not a party to that  
3 case, would you not?

4 A. I don't believe they were.

5 Q. And the Office of Public Counsel was not  
6 a party to that case either, was it?

7 A. Not that I'm aware of, no.

8 Q. And you're not aware of any involvement  
9 by any of my clients in that case either, are you?

10 A. Not that I'm aware of, no.

11 Q. Do you consider yourself to be an expert  
12 in utility regulation?

13 A. No, I do not.

14 Q. Okay. Did you review, in preparation for  
15 this case, any of the testimony given at the local  
16 public hearings in this rate case?

17 A. I have -- I have attended -- basically I  
18 attended two of the public hearings and also was  
19 briefed on some updates that occurred at some of the  
20 other public hearings.

21 Q. Were you -- did you hear or were you  
22 briefed on any comments regarding the Taum Sauk  
23 disaster?

24 A. I -- I heard some -- some questions at  
25 the -- at the hearing that I was at I believe in

1 Arnold with regards to Taum Sauk. And there are more  
2 questions about operational questions with regards to  
3 the facility.

4 Q. Do you believe that any of AmerenUE's  
5 errors in judgment were driven by profit motives  
6 present at the time preceding the disaster?

7 A. I do not believe that.

8 MR. COFFMAN: That's all I have. Thank  
9 you.

10 THE WITNESS: Thank you.

11 JUDGE WOODRUFF: I think it would  
12 probably be more appropriate to go to Staff at this  
13 point since Public Counsel's more adverse.

14 MR. MILLS: Please.

15 JUDGE WOODRUFF: Staff.

16 MS. KLIETHERMES: No questions, Judge.  
17 Thank you.

18 JUDGE WOODRUFF: Okay. Public Counsel?

19 MR. MILLS: Just a few.

20 CROSS-EXAMINATION BY MR. MILLS:

21 Q. Mr. Birk, were you here during the  
22 opening statements and the questions about energy and  
23 capacity of the Taum Sauk facility?

24 A. Are you referring to the opening  
25 statements --

1 Q. Just this morning.

2 A. -- of Warner Baxter?

3 Q. No, I'm sorry. This morning --

4 A. Oh, yes. I was here this morning.

5 Q. -- with Commissioner Davis. In your

6 direct testimony you say that there is a slight

7 increase in capacity at the Taum Sauk reservoir as far

8 as you know, but it has not been quantified; is that

9 correct?

10 A. The increase I was referring to is an --

11 is an energy increase, as Commissioner Davis

12 indicated. It's 100 megawatt hours per day and

13 roughly 300 megawatt hours in the -- in kind of the

14 wintertime frame.

15 Q. Is there any increase in capacity?

16 A. The capacity itself when you -- when you

17 mention -- when I think of capacity, it's

18 440 megawatts. To me, the significant increase is in

19 the life of the facility.

20 Q. Well, Mr. Birk --

21 A. We have a facility will last 80 more

22 years.

23 Q. -- Mr. Birk --

24 MR. MILLS: Judge --

25 JUDGE WOODRUFF: Don't -- don't talk over

1 him, please, Mr. Birk.

2 THE WITNESS: Oh, okay. I'm sorry.

3 MR. MILLS: I asked him a question about  
4 capacity and now he's talking about life of the  
5 facility. Can you instruct the witness to answer the  
6 question?

7 JUDGE WOODRUFF: Please answer the  
8 question and don't elaborate.

9 THE WITNESS: Yes, sir.

10 BY MR. MILLS:

11 Q. Okay. The capacity is determined  
12 primarily by the capacity of the generators; is that  
13 correct?

14 A. That is correct.

15 Q. There are two 220-megawatt generators; is  
16 that correct?

17 A. Yes, that's correct.

18 Q. Are they the same generators that were  
19 there before the rebuild?

20 A. Yes.

21 Q. Okay. Is the penstock the same?

22 A. No. No, it is not. It was -- actually  
23 some -- some lining work was done to modify it  
24 during -- during the rebuild process.

25 Q. Is the tailrace the same?

1           A.     It -- it has also been modified in that  
2     it was dredged out so it was -- actually we have more  
3     capability in the lower reservoir than we did prior to  
4     the -- to the breach.

5           Q.     When you say "it was dredged out," do you  
6     mean the sediment was removed?

7           A.     What was removed was some of the -- some  
8     of the debris associated with the event.

9           Q.     Okay.

10          A.     And then also some sediment that had  
11     formed over the 40-year life of the plant. Both of  
12     them were removed.

13          Q.     Okay. Now, I believe in response to  
14     questions from Mr. Coffman, you said you're familiar  
15     with the investigation generally into the -- the cause  
16     of the breach and the collapse of the upper reservoir;  
17     is that correct?

18          A.     That's correct.

19          Q.     Do you believe that in light of all of  
20     the information that UE had about problems at the Taum  
21     Sauk plant, the overflow, the instrumentation, things  
22     like that, that UE was imprudent in filling the plant  
23     as full as it did in the fall of 2005?

24          A.     I believe that -- that the decisions that  
25     were made at that time, that the people involved were



1 acting in a -- in a prudent manner. As we said  
2 before, we made some errors in judgment and -- and  
3 we've admitted that and we've owned up to that and  
4 we've taken full responsibility for that, but people  
5 make mistakes.

6 And at the time I think as Mr. Voss  
7 indicated, we did not recognize the severity of the  
8 problem. And I do not believe that -- that people  
9 purposely pumped that thing over. There's just no  
10 way.

11 Q. And that wasn't the question I asked, so  
12 may-- perhaps we need to back up a step-- a step. Let  
13 me have you define what you consider to be errors in  
14 judgment.

15 A. I think we --

16 Q. And for purposes of this question, I mean  
17 in general, not specific errors in judgment. What  
18 does the phrase "errors in judgment" mean to you?

19 A. To me, it would mean that either you  
20 didn't have complete information when you were making  
21 the decision or you analyzed the information you had  
22 incorrectly and -- and you made -- you made a decision  
23 that was the incorrect decision. Because when you  
24 were looking at it, maybe you thought one thing was  
25 occurring and something else was really occurring and

1 you made your best efforts at the time to look at the  
2 information, you made a mistake.

3 Q. Okay. Now define for me how -- what you  
4 think the term "imprudent" means.

5 A. To me imprudent would mean that when  
6 you're in the process of let's put it in the context  
7 of a project. When you're in the process of  
8 constructing a -- a project, you -- you incurred some  
9 costs that -- that basically because of the way -- the  
10 way that you constructed it, the way you planned or  
11 organized the job, effectively it cost more than it  
12 should have.

13 Q. Okay. Can you define use of the word  
14 "imprudent" in terms of the operation of a plant?

15 A. I've never -- I've never used it in that  
16 context before.

17 Q. So you can't see -- the way you  
18 understand the term "imprudent," you cannot see a  
19 circumstance in which a plant could be operated  
20 imprudently?

21 A. I think as -- as I mentioned earlier, I  
22 think you can make -- you can make errors in judgment  
23 when you operate and I think you can make mistakes. I  
24 don't know that you can -- that I believe that it --  
25 you know, that I ever used it in the context of,

1 You're operating that thing imprudently.

2 MR. MILLS: Judge, that's all I have.

3 Thank you.

4 JUDGE WOODRUFF: All right. We'll come  
5 up for questions from the bench. Commissioner -- or  
6 Chairman?

7 QUESTIONS BY CHAIR GUNN:

8 Q. I just have a couple questions.

9 A. Yes, Chairman.

10 Q. Clearly according to the reports that  
11 I've seen, the reservoir was not built to the  
12 standards that everyone expected that it had been.  
13 Correct?

14 A. That's correct.

15 Q. So my question is -- one of my questions  
16 is, was the current valuation of Taum Sauk in  
17 rate-base before the collapse the correct valuation?

18 A. And I guess the question that you're  
19 asking really relates to was it -- was it over--  
20 over-valued because of the way it was constructed. Is  
21 that what you're asking?

22 Q. Were ratepayers really getting what they  
23 were paying for when -- at the level of -- at the  
24 level that they thought it was?

25 A. You know, I think -- I think from my

1 understanding, Chairman, the facility was fairly well  
2 depreciated down at the time. So I think the value of  
3 it was actually fairly low.

4 Q. But at the time that it was built, was it  
5 built to the specifications that we all thought --  
6 that the Commission and that ratepayers all thought it  
7 was supposed to be built at --

8 A. I think --

9 Q. -- when it was completed?

10 A. Yeah, I think in hindsight -- and I have  
11 a little story I can probably relate to that, but I  
12 think in hindsight -- at the time I think people felt  
13 it was built to that. I think in hindsight, once the  
14 breach occurred and you could actually see what was  
15 inside the reservoir, I think people realized at that  
16 point this is not like it should have been constructed  
17 and it obviously probably wasn't built to  
18 specification at that point.

19 Q. So it -- all right. So it wasn't built  
20 to specification. But the depreciation that was taken  
21 by the company and all of that was done at the level  
22 that everyone thought that -- thought that they were  
23 supposed to be getting because they thought that's  
24 what the product they were getting?

25 A. That's correct. I would say that's

1 correct.

2 Q. Okay. All right. I'm going to switch  
3 gears a little bit. So if you had -- if you had  
4 done -- taken the enhancements to the -- to the new --  
5 the new facility, which we're talking about the  
6 overflow capacities and the -- and the -- all the  
7 things, not just the walls --

8 A. Uh-huh.

9 Q. -- and added those to the existing Taum  
10 Sauk structure before the collapse, so if you took --  
11 if you took the construction the way it was and just  
12 added the enhancements or what the company is  
13 classifying as enhancements to those structures, A, is  
14 that -- would that have even been possible to do?

15 A. I think probably Dr. Rizzo would be  
16 better to address that, but the -- the drainage  
17 gallery, which is the tunnel that goes around the  
18 inside, that would have not been possible.

19 Q. You couldn't have done that?

20 A. You couldn't have done that. That would  
21 have been impossible. The enhanced foundation, that  
22 would have been impossible without effectively tearing  
23 the reservoir down and rebuilding it. The overflow  
24 release structure, potentially possible. Again, I  
25 would defer to Dr. Rizzo on that, but you would

1 probably need to modify, you know, where you were  
2 putting the release structure and -- and modify the  
3 whole side of it to make it work.

4 Q. But that -- that may have -- the other  
5 two were impossible?

6 A. Impossible.

7 Q. The overflow may be improbable, but if  
8 you figured out the engineering, that's -- that's not  
9 something that necessarily is completely out of the  
10 realm of possibility?

11 A. Correct. In my opinion, that's right.

12 Q. Okay.

13 A. Uh-huh.

14 Q. If -- if that had been done -- let's  
15 assume that the overflow structure was able to be  
16 constructed. And let's assume that the improved  
17 instrumentation was available --

18 A. Uh-huh.

19 Q. -- would that have prevented, in your  
20 opinion, the co-- the collapse or would it have merely  
21 delayed the collapse?

22 A. I think that if -- if there would have  
23 been an overflow release structure and the  
24 instrumentation would have been different, I don't  
25 believe we would have overtopped it obviously. And --

1 and I do believe where -- where we would have had --  
2 had issues is when we would have gotten into the PFMA,  
3 the Probable Failure Modes Analysis.

4 And the reason I'm saying that is because  
5 we went through that process in Osage in 2006. And in  
6 doing that, we had -- we had to bore down and test the  
7 foundation and run a whole lot of other analysis. So  
8 I do believe that we would -- and we went through that  
9 process in '08 for Taum Sauk -- we would have found  
10 all these deficiencies we talk about, you know, that  
11 we found because of the breach and you could walk up  
12 and look at it.

13 So, you know, I think -- I think, like  
14 you said, with the overflow release structure, with  
15 the better instrumentation, we probably wouldn't have  
16 overtopped it. I do believe though we would have --  
17 we would have incurred significant expenditures in the  
18 future to make it seismic and to do other things  
19 associated with that.

20 Q. Because the FERC inspection in 200-- that  
21 was scheduled for 2008 --

22 A. That's correct.

23 Q. -- would have -- would have discovered  
24 all these other flaws?

25 A. Yes. And there have been a number of

1 these PFMA's that have been done throughout the country  
2 and they have found things like that on other plants,  
3 you know, where they have had to put more anchors in  
4 and they -- they -- they -- they're -- do an excellent  
5 job of determining what the -- kind of the potential  
6 failure modes are and seeking repair of those.

7 Q. Was the company planning on receiving a  
8 bad report? So in 2005 was the company aware that a  
9 bad report was likely from the FERC review in 2008 or  
10 were those discovered post-collapse?

11 A. Those would have been discovered  
12 post-collapse. Because if we would have been aware  
13 that we would have had that amount of fines in, we  
14 would have included it in some type of IRP process.  
15 We would have included the repairs. Because we would  
16 have been very uncomfortable running the facility with  
17 what we saw internal once it failed.

18 Q. But -- but there was no -- no plan -- I  
19 mean everyone thought in 2005 when this thing  
20 collapsed -- or at least from a company planning  
21 standpoint for replacement or retirement, that -- that  
22 2008, in three years, was going to be fine and  
23 we're -- and there's no need to develop any  
24 contingency plans?

25 A. I think the -- the -- the most



1 significant problem we had before that was a lot of  
2 leakage. And that's part of the reason that the liner  
3 was put in in '04.

4 And, you know, the feeling at that point  
5 was that the facility -- you know, best we could tell  
6 from the inspections and things that had taken place,  
7 was that the facility was constructed as it was  
8 specified back in the '60s. So, yes, we wouldn't --  
9 we wouldn't have anticipated that we were going to  
10 have to significantly take the thing out of service.

11 Q. And you mentioned that the design was not  
12 state-of-the-art when -- when it was built --

13 A. It was --

14 Q. -- in your -- in your opinion?

15 A. No. If I -- if I mentioned that, that --  
16 it was state-of-the-art back in the '60s. It's not  
17 state-of-the-art now. So when you hear the question  
18 of why wasn't there an overflow release structure,  
19 back in the '60s, that -- that was not something that  
20 was common on pump storage plants.

21 Q. Okay. So let me just clarify that  
22 because I guess I was a little confused. So when it  
23 was built, it was believed that the design of the  
24 reservoir was state-of-the-art?

25 A. Yes. Yes. Back in the '60s.

1           Q.     We later, post-collapse, came out and  
2     found that the construction and the way that it was --  
3     that -- was it the design that caused the collapse or  
4     was it poor construction that caused the collapse or a  
5     combination?

6           A.     I believe -- I believe it was two things.  
7     I think ultimately it was the poor construction and  
8     not following the designs and the specifications.  And  
9     then I think as, you know, as we've talked about  
10    with -- with overflow release structures and things  
11    like that, I think just like every product, you know,  
12    there was an evolution and there was an evolution  
13    in -- in kind of the dam building.

14          Q.     Right.

15          A.     So I think now when you look at it, you'd  
16    say, well, also maybe the design should have included  
17    an overflow release structure, it should have included  
18    a gallery and all the rest of the stuff.

19          Q.     And I'm not -- I'm not interested in -- I  
20    mean at the -- at the time that it was designed, I'm  
21    not -- you know, you -- making decisions in hindsight  
22    are -- are -- are much easier to do.  So I want to --  
23    I want to try to make a distinction between the design  
24    defect and poor construction.  And I think those  
25    are -- those are an important -- it's an important

1 distinction in my mind.

2 And what you're saying is that it doesn't  
3 appear that it was a design defect, that there wasn't  
4 something inherent about the design that caused this  
5 collapse. It was the fact that the -- the --- the  
6 construction did not live up to the design?

7 A. That's correct. I would categorize it  
8 that way, yes.

9 CHAIR GUNN: All right. Thank you. I  
10 don't have any further questions. Thank you.

11 THE WITNESS: Thank you.

12 JUDGE WOODRUFF: Commissioner Davis?

13 QUESTIONS BY COMMISSIONER DAVIS:

14 Q. Good morning, Mr. Birk.

15 A. Good morning, Commissioner.

16 Q. Let me -- let me just go back to -- to  
17 one thing that Mr. Coffman asked you. And that is --  
18 and let me -- let me just re-ask Mr. Coffman's  
19 question a different way. Are we supposed to believe  
20 that economic decisions were not driving how Ameren  
21 was operating the Taum Sauk plant prior to -- to  
22 the -- to the collapse?

23 A. I think -- I think we -- we operate Taum  
24 Sauk as we do all our other facilities. We operate  
25 them economically. But the way I took his question

1 was that it was -- it was something more than an  
2 economic dispatch and -- and why we ran it the way we  
3 ran it. We -- obviously we run our -- all of our  
4 facilities we try to be as economically efficient as  
5 possible.

6 Q. Okay. Well -- and hopefully this will be  
7 my last question along this line, but I mean, it  
8 wasn't just economic efficiency. It -- it was profit  
9 making, wasn't it?

10 A. Commissioner, I believe that -- that the  
11 people that were -- you know, that were at the  
12 facility at the time when -- when we were reviewing  
13 what was going on, I believe ultimately what -- what  
14 they were looking at was -- they believed the  
15 situation was -- was under control. And, you know,  
16 they believed that the level control devices, even  
17 though there were some concerns with them, that they  
18 had -- they had -- they had addressed those such that  
19 they didn't have to take the facility out of service  
20 at that time. So I believe that they were making --

21 Q. Well, I mean, but weren't there --  
22 weren't there like calls from the plant to like the --  
23 to the people that were in charge of selling energy  
24 and the people that were selling the energy saying,  
25 No, no, you can't take -- you know, you can't take the

1 plant off line to do maintenance or whatever?

2 A. No. I think -- I think what it was,  
3 was -- the way I recall it, Commissioner, was that --  
4 that they were trying to schedule a window, as we do  
5 with some of our other plants when we need -- when we  
6 need to do some maintenance repair on them. And at  
7 the time the energy trading organization was trying to  
8 work with them to schedule that window to make it most  
9 efficient for the system.

10 The plant -- the plant never did say, We  
11 need to take this thing out right now to do the  
12 repair. And that -- to me, that's where it becomes --  
13 you know, as Mr. Voss indicated, that we didn't  
14 recognize the severity of the problem.

15 Q. Okay. All right. The plant's been -- or  
16 the plant was originally built and operational in '63;  
17 is that correct?

18 A. Yes.

19 Q. Okay. And you had an IRP filing in, what  
20 was it, 2005 perhaps where you said you didn't  
21 anticipate needing to make any -- any substantive  
22 repairs or improvements over the next 20 years; is --  
23 is that correct?

24 A. Yes. I believe in the -- in the 2005 IRP  
25 filing we assumed the plant would be in service for

1 the next 20 years, which is the planning life of -- of  
2 the IRP.

3 Q. Right. Okay. So that would have put it  
4 at roughly 20, 25 and the plant would have been  
5 roughly 62 years old at that point?

6 A. That sounds correct.

7 Q. Okay. Now, you've had the plant up and  
8 running since April 15, 2010. Is that roughly  
9 correct?

10 A. That's correct.

11 Q. And how many -- how many days would you  
12 estimate that -- that you've run Taum Sauk since --  
13 since then? I mean that's a year and two weeks, maybe  
14 another day or two on top of that. So how many days  
15 would you estimate that you've run the facility?

16 A. I -- I'd estimate -- and again, it's  
17 dispatched based upon economics -- probably around  
18 200 days.

19 Q. Two hundred days.

20 A. Uh-huh. That's just an off -- off the  
21 top of my head estimate.

22 Q. Okay. And what's -- on page 36 and 37 of  
23 your -- your direct testimony, I mean you said that,  
24 While we're still evaluating the precise amount of  
25 additional capacity, our initial review shows an

1 increase of approximately 100 hours -- megawatt hours  
2 per day approximately three-fourths of the year, i.e.,  
3 non-winter months -- and I'm on page 37 now -- and  
4 moreover, because the manner in which we had to  
5 operate the old upper reservoir, we had an even  
6 greater capacity increase during the winter and that's  
7 approximately 300 additional megawatt hours per day;  
8 is that correct?

9 A. That is correct.

10 Q. Now, are those -- are those numbers still  
11 true today?

12 A. Yes. Yes.

13 Q. Okay. Are there any updated or revised  
14 numbers?

15 A. That -- those -- those are the best  
16 estimate. And basically the way those were evaluated,  
17 it was based upon the -- the -- the megawatt hours  
18 that -- that we were able to generate out of the old  
19 facility on an average daily basis compared to what we  
20 could get out of the new facility based upon actual  
21 generation, you know, on an average daily basis.

22 And then the winter period was based upon  
23 the idea that with the old reservoir, we could not  
24 operate up on top -- on the parapet wall, which was  
25 basically you could put eight foot of water on the

1 parapet wall. It was ten-foot high. And -- in the  
2 winter because it caused significant icing problems,  
3 so we had to drop it below it. And the new one we can  
4 operate to full pool.

5 Q. Now, is the number associated with the --  
6 the value of that additional energy, is that highly  
7 confidential or is it not, do you know?

8 A. It's our -- you know, that's our best  
9 analysis at this point. I don't -- I don't think it's  
10 highly confidential.

11 Q. Okay. Okay. So no one -- no one -- no  
12 one's shouting to stop me here. So that's  
13 approximately \$7 million in 2010 dollars. Do you know  
14 how -- how did you calculate that number?

15 A. Basically that number was -- was  
16 calculated taking the additional megawatt hours that  
17 we talked about per day, assuming normal operation of  
18 Taum Sauk, which would -- you know, we had an  
19 assumption of -- of certain number of days or certain  
20 utilization in there.

21 And then taking the -- the energy  
22 costs -- and basically we were using the forward  
23 energy costs for 2011 through I believe it was '15.  
24 And then we locked '15 down and assumed '15 -- the  
25 same energy price from '15 through 2090, the '80-year



1 life. So we didn't -- we didn't have any escalation  
2 after 2015 on the energy cost. And think the energy  
3 cost was about roughly 56 -- \$56 per megawatt hour  
4 energy cost in 2015.

5 Q. Okay. Now, when you say "energy cost,"  
6 is that what it costs you to generate the energy or is  
7 that what it would cost the ratepayers or --

8 A. That is the market price, Commissioner.  
9 That's the round the --

10 Q. That would be the -- that would be the --  
11 that would be the market price?

12 A. Correct. Correct. The market price.

13 Q. All right. And so you just estimated  
14 that the -- the entire value of this additional  
15 capacity is -- is 7 million?

16 A. That's the net present value for an  
17 80-year life, but -- of -- of just the incremental  
18 enhancement -- just the incremental.

19 Q. Yeah. Just the -- just the  
20 incremental -- incremental enhancement?

21 A. Correct. Not the value of having the  
22 plant there for an additional 80 years, which is the  
23 \$170 million --

24 Q. Right.

25 A. -- that was in the testimony, correct.

1 Q. Okay. And Mr. Birk, I mean that -- that  
2 number just seems low to me.

3 A. Well, we were -- Commissioner, when the  
4 analysis was done by -- as Tom Byrne mentioned  
5 earlier, by Jaime Haro's group, we wanted to be  
6 extremely conservative. So like I said, the -- the  
7 energy price in 2015 was locked down with no  
8 escalation through 2090.

9 So we're assuming that \$56 megawatt hour  
10 energy market price is constant all the way through  
11 2090. We're assuming no escalation in the energy.  
12 Because we wanted an extremely conservative estimate.

13 Q. Right. And this is -- this is -- this is  
14 peak electricity, is it not?

15 A. It -- it was based upon kind of an around  
16 the clock. But with Taum Sauk, yeah, you're using,  
17 you know, basically seven hours a day, the seven peak  
18 hours.

19 Q. Right.

20 A. Uh-huh.

21 Q. And, in fact, is it -- let me ask you  
22 this and if -- once again, if this gets into HC, you  
23 know, stop me. But of the -- of the approximate  
24 200 days that you operated Taum Sauk in the last year,  
25 could you tell me how many of those days that you were

1 actually able to procure electricity at -- I'm trying  
2 to think of how to -- how to phrase this question,  
3 Mr. Birk.

4 But, in essence, you know, at night in  
5 the MISO market, I mean you have people that will  
6 actually pay you to take electricity off their hands  
7 because they're -- they're wind generators and they're  
8 getting the production tax credit. I mean, is -- is  
9 it fair to say that a -- that a certain number of  
10 those nights you might have actually gotten -- gotten  
11 paid to take that electricity off of someone else's  
12 hands and -- and use it to generate?

13 A. Commissioner, I think what we've seen,  
14 interestingly, yes, is we have had a few -- now, they  
15 haven't been -- you know, they -- they've been  
16 sporadic, but we have had a few hours of nights where  
17 we've actually been paid to pump, which -- and it's  
18 just like you said, because of the proliferation of  
19 wind and wind being brought onto the system, that it  
20 has helped cause the off-peak prices to be depressed.

21 So we have -- we have actually -- that --  
22 that hasn't been every night obviously. It's been --  
23 it's been sporadic, but there have been hours that we  
24 have had that occur.

25 Q. And I guess the conventional wisdom was

1 before that they would use the -- the excess capacity  
2 from Callaway to -- to -- at night to fill -- fill up  
3 Taum Sauk. I mean that was my always -- my  
4 understanding of how it goes.

5 A. Most of the time, you know, especially  
6 prior to MISO, the way our dispatch stack was done,  
7 Callaway was the lowest dispatch so it would be --  
8 most of the -- the generation that was pumped from  
9 Taum Sauk was from off-peak coal plants because they  
10 dispatched just a little higher than -- than Callaway.

11 Q. Okay. So it would be -- it would be  
12 off-peak coal plants?

13 A. Yes.

14 Q. And is that same true now or is -- is the  
15 price even lower at night?

16 A. I think what we've seen is that at times  
17 the price will go lower. Not all the time though.

18 Q. Right.

19 A. But -- but certain periods of time we  
20 actually dispatch our coal units down because the  
21 market price is lower than what we can dispatch for.

22 Q. Okay. And then I think in response to --  
23 to one of Mr. Mills's questions -- and I think he kind  
24 of cut you off there, but you talked about the -- the  
25 real value of the Taum Sauk rebuild is that it's going

1 to be around now for another estimated 80 years; is  
2 that -- is that correct?

3 A. That is correct. I think the -- when you  
4 look at it and -- you know, based upon what we saw for  
5 the future of Taum Sauk with the -- with the PFMA,  
6 really the biggest enhancement associated with the  
7 whole rebuild is that we're going to have a facility  
8 that's going to be around for another 80 years.

9 It has a lifetime now longer than any  
10 facility we have on our system. Longer than Callaway,  
11 longer than any of our fossil plants, longer than our  
12 hydroplants, Keokuk or Osage at this point. So with  
13 an 80-year life, that's the biggest benefit and the  
14 biggest enhancement. And -- and, you know, that's  
15 where we've calculated the value of -- the net present  
16 value of \$170 million. And again, that's a very  
17 conservative value.

18 Q. And so even if we were going to knock of  
19 say another 20 years, I mean it would still have the  
20 useful life of 60 years?

21 A. Oh, definitely.

22 Q. And then, Mr. Birk, this is -- I'm going  
23 to go back to Exhibit 232, which is the Executive  
24 Summary of the Ameren Missouri 2011 Integrated  
25 Resource Plan.

1                   COMMISSIONER DAVIS: That's already in  
2 evidence, isn't it, Judge?

3                   JUDGE WOODRUFF: Yes.

4 BY COMMISSIONER DAVIS:

5                   Q. Are you familiar with the 2011 Ameren  
6 Integrated Resource Plan, Mr. Birk?

7                   A. At a high level I am, Commissioner.

8                   Q. At -- at -- at a high level. Well, based  
9 on --

10                  MR. LOWERY: Mind if I give that to the  
11 witness?

12                  COMMISSIONER DAVIS: No.

13                  MR. LOWERY: Thank you.

14                  THE WITNESS: Thank you.

15 BY COMMISSIONER DAVIS:

16                  Q. Okay. Based on -- I'm looking at page 12  
17 here of the executive summary that's already in  
18 evidence. I mean it's my understanding from looking  
19 at this document that the amount of existing  
20 generation and the amount of generation that Ameren  
21 needs, that that amount intersects in about 2020; is  
22 that -- is that correct?

23                  A. That's correct.

24                  Q. Okay. So that's roughly nine years away?

25                  A. (Witness nodded head.)

1 Q. And then if you actually retire Meramec,  
2 then that number shifts into about -- is it 2017  
3 roughly?

4 A. If you -- if you assume that Meramec's  
5 retired.

6 Q. If you assume that Meramec is retired,  
7 then the number would shift to -- is that about --

8 A. Depending on the time -- depending upon  
9 the time when you actually retire Meramec.

10 Q. Right.

11 A. That -- that would determine the shift in  
12 the curve.

13 Q. And, Mr. Birk, let me go back and ask you  
14 this question. I apologize if I'm all over the board  
15 here. Do you -- can you quantify like of the -- the  
16 electricity that you use to fill up Taum Sauk right  
17 now, can you quantify how much of that you think comes  
18 from wind versus coal?

19 A. I can't quantify that as I sit here. I  
20 would -- I would tell you that probably -- probably  
21 90 percent of it at least or 95 is coming from coal.

22 Q. Okay.

23 A. It's not going to be a high percentage  
24 from wind at this point yet.

25 Q. Okay. But you never thought you'd see

1       nights where people would actually pay you to take  
2       their electricity either, did you?

3             A.     Never.  Never.

4             Q.     So --

5                    COMMISSIONER DAVIS:  All right, Judge.

6       No further questions.

7                    JUDGE WOODRUFF:  Commissioner Jarrett?

8                    COMMISSIONER JARRETT:  Good morning,

9       Mr. Birk.

10                   THE WITNESS:  Good morning, Commissioner.

11                    COMMISSIONER JARRETT:  I think Chairman  
12       Gunn and Commissioner Davis have asked all the  
13       questions that I had in my mind so I won't beat a dead  
14       horse.  No questions.  Thanks.

15                    THE WITNESS:  Thank you, sir.

16                    JUDGE WOODRUFF:  Commissioner Kenney?

17       QUESTIONS BY COMMISSIONER KENNEY:

18             Q.     Good morning, Mr. Birk.  How are you?

19             A.     Good morning, Commissioner.  I can't  
20       quite see you, but --

21             Q.     That may not be such a bad thing.  Let  
22       me -- let me ask a few questions from your testimony.  
23       You have your direct testimony in front of you?

24             A.     Yes, I do.

25             Q.     The -- and -- and some of these questions



1 may be more appropriate for Mr. Rizzo and if that's  
2 the case, that's -- just tell me so.

3 But first, Mr. Rizzo's report, there's a  
4 reference to his report that he did. And I don't know  
5 if that was commissioned by FERC or commissioned by  
6 Ameren. But do you know where that report is?  
7 Because it's not attached to his testimony as far as I  
8 could determine. Do you know if it's part of the case  
9 file?

10 A. I don't know, Commissioner, if it's part  
11 of this case file. I'm not sure.

12 Q. Is there some other case file of which it  
13 would have been a part that you're aware?

14 A. I believe we may have had some DRs that  
15 asked for that. And it may have been part of the case  
16 file back in 2007 when the Commission investigated the  
17 Taum Sauk event.

18 Q. And is that also the case with respect to  
19 FERC's independent investigation report?

20 A. Yes. Yes.

21 Q. Okay. And that's the 2007-0474-ES case  
22 as far as you know?

23 A. As far as I know. That -- the one that  
24 the Commission investigated in the -- in the  
25 summer/fall of 2007.

1 Q. And I'll check there.

2 A. Thank you.

3 Q. Then let me ask you about the -- the four  
4 points on page 25 of your testimony that refers to the  
5 stability failure of the dike was caused by -- and  
6 there are four points that are listed there. And  
7 those are taken from Mr. Rizzo's report, but you quote  
8 it in your testimony so I want to ask you about it.

9 A. Okay.

10 Q. Number two says, Weak foundation  
11 conditions attributed to the original design and  
12 construction specifications. And this kind of goes to  
13 Commissioner -- or Chairman Gunn's original questions.  
14 Is -- what was the predominant cause of the failure?  
15 Is it construction defects or design defects?

16 A. I believe, sir -- and -- and -- and  
17 again, you can ask Dr. Rizzo this shortly, but I  
18 believe it was -- it was construction defects. And  
19 when you talk about like a -- like you mentioned a  
20 weak foundation condition.

21 When -- if I recall correctly, when it --  
22 when the specification went out for the foundation for  
23 the old reservoir, the -- basically the earth that was  
24 there along with any debris like tree branches and  
25 things were supposed to be cleaned down to rock. And

1 actually what was found after the failure was that  
2 there were places where some of that residual dirt  
3 actually was still there along with potential tree  
4 debris and everything else.

5 So it would indicate that -- to me, that  
6 the specification in the design was okay, but it was  
7 the implementation that was the problem.

8 Q. So do you know what Dr. Rizzo means when  
9 he refers to the original design specifications?

10 A. I think that would be something that  
11 would be better to ask him, Commissioner.

12 Q. Okay. But if the ultimate foundation was  
13 weak because the other debris wasn't cleaned out from  
14 the rock, then that would be a construction defect and  
15 not a design defect?

16 A. Yes, sir.

17 Q. Because obviously the specifications  
18 would say that you want strong concrete, free of  
19 debris?

20 A. Strong -- strong rock to be able to set  
21 the other rock on. Yes, sir. Yes, sir.

22 Q. Now, so the roller-compacted concrete  
23 that is a part of the newly designed upper reservoir,  
24 does that roller compacted concrete help to strengthen  
25 the foundation?

1           A.     Actually the -- the significant  
2     improvement with the new reservoir is that -- that the  
3     foundation was -- was thoroughly cleaned.  In other  
4     words, we had to -- we used high pressure water and  
5     air.  And in places we actually had to dig down below  
6     where the normal grade level would be, sometimes as  
7     much as 60-foot below grade to get to competent  
8     bedrock to sit the facility on.

9           So, you know, when you look at it, you  
10    know, one of the -- one of the significant benefits of  
11    the new foundation is it allows it to be much more  
12    seismic and withstand, you know, a higher level of  
13    seismic events.  But the RCC was laid on top of  
14    that -- that foundation, so to speak -- the  
15    roller-compacted concrete, as you build up.

16          Q.     Is the roller-compacted concrete  
17    considered an enhancement?

18          A.     I believe that -- that basically what the  
19    roller-compacted concrete gives you, is it gives you  
20    the 80-year life.  So it is -- it is as -- a  
21    significant enhancement over what the old facility  
22    was, which was a dumped rock-filled facility.

23          Q.     But -- but would it be considered an  
24    enhancement that would be included in the \$94 million?

25          A.     Actually the enhancements we're asking

1 for, Commissioner, are -- are 90 million of which --

2 Q. 90 million. Okay.

3 A. -- of which -- yeah, of which 67 them --  
4 67 of them were discrete, like an overflow release  
5 structure, a gallery. But the rest of them are  
6 non-discrete. And -- and the RCC would clearly be,  
7 you know, one of those along with the foundation.

8 To me, it's kind of the difference in  
9 building a road out of gravel or building a road out  
10 of cement. I mean that's -- that's really where --  
11 what it's about. I mean the old facility was -- was  
12 an old rock-filled facility. The new one basically is  
13 an RCC cement facility.

14 Q. Okay. So the RCC would be included in  
15 that 23 million?

16 A. The -- you're talking the delta to get up  
17 to the 90?

18 Q. Right.

19 A. Yes, sir.

20 Q. And the 67 million would be like the  
21 overflow release structure, the drainage gallery, the  
22 grout curtain?

23 A. The instrumentation, correct.

24 Q. So if it's determined that the weak  
25 foundation conditions were both a design defect and a

1 construction defect, can you fairly call the use -- or  
2 the cleaning out of the debris or the use of  
3 roller-compacted concrete an enhancement if the  
4 original foundation defects were actually design  
5 defects?

6 A. Commissioner, I believe you have a good  
7 point on that. I think when you look at it in  
8 totality, granted some of the foundation would be  
9 required of a new facility. And doing it the way it's  
10 specified is obviously part of our quality management  
11 process.

12 But, you know, I think when -- when you  
13 look at it as a whole and -- and you compare the old  
14 facility to the new facility, I think you have to say  
15 the foundation is much more robust and it is -- it is  
16 an enhancement compared to the old facility. It's  
17 much better than what was in the old facility.

18 Even -- even if the old facility would  
19 have been built like -- like it was specified, it  
20 still wouldn't have been able to withstand current  
21 seismic requirements. So -- so the new structure  
22 actually is a significant enhancement because it  
23 can -- can withstand those seismic requirements.

24 Q. Okay. okay. All right. Well, let me --  
25 let me -- let me look again at page 25 of your -- of

1 your direct testimony. And if you look at lines 20  
2 through 22 beginning with the sentence -- the first  
3 full sentence in line 20 reads, The FERC report noted  
4 that overtopping of the parapet wall started eroding  
5 the dike material on the downstream toe of the  
6 reservoir.

7 Do you know when that erosion began?

8 A. I don't -- I don't know specifically.  
9 You know, I know we -- we overtopped it for about --  
10 about ten minutes or so, Commissioner. So, you know,  
11 in doing that, I think part of the reason that the  
12 facility failed in the way it failed was because of --  
13 of the way it was constructed.

14 You know, I think an overtopping in and  
15 of itself shouldn't have caused the facility to fail.  
16 But -- but because -- you know, not that short a  
17 duration. But because of the way it was constructed,  
18 we had a -- we had a -- you know, a massive failure in  
19 a short period of time.

20 Q. Well, you said not for that short of a  
21 period. What do you mean?

22 A. Well, I think when the original designers  
23 contemplated -- you know, they had contemplated the  
24 potential of a section of the parapet wall, which was  
25 basically a ten-foot concrete section about two-foot

1 thick that was on top of the rockfill. And in the  
2 original design back in the '60s, they contemplated,  
3 well, maybe one of these sections could fail. And if  
4 it failed, then you would have kind of a slow draining  
5 of the reservoir and it would go down to a V-notch and  
6 it would kind of slowly drain down.

