

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

STATE OF MISSOURI  
PUBLIC SERVICE COMMISSION

TRANSCRIPT OF PROCEEDINGS

EVIDENTIARY HEARING  
May 10, 2017  
Jefferson City, Missouri  
Volume 5

In the Matter of the Application )  
of the Empire District Electric ) File No.  
Company for Approval of its ) EO-2018-0092  
Customer Savings Plan )

JUDGE MICHAEL BUSHMANN, Presiding  
REGULATORY LAW JUDGE

DANIEL Y. HALL, Chairman,  
WILLIAM KENNEY,  
SCOTT T. RUPP,  
MAIDA COLEMAN,  
COMMISSIONERS.

REPORTED BY:

Monnie S. Mealy, CCR, CSR, RPR  
Alaris Litigation Services  
3432 W. Truman Boulevard, Suite 207  
Jefferson City, MO 65109  
(573) 636-7551

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

A P P E A R A N C E S

For Staff of the Missouri Public Service Commission:

Ms. Marcella Forck  
Ms. Nicole Mers  
Missouri Public Service Commission  
P.O. Box 360  
200 Madison Street  
Jefferson City, MO 65102  
(573) 751-3234

For Office of Public Counsel and the Public:

Mr. Nathan Williams  
Office of Public Counsel  
200 Madison Street  
P.O. Box 2230  
Jefferson City, MO 65102  
(573) 751-4857

For Renew Missouri:

Mr. Timothy Opitz  
Renew Missouri  
409 Vandiver Drive  
Building 5, Suite 205  
Columbia, MO 65202  
(402) 943-7938

For Sierra Club:

Mr. Henry Robertson  
Great Rivers Environmental Law Center  
705 Olive Street, Suite 614  
St. Louis, MO 63101  
(314) 231-4181

For City of Joplin:

Ms. Stephanie Bell  
Ellinger & Associates, LLC  
308 E. High Street, Third Floor  
Jefferson City, MO 65101  
(573) 230-5609

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

A P P E A R A N C E S (CONTINUED)

For MEGC:

Mr. David Woodsmall  
Attorney at Law  
807 Winston Court  
Jefferson City, MO 65101  
(573) 797-0005

For Division of Energy:

Mr. Marc Poston  
Department of Economic Development  
Division of Energy  
P.O. Box 1157  
Jefferson City, MO 65102  
(573) 751-5558

For the Empire District Electric Company:

Mr. Dean L. Cooper  
Ms. Sarah Knowlton  
Brydon, Swearingen & England, PC  
P.O. Box 456  
312 East Capitol Avenue  
Jefferson City, MO 65102  
(573) 635-7122

1 P R O C E E D I N G S

2 JUDGE BUSHMANN: Let's go back on the  
3 record. Before we go any further this morning, do  
4 any parties have any matters that need to be  
5 discussed? I don't hear any. Is Empire ready to  
6 call their next witness?

7 MS. BELL: Judge, I would just like to  
8 offer the exhibit on my opening yesterday. All the  
9 parties have had time to review it. It's Joplin  
10 501. And it's just public comments that I quoted  
11 in my opening.

12 JUDGE BUSHMANN: I don't have a copy of  
13 that.

14 MR. COOPER: We -- we would object to  
15 that, your Honor. They're not sworn comments.  
16 There are -- there are sworn comments. Those were  
17 provided at the -- at the public hearing in this  
18 matter. So we would object on the basis that  
19 they're -- they're hearsay.

20 JUDGE BUSHMANN: What's your response?

21 MS. BELL: I think they are official  
22 records of the Public Service Commission in that  
23 the Public Service Commission offers -- offers  
24 members of the public the opportunity to submit  
25

1 public comments.

2 And although there are individuals who  
3 might not have had the time or opportunity to  
4 attend the public hearing, they did take the time  
5 out of their day to submit official public comments  
6 to the Public Service Commission, and the Public  
7 Service Commission retains those comments as part  
8 of the case file.

9 And so I think they come in and overcome  
10 the hearsay objection on the basis that they are  
11 official records of the Public Service Commission.

12 JUDGE BUSHMANN: I'm going to sustain the  
13 objection. I think that they are hearsay. So I  
14 will not accept 501. Anything further? Ready to  
15 call your witness?

16 MR. COOPER: Yes, your Honor. Empire  
17 would call Mr. Blake Mertens.

18 JUDGE BUSHMANN: Please raise your right  
19 hand.

20 BLAKE MERTENS,  
21 being first duly sworn to testify the truth, the  
22 whole truth, and nothing but the truth, testified  
23 as follows:

24 DIRECT EXAMINATION

25 BY MR. COOPER:

1

2

JUDGE BUSHMANN: Please sit down.

3

**Q (By Mr. Cooper) Please state your name.**

4

A Blake Mertens. B-l-a-k-e M-e-r-t-e-n-s.

5

**Q By whom are you employed and in what**

6

**capacity?**

7

A Liberty Utilities Service Company as the

8

Vice President of Electric Operations for the

9

Central Region.

10

**Q Have you caused to be prepared, for**

11

**purposes of this proceeding, certain direct and**

12

**surrebuttal testimony in question and answer form?**

13

A I have.

14

**Q And is it your understanding that that**

15

**testimony has been marked as Exhibit 9 and 10 for**

16

**identification?**

17

A Yes.

18

**Q Do you have any changes that you'd like to**

19

**make to that testimony at this time?**

20

A Yeah. One small one, probably classified

21

as an update. In my direct testimony on page 17,

22

line 7, it has 1,199 megawatts as the historical

23

all-time peak.

24

I'd like to change that to 1,211 megawatts

25

to match up with our recent peak set in January of

1 this year.

2 Q If I were to ask you the questions which  
3 are contained in Exhibits 9 and 10 today, would  
4 your answers as now amended be the same?

5 A Yes.

6 Q Are those answers as -- as amended true  
7 and correct to the best of your information,  
8 knowledge and belief?

9 A Yes.

10 MR. COOPER: Your Honor, I would offer  
11 Exhibits 9 and 10 into evidence and tender  
12 Mr. Mertens for crosscross-examination.

13 JUDGE BUSHMANN: Any objections? Hearing  
14 none, those are received.

15 (Empire Exhibits 9 and 10 were offered and  
16 admitted into evidence.)

17 MR. BUSHMANN: First cross will be by  
18 Staff.

19 MS. FORCK: Thank you, your Honor.

20 CROSS-EXAMINATION

21 BY MS. FORCK:

22 Q Good morning, Mr. Mertens.

23 A Good morning.

24 Q Are you familiar with the affidavit of  
25

1 John Robinette filed May 9th, 2018, in this case?

2 A Yeah. I briefly reviewed that.

3 Q Do you have a copy of it up there with you

4 A I do not.

5 MS. FORCK: May I approach?

6 Q (By Ms. Forck) Is it correct to say that  
7 the graphs attached to this affidavit used the  
8 Meridian Way and Elk River generation numbers to  
9 determine an estimate for the addition of 600  
10 megawatts of wind contemplated by the stipulation?

11 A It -- it's my understanding that the Elk  
12 River and Meridian Way wind farms were used as a  
13 proxy. So those two wind farms are 250 megawatts.  
14 And then somehow that information was used to --  
15 used to prorata up to 855 megawatts. Yes.

16 Q Are Meridian Way and Elk River good  
17 proxies for the wind generation that will be built  
18 under the terms of the stipulation?

19 A I don't believe so. Several things have  
20 changed. Not only the technology of wind turbines  
21 today to make that -- as Mr. McMahon explained  
22 yesterday to make the profile wind turbine is much  
23 different than when these were installed back in  
24 2005 and 2008.

25



1 Plus, the location of the wind turbines in  
2 southwest Missouri is quite different than two wind  
3 farms that are out relatively in central Kansas.

4 **Q Would you please look at the first**  
5 **attachment? It has the date January 18, 2016, and**  
6 **then the words winter peak.**

7 A Yes. I see that.

8 **Q Can you explain to me just generally what**  
9 **this graph depicts?**

10 A Well, it appears that it -- the blue lines  
11 are representative of Empire's total load on our --  
12 our peak day -- or a peak on -- on January 18th of  
13 2016.

14 And then the -- the orangest line  
15 represents wind generation during that day or what  
16 appears to be 855 megawatts of generation based on  
17 what I talked about earlier coming from the Elk  
18 River and Meridian Way wind farms.

19 **Q So is it your understanding that that**  
20 **orange line, that estimated wind production line,**  
21 **represents actual production of Meridian Way and**  
22 **Elk River scaled up to 855 megawatts?**

23 A That's my understanding. I haven't seen  
24 the data behind that, but that's my understanding.  
25

1           **Q**    Okay.  Would you take a look at the page  
2   that indicates December 19, 2016, winter peak?

3           A    December 19, 2016, winter peak?

4           **Q**    Yes.

5           A    Okay.  Yep.  I'm there.

6           **Q**    How does the estimated wind production  
7   line on this graph compare to the previous  
8   estimated wind production line for January 2016  
9   winter peak?

10          A    Well, it shows a lot more production on  
11   that day than the previous graph.

12          **Q**    Okay.  Are the wind shapes the same for  
13   the two winter peak days, then?

14          A    No.  They -- they -- they would be quite a  
15   bit different.  Yes.

16          **Q**    Okay.  And, similarly, let's compare the  
17   spring minimums for 2016 and 2017.

18          A    So you're looking at the graph that says  
19   5/21/2017 and 5/1/2016?

20          A    Yes.

21          **Q**    Do these two days share a like wind shape?

22          A    They -- based on these graphs, no.  
23   They're different on those dates.

24          **Q**    Do any of the graphs depicted in  
25

1 Mr. Robinette's attachments have the same wind  
2 shapes as one another?

3 A You know, I haven't done a thorough  
4 analysis, but it appears that there -- there would  
5 be some variability between the graphs, and there  
6 wouldn't be a -- the wind during the day wouldn't  
7 match up. Correct.

8 MS. FORCK: Okay. Thank you. I have  
9 nothing further.

10 JUDGE BUSHMANN: Cross by MECG?

11 MR. WOODSMALL: Thank you, your Honor.  
12 Very briefly.

13 CROSS-EXAMINATION

14 BY MR. WOODSMALL:

15 Q (By Mr. Woodsmall) Good morning, sir.

16 A Good morning.

17 Q A couple things in your testimony I wanted  
18 to talk about, first being, on your surrebuttal,  
19 page 7 -- and I don't think you need to look it up.  
20 But there, you talk about -- you respond to OPC's  
21 criticism that the original GFSA would not lead to  
22 a diverse resource mix. Do you recall that?

23 A I would just like to pull it up, so --

24 Q Okay. Sure.

25

1 A You said page 7?

2 Q **Yeah. Bottom of page 7.**

3 A Could you repeat the question? Sorry,  
4 David.

5 Q **My question was, do you recall this**  
6 **discussion in your testimony?**

7 A Yes.

8 Q **Would you agree that leaving Asbury open**  
9 **would make the Empire resource mix more diverse?**

10 A You know, I think we get caught up a lot  
11 in what diverse is. You know, I think a -- amount  
12 of coal, amount of natural gas, amount of wind and  
13 hydro that we have in our system as well as fuel  
14 oil as back-up makes it very diverse.

15 And so I -- I think -- but there will be,  
16 you know, similar amounts of coal, natural gas and  
17 wind generation, which would -- would lead to a  
18 diverse system, yes.

19 Q **When you say similar amount, under the**  
20 **stipulation which leads -- leaves Asbury open? Is**  
21 **that what you're referring to?**

22 A That would be correct. Yes.

23 Q **Okay. The second thing I wanted to talk**  
24 **to you about, you have some discussion in your**

25

1 direct testimony about environmental compliance at  
2 Asbury. Are you familiar with that?

3 A Yes.

4 Q And in there, you talk about that there's  
5 a need going forward for approximately 20 to  
6 \$30 million of environmental costs.

7 A Correct.

8 Q Can you tell me what that's associated  
9 with?

10 A Yes. We have coal compression residual  
11 rules that the EPA has put out that we have to  
12 comply with, at least with the current rules, by  
13 April of 2019.

14 So the 20 to \$30 million is really  
15 representative of three things. One, there's about  
16 \$10 million worth of closure of the existing around  
17 pond. That's going -- those -- that \$10 million is  
18 going to occur whether we retire Asbury or not.  
19 At some point, those ash ponds are going to have to  
20 be closed.

21 The other approximately 20 million is  
22 related to two projects. We have to build a new  
23 landfill, which is about eight to \$10 million of  
24 that cost. And then we have to put a new bottom  
25

1 ash conveyance -- conveyance system on the existing  
2 boiler, which is about ten to \$12 million dollars.

3 Q And the -- the 20 million -- the two  
4 projects that constitute the 20 million, those  
5 costs could be avoided if Asbury was closed?

6 A That's correct.

7 Q Okay. So either way, we're going to pick  
8 up at least a third of the costs whether Asbury  
9 stays open or closes?

10 A Correct.

11 MR. WOODSMALL: Okay. No further  
12 questions. Thank you.

13 JUDGE BUSHMANN: Division of Energy?

14 MR. POSTON: Yes. Just a few. Thank you.

15 CROSS-EXAMINATION

16 BY MR. POSTON:

17 Q Good morning.

18 A Good morning.

19 Q Now, in the company's application and  
20 testimony filed in this case, it was contemplated  
21 that Asbury would close, the company made  
22 commitments to offer affected employees other  
23 employment opportunities within the company; is  
24 that correct?

25

1           A    That is correct.

2           **Q    And that was within your testimony; is**  
3 **that right?**

4           A    That's correct.  I think it was in my  
5 rebuttal -- surrebuttal.

6           **Q    And why did the company make those**  
7 **commitments?**

8           A    Well, there -- there were a lot of  
9 circumstances leading to the retirement of Asbury.  
10 And we felt we had a skilled work force out there,  
11 spent a lot of time training them and wanted to  
12 honor the training.

13                    You know, it was good for the company and  
14 good for the employees to continue to -- or to  
15 provide them opportunities to continue within the  
16 company.

17           **Q    And that included training as you were**  
18 **just talking about, right?**

19           A    Yes.  It may take additional training to  
20 move them to other areas of the company.  Yes.

21           **Q    And under the terms of this stipulation,**  
22 **the plant would not be closed at this time.  But**  
23 **the company would exercise its management**  
24 **discretion to close Asbury; is that correct?**

25

1           A    That's -- that's what the stipulation  
2   says, correct.

3           **Q    And will the company file these same**  
4   **commitments regarding employees should it choose to**  
5   **close Asbury?**

6           A    As of today, that agreement is -- is still  
7   in place if that's what you're asking.

8           **Q    Well, the agreement doesn't speak to the**  
9   **employees of Asbury. I'm referring to the**  
10   **commitments the company had made in their**  
11   **testimony.**

12          A    Right.

13          **Q    If you do decide to close, will you still**  
14   **try to find employment for the employees there and**  
15   **training opportunities for them?**

16          A    Yeah. What I'm saying is the agreement  
17   with the union that we have --

18          **Q    I see.**

19          A    -- is still in place today. So yes.

20               MR. POSTON: Okay. All right. Thank you.  
21   That's all.

22               JUDGE BUSHMANN: Renew Missouri?

23               MR. OPITZ: No thank you, Judge.

24               JUDGE BUSHMANN: Sierra Club?

25



1 MR. ROBERTSON: Yes.

2 CROSS-EXAMINATION

3 BY MR. ROBERTSON:

4 Q Good morning.

5 A Good morning. I'd like to refer you to  
6 your direct testimony, Exhibit 9.

7 Q Who was responsible for ensuring the  
8 reliability of the SPP grid?

9 A The Southwest Power Pool, along with its  
10 members, oversee the -- the Southwest Power Pool  
11 and its dispatching -- the way it dispatches the  
12 system on a daily basis is in charge of the  
13 reliability of that system.

14 Q You say in your testimony that energy is  
15 dispatched through SPP's integrated marketplace to  
16 ensure reliability. How does that dispatch ensure  
17 reliability?

18 A Well, on a -- a daily basis, we go through  
19 a process, as all the other members of SPP go  
20 through a process, where we submit our units into  
21 the Southwest Power Pool for them to dispatch them.

22 They do that on two bases. One, economic  
23 basis. But if there is an economic issue out there  
24 that may cause a reliability issue, SPP would say,  
25

1 for instance, Shut this unit off because it's going  
2 to cause a reliability issue and turn this one on.  
3 So there's two parts of that daily dispatch  
4 protocols.

5 **Q Okay. And does SPP also do reliability**  
6 **studies?**

7 A Yes, they do. Yes, they do.

8 **Q Are those for specific projects, wind**  
9 **farms, other units or overall?**

10 A They go -- they go through several  
11 processes. Annually, they go through a 10-year  
12 planning cycle where they look at different  
13 upgrades that need to be made on the system to  
14 ensure reliability as well as flow across the  
15 system.

16 And then we also have to go through any  
17 time we put in a -- a new unit, whether it's a wind  
18 farm or thermal assets, we have to get a large  
19 generator interconnection agreed that we have to go  
20 through a study process to make that happen.

21 And then once that occurs, we have to go  
22 through a study process that allows us to get  
23 network service from our units back to -- to -- to  
24 ensure we have transmission from our units back to  
25

1 our customers' load.

2 So there's really three -- at least three  
3 different study processes going on specifically  
4 related to new units and new transmission lines.

5 **Q And do you know how their study processes**  
6 **deal with the retirement of Asbury?**

7 A Well, once we get within a period where we  
8 believe we'll retire any unit, we have to give them  
9 six months advanced notice. And then they would  
10 run that through a study process and determine in  
11 if any -- if that retire would cause any  
12 reliability issues and, therefore, cause that  
13 person -- or the entity that's retiring that unit  
14 to have any transmission upgrades.

15 **Q And SPP, I believe you testified, is**  
16 **subject to the reliability standards of NERC and**  
17 **FERC?**

18 A That's correct.

19 **Q North American Electric Reliability**  
20 **Council and Federal Energy Regulatory Commission?**

21 A That is correct.

22 **Q Now, in your rebuttal testimony, Exhibit**  
23 **10, on pages 7 through 9, you discuss the**  
24 **reliability of Empire's -- of SPP's system.**

25

1 A Yes.

2 Q And did you respond to the testimony of  
3 OPC witness Lena Mantle, her rebuttal testimony?

4 A Yes, I did.

5 Q And have you also read Ms. Mantle's  
6 surrebuttal testimony, Exhibit 201?

7 A Yes, I have read it.

8 Q I don't suppose you have a copy of that?

9 A I -- I do not.

10 Q Let me -- now, what I gave you is not the  
11 complete copy of the testimony, just certain pages.  
12 I'd like to refer you to page 10. And there is a  
13 quotation in that middle -- middle of that line --  
14 of that page from a data request response. Do you  
15 see that?

16 A I do. Yes.

17 Q Were you the author of that data request  
18 response?

19 A I couldn't recall for sure. I've answered  
20 a lot of data requests in different jurisdictions.  
21 But, I mean, I'm familiar with the answer.

22 Q All right. And below that, lines 17 and  
23 18, Ms. Mantle says, This response merely states  
24 that Empire has enough capacity to meet the SPP  
25

1 capacity margins. Is that right?

2 A Yes.

3 **Q Is capacity margin the only basis for your**  
4 **assessment that the customers savings plan will not**  
5 **compromise good reliability?**

6 A Could you say that -- state that again?

7 Sorry.

8 **Q Is capacity margin the only basis for your**  
9 **assessment that the customer savings plan will not**  
10 **compromise grid reliability?**

11 A No, it's not. There are several other  
12 factors.

13 **Q Well, what other factors do you rely on?**

14 A Well, I -- as I discussed earlier, we --  
15 we go through the robust study processes. We go  
16 through our daily submissions into the -- into the  
17 system. So many of those factors I talked about  
18 earlier.

19 **Q Okay. What percent of Empire's capacity**  
20 **is gas?**

21 A I don't -- off the top of my head, I don't  
22 know percentages. We have roughly 900 megawatts of  
23 our 1400 megawatts of generation that is related to  
24 natural gas.

25

1           **Q    Okay.  And Elk River and Meridian Way have**  
2           **accredited -- they have -- they get capacity credit**  
3           **from SPP, do they not?**

4           A    That's correct.

5           **Q    At what -- what percentage?**

6           A    We have to go through an annual process  
7           that SPP has put together to -- that looks at the  
8           historical output of the wind farms and compares it  
9           to our peak load as well as the peak load of SPP.

10           In rough numbers it's come out to about 15  
11           percent over -- of the entire nominal capacity of  
12           the unit.

13           **Q    Is that true of newer wind farms as well?**

14           A    I mean, we could use that as a proxy, and  
15           that's what I've done in my testimony.  We will --  
16           we'll go through the same study process once those  
17           units come online.  We'll be able to use that same  
18           type of calculation.

19           **Q    And how do you respond to OPC's concern**  
20           **that SPP power prices are too uncertain to justify**  
21           **the risk to ratepayers?**

22           A    Well, there's a certain level of  
23           uncertainty in -- in any market with a zero cost  
24           fuel units.  I would argue that that -- that they  
25

1 have a competitive advantage from the zero cost  
2 fuel perspective compared to other thermal units.

3 Q Going back to your direct testimony, page  
4 9 -- page 6, I believe -- I'm sorry. Lines 15 to  
5 17. You say, It's a buyer's market for wind in SPP  
6 right now. Do you expect that level of saturation  
7 to continue after the PTC expires, Production Tax  
8 Credit, in 2020?

9 A No. I -- I expect there to be a  
10 significant falloff after the December 31st, 2020  
11 deadline. Will there still be wind added? I'm --  
12 I'm sure. But it won't be the saturation that  
13 we're seeing now.

14 Q All right. And I want to refer you back  
15 to Ms. Mantle's surrebuttal, page 5. Do you have  
16 that one?

17 A Yes. I have it here.

18 Q Lines 21 to three. She says, In Empire's  
19 2016 rate case, Staff's fuel run showed Empire's  
20 wind purchased power agreements was more costly  
21 than energy from Asbury.

22 A I see.

23 Q Now, those PPAs were with Elk River and  
24 Meridian; is that right?

25

1 A That's correct.

2 Q And you know, when did -- what year did  
3 Empire enter its PPA for Elk River?

4 A 2005.

5 Q And for Meridian Way?

6 A 2008.

7 Q Do you know if the capacity factors of  
8 those wind farms are higher or lower than those of  
9 new Kansas wind farms?

10 A When we put -- they would be lower. When  
11 we put Elk River in, you know, it was purported to  
12 be the best capacity factor in the state of Kansas,  
13 about 43 percent.

14 New wind farms out in Kansas are in the  
15 upper 40s, and I've seen reports of even 50 percent  
16 or higher capacity factors for wind farms in  
17 Kansas.

18 Q Okay. And that's improved technology to a  
19 large degree, is it not?

20 A Improved technology, higher -- higher  
21 turbines, higher head heights. Yes.

22 MR. ROBERTSON: That's all I have. Thank  
23 you.

24 JUDGE BUSHMANN: Cross by City of Joplin?

25



1 MS. BELL: Thank you.

2 CROSS-EXAMINATION

3 BY MS. BELL:

4 Q We'll just start where we left off. You  
5 just stated that you've seen capacity factors  
6 higher than 50 percent. Did you bring that data  
7 with you today?

8 A I did not. I've just seen that in  
9 publications.

10 Q Is that -- and that data is not in the  
11 record?

12 A Not that I'm aware.

13 Q And were you present for Mr. McMahon's  
14 testimony yesterday?

15 A I was.

16 Q And do you recall him deferring several  
17 questions about the stipulation to you?

18 A Yes. I was quite excited about that.

19 Q But you didn't file an affidavit in  
20 support of the stipulation, correct?

21 A I did not.

22 Q So your testimony was limited to direct  
23 and surrebuttal?

24 A That's correct.

25

1           Q    And so all of that testimony was on the  
2   basis of the original plan, correct?

3           A    Yes. All my -- all of -- if you're asking  
4   if all of my testimony was based on the original  
5   filing, yes. That's correct.

6                    But I believe much of it is still  
7   substantive for what we're talking about even with  
8   the stipulated agreement.

9           Q    Okay. If you'd turn to your direct  
10   testimony -- I'm on page 5. And there, you just  
11   speak generally -- I think on page 5 and page 6,  
12   you speak generally about the recent developments  
13   in wind generation.

14                   And then on page 6, you say the technology  
15   and industry has been improving. And you've  
16   repeated that today, correct?

17           A    Yes, I have.

18           Q    That's your position?

19           A    Yes.

20           Q    And then if you'd turn to page 7, you -- I  
21   think you said you were -- major drivers lowering  
22   the overall cost of wind generation. And you  
23   identify four drivers; is that correct?

24           A    Yes. I have four bullets that refer to  
25

1 lower turbine pricing, improved technology,  
2 improved construction efficiency and local  
3 manufacturing, yes.

4 **Q Are any of those bullets supported by**  
5 **footnotes or factual information?**

6 A I don't have any footnotes, if that's what  
7 you're asking.

8 **Q And so on lower turbine pricing -- you've**  
9 **worked for Empire since 2001; is that correct?**

10 A That's correct.

11 **Q And Empire's never had its own wind**  
12 **assets, correct?**

13 A We have not owned -- directly owned. We  
14 have purchase power agreements.

15 **Q If wind technology is ever improving and**  
16 **improving at a quicker pace), is it reasonable to**  
17 **lock yourself in now to the technology that exists**  
18 **today rather than perhaps holding resources back**  
19 **and capitalizing on the technology in five years?**

20 A Well, as we've discussed, you know, the --  
21 the biggest deadline is related to the protection  
22 tax credit. And that provides our customers  
23 basically a 50 percent discount.

24 So we -- you know, if you would equate  
25

1 that to turbine technology, we would have to see a  
2 50 percent improvement in the amount of wind that  
3 -- the capacity factor.

4 So we'd have to go from a 45 percent  
5 capacity factor to a 90 percent capacity factor. I  
6 can tell you today that's just not possible unless  
7 we make turbines, you know, thousands of feet tall.

8 So the other side of it would be we'd have  
9 to cut the capital costs in half from, you know,  
10 the roughly 15 to \$1600 KW down to 750. Is that in  
11 the long-term impossible? No.

12 Do I -- of my professional opinion believe  
13 that's going to happen in the next four or five  
14 years? Absolutely not.

15 **Q On page 8 of your direct testimony, you**  
16 **talk about, In addition to changes in the market,**  
17 **Empire is now part of a corporate family that has**  
18 **experience with tax equity financing as a reason of**  
19 **why this case is before the Commission.**

20 **But for the merger, would you -- would**  
21 **Empire have considered this type of application?**  
22 **Yes or no?**

23 **A** I think if you look at the April of 2016  
24 Integrated Resource Plan that Empire filed before  
25

1 it went forward with the merger without  
2 Algonquin/Liberty Utilities, we started talking in  
3 and of 2016 about the changes we were seeing in the  
4 wind industry and the possibility even before we  
5 file our next triennial that we would have to try  
6 to take a deeper look and continue to study this  
7 wind being added to SPP.

8 So can I sit here and say it would be  
9 exactly as we filed it without the expertise? I  
10 couldn't say that. But we were looking into this.  
11 But, you know, that expertise has brought a lot of  
12 value to our customers.

13 **Q On page 11, lines 1 and 2, you state, The**  
14 **company decided to seek approvals to retire Asbury**  
15 **and in conjunction with the acquisition of the wind**  
16 **projects. And on line 22, you state, The sooner**  
17 **that we receive Commission approval. Is that what**  
18 **Empire is seeking is approval?**

19 A You know, I think you're getting at  
20 Commissioner Hall's questions yesterday. And I  
21 think what we're looking for is an indication that  
22 our plan is reasonable. Yes.

23 **Q Okay. On page 8 of your -- or I'm sorry.**  
24 **On page 12 of your direct testimony, you talk about**  
25

1 Asbury. Is it true that Asbury was the only plant  
2 Empire could propose to retire because it's the  
3 only plant not under joint ownership?

4 A Could you repeat that? Sorry.

5 Q Is it true that Asbury is the only  
6 generation facility that Empire could propose to  
7 retire because it's the only facility not under  
8 joint ownership?

9 A No. I think the -- the modeling allowed  
10 Energy Centers Units 1 and 2 -- and Mr. Holmes  
11 could correct -- correct me probably later. But I  
12 think Units 3 and 4 as well as the Ozark Beach  
13 units were allowed to be retired.

14 And I think Mr. McMahon went through in  
15 depth yesterday about the different reasons on why  
16 were and some were not allowed to retire.

17 Q Okay. I think Mr. Woodsmall asked you a  
18 few questions about what costs are essentially sunk  
19 with the Asbury project.

20 And I think your answer was, Well,  
21 regardless of whether it stays open or closed, a  
22 third of that 20 to 30 million will have to be  
23 expended anyway; is that correct?

24 A Roughly. That's correct.

25

1 Q And you included those costs in your -- in  
2 your testimony and in your modeling, correct?

3 A Yes. Correct.

4 Q In your testimony, you also talked about  
5 dismantling costs. And in that case, you said  
6 because there are had costs, because they're going  
7 to happen anyway, we chose to exclude those from  
8 our modeling.

9 Why include some costs in one -- in one  
10 situation and exclude some costs in another?

11 A We just knew the -- that the 20 or  
12 \$30 million was something coming up relatively  
13 quickly where the timing of the -- the retirement  
14 was -- you know, if we took some dollars, I think,  
15 just say it cost \$20 million today and we put some  
16 inflation on it out into the \$20 million today to  
17 dismantle it, and then we would just have to  
18 inflate it out into the future.

19 So we just felt like from a -- what the  
20 cost would be today, it -- it was a little bit  
21 different. So I couldn't say that there was, you  
22 know -- couldn't say that that was a -- a  
23 significant dollar value in our overall analysis.

24 Q Okay. On page 17, you talked about  
25

1 Empire's all-time peak. And I believe that's the  
2 provision that you updated today?

3 A That's correct.

4 Q And so there is -- you're stating there  
5 was a new peak in January of this year?

6 A That's correct.

7 Q And was today the first time that you  
8 shared that information with the other parties?

9 A I don't believe so. I think the -- I  
10 think it was -- I know it was referred to  
11 yesterday, maybe in someone's opening remarks.

12 And there may be a data a request out  
13 there with that. But I don't believe that's the  
14 first time that was shared with the parties.

15 Q Okay. On page 18 of your direct  
16 testimony, you talk about dispatching the wind --  
17 the wind facilities into SPP. So with respect to  
18 wind -- and I am not a wind expert.

19 But you cannot essentially store it up and  
20 dispatch it when the -- when you need to. And so a  
21 lot of the graphs we're seeing, we're seeing that  
22 the wind is highest when we -- when we need it the  
23 least. And so you aren't able to capture that and  
24 kind of equalize that variability in any manner,  
25



1 are you?

2 A I think if you look at those graphs that  
3 were based off of the Elk River and Meridian Way,  
4 you can see sometimes even in there where there was  
5 higher generation during some on-peak hours.

6 But, you know, as discussed with today's  
7 technology and the wind turbines reaching higher,  
8 there is a little bit more levelized continual  
9 generation out of these units than what the older  
10 ones would have.

11 Undoubtedly, there's still probably more  
12 generation in off-peak hours. Today, we don't  
13 have, you know, large scale batteries to store that  
14 energy. Can that technology and is that technology  
15 likely to come in the coming years? Yes.

16 **Q And those batteries would then allow you**  
17 **to dispatch that excess wind when it was being**  
18 **produced when you didn't need it?**

19 A That -- yeah. Effectively, yes.

20 **Q Do you know the cost of those batteries?**

21 A Today, they're not economical on our  
22 system. They -- they are higher cost. Yes.

23 **Q And those costs are not included in any of**  
24 **the modeling?**

25

1 A They are not.

2 Q Okay. On page 21 of your direct  
3 testimony, you talked about -- oh, the long-term  
4 service agreements with the OE -- OEMs, right?

5 A Yes.

6 Q And those -- I think yesterday we -- we  
7 talked a lot about how wind projects would be low  
8 cost.

9 But it's your testimony that there will be  
10 planned maintenance and unplanned repairs and that  
11 provisions regarding those costs will be contained  
12 in those OEM agreements, correct?

13 A You went on for a while there. Could  
14 you --

15 Q Sure. Sorry. I will -- okay. So the OEM  
16 agreements will contain provisions regarding  
17 planned maintenance and unplanned repairs, correct?

18 A Correct.

19 Q And those are costs of the wind projects,  
20 correct?

21 A Correct.

22 Q Okay. Moving to your surrebuttal  
23 testimony, on page 5, you talk about the jobs that  
24 will be required for ongoing maintenance of the

25

1 wind projects and you state how many jobs would  
2 that be.

3 A I think somewhere in here, I -- we  
4 estimated 40 jobs for 800 megawatts of wind  
5 turbines.

6 Q And what were the jobs that would be --  
7 essentially be a cost savings for you because they  
8 would be eliminated because of Asbury? If you were  
9 to close Asbury, what was the number?

10 A Our full staff prior to starting to  
11 minimize our work force out there is roughly 60  
12 employees.

13 Q And you said you're minimizing your work  
14 force. What's your staff right now?

15 A I believe we're at roughly 45 Empire  
16 employees. And then we have some contractors  
17 on-site doing fuel handling, another four or five  
18 employees.

19 Q Okay. I'm going to hand you OPC's opening  
20 that has been marked as MECG -- I think it's 235.

21 MR. WOODSMALL: 352.

22 Q (By Ms. Bell) 352. A little bit of  
23 dyslexia there. You were present yesterday for --

24 MR. WILLIAMS: May I interject? My  
25

1 recollection is that what's been marked as MEC -- I  
2 don't remember the Exhibit number, but was only two  
3 pages out of that opening.

4 MR. WOODSMALL: That was my intention.  
5 Yeah.

6 JUDGE BUSHMANN: I -- that's what I have  
7 is there were two pages that were being referred  
8 to. I don't know what those two pages are.

9 MS. BELL: Okay. Well, for my purposes,  
10 I'll just mark this as Joplin 502. And that's the  
11 full opening, just for identification purposes.

12 JUDGE BUSHMANN: That's fine.

13 Q (By Ms. Bell) Okay. You were present  
14 yesterday for the opening by OPC; is that correct?

15 A That's correct.

16 Q And if you could flip to page -- I don't  
17 know what it was numbered -- 20, page 20. And that  
18 is the page that has the capacity factors chart on  
19 it, Table 1, Annual Capacity Factors of Kansas Wind  
20 Farms.

21 A Okay.

22 Q Are you familiar with these projects?

23 A I mean, I'm familiar with the names,  
24 roughly familiar with where some of them are

25

1 located, yes.

2 Q Okay. So on -- if you look at Waverly  
3 Wind Farm and Cedar Bluff Wind Farm, in 2014, they  
4 show NA. And in 2015, for Waverly, it also shows  
5 NA. Is that because these are new wind farms?

6 A I'm not familiar with -- with Cedar Bluff.  
7 Waverly, I believe it was installed sometime in  
8 2015 or '16.

9 Q Okay. And it would be reasonable to  
10 assume that they are using the latest wind  
11 technology; is that correct?

12 A I -- I couldn't comment on what vintage of  
13 turbines they -- they put in there. I couldn't  
14 testify to that.

15 Q Okay. And at Waverly, which was installed  
16 in 2015, roughly, what's the capacity factor for  
17 that wind farm?

18 A It's --

19 MR. WOODSMALL: Your Honor, at this point,  
20 he's being asked to provide as evidence something  
21 that's not in evidence. He hasn't been shown to  
22 have firsthand knowledge of this.

23 So he's simply reciting a number off of a  
24 piece of paper that he can't verify. So until we  
25

1 lay a foundation that he has knowledge, I'd object  
2 to this being put into evidence.