7 Well, what we had happen was effectively  
8 we had an overtopping of that parapet wall, that  
9 section failed. But when it failed, it -- it  
10 saturated the -- the fines in the reservoir and just  
11 blew the whole wall of the reservoir out. So it  
12 didn't fail the way that the design engineers in the  
13 '60s contemplated it would.

14 And it was because of the amount of -- of  
15 fines in the res-- in the old reservoir and the  
16 foundation conditions that were present. So it  
17 didn't -- it didn't really fail the way the designers  
18 thought it would.

19 Q. And -- well, maybe I'm not -- maybe I'm  
20 not understanding you or maybe my question wasn't  
21 clear. That -- that sentence that refers to the  
22 overtopping of the parapet wall that started eroding  
23 the dike material, the second -- the sentence after  
24 that reads that, The erosion then progressed down the  
25 parapet wall, likely causing instability.



1                   Is -- am I -- am I correct in  
2 understanding that that erosion would have occurred  
3 over some period of time?

4           A.     No.  It's -- it's our belief,  
5 Commissioner, that -- that it occurred in the ten  
6 minutes that the overtopping was taking place.

7           Q.     Really?  So ten minutes of water  
8 overtopping would have caused the significant amount  
9 of erosion that would have caused that type of  
10 failure?

11          A.     Yeah.  That -- that would probably be  
12 something better to go into with Dr. Rizzo, but yeah,  
13 that's -- that's -- that's our belief, yes.

14          Q.     Okay.  Moving on then.  You used two  
15 different phrases in your report that -- or your  
16 testimony that I want to ask about.  You refer on  
17 page 25 at line 27 with the original design being  
18 consistent with general design practice of the late  
19 '50s and '60s.  But then you also refer to -- on  
20 page 26, dam safety requirements.

21                   Are general design practices and dam  
22 safety requirements two distinct concepts?

23          A.     No.  I think -- I think what it -- what  
24 it's indicating there, Commissioner, is that -- that  
25 the design and -- as -- as it mentions, kind of the

1 design practices of the late '50s and '60s really are  
2 not consistent with the current dam safety  
3 requirements; in other words, the con-- current design  
4 practices.

5           You know, it's just like a lot of things  
6 that were built in the '60s. You know, they're built  
7 significantly different these days than they were in  
8 the '60s. And really that's what -- that's the intent  
9 of that -- of that sentence.

10           Q.    No, I understand the sentence is -- is --  
11 is indicating that the design practices of the '50s  
12 and '60s aren't consistent with today's dam safety  
13 requirements. And so -- but what I'm asking is that  
14 am I correct that those are two different concepts? I  
15 mean dam safety requirements are separate from general  
16 design practices?

17           A.    I think -- I think they're -- when I --  
18 when -- the way I interpret -- and you can ask  
19 Dr. Rizzo this also. But to me when I hear current  
20 dam safety requirements, it's not only -- not only  
21 the -- the construction and specification of the  
22 facility, but also the operation and maintenance of  
23 the facility. And -- you know, so to me it takes it a  
24 step further than just the design principles back in  
25 the '50s and '60s. It's much more encompassing.

1           Q.     Okay. Well, I guess my question then is,  
2     the general design practices of the late '50s and  
3     '60s -- well, strike that.

4                     However the dam was designed in the '50s  
5     and '60s, was it consistent with then existing dam  
6     safety requirements?

7           A.     Yes. We believe it was.

8           Q.     Okay. So the overflow release structure,  
9     the drainage gallery, grout curtain and there was a  
10    fourth one that you -- the instrumentation upgrades,  
11    are those the four main discrete enhancements that  
12    would be included in that 67 million?

13          A.     I think there was also in addition to  
14    that -- I think that that is correct, Commissioner.  
15    In addition, there's -- there was a roadway, a  
16    significant roadway that was built up at the top of  
17    the facility --

18          Q.     Right.

19          A.     -- with guardrails that -- that basically  
20    allows us to access the top of the facility during  
21    winter conditions, which in the past were -- were a  
22    significant safety issue.

23          Q.     Okay. And if any of those discrete  
24    enhancements -- well, never mind. That might be a  
25    question that's better for -- for Dr. Rizzo.

1                   On -- on page 28 you refer to a series of  
2 meetings that -- that took place between Ameren's own  
3 dam safety and hydrant engineering department and  
4 members of our Commission Staff engineers. Do you  
5 know who from our Staff would have been in attendance  
6 at those meetings?

7                   A.     I believe that in most of those meetings,  
8 Guy Gilbert from the Commission Staff was in  
9 attendance.

10                  Q.     And just Guy Gilbert?

11                  A.     I'm not -- I don't recall who -- who the  
12 other person was with Guy.

13                  Q.     Would you have been present at those  
14 meetings?

15                  A.     I -- I was present at -- at some of the  
16 meetings, but not all of the meetings.

17                  COMMISSIONER KENNEY:   Okay.   Okay.   I  
18 don't think I have any other questions.   Thank you.

19                  THE WITNESS:   Thank you.

20                  JUDGE WOODRUFF:   Commissioner Davis?

21                  FURTHER QUESTIONS BY COMMISSIONER DAVIS:

22                  Q.     Can I go back?   Mr. Birk, looking at  
23 the -- your direct testimony and then looking at the  
24 true-up reconciliation, it seemed like there was a  
25 difference of about \$5 million between what the

1 depreciated and amortized value of the \$90 million  
2 would be in -- in rate-base versus what OPC's  
3 recommended disallowance is. Do -- do you know  
4 anything about that or --

5 A. I don't -- I don't know. I'm not  
6 familiar exactly. I can answer, you know, what makes  
7 up the 90 million if you'd like me to, Commissioner.

8 Q. Well, no. I -- I under-- I understand  
9 that, but in terms of -- I'm just trying to figure out  
10 who -- who would be the best witness to ask about  
11 that. Because, you know, it's -- it's my  
12 understanding that when you depreciate and amortize it  
13 out over 80 years, it would be approximately  
14 15 million. Is that --

15 A. That's -- that's our understanding, yes.

16 Q. Right. Then OPC's disallowance was only  
17 approximately 10.3. And so I was trying to figure out  
18 what the -- what the discrepancy?

19 A. Yeah. I'm not -- I'm -- I'm not sure  
20 about what their discrepancy was on that.

21 Q. Okay. Well, I'll keep asking people  
22 then. And then maybe it will -- maybe it will come --  
23 let me just go back.

24 Would the -- would the additional  
25 capacity -- or not the add-- the additional energy

1 that you are now able to generate, would that have  
2 occurred, you know, but for your -- but for your  
3 renovations?

4 A. No, it would not.

5 Q. Okay. And as someone who is in charge of  
6 Ameren's generation fleet, would you say that, you  
7 know -- what -- I mean what's a -- what's a good price  
8 to pay for new installed capacity?

9 A. Well, I think -- I think when you look at  
10 the -- the value, to me I'd go back to kind of a  
11 market price for capacity right -- right now, which  
12 is, you know -- which is at all-time lows. In our  
13 analysis we were assuming a capacity cost of about --  
14 I think it was about 9 dollars and -- I think it was  
15 about \$9.60 a KW year from 2013 on.

16 Now, if -- if you talk to MISO,  
17 they're -- what they call the CONE, the cost of new  
18 entry, their cap on the cost of new entry for capacity  
19 is \$90,000 per KW year. So you know, when you -- when  
20 you ask what's a good price for capacity, I guess  
21 MISO's capped their cost of new entry of capacity at  
22 \$90,000 per KW a year. The current market, like I  
23 said, is probably a couple bucks a KW a year a right  
24 now, but the economy's depressed and everything else  
25 so --

1 Q. Okay. Well, let me -- let me ask it to  
2 you this way. If you were going to construct  
3 generation on land that you already own that has  
4 transmission lines already there, you don't have any  
5 interconnection problems or anything else, if you're  
6 going to connect something that's -- you know, that's  
7 going to basically generate 100 megawatt hours a day  
8 worth of -- of electricity, I mean what would be --  
9 what would be the -- what would be your estimate, you  
10 know, on a -- on a per KW basis to construct that --

11 A. It --

12 Q. -- the cheapest?

13 A. The cheapest?

14 Q. The cheapest?

15 A. It varies on the technology. Cheapest  
16 would probably be around \$1,000 per -- per KW.

17 Q. \$1,000 per KW?

18 A. Uh-huh.

19 Q. So like installed capacity for wind would  
20 be roughly what?

21 A. Wind's probably running right now about  
22 2,000 to 2,500 dollars a KW. And solar is higher than  
23 that. It's about 4-- I think it's closer to 4,000 a  
24 KW.

25 Q. Okay. And so that would be some sort of

1 like internal combustion engine or something?

2 A. Yeah. A potentially combined cycle  
3 plant, correct.

4 Q. Okay. So basically if you were going to  
5 add a peaking facility that would generate  
6 100 megawatt hours per day, I mean you're talking  
7 roughly \$100 million?

8 A. That's right.

9 Q. Okay. And this could actually generate a  
10 little bit more than that because a third of the year  
11 you weren't getting, you know, that -- that capacity  
12 anyway. So you could actually, you know, be coming  
13 out for roughly 600, 650 per KW installed -- I mean if  
14 we're going to assume 300 megawatt hours a day for  
15 three months a year in terms of actual energy --

16 A. That's the energy, you're right. You're  
17 talking energy now and not capacity so --

18 Q. Okay. Thank you, Mr. Birk.

19 A. Okay. Thank you.

20 JUDGE WOODRUFF: For questions -- for  
21 recross based on questions from the bench beginning  
22 with Staff?

23 MS. KLIETHERMES: Thank you.

24 RECROSS-EXAMINATION BY MS. KLIETHERMES:

25 Q. Just as a point of precision in your



1 discussion with Commissioner Kenney, you were  
2 referring to 90 million. Is -- is it 90 million or is  
3 the characterization of 89.179 million?

4 A. I think it's -- we've rounded it to  
5 90 million. It's -- it's 89 million and --

6 Q. Sure. Just didn't want to lose the  
7 \$800,000.

8 A. No. You're right, you're right.

9 Q. Do you have a copy of Staff's  
10 Construction Audit and Prudence Review of Taum Sauk  
11 project?

12 A. I don't have it in front me, no.

13 MS. KLIETHERMES: May I approach?

14 JUDGE WOODRUFF: You may.

15 THE WITNESS: Thank you.

16 BY MS. KLIETHERMES:

17 Q. Commissioner Kenny was asking you about  
18 some specific items that -- that were included by  
19 Staff and by Ameren.

20 A. Yes.

21 Q. Do you dispute the characterization and  
22 the quantifications that Staff has listed on --  
23 beginning on page 17 of that report?

24 A. Are you talking about in the table?

25 Q. Yes.

1           A.     No, I do not.

2           Q.     Staff's table doesn't list the  
3 roller-compacted concrete or the foundation as  
4 discrete enhancements, does it?

5           A.     That's correct.  It's -- they -- we  
6 don't -- we don't characterize those as discrete  
7 either.

8           Q.     The old design specification was not for  
9 concrete, was it, for the foundations?

10          A.     You're talking about in the original?

11          Q.     Yes.

12          A.     Correct, it was not.

13          Q.     And you agree that the old foundations  
14 weren't built as specified?

15          A.     That's correct.

16          Q.     Even if the old foundations had been  
17 built to specified, they would not have been concrete,  
18 would they?

19          A.     They would not have been, that's correct.

20          Q.     And what is the new foundation made of?

21          A.     The new foundation's made out of what  
22 they call -- you put dental concrete to fill in the  
23 crevices in the rock and then you put the RCC on top  
24 and build up.  So effectively it's concrete.

25          Q.     And was the concrete up from the dentals,

1 was that poured as a monolith?

2 A. It was powered in nine -- nine individual  
3 monoliths around the facility.

4 MS. KLIETHERMES: That's all I have.

5 JUDGE WOODRUFF: Mr. Mills, it's after  
6 10:00. Did you need to make -- take a break before  
7 you --

8 MR. MILLS. No. I have -- thank you, but  
9 I have somebody monitoring the procedure right -- the  
10 proceedings right now and -- and I'm hopefully going  
11 to get word if they want to tell me about something in  
12 particular.

13 JUDGE WOODRUFF: Let us know if you need  
14 to rush out.

15 MR. MILLS: I will. Thank you.

16 JUDGE WOODRUFF: Let's go to AARP for  
17 cross first.

18 MR. COFFMAN: No -- no additional  
19 recross.

20 JUDGE WOODRUFF: All right. And Public  
21 Counsel?

22 MR. MILLS: Thank you.

23 RE-CROSS-EXAMINATION BY MR. MILLS:

24 Q. Mr. Birk, you were asked some questions  
25 about these liner installation in 2004. Do you recall

1 that?

2 A. Yes.

3 Q. And how much did that liner installation  
4 cost?

5 A. If I recall, it was -- it was on the  
6 order of 4 to 5 million dollars.

7 Q. And does that 4 to 5 million take into  
8 account lost margins during the period of time in  
9 which the facility was out of service?

10 A. No, it does not.

11 Q. Okay. Now, in response to some questions  
12 from the bench, you talked about there were pump  
13 storage facilities built in the '60s other than Taum  
14 Sauk that were built without overflows. Do you recall  
15 that?

16 A. Yes.

17 Q. How many pump storage facilities are you  
18 aware of that were built in the 1960's?

19 A. That would probably be a question better  
20 addressed to Mr. Rizzo. I think -- or Dr. Rizzo. I  
21 think from what I recall there was on the order of  
22 20 different pump storage plants.

23 Q. Were any of them built with overflows?

24 A. I'm -- I'm not familiar with that.

25 Q. Okay. So to the best of your knowledge,

1 all of the pump storage facilities in the 1960's were  
2 built without overflows?

3 A. That would be a question that would be  
4 better to ask Dr. Rizzo.

5 Q. Okay. Now, you were asked some questions  
6 I believe by Commissioner Davis with respect to the --  
7 the operation of the Taum Sauk facility in the -- in  
8 the period of time immediately preceding the collapse.  
9 Were the -- the people calling for the dispatch of the  
10 facility engineers?

11 A. Some were engineers and some were not.

12 Q. Okay. Who in -- well, let me -- let me  
13 back up a step then. Who would call for a dispatch of  
14 the facility in -- in the fall of 2005?

15 A. In -- in the fall of 2005 the facility  
16 would have actually been dispatched through the MISO  
17 organization. And basically the way that would work,  
18 Mr. Mills, is we would -- we would actually bid the  
19 capability of the facility in. And then MISO would --  
20 would basically pick up the facility for operation in  
21 the larger MISO dispatch model so they were actually  
22 calling for the starting and stopping.

23 Q. Who would bid into the MISO?

24 A. Our -- our energy trading organization  
25 would bid.

1 Q. And are the energy trading folks  
2 engineers?

3 A. In that -- in that department, some of  
4 the traders have an engineering background, yes, they  
5 are engineers, and some are not.

6 Q. Now, I believe you said in response to a  
7 question from Commissioner Davis that the people  
8 dispatching the facility had reason to believe that  
9 the instrumentation issues were fixed. Do you recall  
10 saying that?

11 A. I believe -- I believe what I said is  
12 that the -- they -- they did not recognize the  
13 severity of the problem and they were -- they were  
14 taking actions to address it. I don't -- I don't  
15 believe I ever said that -- that they thought they  
16 were fixed.

17 Q. Okay. So the people dispatching the --  
18 the facility realized that there were issues with the  
19 instrumentation?

20 A. Yes.

21 Q. And it's your testimony they just didn't  
22 realize the severity of the problems?

23 A. The -- the people at the facility that  
24 were operating it didn't -- didn't realize the  
25 severity of the problem, that is correct.

1                   The -- the dispatch people don't --  
2           they -- you know, they're -- they basically -- the way  
3           it works is that they -- they take their direction,  
4           especially from a safety and reliability perspective,  
5           from the plant organization. So if the plant would  
6           say, This plant's too safe to operate -- unsafe to  
7           operate, it would be taken out of service and the --  
8           and the trading people, they don't even question that.

9                   So basically where trading was getting  
10          their information was from what the plant was relaying  
11          to them. And the plant at the time -- and I was --  
12          I'm part of the -- you know, I'm over the plants and  
13          I'll take responsibility for it. We didn't recognize  
14          the severity of the problem at the time.

15                 Q.     Okay. So it's your testimony that the  
16          trading organization didn't -- may not have even known  
17          that there were issues with instrumentation?

18                 A.     Oh, I think -- I think that they were  
19          aware that there were issues. But again, they're  
20          managing four fossil plants, three hydroplants, 15 CTG  
21          sites and they don't know the technical details of --  
22          of everything at each plant.

23                   So what would have happened was plant --  
24          plant operating people at Taum Sauk would have --  
25          would have let trading now. And I think that was --

1 you know, we went over that -- basically went through  
2 the discussion in '07. They would have let trading  
3 know that, hey, we have -- we have an issue with  
4 the -- with the instrumentation, we believe we have it  
5 under control, trading's aware of it. And basically  
6 they are taking their cue from what the plant's  
7 telling them.

8 Q. Now, I think a minute ago you said that  
9 the people running the -- the -- the engineers at the  
10 facility. Did you mean that there were engineers at  
11 the Taum Sauk facility?

12 A. Yes. Yes.

13 Q. And they're -- they're the ones that were  
14 running it in the fall of 2005?

15 A. Yes. Actually the -- the superintendent  
16 at the time and the -- the supervisor under him that  
17 were -- they were both engineers.

18 Q. So it's not correct that the Taum Sauk  
19 facility was dispatched from -- from the Os-- Osage  
20 facility?

21 A. Well, when -- when you say -- okay. To  
22 me when you -- when -- let me clarify a little. When  
23 you use the term "dispatched," to me dispatch is kind  
24 of a day ahead dispatch. Or -- or when -- when you  
25 have someone like -- like the MISO who is -- who was



1 basically dispatching our facilities at that time,  
2 basically they call and tell you, Put that facility on  
3 or take it off.

4 Now, who actually does that then, which I  
5 think is what you're asking about --

6 Q. That's what I'm asking.

7 A. -- is the Osage actual-- the Osage  
8 operator was the one that would actually hit the  
9 button that would say start it or stop it.

10 Q. Okay.

11 A. But the -- but the functional control of  
12 the facility was under the -- the superintendent at  
13 Taum Sauk.

14 Q. Okay. So the superintendent at Taum  
15 Sauk, did he ever come to testify at the Public  
16 Service Commission investigation of the Taum Sauk  
17 failure?

18 A. He did not. He -- at the time, if I  
19 recall correctly, he actually had colon cancer and he  
20 has -- he has since deceased so I don't --

21 Q. Now, turning to your analysis that you  
22 discussed with Commissioner Davis about the -- the  
23 analysis you did on the value of the -- the -- the  
24 80-year life, did that analysis assume that the  
25 existing turbines would last 80 years?

1 A. Yes, it did.

2 Q. Okay. Is that a conservative estimate of  
3 the life of those turbines?

4 A. Those turbines were -- were replaced  
5 in -- in 1999, so they are -- they're some of our --  
6 our newest, you know, turbines in the system. So at  
7 this point we wouldn't have any reason to believe that  
8 they would not last that length of time.

9 Q. You think -- you think those turbines  
10 will last 91 years?

11 A. I think at this point based upon the --  
12 the -- the maintenance and the inspections and what  
13 we've looked at, you know, and their operation over  
14 the last 10, I think -- I think -- at this point  
15 that's what we would believe, yes.

16 Q. Are they speced for a 90-year life?

17 A. I'm not sure about that.

18 Q. Okay. Now, for purposes of that  
19 analysis, at what point did you estimate that the --  
20 that the old upper reservoir would have to have been  
21 retired?

22 A. I think -- you know, I think that's  
23 something that we would have -- we would have  
24 continued to evaluate, you know, especially coming out  
25 of the PFMA in 2008.

1 Q. You did an analysis that came up with  
2 a -- an enhanced value, the \$170 million or the  
3 7 million even that you talked to Commissioner Davis  
4 about.

5 A. Oh, yeah. That -- that was based upon  
6 from -- basically from 2010 forward. That was -- you  
7 know, basically that was -- that was an assumption  
8 based upon the new reservoir being in place from 2010  
9 to 2090.

10 Q. Okay. What was the projected life of  
11 Taum Sauk when it was originally built?

12 A. I -- I am not sure about that.

13 Q. Okay. What was the license period for  
14 its initial license?

15 A. Its initial license was -- I believe it  
16 was 40 or 45 years. It actually expired in -- in June  
17 of -- or July 1, 2010.

18 Q. Okay. And what is the expiration of the  
19 current license?

20 A. We -- we are currently living on a  
21 year-to-year license while we've submitted a request  
22 for -- for a new license.

23 Q. And what period would that license cover,  
24 assuming that you were granted one?

25 A. The license -- the current license is

1 through FERC and that would be a better question to  
2 ask Dr. Rizzo probably, but currently they run about  
3 40 to 50 years.

4 Q. Okay. So even though you have a license  
5 that expires in less than a year, you -- and -- and  
6 you -- you hope to get a 40-year license, your  
7 analysis projected an 80-year life; is that correct?

8 A. That's correct.

9 Q. Okay. Now, you used the term that I  
10 suppose I should have heard before, but I had not  
11 heard it phrased this way before. What exactly is a  
12 non-discrete enhancement?

13 A. Ba-- basically the way -- and this is,  
14 you know, the way I look at it. The discrete  
15 enhancements are something that were -- you know,  
16 that -- that are -- that were not present at all in  
17 the old facility, in the old Taum Sauk reservoir and  
18 you know, something you can walk up and kind of touch,  
19 look at, see, but discrete. Clearly defined, you  
20 know, and --

21 Q. So -- so just as -- for -- for -- to  
22 define the ground work for discrete before we get to  
23 non-discrete, you're saying it has to be something  
24 that was not present at all in the old facility?

25 A. No. I'm not -- I'm not -- I'm not saying

1 that, but that's the way we use the term for discrete  
2 enhancement, yes, it was--

3 Q. That's how you used it in this case?

4 A. Yeah, like an overflow release structure  
5 was not there in the old facility.

6 Q. Okay. So then what is a discrete  
7 enhancement -- I mean non--

8 A. No, that is discrete--

9 Q. What is a non-discrete enhancement?

10 A. Well, a non-discrete enhancement are  
11 things like the foundation that -- yeah, the old one  
12 had a foundation, but nowhere near like the new one  
13 does. So, you know, you have a foundation now that --  
14 that's capable of handling New Madrid fault. The old  
15 one couldn't do that.

16 Q. Okay.

17 A. So that is a -- a non-discrete -- yeah,  
18 the old one had a foundation, but it was nothing like  
19 that. Like I said before, it's the difference between  
20 a -- a gravel road and a concrete highway.

21 Q. Okay. And how did you, for purposes of  
22 this case, quantify the value of the non-discrete  
23 enhancements?

24 A. We -- basically when you look at the  
25 non-discrete -- like, for example, in my testimony,

1 had the foundation that was -- was 127 -- it's  
2 \$127 million for the foundation.

3 And what we believed was that, you know,  
4 we had -- we had a portion of discrete enhancements,  
5 like I talked about earlier, and then we had a portion  
6 of -- of kind of non-discrete, like the foundation,  
7 like the RCC that really extended the life of the  
8 facility and gave the facility an 80-year life. So  
9 the discretely were 67 million.

10 When you talk about the non-discretely,  
11 like I said, there's 127 million in the foundation.  
12 The very conservative value of the plant for an  
13 80-year life we believe is -- is 170 million. That's  
14 very conservative. And, you know, that's kind of how  
15 we valued the non-discrete enhancements.

16 Q. So 170 million is the non-discrete  
17 enhancements?

18 A. I think -- I think when you look at it,  
19 the value at a minimum's going to be 170 million.

20 Q. And that's what you're asking for in this  
21 case?

22 A. No. What we are asking for in this case  
23 is -- is \$90 million. And basically what the  
24 90 million is, is -- is made up of -- the majority of  
25 this, 80 percent of it, was covered by insurance. And

1 that what we are asking for in the 90 million is  
2 consistent with those enhancements that -- that we  
3 believe add value for ratepayers and for customers and  
4 in value for the life of the plant.

5 Q. Mr. Birk, let me make this simple. For  
6 purposes of this case have you not quantified the  
7 value of the non-discrete enhancements as the  
8 difference between what the plant cost and what the  
9 insurance covered?

10 A. No. No. We --

11 Q. Then how did you --

12 A. We think -- we think the -- the -- the  
13 totality of the enhancements far outweigh the  
14 \$90 million we're asking for. I mean, this is a  
15 plant --

16 Q. How -- how did you quantify the value --

17 A. -- that's going to last 80 years.

18 Q. How did you quantify the value of the  
19 non-discrete enhancements?

20 MR. BYRNE: I'm going to object. The  
21 questions' been asked and answered. He said  
22 \$170 million.

23 BY MR. MILLS:

24 Q. Is that your answer? That is the value  
25 of the non-discrete enhancements?

1           A.     That's the value of the life of the plant  
2     for the next 80 years, yes.

3           Q.     Is that the value --

4           A.     Yes.   Yes.

5           Q.     Thank you.  Now, when the -- when the  
6     Taum Sauk plant was originally designed, was it  
7     designed to be filled up near the top of the parapet  
8     wall?

9           A.     You're -- you're talking about the plant  
10    that was built in the '60s?

11          Q.     The -- the original upper reservoir, was  
12    that designed to be filled up to near the top of the  
13    parapet walls?

14          A.     The -- the original upper reservoir was  
15    to be designed to be built -- to be filled to about  
16    two foot from the top of -- of the parapet wall, yes.

17          Q.     Okay.  Now, you were asked by  
18    Commissioner Davis some questions about the capacity  
19    balances and your -- your current IRP case.  Do you  
20    recall that?

21          A.     Yes.

22          Q.     And specifically he asked you about  
23    the -- the crossover point and about 2020.  Do you  
24    recall that?

25          A.     Yes.



1 Q. Two assumptions going into that; is one  
2 that the Meramec plant is retired?

3 A. Yes.

4 Q. And --

5 A. Well, can I -- can I take that back for a  
6 second?

7 Q. Please go ahead.

8 A. Yeah. Let me -- basically he asked me  
9 about two different curves. Correct? And the one  
10 where the curve kind of crossed over around 2016, that  
11 was assuming that Meramec would be retired in 2016 due  
12 to environmental -- environmental -- potential  
13 environmental issues.

14 Q. Okay.

15 A. The one where it crossed over in 2020 was  
16 assuming, you know, some load growth and -- and -- and  
17 where Meramec would be retired out into the future  
18 somewhere -- somewhere be-- you know, after 2020.

19 Q. After 2020?

20 A. 2021 or 2022, yeah, uh-huh.

21 Q. Now, do both of those curves assume that  
22 UE does what it's called in that -- in that IRP filing  
23 low-risk DSM?

24 A. I believe that -- that both of those  
25 curves assume that we're going to get some -- some

1 energy efficiency demand response.

2 Q. But is it -- is it the specific level  
3 that the plan calls low-risk DSM?

4 A. I'm not -- I'm not -- I can't -- I can't  
5 speak to that.

6 Q. You don't know?

7 A. Yeah. I don't know -- know that, sir.

8 MR. MILLS: Okay. That's all the  
9 questions I have. Thank you.

10 JUDGE WOODRUFF: All right. Redirect?

11 MR. BYRNE: Just a few.

12 REDIRECT EXAMINATION BY MR. BYRNE:

13 Q. Mr. Birk, when Commissioner Davis was  
14 asking you some questions about the IRP and I think  
15 you were talking about the IRP that was filed in 1995.  
16 Do you remember those questions?

17 A. You mean 2005?

18 Q. I mean 2005.

19 A. Yes, sir.

20 Q. Okay. Never mind.

21 MR. MILLS: That sounds like one of my  
22 questions.

23 MR. LOWERY: Happens to the best of us.

24 THE WITNESS: Those are the easiest ones.

25 BY MR. BYRNE:

1           Q.     Commissioner Gunn asked you -- Chairman  
2     Gunn asked you some questions about were ratepayers  
3     getting what they paid for. Do you recall that line  
4     of questions --

5           A.     Yes.

6           Q.     -- talking about how the facility was  
7     originally designed?

8           A.     Uh-huh.

9           Q.     Let me ask it this way: Were -- were  
10    ratepayers paying the costs that were incurred to  
11    build the facilities, the actual costs to build the  
12    facility?

13          A.     Yes, they were.

14          Q.     And if the facility would have been  
15    originally built better than it was, would those costs  
16    have been the same or higher or lower?

17                 MR. MILLS: Judge, I'm going to have to  
18    object. That calls for speculation.

19                 JUDGE WOODRUFF: I'll sustain that  
20    objection.

21    BY MR. BYRNE:

22          Q.     Okay. Let me ask you this: You were --  
23    you quantified a number of energy benefits from --  
24    from the new plant. And I think one -- one set of  
25    figures was -- was for the incremental energy that the

1 plant could produce. Do you recall that?

2 A. Yes.

3 Q. And then -- and then a separate set of  
4 figures was the \$170 million from the longer life of  
5 the plant?

6 A. That is correct.

7 Q. And I think in both cases you said that  
8 the method of calculating those numbers was -- was  
9 very conservative. Could -- could you explain that a  
10 little more, what -- what made the calculation of  
11 those numbers conservative?

12 A. Yes. Based -- let me talk about the --  
13 the energy costs first on the \$7 million. And  
14 basically we were looking at an -- at a forward energy  
15 market, around the clock energy market that -- that  
16 basically we locked in -- in 2015 and then we -- we  
17 took it forward without any escalation through the --  
18 through the 80-year life of the plant.

19 When you look at the 170 million, we  
20 basically -- and that's a capacity and energy cost and  
21 that's really the value of the plant for -- from 2010  
22 to 2090. We were assuming a capacity cost of about  
23 \$9.60 per KW a year which -- with no escalation from  
24 2013 on. So we assumed it would be stable from there  
25 on with no escalation. And we were also assuming an

1 energy cost that basically through 2015 ended up being  
2 56.76 and then it was locked from -- at that \$56 rate  
3 from then on.

4 So -- and the discount rate was about  
5 8.5 percent, which is roughly what our current cost of  
6 capital is. So basically we believe it is the most  
7 conservative value.

8 Q. And the discount rate, explain what you  
9 use that for, if you could.

10 A. Basically we're using it to discount back  
11 to net present value to come up with the -- basically  
12 the 170 million. So you take the cost per year and  
13 then you roll it back at a discount rate.

14 Q. So is that at current dollars, the  
15 170 million?

16 A. Yes. Yes. The 170 million is in current  
17 dollars.

18 Q. Are there additional benefits beyond the  
19 economic benefits from selling the power that the --  
20 the company and its customers derive from having a  
21 Taum Sauk plant in operation?

22 A. Yes. I think -- and I think Commissioner  
23 Davis hit on this a little bit, but one of the -- the  
24 biggest things we've seen over at least the last  
25 couple years is -- with the proliferation of wind, it

1 tends to really tend to push down the off-peak energy  
2 prices. And because of that, it actually makes a Taum  
3 Sauk facility more valuable in the future.

4 And, you know, that coupled with the  
5 ability to meet kind of peak load demands, especially  
6 during on-peak periods and respond within ten minutes  
7 is something that -- that -- that is really beneficial  
8 for the Taum Sauk facility.

9 It's -- it's the biggest battery we have  
10 on our system. And right now there's no good way of  
11 storing electricity. I mean that's -- that's part of  
12 the challenge we have with some of the renewable  
13 generation, you know, that -- that we're going to be  
14 required to bring into our system is that you have  
15 to -- the wind blows at night typically and the sun  
16 shines during certain periods but not all the time.  
17 And it's great to have a storage facility that -- that  
18 you can have to utilize some of that.

19 Q. Do you believe that the new upper  
20 reservoir is safer than the old upper reservoir?

21 A. Absolutely.

22 Q. Are there benefits to having a safer  
23 plant that are not reflected in the \$170 million and  
24 the \$7 million that -- the quantified as far as the  
25 energy benefits?

1           A.     Absolutely.  Just -- just from an  
2 earthquake perspective.

3           Q.     I -- I -- I think in response to  
4 questions from Commissioner Gunn, you were talking  
5 about the -- the -- the -- the enhancement of having  
6 an RCC, roller-compacted concrete, constructed  
7 facility over even -- even a rock-filled facility that  
8 was constructed properly in the first place; is that  
9 correct?

10          A.     Yes.

11          Q.     Okay.  Could you elaborate on that a  
12 little bit?  Why is roller-compacted concrete better  
13 than even a properly constructed rock-filled dam?

14          A.     You know, I think from -- from what we've  
15 seen and the way we constructed the facility, which  
16 was a symmetrical RCC facility, basically, you know,  
17 roller compacted is just so much more robust.  I think  
18 the best analogy I had, it's the difference between  
19 a -- a gravel road and -- and a concrete road.

20                   And your life expectancy would be much  
21 different.  The way -- the way it handles seismic  
22 events and -- and just the -- the operations and  
23 maintenance associated with it.

24                   The -- the old facility prior to liner,  
25 we used to -- we used to almost leak almost two foot a

1 day in elevation from the old facility. The new  
2 facility, we -- we -- we may have, you know, an inch  
3 or two a day. So there's just -- there's just, you  
4 know, a significant number of benefits in RCC as  
5 opposed to a rockfill. And Dr. Rizzo can elaborate --  
6 elaborate much better on that than I can.

7 Q. Mr. Birk, when Ms. Kliethermes was asking  
8 you questions, I think in response to one of her  
9 questions you said that the new upper reservoir was  
10 poured as I think nine monoliths; is that correct?

11 A. That is correct.

12 Q. Can -- can you tell me what that means  
13 or -- or why -- why you did it that way?

14 A. Basically a monolith is about an 800-foot  
15 section. And it was just to allow efficient  
16 construction and -- and basically so that you could  
17 build it kind of in stages. And just it was for -- it  
18 was for efficiency of construction and -- and overall  
19 efficiency of the structure.

20 Q. Mr. Birk, you had -- you had some  
21 questions from Mr. Mills about the length of the  
22 license. Do you recall those questions?

23 A. Yes.

24 Q. And it not being 80 years. Do you know  
25 how long the company is proposing to depreciate the



1 facility?

2 A. We're proposing to depreciate over  
3 80 years.

4 Q. Mr. Birk, you were asked about the price  
5 of the power. And I think you explained even in  
6 response to some of my questions that you used five  
7 years and -- in terms of calculating the energy value  
8 of the plant. And I think the -- you ended up using  
9 the fifth year for all the rest of the years; is that  
10 true?

11 A. Yes. The -- the -- the price of the  
12 fifth year was locked with no escalation.

13 Q. And what was that price again?

14 A. The price of energy we were using was --  
15 was a little bit more than \$56. It was 56.70 or  
16 something like that --

17 Q. And how was --

18 A. -- per megawatt hour.

19 Q. How was that price calculated?

20 A. Basically that was the -- that's the --  
21 the current forward market price.

22 Q. And is that an around the clock price?

23 A. It's an around the clock and current  
24 forward market price.

25 Q. And -- and is power from Taum Sauk

1 generally sold around the clock or is it sold on peak  
2 periods?

3 A. It's typically sold on peak. We -- we --  
4 we don't sell any at night. We're typically pumping  
5 at night.

6 Q. So what does that suggest about the  
7 \$56 --

8 A. It's a very low, very conservative  
9 estimate.

10 MR. BYRNE: Thank you, Mr. Birk. I have  
11 no other questions.

12 THE WITNESS: Thank you.

13 JUDGE WOODRUFF: All right. Thank you,  
14 Mr. Birk. Then you can step down.

15 THE WITNESS: Thank you.

16 JUDGE WOODRUFF: And we are due for a  
17 break anyway. Mr. Mills, do you have any insight on  
18 when you might be called over there?

19 MR. MILLS: I may not be called over at  
20 all.

21 JUDGE WOODRUFF: All right.

22 MR. MILLS: I will let you know.

23 JUDGE WOODRUFF: We'll take a break and  
24 come back at eleven o'clock and we'll deal with your  
25 problem with the legislature or hopefully not problems

1 with the legislature, but we'll be back at  
2 eleven o'clock.

3 (A recess was taken.)

4 MS. KLIETHERMES: Judge, before we take  
5 up the next witness, I believe Commissioner Davis had  
6 some questions about the calculation of the  
7 reconciliation, and Staff does have Steve Rackers  
8 available if that would like to be clarified on the  
9 record.

10 JUDGE WOODRUFF: Let's wait for  
11 Commissioner Davis to come back down before we do  
12 that. So we'll go to the witness and we can bring  
13 Mr. Rackers on later.

14 And so if Ameren would call its next  
15 witness.

16 MR. BYRNE: Yes. I would call Dr. Paul  
17 Rizzo.

18 (Ameren Exhibit Nos. 117 and 118 were  
19 marked for identification.)

20 (Witness sworn.)

21 JUDGE WOODRUFF: You may inquire.

22 MR. BYRNE: Thank you.

23 PAUL RIZZO testified as follows:

24 DIRECT EXAMINATION BY MR. BYRNE:

25 Q. Good morning, Dr. Rizzo.

1 A. Good morning.

2 Q. Could you please state your name and  
3 business address for the record.

4 A. Paul C Rizzo, Paul C. Rizzo Associates,  
5 500 Penn Center Boulevard, Pittsburgh, Pennsylvania  
6 15235.

7 Q. And by whom are you employed?

8 A. Paul C. Rizzo Associates, Inc.

9 Q. And in what capacity?

10 A. I'm CEO.

11 Q. And are you the same Paul C. Rizzo who  
12 caused to be filed in this case direct testimony that  
13 has been marked as Exhibit No. 117 and surrebuttal  
14 testimony that's been marked as Exhibit 118?