3 JUDGE BUSHMANN: Response?

4 MS. BELL: I'll withdraw the question.  
5 I'll ask it in a different way.

6 JUDGE BUSHMANN: Go ahead.

7 **Q (By Ms. Bell) Do you have any data to**  
8 **support the proposition that Kansas -- new wind**  
9 **farms in Kansas have better capacity than older**  
10 **vintage wind farms?**

11 A Are you -- are you asking me if I have  
12 anything, sitting here today, in my possession to  
13 show that?

14 **Q Or have put anything in the record.**

15 A I -- I couldn't tell you if anyone's  
16 answered a data request that would have any other  
17 capacity factors in there.

18 **Q Okay.**

19 A So --

20 MS. BELL: If I could have just a minute,  
21 your Honor.

22 **Q (By Ms. Bell) It's -- this still hasn't**  
23 **been an identification of a contractor for the wind**  
24 **projects; is that correct?**

25

1           A    We -- we have a short list of projects and  
2           contractors that we are looking at.  But no  
3           contract has been signed with -- with any of them.  
4           Correct.

5           **Q    Okay.  And do you have an estimate of**  
6           **ratepayer impact for the wind projects?**

7           A    I'd probably defer that to Mr. Holmes as  
8           some analysis he's done.

9           **Q    Okay.  Would you be the one to answer**  
10          **questions about market prices, or would you also**  
11          **defer that question to someone else?**

12          A    I guess it depends on -- I mean, market  
13          prices associated with modeling or just general  
14          market prices?

15          **Q    Well, we'll see what questions you can**  
16          **answer.  Would you agree that benefits to customers**  
17          **depend on revenues received from the wind projects?**

18          A    I would -- I would agree that that is part  
19          of our modeling.  Yes.

20          **Q    Okay.  And would you agree that the**  
21          **revenues out of SPP are largely dependent on wind**  
22          **energy and wind energy generated?**

23          A    In total or just related to our plan?  I'm  
24          not following your question, I guess.

25

1           Q    The way you calculate the revenues, which  
2 ultimately Empire is saying ends up in customer  
3 savings, that number is dependent on wind energy  
4 generated, correct?

5           A    As it relates to -- as it relates to the  
6 wind turbines and the wind farms, correct.

7           Q    And if you don't have any wind to sell,  
8 you're not making any money? You can't sell it off  
9 in SPP?

10          A    We would not get any revenue from zero  
11 sales off of the wind farm.

12          Q    And you're familiar with the 280-B price  
13 forecasts that were used by Empire?

14          A    Aware of them, but I'd probably defer any  
15 questions about that specifically to Mr. Holmes.

16          Q    Okay. Okay. On Joplin 502, which I  
17 believe is still in your possession, I would ask  
18 you to look at page -- page 8.

19          A    I'm there.

20          Q    And have you reviewed this chart before?

21          A    I -- I -- I can't say that I have. No.

22          Q    Okay. My understanding is that this chart  
23 was attached to Mr. Riley's affidavit in opposition  
24 to the stipulation and agreement.

25



1           And it purports to show a 380 million  
2   shortfall in Years 1 to 10 in revenue requirement  
3   for the wind projects. Do you agree that there  
4   will be a 380 million shortfall?

5           A    I don't agree. But I couldn't comment at  
6   all about how this -- this chart was put together  
7   or -- I do not agree with that.

8           **Q    And so if -- so I guess my question is**  
9   **what's the difference between the numbers here and**  
10 **Empire's numbers? Is that a question for someone**  
11 **else?**

12           MR. COOPER: I object. Yeah. He's  
13 already indicated he's got no familiarity with this  
14 chart, so I don't know how he's going to compare it  
15 to anything else. But --

16           JUDGE BUSHMANN: He can answer the  
17 question if he knows it.

18           A    Could you repeat the question?

19           **Q    (By Ms. Bell) What's the difference --**  
20 **OPC's predicting a \$380 million shortfall. Empire**  
21 **is projecting a customer savings. Do you know**  
22 **generally why the difference would be so severe?**

23           A    This is, you know, ten years with -- ten  
24 columns with, you know, 15 lines. And I have spent  
25

1 no time analyzing it, so I couldn't tell you how  
2 those differences were calculated.

3 Q Okay. If you'd go to Slide No. 10.

4 A Yes.

5 Q And you would agree that capacity factor  
6 decreases over time with wind projects? There's a  
7 performance degradation?

8 A I would agree if you made no upgrades over  
9 time, as with any thermal units, similar wind would  
10 -- would have some degradation. But throughout  
11 periods you -- you do make some -- often make  
12 capital investments to maintain your integrity.  
13 But with no -- with no upgrades, you would likely  
14 see some degradation.

15 Q So on the capacity factor when the project  
16 was modeled at 54 percent and RFP at 47 percent,  
17 was that capacity factor in Year 1? Was it in Year  
18 10? Was there -- was that an average over the time  
19 period?

20 A I -- I couldn't answer that specifically.  
21 Probably Mr. Holmes could answer that better.

22 Q Okay. Thank you. If you'd look to page  
23 27.

24 A Yes.

25

1           **Q**    I believe that purports to show negative  
2    **prices increasing from 2.6 to 7 percent in 2017.**  
3    **Are -- would you expect that trend to continue?**

4           **A**    Well, again, these are -- these are  
5    real-time. The Southwest -- so these negative  
6    prices often come because there's imbalances  
7    between what is projected versus what is actually  
8    produced from these wind farms.

9           SPP is working right now to improve the --  
10   the way that wind is modeled. Or the accuracy of  
11   -- of forecasts for wind. So if that accuracy  
12   improves, then we could see a change in -- in this  
13   trend going up.

14          **Q**    Okay. And if you flip to the next slide,  
15   **I believe -- if we're on Slide 28, which is titled**  
16   **Elk River Annual Minimum Market Price. And so in**  
17   **2016, ABB said the minimum market price would be**  
18   **\$12. In 2017, their revised forecast would be \$9.**  
19   **And those are the forecasts used by Empire,**  
20   **correct?**

21          **A**    I believe that's correct. Yes. The ABB  
22   is 2016, 2017. Yes.

23          **Q**    And then this purports to show that the  
24   **actual minimum price was negative \$50. Are you**  
25

1 aware of any explanation by ABB why they were so  
2 wrong?

3 A Well, I don't -- I think we're  
4 mischaracterizing. That negative 50 could -- you  
5 know, could come from a five-minute interval, and  
6 that could just be what shows -- and that's how  
7 SPP's, L&Ps come out as negative 50 over five  
8 minutes.

9 The next minute, that could have been on  
10 the positive side because that imbalance had been  
11 corrected. So that -- over an hour's period, that  
12 could actually average out to twelve or nine, which  
13 is what the 12 and 9 represent are hourly averages.  
14 So --

15 Q So the twelve and nine are hourly averages  
16 and not the max forecast? Or the min forecast --  
17 sorry -- the minimum forecast?

18 A Well, the 12 would be the minimum forecast  
19 for one hour in the modeling.

20 Q Okay. And so if you'd flip to the next  
21 page, I believe that actual number is about half  
22 what the projections were. And is your explanation  
23 the same, that that's due to an averaging over the  
24 hour?

25

1           A    I'm saying that could be a possibility.  I  
2    don't know -- you know, I'd have to look into the  
3    actual 2017 max to see how that 61 was came up  
4    with.  I'm not familiar with where that came from.

5           **Q    Okay.**

6           A    But I do know L&Ps are -- are available in  
7    a five-minute interval basis.  And I'm assuming  
8    there was some query done to come up with that.

9           **Q    Are you familiar with the wind catcher**  
10   **project in Oklahoma?**

11          A    The -- yeah.  The same type of  
12    publications I read to get the -- you know, the  
13    capacity factors and updates on wind, where I read  
14    about the PSO case.  Yes.

15          **Q    So have you reviewed Dr. Marke's**  
16   **affidavit?**

17          A    I've read it briefly.  I don't have it in  
18    front of me.

19          **Q    Okay.  Have you reviewed the stipulation**  
20   **that was attached to the affidavit, the Oklahoma**  
21   **Wind Catcher Stipulation?**

22          A    I -- I briefly read it.  Yes.

23          **Q    Okay.  And just for the record, I placed**  
24   **the attachment to Dr. Marke's affidavit, which**

25

1 contains the language for the net benefit  
2 provision, on the Elmo. Mr. Mertens, have you  
3 reviewed the net benefits provision before?

4 A I'm -- I've got a bad glare from here, so  
5 I'm trying to be able to read what you put up here.  
6 I don't know if you have a hard copy or not.

7 Q My hard copy is on the Elmo. I think OPC  
8 might have a quick copy of the witness' affidavit.  
9 That's it. Where is it at? Attachment 2,  
10 Attachment 1. Okay. So do you have an  
11 understanding of how that net benefit provision is  
12 different from the provision contained in the  
13 stipulation and agreement?

14 A I've spent no time comparing this -- this  
15 net benefit calculation versus our customer  
16 protections, if that's what you're asking.

17 Q Do you know if anyone at Empire could  
18 answer questions about this document?

19 A If anyone could, it would likely be  
20 Mr. Holmes. He's the one that put the -- the  
21 customer protection provisions together for our --  
22 our stipulated agreement.

23 Q Okay. Do you know if the Commission were  
24 to scrap the 12 pages of Excel spreadsheets, flow  
25

1 charts, definitions from the stipulation and do  
2 something like a net benefit provision in Oklahoma  
3 what Empire's position would be?

4 A Without seeing it and seeing what other --  
5 no, I don't -- I couldn't tell you what our  
6 position would be.

7 MS. BELL: Okay. No further questions at  
8 this time.

9 JUDGE BUSHMANN: Cross by OPC?

10 MR. WILLIAMS: Thank you.

11 CROSS-EXAMINATION

12 BY MR. WILLIAMS:

13 Q Good morning, Mr. Mertens.

14 A Good morning.

15 Q Let's start with your change to your  
16 testimony.

17 A Yes.

18 Q I think it was on page 17 in your direct.  
19 You revised the figure from 1199 megawatts to 1,211  
20 megawatts?

21 A That's correct.

22 Q And you said that the new figure had been  
23 obtained in January of 2018?

24 A That's correct.

25

1           **Q    What was the date of the 1199 megawatt**  
2           **figure?**

3           A    Off the top of my head, I couldn't recall.  
4           I believe it was set in the winter a few years  
5           back. But I couldn't tell you specifically.

6           **Q    Within the past five years?**

7           A    I couldn't recall specifically. I would  
8           be guessing if I -- if I said what year it  
9           occurred. So I don't like guessing on the stand.  
10          So --

11          **Q    You can't even give an idea? I mean,**  
12          **within the past ten years?**

13          A    It's been within the last ten years.

14          **Q    But you can't say it's within the last**  
15          **five years?**

16          A    We -- we've been hovering around 1195 to  
17          1198, 1199 for several years, so I couldn't pick  
18          the exact year when that occurred.

19          **Q    And I'm -- I'm trying to get an idea. And**  
20          **I understand you can't pick an exact year. If**  
21          **that's the best you can do, that's fine.**

22          A    If you don't hold me to it, I believe it  
23          was 2011. But I'm not -- not positive about that.

24          **Q    And, again, that it's taken roughly eight**  
25



1 years -- seven or eight years for that maximum to  
2 change. How long has the maximum been in that  
3 range of 1200 megawatts?

4 A Probably since the 2007/2008 time frame,  
5 we've been hanging -- our peak load has been  
6 hanging right around that 1200 megawatts.

7 **Q And Empire is double peaking, is it not?**

8 A Yeah. Dual peaking. We basically see the  
9 same peak in the summer as we did in the winter.  
10 We probably -- this 1211 and the 1199 are winter  
11 peaks, so our most recent two peaks were winter.  
12 But the summer is not far behind.

13 **Q By not far behind, you mean it's close to**  
14 **the same level?**

15 A I think our all-time summer peak was 1198.  
16 So yeah. Pretty much.

17 **Q Thank you. In response to questioning by**  
18 **Mr. Woodsmall, you indicated that the cost of the**  
19 **ash pond closures would be in the neighborhood of**  
20 **\$10 million. Do you recall that?**

21 A I do recall that.

22 **Q Have you seen Public Counsel witness**  
23 **Robinette's surrebuttal testimony?**

24 A I probably reviewed it at some point.

25

1 Yes.

2 Q Well, there's a table in there that  
3 includes response to a Sierra Club data request.  
4 Do you recall that?

5 A Like I said, I've read many data  
6 questions, so I'd have to read it to be able to jog  
7 my memory.

8 MR. WILLIAMS: May I approach?

9 Q (By Mr. Williams) I'm handing you a copy  
10 of John Robinette's surrebuttal testimony that's  
11 been marked for purposes of identification as  
12 Exhibit No. 203. And in particular, I'm turning  
13 your attention to page 4 of 10.

14 A Okay.

15 Q Do you see Table 1 on that page?

16 A Yes, I do.

17 Q And what does it indicate as the cost of  
18 closing the ponds?

19 A There's a line here that talks about ash  
20 impoundment closure that has 5.1 million in 2018  
21 and then an additional 12.8 million out in 2021.

22 The \$12.8 million would be the eventual  
23 full -- full closure at 5.1 in 2018 is -- is part  
24 of our moving around. My recollection is it's

25

1 moving around and adjusting the existing as ponds  
2 to allow for the ash conveyance system and other  
3 runoff associated with existing ponds that we'd  
4 have to maintain even if we closed -- even if we  
5 would close, even if we continue operating, we're  
6 still going to have to form water pollution  
7 prevention plans, and that's that \$5 million that  
8 is in 2018.

9 Q So if I understand what you're saying,  
10 you're saying that the 5 million in 2018 is going  
11 to be incurred regardless of whether the ponds are  
12 closed or not?

13 A Could you restate that?

14 Q I'm just trying to understand if the  
15 5.1 million in 2018 under the ash impoundment  
16 closure line is a cost that Empire will incur  
17 regardless of whether or not the ash ponds are  
18 closed.

19 A I believe a portion of it. Not all of it.  
20 Because, as I said, we have to change some of the  
21 way our existing ponds are in order to allow us to  
22 capture stormwater runoff from the coal pile.

23 So would we have to incur a portion of  
24 that \$5 million no matter what? Yes. Do I know  
25

1 that exactly sitting here today, what portion of  
2 that? No. It's a little bit confusing. But we're  
3 doing -- we'd have to do some things to comply with  
4 the rule upfront. That's -- I didn't show those in  
5 2018. The actual closure of everything is the 2021  
6 number.

7 **Q Well, let me ask you this. Which is more**  
8 **accurate, the 12.8 plus some portion of the**  
9 **5 million or the 10 million figure you gave earlier**  
10 **for the cost that you would incur for closing the**  
11 **ponds regardless?**

12 A I would -- I would assume this is the  
13 number that's in our capital budget. So I would  
14 say the 12.8 what we know today is probably more  
15 accurate than the roughly \$12 million estimate I  
16 stated earlier.

17 **Q Maybe I'm mistaken. I thought you said**  
18 **ten.**

19 A Did I say -- what did I say there? That's  
20 what I meant to say. The 12.8 is more likely more  
21 accurate than the ten that I stated earlier.  
22 Sorry.

23 **Q Thank you. Do you recall Mr. McMahon**  
24 **saying the other day that it was Empire who**  
25

1 provided parameters, I guess is the word I'll use,  
2 for how the modeling was conducted?

3 A I -- I recall his testimony on that  
4 matter. Yeah.

5 Q Well, someone at Empire decided which  
6 constraints were to be imposed on which plants were  
7 allowed to retire, for example?

8 A Uh-huh. Correct.

9 Q It sounded like someone at Empire also  
10 controlled the other inputs that were used such as  
11 the ABB pricing was used, forecast pricing was  
12 used?

13 A I remember the -- the testimony on that,  
14 yes.

15 Q Was that accurate?

16 A Yes. If you are asking if -- well, I'll  
17 state it this way. I was involved, as I've been  
18 involved in all the IRPs. And I can say since  
19 really -- I've been an employee at Empire over the  
20 last 15 years.

21 I was involved in coming up with at least  
22 the majority of -- of those initial assumptions  
23 that went into the model.

24 Q So you're the one who decided which plans  
25

1 were allowed to retire in the modeling?

2 A We had -- we had joint conversations. So  
3 I'm not going to say I was the one that did that.  
4 But I was involved. And my knowledge of the  
5 existing units was a big part of those discussions.

6 Q Well, do you recall providing a response  
7 to a data request where the question was, Did  
8 Empire analyze retiring higher costs, older CT  
9 units instead of Asbury? If not, explain in detail  
10 why not.

11 And according to this data request  
12 response, which shows you as the responsible  
13 person, the response is, Modeling allowed for the  
14 optimization of retiring of all existing Empire  
15 units.

16 A Yeah. That may be a -- an incorrect  
17 response to that data request. I think, as Mr.  
18 McMahon and I discussed earlier, we allowed for the  
19 retirement of Asbury. We allowed for the  
20 retirement of Energy Center Units 1 through 4 and  
21 Ozark Beach Units 1 through 4.

22 So if -- if my name is on that, that would  
23 be an incorrect statement that we had -- had  
24 allowed all units to be retired as part of the  
25

1 analysis.

2 Q Well, did you prepare the data request  
3 response?

4 A I don't know if myself or someone  
5 underneath my area of responsibility would have.  
6 But I would have reviewed it before it was  
7 submitted, if that's what you're asking, yes.

8 Q Oh, do you want to see it?

9 A Yeah. Sure.

10 MR. WILLIAMS: Can I go ahead and have  
11 this marked as an exhibit?

12 JUDGE BUSHMANN: That would be 214.

13 (OPC Exhibit 214 was marked for  
14 identification.)

15 Q (By Mr. Williams) I've handed you what's  
16 been marked for identification as Exhibit No. 214.  
17 Do you recognize this?

18 A Yes.

19 Q And is that the data request we just  
20 talked about, the response?

21 A I'm assuming so. Yes.

22 Q Well, do you see anything on there that  
23 makes you think it is not?

24 A No.

25

1 Q And when was that response provided?

2 A January 5th of 2018.

3 Q And was any update provided to that  
4 response or correction?

5 A No. It wasn't -- as -- as I just stated,  
6 it was an error on -- on my part.

7 MR. WILLIAMS: Judge, I'd like to have  
8 another exhibit marked.

9 JUDGE BUSHMANN: That will be 215.

10 (OPC Exhibit 215 was marked for  
11 identification.)

12 Q (By Mr. Williams) Mr. Mertens, I'm going  
13 to hand you what's been marked for identification  
14 as Exhibit No. 215.

15 A Okay.

16 Q What is Exhibit 215?

17 A It looks like a -- an update to Data  
18 Request 8535.

19 Q Why do you think it's an update?

20 A That is 8535.1, and it's dated April 9th  
21 of 2018. And then --

22 Q Doesn't it pose a different question than  
23 what was asked in Data Request 8535?

24 A That first sentence starts with, In a  
25



1 response to OPC Data Request No. 8535, Mr. Mertens  
2 states, and goes on to -- goes on from there.

3 Q Well, isn't it asking you to -- or someone  
4 at -- actually, doesn't it ask for what definition  
5 you were using for all existing Empire units in  
6 your response to Data Request 8535?

7 A Yeah. I think it was -- it was a -- a  
8 matter of clarifying my response from earlier in  
9 the previous -- the previous DR that we just talked  
10 about.

11 Q And is the answer that's provided to -- or  
12 the responses provided to Data Request 8535.1 the  
13 correct response to Data Request 8535?

14 A State that again.

15 Q Is the response that was provided to Data  
16 Request -- by Empire, presumably you, to Data  
17 Request 8535.1 the correct response to the question  
18 that was asked in Data Request 8535?

19 A I think 8535.1 is clarifying the initial  
20 response to -- to -- to find the right units that  
21 were allowed to -- that were assumed to be allowed  
22 to retire in the model.

23 Q You think it's just a clarification as  
24 opposed to a correction?

25

1           A   Probably.  Correction is a fine term, I  
2   guess.

3           **Q   Where I'm trying to get in the end is**  
4   **whether or not the response to 8535.1 accurately**  
5   **reflects how the modeling was done with regard to**  
6   **how retirements were permitted -- units were**  
7   **allowed to retire in the modeling.**

8           A   I don't -- I don't think the -- as I  
9   stated earlier, I don't think 8535 correctly  
10  responded to the initial question.

11          **Q   But 8535.1, the response there does?**

12          A   I believe so.  Mr. -- Mr. Holmes could  
13  double correct me.  My name is on this.  But, you  
14  know, he's very familiar with that.  So if he has  
15  any further clarification, I'm sure you could ask  
16  him tomorrow.  But based on what I know, this is  
17  correct.

18          **Q   Well, a lot of people have been deferring**  
19   **to Mr. Holmes, at least you have pretty**  
20   **consistently.  How familiar is he with Empire?**

21          A   Mr. Holmes?  He's been involved in a lot  
22  of modeling that been taking place and -- and has  
23  been reviewing a lot of our -- our units and their  
24  capabilities.  So --

25

1           **Q    Well, how long has Mr. Holmes been**  
2           **involved in working with -- with Empire?**

3           A    You know, he was part of the transition  
4           team. You know, the merger went through in January  
5           of 2017. So, you know, probably six months prior  
6           to that, he started reviewing our -- our units and  
7           our data -- data from our different units. So a  
8           couple of years.

9           **Q    And how long have you been familiar with**  
10          **the operations of Empire?**

11          A    About 16, 17 years.

12                MR. WILLIAMS: Judge,, at this time, I'd  
13                like to offer Exhibits 214 and 215.

14                JUDGE BUSHMANN: Are there any objections?  
15                Hearing none, they're received.

16                (OPC Exhibits 214 and 215 were offered and  
17                admitted into evidence.)

18          **Q    (By Mr. Williams) And is it Mr. Holmes**  
19          **who has been making the decision about what**  
20          **modeling inputs are used that have been -- well,**  
21          **I'll just stop there.**

22          A    Has Mr. Holmes been involved in the  
23          discussions about -- around the model?

24          **Q    Is he the decision-maker about how the**  
25

1 inputs to the modeling?

2 A No.

3 Q Who is?

4 A As I said, we have a team of folks  
5 reviewing that day-to-day model. Couldn't tell you  
6 the day-to-day model. I mean, as far as  
7 decision-makers related to the IRP, I think myself,  
8 Mr. Swain. I think it's been listed that Mr. --  
9 Mr. Eichler from Liberty Utilities as well as David  
10 Pacica from Liberty Utilities.

11 And then I think Rob Sager, who is the CFO  
12 of our -- the CFO of our company, no longer with  
13 Empire, was another decision-maker.

14 Q What about for the stipulated plant  
15 modeling? I assume there was modeling done for  
16 that. Start there. Was there modeling done for  
17 the stipulated plant?

18 A Yes. I think Mr. Holmes and Mr. McMahon  
19 went through a lot of that modeling.

20 Q Do you know who provided the inputs into  
21 that modeling?

22 A I mean, I think from a, per se, input  
23 perspective, a lot of what they did in that final  
24 modeling was updated it on the most recent results  
25

1 we had from our RFP, from a -- from the -- from  
2 that perspective as well as, you know, a lot of the  
3 initial inputs wouldn't have changed.

4 We would have just sort of left Asbury on  
5 versus in a lot of the previous analyses, we had  
6 taken Asbury off.

7 **Q Who decided what inputs were included in**  
8 **the stipulation plan modeling?**

9 A Well, I think the inputs were already  
10 there from previous. From a modeling perspective,  
11 they would have just, you know, pulled some levers,  
12 one unit on versus one level off and potentially  
13 updated some of the wind cost data.

14 **Q Who did the modeling? Who actually**  
15 **performed it?**

16 A As I stated, Mr. McMahon and Mr. Holmes  
17 were -- were very involved along with ABB are  
18 consulted. But ABB would have actually run the  
19 model itself.

20 **Q That was what I was asking. Are you**  
21 **familiar with what's been occurring in SPP with**  
22 **regard to negative pricing?**

23 A Yes. I mean -- yeah.

24 **Q Do you know if there's been -- if that's**  
25

1 -- if SPP is looking at changing how the market  
2 operates to address negative pricing?

3 A Yeah. I think there's a couple things.  
4 As I discussed earlier, they are looking for  
5 improved overall forecasting of the individual wind  
6 farms.

7 And then, secondly, they're -- they're  
8 looking at a -- and I know Ms. Mantle had put some  
9 of this in her rebuttal testimony talking about --  
10 I'll use the short terms and come back with the  
11 NDVER versus DVER. But NDVER stands for  
12 Non-Dispatchable Variable Energy Resource, and DVER  
13 is a Dispatchable Variable Energy Resource.

14 And I think there's a -- a understanding  
15 as to what SPP is trying to do there. So  
16 non-dispatchable resources are, for example, Elk  
17 River and Radio Way Wind Farm.

18 They were installed back in 2000 -- prior  
19 to 2011 when the rules were being made for the SPP  
20 integrated marketplace.

21 And as I discussed earlier, the SPP  
22 integrated marketplace looks for the most economic  
23 dispatch. But some of those original wind farms  
24 were put with contract provisions that did not  
25

1 allow the owner to -- to curtail them. And it  
2 didn't allow SPP to control their -- their daily  
3 input.

4 So as part of SPP integrated marketplace,  
5 the participants agreed that those would be  
6 considered non-dispatchable variable energy  
7 resources and would not follow the same provisions  
8 within the SPP integrative marketplace for any new  
9 wind farms added after 2011.

10 So I think the misunderstanding that has  
11 taken place is our new wind farms will be  
12 considered dispatchable energy resources. And the  
13 ongoing conversations in SPP is to change the  
14 designation of those other wind farms from  
15 non-dispatchable to dispatchable variable  
16 resources.

17 And if that were to occur, that would  
18 actually be beneficial to our -- our new wind farms  
19 because it would have an impact on our old wind  
20 farms in those PPAs.

21 But the new wind farms would be,  
22 therefore, more dispatchable because these  
23 non-dispatchable resources wouldn't be able to be  
24 automatically left without dispatching requirements  
25

1 from SPP.

2 Q So you're telling -- well, would the  
3 stipulation modeling include closing the 600  
4 megawatts that was to be added as being  
5 dispatchable in SPP, then?

6 A I think, as Mr. McMahon stated yesterday,  
7 we followed the curves, the production curves that  
8 were -- were part of the modeling that we -- we  
9 came up with.

10 Q Well, what I'm asking is whether the  
11 modeling treated the wind farm as being  
12 dispatchable or not, what you're talking about,  
13 this misunderstanding in SPP.

14 A I -- I couldn't -- couldn't specifically  
15 respond to hour-to-hour decisions that the modeling  
16 made.

17 Q So your answer you don't know?

18 A I don't know.

19 Q Will Empire require to know the  
20 authorization of its Board of Directors to  
21 implement those stipulated plans?

22 A As with past, large energy resources  
23 before we enter into contracts -- or at the time we  
24 entered into contracts, we would put resolutions in  
25



1 front of our Board, yes.

2 **Q Have you done that yet?**

3 A We have not. We are working on those  
4 resolutions now as well as those type of  
5 authorizations.

6 **Q And why have you not done that yet?**

7 A At this point, we don't have specific  
8 contracts for them to approve.

9 **Q When do you anticipate having those**  
10 **contracts?**

11 A We are -- we are working towards something  
12 in -- in late May. But that's not -- not -- not a  
13 definitive concrete time frame.

14 **Q From the perspective of Empire's customers**  
15 **who are paying rates, why should Empire acquire --**  
16 **make it 600 megawatts of wind generation now?**

17 A Can you say that again? You took a little  
18 pause there in the middle.

19 **Q Why should Empire's customers -- from**  
20 **their perspective, why should Empire acquire 600**  
21 **megawatts of wind generation now?**

22 A I think we've shown through a -- a very  
23 robust modeling and through interactions with the  
24 -- the various Intervenors on running various  
25

1 scenarios, we've consistently showed savings to our  
2 customers by the addition of this generation.

3 Q Well, if the Commission ends up saying no  
4 in this case, is there any reason why Empire can't  
5 go out and go ahead through an affiliate -- well,  
6 let's just make it an affiliate.

7 An affiliate of Empire go out and build  
8 these wind farms and reap all of the benefits for  
9 its shareholders?

10 A I guess -- I guess I'm not completely  
11 following your -- your question.

12 Q Well, you're asking the Commission to have  
13 ratepayers for this project to be included in rate  
14 base for Empire's ratepayers to pay for.

15 Is there any reason why, if this  
16 Commission says, We're not going to rubber stamp  
17 that plan at this point in time, Empire couldn't,  
18 through one of its affiliates, go out and do this  
19 as an IPP?

20 A Well, I personally worked for the -- the  
21 regulated utility/Empire District, and my job was  
22 to look for solutions that are least cost to our  
23 customers as well as reliable and safe.

24 So my analysis is based on serving those  
25

1 customers and what's good for them. So I -- I  
2 couldn't speak to the IPP side of Algonquin.

3 Q Well, just so I don't forget to do this,  
4 you recall Mr. Robinette's affidavit that has some  
5 charts, some bar graphs and some line graphs? Do  
6 you have that with you?

7 A Yes. I have Mr. Robinette's affidavit. I  
8 have that here.

9 Q Are you familiar with typical load shapes  
10 for Empire on a daily basis?

11 A I'm -- I'm not sure I would classify wind  
12 generation, looking at a few charts, here as  
13 typical. But I'm -- I'm familiar with --

14 Q I haven't asked you anything about the  
15 charts yet. I'm just asking you if you have  
16 familiarity with the typical shape of Empire's load  
17 on a day.

18 A Yes.

19 Q Under -- it varies considerably on  
20 different days, does it not?

21 A It would, based on weather.

22 Q Are these -- the bar charts on these one,  
23 two -- well, there's -- there are a series of I  
24 guess I'll call them graphs that are attached to

25

1 the affidavit?

2 A Yes.

3 Q Have you had an opportunity to look at all  
4 of those?

5 A I -- I've looked at them briefly. Yes.

6 Q And looking at the bar graphs, just the  
7 bar graphs themselves, do those appear unusual in  
8 shape for Empire's load on a daily basis?

9 A No. They look consistent with what we  
10 would -- would see.

11 Q And then looking at the line graphs that  
12 are superimposed, are you familiar with the -- I  
13 understand there's a lot of variability in this.  
14 But are you familiar with the output of Meridian  
15 Way and Elk River?

16 A Yes.

17 Q And how those shapes can vary day-to-day  
18 in terms of output on an hourly basis?

19 A Yes. I'm familiar with that.

20 Q And would the variability that is shown on  
21 these graphs be consistent with the kind of  
22 variability that you've seen in terms of output  
23 from those wind farms?

24 A Yeah. I would -- yes. Generally, yes.

25

1 But, again, as I stated earlier, I'm not sure that  
2 what's proposed here would --

3 Q I'm not asking you anything other than  
4 whether or not these are consistent with the kind  
5 of information you've seen in other cases. I'm not  
6 asking to you quantify it or anything like that,  
7 just if the shapes are consistent with what you're  
8 familiar with on a daily basis in terms of load and  
9 wind output from the existing PPAs.

10 A From the existing PPAs, there's no reason  
11 I would think it would be different than what's  
12 proposed -- shown here.

13 Q Okay. Now, we've heard testimony that the  
14 new wind farms have better generation  
15 characteristics. So are you saying -- what does  
16 that mean in terms of these shapes that you see in  
17 these graphs for wind in comparison?

18 A Well, I think, in total, you know -- as we  
19 discussed, you know, these -- let's talk about Elk  
20 River represents roughly a 43 percent capacity  
21 factor. New turbines on that site would -- would  
22 likely -- I don't have any --

23 Q Well, those would go to the quantity of  
24 output. I'm just looking -- really, what I'm  
25

1 directing the question to is, is it going to change  
2 the variability of the output?

3 A Probably wouldn't change the overall  
4 variability. We may see a higher level of, per se,  
5 minimum output.

6 You know, on those -- those real small  
7 days, you might see a larger quantity because your  
8 turbines are higher and there's more wind up there  
9 at the higher level. But it wouldn't change --  
10 drastically change the overall variable, if that's  
11 what you're asking.

12 Q That's what I'm asking. So the shapes  
13 would be consistent probably. I mean, the -- you  
14 wouldn't expect a big change from the shapes you're  
15 seeing here?

16 A You know, I'd have to look at, you know,  
17 wind characteristics of southwest Missouri. There  
18 could be some variability. But, I mean, if -- if  
19 you're asking me if -- is the wind output going to  
20 be a straight line, no, it is not.

21 Q I wasn't going quite that far. I'm asking  
22 if these would -- you would expect that the new  
23 wind farms, the curve shapes would be similar to  
24 what you're seeing in these graphs for wind output?  
25

1           A    I would concede they would be similar  
2 characteristics.

3           Q    And that entails day-to-day variability  
4 and hour-to-hour variability, correct?

5           A    Correct.

6           Q    On page 6 of your direct testimony, it's  
7 probably more in your comfort zone, on lines 7 and  
8 9, you testify, The generation complete savings  
9 analysis is simply a more in-depth continuation of  
10 this analysis.

11           And you're referring to the 2016 analysis  
12 and the 2017 update resource planning analysis to  
13 determine whether there are any savings that can be  
14 achieved for customers; is that true?

15           A    Yes. As my testimony states, yes.

16           Q    Why didn't Empire do this more in-depth  
17 analysis for its 2016 IRP analysis and its 2017 IRP  
18 update analysis?

19           A    I -- I think you -- if you would go back  
20 to the 2016, trying the IRP, we were just starting  
21 to see a -- a shift in the -- the pricing  
22 associated with -- with wind due to these  
23 technology changes that we've been talking about.

24           The extension of the PTC, when we were  
25

1 doing our triennial filing, the PTC was getting  
2 ready to expire. And we didn't see that as a --  
3 without that -- those PTCs in the long run --  
4 long-term. We didn't see wind as viable.

5 But those PTCs were extended about the  
6 same time we were filing our 2016 IRP. And that's  
7 what we talk about in that triennial filing.

8 **Q Were the production credits set to expire**  
9 **at the time of that filing?**

10 A Well, I think at the time they were  
11 actually filed, they had just been extended. But I  
12 -- I think prior to that, they were either --  
13 either the end of 2015 or the end of 2016. I can't  
14 specifically recall.

15 **Q But if a project qualified for the**  
16 **production tax credits, it would get it for the**  
17 **full ten years, would it not?**

18 A Yeah. The PTC rules that allow for  
19 production tax credits over ten years. That's  
20 consistent between the -- the new ones and the old  
21 -- old --

22 **Q Well, haven't production tax credits for**  
23 **wind been available since at least 1994?**

24 A I heard Mr. McMahon testify and confirm  
25



1 that yesterday. I know they've been available for  
2 a while. I don't -- 1994, I couldn't state  
3 specifically. But, yes, they've been available for  
4 quite some time.

5 **Q Over a decade?**

6 A Yeah. Our -- our Elk River and Radio Way  
7 wind farms in 2005 and 2008, while we don't get the  
8 production tax credit specifically, those wind  
9 farms do no production tax credits.

10 **Q And did Empire do the more in-depth**  
11 **analysis for its upcoming 2017 update, resource**  
12 **planning update? I asked you about 2016 and the**  
13 **2017 update. Did Empire do it for the 2018 update?**

14 A I'm not sure. I think we were referred to  
15 the ongoing GFSA analysis and answered the  
16 questions related to contemporary issues. I'm not  
17 sure there was any further in-depth analysis  
18 because we referred to the ongoing analysis  
19 associated with this -- with this case and the  
20 customer savings plan.