15 A. Yes.

16 Q. Do -- do you have any corrections to  
17 either piece of testimony at this time?

18 A. No corrections.

19 Q. And, Dr. Rizzo, if I were to ask you the  
20 questions contained in -- in that pre-filed testimony  
21 today when you're here under oath, would your answers  
22 be the same?

23 A. They would be the same.

24 Q. And is the information contained in that  
25 pre-filed testimony true and correct to the best of

1 your knowledge and belief?

2 A. Yes, it is.

3 MR. BYRNE: Your Honor, I would offer  
4 Exhibits 117 and 118 and tender Dr. Rizzo for  
5 cross-examination.

6 JUDGE WOODRUFF: All right. 117 and 118  
7 have been offered. Any objections to their receipt?

8 Hearing none, they will be received.

9 (Ameren Exhibit Nos. 117 and 118 were  
10 received into evidence.)

11 JUDGE WOODRUFF: Cross-examination  
12 beginning with AARP?

13 MR. COFFMAN: No questions.

14 JUDGE WOODRUFF: Staff?

15 MS. KLIETHERMES: Just very briefly.

16 CROSS-EXAMINATION BY MS. KLIETHERMES:

17 Q. Do you believe the Taum Sauk facility as  
18 designed has a life of at least 80 years?

19 A. Yes, I do.

20 Q. Do you believe that the Taum Sauk  
21 facility as constructed has a life of at least  
22 80 years?

23 A. Yes, I do.

24 Q. Do you believe that life could be, in  
25 fact, be in excess of 80 years?

1           A.     Yes, I do.  The -- I've worked on a  
2     number of other hydro projects that have lives in  
3     excess of 100, 120 years.  In fact, I'm working on one  
4     called Keokuk in -- it's an Ameren facility that's  
5     over 100 years old -- it's just about 100 years old.

6           Q.     Would you agree that the primary  
7     limitation on the life of the facility is the ongoing  
8     maintenance?

9           A.     There are a number of factors that  
10    contribute to the ongoing life.  Maintenance is one of  
11    them.  Certainly the -- another one that must be  
12    considered is the duration of the licenses and  
13    renewals thereto.

14           MS. KLIETHERMES:  That's all I have.  
15    Thank you.

16           JUDGE WOODRUFF:  Public Counsel?

17    CROSS-EXAMINATION BY MR. MILLS:

18           Q.     Good morning, Dr. Rizzo.

19           A.     Good morning.

20           Q.     To start with, can you explain to me the  
21    scope of employment under which you are testifying  
22    here today?

23           A.     I'm -- I was retained by Ameren to  
24    testify about the -- my knowledge of the failure of  
25    the facility in 2005 and my knowledge of the design

1 and construction of the new facility.

2 Q. Okay. So the scope of your employment  
3 today is strictly limited to testifying in this case,  
4 both prefiled and -- and as you're here today; is that  
5 correct?

6 A. Yes.

7 Q. Okay. What other employment have you or  
8 your firm had with Ameren?

9 A. We are Ameren's consultant for the  
10 environmental investigations and seismic  
11 investigations at the Callaway plant, and we have  
12 worked for them on hydro aspects of Bagnell Dam and at  
13 Keokuk.

14 Q. What other employment have you had with  
15 Ameren with respect to the Taum Sauk in addition to  
16 testifying in this case?

17 A. I did the forensic -- our firm did the  
18 forensic investigation of the failure under my  
19 leadership. And then our firm was the engineer in  
20 record -- is the engineer of record and was the  
21 construction manager for the rebuild of the upper Taum  
22 Sauk reservoir.

23 Q. And how much are you being paid for your  
24 testimony in this case?

25 A. I don't know billing rates, but I bill by

1 the hour for my services.

2 Q. And what are those rates?

3 A. I don't know exactly, but it's on the  
4 order of \$200 an hour.

5 Q. Okay. And is that the same compensation  
6 that you got for the other services you -- you've  
7 performed with respect to Taum Sauk?

8 A. It's the same as -- building rate that I  
9 use for all our clients, including Taum Sauk.

10 Q. Okay. Does your firm -- is your firm  
11 recovering from Ameren other sums of money in addition  
12 to the \$200 per hour that you personally are charging  
13 from Ameren for its activities with respect to Taum  
14 Sauk?

15 A. Well, you should understand that we had a  
16 cadre of engineers and construction managers and  
17 technicians working on the project for a number of  
18 years so we -- we were billing for all those people  
19 for that period of time.

20 Q. So is it fair to say that you've --  
21 you've been paid and are continuing to be paid tens of  
22 millions of dollars with respect to the Taum Sauk  
23 facility?

24 A. I'm not continuing to be paid. I was  
25 paid my normal engineering fees when the project -- by



1 the time the project was completed.

2 Q. So your firm has no ongoing  
3 responsibilities with respect to Taum Sauk other than  
4 your testimony in this case?

5 A. We -- I have been retained to be the next  
6 inspector of the dam, which would be occurring in  
7 June -- next -- this coming June. And will  
8 participate in an upcoming PFMA for the facility in  
9 June as well.

10 Q. Okay. Who has retained you to be the  
11 inspector of the dam?

12 A. Ameren.

13 Q. Okay. And is that part of a -- a FERC  
14 inspection?

15 A. That is the -- the inspection of the dam  
16 that's -- as part of the FERC regulations, yes.

17 Q. Okay. So Ameren has hired you to do the  
18 next FERC inspection; is that --

19 A. Yes.

20 Q. -- a layman's way of phrasing that?

21 A. That's right. That's consistent with  
22 normal practice for a new dam, that the new -- that  
23 the designer of the new dam is retained to do the  
24 first inspection after -- upon completion of  
25 construction.

1 Q. Okay. Now, as -- as part of your  
2 testimony in this case, are you representing yourself  
3 as an expert in the rate-making aspects of utility  
4 rate setting?

5 A. I am not an expert in rate-making  
6 whatsoever.

7 Q. Okay. Are you -- do you consider  
8 yourself an expert in utility regulation?

9 A. I am not an expert in utility regulation.

10 Q. Okay. Now, a -- a good deal of your  
11 direct testimony has to do with what would have  
12 happened, in your opinion, after the 2008 FERC  
13 inspection; is that correct?

14 A. Yes.

15 Q. Okay. And in the normal course of  
16 event -- events, and not referring to the Taum Sauk  
17 but just to facilities in general, if that inspection  
18 process uncovers issues with the facility, what are  
19 the next steps in the process?

20 A. Well -- excuse me. The inspection  
21 process changed dramatically during the 2000  
22 periods -- during 2000, 2005.

23 Q. And I don't want to interrupt, but I'm  
24 really talking about the steps after the inspection  
25 process. Assuming the inspection process is concluded

1 and issues are found, what are the next steps after  
2 that?

3 A. Let me explain what I mean by my answer.

4 Q. Okay.

5 A. The process in the time interval between  
6 2000 and about 2005, the inspection process changed  
7 significantly. In the period -- during that period,  
8 a -- a new process was added to the FERC inspection  
9 procedures.

10 Prior to about 2001, 2002, the FERC  
11 inspector -- the engineer designated as independent  
12 inspector would visit the dam, usually walk the toe  
13 and the heel of the dam, walk the crest of the dam,  
14 look at instrumentation records and look at how the  
15 dam was -- generally appeared as far as its  
16 functionality and write a report that would indicate  
17 whether the dam was being operated in compliance --  
18 general compliance with its -- with the license for  
19 the facility.

20 In about 2001 to 2005, the FERC added a  
21 new process called a potential failure modes analysis,  
22 PFMA. With that process, the inspection process --  
23 the whole inspection procedure, operation, whatever,  
24 dramatically changed, resulting in a much more  
25 detailed, much more comprehensive investigation of the

1 dam itself.

2 That did not occur at Taum Sauk. It was  
3 scheduled to occur in 2008. In 2003, which was the  
4 date of the last FERC inspection, the process was like  
5 in the former mode. The pro-- the inspection we're  
6 going to conduct in 2011 will be the new mode with --  
7 including a PFMA.

8 Q. Okay. And under -- are the steps after  
9 the inspection's concluded different under those two  
10 modes?

11 A. The inspections are dramatically  
12 different because there's much more information  
13 available under the PFMA approach than with the old  
14 FERC inspection approach.

15 Q. If there were issues found on the old  
16 inspection re-- approach, what would the next steps  
17 be?

18 A. The licensee would be obligated to -- to  
19 deal with them and correct any deficiencies.

20 Q. Okay. And how -- how -- what are the  
21 steps in the process? Under either the old or the new  
22 approach, a report is issued. Correct?

23 A. Well, and there are -- with the old  
24 process, there was a single report prepared by the  
25 FERC inspector. And he would in his report make

1 recommendations as to what should be accomplished,  
2 where the deficiencies were and what the utility  
3 should do about these deficiencies. That report would  
4 go to the FERC.

5 The FERC would review the report and ask  
6 the utility, the licensee, about what they planned to  
7 do about those deficiencies. Normally, nine times out  
8 of ten, practically every case, the licensee would  
9 say, I'm going to fix this, I'm going to fix that and  
10 here's my schedule for doing so.

11 With the new process, the -- the FERC  
12 inspector does his inspection, he prepares a  
13 preliminary report. Then the potential failure modes  
14 analysis is -- is conducted. And then that session,  
15 which is a very elaborate, very well structured, very  
16 programmed process, the -- the potential modes of  
17 failure of a dam or a facility are considered by a  
18 learned group of engineers and -- and regulators  
19 and -- and owners and so forth. Usually it's 10 to 15  
20 people.

21 The -- the program -- the structured  
22 program that you follow under FERC guidelines is that  
23 all potential failure modes are classified as not  
24 credible, credible, needing more information,  
25 emergency repair and immediately.

1                   Now, a report is prepared under the  
2                   direction of the FERC inspecting report -- under --  
3                   under the direction of the FERC inspector as well as  
4                   with the compliance of the PFMA committee. And that  
5                   then is processed again through FERC and with the same  
6                   kind of situations.

7                   The inspector and the PFMA group  
8                   recommend to the licensee what measures should be  
9                   taken to either investigate the deficiencies or  
10                  unknown information or correct deficiencies.

11                  If they're -- it's a relatively  
12                  comprehensive process that's much more elaborate than  
13                  what we had in early 2000.

14                  Q.     In either situation, sort of at the end  
15                  of the inspection process -- and I understand that  
16                  under the PFMA it's a much more involved inspection  
17                  process. At the end of the inspection process,  
18                  there's a report to FERC?

19                  A.     That's correct.

20                  Q.     And then there's a directive from FERC to  
21                  respond to the report?

22                  A.     There's an inquiry to the -- from the  
23                  FERC to the licensee, what are you going to do  
24                  about -- for example, what are you going to do about  
25                  these deficiencies. The licensee responds what he's

1 going to do. If that action is inadequate or  
2 non-responsive, the FERC will issue an order to  
3 correct the deficiencies.

4 Q. And is there opportunity during that  
5 process for the licensee to request a contested case  
6 procedure?

7 A. Not that I'm aware of.

8 Q. Okay. Is the opportunity for the  
9 licensee and the FERC to have a back and forth between  
10 what the licensee wants to do and what the FERC thinks  
11 needs to be done to result in a resolution?

12 A. Normally -- there is normally a back and  
13 forth discussion of not what to do but when to do it,  
14 the schedule for implementing it.

15 Q. And is there sometimes a discussion of  
16 exactly what particular steps need to remedy these  
17 particular deficiencies?

18 A. There is -- usually has to be some sort  
19 of agreement reached between the licensee and the FERC  
20 on what steps. Only because the reports coming out of  
21 the PFMA committee or the inspector usually leave  
22 several options available for the licensee to handle  
23 the deficiency.

24 Q. Okay. Would you categorize that back and  
25 forth process as a negotiation?

1           A.     Well, it's a negotiation that's very one  
2     sided because the FERC has -- has the golden -- has  
3     the golden handshake, so to speak. They -- they --  
4     you can -- you can try to negotiate something less, if  
5     you want to use the word negotiate, but usually you  
6     would fail.

7           Q.     Well, if the -- I'm sorry. If the PFMA  
8     report identifies several options, does the FERC  
9     necessarily dictate which option the licensee must  
10    take?

11          A.     No. They don't necessarily dictate, but  
12    you have got to justify the option you have selected.

13          Q.     Okay. And there could be some back and  
14    forth on that between the licensee explaining --

15          A.     There is usually back and forth more tied  
16    to schedule than actual actions.

17          Q.     And would you consider that back and  
18    forth to be a negotiation of sorts?

19          A.     As I said, I don't consider it much of a  
20    negotiation because there's -- there's unbalanced  
21    power between the two entities.

22          Q.     So you said that's a no, it's not a  
23    negotiation?

24          A.     No. It's -- it's a discussion. I  
25    wouldn't call it so much a negotiation.



1 Q. Okay. At the time it was constructed, do  
2 you know what the predicted life of the original Taum  
3 Sauk upper reservoir was?

4 A. No, I do not.

5 Q. All right. Do you know -- even though  
6 you don't know the exact time, do you know whether  
7 it -- it collapsed before or after the predicted life?

8 A. I -- I can surmise based on experience  
9 that the engineers who designed the dam in 1958  
10 through 1963 probably envisioned a design life on the  
11 order of 40 or 50 years. Only because I witnessed  
12 that on other projects, but do not know exactly what  
13 they had in their mind.

14 Q. What was the -- the length of the  
15 original license granted by FERC back in the early  
16 '60s?

17 A. I believe the original license issued by  
18 FERC was after the completion of construction. I  
19 believe it was 1965. I believe it was about a 40-year  
20 license.

21 Q. Okay. So was the facility up for a  
22 renewed license in about 2005 or should it have been?

23 A. The license -- the license was in the --  
24 was in the process of being renewed or would have been  
25 very quickly. In fact, it's in the process now of

1 being renewed.

2 Q. So but for the collapse -- collapse at  
3 the end of 2005, there would have been a relicensing  
4 process before the PFMA analysis in 2008?

5 A. It's my belief that the relicensing  
6 process had already just begun at the time of the  
7 collapse.

8 Q. Okay.

9 A. And then it was put on hold pending  
10 resolution of what to do with the project.

11 Q. Okay. Now, with -- with respect to the  
12 original construction of the upper reservoir, was the  
13 parapet wall part of the original construction or was  
14 it added later?

15 A. The parapet wall was part of the original  
16 design.

17 Q. Okay. Was it part of the original  
18 construction?

19 A. And construction, yes.

20 Q. Okay. And was the original design such  
21 that it was intended that the reservoir would be  
22 operated with the -- the water routinely up within a  
23 few feet of the top of the parapet wall?

24 A. To the best of my knowledge, yes.

25 Q. Is that -- as an engineer, do you believe

1 that is an appropriate way to run a -- a reservoir  
2 within a parapet wall?

3 A. The -- in today's practice, we do not  
4 build parapet walls to sustain water on an every day  
5 basis. If we use a parapet wall at all on the top of  
6 a dam, it's for -- it's -- it's designed for wave  
7 action and -- only.

8 Q. Okay. So that on -- in certain  
9 circumstances, water will wash up onto the parapet  
10 wall, but the reservoir would not routinely be filled  
11 up onto the parapet wall?

12 A. That's right.

13 Q. Okay. And when you say under today's  
14 practices, when -- when did that become the -- the  
15 norm?

16 A. Oh, it was an evolving process that  
17 probably started in the '80s, '7-- '70s and '80s to  
18 get away from parapet walls.

19 Q. And when did it become the norm?

20 A. Oh, I don't know exactly the date, but it  
21 was in that timeframe.

22 Q. Okay. Well before 2005?

23 A. Yes. Well before 2005.

24 Q. And -- now, with respect to the -- to  
25 the -- the use of the PFMA analysis -- I guess that

1 double counts analysis -- the PFMA by FERC, is that a  
2 statutory requirement?

3 A. I don't know if it's a statutory  
4 requirement or not so much as a regulatory practice.

5 Q. You're not aware of any laws changing to  
6 require FERC to use the PFMA?

7 A. No. I'm not aware of any laws that --  
8 regarding that.

9 Q. Is the particular PFMA protocol that FERC  
10 uses for facilities like Taum Sauk required or  
11 codified by statute?

12 A. Not to my knowledge.

13 Q. Is it codified by a regulation?

14 A. It's codified by regulatory practice  
15 imposed on licensees by the FERC staff.

16 Q. When you said "regulatory practice," is  
17 that the same as a regulation promulgated in the  
18 federal code?

19 A. I cannot speak to whether the PFMA  
20 practice is put in a federal code or not. I suspect  
21 it is not at this point in time because it was meant  
22 to be a -- a process in development when it began,  
23 which was why it was only applied to a limited number  
24 of plants in the early 2000's to see how it possibly  
25 could be improved, modified, changed to be more

1 effective. I -- I'm not aware of it being put in the  
2 regulatory -- regulatory code at this point in time.

3 Q. Okay. How many inspections that involve  
4 the use of -- of the PFMA have you personally been  
5 involved in?

6 A. Oh, I don't know the number, but at least  
7 a half a dozen.

8 Q. Half a dozen. Okay. And how many of  
9 those have been pump storage facilities?

10 A. I have been involved with -- well, put it  
11 this way, they -- they -- they're not all pump storage  
12 but most of them have a storage reservoir. Whether  
13 that water was pumped there or stored by natural  
14 flows, it's the same process.

15 Now, if you want to distinguish  
16 between -- most of them have a storage reservoir. At  
17 least one that comes to top -- two that come to my  
18 mind are pump storage reservoirs.

19 Q. And those are -- those have been since --  
20 well, let -- let me back up. In a previous answer it  
21 sounded as though the FERC used the PFMA protocol sort  
22 of on a trial basis. Is that fair to say?

23 A. In the early 2000's, that's right. And  
24 it evolved to a normal practice. By now it's normal  
25 practice.

1           Q.     And of the -- of the half a dozen that  
2     you've mentioned projects that -- that you were  
3     involved in, how many of those were during the trial  
4     phase and how many during the more -- more well  
5     established phase?

6           A.     Let me think for a moment.  I would  
7     suspect that it's about -- I'd have to go back and  
8     reflect on my memory, but it's probably three and --  
9     three and three.

10          Q.     All right.  Now, this is a fairly long  
11     question and I apologize in advance, but do you know  
12     the entire chain of events that would have happened  
13     between the fall of 2005 and the inspection in 2008 --  
14     the chain of events that would have happened if Ameren  
15     had made a report in September of 2005 to FERC about  
16     the incidents that had occurred that fall?

17          A.     I'm sorry.  Could you repeat that?

18          Q.     Okay.  Let me -- let me back up a step.  
19     Are you familiar with what has been referred to in  
20     the -- in the Staff investigation and other  
21     investigations as the Niagra Falls incident in  
22     which --

23          A.     No.

24          Q.     -- an Ameren employee saw overtopping  
25     at -- personally saw overtopping at -- at the upper

1 reservoir and described it I believe in an e-mail  
2 following that as a Niagra Falls?

3 A. I don't know the term "Niagra Falls," but  
4 I do know there was an observation of some overtopping  
5 on one -- one corner of the reservoir by one of the  
6 operating people at Ameren, yes.

7 Q. And I believe in the evening one night in  
8 September of 2005. Is that the incident you're  
9 talking about?

10 A. That's the timeframe I would put it in,  
11 yes.

12 Q. Okay. If that incident had been reported  
13 to FERC, do you purport to know the chain of events  
14 that would have ensued from there?

15 A. If that incident had been reported to  
16 FERC -- and I don't know if it was or was not, FERC  
17 would have requested an explanation immediately. They  
18 perhaps would have requested analysis of -- of the  
19 root cause of that -- why that occurred. And  
20 depending on the outcome of that root cause  
21 investigation, requested Ameren to take measures to  
22 see that it didn't happen again.

23 Q. So it's well within the realm of  
24 possibility that FERC could have required actions that  
25 would have prevented the collapse of the upper

1 reservoir had that incident been reported?

2 A. Oh, I -- it's my view that -- that FERC  
3 if having not been -- having not received a  
4 satisfactory answer -- for example, a satisfactory  
5 answer could have been, Well, we lost the transducer  
6 or we lost some monitoring device and now it's  
7 repaired and it's fully functional. Okay.

8 Or if the answer came back from FERC --  
9 from the licensee saying that, We don't know why it  
10 happened, we're investigating it, the FERC would  
11 likely say, Well, drop the reservoir a few feet, five  
12 feet, six feet off the parapet wall until you  
13 understand fully the cause of this incident.

14 Q. Now, with respect to the first answer  
15 where -- where the licensee responds, It was a bad  
16 transducer and we fixed it, do you -- is it your  
17 understanding that the -- the reason that the -- the  
18 overtopping occurred was because of a bad transducer?

19 A. At that time I do not know why the  
20 incident occurred. I know what happened later on in  
21 December, but I do not know what happened in  
22 September.

23 Q. Okay. But if -- if it were the case that  
24 it were a bad transducer, the licensee fixed the  
25 transducer, would that have likely prevented the



1 ultimate collapse of the reservoir?

2 A. First, I have to hypothetically assume it  
3 was a bad transducer, then they reported that to the  
4 FERC. Then I have to assume the transducer was  
5 repaired, tested and installed properly. Then what's  
6 your question?

7 Q. Well, it was part of your response and  
8 I'm just trying to pin it down. You said two -- two  
9 things could happen in response to a report --

10 A. Yeah. Either A or B, that's right.

11 Q. -- to the FERC. And your A was it was a  
12 bad transducer. And I'm -- and I'm trying to figure  
13 out the assumptions that you were making when you gave  
14 that answer.

15 A. No. I -- I'm not making any assumptions.  
16 I'm simply saying that if the FERC had been given a  
17 reasonable explanation of why the incident occurred in  
18 September such as, for example, the licensee reports,  
19 oh, we had a bad transducer, we repaired it, we  
20 checked it, it's now fully functional, the FERC would  
21 have said, Okay.

22 If the licensee would have said, for  
23 example, that, We don't know what the cause is, it's  
24 still under investigation, the FERC will say, When  
25 will you know? Or they would have said, Lower the

1 reservoir four, five, six feet off the parapet wall  
2 until you can tell me what the problem was.

3 Q. And if the latter had happened, would  
4 that have prevented the ultimate collapse of the  
5 reservoir?

6 A. If the ultimate collapse of the reservoir  
7 was due to over-pumping of the water entering the  
8 reservoir because of a faulty instrumentation, okay --  
9 I cannot specifically tie the faulty instrumentation  
10 in December to the incident in September. I just  
11 don't know.

12 Q. Okay. Well, let me -- and now that --  
13 that's raised another question for me. You said if  
14 the ultimate failure was due to over-pumping of the  
15 reservoir. Is there any doubt in your mind that that  
16 is the cause of the collapse of the reservoir?

17 A. The collapse of the reservoir is --  
18 is -- is somewhat complex. I can explain that if you  
19 would like. I did the forensic investigation of that.

20 The collapse of the reservoir was caused  
21 by over-- over-pumping of water into the upper  
22 reservoir because of faulty instrumentation. The  
23 water then overtopped the parapet wall, particularly  
24 on the northwest corner. But on the -- over a number  
25 of areas around the reservoir it was overtopping, but

1 at the northwest corner it was particularly aggravated  
2 because that is the deepest section of the dam. And  
3 that particular corner was the highest portion of the  
4 dam.

5 The water overtopped that parapet wall,  
6 went down into the rockfill on the downstream side of  
7 the -- of the reservoir. It probably -- probably  
8 because -- I'm saying probably because I don't know  
9 this, I can only speculate that if the wall had  
10 self-rolled over, I think it might have rolled over,  
11 water entered down into the rockfill, it encountered a  
12 very poor foundation material.

13 The 700-foot of section that failed  
14 slid -- literally slid down the mountain on that poor  
15 foundation material, water rushed out of that -- that  
16 700-foot wide zone and down the mountain.

17 Q. And I don't want to digress too far into  
18 this, but -- but is it not also likely that previous  
19 overtoppings had further weakened the base of the  
20 parapet wall?

21 A. The -- the -- we found evidence that the  
22 parapet wall had been undermined over a number of  
23 areas along the perimeter of the dam. The degree of  
24 which undermining occurred in previous un--  
25 overtoppings is not so clear. But the fact that it

1 had been undermined over a number of reaches around  
2 the perimeter was clear.

3 Q. And do you have any -- an opinion as to  
4 whether it was likely that it had been undermined at  
5 the point at which it -- of ultimately collapsed?

6 A. It -- the ultimate collapse, there was  
7 undermining occurring.

8 Q. And I didn't ask that question very well.  
9 Do you have an opinion as to whether or not there was  
10 undermining of the foundation at the point where it  
11 collapsed had occurred on a date prior to the date of  
12 the ultimate collapse?

13 A. It's my opinion that it probably did.

14 Q. Okay. Now, in your testimony I believe  
15 you state that the -- the PFMA protocol would have  
16 begun in 2008; is that correct?

17 A. Yes.

18 Q. And that portion of the inspection pr--  
19 inspection process lasts two to three years; is that  
20 correct?

21 A. The PFMA process lasts -- the initial  
22 meeting probably lasts three or four days. I've been  
23 as long as five days on some. And then the -- the --  
24 but the process normally winds up with one of four  
25 categories. One of those categories is not enough

1 information to render an opinion. That then proceeds  
2 to result in an effort to get the additional  
3 information, which results in -- which results in a  
4 need to do investigations.

5 Q. And if there is a need to do  
6 investigations, in your expertise, how long do those  
7 investigations usually take?

8 A. Those investigations can last two or  
9 three years.

10 Q. Okay. Is it your opinion that -- that  
11 the PFMA protocol at Taum Sauk would have led to the  
12 need for additional investigations?

13 A. Yes.

14 Q. That would likely have taken two or three  
15 years?

16 A. Yes.

17 Q. Okay. And then going back to some of our  
18 earlier discussions, because I won't call them  
19 negotiations, but we'll call them discussions, is it  
20 your opinion that following that two- to three-year  
21 process, there would have been a process during which  
22 the FERC itself is apprised of the results of the PFMA  
23 who -- and the FERC then communicates to the licensee  
24 who then communicates back to the FERC? Is that the  
25 most likely outcome of that process?

1           A.     That's right.

2           Q.     Okay.  And how long would that process  
3     take following the two to three years that the PFMA  
4     process itself took?

5           A.     Well, in the normal process -- the normal  
6     sequence of things, the FERC people, regulators are  
7     involved with the PFMA process.  They are usually  
8     attending the meetings, occasionally their own  
9     consultants are participants in the PFMA, occasionally  
10    their own staff people.

11                    So they're very much in tune with the  
12    thinking of the people participating in the PFMA  
13    process of what's going on.  They're fully  
14    understanding the risks and the hazards associated  
15    with the discussions.

16                    It -- I suspect that they would know  
17    within one- to two- or three-year period I'm referring  
18    to that in the case of Taum Sauk, we have a serious  
19    problem on our hands from a dam safety point of view.

20           Q.     So how long would that process -- after  
21    the two- or three-year process, how long would the  
22    ultimate process take?

23           A.     Well, you could be -- it could be zero to  
24    a year.

25           Q.     Okay.  And how many PFMA -- PFMA --

1 inspections that involved the PFMA protocol have you  
2 been involved with that have gone through that entire  
3 process and concluded?

4 A. All of them -- all the ones that I've  
5 been involved with with a PFMA have completed.

6 Q. And how many of them resulted in issues  
7 being found that required the licensee to correct  
8 them?

9 A. All of them.

10 Q. And so from your previous answer, is it  
11 correct that -- that the period of time from the end  
12 of the two- or three-year PFMA process until the  
13 ultimate conclusion took between zero days and a year?

14 A. Yes.

15 Q. Okay. Now, is a PFMA different than an  
16 FMA?

17 A. I'm not sure what you mean by an FMA.

18 Q. Well, after an event occurs, is it not  
19 occasionally the practice to conduct an analysis of  
20 what the mode of failure was?

21 A. Oh, it's -- this is a different  
22 terminology. We use in our business the term "root  
23 cause analysis" for --

24 Q. Okay.

25 A. -- post-event analysis.

1           Q.     But that would essentially be a failure  
2 mode analysis as opposed to a potential failure mode  
3 analysis?

4           A.     Potential failure mode analysis you're  
5 speculating on a large number of potential failure  
6 modes. The failure mode analysis would focus on the  
7 actual mode of failure.

8           Q.     So -- so in a root cause, you know the  
9 failure happened. You're going back to try to figure  
10 out what the mode of that failure was?

11          A.     No. I'm sorry. If you have -- in a  
12 potential failure modes analysis, you consider failure  
13 of the dam, failure of the spillway, failure of the  
14 tunnel, the conveyance system, a large number of  
15 potential failure modes of -- of the -- of the FERC  
16 licensed project.

17                   If the -- if you have a specific failure,  
18 say a penstock failed, then you're going to  
19 investigate the mode -- that particular failure mode,  
20 the failure of the penstock. Then you would do a root  
21 cause as to why that particular feature, the penstock,  
22 failed.

23          Q.     Okay. So -- so you're essentially -- in  
24 your root cause analysis you're looking at the actual  
25 failure mode?



1           A.     That's correct, sir.

2           Q.     Okay.  Was a PFMA ever performed at Taum  
3     Sauk?

4           A.     No.

5           Q.     Okay.

6           A.     I'm sorry.  The answer to the question is  
7     yes, there was a PFMA conducted on the design of the  
8     new feature -- of the new dam during the design  
9     process.

10          Q.     Okay.  And perhaps I wasn't clear on my  
11     question.  Was there -- was there ever a PFMA  
12     conducted on the old upper reservoir?

13          A.     There was not to my knowledge and I have  
14     no information suggesting that there was a failure  
15     modes analysis -- potential failure modes analysis  
16     performed for the old dam.

17          Q.     Okay.  Now, one of the aspects of the new  
18     Taum Sauk upper reservoir is the drainage gallery.  
19     Correct?

20          A.     Yes.

21          Q.     As you sit there today, can you tell me  
22     with 100 percent certainty that had FERC done a PFMA  
23     analysis in -- as part of its inspection in 2008, that  
24     a new Taum Sauk reservoir would have been constructed  
25     with that exact same drainage gallery?

1           A.     "The exact same" is throwing me. A new  
2     dam would have had a gallery in it. Maybe the  
3     dimensions a little bit wider, little bit higher,  
4     maybe move a little bit further upstream, a little bit  
5     further downstream but there would have been a  
6     gallery.

7           Q.     Now, just hypothetically speaking, if you  
8     have a suspected series of events, each one that has a  
9     70 percent chance of occurring -- five separate  
10    events, each one has a 70 percent chance of occurring.  
11    What is the probability of all of them occurring?

12          A.     Any one of them could be 70 percent.

13          Q.     And of all of them occurring?

14          A.     Depends what they are. If they're  
15    unrelated independent events, it's 70 percent. If  
16    they're dependent upon one another, then the  
17    probability of -- of two of them, say, would be  
18    50 percent. But if they're independent events, then  
19    they're all 70 percent.

20          Q.     Each one individually is 70 percent.  
21    What is the chance that all seven will occur -- I mean  
22    all of them will occur?

23          A.     If you're telling me the potential for  
24    the penstock to fail is -- probably fair the penstock  
25    is 70 percent and you're telling me the probability of

1 failure of the dam is 70 percent, those are two  
2 independent events. Each has a 70 percent probability  
3 of occurring. All right?

4 Now, if you're telling me that the  
5 penstock has a 70 percent probability of failure and  
6 the butterfly valve downstream also has a 70 percent  
7 failure because the penstock -- the butterfly valve is  
8 connected to the penstock, I'm going to tell you it's  
9 a 50 percent probability.

10 Q. Okay.

11 MR. MILLS: That's all the questions I  
12 have. Thank you.

13 JUDGE WOODRUFF: All right. We'll come  
14 up to questions from the bench. Chairman?

15 QUESTIONS BY CHAIR GUNN:

16 Q. Just to clarify that last point, that's  
17 like the gambler's fantasy. Right? Like the  
18 probability of -- of -- of a card coming out red or  
19 black or landing on wheel is -- is that individual  
20 percentage. Right? I mean it's 50 percent every  
21 time?

22 A. Yes.

23 Q. The fact that it's happened ten times in  
24 a row still means the next time it's 50 percent --

25 A. Flip of a coin. Exactly right.

1 Q. -- you're going to get -- get that --

2 A. That's right.

3 Q. But when you have a dependency issue,  
4 then the percentage comes lower because you have to  
5 have a sequence of --

6 A. That's correct.

7 Q. -- of failures in order for that to  
8 happen?

9 A. That's right, sir.

10 Q. Great. I want to go back to a couple  
11 questions I asked -- I asked Mr. Birk. And just to  
12 clarify, so you -- you were -- according to your --  
13 your CV, you were brought in in January of 2006?

14 A. Actually I was called the day after  
15 Christmas.

16 Q. Okay.

17 A. 2004 or '5, yeah.

18 Q. All right. And -- and your task was  
19 to -- and what you provide on here was both the  
20 forensic examination of what happened?

21 A. Yes.

22 Q. And then developing the new design and  
23 implementing the new design in order to keep this from  
24 ever happening?

25 A. Yes, sir.

1 Q. So let me go back to when -- when Taum  
2 Sauk was originally designed. The design itself, was  
3 it in compliance with the dam safety standards known  
4 at the time, just the design?

5 A. In 19-- the dam was designed between 1958  
6 and 1962, '61 and then constructed from '60 to '63.  
7 At that time there were no dam safety regulations at  
8 FERC.

9 Q. Okay.

10 A. In fact, the licensing process wasn't  
11 even very well established. License came in '65. At  
12 that time there was -- and like in all professions,  
13 there is a practice --

14 Q. Industry standards?

15 A. Industry practice -- yes, standards,  
16 practice that we all follow. And at that time I  
17 remember this vividly because it was -- I was -- 1963  
18 I left university, I started my -- did my first dam.  
19 And I can still see vividly in my mind an article in  
20 Engineering News Record describing the phenomenal Taum  
21 Sauk pump storage project. At that time it was -- it  
22 was the project in the US for pump storage projects.

23 And it was designed by a firm in  
24 St. Louis acting on the advice of one of the icons in  
25 our industry at the time. And it was -- it was hailed

1 as this is the future of pump storage projects, we're  
2 going to build it with concrete-faced rockfill dam.  
3 So it was done at that time by what was designed -- it  
4 was designed at that time by people knowledgeable in  
5 the industry.

6 Q. And you could even say that at the time  
7 that it was built, it was the -- the best design  
8 available?

9 A. It was complete with industry practice.

10 Q. So if the -- if the construction had  
11 equaled the design, would there have been failure  
12 at -- at any point over the useful life of the  
13 project?

14 A. If -- in that situation, the most likely  
15 scenario for a failure would have been an earthquake  
16 equivalent to or maybe slightly less -- considerably  
17 less than what occurred in New Madrid in 1811.  
18 Because at that time they didn't design dams,  
19 particularly those on top of mountains in remote  
20 areas, to resist earthquakes.

21 Q. So in the absence of an intervening  
22 natural event like an earthquake --

23 A. Yes.

24 Q. And so let's assume that this was built  
25 nowhere near a fault, where the seismic activity

1       wasn't an issue.  Would we -- if construction again  
2       had lived up to the design absent seismological  
3       issues, would you suspect that that design plus good  
4       construction would mean that for the useful life --  
5       for whatever the useful life, that would determine  
6       there would be no failure?

7             A.     That's right.

8             Q.     Okay.

9             A.     Yes.

10            Q.     So would it have been possible at the  
11       time of construction to know that the construction was  
12       inadequate?

13            A.     When we did the forensic investigation of  
14       the failure, we found two reports that were prepared  
15       by independents, including the designer I referred to,  
16       and another geologist who raised flags about the  
17       construction operation.  I have no evidence to --  
18       no -- no knowledge of whether these concerns or these  
19       red flags were ever dealt with.

20            Q.     Do you know if the -- the construction --  
21       was this a contractor not doing what someone told them  
22       to do or what the construction plans called for or was  
23       this a determination on -- on the part of the company  
24       to use the materials that the contractor ultimately  
25       used?

1           A.     It's my view the contractor did not  
2 follow the specs -- the construction specifications  
3 developed by the designer.

4           Q.     Okay.  So after the -- after the dam was  
5 built, would it have been possible for the company to  
6 make that determination that the materials used were  
7 faulty?

8           A.     I would not say materials.  I would say  
9 construction practices were faulty.

10          Q.     Okay.  The practices were faulty?

11          A.     Practice was faulty, yes.

12          Q.     Okay.

13          A.     Yes.  They -- they -- if they had done an  
14 investigation involving test borings and test bits and  
15 laboratory testing, they could have real-- they could  
16 have discovered that the dam was not constructed in  
17 accordance with the specifications put out by the  
18 designer.

19          Q.     Was the industry standard practice at the  
20 time that the dam was -- construction was completed,  
21 was to do that before you put the dam into service?

22          A.     No.

23          Q.     It was not?

24          A.     (Witness shook head.)

25          Q.     All right.  So let's fast forward to say



1 2004. If you knew what you determined in your  
2 forensic examination in 2004, would you say that  
3 the -- that the dam could have operated safely in 2004  
4 or would you have shut it down?

5 A. I would have at a minimum dropped the  
6 water level in that facility, as a minimum, until I  
7 could do a thorough investigation of what the  
8 situation was. And then I would have probably drained  
9 it.

10 Q. Did the absence of a forensic exam--  
11 investigation, knowing that there had been several  
12 incidents of overtopping, would that have red  
13 raised -- raised a red flag for you?

14 A. Yes, it would have raised a red flag with  
15 me.

16 Q. Would you have done the same -- taken the  
17 same precautions?

18 A. I would have at least lowered the  
19 reservoir.

20 Q. Until you could then --

21 A. Right.

22 Q. -- check the structural integrity of the  
23 dam?

24 A. Yes, sir.

25 Q. Okay. And you and the Public Counsel had

1 some discussion about undermining and I just want to  
2 clarify. So when you talk about that there was  
3 undermining, you made the determination that it had  
4 been undermined in several -- several locations,  
5 including the point of failure. Were those -- could  
6 you de-- make a determination that those were as a  
7 direct result of -- of overtopping or were -- was the  
8 actual reason why those areas were undermined  
9 indeterminate?

10 A. No. It was -- had been obvious it was  
11 due to overtopping.

12 Q. Overtopping. So you had -- we had  
13 several incidences of overtopping over sev-- over a  
14 certain length of time?

15 A. Yes. The evidence for that that I just  
16 said is that you could see some evidence of water  
17 stains on the wall where water had gone over. You  
18 could see areas here, for example, that were  
19 undermined and not over here but here, there  
20 (indicating). That sort of thing.

21 Q. And that would -- that's all evidence of  
22 overtopping?

23 A. Yes.

24 Q. And that is what would have raised red  
25 flags with a FERC inspection in 2008?

1           A.     Well, in 2008 --

2           Q.     Well, that's when it was scheduled?

3           A.     Yes.

4           Q.     So --

5           A.     There would have been a PFMA in 2008 as  
6 well, a potential mo-- failure mode analysis.

7           Q.     And those would have all been determined  
8 at that time? Those --

9           A.     There --

10          Q.     That -- that evidence would have raised  
11 red flags?

12          A.     That and several other issues.

13          Q.     Okay. But they should have been raised  
14 earlier in the normal course of checking to make sure  
15 that the dam was --

16          A.     Well, the overtopping would have, but  
17 that would have caused -- if you -- a FERC inspector,  
18 2008, knowing nothing else, without a PFMA saw the  
19 erosion, would have raised a red flag.

20          Q.     So the overtopping should have raised a  
21 red flag with someone and they should have checked --

22          A.     Yes.

23          Q.     -- on this structural integrity, just the  
24 overtopping alone. If you knew nothing else about  
25 structural integrities of dams, this design says you

1 have overtopping, you need to go check the --

2 A. Why it's occurring. Why is it occurring?

3 And why is it occurring here and not over there where  
4 the judge is sitting? For example, if the -- the dam  
5 was 6,800 feet along -- around, a mile and a half. It  
6 didn't overtop everywhere. What does that lead to?

7 Well, you'd think that the contractor  
8 when he built it, would have built it level all the  
9 way around. But that spot didn't overtop. That means  
10 this spot is lower than that. That means it's settled  
11 here. Why did it settle?

12 Q. Okay. Leads you to a series of other  
13 questions which help you prevent the catastrophic  
14 failure?

15 A. Yes, sir.

16 Q. Or at least take steps to investigate  
17 before there's catastrophic failure?

18 A. Yes. That's right.

19 Q. So now I want to go to what the company  
20 is classifying as enhancements, things that in your  
21 design have made it into the -- the -- the current  
22 upper reservoir design and build.

23 Out -- out of the enhancement -- out of  
24 the group that the company is calling enhancements,  
25 are there any of those -- and these are very similar

1 questions that I -- I asked Mr. Birk. Are there any  
2 of those that you think could have been done to the  
3 existing -- or the old reservoir -- that could have  
4 been integrated into the old reservoir without a  
5 complete rebuild?

6 A. I'm reflecting on the list of  
7 enhancements and --

8 Q. Well, some of the ones that were  
9 mentioned before was the --

10 A. The overflow release structure.

11 Q. The overflow release structure was the  
12 one that Mr. Birk said was possible.

13 A. It's possible. However -- I don't mean  
14 to correct Mr. Birk, but, in fact, to build that  
15 overflow release structure, you would have had to  
16 remove 70-- 700 feet of the existing dam down to rock,  
17 prepare a foundation level -- prepare a foundation  
18 like we did and reconstruct it back up again.

19 Q. And if you'd done that, you would have  
20 discovered serious structural problems and you would  
21 have called for a complete rebuild?

22 A. That's correct.

23 Q. All right. So are there any of the group  
24 that are -- of -- of enhancements that -- so I'll go  
25 back to my original question. Are there any in that

1 group of enhancements that could have been done in the  
2 absence of a complete rebuild of the facility? The  
3 one that I -- I thought may be the most likely would  
4 be instrumentation.

5 A. That's correct. You could have probably  
6 enhanced the instrumentation operation without a  
7 complete rebuild.

8 Q. And that might have happened in the -- in  
9 the normal course where you just have new modern  
10 systems and that -- that's --

11 A. New system fiberoptics as opposed to  
12 whatever, yes.

13 Q. And -- and software and all that other  
14 stuff --

15 A. Yes.

16 Q. -- that all --

17 A. Uh-huh.

18 Q. Could all be done relatively easy without  
19 a complete rebuild?

20 A. With the caveat that if you began to do  
21 that and you calibrate that instruments, you would  
22 have probably said, Hmm, why is it high here and low  
23 over there and low here and high there?

24 Q. But let's -- let's assume that there  
25 wasn't anything structurally wrong with the old

1 facility.

2 A. Yes.

3 Q. You could put in the instrumentation  
4 without -- without too much of a -- of a problem?

5 A. You could -- except -- that's the  
6 instrumentation for the level control.

7 Q. Okay.

8 A. Not the instrumentation that we have in  
9 our gallery.

10 Q. Okay.

11 A. Because we wouldn't have a gallery.

12 Q. Okay. All right. Other than that, can  
13 you think of anything else that -- that could have  
14 been done -- and -- and I don't -- I don't even want  
15 to -- I don't even want to necessarily say that it was  
16 likely to have been done or that it would be easy to  
17 do. Just actually in the realm of possibility to do  
18 without having to do an entire rebuild?

19 A. Well, if I go through the mental list of  
20 enhancements --

21 Q. And we'll assume this isn't exhaustive.  
22 This is just off the top of your head.

23 A. Spillway we talked about. We talked  
24 about the instrumentation. Gallery, wouldn't do. You  
25 could put a grout curtain in if you dropped the

1 reservoir and kept it dry for six months perhaps, but  
2 you probably wouldn't do that if you had all the  
3 leakage through the dam.

4 Remember we had -- they -- Ameren put in  
5 a -- a membrane in 2004 to stop leakage through the  
6 dam. And that would have probably arrested most of  
7 the leakage that they would have been concerned about,  
8 at least percentage-wise. But you could have probably  
9 put an enhanced grout curtain in in addition, if you  
10 empty the reservoir for maybe six months.

11 Q. Do you believe that in 2008 the PFMA or  
12 any FERC inspection would have required a complete  
13 rebuild of the dam?

14 A. I believe that the -- in 2008 a PFMA  
15 would have indicated a very, severely deficient dam,  
16 one that could not withstand a repeat of the 1811,  
17 1812 earthquakes. And then that would parrot onto an  
18 analysis to say we couldn't -- you can't rebuild this  
19 dam, you have to -- in its present form.

20 Q. Let's -- let's again remove the  
21 seismological activity because the -- the dam was  
22 never anticipated to -- to do that, there weren't any  
23 standards. Let's take that out. If you took out  
24 the -- the ability to withstand earthquakes, do you  
25 believe that the PFMA would have required a rebuild?



1           A.     The PFMA would have indicated factors of  
2 safety -- factors of safety, again stability failure,  
3 the kind of factor that occurred, inadequate under  
4 static conditions.

5           Q.     If you were building a dam from scratch  
6 today on top of -- or where the current upper  
7 reservoir, which you essentially did, are all -- all  
8 of the group of that -- that their enhancements and  
9 all of your design features, are they required to be  
10 compliance with the dam safety standards or are there  
11 things that are on this dam that are over and above  
12 what those standards are in order to be the most safe?

13          A.     The dam is designed and constructed first  
14 in accordance with current dam safety regulations;  
15 secondly, in accordance with current dam design and  
16 construction practices throughout the industry. Now,  
17 you won't find all those practices enumerated in the  
18 regulations, but you will find them at other dams  
19 around the world that are of similar design.

20          Q.     So some of them are the formal  
21 regulations and others are industry standards to make  
22 sure that this complies with what you would do as good  
23 practice?

24          A.     And then I have sitting over here the  
25 regulatory staff, two boards of consultants saying,

1 Hey, we don't care what the regs say. Good practice  
2 requires you to do this.

3 Q. Right. So in the absence of any  
4 collapse, in the absence of any -- any external  
5 factors if you were -- if you were building a dam  
6 or -- this is -- a pump storage facility, the upper  
7 reservoir is what you would build under -- under  
8 the -- a similar set of circumstances?

9 A. That's right.

10 Q. Okay. All right. Thank you very much.  
11 I appreciate it. Very enlightening.

12 CHAIR GUNN: I don't have any further  
13 questions.

14 JUDGE WOODRUFF: Commissioner Davis?

15 COMMISSIONER DAVIS: No questions.

16 JUDGE WOODRUFF: Commissioner Jarrett?

17 COMMISSIONER JARRETT: I don't have any  
18 questions either. Thank you, sir.

19 JUDGE WOODRUFF: Commissioner Kenney?

20 QUESTIONS BY COMMISSIONER KENNEY:

21 Q. Okay. Good morning, Dr. Rizzo.

22 A. Good morning.

23 Q. How are you? I think Chairman Gunn just  
24 asked a key question that I was going to ask, but I  
25 want to ask an adjunct to that -- that question.

1 The -- the things that we're calling enhancements  
2 then, are they enhancements because they are  
3 improvements over the old upper reservoir rock filled  
4 dike then?

5 A. Yes, sir.

6 Q. Okay. Not because they are more robust  
7 than today's industry standards?

8 A. That's correct, sir.

9 Q. I want to ask -- I want to read something  
10 to you and get your reaction to it, if you don't mind:  
11 We conclude from this comparison that while the design  
12 was in all likelihood consistent with the general  
13 practice of the late 1950's and early 1960's, it was  
14 not consistent with the best practices of those times.

15 And this is in reference to the --  
16 comparing the Taum Sauk design of old with current  
17 2006 design and construction practices.

18 Do you -- do you recognize that language,  
19 first of all?

20 A. No. But I -- could you repeat the first  
21 part of that?

22 Q. Sure. We -- and I'm quoting: We  
23 conclude from this comparison that while the design  
24 was in all likelihood consistent with the general  
25 practice of the late 1950's and early 1960's, comma,

1 it was not consistent with the best practices of those  
2 times.

3 A. Okay.

4 Q. Do you recognize that language?

5 A. No. But it could have been written by  
6 me. I'm not sure if I wrote that, but I -- one of my  
7 colleagues might have written it.

8 Q. It was -- it was wr-- it's from the  
9 report -- the Forensic Investigation and Root Cause  
10 Analysis FERC Project 2277.

11 A. Okay. That would -- there were several  
12 forensic investigations performed. One was mine and  
13 one was a FERC and one was the IPOC.

14 Q. Well, the cover page on this is The  
15 Forensic Investigation and Root Cause Analysis of the  
16 December 14th, 2005 Incident Upper Reservoir Dike,  
17 Taum Sauk plant, FERC Project 2277. And then I submit  
18 to you that it was filed in our case file as -- as an  
19 exhibit in the investigative docket that our -- that  
20 the Missouri Public Commission opened.

21 A. Well, was I the author of that or the  
22 IPOC? Can you tell?

23 Q. It appears to be from your office.

24 A. Okay. Then I wrote it.

25 Q. R-- RCR?

1           A.     PCR.   PCR.

2           Q.     PCR, yeah.

3           A.     Yes.

4           Q.     My -- my question is to you then, based  
5 upon that language, is it your opinion that there were  
6 design defects in the original design of the Taum Sauk  
7 upper reservoir rock-filled dike?

8           A.     Let me explain the -- the background of  
9 that statement.

10          Q.     Okay.

11          A.     The upper reservoir at that time was  
12 designed as a concrete-filled rock fil--  
13 concrete-faced, rock-filled dam. CFRD we call it in  
14 our industry. Now, that type of dam was originally  
15 conceived in southern California as a means of  
16 building a dam where you had lots of rock, you had no  
17 soil, but you needed some sort of an impervious  
18 barrier. So you built a dam out of rock, but a rock  
19 dam would leak, of course, so you put a concrete face  
20 on the front of it. Concrete-faced rockfill dam.

21                 Now, at that time there's -- in fact,  
22 there's a plot in that report showing the number of  
23 dams of that type built for the previous, I don't  
24 know, 20, 30 years perhaps. And you will find in that  
25 report and on that chart that Taum Sauk was one of the

1 last concrete-faced rockfill dams built by simply  
2 end-dumping the rock. That was a design criteria by  
3 the designer. He believed that if you simply dump the  
4 rock and it would seek its own maximum density by  
5 gravity and then you would build a concrete face on  
6 it, you had an adequate dam.

7           That report goes on to say that shortly  
8 after that, we began to build the same type of dam,  
9 but simply -- instead of dumping the rock, we  
10 compacted it with heavy vibratory rollers, heavy  
11 compactors and densified the rock in place. That was  
12 not done at Taum Sauk, but at the time it was -- there  
13 were many dams built with simply dumped rock. Taum  
14 Sauk happened to be one of the last built that way.

15           It would be difficult to argue that it  
16 was improperly designed, because there were many dams  
17 at that time that had already been built that way  
18 supposedly performing quite fine. But after that,  
19 there were no more rockfill dams that were not with  
20 compacted rock as opposed to dumped rock. The long  
21 answer to a short question. I'm sorry.

22           Q. Well, no. It's okay. I'll follow up.  
23 It was -- so in other words, it was consistent with  
24 generally -- generally what was going on at the time,  
25 but there was known and better technology. Is that --

1 would that be why you used the phrase that "it wasn't  
2 consistent with best practices of those times"?

3 A. Let me add one other comment. The  
4 individual -- the person -- specific person involved  
5 with that original design who was generally credited  
6 with that design had built a number of dams that were  
7 uncompacted rock. There were other people at the same  
8 time saying, Hey, this is not good practice, we should  
9 be compacting the rock. He was probably the last  
10 holdout with that type of dam.

11 Q. So everybody else was doing it?

12 A. Everybody was starting to do it more --  
13 with more intense compaction, that's right, sir.

14 COMMISSIONER KENNEY: Okay. Actually I  
15 don't think I have any other questions then. That  
16 helps. Thank you very much.

17 JUDGE WOODRUFF: I have a couple  
18 questions for you.

19 THE WITNESS: Yes, sir, Judge.

20 QUESTIONS BY JUDGE WOODRUFF:

21 Q. Were you involved in the settlement  
22 negotiations with the Attorney General --

23 A. No.

24 Q. -- on behalf of Ameren?

25 A. No, sir.





1 wall would simply have failed, we'd have lost eight  
2 feet of water out of the reservoir. Probably not in  
3 my mind a catastrophic failure, but a failure.

4 Q. Okay. Is there a term to refer to that  
5 just so we can be specific?

6 A. No. I don't think so.

7 Q. Okay. For purposes of the next couple of  
8 questions --

9 A. It's called a failure then. Okay?

10 Q. Okay. Sure. Thank you. Did the initial  
11 design consider the clay seams in the underlying rock?

12 A. There was concern with the clay seams in  
13 one zone on the west side of the reservoir. They were  
14 treated somewhat superficially, quite frankly, simply  
15 by moving the dam a little bit to the west. If you  
16 notice in -- the shape of the dam is kidney shape, but  
17 there's a lot bit of a notch which we call it at the  
18 time the pie-shaped area. The dam was moved a little  
19 bit to accommodate that.

20 Q. And are there additional clay seams other  
21 than this in that area?

22 A. There are -- there were many more clay  
23 seam discovered during the investigation, yes.

24 Q. Did the initial construction acknowledge  
25 in any way those other clay seams?

1           A.     No, it did not.

2           Q.     Does the new reservoir adequately deal  
3 with the clay seams?

4           A.     The -- yes, they've been fully eliminated  
5 or designed around them.

6           Q.     And that's done through the foundation  
7 work?

8           A.     Yes.

9           Q.     So could the sufficient -- or I'm sorry.  
10 Could those foundation issues have been brought to the  
11 initial design specification without destroying the  
12 old reservoir?

13          A.     The -- you could have -- one could have  
14 conducted an investigation through -- by drilling a  
15 holes or a series of borings through the existing dam  
16 down into the foundation and they would have  
17 discovered these clay seams.

18          Q.     And what would be the impetus for doing  
19 those sort of bore test?

20          A.     PFMA would have probably demanded that  
21 sort of an investigation.

22          Q.     Now, you were --

23          A.     Would have. Not probably. Would have.

24          Q.     You were referring to being able to  
25 observe the insufficiency of the foundation based on

1 where settling had occurred; is that correct?

2 A. Well, the -- the -- the settlement could  
3 have occurred by either insufficiency of the  
4 foundation or the fact that the dam itself was  
5 uncompacted rock and would not -- was not settling  
6 uniformly. Could be either or both of those.

7 Q. Would the boreholes have been -- the  
8 boreholes you just described, would those have been  
9 likely done in only the areas where uneven settling  
10 was indicated or even in areas where it appeared that  
11 the settling was not even?

12 A. The -- the PFMA would have probably  
13 demanded that bores be drilled around the entire  
14 perimeter of -- of the dam and that pit -- test pits  
15 be dug at the toe of the dam on the downstream side.

16 Q. So regardless of whether the foundation  
17 issues could be addressed without the destruction of  
18 the dam, the -- any remediation of the clay seams,  
19 would that have required destruction of the dam?

20 A. It would not have been practical to  
21 remediate the clay seams with the dam in place, that's  
22 correct.

23 Q. And now -- now back to that earlier  
24 discussion, the -- the catastrophic failure as opposed  
25 to a -- a less impressive failure, was that due to the

1 foundation not being built to the design  
2 specifications?

3 A. The -- the failure of the -- the  
4 catastrophic failure was due to a -- a series of  
5 events in series started by the over-pumping, ending  
6 with the total sliding downhill on the poor  
7 foundation.

8 Q. And was that due to fluidization of the  
9 underlying foundation?

10 A. The term "fluidization" is not what I  
11 would use, but yes, that's correct, it's water  
12 pressure. Poor water pressure we call it.

13 Q. Thank you. So regarding your  
14 questions -- or your discussion with Commissioner  
15 Kenney, would compaction of the rock have prevented  
16 the catastrophic failure?

17 A. Probably not. Because the foundation --  
18 the catastrophic failure was more tied to the sliding  
19 downhill on the poor foundation material. What would  
20 have happened is we would have probably had more  
21 uniform settlement around the entire perimeter and we  
22 would have seen more uniform erosion, but the failure  
23 where it occurred would have still occurred there  
24 because that was the highest section of the dam.

25 Q. Okay. Would compaction of the rock have

1 prevented a less catastrophic failure?

2 A. No.

3 MS. KLIETHERMES: I believe that's all I  
4 have. Thank you.

5 JUDGE WOODRUFF: AARP?

6 MR. COFFMAN: No questions.

7 JUDGE WOODRUFF: Public Counsel?

8 MR. MILLS: Just a few.

9 RECROSS-EXAMINATION BY MR. MILLS:

10 Q. Dr. Rizzo, in -- in talking about the  
11 catastrophic failure -- and I think you said this  
12 earlier, it's -- you believe it failed where it did  
13 because that was the highest portion of the dam?

14 A. That's correct.

15 Q. Okay. And did not the fact that it had  
16 also had settled so that was one of the lower portions  
17 of the parapet wall also contribute to the point where  
18 it failed?

19 A. I -- I -- I've never been able to study  
20 the actual settlement profile around the entire  
21 perimeter. I know there are several zones where the  
22 settlement appeared to be excessive only because of  
23 the -- what we call undermining occurred.

24 The -- the failure occurred on that  
25 700-foot reach on the northwest corner because that

1 was where the dam was highest. But also in the  
2 original design there was a partial grout curtain  
3 installed in that corner, maybe 200 feet long.

4 That had to be -- it was installed and  
5 re-installed because of excess leakage over there,  
6 which is an indication of relatively poor foundation  
7 conditions. So a combination of things, the most  
8 serious one being that's the highest portion of the  
9 dam.

10 Q. Okay. Now, in response to -- to  
11 questions from Chairman Gunn about prior overtoppings,  
12 you mentioned water stains and portions of the  
13 foundation, the parapet wall being undermined. Is it  
14 your testimony that the water stains were sufficient,  
15 dark enough, distinct enough to indicate that  
16 overtopping had taken place for quite some period of  
17 time prior to the collapse?

18 A. No. The -- the strongest evidence for  
19 overtopping was, in fact, the erosion of the -- of  
20 the -- I guess you would call it the heel of the  
21 parapet wall.

22 Q. Okay. And that evidence was sufficient  
23 to indicate that it had happened over a -- an extended  
24 period of time?

25 A. I can't say over what period of time. I

1       only saw that the -- at the end when I was there  
2       during the forensic investigation. And I can't tell  
3       you when it started. I can just say, hey, there's  
4       erosion occurred here.

5               Q.     Okay. But given that we know of the  
6       overtopping that occurred on September 25th, 2005, at  
7       least for --

8               A.     A couple of months.

9               Q.     -- a couple of months in -- at a minimum.  
10      Okay.

11               Now, you were asked a series of questions  
12      from Chairman Gunn about if -- if one were rebuilding  
13      the upper reservoir today. Was it within the scope of  
14      your analysis to advise Ameren whether or not to  
15      rebuild in terms of its overall capacity balance and  
16      other needs?

17              A.     No, that was not in my scope.

18              Q.     Okay. So you did not provide advice as  
19      to rebuild or not rebuild? You were -- you were  
20      advising as, Here's how you should rebuild if you  
21      rebuild?

22              A.     That's right.

23              Q.     Okay. Now, you were asked questions by  
24      both Chairman Gunn and Commissioner Kenney about the  
25      concept of today's industry standards. Do you recall

1 that?

2 A. Yes.

3 Q. Is there a -- a list of minimum industry  
4 standards or are these just generally accepted  
5 practices?

6 A. No. There's not a list, per se. There  
7 are a number of shall we say publications and books  
8 available to the profession describing what good  
9 practice is.

10 Q. Okay. And in your opinion, is the new  
11 upper reservoir constructed to the bare minimum of  
12 today's industry standards?

13 A. The upper reservoir is -- is constructed  
14 in accordance with today's best standards for  
15 construction.

16 Q. Okay. Do you -- do you define best  
17 standards as different from minimum standards?

18 A. I don't -- there's never -- I've never  
19 seen a list of minimum versus best. I just know what  
20 good construction practices are for dam construction.  
21 And the dam at the upper reservoir was built in  
22 accordance with good construction practices --

23 Q. Okay.

24 A. -- for dams.

25 MR. MILLS: Okay. That's all the



1 questions I have. Thank you.

2 JUDGE WOODRUFF: Okay. Redirect?

3 MR. BYRNE: Yes, your Honor.

4 COMMISSIONER DAVIS: Hold on. Judge, can  
5 I go back -- can I ask this witness one question?

6 JUDGE WOODRUFF: Go ahead.

7 FURTHER QUESTIONS BY COMMISSIONER DAVIS:

8 Q. Dr. Rizzo, were -- based on your  
9 professional opinion, do you think the -- the actions  
10 in building Taum Sauk back in 1963, that the actions  
11 taken by the company, were they reasonable at the time  
12 and under those circumstances?

13 A. Yes.

14 COMMISSIONER DAVIS: Okay. No further  
15 questions.

16 JUDGE WOODRUFF: Any recross based on  
17 that question. Mr. Mills?

18 FURTHER RE-CROSS-EXAMINATION BY MR. MILLS:

19 Q. What is your understanding of UE's degree  
20 of supervision over the construction in 1963?

21 A. My under-- my understanding of the  
22 oversight of U-- of UE at the time was -- let me put  
23 it this way: We hired a design engineer, he in tur--  
24 he in turn hired the world's expert -- a world expert  
25 on CFRDs. We hired a consulting geologist to oversee

1 what the engineer was doing. And we hired a competent  
2 contractor to build our dam.

3 I found no evidence in the record of --  
4 of UE imposing any restrictions or requirements on the  
5 engineer or the constructor, nothing in writing that I  
6 could see. They did act in a prudent manner by having  
7 the -- the -- the engineer responsible for it being a  
8 world expert and the consulting engineering geologist  
9 reviewing what was going on as it was being built.

10 Q. But you have no evidence of what -- sort  
11 of on a day-to-day basis during the construction, of  
12 any supervisory role that UE took?

13 A. I have no evidence one way or the other,  
14 that's right.

15 Q. Okay. So you don't know in particular  
16 whether UE actually took any steps to oversee the  
17 sluicing of the rock to remove the fines?

18 A. I do not.

19 MR. MILLS: That's all that I have in  
20 response to Commissioner Davis's questions. Thank  
21 you.

22 JUDGE WOODRUFF: Redirect?

23 REDIRECT EXAMINATION BY MR. BYRNE:

24 Q. Good -- good afternoon, Mister --  
25 Dr. Rizzo. In response to some of Mr. Mills'

1 questions, you talked about the difference between  
2 the -- the inspection process that the FERC used prior  
3 to adoption of the PFMA and then after the adoption of  
4 the PFMA. Do -- do you recall that --

5 A. Yes.

6 Q. -- line of questions and answers?

7 And my understanding is that in 2003 when  
8 the Taum Sauk facility was last inspected, your  
9 testimony was that it was under the old process; is  
10 that correct?

11 A. That's correct.

12 Q. And were any deficiencies identified  
13 during that inspection?

14 A. I don't recall precisely what was written  
15 by the inspector at the time. He -- he did indicate  
16 that he reviewed instrumentation data. He -- I don't  
17 remember if he commented on settlement. I don't  
18 recall the text of his report.

19 Q. Did he -- did he discover any significant  
20 deficiencies?

21 A. No. There were no significant  
22 discoveries.

23 Q. But my understanding of your testimony is  
24 the -- the PFMA process would have been much more  
25 robust; is that correct?

1           A.     Much more robust, yes -- much more in  
2     depth, much more structured.

3           Q.     Can you explain a little bit about  
4     exactly what would have happened in that PFMA process?

5           A.     The PFMA process involves the gathering  
6     of perhaps 10 or 15 people who -- some who know the  
7     dam, some who have no knowledge of the dam whatsoever,  
8     some who know the operation, some who are experts on  
9     dam design and construction. They gather for about a  
10    week at the site and they -- they do a certain number  
11    of things.

12                    Prior to the commencement of the -- of  
13    the PFMA, the owner and his engineer, in that case it  
14    was us -- would have been us, put together what's  
15    called an STID, which is a large group of documents,  
16    fill two or three tables in this room. Describing  
17    all -- providing all the documents regarding the  
18    design, the construction, the operation, the  
19    maintenance of that dam over the life up to that  
20    point.

21                    The group of 10 or 15 people spend at  
22    least a day, sometimes two days reading and reviewing  
23    all those documents, looking for signs of -- of red  
24    flags, if you will, or looking for issues that should  
25    be investigated.

1                   Then the following day after a brief  
2                   introduction of the project and what the goals of the  
3                   meeting are, there's an inspection conducted by this  
4                   group of people. Usually it takes a day, sometimes  
5                   tw-- a day and a half. They walk the dam, they tour  
6                   the dam inside, outside, upstream, downstream, so  
7                   forth. But look at the powerhouse, the penstocks, all  
8                   the water conveyance facilities.

9                   And then they sit together in a room like  
10                  this. There's a facilitator whose job is to  
11                  facilitate the discussion and keep the discussion in a  
12                  structured manner in accordance with the FERC  
13                  protocol. And then you cycle around the room and  
14                  you -- each of the experts begins by postulating the  
15                  potential failure mode, stability failure, settlement  
16                  problem, penstock failure, gate failure, failure to  
17                  operate the lifting systems, whatever. And you -- you  
18                  rotate around the room until every -- every  
19                  participant lists in his mind all the potential  
20                  failure modes. So you wind up with a series of flip  
21                  charts. And that is covering -- covers an entire wall  
22                  of all the potential failure modes.

23                  That -- this group of people who have  
24                  seen many dams, who were witness to operational  
25                  deficiencies in this project and this project and

1 regulators who have seen the same thing as well.

2           The potential failure modes are put into  
3 four categories; not a problem, a minor problem, need  
4 more information, imminent failure problem. Then  
5 that, as I said before, you -- winds up normally, like  
6 in a case of an older dam, with a long list of issues  
7 needing more information, unless there's something  
8 that stands out immediately as being a catastrophic  
9 failure problem potential. Then at that process you  
10 have this long list of potential failure modes  
11 requiring more information.

12           Then the engineer, the FERC inspector,  
13 proposes a system, a scheme, a plan, a program to go  
14 investigate these issues requiring more information.  
15 In this case it normally includes borings, includes  
16 these -- laboratory testing and it could involve  
17 hydraulic analysis, hydrology analysis, stability  
18 analysis or whatever.

19           But you would certainly do a geotechnical  
20 investigation involving borings through the dam, into  
21 the foundation. You would be -- obtain samples of the  
22 foundation materials, you'd do laboratory testing, do  
23 stability analysis and so forth.

24           Q.     Is that what would have happened in the  
25 case of Taum Sauk?

1           A.     That's what would have happened in the  
2     case of Taum Sauk.

3           Q.     And then --

4           A.     Somebody would have raised the issue  
5     about the earthquake as well, what's the earthquake  
6     design on this dam?

7           Q.     And then what would have happened after  
8     they got the results of those -- that further --

9           A.     They would have seen -- they would have  
10    seen that the dam is -- how it was deficient under  
11    static as well as dynamic conditions for stability.

12          Q.     And then what would they have done?

13          A.     They -- depending on the -- the degree  
14    and the evidence, they would have, in -- in my  
15    opinion, been instructed to lower the reservoir or  
16    perhaps drain the reservoir.

17          Q.     And then would they have continued to  
18    investigate it more fully after that?

19          A.     They would have continued to investigate  
20    it more thoroughly and see if they could develop some  
21    scheme for mediation.

22          Q.     And in this case, what would -- in your  
23    opinion, would have been the scheme for mediation?

24          A.     In my opinion, they -- the scheme for  
25    mediation would have been a complete rebuild.

1           Q.     Or would it have been possible to  
2 completely shut down the reservoir?

3           A.     You could retire it if you didn't want to  
4 rebuild it.

5           Q.     And would there be co--

6           A.     But you couldn't operate it under the  
7 current condition.

8           Q.     Would there be costs associated with a  
9 retirement?

10          A.     Retiring a facility under a FERC --  
11 there's that FERC license involved restoration of the  
12 entire project to its original condition, including  
13 removal of the powerhouse, removal of the dam itself,  
14 revegetation, removal of the transmission lines,  
15 all -- and to -- filling that tunnel back up with  
16 concrete after you remove the steel from the tunnel.  
17 Complete restoration.

18          Q.     Mr. Mills I think raised the issue of the  
19 fact that the PFMA process is not embodied in  
20 statutes; is that correct?

21          A.     That's correct.

22          Q.     And --

23          A.     Best of my knowledge, that's correct.

24          Q.     And that to some degree, it's not  
25 embodied in regulations either; is that correct?



1           A.     Only in the perspective -- I know it's  
2 part of the regulatory practice. I cannot cite  
3 chapter and verse if it's in the regulation. I don't  
4 think it is, but it's part of the regulatory practice  
5 imposed on licensees by FERC.

6           Q.     Does -- do -- does a licensee have any  
7 choice as to whether the PFMA is going to apply to it?

8           A.     No. He has no choice.

9           Q.     Are the PFMA parameters built into  
10 documents that -- that FERC uses?

11          A.     Yes.

12          Q.     Like --

13          A.     There are -- there are -- are protocols.  
14 But more often than not at -- we -- we follow in  
15 practice that we know happened in the last four or  
16 five of these and what went wrong. And the FERC  
17 usually steps in and advises at the beginning of the  
18 meeting, Hey, we're now doing this in the protocol,  
19 we're now following this procedure, we now use this  
20 kind of schedule, so forth.

21                   And it is an evolving pr-- it is an  
22 evolving protocol begun in the early 2000's and it's  
23 going to be put into regulations, I'm reasonably sure,  
24 within five years.

25          Q.     Commissioner Gunn asked you some

1 questions about two -- two things. One -- one was if  
2 over-- overtoppings or at least the overtopping in  
3 September of 2005 should have raised a red flag. And  
4 I think you said yes, it should have.

5 A. Yes.

6 Q. What would have happened if a red flag  
7 had been raised with regard to that overtopping and --  
8 and there had been an investigation?

9 A. Well, there would have been an  
10 investigation as to the cause of the overtopping. The  
11 investigation would have been limited probably to that  
12 to start. And the FERC would have said drop the  
13 reservoir level -- your operating level down. Because  
14 they would have found that it was due to settlement  
15 differential across the length of the dam.

16 Q. If -- if a red flag had raised -- been  
17 raised in 2005, would that have done anything to  
18 change the outcome of the PFMA inspection in 2008?

19 A. No. Because the -- it would depend very  
20 much if -- if the red flag would have caused the FERC  
21 to instruct the licensee to drill borings through the  
22 dam into the foundation. It would not have changed  
23 the outcome in 2008, however. There's -- the same  
24 data would have become -- would have become available.

25 Q. I should -- I mean, is it fair to say

1 maybe it would have -- would have sped up the outcome  
2 if you had to do borings in 2005?

3 A. Yeah. But it would -- as I -- it would  
4 take -- to drill through that dam and investigate that  
5 foundation, it would have taken two years.

6 Q. Okay. And Commissioner Gunn also asked  
7 you about the possibility of retrofitting some of the  
8 enhancements on the old facility. And I think in  
9 particular, he asked about if you put the overflow  
10 release structure on the old facility. And I think in  
11 response to his question, you said it might reveal  
12 the -- some of the deficiencies if you did that  
13 construction. Do you recall that question and answer?

14 A. Yes.

15 Q. And -- and what would have happened if  
16 that -- if it would have been revealed through that  
17 construction?

18 A. The same thing that happened after the --  
19 we would have cut a breach for the new overflow  
20 spillway to build it, we would have found the same  
21 thing we found with the breach that was created by  
22 the -- by the failure in December of 2005; in other  
23 words, poor foundation constructions.

24 Q. Mr. Mills asked you some questions about  
25 erosion in his second round. And I think you said you

1       couldn't -- you -- you could tell there were -- was  
2       erosion in a couple places, but you couldn't tell when  
3       that erosion occurred. Do you recall that question  
4       and answer?

5             A.     That's right.

6             Q.     And so -- so my -- is it -- would it --  
7       am I taking it right that -- that all that erosion  
8       could have occurred during the incident in 2005 where  
9       there was a breach?

10            A.     If there had been overtopping any time  
11       prior to the breach, there would have been overtopping  
12       in several locations and probably erosion in several  
13       locations.

14            Q.     Are you aware of any overtopping other  
15       than the September 2005 incident --

16            A.     No, I'm not.

17            Q.     -- that's been discussed?

18            A.     No.

19            Q.     Okay. In response to one of the  
20       Commissioner's questions, I think maybe  
21       Commissioner -- both Commissioner Gunn -- or Chairman  
22       Gunn and Commissioner Kenney, you were talking about  
23       the design and the construction. And I think you  
24       testified that the design was better than the  
25       construction, that there were problems with the

1 construction. Is that fair?

2 A. That's correct.

3 Q. Okay. And let me ask you this: If --  
4 let's imagine that the design and construction of the  
5 rockfilled concrete face dam had been good in 1963.  
6 Would -- would the new upper reservoir still contain  
7 enhancements beyond what was in that 1963 dam?

8 A. The new -- the new dam that we built --

9 Q. The one that we just built.

10 A. Yes.

11 Q. Would that have enhancements above and  
12 beyond what would -- what would have been a dam if the  
13 construction practices had been good in 1963? In  
14 other words, if they compacted the rock in 1963 and  
15 sluiced the rock or whatever other construction  
16 practices would have been good for 1963, would the  
17 current dam that we just built have enhancements  
18 beyond that 1963 dam?

19 A. Well, the -- the -- the construction  
20 deficiencies include the fact that rock was not  
21 compacted and the foundation was not properly  
22 prepared. Those were deficiencies back in 1962, '63  
23 timeframe.

24 The new dam has enhancements consistent  
25 with the needs of -- well, consistent with good

1 construction practice, design practice today,  
2 including a gallery and effectively a grout curtain  
3 and so forth.

4 Q. You -- you spoke in response to some  
5 questions about the improved seismic resistance of the  
6 facility, improved ability to resist earthquakes. Is  
7 that a significant enhancement?

8 A. I think it's a major, major improvement  
9 for the project as a whole. I mean you all who live  
10 in Missouri know earthquakes better than anybody else  
11 in this country, including California, because you've  
12 had the largest in New Madrid. Those events in 1811,  
13 1812 are the largest earthquakes recorded in this  
14 country.

15 You hear about the earthquakes in  
16 California, you hear about the ones in Los Angeles,  
17 San Francisco earthquake of 1906, but quite frankly,  
18 the magnitude 7.8, 7.5 that occurred in New Madrid are  
19 the largest magnitude earthquakes that have occurred  
20 in this country. The most frequent is the ones in  
21 California, but they're the largest.

22 And therefore, it's in my judgment, my  
23 opinion, that an earth-- prudent earthquake design for  
24 the upper reservoir and any dam in Missouri if you --  
25 is -- dictates the need for serious seismic design

1 considerations.