21 **Q You say you referred to it. Did you --**  
22 **well, did you include the generation complete**  
23 **savings analysis as part of your update to the 2016**  
24 **resource planning in the 2018 integrated resource**  
25

1 plan annual update report that Empire filed with  
2 the Commission?

3 A I can't -- I couldn't recall whether we  
4 specifically filed the generation complete savings  
5 analysis as part of the 2018 annual tri -- annual  
6 update.

7 I know we refer to it, but I couldn't tell  
8 you whether we actually filed that actual  
9 report.

10 **Q Why wouldn't have you included it in that**  
11 **report?**

12 A Like I said, I can't recall whether we did  
13 or did not.

14 **Q At this point in time, has Empire changed**  
15 **its preferred resource plan?**

16 A The preferred plan, the 2016 IRP, is still  
17 what we consider our preferred, which is why we're  
18 here as part of these ongoing to determine  
19 long-term what our preferred plan is.

20 **Q Why isn't Empire willing to just go ahead**  
21 **and change its preferred plan at this point in time**  
22 **if it wants to build this 600 megawatts of wind?**

23 A Well, I think, as we discussed yesterday,  
24 from a financing -- financing of these type of  
25

1 projects and -- and overall assessment of the  
2 reasonability of this -- these projects then, our  
3 plan, that's why we brought this forth to the  
4 Commission and to the intervening parties.

5 **Q You have a triennial resource planning**  
6 **analysis that's due in April of 2019 to be filed**  
7 **with this Commission, do you not?**

8 A That's correct.

9 **Q Is Empire performing the more in-depth**  
10 **analysis that it did for the GFSA as part of that**  
11 **triennial filing?**

12 A We are, at this point, starting to put  
13 together the plan associated with the -- our 2018  
14 triennial filing. And, obviously, whatever comes  
15 out of these proceedings will be -- will -- will  
16 have an impact on how we analyze the 2019  
17 triennial.

18 **Q Well, my understanding in the resource**  
19 **planning is that you look at a number of different**  
20 **options and then you select one. And you look a**  
21 **lot -- consider a number of different futures.**

22 **But, ultimately, you select whichever A**  
23 **plan, that's what you call your preferred plan.**  
24 **Why wouldn't you -- why would you not, if you think**  
25

1 the GFSA is a rigorous planning, include that as  
2 part of your resource planning analysis? I mean.  
3 What's the difference that you're going to report  
4 to the Commission about?

5 A Well, I guess what I'm saying is I --  
6 whatever comes out of this will be part of our base  
7 assumptions. And then going forward, we would  
8 still figure out what our long-term plan is through  
9 additional modeling and analysis and robust review  
10 from the intervening parties. So I -- I guess --  
11 I'm a little confused by -- by what you're trying  
12 to get to.

13 Q Well, why would what comes out of this  
14 affect how you do your resource planning is  
15 basically what I'm getting at? What effect is it  
16 going to have on your base assumption?

17 A Well, if we would have -- you know, our  
18 base assumptions would have an additional 600  
19 megawatts. Even if it may -- even if we -- even if  
20 the Commission denies what we're going through  
21 here, our analysis would still go through the same  
22 robust review that we went through in this process.  
23 So many of the same analysis that we went through  
24 in this process, I'm sure, would be part of that  
25

1 2019 triennial filing.

2 Q I mean, Isn't resource planning something  
3 you do all the time? It's just in certain points  
4 of time you have to make certain recommendations to  
5 the Commission?

6 MR. COOPER: I'm going to object. I think  
7 this line of questioning is redundant. I think  
8 we've been over this maybe three times here. But  
9 that's my objection.

10 MR. WILLIAMS: I don't think it's  
11 redundant. And I think that's my last question on  
12 this area anyway.

13 JUDGE BUSHMANN: All right. Well, then  
14 we'll move along. Go ahead and ask your question,  
15 and we'll go to another subject.

16 MR. WILLIAMS: I did ask it. I'll have  
17 the court reporter read it back. It hasn't been  
18 answered yet.

19 A I guess I'll answer that. I remember it.  
20 I guess the -- the basic is you are correct. We do  
21 do continual resource analysis, which is part of  
22 this -- which is why we made this filing because we  
23 saw there was significant change in the market.

24 As part of our ongoing analysis, continual  
25

1 analysis, we thought this was a big enough change  
2 from our 2016 IRP, so we came forward with that  
3 before our 2019 triennial filing.

4 **Q (By Mr. Williams) Does Empire need to**  
5 **expand its resource capacity?**

6 A Today, we meet our reserve margin  
7 requirements that are part of the SP -- Southwest  
8 Power Pool with our existing generation.

9 **Q And is that the only criteria, then, you**  
10 **rely on for whether or not you need to expand your**  
11 **resource capacity?**

12 A I think as we discussed we try to look for  
13 least cost resources. You know, that -- that  
14 reserve margin/capacity requirement is -- is a  
15 reliability metric, but there are other economic  
16 factors that we look at our generation as well.

17 **Q So I'll ask you again, and please give me**  
18 **a yes or no answer. And if you need to provide**  
19 **more explanation than you have, I'm okay with that.**  
20 **Does Empire need to expand its resource capacity?**

21 A I guess I'd respond from what -- what  
22 metric are you looking at? From a reserve margin  
23 requirement or from a least cost analysis  
24 perspective or -- there's -- there's several items  
25

1 that you could -- there's several ways you could  
2 answer that question.

3 **Q Why don't you answer it from residential**  
4 **-- or not residential -- retail customer load**  
5 **requirement perspective?**

6 A And, again, as I stated earlier, we do not  
7 need to add additional capacity to meet the peak  
8 load of our retail customers. I think you -- well,  
9 when are Elk River and Meridian Way -- the purchase  
10 power agreements, when do those end respectively?

11 A The existing Elk River contract expires in  
12 2025. We do have an option to extend that for five  
13 years, but we'd have to negotiate the rate. So  
14 there's not a set rate for that five-year  
15 extension. And then the Meridian Way expires in  
16 2028.

17 **Q And what is that based on, those -- those**  
18 **dates you provided?**

19 A Twenty-year terms from their initial  
20 execution.

21 **Q The source of your information, is that a**  
22 **contract?**

23 A Yes.

24 **Q I was a little confused. Are you familiar**  
25

1 with any of Empire's FCC filings?

2 A Yes. As a -- as an officer of the  
3 company, I was familiar with those filings.

4 Q Are you familiar with the 10-Q that Empire  
5 filed for the quarterly period ending September of  
6 2016?

7 A Yeah. I would have -- I would have  
8 reviewed that at some point.

9 Q May I have -- let's see.

10 MR. WILLIAMS: May I approach the witness?

11 JUDGE BUSHMANN: Yes, you may.

12 Q (By Mr. Williams) I'm handing you a copy  
13 of the Empire District Electric's Form 10-Q for the  
14 quarterly period ending September of 2016. I want  
15 to turn your attention in particular to page 19.  
16 Well, I guess it's 20.

17 And the first thing I'm going to do is ask  
18 you, do you recognize what I've handed you?

19 A Yes.

20 Q And what is it?

21 A It is the Form 10-Q SEC filing. I'm  
22 looking for the date here. For the period ended  
23 September 30th, 2016.

24 Q Turn your attention to the page that has  
25



1 19 at the top, Table of Contents, cutter. Do you  
2 see that?

3 A Yes. I see that.

4 Q And there's a paragraph that talks about  
5 Plum Point, and then there's a second paragraph  
6 that talks about Meridian Way wind farm. Do you  
7 see that?

8 A Yeah. Howell County, yes, wind farm, yes.

9 Q And it indicates that agreement expires in  
10 2028, does it not?

11 A Yes.

12 Q And then there's a third paragraph that  
13 refers to the Elk Refer wind farm?

14 A Yes.

15 Q And it shows an expiration date of 2020,  
16 does it not?

17 A That's what the 10 -- 10-Q states. It  
18 must have been a typographical error because I can  
19 assure you it's 2025.

20 Q Well, that was the source of my confusion.  
21 I wanted to get some clarification on that. Of  
22 course, 10-Qs are documents that investors rely on,  
23 correct?

24 A That's correct.

25

1           **Q**    Do you know if there was ever any  
2    **correction made to that 10-Q?**

3           A    I -- I can't state with any certainty  
4    whether it was or not.

5           **Q**    On page 6 of your direct testimony, lines  
6    20 to 21, you indicate -- or you testified the wind  
7    -- in part, the wind generation industry has been  
8    **maturing over the last 10 to 15 years.**

9           A    Yes.

10          **Q**    Is the wind generation -- wind generation  
11    **industry still maturing?**

12          A    At -- as with all types of generation,  
13    there's continual technology advancements.

14          **Q**    So you're saying the wind generation  
15    **industry is always mature, then?**

16          A    Yeah. I would say there's a continual  
17    improvements. Are there periods in every type of  
18    technology where improvements are steeper than  
19    others? Yes.

20                And with -- with these large wind  
21    turbines, I would say kind of at the onset we're  
22    seeing -- we have seen some -- some rapid  
23    increases. As with any technology, those increases  
24    taper off with time.

25

1           Q    And then I'm going to direct your  
2   attention to page 9 of your direct testimony, line  
3   7 to 8. And there you talk about by owning and  
4   operating the wind generation assets, Empire is in  
5   a position of control over the generation of  
6   electricity from them, correct?

7           A    Correct.

8           Q    Do wind farms generate electricity when  
9   the wind is not blowing?

10          A    No.

11          Q    What is it that you mean by that sentence?

12          A    Well, my opinion -- when I'm referring to  
13   is -- is, from an ownership perspective, as with  
14   the majority of our other thermal assets, we  
15   control the decisions about day-to-day maintenance,  
16   day-to-day capital improvements that ensure  
17   long-term viability of those projects and the  
18   long-term benefits for our customers.

19          Q    Well, my understanding one of the great  
20   benefits of these wind projects is there's supposed  
21   to be very little day-to-day maintenance or capital  
22   improvements needed for them once they're  
23   installed. Am I wrong?

24          A    I'm not sure I would agree with -- with  
25

1 very little. Are they as large and complex as a  
2 combined cycle unit or a natural gas-fired combined  
3 cycle unit or a coal unit, no, they're not.  
4 They're not that complex.

5 But when you have a hundred or 150 of  
6 them, there is continual routine maintenance.  
7 These -- these units have lots of -- lots of moving  
8 parts. So I don't know about little, but there are  
9 things that you're doing continually to these  
10 units.

11 Q Well, isn't the cost of that considerably  
12 less than big coal-fired units such as IATAN 1?

13 A On a -- a per unit basis, yes.

14 Q I'm going to turn your attention to --  
15 let's see -- the same page, page 9 down on line 22.  
16 There's a -- you start a paragraph off there that  
17 continues onto the next page.

18 And in part, you testify that ownership of  
19 assets versus being in a lease, rent or pay for use  
20 situation with an asset or energy seller inherently  
21 creates healthier utilities and provides better  
22 local economic development opportunities for our  
23 cities, communities and customers. Why does owning  
24 wind farms inherently make Empire healthier?

25

1           A     Well, from the ownership perspective,  
2     again, it talks about the -- having those assets in  
3     our control versus, you know, being at the whim of  
4     a purchase power agreement that has defined terms  
5     and makes it hard for us to respond to ongoing  
6     issues from -- from a finance perspective.

7           Having those assets on our balance sheet  
8     does make us a healthier utility in the -- in the  
9     long run. And I think if you look at our existing  
10    Elk River and Cloud County wind farms, you know,  
11    that those terms being back from 2005, 2008, we're  
12    not in a position to make long-term decisions on  
13    those assets that -- that could make them more  
14    beneficial to Empire and its customers.

15           **Q     Okay. Well, you have the option of not**  
16    **renewing the five -- or extending one of the**  
17    **contracts by five years, correct?**

18           A     That's correct.

19           **Q     And you're done with them after their**  
20    **contracts terminate unless you negotiate new ones.**  
21    **Is that not correct?**

22           A     That would be correct.

23           JUDGE BUSHMANN: Mr. Williams, we need to  
24    take a break soon. I'm curious as to how much --  
25

1 if you have a lot more to go or if you're close to  
2 being finished.

3 MR. WILLIAMS: How long are you -- when  
4 did you want to take -- I mean, we can take a break  
5 now if you like.

6 JUDGE BUSHMANN: Why don't we go ahead and  
7 -- we've been going for a couple of hours. Let's  
8 be in recess for about 10 minutes.

9 (Break in proceedings.)

10 JUDGE BUSHMANN: Back on the record. And  
11 where we left off was cross-examination by Public  
12 Counsel.

13 Q (By Mr. Williams) One more question, or  
14 at least hopefully, regarding that same paragraph  
15 we were just looking at that starts on line 22 of  
16 page 9 of your direct testimony.

17 A Yes.

18 Q And I directed you to a particular  
19 sentence earlier where you talk about ownership of  
20 assets versus, I guess, not owning them creates --  
21 inherently creates healthier utilities and provides  
22 better economic development opportunities and so  
23 on.

24 A Uh-huh.

25

1           **Q    I asked you about why owning wind farms**  
2           **inherently makes Empire healthier, and you answered**  
3           **that question. My next question is why does Empire**  
4           **owning wind farms, quote, provide better local**  
5           **economic development opportunities for our cities,**  
6           **communities and customers, closed quote?**

7           A    Well, I -- I think owning these wind farms  
8           and bringing them into our, per se, family of -- of  
9           generating units and overall system and -- and  
10          invoking -- or getting those folks involved in the  
11          Empire family and, therefore, living in our  
12          communities, participating long-term in your  
13          communities is -- makes not only for a healthier  
14          Empire, but for a healthier community and long-term  
15          growth by -- by having those employees live  
16          locally.

17          **Q    I'm trying to understand how that relates**  
18          **to the difference between owning or not owning the**  
19          **assets that you're relying on. Can you explain how**  
20          **owning or not owning the wind farms provides better**  
21          **local economic development opportunities for the**  
22          **cities, communities and customers?**

23          A    I just think -- as I stated, by -- by  
24          owning, I think most of our -- well, I know most --  
25

1 our local communities and local officials are very  
2 prudent of -- of Empire, and they use the health of  
3 our company along with the pride that we show in  
4 our community to -- to help them with their  
5 economic development activities.

6 So making that family a little larger,  
7 saying that we have those wind assets and those  
8 employees within our family is what I'm referring  
9 to there.

10 Q Direct your attention to page 15 of your  
11 direct testimony and the first three lines where  
12 you testify that the environmental upgrades to  
13 Asbury will cost 20 to \$30,000,000.

14 A Yes.

15 Q Do you agree that currently Empire is  
16 planning to retire Asbury in 2035?

17 A I agree that's the date that was in our  
18 last IRP model. Or our IRP triennial filing in  
19 2016.

20 Q Is that also what depreciation rates are  
21 based on?

22 A That's correct.

23 Q Is there anything indicating that  
24 currently Empire is planning to retire Asbury at  
25



1 some other date?

2 A Nothing specifically rather than the  
3 ongoing conversations that we have here as well as,  
4 you know, just the continued difficulties from an  
5 economic dispatch perspective of the unit is seen.

6 Q Well, currently, then, for costing  
7 purposes, it's treated as having 16 years of  
8 remaining life, correct?

9 A That's correct.

10 Q Do you agree that 20 million divided by 16  
11 years is 1.25 million per year?

12 A I'll -- yes. I would agree that's  
13 correct.

14 Q And what is the investment that Empire is  
15 anticipating to make for its customer savings plan  
16 approximately?

17 A Are you referring to the stipulated  
18 agreement value or the --

19 Q That's what I intended. For the  
20 stipulated -- for the 600 megawatts, how much is  
21 Empire currently anticipating it will be investing?

22 A Approximately a billion dollars.

23 Q And how much of that is Empire  
24 anticipating will -- the original project for 800

25

1 megawatts was based on \$700 million that Empire  
2 would put up, and a tax equity partner would put up  
3 the balance, correct?

4 A Yes. Thank you for the correction. The  
5 billion dollars would be the total project cost.  
6 The tax equity would finance a portion of that.

7 **Q And I know it's not a locked down number,**  
8 **but approximately what is Empire anticipating its**  
9 **portion of that investment would be currently?**

10 A Mr. Mooney could answer that better. But,  
11 you know, I think we -- we show a range between --  
12 in some of his testimony between 40 and 60 percent.  
13 So just for the sake of this, roughly 50 percent,  
14 which is the middle of that range.

15 **Q So approximately \$500 million?**

16 A Yes. Approximately. I just want to make  
17 sure to clarify, that billion dollars does include  
18 some transmission upgrade costs, too, which would  
19 not be financed to the tax equity partner.

20 **Q And if you take that -- the anticipated**  
21 **life of the wind farms as -- as 30 years, is it**  
22 **not?**

23 A That's correct.

24 **Q And if you take that 500 million -- and**  
25

1 I'm just trying to get a ball -- well, let's make  
2 it 600 to make the math easier just for purposes of  
3 this question.

4 A Just for purposes of the question, that's  
5 fine.

6 Q Taking the 600 million and divide it by 30  
7 years, you get \$20 million per year, do you not?

8 A That's correct.

9 Q Is Empire filing a rate case in 2019 to --  
10 so it can be authorized to continue to have a fuel  
11 adjustment clause?

12 A I believe we are required to file a -- a  
13 case no later than September of 2019 due to the  
14 rules associated with the fuel adjustment clause.

15 Q And if -- if Empire goes forward with the  
16 stipulated plan, will not Empire seek a rate  
17 increase based on its investment in the new wind  
18 generating assets?

19 A You threw a will not in there that  
20 confused me as to what your question is.

21 Q If -- if Empire executes its plan, won't  
22 it seek a rate increase based on its investment in  
23 the new wind generating assets?

24 A Once those assets went into service, yes,  
25

1 we would -- we would have to go through a general  
2 rate case for prudence and getting those costs  
3 reflected in our rates.