2 Q. Even if the original dam in 1963 had been  
3 constructed in accordance with proper standards, would  
4 the new dam last longer than -- than that dam would  
5 last?

6 A. That dam would not survive a major  
7 earthquake in 1963. This dam will survive a repeat of  
8 the New Madrid earthquake.

9 Q. Even in the absence of an earthquake,  
10 would -- would the new dam constructed 40-some years  
11 later be likely to last longer than the dam that was  
12 constructed in 1963?

13 A. Yes. Right. The new dam will  
14 construct -- you know, we've been talking about an  
15 80-year life to this project. I heard Mark Birk  
16 testify to that. As I mentioned also, we work on  
17 100-year-old concrete dams, we're working on Keokuk,  
18 we're working on Osage. These -- dams in South  
19 American and Australia that are over 100 years old  
20 that continue to generate. Now, these are concrete  
21 dams where the maintenance is -- is far less than that  
22 required with an earth-filled dam or a rock-filled  
23 dam.

24 Now, the -- the 80-year life discussed  
25 for upper reservoir -- for Taum Sauk is tied to one

1 relicensing after the original relicense. So the  
2 first -- we'll get a license for 40 years, I expect,  
3 and one relicense after that takes us out 80 years.  
4 That's a large degree why it's 80 years, not 110 or  
5 120.

6 MR. BYRNE: Okay. Thank you, Dr. Rizzo.  
7 I have no other questions.

8 JUDGE WOODRUFF: Thank you, Dr. Rizzo.  
9 You may step down. You are excused.

10 Before we take a break for lunch, I  
11 believe Mr. Rackers -- Staff proposed to bring  
12 Mr. Rackers up to answer some questions from  
13 Commissioner Davis.

14 COMMISSIONER DAVIS: Well, let me -- let  
15 me just ask real quick. I went back and tried to  
16 locate it in Mr. Birk's testimony. Does Ameren concur  
17 with the amount of -- of proposed disallowance in  
18 the -- I mean I know it's 90 million in -- in terms of  
19 rate-base, but in the -- in the true-up reconciliation  
20 it was listed at 10.379 million. Is -- is that the  
21 correct amount? Because I thought I read somewhere in  
22 Birk's testimony it was actually 15, but I couldn't --  
23 15 million, but I couldn't find it.

24 MR. BYRNE: Let us ask Gary Weiss, who's  
25 our reconciliation expert.



1 COMMISSIONER DAVIS: Okay.

2 MR. BYRNE: Okay. Your Honor, I think  
3 the amount depends on some other issues. One -- one  
4 figure has property taxes in and the other has  
5 property taxes listed as a separate issue because  
6 that's being contested. So that's \$2,500,000 is the  
7 difference is property taxes.

8 COMMISSIONER DAVIS: Okay.

9 MR. BYRNE: Also then the numbers got  
10 refined a little bit. And also, the return -- it  
11 depends on what return you apply to it. So the --  
12 so -- but we agree with -- I mean, the reconciliation  
13 is correct.

14 COMMISSIONER DAVIS: Okay. Okay. You  
15 just -- you agree. Okay. I was just -- I -- the tax  
16 issue, the ROE, that -- it all makes sense to me now.  
17 I just wasn't -- I wasn't tracking before.

18 MR. BYRNE: Okay.

19 COMMISSIONER DAVIS: Okay. Thank you.  
20 So no need -- no need to call -- no need to call  
21 Mr. Rackers.

22 JUDGE WOODRUFF: All right. Very good.

23 COMMISSIONER DAVIS: Judge, can I inquire  
24 of the parties?

25 JUDGE WOODRUFF: Sure.

1                   COMMISSIONER DAVIS: I have one question  
2                   and this is for the attorneys. What is the -- what is  
3                   the legal standard that the Commission should apply on  
4                   this issue? And you can all speak so -- I mean  
5                   Mr. Byrne, I guess we'll let you go first since you  
6                   wanted the microphone.

7                   MR. BYRNE: I believe it's a prudence  
8                   standard. I believe it's the same standard that the  
9                   Commission applies to the construction of any  
10                  rate-base item. Like the se-- it's the same standard  
11                  as the Sioux plant. It's -- there's a presumption of  
12                  prudence on our favor. If someone raises a serious  
13                  doubt about it, then -- then we have to prove  
14                  prudence.

15                  COMMISSIONER DAVIS: Okay.

16                  MS. KLIETHERMES: I think the standard is  
17                  given in the Associated Natural Gas case, which is at  
18                  116 S.W. 3d, pages 693 to 94. And that's that, In  
19                  order to disallow a utility's recovery of costs from  
20                  its ratepayers, the regulatory agency must find both  
21                  that, one, the utility acted imprudently; and two,  
22                  such imprudence resulted in harm to the utility's  
23                  ratepayers.

24                  And I believe that the point of  
25                  imprudence or point of prudence that would be reviewed

1 in this situation is Ameren's rebuilding of the upper  
2 reservoir as opposed to the destruction of the prior  
3 reservoir.

4 COMMISSIONER DAVIS: Mr. Mills?

5 MR. MILLS: And I don't disagree that  
6 that is the proper standard. I think the point in  
7 time that you need to look at is when -- you have to  
8 go back farther than starting to rebuild the current  
9 reservoir. You have to figure out why we got to  
10 rebuild the current reservoir. And we got here  
11 because of imprudence. So I think -- I think it is  
12 the prudence standard. I just think the scope is  
13 broader than either UE or the Staff believes.

14 COMMISSIONER DAVIS: Mr. Coffman?

15 MR. COFFMAN: I -- I would concur in --  
16 in Mr. Mills' description, there except that I -- I  
17 believe that the standard is broader too. I think  
18 that the -- what Ameren is requesting be included in  
19 its rate needs to be both prudent and reasonable and  
20 that there is a -- there is precedent for a  
21 disallowance even if something involves a certain  
22 amount of prudence but is -- would be unreasonable to  
23 charge to ratepayers.

24 MS. KLIETHERMES: And I would agree in  
25 that. I think that we also look at whether it was

1 reasonable and whether it is of benefit to ratepayers.

2 MR. BYRNE: I don't -- I'm not sure the  
3 company agrees with that. I think if we have  
4 prudently incurred costs, they should be recovered.

5 COMMISSIONER DAVIS: Well, I guess --  
6 Okay. If it's reasonable, wouldn't it -- wouldn't it  
7 be prudent?

8 MS. KLIETHERMES: There are some  
9 telephone cases that I'm not entirely familiar with  
10 that I believe deal with this. I think that -- well,  
11 I might have them in this document I happened to bring  
12 with me.

13 Well, at any rate, I -- I believe there  
14 might be some Western District precedent that -- that  
15 deals with items that are not of benefit to ratepayers  
16 or not of -- or not reasonable, although -- although  
17 they were prudent. It has to do with a facility being  
18 built larger than was necessary. In other words,  
19 since they were doing the construction, the argument  
20 was it was prudent but not reasonable to do the  
21 quantity that they did. And again, it was telephone  
22 cases in I believe the '80s.

23 COMMISSIONER DAVIS: Okay. And that  
24 would also maybe get back to like the Missouri  
25 American Water St. Joe case --

1 MS. KLIETHERMES: Yes. Thank you.

2 COMMISSIONER DAVIS: -- of ten years ago.

3 Is that --

4 MR. COFFMAN: There is -- there is other  
5 precedent too. The Wolf Creek case. I mean the case  
6 law is not always clear, but there's plenty of it and  
7 we would be happy to brief what we believe the  
8 appropriate standard to be.

9 COMMISSIONER DAVIS: Okay. Well, yeah.  
10 I think that's -- I think that would be -- that would  
11 be helpful. And Mr. Coffman if you could, could you  
12 just clarify what your argument is as to  
13 unreasonableness here?

14 MR. COFFMAN: In order to allow recovery,  
15 a cost has to be both prudent and reasonable. So it's  
16 a two-part test --

17 COMMISSIONER DAVIS: Okay.

18 MR. COFFMAN: -- in -- in my opinion.

19 COMMISSIONER DAVIS: Okay. And so --

20 MR. COFFMAN: Under -- under Missouri  
21 law.

22 COMMISSIONER DAVIS: And you're saying  
23 that the costs are not reasonable because?

24 MR. COFFMAN: Well, I mean in this case I  
25 think that -- that that there is not -- that the issue

1 is the prudence of the operation -- the construction  
2 and operation of the plant that prude-- that  
3 there's -- that there's overwhelming evidence of  
4 imprudence going back before the reservoir was  
5 destroyed and that the costs at issue here go back to  
6 that and are a consequence of that imprudence.

7 So I mean, I don't think you even have to  
8 reach the question of whether it's unreasonable, but  
9 it -- that is a second ground that even if you felt  
10 that at some point the utility's actions were prudent,  
11 it wouldn't be reasonable to charge these costs to  
12 the -- to consumers.

13 COMMISSIONER DAVIS: Okay. Now, let me  
14 ask you this: Would you agree with the statement  
15 that -- that nothing -- no Taum Sauk expenses have  
16 gone into rates so far? Other -- I mean other --

17 MR. COFFMAN: Well, it's my understanding  
18 as --

19 COMMISSIONER DAVIS: As a consequence of  
20 the -- as a consequence of the Niagara Falls incident,  
21 the -- the collapse, et cetera, would you agree that  
22 no -- no expenses related to the -- to the collapse  
23 have gone into rates so far?

24 MR. COFFMAN: There have been some  
25 disputes in the last couple of cases. I'm not sure I

1 could confirm that.

2 COMMISSIONER DAVIS: Mr. Mills, do you  
3 have -- have an opinion?

4 MR. MILLS: I do. In the first case  
5 the -- the capacity value of Taum Sauk was not  
6 adequately compensated for. In the second case we  
7 came to an agreement to address that. So at least  
8 that cost has not been adequately in-- ratepayers have  
9 not been adequately insulated from the cost to that  
10 extent throughout the process. But I'm not aware of  
11 additional items that fall into that category.

12 COMMISSIONER DAVIS: And -- and it has  
13 been modeled in rates the whole time?

14 MR. MILLS: In the first case it was  
15 modeled I believe just for energy, but there was  
16 capacity value that was not modeled in the first case.  
17 And in subsequent cases that has been included.

18 COMMISSIONER DAVIS: Okay. And that  
19 was -- I mean that issue didn't come up in the -- in  
20 the first case until -- what was it, reply briefs or  
21 almost or something like that, Mr. Mills?

22 MR. MILLS: I don't believe it was quite  
23 that late, but the Commission found that it was raised  
24 late in the case and -- and declined to make the  
25 adjustment.

1                   MR. BYRNE: It was raised after the  
2 hearing in the case.

3                   COMMISSIONER DAVIS: Okay. All right.  
4 All right. Thank you.

5                   JUDGE WOODRUFF: Commissioner Kenney, did  
6 you have something?

7                   COMMISSIONER KENNEY: I -- I did since  
8 we're on this -- this line of inquiry. Is there  
9 anybody in the room that would -- any of the attorneys  
10 that would have an opinion about -- or an idea rather  
11 whether the term "enhancement" is any -- is there  
12 anywhere I can look to determine how you define that  
13 term as it was used in the settlement agreement with  
14 the State?

15                   MR. BYRNE: I can -- I could try,  
16 Commissioner. I know in our testimony we provided a  
17 dictionary definition of enhancement. And I think  
18 as -- as I said this morning, it's not defined in  
19 the -- in the con-- in the settlement document itself.  
20 It's not one of the defined terms. And so in that  
21 case, I -- I believe a dictionary definition is the  
22 most appropriate definition.

23                   COMMISSIONER KENNEY: Well, is there  
24 anything in the settlement agreement -- if it's not a  
25 defined term within the body of the settlement



1 agreement, is there any language in the settlement  
2 agreement that gives guidance as to what would be an  
3 enhancement and/or is there language in the settlement  
4 agreement that says go ahead and use the dictionary  
5 definition of enhancement?

6 MR. BYRNE: It -- it certainly doesn't  
7 explicitly say to use the dictionary definition of  
8 enhancement. I don't think there's -- I don't think  
9 there's anything in the settlement document that  
10 suggests a different definition though.

11 MS. KLIETHERMES: And, Commissioner,  
12 for -- for what's it worth, I realize you're not here  
13 in Jeff City. I would just indicate that the  
14 representative from the AG's office who has been  
15 representing DNR is -- is not present today. And I  
16 think you can read into that what -- what you need to  
17 about the -- the sufficiency of the record and the  
18 positions regarding the satisfaction with the  
19 agreement.

20 MR. COFFMAN: Commissioner, this is John  
21 Coffman. I'm not sure if you can see me.

22 COMMISSIONER KENNEY: I can, John.

23 MR. COFFMAN: It's our opinion that  
24 the -- the use of enhancements in paragraph 3 of that  
25 consent agreement does not apply in this proceeding at

1 all. It -- AmerenUE apparently agreed not to seek  
2 certain things in settlement of its issues it had with  
3 the attorney general, but that --

4 COMMISSIONER KENNEY: Right.

5 MR. COFFMAN: -- the idea of enhancements  
6 as a standard in this case is not our understanding of  
7 what that document is about. I mean that would be an  
8 issue between AmerenUE and the attorney general.

9 And that the document clearly does not  
10 attempt to play -- assert a principle or a standard on  
11 the Missouri Public Service Commission about whether  
12 anything brought to it should be recovered. That the  
13 standard is what the standard always is and that is,  
14 you know, what is just and reasonable

15 COMMISSIONER KENNEY: Well, no, sure. I  
16 understand that. And that's a separate and distinct  
17 issue. I mean you're saying irrespective of what the  
18 settlement agreement provides, we're free to disallow  
19 whatever we want to disallow under -- under the  
20 statute that governs how we're to make rates.

21 MR. COFFMAN: Right. That's the  
22 interpretation.

23 COMMISSIONER KENNEY: And I understand  
24 that. I'm just curious if there's any -- I just -- I  
25 just want to get some clarification on the settlement

1 agreement and -- and how the parties understood that  
2 term to mean -- what they understood that term to mean  
3 and how they understood it to apply.

4 MR. BYRNE: I guess --

5 COMMISSIONER KENNEY: Because it  
6 clearly -- it clearly was contemplated that at some  
7 point in time Ameren would be in for a rate case and  
8 may or may not seek to recover certain items, right,  
9 in -- relative to the Taum Sauk reservoir. And -- and  
10 I'm wondering what that term means and how we should  
11 interpret it here in this rate case.

12 MR. BYRNE: Commissioner Kenney, one  
13 thing I said in response to a question from  
14 Commissioner Gunn earlier is under the settlement, we  
15 had an obligation to provide written -- a written  
16 notification to each of the parties that signed the  
17 settlement when we -- any time we sought to include  
18 anything in rates.

19 In -- prior to filing this case, we set  
20 up a meeting with each of the signatories to -- to the  
21 agreement, we hand-- hand-delivered a written  
22 notification to the governor's office, the attorney  
23 general and the Missouri Department of Conservation  
24 and we explained to them what we would be asking for  
25 in this case.

1                   And so -- and what -- and what -- what  
2 things we were going to be calling enhancements. And,  
3 of course, they were -- they were served with  
4 testimony. And they haven't -- they haven't objected  
5 so whatever -- whatever that's worth.

6                   CHAIR GUNN: And I just want to be clear  
7 about something Ms. Kliethermes said. The attorney  
8 general's office is here representing the Department  
9 of Natural Resources. Correct?

10                   MS. KLIETHERMES: That's my  
11 understanding, yes.

12                   CHAIR GUNN: And does --

13                   MS. KLIETHERMES: Well, they're not here  
14 today, but they're in the case.

15                   CHAIR GUNN: No. But they -- they're in  
16 the case as the -- as the lawyer for the Department of  
17 Natural Resources. They're not here and I just want  
18 to be clear. They are not here in their capacity as  
19 the attorney general's office nor are they here  
20 representing the Department of Conservation. So I  
21 don't know whether the scope of their -- or the  
22 governor's office.

23                   So I don't know whether the fact that  
24 they're not here -- and I'll just get clarity. I  
25 don't know that -- and people can answer that. I

1 don't know that they're -- because they're not here  
2 and weighing in on this subject that that particular  
3 decision of the attorney general is indicative of  
4 anything as to the position of the Department of  
5 Conservation, the attorney general's office and the  
6 governor's office.

7 MS. KLIETHERMES: And I didn't mean to  
8 imply at all that it was. Simply that the person  
9 probably in the best position to answer the questions  
10 was -- was not available.

11 CHAIR GUNN: Okay. I just wanted to  
12 make --

13 COMMISSIONER DAVIS: Well, now are you  
14 done, Mr. Chairman? I'm sorry.

15 CHAIR GUNN: Yeah, go ahead.

16 COMMISSIONER DAVIS: Okay. I mean,  
17 Ms. Kliethermes, would you -- would you agree with me  
18 that under our rules, silence constitutes acceptance?

19 COMMISSIONER KENNEY: Well, I wouldn't  
20 agree with that.

21 MS. KLIETHERMES: I think that's often  
22 the effect.

23 COMMISSIONER DAVIS: I mean, it is. I  
24 mean if there's -- if there's a stip or if there's  
25 something cited and you don't object, it's --

1 MS. KLIETHERMES: They're not parties to  
2 the case.

3 COMMISSIONER DAVIS: Okay. But -- but  
4 they've -- they had notice and -- and they're not  
5 here. But this -- this brings up another point is,  
6 we're not a signatory to this contract, are we?

7 MS. KLIETHERMES: Not to my knowledge.

8 COMMISSIONER DAVIS: And it is, in  
9 essence a contract. Is -- it's a settlement agreement  
10 in another court.

11 MS. KLIETHERMES: That is my  
12 understanding.

13 COMMISSIONER DAVIS: So if there's a  
14 breach of that agreement, is there remedy here?

15 MS. KLIETHERMES: Without knowing a high  
16 level of detail, I think that they could pursue a  
17 remedy through here, but I don't think it would be  
18 their exclusive remedy. And again, I've not given a  
19 high level of the study to the -- to the settlement  
20 agreement.

21 COMMISSIONER DAVIS: Well, does this  
22 Commission have the authority to enforce a contract?

23 MS. KLIETHERMES: Not -- not to enforce a  
24 contract. I believe this Commission has the authority  
25 to make rulings that are consistent with a contract.

1                   COMMISSIONER DAVIS: To make rulings that  
2 are consistent with a contract. Okay. But if the --  
3 if an -- if a settlement agreement is contrary to the  
4 law, then which one trumps?

5                   MS. KLIETHERMES: The law.

6                   COMMISSIONER DAVIS: And so if we're  
7 applying the law, which is the prudent and reasonable  
8 standard that -- that you and Mr. Coffman have  
9 articulated, and there's a conflict, then would their  
10 remedy be here or would it be there?

11                   MS. KLIETHERMES: I think that the State  
12 could make arguments before this Commission to try to  
13 persuade that the setting of just and reasonable rates  
14 would involve certain considerations. To my  
15 knowledge, the State has not made such an argument in  
16 this case.

17                   CHAIR GUNN: And if I may interrupt here  
18 for a second, it may also -- there may also be a  
19 colorable argument -- and I'm not saying I agree with  
20 it or not, but when you get to the division of prudent  
21 and reasonable where it may have been perfectly  
22 prudent to do it; however, because of the existence of  
23 a prior contract, that may make the seeking of that  
24 reimbursement unreasonable in our mind.

25                   So I -- it's a legal point I'm looking

1 for. I'm not saying I agree with that, I'm not saying  
2 that that's even -- that may not be done, but I'm  
3 look-- I don't think we're going to decide this today  
4 and I think it makes sense that we take some briefing  
5 on it when we take the case.

6 MR. MILLS: And Chairman Gunn, to your  
7 earlier question, I don't know if you're aware of  
8 this, but DNR does have testimony in this case about  
9 Taum Sauk. They -- they declined to produce a witness  
10 on this issue, but Laura Wolfe provided, oh, half a  
11 page of testimony, almost a page basically declining  
12 to take any position on the recovery of costs and  
13 throwing it right in your lap, so --

14 COMMISSIONER KENNEY: Has the settlement  
15 agreement been filed in EFIS yet?

16 MR. BYRNE: Yes, your Honor, we have.  
17 And we provided hard copies here too.

18 COMMISSIONER KENNEY: Yeah, I'm --

19 JUDGE WOODRUFF: I have a hard copy here  
20 waiting for you.

21 COMMISSIONER KENNEY: I mean -- I can  
22 just get it from EFIS and print it if it's here.  
23 Thank you.

24 MR. BYRNE: I believe it has been filed.

25 JUDGE WOODRUFF: Okay.



1                   COMMISSIONER DAVIS:  It's brief.  It  
2   can -- can it be read into the record?

3                   JUDGE WOODRUFF:  It's only about  
4   50 pages.

5                   Okay.  Well, time for our lunch break.  
6   Let's come back at 2:15.

7                   (A recess was taken.)

8                   (Ameren Exhibit No. 157 was marked for  
9   identification.)

10                  (Staff Exhibit Nos. 203-HP and 203-NP  
11   were marked for identification.)

12                  JUDGE WOODRUFF:  We're back from lunch  
13   and ready to move onto Staff's case.  I believe the  
14   first witness will be Erin Car-- Erin Carl.

15                  Good afternoon.  Please raise your right  
16   hand.

17                  (Witness sworn.)

18                  JUDGE WOODRUFF:  Thank you very much.

19   You may inquire.

20   ERIN CARLE testified as follows:

21   DIRECT EXAMINATION BY MS. KLIETHERMES:

22                  Q.    Good afternoon, Ms. Carle.  Could you  
23   please state and spell your name for the record.

24                  A.    Erin Carle, E-r-i-n C-a-r-l-e.

25                  Q.    And are you the same Erin Carle who

1 co-authored the Staff's Taum Sauk Construction Audit  
2 and Prudence Review, which has been marked as Exhibit  
3 203-HC and NP?

4 A. Yes, I am.

5 Q. And did you create or compile appendices,  
6 including your credentials?

7 A. Yes.

8 Q. You didn't have any other testimony, did  
9 you?

10 A. No, I did not.

11 Q. And do you have any corrections to make  
12 to the Taum Sauk Construction Audit Prudence Review or  
13 to any of the appendices?

14 A. No, I don't.

15 Q. If I were to ask you to answer the same  
16 questions or draft the same reports, would the product  
17 be the same?

18 A. Yes, it would.

19 MS. KLIETHERMES: With that, I offer  
20 Ms. Carle's portion of Taum Sauk Construction Audit  
21 and Prudence Review, which has been pre-marked as  
22 Exhibit 203-HC and NP.

23 JUDGE WOODRUFF: And the rest of that  
24 will be offered by --

25 MS. KLIETHERMES: Pursuant to

1 Mr. Gilbert, yes.

2 JUDGE WOODRUFF: -- Mr. Gilbert. Okay.

3 A portion of 203-NP and HC has been offered. Any  
4 objection to its receipt?

5 Hearing none, it will be received.

6 (A portion of Staff Exhibit Nos. 203-HC  
7 and 203-NP were received into evidence.)

8 MS. KLIETHERMES: I tender the witness  
9 for cross.

10 JUDGE WOODRUFF: For cross-examination  
11 then, I would assume Ameren would be the least  
12 opposition so we'll let them go first.

13 MR. BYRNE: No questions, your Honor.

14 JUDGE WOODRUFF: AARP?

15 CROSS-EXAMINATION BY MR. COFFMAN:

16 Q. Good afternoon, Ms. Carle.

17 A. Good afternoon.

18 Q. Hi. Does the Staff still stand by its  
19 conclusions that it made in the 2007 investigation  
20 Case ES-2007-0474?

21 A. As in -- stand by their conclusions? I'm  
22 sorry?

23 Q. I mean has Staff reconsidered any of the  
24 opinions and conclusions it -- it made in that  
25 particular case?

1 A. I don't believe so, no.

2 Q. Did you -- did you review that particular  
3 case in conjunction with your -- your audit of the  
4 costs in this case?

5 A. I read through it, but I did not review  
6 it very closely.

7 Q. All right. So am I to understand that  
8 your -- that your audit in this case was -- did not  
9 take into account the issues regarding the collapse of  
10 the Taum Sauk upper reservoir?

11 A. I did not investigate why the reservoir  
12 collapsed, if that's what you're asking. No, I did  
13 not.

14 Q. That was beyond the scope of your review?

15 A. Yes.

16 Q. Okay. Was it beyond the scope of  
17 Mr. Gilbert's testimony?

18 A. You'll have to ask Mr. Gilbert.

19 MR. COFFMAN: I guess I have no further  
20 questions.

21 JUDGE WOODRUFF: All right. Public  
22 Counsel?

23 CROSS-EXAMINATION BY MR. MILLS:

24 Q. Just to follow up, Ms. Carle, did you  
25 review the direct testimony of OPC witness Ryan Kind

1 on this issue?

2 A. Yes, I did.

3 Q. And just so I'm clear, it's your  
4 testimony today that the Staff's position with respect  
5 to the Taum Sauk rebuilding costs is the same as it  
6 was in the Staff incident report in ES-2007-0474?

7 A. Could you repeat that, please?

8 Q. Let me just ask it as a direct question.  
9 Is the Staff's position with respect to Taum Sauk  
10 rebuilding costs in this case consistent with its  
11 position in that case?

12 MS. KLIETHERMES: Objection, assumes  
13 facts not in evidence. I don't believe we have any  
14 indication of what -- whether or not Staff took a  
15 position on the rebuilding of the reservoir in the  
16 prior case.

17 JUDGE WOODRUFF: You can clarify your  
18 question.

19 BY MR. MILLS:

20 Q. Let me rephrase. Do you have a copy of  
21 Mr. Kind's testimony there?

22 A. Not with me, no.

23 Q. Do you have a copy of the Staff's initial  
24 incident report with you?

25 A. No.

1 MR. MILLS: May I approach?

2 JUDGE WOODRUFF: You may.

3 BY MR. MILLS:

4 Q. Ms. Carle, I've handed you a copy of the  
5 direct testimony of OPC witness Ryan Kind in this case  
6 opened to page 4. And at lines 24 to 27 he quotes  
7 from the Staff's initial incident report including the  
8 sentence on lines 25 to 26 of Mr. Kind's testimony  
9 that says, This includes but is not limited to the  
10 exclusion of rebuilding costs and treating the  
11 facility as though its capacity is available for  
12 dispatch modeling.

13 Is your position in this case consistent  
14 with that statement from the Staff's initial incident  
15 report?

16 A. I believe we are the same because the new  
17 reservoir is not exactly the same as what was there  
18 before for rebuilding costs.

19 Q. So what is your interpretation of what  
20 the Staff in its incident report meant by rebuilding  
21 costs?

22 MS. KLIETHERMES: Objection, calls for  
23 speculation.

24 JUDGE WOODRUFF: I'll sustain that.

25 BY MR. MILLS:

1           Q.     Ms. Carle, on whose behalf are you  
2     testifying today?

3           A.     Staff.

4           Q.     Are you here -- are you competent to talk  
5     about what the Staff's position is in this case and in  
6     prior cases?

7           A.     Yes.

8           MR. MILLS:   Judge, all I'm asking about  
9     is what the Staff's position is. I'm not asking her  
10    to speculate about something.

11          JUDGE WOODRUFF:  I think that's slightly  
12    different than what the question you actually asked  
13    for was --

14          MR. MILLS:  Well, I'm trying to get at  
15    what the Staff meant by the phrase "rebuilding costs"  
16    in a Staff filing. And if I can't ask --

17          JUDGE WOODRUFF:  All right. If you're  
18    asking -- if you're asking what Staff's position is, I  
19    think that's a proper question. If you're asking what  
20    Staff thought at the time --

21          MR. MILLS:  I'm sorry.

22          JUDGE WOODRUFF:  -- which is what I  
23    thought you were asking.

24          MR. MILLS:  That's not what I meant to be  
25    asking.

1 JUDGE WOODRUFF: Okay. I'll --

2 BY MR. MILLS:

3 Q. What is Staff's definition of rebuilding  
4 costs in this case?

5 A. In the current case or in the 2007 case?

6 Q. In the current case.

7 A. Rebuilding costs is the costs that were  
8 included in the construction of the new upper  
9 reservoir.

10 Q. Okay. So in this case rebuilding costs  
11 means all of the costs of rebuilding the upper  
12 reservoir?

13 A. Yes.

14 Q. Okay. What did rebuilding costs mean in  
15 the Staff incident report in Case ES-2007-0474?

16 MS. KLIETHERMES: Objection, calls for  
17 speculation.

18 MR. MILLS: I'm trying to find out what  
19 the Staff means.

20 JUDGE WOODRUFF: I'm going to overrule  
21 that objection. If you can state what Staff's  
22 position was.

23 THE WITNESS: As I wasn't on this case, I  
24 can't tell you exactly what they were including in  
25 rebuilding costs. I would assume costs to build a



1 facility.

2 BY MR. MILLS:

3 Q. So you think that they -- that the Staff  
4 is using the term "rebuilding costs" consistent from  
5 that case to this case?

6 A. I suppose they could be.

7 Q. Is that a yes?

8 A. I guess a yes.

9 Q. Okay. Then is it still Staff's position  
10 that rebuilding costs should be excluded?

11 A. Well, I guess I'm -- I would have to go  
12 with no because we are allowing the costs of  
13 enhancements that have been done to the plant.

14 Q. Okay. When you prepared your testimony  
15 in this case, with whom did you discuss what Staff's  
16 position should be?

17 A. As in like direct to me on what I should  
18 decide on this case or -- I'm not sure what I [sic]  
19 mean by your question.

20 Q. Well, let me start with that. How did  
21 you decide what issues you would address in this case?

22 A. Well, I was assigned to the construction  
23 audit and prudence review so I just went through and I  
24 reviewed everything that has to do with the  
25 construction -- construction of Taum Sauk.

1 Q. Okay. So it wasn't your decision to  
2 address this issue? Someone assigned you this issue?

3 A. Correct.

4 Q. Okay. And when you -- when you were  
5 formulating your position on the issue, did you have  
6 direction from anyone on the Staff on what your  
7 position should be?

8 A. I came to my position on my own.

9 Q. Okay. Did you come to that position he--  
10 did you review the Staff's incident report, the  
11 portion of which I've just quoted to you, before you  
12 came to that position?

13 A. As I was doing my review, I did read  
14 through the incident report.

15 Q. Okay. Did you read through it before or  
16 after you determined what your position would be in  
17 this case?

18 A. I believe I'd already reviewed the  
19 majority of information from Ameren, so I was --  
20 I'm -- had my position pretty much determined and then  
21 I read through the incident report and further  
22 filings.

23 Q. Okay. I'm not sure I followed that. Did  
24 you read through the -- did you read the incident  
25 report before or after you determined your position in

1 this case?

2 A. After I determined my position in this  
3 case.

4 Q. Okay. Did -- did you read it before or  
5 after you authored your portion of the Taum Sauk audit  
6 report?

7 A. I don't recall if it was before or after.

8 Q. Did it have any bearing on the  
9 formulation of your position in this case?

10 A. I don't believe so.

11 Q. With respect to your -- your role in this  
12 case, do you consider what you did to be a prudence  
13 audit?

14 A. Yes.

15 Q. Have you ever done a prudence audit  
16 before?

17 A. No, I have not.

18 Q. What -- what educational qualifications  
19 do you believe that qualify you to do a construction  
20 audit?

21 A. Well, I've got my accounting degree. I  
22 went to a training course for construction audits  
23 through the Commission and a lot of the same  
24 principles go along with a rate case audit. You still  
25 have to look at everything and determine costs and if

1 they are prudent or reasonable.

2 Q. Well, let's just talk about education for  
3 a moment. Tell me about the prudence audit course  
4 that you took at the Commission. Is that what you  
5 called it?

6 A. It was a construction audit course.

7 Q. Okay. Who -- who gave that course?

8 A. The Institute of Internal Auditors.

9 Q. But it was sponsored by the Commission?

10 A. I believe the Institute of Internal  
11 Auditors sponsored it. The Commission sent me to it.

12 Q. Okay. And when did you take that course?

13 A. It was in November of 2010.

14 Q. Okay. Had you formulated your position  
15 in this case before you took that course?

16 A. No.

17 Q. Okay. Now, in the course of your audit  
18 of the Taum Sauk rebuild, did you look at every  
19 invoice submitted to UE?

20 A. Not every single one of them, no.

21 Q. Okay. How did you determine which ones  
22 to look at?

23 A. I went through and I picked a random  
24 sample. I tried to get at least one invoice from each  
25 vendor, if not more than one, depending if the vendor

1 had numerous invoices. And then I sent in a data  
2 request to get the copies of those.

3 Q. And what percent of the invoices was your  
4 sample?

5 A. I would say at least 10 percent.

6 Q. At least 10 percent. How much more than  
7 10 percent could it have been?

8 A. I don't have a percent on -- I didn't do  
9 a calculation to determine the percent of invoices  
10 that I requested.

11 Q. How did you come up with the notion that  
12 it was at least 10 percent then?

13 A. I guess I was just assuming that it was  
14 around 10 percent.

15 Q. Around 10 percent. Okay. What  
16 evaluation did you do of the cost control processes  
17 that Ameren had in place for the audit?

18 A. Well, I read through their processes and  
19 procedures and I read internal and external audit  
20 reviews that had been done on it, read through their  
21 change orders and I -- meeting minutes.

22 Q. Okay. Did you say that you looked at  
23 reviews of their cost control procedures, internal and  
24 external reviews?

25 A. They had internal and external audits



1 questions that I believe have to do with highly  
2 confidential information in the Staff audit report so  
3 I'd like to go in-camera.

4 JUDGE WOODRUFF: We'll go in-camera at  
5 this point.

6 MR. MILLS: Is this no longer HC?

7 MR. LOWERY: It never was. Just -- just  
8 to clarify for the record, Mr. Birk's testimony --  
9 direct testimony is marked HC because there was one  
10 exhibit that was HC.

11 MS. KLIETHERMES: That was part of the  
12 Staff report.

13 MR. LOWERY: Those numbers came from us,  
14 didn't they?

15 MR. MILLS: Apparently -- are we still on  
16 the record and still in public session?

17 JUDGE WOODRUFF: We are.

18 MR. MILLS: Okay.

19 JUDGE WOODRUFF: We are back -- if we  
20 ever left, we're back in open session.

21 MR. MILLS: Apparently -- apparently  
22 Ameren is willing to state that these are not highly  
23 confidential numbers so I'll just do it in open  
24 session.

25 BY MR. MILLS:

1 Q. Ms. Carle, do you have a copy of the  
2 Staff Taum Sauk report?

3 A. Yes, I do.

4 Q. Okay. Can I get you to turn to page 17.  
5 And first of all, were you here for the testimony of  
6 Mr. Birk this morning?

7 A. Yes, I was.

8 Q. And do you agree with his definition of  
9 discrete enhancements as -- and I'm paraphrasing  
10 obviously because I don't remember his exact quote,  
11 but as things that are present in the new Taum Sauk  
12 facility that were not present in the old Taum Sauk  
13 facility?

14 A. I guess I can agree to that. So, yeah, I  
15 agree.

16 Q. Well, let me -- let me give you the  
17 chance to elaborate if you want to. On page 17 of  
18 your testimony you've got a number of things listed as  
19 discrete enhancements. Can you define for me how you  
20 use that term in your direct testimony? I mean not  
21 your direct testimony -- in -- in your Staff report?

22 A. I refer to them as discrete enhancements  
23 because that's how Mr. Birk labeled them in his direct  
24 testimony.

25 Q. So you made no independent judgment as to



1 whether or not these are discrete enhancements --  
2 discrete enhancements or not?

3 A. I really didn't think the word "discrete"  
4 was the deciding factor on if these enhancements were  
5 allowable or not.

6 Q. Okay. And what was the deciding factor?

7 A. I actually referred the enhancements to  
8 Mr. Guy Gilbert for his engineering expert on these to  
9 determine if they were necessary or prudent  
10 enhancements.

11 Q. Okay. So you have no opinion about  
12 whether any of these things should have been built or  
13 not?

14 A. I am not an engineering expert, so when  
15 it comes to constructing a power plant or something of  
16 that nature, utility plant, I do not have the  
17 engineering expertise to make that decision.

18 Q. Do you have an opinion as to whether or  
19 not any of these are appropriate things to be building  
20 in a power plant?

21 A. From the feedback that I received from  
22 Mr. Gilbert from the engineering department, I believe  
23 these are acceptable enhancements to include.

24 Q. Okay. Now, do you believe that --  
25 because you've labeled them discrete enhancements, are

1 these items that were not present in the original  
2 build of Taum Sauk?

3 A. That is my belief, yes.

4 Q. Okay. Were there piezometers on the  
5 original Taum Sauk facility?

6 A. I could not say 100 percent one way or  
7 the other if there were or not.

8 Q. Okay. Were there security cameras?

9 A. As I said, I don't really know.

10 Q. Okay. So if I were to ask you all of  
11 these, you -- would your answers be the same?

12 A. Yes.

13 Q. Okay. Now, did you actually prepare this  
14 table on page 17?

15 A. I believe it came out of Mr. Birk's  
16 direct testimony.

17 Q. Okay. So you had -- you just copied this  
18 from Mr. Birk's testimony; is that correct?

19 A. Yes.

20 Q. Okay. Do you have any opinion on whether  
21 any of these numbers are accurate?

22 A. Well, yes, I've reviewed work orders and  
23 change orders.

24 Q. Okay. So you -- you copied this from  
25 Mr. Birk's testimony, but you verified that all the

1 numbers are accurate?

2 A. Correct.

3 Q. Okay. The difference between the --  
4 the -- let me ask it this way: The 66, almost  
5 67 million dollars that's labeled Total Discrete  
6 Enhancements, is that a sum of the numbers in the --  
7 the next left column?

8 A. Yes.

9 Q. Okay. And then the bottom amount, the  
10 amount included in rate-base by Ameren Missouri, is  
11 the \$67 million figure used in any manner to arrive at  
12 that number?

13 A. The 67 million is in that 89.

14 Q. Is it used in the arithmetic to get to  
15 that 89?

16 A. Well, yes.

17 Q. Okay. Arithmetically how do you arrive  
18 at 89.179539 from this table?

19 A. I -- I don't think there's an exact  
20 formula on this table that comes to that total.

21 Q. Okay. Where does that -- where does that  
22 number come from then?

23 A. As I said, that number came from a  
24 conference call with Mr. Birk.

25 Q. Okay. What is the number that Staff is

1 proposing for inclusion in rate-base for the Taum Sauk  
2 plant in this case?

3 A. Staff is proposing the 89 million because  
4 that is the cap that we have said that they were able  
5 to recover.

6 Q. That \$89 million that -- that we're  
7 talking about?

8 A. Yes.

9 Q. Okay. How did Staff arrive at that  
10 number?

11 A. Well, that is the discrete enhancements  
12 with a portion of the other enhancements that the --  
13 the -- reservoir, on top of what insurance paid, up to  
14 the max -- the total rebuild cost minus the insurance  
15 costs, that is I believe the 89 million.

16 Q. Okay. Of the total rebuild costs and the  
17 insurance costs shown on this table --

18 A. Yes.

19 Q. -- if I were to subtract the insurance  
20 payments from the total rebuild costs in this case --  
21 on this table, what number would I get to?

22 A. I would say I don't have a calculator up  
23 here, so --

24 Q. You don't know from this table in your  
25 testimony that the \$89 million is the difference

1 between the total construction costs and the insurance  
2 proceeds?

3 A. Yes, it is.

4 Q. Okay. How was the appropriate portion of  
5 the non-discrete enhancements determined by Staff?

6 A. What do you mean by that?

7 Q. Well, you've got \$67 million -- and I'm  
8 rounding here -- in discrete enhancements. Correct?

9 A. Yes.

10 Q. Plus some additional figure for  
11 enhancements that are not discrete enhancements; is  
12 that correct?

13 A. Yes.

14 Q. How did you determine that non-discrete  
15 enhancement number?

16 A. Well, the foundation in itself is worth  
17 127 million, but as I said, insurance obviously has  
18 covered a portion of that. So the max that Ameren  
19 would be allowed to collect would be the 89 million  
20 because as I said, that's the difference between the  
21 total cost versus what insurance has paid.

22 And I did not feel that it would be  
23 appropriate to let them collect more than the cost to  
24 rebuild if insurance has already paid for a portion of  
25 the enhancements. To me, that would be like getting

1 paid twice for the same thing.

2 Q. So is the amount that you've allowed for  
3 non-discrete enhancements simply the difference  
4 between the amount that's not covered by insurance and  
5 the amount that you calcu-- that -- that Mr. Birk  
6 calculated as non-discrete enhancements?

7 A. Do you mean discrete enhancements?

8 Q. Yes.

9 A. Then yes, up to the \$89 million cap.

10 Q. Right. So the \$89 million -- the  
11 89 million is -- is the number that the insurance did  
12 not cover. Correct?

13 A. Correct.

14 Q. Okay. And the way that you came up with  
15 the allowable amount of non-discrete enhancements was  
16 simply a reference to the cap. Correct?

17 A. Correct.

18 Q. Okay. You didn't do any analysis of how  
19 much of that should be considered foundation or some  
20 other non-discrete enhancement; is that correct?

21 A. Well, I felt there were other  
22 enhancements that qualified, yes, but as I said, it --  
23 it's an \$89 million cap and, as I said, the foundation  
24 itself was 127 million so I mean, I didn't feel that I  
25 needed to go through and do, you know, a breakdown of

1 each non-discrete enhancement that makes up the  
2 89 million or portions of.

3 Q. Okay. Was there -- was there a  
4 foundation on the old Taum Sauk upper reservoir?

5 A. I believe it was -- if I remember  
6 correctly from reading, I believe it was mostly the  
7 rock.

8 Q. So are you saying there was a foundation  
9 or there was not a foundation?

10 A. I'm not sure if that would be considered  
11 a foundation or -- I'm not sure how they classified  
12 that.

13 Q. Okay. Well, I -- I'm trying to figure  
14 out your numbers here. Do you believe that there was  
15 a foundation on the old Taum Sauk reservoir -- upper  
16 reservoir?

17 A. I believe they just used the mountaintop  
18 as the bottom of it.

19 Q. Is that -- is that -- was there a  
20 foundation? Can you give me a yes or no or an I don't  
21 know?

22 A. I don't know.

23 Q. Okay. If you don't know whether or not  
24 there was a foundation, how do you know whether to  
25 categorize a foundation as a discrete enhancement or

1 not?

2 A. As I said before, I had discussions with  
3 Mr. Gilbert about if these were enhancements and if  
4 they were reasonable and prudent.

5 Q. Okay. Now, in terms of your analysis of  
6 the costs, is there anything in here that takes into  
7 account the -- the costs of having a huge swath of the  
8 mountainside scoured away by the reservoir collapse?

9 A. Did I include any costs for that?

10 Q. Are there any costs -- any -- any -- any  
11 way that that's reflected in your analysis?

12 A. No, it's not. This is strictly just to  
13 rebuild the upper reservoir.

14 Q. Okay. Is there anything in here that  
15 accounts for the loss of the use of the Johnson  
16 Shut-Ins State Park for an extended period of time?

17 A. No, there's not.

18 Q. Okay.

19 MR. MILLS: That's all the questions I  
20 have. Thank you.

21 JUDGE WOODRUFF: All right. We'll come  
22 up for questions from the bench. Commissioner  
23 Clayton, do you have any questions for Ms. Carle?

24 COMMISSIONER CLAYTON: No questions for  
25 me.



1 JUDGE WOODRUFF: Commissioner Davis?

2 QUESTIONS BY COMMISSIONER DAVIS:

3 Q. Good afternoon, Ms. Carle.

4 A. Good afternoon.

5 Q. What -- what do you think are the  
6 important take-aways from Staff's Taum Sauk -- I  
7 mean -- let me read the title here -- I've got to  
8 scroll back up to the top here.

9 What -- what would you view the important  
10 take-aways from your -- your part of the report of  
11 Staff's Construction Audit and Prudence Review of Taum  
12 Sauk Project for Costs Reported as of October 31,  
13 2010?

14 A. The important --

15 Q. Yeah. What -- I mean what are -- what do  
16 you think are the most important points?

17 A. Probably the fact that Staff has gone in  
18 and they have reviewed the process of the rebuild, the  
19 change orders, invoices. They reviewed for the  
20 prudence of the purchases for the reservoir and the  
21 construction itself. They reviewed all of the  
22 contracts with the vendors and the construction  
23 companies. I think just the overall --

24 Q. Uh-huh. Okay. And so the rebuild costs  
25 approximately \$490 million, insurance covered

1 approximately \$400 million of that 490 and the company  
2 is asking for the -- that additional increment, that  
3 \$90 million that they spent on rebuilding Taum Sauk,  
4 that that -- that that be put into rates because, in  
5 essence, it's extending the useful life and it's also  
6 going to -- to generate -- some additional  
7 electricity. Is that a fair statement?

8 A. Yes.

9 Q. Anything else you want to add?

10 A. Well, you're asking that's what the  
11 company was wanting to include. Correct?

12 Q. Right. Right.

13 A. Yes. I believe that's what the company  
14 has approached us with, yes.

15 Q. And you're okay with that?

16 A. After doing the review and going through,  
17 as I said, the 89 was more of a cap that we used. I  
18 mean I felt other enhancements would qualify, but I  
19 wasn't going to recommend collection for items that  
20 insurance has already covered.

21 Q. All right. And how was that \$89 million  
22 cap calculated again?

23 A. The total costs minus the insurance  
24 reimbursements. And then if you add the discrete  
25 enhancements and then a portion of the non-discrete

1 enhancements, that's how you get the 89.

2 Q. Okay. So is there -- is there anything  
3 else that you want to add about anything that you've  
4 been asked to testify about here today, Ms. Carle?

5 A. Not that I can think of.

6 COMMISSIONER DAVIS: All right. Thank  
7 you. No further questions.

8 JUDGE WOODRUFF: Commissioner Jarrett?

9 QUESTIONS BY COMMISSIONER JARRETT:

10 Q. Just a couple of quick questions. Is it  
11 Staff's position that these enhancements that Staff is  
12 allowing are above and beyond what would have been  
13 there if Taum Sauk hadn't been rebuilt?

14 A. Correct.

15 Q. Okay. And are these enhancements of  
16 benefit -- and is it Staff's position that these  
17 enhancements that would not have been there but for  
18 the Taum Sauk collapse, are a benefit to ratepayers?

19 A. Yes.

20 Q. And I just wanted to clarify, I think you  
21 mentioned Mr. Gilbert a few times?

22 A. Uh-huh.

23 Q. He's the engineer that worked -- worked  
24 on this case?

25 A. Yes.

1 Q. And did you work fairly closely with him?

2 A. Yes.

3 Q. So you got the engineering perspective  
4 from him and then you did your number crunching?

5 A. Yes.

6 COMMISSIONER JARRETT: All right. Thank  
7 you. Appreciate it.

8 JUDGE WOODRUFF: Commissioner Kenney?

9 COMMISSIONER KENNEY: I don't have any  
10 questions. Thank you very much.

11 JUDGE WOODRUFF: All right. Then we'll  
12 move to recross based on questions from the bench  
13 beginning with Ameren?

14 MR. BYRNE: None, your Honor.

15 JUDGE WOODRUFF: AARP?

16 MR. COFFMAN: No, thank you.

17 JUDGE WOODRUFF: Public Counsel?

18 MR. MILLS: Yeah, just briefly.

19 RECROSS-EXAMINATION BY MR. MILLS:

20 Q. You talked with Commissioner Davis about  
21 the insurance proceeds. Do you believe that the --  
22 the 90 -- THE \$89 million cap, does that include  
23 payment by UE of the \$15 million deductible?

24 A. No, it does not.

25 Q. Do you believe that -- well, strike that.

1                   MR. MILLS: That's all the questions I  
2 have. Thank you.

3                   JUDGE WOODRUFF: Redirect?

4                   MS. KLIETHERMES: Thank you.

5 REDIRECT EXAMINATION BY MS. KLIETHERMES:

6           Q.     You had some discussions with Mr. Mills  
7 about the percentages of invoices you reviewed. Do  
8 you know how many numerically invoices you reviewed?

9           A.     It was approximately 1,400.

10          Q.     Referring to your table on page 17, you  
11 had some discussion with Mr. Mills about that. Did  
12 you discuss each of the items listed on that table  
13 with Mr. Gilbert?

14          A.     Yes.

15          Q.     And how did those discussions go?

16          A.     I believe it was actually in an e-mail.  
17 I sent him an e-mail asking him to review these and if  
18 they were reasonable -- if he saw anything  
19 unreasonable or imprudent I believe was similarly  
20 worded to that.

21          Q.     And did you have subsequent discussions  
22 with him or discussions with him throughout the  
23 process that any -- any follow-up questions, if  
24 necessary, anything --

25          A.     Yes.

1           Q.     Also in regards to that, during your  
2     discussion with Mr. Mills, I was a bit confused by  
3     some terminology you used. You referred to the  
4     foundation and you referred to it as the bottom. And  
5     just looking at the sentence that follows the table,  
6     were you referring to the foundation as an additional  
7     enhancement or were you referring to the cementitious  
8     bottom as an enhancement or both?

9           A.     I'd say they're both considered  
10    enhancements so --

11          Q.     It's just the -- why -- why are not both  
12    listed as -- as discrete elements of that 89 then?

13          A.     Well, foundation I think is the same as a  
14    reservoir floor, bottom. And then --

15          Q.     Do you know how much the cementitious  
16    floor cost?

17          A.     I don't know the exact number.

18          Q.     Is it in one of your schedules or in one  
19    of Mr. Birk's schedules?

20          A.     It may be. Not that I have up here with  
21    me though.

22          Q.     To your recollection, is it more than  
23    23 million -- or I'm sorry, is it more than whatever  
24    89 minus 66 is?

25          A.     I can't say for sure.

1           Q.     And then in your discussion with  
2     Commissioner Davis, you referred to the total cost  
3     minus the insurance as being the basis for Staff's  
4     cap. Does that total cost include the fees, fines,  
5     penalties or any of the other items that are listed on  
6     page 7 of the -- of the Staff's report?

7           A.     No, it does not.

8           Q.     So Staff did not consider those elements  
9     in its valuation of the rebuild?

10          A.     No.

11                 MS. KLIETHERMES:   That's all I have.

12     Thank you.

13                 JUDGE WOODRUFF:   All right. And,

14     Ms. Carle, you can step down.

15                 THE WITNESS:   All right. Thank you.

16                 JUDGE WOODRUFF:   Call your next witness.

17                 MS. KLIETHERMES:   Staff calls Mr. Guy

18     Gilbert.

19                         (Staff Exhibit Nos. 211 and 212 were  
20     marked for identification.)

21                 JUDGE WOODRUFF:   Good afternoon,

22     Mr. Gilbert.

23                         (Witness sworn.)

24                 JUDGE WOODRUFF:   You may inquire.

25     GUY GILBERT testified as follows:

1 DIRECT EXAMINATION BY MS. KLIETHERMES:

2 Q. Good afternoon, Mr. Gilbert.

3 A. Good afternoon.

4 Q. Could you please state and spell your  
5 name for the record.

6 A. Guy Gilbert, G-u-y G-i-l-b-e-r-t.

7 Q. And are you the same Guy Gilbert who  
8 submitted rebuttal and surrebuttal testimony in this  
9 matter?

10 A. I am.

11 Q. I believe your rebuttal has been  
12 premarked as Exhibit 211, your surrebuttal as 212.  
13 Does that sound correct?

14 A. It does.

15 Q. And did you author the section of the  
16 Staff's Cost of Service Report, Exhibit 201-HC and NP,  
17 which dealt with depreciation?

18 A. Yes.

19 Q. Did you compile or create appendices to  
20 the various report and testimonies, including your  
21 credentials?

22 A. I did.

23 Q. And did you co-author the Staff's Taum  
24 Sauk Construction Audit and Prudence Review marked as  
25 203-HC and NP?



1           A.     Yes.

2           Q.     Do you have any corrections to make to  
3 any of those documents?

4           A.     Not that I'm aware of.

5           Q.     And if I were to ask you today the same  
6 questions or to draft the same reports, would the  
7 product be the same?

8           A.     It would.

9                   MS. KLIETHERMES:   Judge, I don't believe  
10 that Mr. Gilbert is slated to take the stand on any of  
11 the depreciation issues, so would you prefer that I  
12 offer all of his testimony at this time or only that  
13 pertaining to Taum Sauk?

14                   JUDGE WOODRUFF:   Just go ahead and offer  
15 it all.

16                   MS. KLIETHERMES:   With that, I offer all  
17 of Mr. Gilbert's -- I believe that's -- rebuttal is  
18 211; surrebuttal, 212; his sections of cost of service  
19 report, 201; and the entire -- or the remainder of the  
20 Taum Sauk Construction Audit and Prudence Review,  
21 203-HC and NP.

22                   JUDGE WOODRUFF:   211, 212, the remaining  
23 portion of 203 and a portion of 201 have been offered  
24 into evidence.  Is there any objections to their  
25 receipt?

1                   Hearing none, they will be received.

2                   (Staff Exhibit Nos. 203, 211, 212 and a  
3                   portion of 201 were received into evidence.)

4                   MS. KLIETHERMES: I tender the witness  
5                   for cross.

6                   JUDGE WOODRUFF: And for  
7                   cross-examination we begin with Ameren.

8                   MR. BYRNE: Thank you.

9                   CROSS-EXAMINATION BY MR. BYRNE:

10                  Q.     Good afternoon, Mr. Gilbert.

11                  A.     Good afternoon.

12                  Q.     I notice on your affidavit you have  
13                  initials after your name MS, PE, and RG. And I was  
14                  just wondering if you could tell me what each of those  
15                  stand for?

16                  A.     MS is master of science in technical  
17                  education. PE is professional engineer's designation.  
18                  And RG is a registered engineer's des-- or excuse me,  
19                  registered geologist designation.

20                  Q.     And what kind of an engineer are you?

21                  A.     Mining engineer.

22                  Q.     Mining engineer. How long have you been  
23                  an engineer?

24                  A.     I passed the PE examination in 1997.

25                  Q.     Okay. And my understanding is you've

1       been involved in -- with the Taum Sauk plant for quite  
2       a while; is that true?

3             A.       Since the failure.

4             Q.       Okay.  And what all have you done --  
5       before you testified in this case, what all have you  
6       done at the Taum Sauk plant?

7             A.       Well, this is the first time I've  
8       testified with respect to -- so I went and represented  
9       Staff with Leon Bender the day following the failure.  
10       We made some observations, took some photographs, came  
11       back, produced a report, briefed the Commissioners on  
12       it.  Monitored the document requests submitted by the  
13       FERC.  Submitted document requests on behalf of the  
14       Staff.  Reviewed those materials.

15                 Followed the process through the 474 case  
16       that was mentioned earlier.  And then probably about  
17       the -- the late summer of '08, I think near the  
18       beginning of construction, began attending the  
19       quarterly construction meetings and monitoring the  
20       progress of the construction of the new upper  
21       reservoir and also monitored the enhancements being  
22       made at the power site.

23             Q.       How many times do you think you've been  
24       up to the Taum Sauk upper reservoir since the failure?

25             A.       I think I've written 19 reports and

1 probably had a couple other visits that I didn't  
2 document.

3 Q. Have you -- did you attend any of the  
4 Board of Consultants meetings?

5 A. Those would be the 19 that I wrote  
6 reports on.

7 Q. Okay. And I think you just said that you  
8 examined some of the enhancements. Can you tell me a  
9 little bit more about that?

10 MR. MILLS: Judge, I'm going to object to  
11 this as improper supplemental direct testimony. It's  
12 friendly cross. It's simply offering him the  
13 opportunity to supplement what he's got in his direct  
14 testimony and it's done at a point in the hearing  
15 which I have no meaningful opportunity to file  
16 responsive testimony. So that's the very nature of  
17 friendly cross. He's trying to give this witness  
18 softball questions to allow him to bolster his direct  
19 testimony and I object to it on that basis.

20 MR. BYRNE: We've made similar objections  
21 in the past that have been consistently overruled.  
22 This is -- within limits, the Commission does allow  
23 friendly cross and Mr. Mills will have a chance to ask  
24 questions later on.

25 MR. MILLS: I can ask cross-examination

1 questions, but this is all direct testimony. We're  
2 way past the stage of direct testimony and what are  
3 your qualifications and what meetings did you go to.

4 To -- to get additional information on  
5 that without the opportunity for me to conduct  
6 discovery on it, without the opportunity to do  
7 responsive testimony on it, it's in violation of the  
8 Commission's rules and it's in violation of due  
9 process and it deprives me of the ability to have --  
10 to have a fair hearing.

11 JUDGE WOODRUFF: Mr. Coffman, you also  
12 want to be heard?

13 MR. COFFMAN: I would join in that  
14 objection. I don't like using the term "friendly  
15 cross" because I don't think it's a proper objection.  
16 I think the -- the proper way to phrase it is improper  
17 direct testimony. And I think you can tell by the  
18 last few questions that they are open-ended and "what  
19 else can you tell me" type of questions; whereas,  
20 cross-examination questions are adverse.

21 MR. BYRNE: Your Honor, again, there's  
22 no -- Mr. Coffman's exactly right. An objection to  
23 friendly cross is not a proper objection. Frankly,  
24 I've found that out by making it more than once and  
25 getting it denied in -- in front of you.

1                   You know, I -- within limits the  
2 Commission allows this. And I'm asking him about  
3 specific things in his testimony and specific things  
4 that he did to develop this testimony and I think it's  
5 proper cross-examination.

6                   JUDGE WOODRUFF: I'm going to overrule  
7 the objection. If there's a question pending, you can  
8 answer it. If not, ask your next question.

9 BY MR. BYRNE:

10                  Q. I think I -- let me try to rephrase the  
11 question I was asking you. I think in response to a  
12 previous question you said that you examined some of  
13 the enhancements at the Taum Sauk upper reservoir.  
14 Could you please explain what you mean by that?

15                  MR. MILLS: And, Judge, for the record,  
16 can I lodge a continuing objection?

17                  JUDGE WOODRUFF: You may.

18                  MR. MILLS: Thank you.

19                  THE WITNESS: As we discussed earlier in  
20 Ms. Carle's testimony at page 17, there's a table of  
21 enhancements. And those are probably some of the  
22 largest things that we observed during the process of  
23 the rebuild of the upper reservoir.

24 BY MR. BYRNE:

25                  Q. Did you watch those enhancements being

1 built?

2 A. Yeah. We were well involved in each of  
3 these processes and the decision of whether or not  
4 these enhancements needed to be made and what the  
5 benefit to be derived from -- of each would be.

6 We looked at the foundation. It was an  
7 extremely thorough geologic review as far as the upper  
8 reservoir, the construction of that. And this all  
9 kind of goes together as a system really. The upper  
10 reservoir is the roller-compacted concrete structure  
11 that went upon the foundation that was talked about.  
12 We discussed the mix designs and -- well, I didn't  
13 discuss; I monitored. But there -- discussion was  
14 made of the mix designs and the parameters during  
15 which the materials could be placed.

16 Piezometers were put in place as part of  
17 just a surety in the process of construction and then  
18 for further monitoring. I might add that probably  
19 also under that were temperature monitoring just to  
20 make sure that the heat hydration of the concrete  
21 didn't stray above or below boundaries.

22 The additional level controlling for  
23 instrumentation, we attended a special meeting I  
24 believe a day in advance for that -- in advance of one  
25 of these quarterly meetings. Security cameras I think

1 are self-explanatory. Toured and observed the gallery  
2 power and instrumentation several times. And the  
3 gallery, which was a structure designed as part of  
4 this dam, which is a gravity dam to monitor the  
5 hydrogeologic pressures below it so it wouldn't,  
6 quote, float away, if you will.

7 We observed the construction of the  
8 over-- overflow release structure and stilling basin,  
9 monitored the construction -- or monitored the design  
10 and placement of the grout curtain. We were there for  
11 the decision of the PVC water stops, we were there for  
12 the cementations floor that was placed in and about  
13 the interior perimeter of the dam, the upstream side.

14 Let's see. Crest to gallery foundation  
15 and drains. Again, that's just part of the hydraulic  
16 control and monitoring for this gravity structure.  
17 Toured the crest concrete roadway and guardrail.  
18 Toured the instrument house on more than one occasion.  
19 I mean this was a monitoring thing.

20 So typically we'd meet, we'd go into the  
21 field, we'd review whatever the topics of the day  
22 were. Come back in, have some additional discussion  
23 and then either adjourn for the day or meet again  
24 later if there were additional items to be reviewed.

25 I observed the gallery vehicle, noted the



1 rain dike. And probably a very important thing is the  
2 bollards and survey monuments which are there to allow  
3 surveying of the structure to make sure that it or the  
4 mountain isn't moving.

5 Q. Mr. Gilbert, what were the geological  
6 considerations that went into the foundation work?

7 A. On the rebuild?

8 Q. Yes.

9 A. On the rebuild, essentially what they did  
10 was unlike with the original construction of the upper  
11 reservoir, they took the m-- the foundation area,  
12 which is actually the perimeter below the ring dike,  
13 they took it down to bedrock, marked it off into  
14 ten-by-ten square foot sections, if I recall  
15 correctly, brought in licensed geologists such as  
16 myself who then would map the structure within that  
17 100-square foot area and make recommendations.

18 In instances where there was extra  
19 concern, they would bore holes and lower cameras so  
20 that they could get a better picture of any anomalies  
21 that might exist below the foundation and present  
22 problems later on.

23 Q. And do you believe that the foundation of  
24 the new reservoir is a substantial enhancement over  
25 the old reservoir's foundation?

1 A. No comparison.

2 Q. Do you agree with Dr. Rizzo that the  
3 current -- the current upper reservoir is built to  
4 modern seismic standards?

5 A. Yes. That's part of the monolithic --  
6 the nature of having the nine separate monoliths.

7 Q. Do you believe the new upper reservoir is  
8 significantly safer than the old upper reservoir was?

9 A. Yes.

10 Q. Do you know what material the new upper  
11 reservoir is made out of?

12 MR. MILLS: Judge, here I'm going pose an  
13 additional objection because this is just repetitious  
14 now. Not only is it bolstering his direct testimony,  
15 but it's repeating what he's already testified to.

16 MR. BYRNE: I don't believe he has  
17 already testified to this, but if Mr. Mills can cite  
18 me to it, I'll withdraw the question

19 JUDGE WOODRUFF: Mr. Mills, are you  
20 talking about in his report?

21 MR. MILLS: Yes.

22 JUDGE WOODRUFF: I'm going to overrule  
23 the objection.

24 BY MR. BYRNE:

25 Q. Do you know what material the new upper

1 reservoir is made out of?

2 A. The upper mat-- upper reservoir is  
3 primarily constructed of the material from which the  
4 old structure consisted of. Basically they brought in  
5 a aggregate and concrete processing facility, mined  
6 out the material of the existing dike. Sorted, sized,  
7 ground, cleaned and stockpiled into its various  
8 constituents.

9 Brought in Portland cement and recovered  
10 ash from Meramec ash pond, which was used -- which was  
11 ash from the burning of the air in Illinois No. 6 coal  
12 that has certain pozzolanic properties that are  
13 beneficial for slow rate of cure concrete, which is  
14 what they wanted in the roller-compacted concrete  
15 structure.

16 Arrived at mix designs, did various  
17 testing of the materials. They constructed a model  
18 first just to make sure that all of these things would  
19 work and then began to lay down in various monuments  
20 the -- or re-lay, if you will, the material from the  
21 original dike into the second dike with certain  
22 additives that I've touched on.

23 Q. Do you believe that the material that the  
24 new upper reservoir is made out of is better than the  
25 material that the old upper reservoir was made out of?

1           A.     It's essentially a homogenous  
2     structure -- or homogenous structure with limestone  
3     concrete sheathing of approximately I think three feet  
4     on the inside and a couple feet on the outside.  And  
5     so it's -- it's going to be considerably more robust  
6     then stacked rocks with concrete slabs.

7           Q.     Mr. Rizzo has testified that he estimates  
8     that the new -- new upper reservoir has -- has a life  
9     of at least 80 years.  Do you agree with that or  
10    disagree with that?

11          A.     I wouldn't doubt that in the least.

12          Q.     Okay.  Do you believe a longer life is an  
13    enhancement?

14          A.     Yeah.  Of benefit, uh-huh.

15                 MR. BYRNE:  Thank you, Mr. Gilbert.

16                 JUDGE WOODRUFF:  Move over to AARP for  
17    cross?

18                 MR. COFFMAN:  Yes, thank you.

19                 CROSS-EXAMINATION BY MR. COFFMAN:

20          Q.     Good afternoon, Mr. Gilbert.

21          A.     Good afternoon.

22          Q.     Would the rebuild of the Taum Sauk upper  
23    reservoir have occurred had the original Taum Sauk  
24    reservoir been destroyed?

25          A.     I don't know.

1           Q.     You don't have any evidence that suggests  
2     that by 2011, absent the disaster, there would have  
3     been any rebuild, do you?

4           A.     No.

5           Q.     If you had to guess, would you say it  
6     would be rather unlikely that a rebuild of this type  
7     would have occurred by 2011 absent the disaster?

8                   MS. KLIETHERMES:  Objection, calls for  
9     speculation.

10                   JUDGE WOODRUFF:  I'll sustain that.

11     BY MR. COFFMAN:

12           Q.     Would you agree with me that for a  
13     rebuild to have occurred, the original Taum Sauk  
14     reservoir would have to be taken apart or -- or  
15     destroyed?

16           A.     I mean I -- I think Dr. Rizzo pointed to  
17     it earlier.  You know, there probably were some  
18     modifications that could be made, but from an economic  
19     standpoint, I think a rebuild would be in order.

20           Q.     Well, from an economic perspective, given  
21     the rebuild that did occur, would you agree with me  
22     that AmerenUE is going to be in a better economic  
23     position since -- because of the disaster and the fact  
24     that it was able to rebuild a state-of-the-art  
25     facility in the condition that it was rebuilt?

1           A.     As will the ratepayers.

2           Q.     And exactly how are the ratepayers better  
3     off --

4           A.     Well, I think everybody --

5           Q.     -- if your recommendation is adopted?

6           A.     I think everybody benefits from the  
7     rebuild. I think, as I pointed out in my testimony,  
8     you've got an enhanced structure that obviously costs  
9     almost \$500 million, half a billion dollars for about  
10    20 cents on the dollar. We now have far superior  
11    safety for the part that exists on Johnson Shut-Ins.  
12    And actually there were, in my observations -- we go  
13    down there too and take a look, they have enhanced  
14    those facilities greatly so and added an  
15    interpretative center as a result of this. From a  
16    geologic standpoint, it's actually become something of  
17    a sur-- tourist attraction to look at the scour area.

18                    But with respect to the enhancements of  
19    the upper reservoir, it's not just the safety  
20    characteristics, but I think the additional capacity  
21    that was spoke about earlier today and just the robust  
22    nature of the facility that benefits everyone.

23           Q.     And do you know how much additional  
24    capacity this rebuild provides?

25           A.     In -- in my testimony I took a more

1 broad-based approach to it and kind of leaned on some  
2 of Mr. Birk's numbers. But I came up with around  
3 54,000-some megawatt hours of additional capacity in a  
4 calendar year.

5 Now, that's going to vary quite a bit  
6 upon during the time of year and how many cycles  
7 they'd actually run the structure through. I believe  
8 my math was just based upon one cycle; in other words,  
9 one pump down, one fill up per day.

10 Q. In the Staff's initial incident report in  
11 2007 --

12 A. Yes.

13 Q. -- did you author that report or were you  
14 a primary contributor?

15 A. I was a resource.

16 Q. Okay. Do you -- as you sit here today,  
17 do you stand by every conclusion in that report?

18 A. I -- I'd really have to review it for  
19 that. I know I didn't have any objections at the time  
20 and I can't imagine, you know, what challenges there  
21 would be.

22 Q. Did you -- did you review that report in  
23 preparation for your -- of your testimony in this  
24 case?

25 A. Not really. I thumbed through it.

1 Q. Did you not consider it relevant?

2 A. Well, it's -- it was more -- in my --  
3 from my perspective, it was more review of the  
4 responsibility of, you know, what -- what actually  
5 happened in that accident and what actions should be  
6 taken as a result of it. This part of the rate case  
7 is, okay, we're -- they've now made the investment  
8 so --

9 Q. Did --

10 A. I didn't tie one to the other, no.

11 Q. Are you of the opinion if a utility  
12 builds something and it's providing benefit to  
13 consumers, that it should be included in the rate-base  
14 no matter how it came to be?

15 A. No.

16 Q. Given the very poor state of the  
17 construction of the original Taum Sauk reservoir, do  
18 you have an opinion about whether ratepayers were  
19 perhaps overpaying for the original reservoir? Or  
20 stated another way, was that overvalued in rate-base  
21 at that time?

22 A. No. I don't believe so. I mean, the  
23 company got the bills, the company paid the bills, the  
24 company put the capital in rate-base.

25 Q. Did you -- in developing your testimony



1 in this case, did you take into account the --  
2 AmerenUE's commitment that ratepayers would be held  
3 harmless from the disaster?

4 A. I did.

5 Q. And in what way did you take that into  
6 account?

7 A. As -- well, there's -- there's rebuild or  
8 replace versus rebuilding with something more. And I  
9 think when they added the additional safety features  
10 that were more or less a requirement under the FERC's  
11 guidance -- and again, Dr. Rizzo kind of spoke about  
12 the process that I observed at those quarterly  
13 meetings. They had a lot of direction on what was  
14 going to be required to -- to rebuild this facility in  
15 such a way that it meant -- met the safety  
16 requirements of the FERC.

17 Q. Wouldn't you agree with me that if your  
18 recommendation is accepted, that ratepayers will be  
19 paying higher rates than they otherwise would have  
20 without the intervening disaster -- than they would  
21 have, you know, in 2011 had no disaster occurred?

22 A. I -- I -- I think, you know, you always  
23 need to measure the benefits that -- that you get from  
24 the additional investment. So yes, they will be  
25 paying higher rates and reaping additional benefits.

1                   MR. COFFMAN: Thank you. That's all I  
2 have.

3                   JUDGE WOODRUFF: Public Counsel?

4                   MR. MILLS: Thank you.

5 CROSS-EXAMINATION BY MR. MILLS:

6                   Q.     The -- the -- the report that's titled  
7 Staff's Construction Audit and Prudence Review of Taum  
8 Sauk Project, do you have a copy of that?

9                   A.     Yes, I do.

10                  Q.     Were you involved in both aspects; that  
11 is, the construction audit aspect and the prudence  
12 review aspect of this report?

13                  A.     With the extent that I provided technical  
14 consultation to the auditors, I would say I was  
15 involved in the prudence review for that aspect. From  
16 the engineering or the construction standpoint, I  
17 monitored the prudence review as conducted by the  
18 various parties that the FERC had Ameren bring  
19 together for that process.

20                         So there were -- I guess I'm talking  
21 about two kinds of prudence, a dollar prudence and an  
22 engineering prudence.

23                  Q.     Okay. Which of those does Staff's report  
24 cover?

25                  A.     Both.

1           Q.     Okay.  And -- okay.  But the -- the  
2     various parties that the FERC brought in were not  
3     involved in drafting the Staff report?

4           A.     No.

5           Q.     Okay.  In terms of your involvement, did  
6     you review any invoices or change orders?

7           A.     Not from a dollar standpoint.  I did  
8     review the monthly and quarterly production reports  
9     and looked at where, for instance, some concrete pours  
10    may not have met grade and had to be removed.  And  
11    also the testing and -- and things of that nature that  
12    went into the construction of the monoliths.

13          Q.     Okay.  Were there concrete pours that had  
14    to be removed?

15          A.     There were.

16          Q.     And are the costs of those re-pours  
17    included in the recommendation that Staff has made for  
18    rate-base in this case?

19          A.     I would expect so.

20          Q.     Okay.  In fact, did Staff recommend any  
21    of the costs that you reviewed for disallowance?

22          A.     I don't believe so.

23          Q.     When you say "I don't believe so" as  
24    opposed to no, is that a -- is that a -- is there -- I  
25    mean is there a difference there?

1           A.     There may be. I don't know what  
2     disallowances Ms. Carle had, but it was essentially a  
3     cost-plus project. So even if you had a bad batch of  
4     concrete, for instance, or, you know, a truck got a  
5     flat tire, the concrete sat on it too long before they  
6     could use it, in a 3 million -- 3 million cubic yard  
7     job, those things happen.

8           Q.     Okay. Did you make any determination as  
9     to whether it was a wise choice to enter into this  
10    project as a cost-plus contract?

11          A.     I believe Ms. Carle participated me  
12    with -- in -- with -- in a telephonic conversation  
13    with Mr. Birk and some other individuals. And  
14    basically we reviewed, you know, why didn't you have  
15    any competitive bids?

16                   And basically with an unknown where  
17    you're going to be rebuilding the top of a mountain  
18    into a concrete dam, nobody wanted -- nobody of --  
19    what do I want to say -- competence maybe wanted to  
20    take that on just like, yeah, we'll do it for  
21    2 million -- 2 billion dollars. So the only thing  
22    they really could get from any trusted contractors,  
23    any contractors experienced with that size of a job  
24    was the cost-plus basis was my understanding.

25          Q.     And so from your perspective, that was a

1 prudent choice?

2 A. Yes.

3 Q. Now, how many -- how many discussions did  
4 you have with Ms. Carle about the table that appears  
5 on page 17 of the Taum Sauk report?

6 A. I think initially she -- well, first we  
7 had a couple of telephone conversations. And I think  
8 Roberta Grissom might have introduced me to Carle. We  
9 hadn't worked together before -- or Ms. Carle, I'm  
10 sorry.

11 And then I -- based upon that phone  
12 conversation, I came kind -- I came up with a list of  
13 the high points of the project off the top of my head  
14 that I could recall and sent that to her and said,  
15 These will probably be some of the large dollar items  
16 that you'll see come through as you conduct your  
17 audit.

18 And then she would have various questions  
19 and we had various meetings too where a number of the  
20 people on the project would get together with  
21 Mr. Rackers and such and just discuss where we were  
22 at.

23 Q. Okay. Did you have conversations with  
24 her, for example, about what a grout curtain is?

25 A. Probably.

1           Q.     Okay. Did you explain to her what to  
2 look for in terms of reviewing invoices for work done  
3 on the grout curtain?

4           A.     Not specifically that I recall, no.

5           Q.     Do you know what standard she used to  
6 identify whether invoices for work on the grout  
7 curtain --

8           A.     I did not.

9           Q.     -- should be included?

10          Q.     Okay. So to the extent that you had  
11 discussions with her about particular invoices,  
12 what -- what were those discussions?

13          A.     What -- what is this and what's it used  
14 for and it's probably going to be one of the larger  
15 dollar items.

16          Q.     Okay. All right. Did -- did you have  
17 any involvement in creating or reviewing the table on  
18 page 17?

19          A.     I'd have to check back in my e-mail, but  
20 possibly the very first column there on the left-hand  
21 side, those -- those names.