4 **Q And it might take more than one rate case,**  
5 **correct, depending on timing?**

6 A It -- it potentially could.

7 **Q Do you know what the impact will be on**  
8 **Empire's Missouri retail customers bills related to**  
9 **Empire recovering through its customer rates its**  
10 **investment in the wind farms?**

11 A Well, I think over the life of the -- of  
12 the project, we would see our models reflect  
13 savings.

14 **Q I'm looking at the -- at the beginning**  
15 **when you first put those in service. What kind of**  
16 **a rate increase will it have on Missouri customers,**  
17 **if you know?**

18 A I do not know the -- the initial --  
19 Mr. Holmes, I know, has run some analysis on that.

20 **Q Do you agree that wind farms only produce**  
21 **electricity when the wind blows where they are**  
22 **located?**

23 A I think I've testified several times that  
24 wind turbines only generate when the wind blows.

25

1 Yes.

2 Q Well, when the wind blows where the  
3 turbines are, correct?

4 A Correct.

5 Q And do you agree that coal-fired  
6 generating plants produce electricity when the coal  
7 is burned?

8 A As long as everything else is functioning  
9 correctly, yes.

10 Q I'll give you that.

11 A Yeah.

12 Q Is it not the unreliability of - I'm  
13 sorry.

14 A No. I --

15 Q Is not the -- is it not the unreliability  
16 of wind farms to produce energy why their SPP  
17 accredited capacity relative to their nominal  
18 capacity is so low in comparison to those of  
19 coal-fired generating units such as Asbury?

20 A I wouldn't characterize it as  
21 unreliability. I would characterize it as  
22 intermittence. And -- and that's why it would be  
23 -- it's -- accredited capacity is calculated  
24 different than a thermal unit.

25

1           **Q    It's also a lot lower than a thermal unit,**  
2           **is it not?**

3           A    Yes.  It is -- like I said earlier, we get  
4           roughly 15 percent from our wind agreements versus,  
5           you know --

6           **Q    It's actually a little less than 50**  
7           **percent, is it not?**

8           A    The -- the calculation changes every year,  
9           so 15 percent is a plus or minus, yes.

10          **Q    So what are the SPP accredited and the**  
11          **nominal capacities for Empire's Elk River wind farm**  
12          **purchase power agreement?**

13          A    I -- I don't have that off the top of my  
14          head.

15          **Q    Do you know what the SPP accredited and**  
16          **nominal capacities are for Empire's Meridian Way**  
17          **wind farm PPA?**

18          A    Not -- not off the top of my head.  Again,  
19          it's, you know, somewhere in that 15 percent plus  
20          or minus.

21          **Q    And do you know the SPP accredited and**  
22          **nominal capacities of Asbury?**

23          A    I do know that one.  That one is 198  
24          megawatts.

25

1           **Q   That's the SPP.  What about the nominal?**

2           A   Are -- are you -- are you talking about  
3   the -- the nominal capacity of the generator?  I  
4   mean, it's -- nominally, it -- it has an overall  
5   capacity of about 218 megawatts.  But there's  
6   auxiliaries that get it back to accrediting  
7   capacity of 198 megawatts.

8           **Q   Okay.  Would you explain -- what do you**  
9   **mean by the auxiliaries to get it back to 198?  I**  
10 **don't follow what you're saying.**

11          A   Well, so, roughly, the unit is capable and  
12   actually does produce 218 megawatts.  But you have  
13   to use about 20 megawatts of that to run the  
14   auxiliary equipment to get you back to the 198  
15   megawatts of accredited continual capacity.

16          **Q   So you're saying the difference between**  
17 **the accredited and I guess maximum capability is**  
18 **because of usage at the station itself?**

19          A   Yeah.  I mean, that -- you mentioned --  
20   you said nominal.  The name plate capacity 218  
21   megawatts versus the accredited capacity of a 198  
22   because of those auxiliaries I talked about.

23          **Q   Thank you.  Are you familiar at all with**  
24 **Ameren Missouri plant at 700 megawatts of wind**  
25

1 generation?

2 A Just to the extent that I've -- I've seen  
3 it in different publications.

4 Q Do you know why Ameren Missouri's planning  
5 to add 700 megawatts of wind generation?

6 A I couldn't specifically speak to the  
7 strategy behind their addition of the 700  
8 megawatts.

9 Q On page 8 of your surrebuttal testimony,  
10 on lines 1 to 14, you testify about how Empire has  
11 relied on SPP for reliability, do you not?

12 A Yes. That's -- that's the gist of that  
13 question and answer.

14 Q Is Empire unconcerned with making sure  
15 itself that it is maintaining reliability for its  
16 customers independent of the SPP?

17 A I mean, we -- we have a -- a System  
18 Planning and Reliability Department that is  
19 continually looking into -- into these type of  
20 additions and transmissions, whether it be  
21 transmission or generation addition.

22 So our own Planning Department is very  
23 involved in the SPP analysis to -- to make sure we  
24 continue providing reliability services.

25



1           Q    I'm not sure if you've answered my  
2   question or not. My question related to -- to  
3   **Empire maintaining reliability for its customers**  
4   **independent of the SPP. Does Empire -- is Empire**  
5   **concerned with that or not?**

6           A    That's -- reliability to our customers is  
7   a very high priority for -- for Empire.

8           Q    **Was the modeling for the stipulation plan**  
9   **done to see how with adding 600 megawatts of wind**  
10   **it would meet Empire's load, or was it just modeled**  
11   **against SPP market prices?**

12          A    The -- the economic modeling was done  
13   using SPP prices. It wasn't a -- I would say no.

14          MR. WILLIAMS: No further questions at  
15   this time.

16          JUDGE BUSHMANN: Commission questions?

17                            CROSS-EXAMINATION

18   BY CHAIRMAN HALL:

19          Q    **Good morning.**

20          A    Good morning.

21          Q    **Just a few. Were -- were you involved in**  
22   **the decision to -- to attempt to -- to finance the**  
23   **-- the customer savings plan through -- through tax**  
24   **equity -- tax equity financing as opposed to**

25

1 accessing the debt market? Were you involved in  
2 that decision-making process?

3 A I mean, I was part of the conversation.  
4 Our -- our witness, Todd Mooney, would be much  
5 better at answering any specific questions you have  
6 about financing and tax equity.

7 Q So if -- if I want to understand why --  
8 why this particular structure is most advantageous  
9 for ratepayers, he would be one to ask?

10 A Yeah. He would be the one that would have  
11 the most experience in that.

12 Q Okay. On page 9 of your direct -- and  
13 this also came up in response to some questions  
14 from Public Counsel, the -- the discussion of -- of  
15 why it is better, in your view, for the company to  
16 construct and -- and operate the -- the wind farms  
17 as opposed to getting wind through -- through PPAs.

18 I don't really understand financially why  
19 -- why it is better from your perspective to take  
20 this approach.

21 A Well, we talked about the ongoing  
22 decisions related to capital improvements for --  
23 for a wind farm and continually making improvements  
24 to its reliability or its amount of output.

25

1           So let's think about our existing wind --  
2 PPA that we had with Elk River and Meridian Way. I  
3 won't talk about the prices because they're  
4 confidential.

5           But we have set prices in those -- in  
6 there that today are higher than the existing  
7 market. And we could go back if we -- and the  
8 purchase power agreement holder could go back and  
9 retrofit those to make them more efficient for our  
10 customer, get more energy out of them, have lower  
11 percent O&M costs in the long run.

12           But in order to do that, they would have  
13 to renegotiate our contract. And they can't  
14 renegotiate -- if they would renegotiate our  
15 contract, they would want the existing PPA price,  
16 which is above the market, and then to negotiate a  
17 price for the extension.

18           It's very complicated because they're  
19 financing is set up on that initial PPA price  
20 that's higher than current market, whereas if we  
21 owned those markets, we could go back if they were  
22 economical for our customers, and -- and our  
23 customers would benefit from those changes right  
24 away. I mean, that's just one example I'm trying  
25

1 to give you.

2 Q I guess what I'm also -- going forward,  
3 though, with -- with that knowledge, couldn't you  
4 enter into better contracts for PPAs that would --  
5 to take that into account, all of those factors?

6 A I mean, PPA -- if you're asking PPA's  
7 today, would they have better terms than those that  
8 we signed back in 2005 and 2008? They would. But  
9 as we talked about --

10 Q Okay. So then let's compare going forward  
11 from where we are right now with either entering  
12 into new PPAs or building these wind farms. Why is  
13 it better for ratepayers to -- to build these wind  
14 farms as opposed to entering into the PPAs?

15 A I listed out several things in here. You  
16 know, typically, those PPA terms are 15 to 20  
17 years. We believe wind farms and I think the --  
18 it's not proven, per se, but they would -- many  
19 white papers out there show these are 30-year  
20 assets. So our customers get the benefits of those  
21 for the full 30 year life versus just 20.

22 Q I don't understand that. I mean, isn't --  
23 isn't that a function of the contract you enter  
24 into?

25

1           A    It is -- it is a function.  But if you get  
2 past that 20 years, those -- those developers are  
3 going to start pricing risk into the long-term  
4 viability and reliability and availability of those  
5 turbines.

6                    So those prices would be for a longer term  
7 contract.  In my opinion, it would be higher than  
8 if you were going to sign the typical 15 to 20-year  
9 term if we put a -- put additional -- you know,  
10 that risk would be an additional cost to our  
11 customers.

12           **Q    Is there a scholarship or analysis out**  
13 **there that you're aware of that would support that**  
14 **assertion?  I think it makes some sense to me**  
15 **intuitively.  But I'm curious if there is -- if**  
16 **there is analysis out there publicly available?**

17           A    Analysis showing a 30-year life or this  
18 PPA versus ownership?

19           **Q    Showing that -- that there is some**  
20 **benefit, financial benefit, for ratepayers for**  
21 **utilities to own these -- these wind farms as**  
22 **opposed to PPAs.**

23           A    Now tell me again.  And we'll do some  
24 research, and if we can, we can provide that to  
25

1 you.

2 Q So your -- so your testimony here today is  
3 -- is -- and it's also in your written testimony,  
4 is -- is that there is a -- also a concrete  
5 financial benefit for ratepayers to put the -- for  
6 the utility to own the -- the wind farm as opposed  
7 to entering into PPAs?

8 A That's my testimony. Yes.

9 Q You -- you explained, and I think some of  
10 the witnesses did as well, that as part of -- of  
11 this additional 600 megawatts of wind, there's  
12 going to be some additional transmission needed; is  
13 that correct?

14 A That's correct.

15 Q And will -- and that transmission will be  
16 built by Empire?

17 A Either Empire, a contractor for Empire or  
18 maybe some of the Jenti (ph.) lines that connect  
19 the wind farm to the existing system might be built  
20 by the contractor that built the wind farm itself.

21 Q Does that --

22 A So some combination.

23 Q I'm sorry.

24 A So some combination of that, yes.

25

1           **Q**   **Does that transmission have to be -- have**  
2   **to go through some type of SPP process in order to**  
3   **be built?**

4           A    Yes.  So we -- we go through two  
5   processes.  There's a large generator  
6   interconnection agreement that would connect the  
7   wind farm to the existing grid.  And then we have  
8   to go through another process that's called a  
9   network service study that if our wind farm caused  
10  negative impacts to the system, we may have to make  
11  upgrades to the system to get that energy back to  
12  our customers.

13          **Q**   **And that would have to occur before --**  
14  **before the transmission could be reached; is that**  
15  **correct?**

16          A    The -- the network service study for sure  
17  would be.  You know, and, preferably, we'd like to  
18  have a large generator interconnection agreement --  
19  or study done by SPP prior to us building it.

20                But there are -- there is ability for  
21  utilities to go out there and build that without  
22  that study being complete.  But they take the risk  
23  of -- of, you know, not complying with the end  
24  result of the SPP study.

25

1           **Q    And would Empire have to put this 600**  
2 **megawatts into the queue of the SPP at some point?**

3           A    Yes. We already have -- for or two sites  
4 as well as the other two sites that we are -- are  
5 -- or the other sites, I should say, that we're  
6 looking at from third parties, they're all already  
7 in the generation. Generator interconnection  
8 queue. Sorry.

9           **Q    Do you know right now the extent of -- of**  
10 **Empire's off-system sales?**

11          A    Well, I -- I hesitate because,  
12 technically, we sell all of our energy into the  
13 SPP.

14          **Q    Well, okay. Rephrase it as the difference**  
15 **between the generation to serve native load and**  
16 **anything beyond that.**

17          A    Yeah. In very round numbers, you know,  
18 averaging over a couple years, we -- we currently  
19 have about five and a half million megawatt hours  
20 four our native load, customers load.

21                And we sell onto the SPP market -- we're a  
22 net seller because of our natural gas combined  
23 cycles that we recently implemented. We sell  
24 between six and six and a half million megawatt  
25



1 hours. So about a half million megawatt hours or a  
2 little bit more net seller into the SPP market.

3 **Q So you're selling twice as much as you're**  
4 **consuming?**

5 A No, no, no. We're consuming five and a  
6 half megawatt hours and selling six -- the six and  
7 a half million megawatt hours.

8 **Q Okay.**

9 A So we're -- somewhere between half a  
10 million and a million megawatt hours above. So --

11 **Q And how would that change if -- if this**  
12 **additional 600 megawatts is -- is built?**

13 A We -- we would be a -- sell more on the  
14 system than what we currently do. Mr. Holmes could  
15 give you specific numbers, but I think versus the  
16 half million to a million, we go somewhere between  
17 two and two and two a half million. But Mr. Holmes  
18 could answer that specifically when he gets up  
19 here.

20 **Q So the -- the extent to which this -- this**  
21 **plan produces savings for ratepayers would be**  
22 **almost completely a function of the -- the price**  
23 **that Empire receives for that additional -- those**  
24 **additional off-system sales; is that correct? And**  
25

1 I personally don't view that as a bad thing. I  
2 just want to understand.

3 A Yeah. Not -- not totally because, you  
4 know, with this wind, it could keep us from -- from  
5 operating one of our more expensive units, like at  
6 Asbury or something like that, that could offset  
7 costs in that way.

8 Q Yeah.

9 A But the majority of it, you are correct.

10 Q Okay. And -- and these off-system sales,  
11 they -- they flow back to ratepayers 95/5 through  
12 the FAC; is that correct?

13 A Yeah. Again, I hesitate on the off-system  
14 sales. I'm not trying to -- these sales that we  
15 put in the SPP flow through the FAC today, yes.

16 Q Will you be involved -- will you be at the  
17 table when -- when -- when the decision is made as  
18 to whether or not to retire Asbury?

19 A Yes. I will be part of that conversation.

20 Q Can you tell me what factors will be  
21 involved in -- in your decision-making role in that  
22 process?

23 A We have to look at the -- one, the  
24 long-term viability. And, obviously, we made some  
25

1 -- some upgrades to the facility that, as talked  
2 about with Mr. Williams earlier, to get us through  
3 2025.

4 But those were at a time when natural gas  
5 prices were much higher. Now, market prices have  
6 dropped considerably.

7 **Q So the price of natural gas would be one?**

8 A Right. Natural gas. Amount of other  
9 competing energy, which wind is -- is one of those  
10 in the SPP market.

11 So just from a high level, I can tell you,  
12 12 months ending March of 2017, Asbury was made  
13 \$3.3 million worth of margin. So we -- our sales,  
14 the revenue we received from the market was  
15 \$3.3 million higher than our fuel costs. So that's  
16 that --

17 **Q And -- and all other costs related?**

18 A Right. So that's just the -- that's just  
19 offsetting the fuel. We have \$10 million of other  
20 fixed costs, whether it be labor or ongoing -- half  
21 of that's labor. Half of it's just ongoing  
22 maintenance activities.

23 So we were -- that \$3.3 million is the  
24 margin to offset that 10 million in capital -- or  
25

1 ongoing costs, fixed labor cost and fixed costs.  
2 If I fast forward to 12 months in March of 2018,  
3 that \$3.3 million has shrunk to 1.6 million.

4 So my point is it continues to face  
5 economic hurdles to make it viable in the SPP  
6 market.

7 **Q Will -- will the decision as to whether or**  
8 **not it is necessary to spend \$20 million on the --**  
9 **on the CCR investment, will that play a factor in**  
10 **determining whether or not management decides to**  
11 **close the plant?**

12 A I mean, I think as we put forward in our  
13 customer savings plan, that was a -- a big factor  
14 that we have been considering and will continue to.

15 We -- you know, the utility solid waste  
16 activity group, which is a group that's associated  
17 with EEI, has put in a request to delay the  
18 compliance deadline.

19 We'll be an active part of that to  
20 hopefully delay this potential \$20 million as long  
21 as we can. But, again, spending that \$20 million  
22 is a -- just an example of a hardship that Asbury  
23 faces going forward.

24 **Q So it will be a factor in -- in**

25

1 management's decision as to whether to -- to retire  
2 the plant or not?

3 A I think it has been and will continue to  
4 be, yes.

5 Q What -- and what is the latest on -- on --  
6 I guess it's EPA's decision as to whether to delay  
7 implementation of that deadline?

8 A Yeah. The Utility Solid Waste Activities  
9 Group just supplied -- or supplemented -- sorry --  
10 submitted comments last week, and I haven't seen  
11 any specific replies out of EPA. I mean, the  
12 general industry feels like we've pushed a lot of  
13 decisions around this for quite a while and for all  
14 these utilities to meet these deadlines just isn't  
15 reasonable. But the EPA still has to make that  
16 ruling and go through some final rule-making  
17 processes.

18 Q So if there is no delay issued by -- by  
19 EPA, you would be subject to litigation in April of  
20 2019 if you -- if you don't comply with -- with  
21 those requirements; is that correct?

22 A That is our -- our strong belief. Yes.

23 Q And is -- the April of '19 deadline, is  
24 that the deadline that you have to start any

25

1 environmental projects, or is that the deadline you  
2 have to complete environmental projects?

3 A You have to be in compliance by that  
4 deadline. And that deadline is -- is driven by  
5 some tests that we have to do this fall in October.