22          Q.     The descriptions?

23          A.     Yeah.

24          Q.     Okay. Did you have any role in  
25 categorizing things as discrete enhancements?

1           A.     No.

2           Q.     Okay.  Did you form -- in the course  
3     of -- of your role in the audit, did you make any  
4     judgments as to what constitutes enhancements?

5           A.     Well, again, I kind of view one of these  
6     things as a -- a dam as a system.  And once you make a  
7     choice of the type of dam that you're going to put in  
8     place, which I reviewed documents that Ameren had  
9     received from Paul Rizzo and Associates in I believe  
10    it was April of 2006.

11                    They had a number of selection of dam  
12    structures that they proposed to use to replace the  
13    upper reservoir because it was determined after the  
14    breach of the upper reservoir that really a rebuild or  
15    repair wasn't -- wasn't appropriate.  And they looked  
16    at a number of types of replacements.  And ultimately,  
17    without having reviewed every bit of communication,  
18    arrived at the roller-compacted concrete with  
19    conventional concrete sheathing, gravity dam.

20           Q.     My question was, did you have -- did you  
21    come to form conclusions about whether any of these  
22    constitute enhancements?

23           A.     No.  I mean -- well, I'm not sure I know  
24    what your question is.  These are the types of things  
25    that you would include with that type of dam, with the

1 exception of the security issues and things of that  
2 nature.

3 Q. And do you have an opinion as to whether  
4 or not any of these constitute enhancements?

5 A. Yes.

6 Q. Okay. Do you have -- and do they all  
7 constitute enhancements?

8 A. Yes.

9 Q. Okay. Do you have an opinion as to  
10 whether or not they constitute discrete enhancements?

11 A. There were probably -- well, I don't  
12 know. Yeah, they're discrete.

13 Q. Okay. And how do you define discrete  
14 enhancements?

15 A. As a separate system or separate  
16 component of the system. In other words, at one of  
17 our meetings we had a discussion about the cracking  
18 that appeared in the interior face -- the upstream  
19 face of the reservoir. And at that time a discussion  
20 was made to add additional water stops.

21 Q. Okay. Were you here for the testimony of  
22 Mr. Birk?

23 A. Yes.

24 Q. Okay. And again, I'm going to be  
25 paraphrasing his testimony, but I believe he defined



1 discrete enhancements as items that weren't included  
2 in the original Taum Sauk upper reservoir structure.  
3 Is that different from the way you define the term  
4 "discrete enhancements"?

5 A. No. That's -- that's true for all of  
6 these items.

7 Q. Okay. So it's your testimony that there  
8 was not a grout curtain on the old Taum Sauk upper  
9 reservoir?

10 A. There was a partial grout curtain at the  
11 northwest corner.

12 Q. Okay. And how -- how does a -- this  
13 grout curtain qualify as a discrete enhancement if  
14 there was already a partial grout curtain?

15 A. Well, the partial drought curtain was  
16 probably at a different location. I don't know  
17 exactly where it was, but 200 feet is a pretty small  
18 area and -- given the whole perimeter of the upper  
19 reservoir.

20 And this grout curtain was designed to  
21 act as a sys-- a system, actually a shield of the base  
22 of the ring dike in the interior perimeter of holes  
23 drilled in different patterns depending upon the  
24 geology to seal any water from seeping under the  
25 immediate area below the foundation of the dam.

1           Q.     Was the original grout curtain later  
2     expanded?

3           A.     I don't recall.

4           Q.     Would that make a difference to your  
5     determination as to whether the grout curtain that's  
6     included on this list of discrete enhancements was a  
7     discrete enhancement?

8           A.     The -- the original grout curtain as  
9     installed has no comparison from a control standpoint  
10    to me that the purpose of this grout curtain has.

11                   This protects the entire interior  
12    perimeter; whereas that was -- I think they call it  
13    the bird pond or something where the area actually  
14    kind of dipped off and it was the highest part of the  
15    dam, as Dr. Rizzo had mentioned. It was an attempt to  
16    go subgrade and bolster that part of the dam.

17           Q.     So it's the extent of the grout curtain  
18    in the new structure as opposed -- as -- as compared  
19    to the extent of the grout curtain in the old  
20    structure; is that correct?

21           A.     Well, this was installed as a system.  
22    That was installed as a patch. There was a decision  
23    made to install a grout curtain in the new upper  
24    reservoir. Whereas, I wasn't involved with the  
25    decisions at the old reservoir, but reading the

1 history of the problems they had, it's like, Will this  
2 patch work? Let's try it.

3 Q. Now, you've mentioned several times the  
4 discussion about how to -- how to construct the -- the  
5 new upper reservoir; is that correct?

6 A. Uh-huh.

7 Q. Were you involved in the discussions  
8 about how to construct the upper reservoir as part of  
9 the -- the BOC?

10 A. I didn't recommend anything. I was an  
11 observer.

12 Q. So you never spoke at those meetings?

13 A. Not with respect to design criteria.

14 Q. What -- what -- what was your speaking  
15 role at those discussions?

16 A. Observer.

17 Q. Okay. Did you -- did you speak at these  
18 meetings?

19 A. Sure. Just conversational.

20 Q. Okay. So nothing having to do with  
21 the -- with the substance of the discussions?

22 A. Right. I didn't make recommendations as  
23 to the grout mixture, what the pressure to put the  
24 grout in -- mixture into the grout curtain should be.

25 Q. And I'm -- my question is -- is broader

1 than just the grout curtain. I'm talking about all  
2 the discussions.

3 A. That's correct.

4 Q. So your answer would be the same with  
5 respect to all of the discussions?

6 A. There was one instance where I spoke to  
7 the FERC regarding the penstock tunnel and my concerns  
8 about a lateral slip that was there. And we went back  
9 and reviewed the geologic maps and discussed it and  
10 noted that there was apparently some confusion on the  
11 part of geologists with respect to that. And the FERC  
12 noted it and that was pretty much it.

13 Q. Was any change in the -- in the design or  
14 structure --

15 A. No.

16 Q. -- result from that?

17 Okay. Now, with respect to the question  
18 of whether the -- the foundation is a discrete  
19 enhancement or not, is it your understanding -- well,  
20 do you believe that the old Taum Sauk upper reservoir  
21 had a foundation?

22 A. On my review at the area of failure, I  
23 found carbonized vegetation, which indicated to me  
24 that materials had simply been bulldozed over and  
25 allowed to sit and then had additional materials

1 placed on top of them. So, you know, a foundation can  
2 be subjective. Based upon the evidence I found, I  
3 would say it didn't have a foundation.

4 Q. Okay. Do you know whether the original  
5 design called for a foundation?

6 A. There were specifications that the  
7 surface of the mountain was to be stripped to bedrock  
8 and washed.

9 Q. Okay. And from your observation, was  
10 that done?

11 A. Not if I was finding carbonized  
12 vegetation on top of dirt.

13 MR. MILLS: Nothing further. Thank you.

14 JUDGE WOODRUFF: All right. Questions  
15 from the bench then, Commissioner Clayton?

16 COMMISSIONER CLAYTON: No questions,  
17 thank you.

18 JUDGE WOODRUFF: Commissioner Davis?

19 QUESTIONS BY COMMISSIONER DAVIS:

20 Q. Good morning -- or good afternoon,  
21 Mr. Gilbert.

22 A. Good afternoon, Commissioner.

23 Q. Mr. Gilbert, I'm going to go off  
24 hopefully not too far on a tangent here, but I've got  
25 some questions that -- that I really feel compelled to

1 ask you. It looks like that -- that you worked very  
2 closely with -- with Ms. Carle to perform this  
3 prudence audit; is -- is that correct?

4 A. As close as I ever work with the  
5 accountants, yes.

6 Q. Okay. And did you conduct this audit in  
7 accordance with -- with this internal policy that  
8 Staff has -- has had for conducting prudence audits?

9 A. No.

10 Q. No. So that was -- that was abolished?

11 A. I don't know. I -- I originally asked  
12 Ms. Mantle if she would like for me to do the  
13 in-service audit of the Taum Sauk upper reservoir.  
14 And she said, Sure, you know, you've been doing it all  
15 along, do that. I met with Mr. Taylor and Mr. Elliott  
16 and they gave me some guidelines or guidance.

17 And from the engineering perspective of,  
18 you know, what I needed to do, that's the guidance I  
19 had followed in conjunction with just my professional  
20 experience. So that when it came to working on the  
21 accounting side with Ms. Carle, I simply wanted to  
22 provide her with as much insight to what it was they  
23 were doing as I could.

24 Q. Well, I guess -- I guess here's what  
25 doesn't make sense to me, Mr. Gilbert. And you may

1 not know the answer to this and if you don't know,  
2 that's -- that's fine.

3 But it looks like, you know, you worked  
4 very close with Ms. Carle to -- to perform this  
5 prudence audit and there was a -- how do we call it --  
6 a coordinated effort to -- to conduct the prudence  
7 audit in this case, which is in marked contrast to the  
8 way the prudence audit for Iatan 2 was conducted.

9 Can you explain to me why there appears  
10 to be such a difference in prudence audit  
11 methodologies in regard to two different prudence  
12 audits that were almost being conducted  
13 simultaneously?

14 A. Well, neither of us have done one before.

15 Q. All right. Let's see. Going back to  
16 your testimony, page 21 of the prudence audit,  
17 54,500 megawatt hours per year of additional electric  
18 production. Is that --

19 A. I'm sorry. Twenty-one, I've got a  
20 picture in mine unless I'm -- I'm looking at Staff's  
21 construction audit.

22 Q. I'm sorry. Let me go down to the bottom  
23 of my page because I'm reading -- page 19. I'm sorry.

24 A. I'm there.

25 Q. Page 19, line 6. 54,500 megawatt hours

1 per year of additional electric production; is that  
2 correct?

3 A. Yes.

4 Q. Is that -- is that -- do you think that's  
5 a benefit to the ratepayers?

6 A. I do.

7 Q. And -- and from your perspective as a --  
8 as a Commission Staff, I mean you're okay with paying  
9 an additional \$90 million -- or 89 million and some  
10 change roughly to have that additional 54,500 megawatt  
11 hours per year of electric production, are you not?

12 A. And the -- and the added safety and  
13 system enhancements.

14 Q. Right. As well as the fact that this  
15 is -- this unit's going to have a much longer use of  
16 life --

17 A. It will.

18 Q. -- as well?

19 And -- and these costs are going to be  
20 pretty much fixed from -- from now on?

21 A. Largely so, yes.

22 Q. Do you know what -- if we were going to  
23 calculate it out, do you know what the -- this  
24 installed capacity would cost on a per kilowatt basis?

25 A. It would take me a few minutes to do a



1 back of the envelope. I just looked at basically as a  
2 revenue stream based upon the energy.

3 Q. Okay.

4 A. And that sells for a band, so --

5 Q. And what is that band, do you know?

6 A. Well, I think when I first looked into  
7 it, the MISO was as low as \$2 and I imagine during  
8 peak periods -- I've heard \$80, but that's really not  
9 my field, so --

10 Q. Okay. And could you -- could you make  
11 that back-of-the-envelope calculation for me?

12 A. If I base it on \$1,000 a megawatt  
13 installed -- or a kilowatt, I'm going to say  
14 125 million. But that would really be subject to  
15 check.

16 Q. Right. And what the company -- or what  
17 your -- what Staff is recommending here and what  
18 Ameren's really not disputing is that we're -- they're  
19 only seeking 89 million. Correct?

20 A. That's my understanding.

21 Q. And do you have any opinion as to whether  
22 being able to -- to procure that amount on -- you  
23 know, that amount of additional energy for a period of  
24 80 years is a good deal for consumers?

25 A. Yeah. And if I could just add a little

1 bit. In my discussions with Mr. Birk, they basically  
2 had two choices. They could take the insurance  
3 proceeds, which might have been this million dollars  
4 we'll surmise --

5 Q. Uh-huh.

6 A. -- or they could rebuild the structure as  
7 they did and essentially pay the difference. And the  
8 difference that they had to pay for these additional  
9 safety systems and that, you'd have kind of had to be  
10 at these meetings but the FERC does have the golden  
11 glove, as Dr. Rizzo pointed out. So they're very much  
12 in control as these are the requirements, so --

13 Q. Okay. And in your experience, the -- the  
14 Missouri Public Service Commission Staff is not shy  
15 about recommending disallowances, is it?

16 A. We just try to provide the correct  
17 answers.

18 Q. Thank you, Mr. Gilbert.

19 COMMISSIONER DAVIS: Thank you.

20 JUDGE WOODRUFF: Commissioner Jarrett?

21 QUESTIONS BY COMMISSIONER JARRETT:

22 Q. Yeah, Mr. Gilbert. Good afternoon.

23 A. Good afternoon.

24 Q. I want to -- just a quick follow-up  
25 question on Commissioner Davis's line of questioning

1 when he was talking -- talking about construction  
2 audits.

3 If you would have been assigned the  
4 Iatan 2 construction audit, would you have pretty much  
5 conducted yourself the same way as you did in the --  
6 in the Taum Sauk audit, working closely with the  
7 financial auditor to make sure that the engineering  
8 perspective was -- was well represented in the audit?

9 A. Given the time and resources, that's --  
10 would certainly be my intention.

11 Q. Do you know is that the general policy of  
12 the department or is that just your own personal level  
13 of -- of excellence that you try to achieve?

14 A. This is -- this is -- I've been involved  
15 in management audits and a lot of different types of  
16 projects, but I haven't really been involved with this  
17 sort of audit before, so --

18 Q. Well, keep up the good work. I  
19 appreciate it. Thank you.

20 A. Thank you.

21 JUDGE WOODRUFF: Commissioner Kenney?

22 COMMISSIONER KENNEY: No questions.

23 Thank you, sir.

24 THE WITNESS: Thank you.

25 QUESTIONS BY JUDGE WOODRUFF:

1           Q.     All right. I do have one question, for  
2 you, Mr. Gilbert.

3           A.     Yes, sir.

4           Q.     And that is to define a term that's been  
5 used by a couple of witnesses now that's not real  
6 clear. What is a grout curtain?

7           A.     A grout curtain. That is essentially  
8 when you've got broken rock, to use a very general  
9 term, and the Proffit Mountain is very well jointed or  
10 fractured, broken up, cracked, hard rhyolite rike --  
11 rock.

12                    So what they do is they come up with a  
13 plan to drill holes at a concern depth and a certain  
14 spacing, then inspect those holes to see just how  
15 broken up the rock is. Maybe drop some cameras down  
16 there and do some -- some fracture measurement and  
17 things of that nature.

18                    If it's pretty well broken up, they'll  
19 come in and put additional holes in possibly at angles  
20 to develop a lacing. And then you come up with a  
21 grout or a cement mix that has a certain viscosity or  
22 fluidity to it and a certain residence time before it  
23 hardens. And you literally pump these fractures full  
24 of this concrete material that will then harden and  
25 form a solid curtain below the surface to hopefully

1       impede the flow of water underneath the structure or  
2       the foundation of the rain dike dam.

3             Q.     Okay. Thank you very much.

4             A.     Certainly.

5                    JUDGE WOODRUFF: Recross based on  
6       questions from the bench beginning with Ameren?

7             MR. BYRNE: None, your Honor.

8                    JUDGE WOODRUFF: AARP?

9             MR. COFFMAN: No thanks.

10                   JUDGE WOODRUFF: Public Counsel?

11       REXCROSS-EXAMINATION BY MR. MILLS:

12             Q.     First off, can you spell rhyolite for the  
13       court reporter?

14             A.     Maybe I better look it up. R-y-o-l-i--  
15       r-h-y-o-l-i-t-e.

16             Q.     Thank you. In response to a question  
17       from Commissioner Davis about how closely you worked  
18       with Ms. Carle, your answer was "as close as I ever  
19       work with the accountants."

20             A.     Uh-huh.

21             Q.     Can you give me some more background on  
22       what does this mean?

23             A.     Well, this being the first type of this  
24       project I've done an actual prudent audit or the  
25       involvement I've had in the prudent involvement, it

1 would be as close as I work with them. Now, I've also  
2 had some small water cases where we'll be closely  
3 involved with the auditors. And again we try and, you  
4 know, work with them to the extent that both parties  
5 are knowledgeable about the activities in the case.

6 Q. Okay. Now, you testified in response to  
7 a question from Commissioner Davis that neither you  
8 nor Ms. Carle had done a prudence review or a  
9 construction audit; is that correct?

10 A. That's correct.

11 Q. Do you know how the Staffing decision was  
12 made to put two people who had never done a prudence  
13 review or construction audit before on this issue?

14 A. I asked to do it through Ms. Mantle, as I  
15 mentioned earlier. Ms. Grissom introduced me to  
16 Ms. Carle as she would be conducting this. So you'd  
17 have to follow up with either of them, I guess.

18 Q. Okay. So you don't know how the Staffing  
19 decision was made other than you asked to be involved?

20 A. Uh-huh. Yes.

21 MR. MILLS: That's all the questions I  
22 have. Thank you.

23 JUDGE WOODRUFF: Redirect?

24 MS. KLIETHERMES: Thank you.

25 REDIRECT EXAMINATION BY MS. KLIETHERMES:

1 Q. Just picking up where we left off with  
2 Mr. Mills there, do you know how many people on Staff  
3 have done a prudence audit before?

4 A. I do not.

5 Q. Would you -- would that number be more or  
6 less than 20?

7 A. I think part of it's the timeframe you're  
8 talking about.

9 Q. On a -- currently on Staff.

10 A. I'll say probably about 15.

11 Q. What's your title and what are your  
12 normal assignments?

13 A. Utility regulatory engineer two. And I'm  
14 the senior depreciation engineer.

15 Q. And so you normally work with  
16 depreciation; is that correct?

17 A. That's correct.

18 Q. And that's in the services division?

19 A. It is.

20 Q. To clarify a point raised by Mr. Coffman  
21 earlier, is Staff -- does Staff's number include  
22 recovery for either the interpretative center or the  
23 scour as a tourist attraction?

24 A. I don't believe so.

25 Q. Moving onto your discussion with

1 Mr. Mills, is it common in construction to core or  
2 test various concrete pours?

3 A. Oh, yes.

4 Q. Was Ameren's coring practices more or  
5 less rigorous than you would expect?

6 A. They -- they were appropriate.

7 Q. You were asked about your work with Staff  
8 auditors. If you had found an area that you felt  
9 required greater scrutiny, do you believe Staff would  
10 have followed up on that?

11 A. I do.

12 Q. And if you had ultimately recommended a  
13 disallowance, do you believe Staff would have  
14 ultimately recommended a disallowance?

15 A. Yes.

16 Q. In the report -- the Construction Audit  
17 and Prudence Report of Taum Sauk, was Staff using  
18 anything other than the dictionary definition of the  
19 word "discrete"?

20 A. Not that I'm aware of.

21 Q. Were you even aware that Staff used the  
22 word "discrete"?

23 A. No.

24 Q. Was Staff aware of Mr. Birk's testimony  
25 when it characterized the discrete enhancements as



1 discrete enhancements?

2 A. I really didn't think about the word  
3 "discrete" when I read his descriptions. I thought of  
4 discrete I guess as singular.

5 Q. When you -- I'm sorry. Did whether  
6 enhancement was discrete or not factor into your  
7 analysis or your recommendations to Ms. Carle?

8 A. No.

9 Q. And finally to clarify a point raised by  
10 Mr. Woodruff, when you say Proffit Mountain is well  
11 fractured, does that mean good fractures or lots of  
12 fractures?

13 A. Lots of fractures.

14 MS. KLIETHERMES: Thank you.

15 JUDGE WOODRUFF: We want to be precise.

16 All right, Mr. Gilbert. You can be excused.

17 THE WITNESS: Thank you.

18 JUDGE WOODRUFF: And we'll move to the  
19 next witness then who is Mr. Kind. Good afternoon.  
20 If you'd please raise your right hand, I'll swear you  
21 in.

22 (Witness sworn.)

23 JUDGE WOODRUFF: Thank you very much.

24 You may inquire.

25 RYAN KIND testified as follows:

1 DIRECT EXAMINATION BY MR. MILLS:

2 Q. Could you state your name for the record,  
3 please.

4 A. My name is Ryan Kind.

5 Q. And for whom are you employed and in what  
6 capacity?

7 A. I'm employed at the Missouri Office of  
8 the Public Counsel as chief energy economist.

9 Q. And in that role, did you prepare -- and  
10 in the course of this case, direct testimony on Taum  
11 Sauk rebuilding costs as well as rebuttal and  
12 surrebuttal testimony on that issue?

13 A. Yes, I did.

14 Q. If I were to ask you the questions in  
15 that testimony here today, would your answers be the  
16 same?

17 A. Yes.

18 Q. And are those answers true and correct to  
19 the best of your knowledge, information and belief?

20 A. Yes, they are.

21 Q. Do you have any corrections that you  
22 would like to make to any of those pieces of testimony  
23 at this time?

24 A. No, I do not.

25 MR. MILLS: Judge, with that, I would

1 like to offer Exhibit 300, the direct testimony on  
2 Taum Sauk rebuilding costs; Exhibit 302, Mr. Kind's  
3 rebuttal; and Exhibit 303, Mr. Kind's surrebuttal  
4 testimony

5 JUDGE WOODRUFF: 300, 302 and 303 have  
6 been offered. Any objections to their receipt?

7 Hearing none, they will be received.

8 (OPC Exhibit Nos. 300, 302 and 303 were  
9 received into evidence.)

10 MR. MILLS: And I tender the witness for  
11 cross-examination.

12 JUDGE WOODRUFF: Thank you. For cross  
13 then, we'll begin with AARP.

14 MR. COFFMAN: All right. Thank you.

15 CROSS-EXAMINATION BY MR. COFFMAN:

16 Q. Good afternoon, Mr. Kind.

17 A. Good afternoon, Mr. Coffman.

18 Q. I see that you have been a regulatory  
19 economist for about 20 years?

20 A. That's correct. I had my -- I reached  
21 20 years just a month or two ago.

22 Q. Do you consider yourself an expert in  
23 public utility regulation?

24 A. Yes, I do.

25 Q. Have you -- in the course of your

1 occupation and work for Office of the Public Counsel,  
2 have you reviewed integrated resource planning and --  
3 and other planning documents for electric utilities?

4 A. Yes, I have for almost the 20 year --  
5 full 20-year time period that I've been part of the  
6 Office of Public Counsel. Some of our utilities we're  
7 actually doing IRP analysis before there was an IRP  
8 rule in Missouri. That began in 1993. And, for  
9 example, KCPL did IRPs prior to that that I reviewed.

10 Q. And I note that you serve on committees  
11 both at the NERC and Midwest ISO. How long have you  
12 served on those bodies?

13 A. I am not currently serving on those  
14 committees. I -- I was the original consumer  
15 representative to the Midwest ISO advisory committee  
16 following its organization. And I served on a couple  
17 of different committees at NERC, both the operating  
18 committee and standards authorization committee for  
19 approximately five years. Not a five-year duration on  
20 both committees, but the combined period was about  
21 five years.

22 Q. In arriving in your -- at your  
23 recommendation for disallowance for the rebuild costs  
24 in this case, what -- what documents did you review?

25 A. Well, I reviewed documents from

1 essentially going back to the time of the disaster and  
2 then various documents that represented the company's  
3 commitments to hold ratepayers harmless that were --  
4 where that statement was made in various different  
5 documents during the initial two-year period following  
6 the disaster. And those documents I've quoted in my  
7 direct testimony.

8 I also tried to review as much of the  
9 Staff discovery responses as I had a chance to, did  
10 some discovery on my own, which -- in which I received  
11 several documents pertaining, in particular, to the  
12 FERC licensing process and the new PFMA analysis.

13 Also reviewed the Staff investigative  
14 report from the Taum Sauk investigation docket and  
15 reviewed the testimony filed by various witnesses in  
16 this case pertaining to the Taum Sauk issue.

17 There are other documents that I could  
18 list then -- but it is getting a little late in the  
19 day so I'll stop there.

20 Q. Let me just ask finally with regard to  
21 the various statements and commitments by AmerenUE  
22 that ratepayers would be held harmless from the  
23 disaster which -- that was caused by their many errors  
24 in judgment, what -- what leads you to the conclusion  
25 that those statements are -- are related to a

1 disallowance of rebuild costs and cover the -- cover  
2 the rebuild costs?

3 A. Well, I -- I assumed incorrectly based on  
4 those statements that Ameren would not seek to recover  
5 any rebuilding costs, after them making statements  
6 saying things like that they accepted full  
7 responsibility for the effects of the breach of the  
8 Taum Sauk reservoir, statements like Ameren is  
9 committing to protecting its customers from bearing  
10 the costs of the Taum Sauk failure.

11 Based on these types of statements, I  
12 assumed that Ameren would not come and seek to raise  
13 customers' rates based on costs of rebuilding the Taum  
14 Sauk facility. And obviously that assumption was  
15 wrong.

16 And -- because -- after finding that  
17 assumption was wrong and seeing that Ameren sought  
18 rate relief in this case despite those commitments to  
19 hold customers harmless, that was what caused me to  
20 get engaged in this case on this issue and try and  
21 make sure that those commitments were upheld.

22 As well as get engaged just -- just  
23 because even if the company had not made -- made those  
24 commitments, it would seem like good regulatory policy  
25 that a company that made the terrible errors that were

1 made that led to the Taum Sauk disaster should not be  
2 getting ratepayers to absorb a portion of the costs of  
3 recovering from that disaster.

4 Q. And in your opinion, would the rebuild of  
5 Taum Sauk as it -- as it was rebuilt have possibly  
6 occurred without the catastrophic disaster that  
7 preceded it?

8 A. Well, if I -- I could only just speculate  
9 on what might have happened in the absence of the Taum  
10 Sauk disaster just like another -- a number of other  
11 witnesses have speculated on what might have happened  
12 if the disaster had not occurred. But I have no  
13 reason to have any -- any level of certainty that  
14 the -- in the absence of the Taum Sauk disaster, that  
15 the plant would be rebuilt.

16 And I can say with a high degree of  
17 certainty that even if the plant was rebuilt at some  
18 point in time, we would not be here today talking  
19 about any increased costs associated with that rebuild  
20 because it would not have happened yet. It would be  
21 something that would still be a few years off.

22 Q. Do you have an opinion based on all the  
23 evidence that has been entered in the record so far  
24 about when and if that rebuild might have occurred,  
25 how far out it might have occurred in your opinion?

1           A.     Well, the company's witnesses, including  
2     Mr. Rizzo, have testified that, you know, if a rebuild  
3     were to occur, he thought it would have been driven by  
4     the PFMA anal-- analysis that was part of the  
5     inspection process to be done in the year 2008.  And  
6     he thought that that would take two or three years in  
7     order to produce the -- a report from that inspection.

8                     And as he testified this morning to  
9     Mr. Mills, there would then be a period of time of  
10    another year potentially when there would be some  
11    decisions made in response to that report about any  
12    new construction activity that might take place.

13                    And so if you look at -- assume that  
14    the -- the process were initiated in, say, mid-2008  
15    and if it took three years, that would take you up  
16    to -- you know, about a month from now when that  
17    process of getting the report submitted to FERC would  
18    occur.

19                    And then after that, you would have the  
20    further process of the back and forth conversation  
21    between FERC and the licensee over what would be done  
22    in terms of any construction that might be necessary  
23    to remedy any of the deficiencies that were documented  
24    in the PFMA analysis.

25            Q.     And even assuming that most aggressive



1 timetable, would it be likely that the end result  
2 would have been a total dismantling of the -- the old  
3 Taum Sauk reservoir and rebuilding as -- as it was  
4 today?

5 A. I think that it -- the assumption that  
6 that would occur as a result of that inspection  
7 process and the report is just an educated guess that  
8 it -- it could possibly occur, but other things could  
9 happen as well.

10 And of course, as I pointed out in my  
11 testimony, if Ameren had complied with FERC  
12 regulations in September of 2005 and reported the  
13 incident on September 25th, 2005 that's been -- that  
14 certain Ameren personnel referred to in an e-mail as  
15 the Niagara Falls incident, then the whole premise  
16 that a bunch of activities would take place subsequent  
17 to -- you know, as a result of the PFMA analysis being  
18 initiated in 2008 is -- becomes even more conjecture.

19 You can only get there if you somehow  
20 ignore that -- that Ameren violated the law in not  
21 reporting safety violations prior to that time and  
22 whatever remedies might have resulted from that  
23 process.

24 Q. Have you heard here today the claim that  
25 consumer benefits over the 80-year life of the new

1 Taum Sauk upper reservoir will produce certain  
2 benefits to consumers?

3 A. I have heard that assertion, yes.

4 Q. Would that assumption of benefits be  
5 based on an assumption that cost-based regulation  
6 would continue over the next 80 years?

7 A. Well, certainly. And in fact, it would  
8 be based on the presumption you'd have, you know, a  
9 fuel adjustment clause that would be flowing those  
10 benefits through to customers for the next 80 years.

11 Q. And just finally, if the -- the utility  
12 and Staff position prevails in this case, is it your  
13 opinion that ratepayers will be worse off than they  
14 would have been absent the catastrophic disaster in  
15 2005?

16 A. Yes. I would say. Because absent that  
17 disaster, there's no reason to believe we would not  
18 still have a facility in place today that's providing  
19 service to customers. So yes, I would agree with  
20 that.

21 MR. COFFMAN: That's all the questions  
22 that I have, your Honor. Thanks.

23 JUDGE WOODRUFF: Cross from Staff?

24 MS. KLIETHERMES: Thank you.

25 CROSS-EXAMINATION BY MS. KLIETHERMES:

1 Q. Good afternoon, Mr. Kind.

2 A. Good afternoon.

3 Q. I believe I've structured my questions  
4 such they can be answered with a "yes" "no" or "I  
5 don't know." And in the interest of time, I'd ask  
6 that you confine your responses to those.

7 Is the new upper reservoir a substantial  
8 improvement over the old upper reservoir?

9 A. I'd have to clarify that question a  
10 little further before I could respond in the way  
11 you've requested.

12 Q. Did you have your deposition taken in  
13 this matter on April 21st, 2011?

14 A. In the matter of Taum Sauk? Amongst  
15 other subjects, yes.

16 Q. Looking at page 72 -- and I'm going to  
17 read aloud a question and answer:

18 "Question: Let me -- let me ask a  
19 broader question. Do you agree or disagree with  
20 this" --

21 A. I'm sorry. I haven't caught up with you  
22 yet. If you'd permit me to get the document out.

23 Q. My apologies.

24 A. Page 72?

25 Q. Yes.

1 A. And what line number are you on, please?

2 Q. Beginning line 4.

3 A. Thank you.

4 Q. The question: "Let me -- let me ask a  
5 broader question. Do you agree or disagree with this  
6 statement: The new upper reservoir is a substantial  
7 improvement over the old upper reservoir? Do you  
8 agree or disagree with that statement?"

9 "Answer: I agree with that statement."

10 Did I read that exchange correctly?

11 A. Yes, you did.

12 Q. Moving on, were there significant  
13 structural problems with the old upper reservoir?

14 A. Definitely were instrumentation problems.  
15 I'm not sure I'd relate that to the structure.

16 Q. I'm turning to page 80 of your  
17 deposition, line 21.

18 A. Okay.

19 Q. And I believe the first part of this is  
20 in reference to a prior question. Beginning at line  
21 21, "Question: So there were --

22 "The answer is: Yes.

23 "There were significant structural  
24 problems to the upper reservoir that would -- that  
25 would have been revealed through the PFMA process? Is

1 that a yes?

2 "Answer: Well, again, if they weren't  
3 revealed earlier by -- by Ameren complying with the  
4 FERC regulations and reporting serious challenges to  
5 the safe operation of the plant that occurred such as  
6 those on September 28th -- or I'm sorry, September  
7 2005, it would have arisen probably at a later date."

8 Did I read that correctly?

9 A. Yes, you did.

10 Q. Moving on, you haven't done a  
11 quantitative analysis to support your exclusion of the  
12 Taum Sauk investment, have you?

13 A. I had not done one at the time of my  
14 deposition, that's correct.

15 Q. You hadn't done one at the time of the  
16 filing of your direct testimony?

17 A. No, I had not.

18 Q. You don't claim that the 89 million  
19 aren't allowable costs under the settlement with the  
20 State of Missouri, do you?

21 A. I haven't addressed that issue in my  
22 testimony.

23 Q. Turning to page 82 of your deposition,  
24 line 16: "Question: Do you agree with me that the  
25 costs that Ameren is seeking to recover in this case

1 qualify as I think it's allowable costs under the  
2 State settlement that it's entitled to ask for?

3 "Answer: I haven't done an analysis of  
4 that."

5 Did I read that correctly?

6 A. Yes. I think that's consistent with the  
7 response I just gave you.

8 Q. Has Ameren absorbed a lot of costs  
9 associated with the failure of the Taum Sauk plant?

10 A. Certainly.

11 Q. I'm going to outline a hypothetical. I'd  
12 ask if you bear with me, I'll give you a number of  
13 premises underlying it.

14 Number one, OPC prevails on this issue in  
15 this rate case. Number two, five years from now  
16 Ameren builds a parapet wall on top of the dam at the  
17 upper reservoir. Number three, that parapet wall  
18 makes the structure safer.

19 A. Am I to assume this is a parapet wall  
20 that's in addition to the one that's already part of  
21 the new structure?

22 Q. Yes.

23 A. So it would be on top of the existing  
24 parapet wall or where would it go?

25 Q. Yes. It's a hypothetical.

1           A.     Okay.  And was there a height you gave or  
2 something or just that they've built --

3           Q.     Just that they built it?

4           A.     So in addition to the existing parapet  
5 wall.  Is that the idea?

6           Q.     Yes.

7           A.     Okay.  Gotcha.

8           Q.     And number four, that parapet wall could  
9 not have been built on the old structure.  Do you  
10 understand the hypothetical?

11          A.     I believe so.

12          Q.     Would you be recommending zero recovery  
13 for that parapet wall on the basis that it couldn't --  
14 couldn't have been built but for the destruction of  
15 the old structure?  We're five years in the future.

16          A.     So the idea is they're coming to recover  
17 the costs of it --

18          Q.     Yes.

19          A.     -- and we're having a case five years  
20 from now?

21          Q.     Yes.  Probably six years from now.

22          A.     And would I recommend disallowance  
23 specifically for what reason in that case?

24          Q.     On the basis that parapet wall could not  
25 have been built but for the destruction of the old

1 structure.

2 A. I think I -- I usually give a lot more  
3 thought to disallowances than -- than just figuring  
4 something out in a few minutes while I'm sitting on  
5 the witness stand. And this is one of those issues  
6 where I -- I would be giving it more thought.

7 Because my -- I don't make, you know,  
8 disallowance recommendations that just sort of -- you  
9 know, at the drop of a hat. They're well thought out  
10 when I make them. And -- so I really would have to  
11 say I don't know at this point in time.

12 Q. Well, I'm going to change one of the  
13 considerations. I saw you wrote down as I was  
14 talking; is that correct?

15 A. That's correct.

16 Q. The second consideration that I gave you  
17 in that hypothetical was that we were five years in  
18 the future when Ameren builds that parapet wall.  
19 Correct? Let's change that five years to ten years.  
20 Would you still have to do some analysis?

21 A. Excuse me. I did write some things down  
22 but just very cryptic format so I think I better get  
23 it written down here before you go onto the next  
24 one -- to change this one.

25 Q. I'll only be changing one consideration



1 if that makes things easier on you, and that's the  
2 number of years out in the future we are --

3 A. Okay. I'm ready for the change, whatever  
4 it is if you want to begin --

5 Q. All right.

6 A. -- describing that.

7 Q. The new wall -- five years from now,  
8 nothing happens. We're now ten years from now when  
9 Ameren decides it's going to build a parapet wall.  
10 We're now in year 11 when they come in to seek  
11 recovery of that parapet wall. Would you still need  
12 to give some serious analysis before you knew whether  
13 or not you would recommend a disallowance on the basis  
14 that parapet wall couldn't have been built but for the  
15 destruction of the old upper reservoir?

16 A. You know what? One of the key factors  
17 would be what's the intended purpose of the parapet  
18 wall as to whether -- what sort of prudence  
19 recommendation I would make. And we haven't talked  
20 about that.

21 Q. And -- and let me be clear. The only  
22 basis I'm discussing in this for disallowance would be  
23 that it couldn't have been built but for the  
24 destruction of the old reservoir. Assume all other  
25 actions are prudent.

1           A.     Right.  For instance, I don't know  
2     whether the parapet wall is built for the purpose of  
3     allowing --

4           Q.     Assume it's built for a prudent purpose.

5           A.     And it's built into -- in addition to the  
6     existing parapet wall but for a prudent purpose?

7           Q.     Yes.

8           A.     Yeah, I would -- I need to know more  
9     facts, such as is the -- has the existing parapet wall  
10    that's been built, has it been, you know, consistently  
11    overtopped and things like that.  And, you know,  
12    what -- to what extent was it -- has it been  
13    overtopped over time over the last five or ten years  
14    and what was the cause of the overtopping.

15          Q.     So what you're saying is you would need  
16    to do a more significant analysis than a quantitative  
17    analysis you didn't do in your preparation of your  
18    direct testimony in this case.  Is that a fair  
19    statement?

20          A.     No, that's not at all a fair statement.

21                   MS. KLIETHERMES:  That's all I have.

22                   JUDGE WOODRUFF:  Ameren?

23    CROSS-EXAMINATION BY MR. BYRNE:

24          Q.     Good afternoon, Mr. Kind.

25          A.     Good afternoon, Mr. Byrne.

1 Q. Do you have a copy of your deposition  
2 that I took on April 21st with you?

3 A. Yes, I do.

4 Q. Okay. Mr. Kind, are you an engineer?

5 A. No, I'm still not an engineer.

6 Q. Glad to see you didn't get an engineering  
7 degree since I took your deposition. I suspected you  
8 hadn't.

9 A. Not since you took this one or since you  
10 took, you know, several prior ones in other rate cases  
11 where you've asked me the same question, no.

12 Q. Mr. Kind, are you a geologist?

13 A. No, I'm not.

14 Q. Are you an accountant?

15 A. I have expertise in accounting, but I'm  
16 not a CPA. I've taken extensive accounting courses  
17 as -- as part of getting a business degree at the  
18 University of Missouri-Columbia.

19 Q. Do you have an undergraduate degree in  
20 accounting?

21 A. No. I have an undergraduate degree in  
22 economics from a business school. And I took -- I've  
23 taken additional accounting courses subsequent to  
24 getting a master's degree in economics.

25 Q. Do you have any kind of degree or

1 certification in accounting?

2 A. As I said, I already told you I don't  
3 have a CPA and I'm not aware of any other  
4 certifications so --

5 Q. So that would be a no?

6 A. Yes. Same answer I gave you a couple  
7 months ago.

8 Q. Okay. And would you agree, Mr. Kind,  
9 that you are not qualified to provide an engineer's  
10 opinion of the enhancements of the new upper  
11 reservoir?

12 A. Yeah, I think I've just provided a  
13 layman's opinion in my testimony.

14 Q. Okay. Mr. Kind, you've never designed a  
15 plant like the Taum Sauk plant, have you?

16 A. No, I've not.

17 Q. And you've never operated a plant like  
18 the Taum Sauk plant, have you?

19 A. No. Just, you know, filling my bathtub,  
20 I've never overflowed it and -- but other than that --

21 Q. Would you agree that the only kind of  
22 training that you've ever had that relates to a plant  
23 like the Taum Sauk plant is what you described as  
24 self-training?

25 A. I don't believe I would agree -- I mean

1 it depends on how you qualify training. I know we  
2 talked about this extensively in my deposition and  
3 we --

4 Q. Could you -- could you turn to page 59 of  
5 the deposition, line 21.

6 A. Okay.

7 Q. And it says: "Question: How about more  
8 specifically a plant like the Taum Sauk upper  
9 reservoir or the Taum Sauk plant as a whole? Have you  
10 ever received any training regarding the engineering  
11 or design or construction or operation of a plant like  
12 the Taum Sauk plant?

13 "Answer: Oh, pump storage plant  
14 technology? I guess it would be mostly from just as a  
15 part of -- you know, subsequent to the Taum Sauk  
16 disaster, becoming aware of some of the -- the  
17 different ways of performing, you know, those types of  
18 dams that you need for pumps, pump storage projects.

19 "Question: But what kind of training, if  
20 any, have you had?

21 "Answer: I guess I'm talking of  
22 self-training there. I don't know if that's the kind  
23 of training you're getting at.

24 "Question: I'll get to that in a minute.  
25 Aside from self-training though, did you have any

1 non-self-training with regard to the engineering  
2 design trucks it says -- it should be construction --  
3 or operation of a plant like Taum Sauk?

4 "Answer: None that I can recall right  
5 now, no."

6 Did I read that correctly?

7 A. Yes, you did.

8 Q. Mr. Kind, have you ever been involved in  
9 a FERC inspection of a facility like the Taum Sauk  
10 upper reservoir?

11 A. Not like the Taum Sauk upper reservoir,  
12 no.

13 Q. Have you ever participated in getting a  
14 license from the FERC for a plant like the Taum Sauk  
15 plant?

16 A. I've never been employed by a utility in  
17 a position where I would participate in such an  
18 endeavor, no.

19 Q. So that's a no?

20 A. I think I just said no --

21 Q. Okay.

22 A. -- yes.

23 Q. And when you filed your testimony in this  
24 case, isn't it true that you didn't know what's  
25 required to get a license from the Federal Energy

1 Regulatory Commission for a plant like the Taum Sauk  
2 plant?

3 A. I have not read all the licensing  
4 requirements, no.

5 Q. And you didn't know how much it cost to  
6 get a license for a plant like the Taum Sauk plant?

7 A. No.

8 Q. And you didn't know how long a license  
9 would last -- would last if it was gotten for a plant  
10 like the Taum Sauk plant?

11 A. At the time of my deposition or as I sit  
12 here today?

13 Q. At the time of your deposition.

14 A. Oh, no. Not at the time of my  
15 deposition.

16 Q. And as I understand it, at the -- well,  
17 at the time of your deposition, you had never been --  
18 you had never physically been to the upper  
19 reservoir -- the new upper reservoir of the Taum Sauk  
20 plant; is that true?

21 A. That's correct.

22 Q. And you -- have you been since your  
23 deposition?

24 A. No, I have not.

25 Q. And my understanding is you -- in your

1 adult career you never went to the old upper  
2 reservoir, but you may have gone once as a child; is  
3 that correct?

4 A. That's correct.

5 Q. Okay. And so you never physically  
6 inspected either the old or the new upper reservoir;  
7 is that true?

8 A. Not as an adult, no.

9 Q. And you've never physically examined any  
10 of the enhancements to the new plant; is that true?

11 A. That's correct.

12 Q. And you never physically examined any of  
13 the deficiencies of the old upper reservoir; is that  
14 true?

15 A. That's correct.

16 Q. And my understanding is that your  
17 recommendation to disallow all the costs of the upper  
18 reservoir is not based on any individualized review of  
19 each of the specific enhancements that Ameren Missouri  
20 is saying it has made; is that true?

21 A. That's correct.

22 Q. And isn't it true, Mr. Kind, that just on  
23 April 21st when I took your deposition, you did not  
24 even know what material the new upper reservoir was  
25 made of?



1           A.     I don't think that's correct.

2           Q.     Take a look at page 69 of your  
3 deposition, if you will. Line 14 says,  
4           "Question: Do you know what the material  
5 that the dam -- the new dam is constructed of? Do you  
6 know what material the new dam is constructed of?  
7           "Answer: I've read descriptions of that,  
8 but I can't tell you off the top of my head."  
9           Did I read that correctly?

10          A.     That was my answer on the day you deposed  
11 me, yes.

12          Q.     And you also didn't know what material  
13 the old upper reservoir was made of; isn't that true?

14          A.     That was my answer, yes. That was --  
15 that was the state of my knowledge on the day you  
16 deposed me.

17          Q.     And that was after you filed your  
18 testimony. Correct?

19          A.     Yeah. That -- but --

20          Q.     That's -- you answered my question. Yes  
21 is -- yes is the answer to the question, Mr. Kind.  
22           And -- and -- and on the date I took your  
23 deposition, you did not know what a gallery is; isn't  
24 that true?

25          A.     I think I had some rough idea of what it

1 was.

2 Q. Well, let's look. Page 64, line 21,  
3 "Question: Do you know what the gallery  
4 is?

5 "Answer: No. I've -- I know I've come  
6 across that term."

7 Did I read that correctly?

8 A. Yes. I haven't read this so I don't know  
9 if I elaborated on that at some other point in the  
10 deposition. I haven't had time to review this.

11 Q. But I read it -- I read it correctly?  
12 That was the question I asked you? I read it  
13 correctly?

14 A. You read what's on the page correctly,  
15 yes.

16 Q. How about the tailrace of a plant? Isn't  
17 it true that when I took your deposition, you did not  
18 know what the tailrace of the plant was?

19 A. I think that's correct.

20 Q. Or the gates? You didn't know what the  
21 gates of the plant were?

22 A. I really don't recall you asking me that  
23 question. I'm sorry.

24 Q. And you didn't know -- when I took your  
25 deposition on April 21st, you did not know the name of

1 the current FERC dam inspection process; is that  
2 correct?

3 A. I'd have to look at the deposition to --  
4 to see.

5 Q. Let's take a look at page 78, line 11.

6 "Question: Do you know what the new type  
7 of inspection process that FERC was employing was?

8 "Answer: Um, yes. I think I named it in  
9 my testimony and can't think of the name of it off the  
10 top of my head. I know I did some discovery on that  
11 issue to see if it was ever any mention of that  
12 process internally at Ameren that was documented and I  
13 found that it never occurred."

14 Did I read that correctly?

15 A. Yes, you did.

16 Q. Do you know what -- do you know what that  
17 process is named today as you sit there?

18 A. I'm assuming you're referring to the  
19 potential failure modes analysis process --

20 Q. It is.

21 A. -- that's abbreviated PFMA. And I did,  
22 in fact, did do considerable discovery on it as  
23 mentioned in here and it is in my testimony as stated  
24 in my deposition.

25 Q. Would you agree that when I took your

1 deposition, you said you did not know the estimated  
2 remaining life of the old up-- upper reservoir before  
3 the breach?

4 A. I don't recall that question. I may have  
5 said that.

6 Q. Do you know what the estimated remaining  
7 life of the old upper reservoir before the breach was,  
8 as you sit here today?

9 A. No, I don't.

10 Q. And when I took your deposition, you said  
11 you did not have an opinion about whether Ameren  
12 Missouri's estimated life for the new upper reservoir  
13 is right or wrong; is that correct?

14 A. Could you repeat that, please?

15 Q. And when I took your deposition, you said  
16 that you did not have an opinion about whether Ameren  
17 Missouri's estimated life for the new upper reservoir  
18 is right or wrong; is that correct?

19 A. I think that's correct.

20 Q. Okay. Thank you, Mr. Kind. I don't have  
21 any other questions.

22 A. Thank you, Mr. Byrne.

23 JUDGE WOODRUFF: We'll come up to  
24 questions from the bench. Commissioner Clayton?

25 COMMISSIONER CLAYTON: No questions.

1 Thank you, Mr. Kind.

2 JUDGE WOODRUFF: Commissioner Davis?

3 QUESTIONS BY COMMISSIONER DAVIS:

4 Q. Good afternoon, Mr. Kind.

5 A. Good afternoon, Commissioner.

6 Q. On cross-examination from Mr. Coffman you  
7 agreed that you are an expert on public utility  
8 regulation; is that correct?

9 A. That's correct.

10 Q. And would you agree with me that part of  
11 being an expert on public utility regulation is -- is  
12 being able to -- is having knowledge of regulatory  
13 decisions in other -- in other jurisdictions?

14 A. General knowledge, yes.

15 Q. Okay. To the best of your knowledge, has  
16 the Missouri Public Service Commission or any state  
17 PUC or the Federal Energy Regulatory Commission ever  
18 made a decision or issued a rule stating that they  
19 were going to disallow half of a utility's rate case  
20 expense on the premises that -- on the premise that  
21 shareholders derived equal benefits as the customers?

22 A. I'm not aware of any decisions in that  
23 area.

24 Q. Okay. Let me change subjects now. Do  
25 you think it would be prudent for Ameren to site a

1 nuclear power plant within 30 miles of New Madrid,  
2 Missouri?

3 A. I would be skeptical, but certainly  
4 I'd -- I'd be open to examining the facts with that  
5 particular circumstance.

6 Q. And would the fact that New Madrid,  
7 Missouri is located near the epicenter of the New  
8 Madrid fault cause you trepidation?

9 A. It certainly would.

10 Q. And those concerns would -- would be for  
11 anyone else looking to site a nuclear power plant  
12 there too. Correct?

13 A. I'd be skeptical.

14 Q. Okay. Now, Mr. Kind, going back to your  
15 cross-examination by -- by Mr. Coffman, did I -- did I  
16 hear it correctly? Did you say that you never  
17 contemplated that AmerenUE would seek any recovery  
18 from its ratepayers for Taum Sauk?

19 A. You did hear that correctly. And I would  
20 say that part of the reason why I -- I know I had that  
21 sense was that after the Taum Sauk investigation case  
22 that the Commission did here at the Missouri  
23 Commission, I had gathered quite a lot of materials  
24 about the -- the details of their imprudence, and I  
25 did not retain those materials.

1           Q.     Okay. Well, in your -- in your direct  
2 testimony you indicated that -- that the November 2007  
3 consent agreement between the State of Missouri and  
4 Ameren contained language referring to, quote, allowed  
5 costs. And in your testimony you defined the term  
6 "allowed costs" as being those costs that Ameren could  
7 seek to recover from customers at this Commission for  
8 the rebuilding of the upper Taum Sauk reservoir. So I  
9 mean isn't that position inconsistent with your answer  
10 to Mr. Coffman earlier?

11           A.     I was not aware of the details of what's  
12 contained in the consent agreement prior to Ameren  
13 seeking to recover Taum Sauk costs in this case.

14           Q.     Well, but, you were aware of the November  
15 2007 consent agreement when you filed your -- actually  
16 this would be your rebuttal testimony you filed on  
17 March 25th. Correct?

18           A.     Certainly.

19           Q.     And so you were aware of it when you  
20 responded to -- to Mr. Coffman's question, were you  
21 not?

22           A.     If I'm recalling right what you're sort  
23 of discussing here is that I was describing to  
24 Mr. Coffman my surprise at them seeking to recover  
25 Taum Sauk costs as my reaction to the company's press

1 release and direct testimony that got filed as part of  
2 the initiation of this case.

3 Q. Okay. But obviously if they had -- had  
4 entered into a consent agreement with the Missouri  
5 Attorney General in November 2007 that seemed to  
6 contemplate that they could at least come ask that the  
7 Commission would allow them certain costs, I mean that  
8 would be a manifestation of their intent. Correct?

9 A. Yes. And I went and looked and found  
10 that consent agreement after I read the direct  
11 testimony that, in fact, referenced that consent  
12 agreement. And then I'm talking about the direct  
13 testimony of Mr. Birk.

14 Q. Uh-huh. Okay. Now, on page 6 of your  
15 rebuttal testimony you indicated there was -- there  
16 was no evidence that any of these costs would have  
17 occurred absent the catastrophic failure of the upper  
18 reservoir that resulted from -- from UE's errors in  
19 judgment. And that was in reference to Mr. Birk's  
20 description of the enhancements that cost  
21 approximately 67 million.

22 But on cross-examination from Mr. Coffman  
23 you seemed to indicate that, you know, after the 2008  
24 review, there might be two or three years -- we'll say  
25 three years and then another year on top of that --



1 that by 2012 at least some of those -- of those costs  
2 might -- might be -- have to be incurred; is that  
3 correct?

4 A. That's correct. And, you know, I would  
5 want to correct that statement that's there in line 24  
6 if I have -- had used the word "could" instead of  
7 "would." I think that makes a big difference.

8 Q. Okay. Now, you haven't become an  
9 engineer since Mr. Byrne cross-examined you, have you?

10 A. I've been in here, I think the camera's  
11 been on me the whole time.

12 Q. Okay. Okay. But in your -- in your lay  
13 opinion, would you -- would you agree that -- that  
14 fixing a -- a reservoir with water inside it might  
15 actually be more expensive than -- than fixing a  
16 reservoir without water in it?

17 A. Certainly. You know, I mean we have the  
18 experience of Ameren talking about wanting to, you  
19 know, fix it while the reservoir was full in terms of  
20 addressing instrumentation problems and have a diver  
21 go down and fix it. And that was because apparently  
22 they -- they didn't want to sacrifice the earnings  
23 that would go along with leaving the reservoir empty  
24 for several days.

25 Q. And that -- I think in one of our

1 previous proceedings here we -- we actually came close  
2 to -- to finding the person who was responsible for --  
3 for moving some of that instrumentation, didn't we?

4 A. I know that there was certainly an effort  
5 made to locate -- try and determine which individual  
6 was responsible, but it seemed that apparently the  
7 utility itself didn't know who had moved its own  
8 instrumentation so that made it hard to get to the  
9 bottom of that. We're talking about the water probes,  
10 I guess.

11 Q. Yes. The probes, yes. Mr. Kind, this is  
12 my last question. My impression of Mr. Coffman's  
13 argument is that -- that any rise in consumer prices  
14 in and of itself is an adverse impact for consumers  
15 without regard to the reason for that increase. Is --  
16 am I getting the correct impression there?

17 A. Yeah, I think he's probably responding  
18 sort of in the same way generally that Public Counsel  
19 responded to the requests from Ameren Missouri to  
20 collect essentially every penny that wasn't covered by  
21 insurance related to rebuilding the upper reservoir,  
22 to collect that from consumers as opposed to the --  
23 having the utility that had essentially initiated this  
24 whole chain of events and -- and caused the situation  
25 to happen volunteering to perhaps share in the pain.

1                   We saw none -- none of that. And it  
2                   seemed to be especially troubling in light of their  
3                   prior commitments to hold ratepayers harmless.

4                   Q.     Well, didn't you already acknowledge on  
5                   cross-examination that -- that Ameren has -- has borne  
6                   some expenses that they're not going to recover?

7                   A.     I did. I was speaking there to sharing  
8                   some of the costs related to rebuilding of the  
9                   reservoir which was destroyed as a result of imprudent  
10                  actions on behalf of the utility.

11                  Q.     Okay. Would you agree that this is more  
12                  than just a rebuild?

13                  A.     In the sense that it's incorporating  
14                  the -- today's approach to -- to building an upper  
15                  reservoir and better construction methods, yes.

16                  Q.     And you reviewed Mr. Birk's testimony as  
17                  well as Mr. Gilbert's testimony, did you not?

18                  A.     Yes, I did.

19                  Q.     And have you anywhere in your rebuttal or  
20                  your surrebuttal testimony disputed the fact that  
21                  there is going to be additional energy generated on  
22                  top of what Taum Sauk was generating before the  
23                  collapse?

24                  A.     No, I don't dispute that in my testimony.

25                  Q.     And likewise, you don't dispute the fact

1 that in all likelihood, this facility is now going to  
2 operate 50 to 60 years longer than it would have  
3 otherwise. Correct?

4 A. You know, the original turbines were  
5 replaced after about 40 years. And I'm not sure that  
6 the -- those new turbines put in in the late '90s are  
7 going to last beyond 40 years.

8 Q. Okay. But those same turbines are still  
9 there. Correct?

10 A. Yes, they are.

11 Q. So that wasn't -- that's not -- the  
12 turbines aren't an enhancement issue, are they?

13 A. No. But they are an essential piece for  
14 the -- for the life of the entire facility.

15 Q. All right. Now, assuming -- assuming  
16 that you are still here in 2030 and is it -- is it --  
17 do you think it would be your position in 2030 that --  
18 that new -- the addition of new turbines would not be  
19 prudent?

20 A. You know, assuming we still are  
21 overseeing that part of the regulation industry  
22 20 years from now, I would have to just look at the --  
23 the facts, I suppose. What's the -- what's the reason  
24 why the -- you know, the ones that were put in in the  
25 late '90s have -- are shot? And especially given the

1 testimony we've heard today from, you know, Mr. Rizzo  
2 who -- whose -- has some expertise in that -- this  
3 area that those turbines, he thought that they -- they  
4 could last for 80 years.

5 COMMISSIONER DAVIS: All right. No  
6 further questions, Mr. Kind.

7 THE WITNESS: Thank you.

8 JUDGE WOODRUFF: Commissioner Jarrett?

9 COMMISSIONER JARRETT: Mr. Kind, I don't  
10 have any questions, but thank you for your testimony.

11 THE WITNESS: Thank you.

12 JUDGE WOODRUFF: Commissioner Kenney?

13 COMMISSIONER KENNEY: No. I'll ask you  
14 about rate case expense later. Thanks for your time,  
15 Mr. Kind.

16 THE WITNESS: Okay.

17 JUDGE WOODRUFF: All right. Any recross  
18 based on questions from the bench beginning with AARP?

19 MR. COFFMAN: No, thank you.

20 JUDGE WOODRUFF: Staff?

21 MS. KLIETHERMES: Just one.

22 RE-CROSS-EXAMINATION BY MS. KLIETHERMES:

23 Q. Commissioner Davis was asking you about  
24 whether any increase in rates was a detriment to  
25 ratepayers. I'm paraphrasing, but do you recall that

1 discussion?

2 A. Increase in rates related to --

3 Q. Taum Sauk.

4 A. -- Taum Sauk specifically? Yes. Yes.

5 Q. Would it be possible that your position  
6 on that would be different if some sort of sharing  
7 mechanism designed to OPC's liking were in place?

8 A. It certainly I think would be something  
9 we would consider in -- in possibly reassessing our  
10 position, yes.

11 Q. So do you believe that -- that  
12 modifications or other considerations in something  
13 like AmerenUE's fuel adjustment clause could in some  
14 way mitigate your concerns in this case?

15 A. No. I think a sharing would have to  
16 occur in terms of exactly how much of the  
17 approximately \$90 million in investment that wasn't  
18 covered by insurance would be put into rate-base in  
19 this case.

20 Q. Is there any other effort that could be  
21 undertaken to mitigate OPC's and/or AARP's concerns in  
22 this case?

23 A. Well, I don't think it would be through  
24 the FAC. I can't imagine how that would work, but  
25 maybe you have an idea as to how that would work that

1 I -- I can't think of off the top of my head at the  
2 moment.

3 Q. Was hoping you would.

4 MS. KLIETHERMES: That's all.

5 JUDGE WOODRUFF: All right. For Ameren?

6 MR. BYRNE: No, thank you.

7 JUDGE WOODRUFF: Redirect?

8 MR. MILLS: Just a few, your Honor.

9 REDIRECT EXAMINATION BY MR. MILLS:

10 Q. In your deposition was the question about  
11 substantial improvements in the upper reservoir asked  
12 in the context of a series of questions?

13 A. Yes, it was, I think.

14 Q. Did the same question by Ms. Kliethermes  
15 have any context?

16 A. What do you mean by "the same question"?  
17 When she was asking me about -- oh, when she was  
18 asking me, for example, about enhancements to the  
19 upper reservoir? I don't know if it did or did not  
20 have the same context without reviewing the  
21 deposition.

22 Q. What clarification would you need to  
23 answer the question when Ms. Kliethermes asked it?

24 A. Oh, are you talking about her  
25 hypothetical or --

1           Q.     No. Her very first question was, was  
2 the -- was there substantial improvement in the upper  
3 reservoir and you --

4           A.     Oh, okay.

5           Q.     -- your answer was that you needed more  
6 information to be able to as-- to answer that.

7           A.     Well, yes. I would. I mean one of the  
8 things that I would want to know is are we talking  
9 substantial improvements, you know, relative to the  
10 original Taum Sauk project as designed or as  
11 constructed or as further modified when the liner was  
12 put in in the mid-1990's and all the instrumentation  
13 adjustments that took place in conjunction with the  
14 liner installation and then the further  
15 instrumentation adjustments that took place in  
16 response to many of the false signals that were  
17 apparently tripping the plant off.

18          Q.     You were asked a series of questions from  
19 Mr. Byrne, for example, about at the time of your  
20 deposition did you know what the term "gallery" meant.  
21 Do you -- do you un-- do you recall those series of  
22 questions?

23          A.     Yes, I do.

24          Q.     And at your deposition did you -- did you  
25 answer any of those questions "I've never heard of



1 that term before"?

2 A. No. My answer was generally much  
3 different. Was, you know, to the effect -- sometimes  
4 it was that a term he was asking me about I actually,  
5 you know -- for instance PFMA analysis, I'd actually  
6 used that in my testimony, I had used it in discovery  
7 requests that I sent to the company, but simply could  
8 not recall the term at the time.

9 Q. Now, with respect to some questions that  
10 you were asked by Commissioner Davis, until the -- the  
11 consent agreement, are you aware of any statements  
12 from Ameren that even hinted that Ameren might seek to  
13 raise rates because of Taum Sauk rebuild costs?

14 A. No, I'm not.

15 Q. And when was the consent agreement signed  
16 in relation to the -- to the Taum Sauk disaster?

17 A. I believe it was in November 2007.

18 Q. Almost two years after the event?

19 A. Yes. The event was in December 2005.

20 Q. Okay. Now, with respect to Commissioner  
21 Davis's questions about repairing a reservoir that's  
22 full versus empty, isn't the Taum Sauk reservoir  
23 drained down once or twice a day?

24 A. Yes. That's part of the process of -- of  
25 running it is that you drain it to run the turbines.

1           Q.     Isn't that really the whole point of a  
2 pump storage facility?

3           A.     That's how you generate electricity from  
4 it, yes.

5           MR. MILLS:  No further questions.

6           JUDGE WOODRUFF:  All right then.

7     Mr. Kind, you can step down.

8           And that concludes the Taum Sauk issue.  
9     The next issue on the list is municipal lighting and  
10  it's nearly five o'clock.

11          COMMISSIONER KENNEY:  Judge --

12          JUDGE WOODRUFF:  Commissioner Kenney?

13          COMMISSIONER KENNEY:  Can I ask a  
14 question?  Can I ask a question of either -- Mr. Kind,  
15 no question for you.  It's for Mr. Byrne or  
16 Mr. Lowery.

17                 My -- my question is regarding the notice  
18 that was provided to MDNR and the -- the parties to  
19 the consent agreement.  I guess it was MDNR and the  
20 Conservation Commission.  When was that notice  
21 provided to them?

22                 MR. BYRNE:  I believe it was required to  
23 be provided seven days before we filed.  We provid--  
24 you know, at least seven days before we filed.  We  
25 provided it a little earlier than that.  And as I

1 said, we met with each of the parties. And it was --  
2 I believe it was also the attorney general and the  
3 Department of Conservation and the Department of  
4 Natural Resources.

5 So we -- so we provided them with written  
6 notification but also sat down and met with them and  
7 went over our direct case regarding Taum Sauk.

8 COMMISSIONER KENNEY: Was -- did the  
9 written notification set forth exactly what it is that  
10 Ameren would be seeking to recover in rates?

11 MR. BYRNE: I don't have a copy of it.  
12 We certainly -- we certainly explained exactly what we  
13 were seeking to recover when we met with them. I  
14 don't know -- I'm not exact -- I can provide you a  
15 copy of the written notification if you'd like to see  
16 if, Commissioner.

17 COMMISSIONER KENNEY: I -- could we file  
18 that in EFIS also? Could we mark it as an exhibit and  
19 file it? And -- and was the notice the same to the  
20 AG, governor, MDNR and the Conservation Commission?  
21 Essentially the same notice?

22 MR. BYRNE: Yeah. We just changed the  
23 recipient and sent the same notification. But again,  
24 as I said, we also had a meeting with each of those  
25 parties.

1                   COMMISSIONER KENNEY: Okay. Well, since  
2 you mentioned that, the parties with whom you met,  
3 would it have been the same parties with -- that  
4 signed off and the consent decree or that negotiated  
5 the consent decree or just different representatives?

6                   MR. BYRNE: No. The parties that we  
7 negotiated the consent decree with.

8                   COMMISSIONER KENNEY: The actual -- I  
9 mean I know it's the same entities, but the same human  
10 beings? Because I think --

11                   MR. BYRNE: No. Governor -- Governor  
12 Nixon I think was the attorney general at the time the  
13 consent decree was signed. So for -- we -- I think we  
14 also met with the governor's office, but -- but to  
15 fulfill that obligation, we met with the current  
16 attorney general, you know, which was his successor.

17                   At -- at least some of the people were  
18 involved. I believe, for example, in the attorney  
19 general's office even though the attorney general  
20 himself wasn't same, there were senior -- senior  
21 representatives of the attorney general's office who  
22 were the same senior representatives who were involved  
23 in negotiating the original agreement.

24                   MS. KLIETHERMES: And Commissioner  
25 Kenney, I should also mention that Staff did meet with

1 representatives of DNR and the attorney general's  
2 office on -- on at least one occasion, I think there  
3 may have been additional conference calls.

4 COMMISSIONER KENNEY: Okay. That's all I  
5 had. And you'll -- you'll file that notice in the  
6 case?

7 MR. BYRNE: Yes. Be glad to.

8 JUDGE WOODRUFF: We'll go ahead and mark  
9 it as -- No. 158 is your next number.

10 COMMISSIONER KENNEY: Thank you. Thanks  
11 very much.

12 MR. LOWERY: Your Honor, just for  
13 clarification as well, I believe some written  
14 materials may have been provided as part of those  
15 meetings that took place that explained what we were  
16 asking for. And to the -- so to the extent my memory  
17 serves me, we will also provide those as part of that  
18 same exhibit.

19 MR. DOTTHEIM: Commissioner Kenney --

20 JUDGE WOODRUFF: Wait a minute. Let's  
21 deal with 158 here first.

22 COMMISSIONER KENNEY: Sorry.

23 JUDGE WOODRUFF: Do you wish to offer 158  
24 at this time?

25 MR. BYRNE: Yes. Yes, your Honor.



1 the limited testimony they have filed. And that in  
2 itself may answer your questions. As Ms. Kliethermes  
3 said earlier in the day, their non-appearance here  
4 today even though they had some testimony filed but  
5 they're not even appearing with their witness today  
6 may say something in itself.

7 I don't know how the Commissioners might  
8 want to proceed, if they want to proceed any further,  
9 but since it was a meeting, so to speak, of counsel  
10 with witnesses, but a meeting of counsel, I don't --  
11 and Ms. Kliethermes didn't feel comfortable going into  
12 any greater detail about the -- about the matter, then  
13 we have -- then we have done.

14 JUDGE WOODRUFF: Well, thank you,  
15 Mr. Dottheim then. If the Commission wishes to take  
16 further action, we'll let you know in the near future.

17 COMMISSIONER DAVIS: Judge, can -- can I  
18 inquire of Mr. Mills?

19 JUDGE WOODRUFF: Go ahead.

20 COMMISSIONER DAVIS: Mr. Mills, it  
21 just -- it seems to me that -- I mean Mr. Kind was  
22 professing that he knew -- he knew nothing about  
23 Ameren's plans to seek any recovery from the  
24 ratepayers until after Mr. Birk had -- had filed his  
25 testimony.

1                   At some point -- I mean when Ameren --  
2                   after they had signed the -- the consent agreement on  
3                   November 27th, 2007, and, you know, they announced  
4                   plans that they were going to -- to rebuild Taum Sauk  
5                   and make it, you know, as -- obviously as operational  
6                   on or about April 15th, 2010, did they at any time  
7                   meet with you and say, This is what we're -- we're  
8                   planning to do and we, you know, are going to be  
9                   seeking the difference between, you know, what -- what  
10                  the rebuild cost is and what we recover from our  
11                  insurance company?

12                 MR. MILLS: Mr. Kind may be able to have  
13                  a different answer on this, but for myself, no, they  
14                  never did.

15                 COMMISSIONER DAVIS: No.

16                 MR. BYRNE: Your Honor, my recollection's  
17                  a little different. We did schedule a meeting and I  
18                  know we met with the Staff and I believe we invited  
19                  the Office of the Public Counsel. We met with  
20                  numerous Staff members. I thought Mr. Kind was there,  
21                  but I'll go back and check my records.

22                 When we came down to Jefferson City and  
23                  had a meeting before the rate case was filed, I can't  
24                  imagine we wouldn't have invited the Office of Public  
25                  Counsel.



1                   COMMISSIONER DAVIS: Well, I mean, that  
2 was before -- before this rate case was filed, but I  
3 mean --

4                   MR. BYRNE: Actually pretty considerably  
5 before the rate case was filed.

6                   MR. MILLS: And I didn't take the  
7 question that way. There may have been a meeting  
8 shortly before the rate case was filed, but not in the  
9 period from 2007 until 2010, no.

10                  MR. BYRNE: Mr. Lowery says June of '10  
11 is when we went town.

12                  COMMISSIONER DAVIS: So June of '10.  
13 Mr. Byrne, are you aware of any other meetings?

14                  MR. BYRNE: No. Just that one, plus the  
15 meetings with all the parties to the agreement.

16                  COMMISSIONER DAVIS: And I guess I'm --  
17 I'm curious if -- if Mr. Schallenberg or Mr. Henderson  
18 or anyone else here got a heads-up prior to June of  
19 2010 or Mr. Dottheim, wherever he -- do you have any  
20 knowledge, Mr. Dottheim?

21                  MR. DOTTHEIM: Of the consent judgment?

22                  COMMISSIONER DAVIS: Well, I mean just do  
23 you know, Mr. Dottheim -- and if you don't know,  
24 that's -- that's fine. But at any point after --  
25 from -- from let's say January of '08 after, you know,

1 did -- did Staff inquire of Ameren about -- well, I  
2 mean Mr. Gilbert has been involved in this process  
3 since pretty much day one of the rebuild.

4 So I mean, do you recall did Ameren make  
5 a presentation to Staff in terms of what the number --  
6 what the financial numbers were going to be for the  
7 rebuild and everything?

8 MR. DOTTHEIM: I, myself, was not  
9 involved in that process. There were other members of  
10 the -- of the Staff. Ms. Kliethermes may be able  
11 to -- to address that or may -- may -- may know more  
12 than I do there. Because I don't doesn't mean that  
13 there weren't others in the general counsel's office  
14 who may know more.

15 MS. KLIETHERMES: And my recollection of  
16 assignments within the general counsel's office, which  
17 is -- please do not give it any more weight than it's  
18 due is that Shelley Syler Brueggemann would have been  
19 handling that roughly prior to her accepting the  
20 water/sewer position. And I think a lot of that would  
21 have taken place during that time.

22 COMMISSIONER DAVIS: Right.

23 MR. DOTTHEIM: And I don't know if part  
24 of that -- and Ms. Kliethermes may be indicating this,  
25 this may have been in part because of the actual ES

1 case that -- that was in existence at that time. And  
2 I think Ms. Brueggemann was working on the -- on the  
3 ES case in particular.

4 MS. KLIETHERMES: That is my  
5 recollection.

6 COMMISSIONER DAVIS: Okay. All right.  
7 Thank you. No further questions.

8 JUDGE WOODRUFF: All right. Let's move  
9 onto then -- we'll take a break here in a moment in  
10 case anyone's wondering. I do want to decide what we  
11 want to do with the -- the next issue, the municipal  
12 lighting issue. It is now almost five o'clock. Do we  
13 want to push on with this today or do we want to push  
14 it back for another day?

15 MR. CURTIS: Your Honor, on behalf of the  
16 municipal group, given that the hour is very late,  
17 it's been a full day. We would prefer starting the  
18 lighting -- municipal lighting issue first thing in  
19 the morning.

20 JUDGE WOODRUFF: What do the other  
21 parties say? Ameren and Staff have the other  
22 witnesses. Come on forward so we can hear you on the  
23 mic.

24 MS. TATRO: Ameren doesn't object to  
25 handling it either way, your Honor.

1 JUDGE WOODRUFF: Staff?

2 MS. KLIETHERMES: Staff doesn't object  
3 either way. I can tell you that as it stands, I don't  
4 have any cross planned for either of the witnesses so  
5 if that factors in at all.

6 JUDGE WOODRUFF: Do the parties  
7 indicate -- have any idea how long this might take?

8 MR. BYRNE: Are there any witnesses that  
9 nobody has any cross for?

10 MS. TATRO: I don't believe we have cross  
11 for Staff. I certainly have cross for Ms. Eastman.

12 MR. CURTIS: Your Honor, we have very  
13 little cross for Staff, but we do have a fair amount  
14 of cross for Mr. Difani.

15 MS. KLIETHERMES: I would propose then  
16 that we just take Mr. Scheperle up today perhaps?

17 JUDGE WOODRUFF: I don't see there's any  
18 reason to do him out of order unless he has to be  
19 somewhere else tomorrow.

20 MS. KLIETHERMES: No.

21 JUDGE WOODRUFF: And Mr. Difani can be  
22 here tomorrow also?

23 MS. TATRO: Yes.

24 JUDGE WOODRUFF: Also cost of capital and  
25 property tax. Will we be pressed to finish those in a

1 more restricted amount of time?

2 MR. BYRNE: Maybe cost -- I mean cost of  
3 capital could take a long time maybe.

4 JUDGE WOODRUFF: Okay. Well, since the  
5 parties prefer waiting until tomorrow morning, that  
6 would be my preference as well. So we'll push  
7 municipal lighting back to the start of the day  
8 tomorrow and then we'll go from there.

9 We are adjourned at this point and we'll  
10 resume at 8:30 tomorrow.

11 COMMISSIONER DAVIS: Judge, before you  
12 adjourn, can I inquire of you? I mean, I don't know  
13 what the schedule is for the cost of capital experts,  
14 but, you know, I know those people are experts from  
15 out of town and everything, so --

16 JUDGE WOODRUFF: Yes. We'll make sure  
17 they get finished tomorrow.

18 COMMISSIONER DAVIS: Right. So I -- and  
19 I'm inquiring of you. Would it be prudent to advise  
20 people that if they have babysitters or whatever, they  
21 may want to make arrangements to stay after  
22 five o'clock?

23 JUDGE WOODRUFF: For tomorrow?

24 COMMISSIONER DAVIS: Yes. For tomorrow.

25 JUDGE WOODRUFF: Yes. I think that's

1 probably a good idea. We'll -- we will finish if  
2 not -- if not probably tax, we'll definitely finish  
3 cost of capital tomorrow. So bear that in mind. All  
4 right. We are adjourned.

5 (OPC Exhibit Nos. 300, 302 and 303 were  
6 marked for identification.)

7 WHEREUPON, the hearing was adjourned  
8 until 8:30 a.m. May 3, 2011.

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## 1 CERTIFICATE OF REPORTER

2  
3 I, Tracy Thorpe Taylor, CCR No. 939, within the  
4 State of Missouri, do hereby certify that the  
5 testimony appearing in the foregoing matter was duly  
6 sworn by me; that the testimony of said witnesses was  
7 taken by me to the best of my ability and thereafter  
8 reduced to typewriting under my direction; that I am  
9 neither counsel for, related to, nor employed by any  
10 of the parties to the action in which this matter was  
11 taken, and further, that I am not a relative or  
12 employee of any attorney or counsel employed by the  
13 parties thereto, nor financially or otherwise  
14 interested in the outcome of the action.

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16 \_\_\_\_\_  
17 Tracy Thorpe Taylor, CCR  
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## EXHIBITS INDEX

MARKED REC'D

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\* A portion was received.

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