6 By October of this year, we have to do  
7 some tests to see if our ground water is at least 5  
8 feet below the bottom of our existing ash pond.  
9 Just in -- in general terms, we're a little  
10 concerned with our ability to pass that. We've got  
11 some data devices that show we might have hardships  
12 passing that -- that October -- from that October  
13 deadline to submit those results of that test, we  
14 have six months to comply. So that's where the  
15 April of 2019 comes from.

16 Q **And is six months a time period within**  
17 **which you -- you could complete these projects?**

18 A It's prob -- at this point, we're trying  
19 to push back as far as we can. We would probably  
20 actually start the outage in April, not putting new  
21 waste into the existing ash pond.

22 Already probably start building a landfill  
23 maybe late this fall sometime, you know, third  
24 quarter of this year. So have the landfill ready.  
25

1 But the actual outage to put that bottom ash  
2 conveyance system into place that I talked about  
3 probably wouldn't start until April based on our  
4 current time frame and then wouldn't get completed  
5 until late May or early June.

6 So we wouldn't operate any time out of  
7 compliance. But we would -- we probably wouldn't  
8 start the outage until a little bit later than what  
9 we've been planning up to date just because of the  
10 delay and the decisions around this.

11 CHAIRMAN HALL: No further questions.

12 Thank you. Thank you.

13 COMMISSIONER KENNEY: No questions.

14 COMMISSIONER RUPP: No questions.

15 JUDGE BUSHMANN: Cross based on

16 Commissioner questions? Staff?

17 MS. FORCK: Just a few.

18 RE CROSS EXAMINATION

19 BY MS. FORCK:

20 Q Mr. Mertens, can you tell me what the  
21 expected cost of the disabandonment of Asbury would  
22 be?

23 A We -- we haven't performed an engineering  
24 study. But I think the estimate that we have used  
25

1 is roughly \$24 million.

2 Q Okay. In the 2016 IRP capacity expansion  
3 modeling, did you allow Asbury to be retired early?

4 A

5 MR. WILLIAMS: I'm -- I'm objecting at  
6 this point. I don't see how this ties in with  
7 questions from the Bench.

8 MS. FORCK: Your Honor, I believe Chairman  
9 Hall's questions related to Asbury are all also  
10 related to potential retirement of Asbury, and  
11 that's kind of where this line of questioning is  
12 going.

13 JUDGE BUSHMANN: Overruled.

14 A In the 2016, I couldn't recall  
15 specifically. I know back in the 2010 IRP, when we  
16 were making the decisions related to AQCS, we  
17 looked at several scenarios with replacing that  
18 capacity with other combined cycle capacity. But I  
19 couldn't tell you for sure in 2016 whether we  
20 allowed the unit to retire.

21 Q (By Ms. Forck) Okay. Just one more  
22 question. This is related to the questions that  
23 Chairman Hall asked you related to the generation  
24 to serve native load and the additional generation.

25



1           You mentioned that Empire's a net seller.  
2   Are you familiar with the rebuttal testimony of  
3   John Rogers?

4           A    I've read it once, yes.

5           **Q    Did you have a copy of it in front of**  
6   **you?**

7           A    I do not.  I'm sorry.  I don't have it  
8   individually.

9           **Q    All right.  So this is the beginning.**

10          A    Okay.

11          **Q    All right.  So would you look at the chart**  
12   **on page 14?**

13          A    I'm there.

14          **Q    Can you explain to me how that chart**  
15   **relates to -- thank you -- how that chart relates**  
16   **to the difference between the generation to serve**  
17   **native load and the generation beyond -- under**  
18   **these various plans?**

19          A    Let me do some studying and reading here.  
20   Could you repeat the question?

21          **Q    I'll try.  So this chart, it shows a**  
22   **change in the off-system sales revenues for various**  
23   **plans; is that right?**

24          A    Yes.  It appears Plants 2, 3 and 10 has  
25

1 off-system sales revenue.

2 **Q And can you explain to me what this chart**  
3 **shows relative to the current generation?**

4 MR. WILLIAMS: Judge, I'm going to object  
5 to this being beyond the scope of Commissioner  
6 questions. I think Chairman Hall's questions were  
7 directed to the current plan, not to these  
8 alternative plans.

9 MS. FORCK: Your Honor, I think that  
10 Chairman Hall also asked how -- well, so did Mr. --  
11 Mr. Williams, do you mean -- by current plan, are  
12 you referring to the stipulated plan?

13 MR. WILLIAMS: Yes.

14 **Q (By Ms. Forck) Okay. So while this chart**  
15 **doesn't have the stipulated plan because this was**  
16 **filed prior to, this chart does have alternative**  
17 **plans that have similar -- similar projections as**  
18 **the stipulated plan?**

19 JUDGE BUSHMANN: What's the purpose of  
20 your question?

21 MS. FORCK: Simply to just show -- I know  
22 the Chairman was asking about the impacts of if --  
23 if Empire's already a net seller how -- how much  
24 more of a net seller they might potentially become  
25

1 as a result of this plan. And this chart tries to  
2 show that scope. That's -- that's the only purpose  
3 of this question.

4 JUDGE BUSHMANN: Okay. I'll allow the  
5 question if the witness is able to answer it.

6 A Are you going to -- I think you were going  
7 to try to repeat the question with the objection?

8 Q (By Ms. Forck) Sure. Can you tell me how  
9 the off-system sales revenues related to these  
10 plans compares to the current off-system sales  
11 revenue?

12 A I -- I -- in general, I think it shows  
13 off-system sales revenue higher than what current  
14 generation capacity has.

15 Q Okay. And --

16 MS. FORCK: I have nothing further. Thank  
17 you.

18 JUDGE BUSHMANN: Recross by MECG?

19 MR. WOODSMALL: Yes, briefly, your Honor.

20 RECROSS EXAMINATION

21 BY MR. WOODSMALL:

22 Q Do you have that chart --

23 MR. WOODSMALL: Marcy, can he keep that  
24 for a second? Thank you.

25

1 Q (By Mr. Woodsmall) Do you still have that  
2 chart in front of you?

3 A Chart 3 on page 14, yes.

4 Q Correct. That chart shows a -- well,  
5 first to tie it back, Chairman Hall was asking some  
6 questions and you were responding about the margins  
7 provided by Asbury in the last couple years. And  
8 you said it's declined a little bit over the last  
9 couple years; is that correct?

10 A That's correct.

11 Q And this chart shows some plans, one of  
12 which is to include -- to keep Asbury online and  
13 shows the off-system sales revenues of those  
14 plants. Is that what this pretends to show?

15 A I think Plan 10 included Asbury remaining  
16 online, subject to check.

17 Q Okay. And -- and that's what the dialogue  
18 up above says. And up above, it says, During years  
19 2020 through 2031, most years are expected to have  
20 from 20 to 35 -- 20 million to 40 million as a  
21 result of Plan 10, which is the corrected keep  
22 Asbury plan. Is that what that says?

23 A That's what this modeling reflects in this  
24 chart. Yes.

25

1           Q    Okay.  So what that means is even though  
2   the margins for keeping Asbury have been going  
3   down, as we look forward, Asbury is staying online  
4   and is projected to continue to have margins above  
5   costs; is that correct?

6           A    Well, this is off-system sales revenue.  
7   This isn't -- this isn't necessarily margins.  So  
8   there -- it would still show revenue from the  
9   market.

10           I couldn't -- based on this graph, I  
11   couldn't comment on the margins that it's showing.

12           Q    So it doesn't consider the cost side is  
13   what you're saying?

14           A    I think the revenue requirement would.  
15   I'm not sure the off-system sales revenue would.

16           Q    Okay.  I see what you're saying.  Do  
17   you --

18           MR. WOODSMALL:  No further questions.  
19   Thank you.

20           JUDGE BUSHMANN:  Division of Energy?

21           MR. POSTON:  No questions.

22           JUDGE BUSHMANN:  Renew Missouri?

23           MR. OPITZ:  No thank you, Judge.

24           JUDGE BUSHMANN:  Sierra Club.

25

1 MR. ROBERTSON: No questions.

2 JUDGE BUSHMAN: City of Joplin?

3 MS. BELL: No questions.

4 JUDGE BUSHMANN: Public Counsel?

5 MR. WILLIAMS: No, thank you.

6 JUDGE BUSHMANN: Redirect by Empire?

7 MR. COOPER: Yes. Thank you, your Honor.

8 REDIRECT EXAMINATION

9 BY MR. COOPER:

10 Q Early on, Ms. Bell had asked you some  
11 questions about, oh, maintenance repair expense,  
12 that sort of thing associated with the wind farms.  
13 Are those costs included in the modeling that's  
14 been done in this case?

15 A That's correct.

16 Q You were asked some questions about --  
17 about negative prices, and I think there was some  
18 sort of comparison of real-time prices to day ahead  
19 prices or -- or what purported to be ABB forecasts.  
20 Do you remember that?

21 A Yes.

22 Q Tell me the difference between what a  
23 real-time price is and what a day ahead price is.

24 A As I discussed earlier, day ahead pricing,  
25

1 we submit our units into SPP by the morning of the  
2 previous day. And those are dispatched on a day  
3 ahead basis.

4 So we'd offered them in at 11 a.m. today.  
5 And then starting at midnight tonight, those would  
6 be the day ahead prices that they're dispatched at.  
7 From a real-time perspective, as we know, we're  
8 never perfect forecasters. So -- or there's an  
9 outage on the system unexpectedly.

10 So there are real-time imbalances, and  
11 that real-time market is basically instantaneous  
12 prices that generation and load are -- are -- have  
13 to respond to.

14 **Q And so is the predominant impact on**  
15 **Empire, does it come from the day ahead prices or**  
16 **as opposed to real-time prices?**

17 A The majority of our sales and revenues are  
18 associated with day ahead prices.

19 **Q In terms of ABB forecast, do they forecast**  
20 **day ahead times, or do they forecast real --**  
21 **real-time pricing?**

22 A Their -- their modeling and our modeling  
23 in those forecasts are based on day ahead pricing.

24 **Q So would a comparison of a real-time price**  
25

1 versus an ABB forecasting price be sort of apples  
2 to oranges comparison to some extent?

3 A To some extent. Yes.

4 Q You talked about need to expand resource  
5 capacity. And I think you -- you started into this  
6 a little bit. But could you tell us what reasons  
7 there might be to expand resource capacity other  
8 than to meet load?

9 A Well, as I -- as I started to say, there  
10 are other economic factors that drive that -- drive  
11 that in order to maintain our overall low cost to  
12 customers, obviously, that being the biggest of the  
13 other ones besides just capacity reliability  
14 options.

15 Q You were asked questions about modeling to  
16 the stipulation related to 600 megawatts, and I  
17 think you responded that that modeling was economic  
18 primarily in basis, correct?

19 A Correct.

20 Q But do you have any concerns in regard to  
21 reliability associated with adding 600 megawatts of  
22 wind to the Empire system?

23 A No, I do not. You know, there's a lot of  
24 talk about intermittency of wind. And we at the  
25



1 SPP try to -- to minimize that.

2 But we have more generation through  
3 thermal units, you know, 1200-some-odd megawatts.  
4 Actually, if we continue with Asbury 1,400  
5 megawatts of thermal capacity to meet our 1,200  
6 megawatts of load.

7 So that, along with just other all  
8 reliability of SPP, partnering with our neighbors  
9 to provide generation during peak periods, I don't  
10 have any reliability concerns with that adding 600  
11 megawatts to our generation.

12 **Q You had a conversation earlier, a brief**  
13 **question and answer, I think, from the Chairman**  
14 **about the impact of the revenues as they flowed**  
15 **through the -- the FAC. And I think there was a**  
16 **reference to the 95/5 sharing or impact.**

17 A Right.

18 **Q But that would only be the case if those**  
19 **revenues were not taken into account in setting a**  
20 **base fuel number, correct?**

21 A Yes. That's a very good point. The 95/5  
22 is only if it varies in the base fuel rate that's  
23 set in our base rates.

24 MR. COOPER: Okay. That's all the  
25

1 questions I have, your Honor.

2 JUDGE BUSHMANN: Thank you, Mr. Mertens.

3 You may be excused.

4 MR. MERTENS: Just leave this?

5 JUDGE BUSHMANN: Call your next witness

6 whenever you're ready.

7 MS. KNOWLTON: The company calls Todd

8 Mooney.

9 JUDGE BUSHMANN: Please raise your right

10 hand.

11 TODD MOONEY,

12 being first duly sworn to testify the truth, the whole

13 truth, and nothing but the truth, testified as follows:

14 DIRECT EXAMINATION

15 BY MS. KNOWLTON:

16 JUDGE BUSHMANN: Please be seated.

17 Q (By Ms. Knowlton) Good morning.

18 A Good morning.

19 Q Mr. Mooney, would you please state your

20 name for the record?

21 A Good morning. My name is Todd Thomas

22 Mooney.

23 Q By whom are you employed and in what

24 capacity?

25

1           A    I'm employed by Liberty Utilities Canada  
2           Corp. in the capacity of Vice President, Finance  
3           and Administration.

4           Q    Have you caused to be prepared for the  
5           purposes of this proceeding certain direct and  
6           surrebuttal testimony in question and answer form?

7           A    Yes.

8           Q    It is your -- is it your understanding  
9           that that testimony has been marked as Exhibits 11,  
10          12-C and 12-P for identification?

11          A    Yes.

12          Q    Do you have any changes that you would  
13          like to make to that testimony at this time?

14          A    No, I do not.

15          Q    Are you familiar with the testimony that  
16          was filed by Robert Sager in this docket, which was  
17          marked for identification as Exhibit 14?

18          A    Yes.

19          Q    And the revised direct attachment, RWS-1,  
20          it was marked for identification as Exhibit 15?

21          A    Yes.

22          Q    Do you adopt that testimony as your own  
23          testimony today?

24          A    Yes, I do.

25

1 Q Do you have any changes that you would  
2 like to make to that testimony at this time?

3 A No, I do not.

4 Q If I were to ask you the questions that  
5 are contained in Exhibits 14 and 15 today, would  
6 your answers be the same?

7 A Yes.

8 Q Are those answers and all of those  
9 exhibits true and correct to the best of your  
10 information, knowledge and belief?

11 A Yes.

12 MS. KNOWLTON: Your Honor, I offer  
13 Exhibits 11, 12-C, 12-P, 14 and 15 into evidence  
14 and tender Mr. Mooney for cross-examination.

15 JUDGE BUSHMANN: Any objections to the  
16 receipt of those exhibits? Hearing none, they're  
17 admitted.

18 (Empire Exhibits 11, 12-C, 12-P, 14 and 15  
19 were offered and admitted into evidence.)

20 JUDGE BUSHMANN: And first cross would be  
21 by Staff.

22 CROSS-EXAMINATION

23 BY MS. MERS:

24 Q Good morning, Mr. Mooney.

25

1           A    Good morning.

2           Q    You discuss on page 4 of your surrebuttal  
3   the misconception that the tax equity partner is  
4   guaranteed a return.  Would you say it's accurate  
5   to compare the return a tax equity partner may  
6   receive on its investment to the ROA the facility  
7   may receive in which they are targets and not  
8   guarantee?

9           A    Yes.  I would say that's accurate.

10          Q    And would you say for some return on  
11   investment, that's not an unusual outrageous  
12   expectation, right?

13          A    I would agree with that statement.

14          Q    In fact, would you agree that nearly  
15   investments, shareholder investments, even personal  
16   investments are made with the expectation of a  
17   return on that investment?

18          A    Yes.

19          Q    You also have attached to your surrebuttal  
20   some confidential letters from potential tax equity  
21   partners.  Without going into any confidential  
22   information, would you say that those conversations  
23   are still ongoing, and there still is interest?

24          A    Yes.  Those conversations are, in fact,

25

1     advancing.

2           **Q     Okay. That's great to hear.**

3           MS. MERS: That's all I have for you.

4     Thank you.

5           JUDGE BUSHMANN: Cross by MECG?

6           MR. WOODSMALL: Thank you, your Honor.

7                           CROSS-EXAMINATION

8     BY MR. WOODSMALL:

9           **Q     Good morning. A couple questions for you**  
10          **First off, you had at a couple places, I think, in**  
11          **your direct and your surrebuttal some discussion,**  
12          **and you used the words "tax appetite," that Empire**  
13          **doesn't have the tax appetite for collecting, using**  
14          **any excess PTCs. Do you recall that discussion?**

15          A     Yes.

16          **Q     And can you tell me why Empire does**  
17          **haven't that tax appetite?**

18          A     In the past, Empire has made capital  
19          investments that were subject to bonus  
20          depreciation, accelerated depreciation rates for  
21          income tax purposes that allowed it to record  
22          taxable losses not relating to actual financial  
23          losses, but losses for purposes of calculating its  
24          income tax provision.

25

1           These taxable losses have meant that  
2 Empire has not paid cash income taxes as an entity  
3 and has the -- the tax -- does not have the tax  
4 appetite to take on more tax losses.

5           It would not save the cash today for  
6 Empire to have additional generation or PTCs. It  
7 would save Empire cash in the future.

8           **Q   And PTCs provide a deduction so that they**  
9 **shield taxable income; is that correct?**

10          A   No, that's not correct. PTCs are a tax  
11 credit. We reduce your tax liability on a dollar  
12 for dollar basis. So after you calculate how much  
13 tax the corporation owes, part of that amount is  
14 reduced by the PTC.

15          **Q   Okay. And since the PTCs work in that**  
16 **fashion, if Empire doesn't have taxable income, any**  
17 **more PTCs are kind of lost on it, aren't they?**

18          A   Those PTCs are lost for immediate use, but  
19 they are carried forward and continued use in the  
20 future.

21                 With the time value of money, there's lost  
22 economic value if they are used in the future as  
23 opposed to today.

24          **Q   And so those PTCs are worth more in the**  
25

1 third party's hands than they would be in Empire's  
2 hands; is that correct?

3 A Assuming the third pay could use them  
4 immediately, which is the case with tax equity  
5 partners, yes.

6 Q Okay. Moving on, looking at your  
7 testimony, you appear to be the guy that  
8 understands what the hedging agreement is about.  
9 Is that -- are you comfortable with that subject?

10 A Yes, indeed.

11 Q Okay. First off, turning to -- do you  
12 have, by any chance, the affidavit in opposition to  
13 the non-unanimous stipulation of Ms. Mantle on  
14 behalf of OPC?

15 A I do have that. Give me a moment to page  
16 to the right spot.

17 Q Okay. And I'm going to turn your  
18 attention to paragraph 10, which is on page 2.

19 A Okay. I've found the paragraph.

20 Q And just to take a clause out of there, it  
21 talks about -- well, first off, it uses TE, which  
22 refers to tax equity partner; is that correct?

23 A That's correct.

24 Q Okay. And it talks about a -- an  
25



1 agreement for Empire to provide to the tax equity  
2 partner to the extent necessary a fixed amount for  
3 each megawatt hour the wind farm generates.

4 First off, can you tell me, is the hedge  
5 and agreement between Empire and the tax equity  
6 partner?

7 A No, that is not correct.

8 Q Okay. Who is the -- the counterpart to  
9 the -- to Empire in the hedge agreement?

10 A As indicated my direct testimony, the  
11 counter parties between the hedge agreement are  
12 Empire and the wind project, which will be owned by  
13 Empire.

14 Q Okay. The wind project is owned by Empire  
15 and the tax equity partner; is that correct?

16 A That is correct.

17 Q Okay. And so here to the extent it  
18 indicates that there is an agreement for Empire to  
19 provide a fixed amount for each megawatt hour to  
20 the tax equity partner, that's not correct, is it?

21 A That statement is not correct.

22 Q Okay. And -- well, let's back up a little  
23 bit. What is the purpose of the hedge?

24 A So in order to finance renewable energy  
25

1 projects, there needs to be some degree of price  
2 certainty with respect to the revenues those  
3 renewable energy projects will earn.

4 And this is true for regular financing as  
5 well as for tax equity financing. The purpose of  
6 the hedge is to provide some price certainty to the  
7 wind project, to the renewable energy project over  
8 a number of years.

9 The price certainty can be in the form of  
10 a hedge such as is described in the testimony, or  
11 it could be in the form of the power purchase  
12 agreement.

13 In fact, it's quite similar to the power  
14 purchase agreement that Empire has with Elk River  
15 or Meridian Way where, for Elk River, SPP pays  
16 revenues based on the actual market prices to  
17 Empire. And Empire pays a fixed fee to Elk River  
18 for each megawatt hour generated.

19 The key difference, however, is that the  
20 Elk River is owned by a third party, and it is the  
21 third party who suffers benefit or detriment to the  
22 extent that the hedge -- the hedge -- that that PPA  
23 arrangement is greater than or less than the market  
24 prices.

25

1           With respect to the hedge proposed in the  
2 testimony, it is Empire who is the owner with the  
3 tax equity partner of the wind projects. And it is  
4 Empire that benefits from the hedge rather than a  
5 third party owner.

6           **Q   Let's try and unwind that a little bit.**

7           A   For sure.

8           **Q   When you said -- first off, when you say**  
9 **you need to provide some price certainty, why does**  
10 **there need to be provided some price certainty?**  
11 **Who dictates that?**

12          A   The financiers of a -- a renewable energy  
13 project will loan money to a renewable project or  
14 will invest money as equity in a renewable energy  
15 project with the anticipation of getting their  
16 capital back and getting a return on that capital.

17           If you consider a regular financing, the  
18 amount of financing, a straight loan with an  
19 amortization schedule that is paid back over time,  
20 the financing institution will ensure that there  
21 are sufficient expectations of revenues generated  
22 by the facility in order to pay back the loan, not  
23 just the principle, but also the interest on that  
24 loan.

25

1           There are many elements that go into  
2           determining whether a real lender project will be  
3           able to pay back that loan with its revenues. That  
4           includes evaluating the production. They include  
5           ensuring that there is not too much price risk,  
6           that, in the event that prices are different than  
7           expected the loan can still be paid back.

8           **Q    Now, let's try and follow the cash to some**  
9           **degree. It's my understanding that in Years 1**  
10          **through 5 of the -- okay. First off, the hedge**  
11          **will pay money to the wind project; is that**  
12          **correct?**

13          A    That is potentially correct. The -- the  
14          hedge could have the wind project paying money to  
15          Empire. It depends if the market price's  
16          experience that any given hour of any given day  
17          when there is production, whether that price is  
18          greater or less than the fixed price and the hedge.

19          **Q    Any work projects, any cash that's**  
20          **generated in the first five years is returned 100**  
21          **percent to Empire; is that correct?**

22          A    That is correct.

23          **Q    Okay. So to the extent that Empire pays**  
24          **money in the form of a hedge, at least for Years 1**  
25

1 through 5, all of that money is going back to  
2 Empire; is that correct?

3 A That is correct.

4 Q Okay. So to some degree in Years 1  
5 through 5, if you collapse this, it's a net -- and  
6 I won't use the word benefit, but there's no loss,  
7 no benefit to Empire associated with this hedge; is  
8 that correct?

9 A That is entirely accurate.

10 Q Okay. Can you tell me then what's in  
11 years -- well then, in your -- the tax equity  
12 partner will presumably be bought out and will  
13 disappear from this arrangement?

14 A That's correct. But as well in Year 10,  
15 the -- the hedge is anticipated to not last past  
16 that year.

17 Q Okay. And so tell me then what happens  
18 with any cash associated with the hedge in Years 6  
19 through 10.

20 A As indicated in my testimony, in Years 6  
21 through 10, the tax equity partner main -- takes a  
22 share of the cash from the wind projects.

23 This share of cash is dependent upon the  
24 project specifics estimated in the stipulation in  
25

1 my testimony at between 25 and 50 percent.

2 The cash is a requirement to meet the IRS  
3 guidelines that a portion of the tax equity  
4 partners return on and of it's capital be in the  
5 form of cash items.

6 And so in that period, if there is a hedge  
7 -- when there is a hedge as proposed between Empire  
8 and the wind projects, that hedge will pay or be  
9 paid by the wind projects.

10 Cash -- let's just assume that Empire is  
11 paying the wind projects because the market prices  
12 are lower than the fixed hedge amount. In that  
13 instance, the wind project will receive cash from  
14 Empire. It will receive market revenues from SPP.

15 When totaled, those two elements will  
16 equal fixed price in the hedge. Empire -- the wind  
17 projects may or may not receive other revenues,  
18 whether for wrecks or for other items that it could  
19 receive.

20 It will pay its operating expenses. It  
21 will have a net cash amount left over. And at the  
22 end of the month, it will pay a cash distribution  
23 to its owners.

24 And in Year 6 to 10, tax equity would get  
25

1 a quarter -- between 25 percent or 50 percent of  
2 that cash and Empire would get the balance.

3 Q Well, that's just as clear as I can ever  
4 attempt to make it. So anything beyond that is  
5 lost on me. So let's turn, then -- do you have  
6 Mr. Riley's affidavit in front of you?

7 A I do.

8 Q Specifically, his attachment MJS -- JSR-1.  
9 Let me know when you've found that.

10 A I have that in front of me.

11 Q Okay. And let me see if I understand what  
12 exactly what JSR-1 is intending to demonstrate. In  
13 the market price provision, there is a comparison  
14 of the revenue requirement of the wind project with  
15 the revenues generated by the wind projects. Is  
16 that your understanding?

17 A That is my understanding.

18 Q And this attempts to make that comparison  
19 for a 10-year period. Is that true?

20 A That's what I believe to be true. But the  
21 assumptions --

22 Q Okay.

23 A I'm not too certain how the assumptions  
24 were arrived at.

25

1 Q And that will be my next part. So the top  
2 part attempts to get at the wind revenue  
3 requirement. Do you see there above the bold line,  
4 it says revenue requirement? So that's the revenue  
5 requirement of the wind projects; is that true?

6 A That's what this spreadsheet calculates as  
7 revenue requirement.

8 Q And it was my understanding that  
9 Mr. Holmes is probably the best person to discuss  
10 the wind revenue requirement. Is that your  
11 understanding as well?

12 A Yes, it is.

13 Q Okay. On the bottom part, there is the  
14 other part of the equation, which is the revenues  
15 for the wind project. And there are some lines  
16 there talking about hedges and tax equity. Do you  
17 see those?

18 A Yes, I do.

19 Q And are you comfortable asking --  
20 answering questions about those lines?

21 A Yes, I am.

22 Q Okay. Can you tell me then whether you  
23 believe this accurately models the situation for  
24 the hedges between Empire and the wind project?

25



1           A    I can tell you that.  And I do not believe  
2   it accurately models the situation for those items.

3           **Q    And why -- and why is that?**

4           A    With respect to the hedge, I can't speak  
5   to what the calculation is.

6           **Q    And can you tell me which line you're**  
7   **referring to when you say the hedge?**

8           A    There is a -- a line that's titled Add  
9   Back The Price Guarantee [hedge].

10          **Q    And you can't explain that or --**

11          A    I -- I do not know how this amount was  
12   calculated nor where these numbers come from or how  
13   they are derived.

14                As modeled, the stipulation and the  
15   financial modeling behind it, I understand, used  
16   its estimates of market prices.  And the hedge was  
17   set based on those market prices.

18                And so by definition in the modeling, the  
19   hedge would have a -- a net payment to or from  
20   Empire of zero.

21          **Q    So for that line, you don't believe it's**  
22   **appropriate to consider those numbers no matter**  
23   **what they're quantified to be?**

24          A    Correct.  And perhaps to also address the  
25

1 distribution element in your Year 6 to 10, the  
2 impact of the hedge had already been captured in  
3 the financial modeling so that the cash  
4 distributions to the tax equity partner modeled --  
5 were modeled appropriately with respect to the  
6 hedge.

7 **Q Okay. So that was that line. Do you have**  
8 **any other concerns with the lines that discuss tax**  
9 **equity partner?**

10 A Well, yes, I do. Those concerns are  
11 highlighted by the fact that even in Mr. Riley's  
12 own testimony, he admits he doesn't understand and  
13 the fact that his figures do not tie to anything I  
14 can identify.

15 So it -- it appears that there has been a  
16 double counting of distributions made to the tax  
17 equity partner.

18 **Q And is that the line that says, Add back**  
19 **distribution to the tax equity?**

20 A Yes. That independently might be  
21 appropriate. I haven't tied his figures to the  
22 exact modeling. But he seems to have as well added  
23 those figures.

24 He's indicated in his testimony that he  
25

1 netted distributions tax equity against the  
2 contributions from tax equity in the line  
3 indicating less contributions from tax equity.

4 Q And so if that number is already included  
5 in the line that says Less Contributions From Tax  
6 Equity, it's inappropriate, then, to have a  
7 separate line add back distribution to the tax  
8 equity?

9 A That would be correct. And that would be  
10 a material and significant overstatement of the  
11 costs on this calculation.

12 Q So for the three lines we've been  
13 discussing, you don't believe that it accurately  
14 reflects the situation for the hedge and the  
15 distribution/contributions from the tax equity  
16 partner?

17 A That is correct.

18 Q Okay. Moving on, in Mr. Riley's  
19 affidavit, there is -- on page 1 and spills over to  
20 2, it discusses a situation -- talks about a case  
21 in the Eighth Circuit of the United States Court of  
22 Appeals, a case involving the City of Independence.  
23 Are you familiar with that?

24 A Yes. I'm familiar with that. I read that  
25

1 case, that ruling.

2 Q Okay. And what this intends to indicate  
3 is that, at least in this situation, the City of  
4 Independence had to pay the tax equity partner for  
5 economic curtailments; is that correct?

6 A Well, that is what's in Riley's testimony,  
7 Mr. Riley's testimony. But, no, that is not  
8 correct. The City of Independence had to pay the  
9 wind project for economic curtailments where the  
10 wind project could have produced power but did not.  
11 And the City of Independence had to make a payment  
12 to the wind project.

13 Q Okay. Can you tell me whether this  
14 situation of an economic curtailment is relevant to  
15 the wind project envisioned under the stipulation?

16 A No. This is not relevant. The -- in the  
17 first instance, Empire is the owner of the wind  
18 project. And so it would be paying itself for  
19 economic curtailments in a situation similar to  
20 this court case.

21 By the same token, this is not something  
22 that is required, and I've never seen tax equity  
23 partnership agreements include any provision of  
24 this nature.

25

1 Tax equity partnership agreements do  
2 include a provision in case a wind project receives  
3 payment from a third party for curtailment of that  
4 revenue be counted among all the other revenues of  
5 the wind project. But for the tax equity partner  
6 to be paid based on hypothetical projection is not  
7 a term that is part of tax equity agreements that I  
8 have seen, nor it is a term that Empire would agree  
9 to.

10 **Q And the tax equity partner has not yet**  
11 **been identified for this project; is that correct?**

12 A That's correct. We have not finalized the  
13 selection of the tax equity partner.

14 **Q And so the contract, then, obviously**  
15 **hasn't been nailed down; is that correct?**

16 A That's correct. Although we are advancing  
17 in discussions.

18 **Q Okay. And since we don't have a contract**  
19 **yet, you said Empire would not agree to doing this.**  
20 **Would Empire commit to not having a provision that**  
21 **would require a payment for anybody for economic**  
22 **curtailments?**

23 A Empire would agree to a provision --  
24 Empire would not agree to a provision that would  
25

1 pay a tax equity partner for economic curtailments.

2 MR. WOODSMALL: Okay. No further  
3 questions. Thank you, sir.

4 MR. MOONEY: Thank you.

5 JUDGE BUSHMANN: Division of Energy?

6 MR. POSTON: No questions.

7 JUDGE BUSHMANN: Renew Missouri?

8 MR. OPITZ: No, thank you, Judge.

9 JUDGE BUSHMANN: Sierra Club?

10 MR. ROBERTSON: No questions.

11 JUDGE BUSHMANN: City of Joplin?

12 CROSS-EXAMINATION

13 BY MS. BELL:

14 Q Good morning. We've still got ten more  
15 minutes.

16 A Good morning.

17 Q All right. Let's start with Mr. Sager's  
18 direct testimony, which I believe you are  
19 responsible for; is that correct?

20 A That is correct.

21 Q Okay. On page 3, it mentions and I think  
22 this is mentioned several times throughout his  
23 testimony and yours, the 325 million in customer  
24 savings. Are you familiar with that number?

25

1           A    I am familiar in general with that number,  
2    yes.

3           **Q    Okay.  And that number is based on the**  
4    **company's original plan?**

5           A    That was one of the modeled scenarios in  
6    the original generation complete savings analysis,  
7    I believe.

8           **Q    Okay.  And in that plan, what was the --**  
9    **in the model, what was the percentage of**  
10   **contribution by the tax equity partner?**

11          A    Speaking from memory, the percentage  
12    contribution with the tax equity partner depended  
13    on the scenarios used in the GFSA for the wind  
14    projects.

15                As you may recall, there was a low LCOE  
16    wind project model as well as an MCOE wind project  
17    model.  And speaking from memory, I believe those  
18    were between 50 and 60 percent initial capital  
19    contribution by the tax equity partner.

20          **Q    Okay.  On page 5, lines 15 through 17 of**  
21    **Sager's direct, he --**

22          A    I apologize.  If you'd let me try to find  
23    that so I can follow along.

24          **Q    Sure.**

25

1 A Could you please repeat the page?

2 Q Sure. It's page 5, lines 15 through 17.

3 A Okay.

4 Q In there, it says, Failure to obtain  
5 approval of a regulatory asset for the retired  
6 Asbury plant would prevent the company moving  
7 forward with any aspect of this ESP. Is that still  
8 the position of the company, or has that changed?

9 A I think this position is in respect of  
10 looking forward with a plan with closure of Asbury.  
11 Since that is not part of the stipulation, I can't  
12 speak to how that testimony would change.

13 Q Moving on to your direct testimony, just  
14 generally, you were present for Mr. McMahon's  
15 testimony yesterday?

16 A Yes.

17 Q And you recall him deferring a number of  
18 questions regarding the stipulation to you?

19 A Yes.

20 Q And did you file an affidavit in support  
21 of the stipulation?

22 A I did not file an affidavit. But  
23 Mr. Krygier, in his affidavit, referred to my  
24 direct testimony and surrebuttal testimony.

25



1 Q And your direct and surrebuttal were  
2 prepared before the development of the stipulation,  
3 correct?

4 A That's correct.

5 Q If you flip to page 9 of your direct  
6 testimony, that flow chart as well as the lines  
7 preceding, you state that, The following depicts a  
8 commonly used tax equity structure, is that  
9 correct?

10 A That's correct.

11 Q And what is the contribution percentage  
12 shown by Empire in that flow chart?

13 A That flow chart shows 40 percent.

14 Q Okay. And on page 10, lines 8 through 10  
15 were also talking about a 40 percent contribution;  
16 is that correct?

17 A That's correct.

18 Q Of \$40 out of every \$100?

19 A That is an example that was used, yes.

20 Q Okay. As that \$40 number increases and  
21 more -- well, as I understand it, the \$40 number  
22 you recovered in Empire's rates, correct?

23 A That is what's being proposed. Right.

24 Q And that is added to the rate base?

25

1           A    Yes.

2           **Q    And by recovering Empire's rates, that --**  
3           **those rates are the rates the customers take,**  
4           **correct?**

5           A    I believe so.  Yes.

6           **Q    Okay.  So as that number increases, as the**  
7           **correction is more, then the -- the number going**  
8           **into rate base also increases?**

9           A    Not necessarily.  This number has changed  
10          because this testimony was prepared before the tax  
11          cuts and jobs act, tax reform known as.

12                   And that is a change that will decrease  
13          the upfront contribution by a tax equity partner to  
14          some extent but will also decrease the tax rates  
15          that are applied to the wind project's learnings  
16          throughout its life and, as a result, it actually  
17          would not change the overall impact on customer  
18          rates for the project.  That is the analysis that  
19          we did conduct after the Tax Cuts and Jobs Act.

20          **Q    Has that analysis been provided to the**  
21          **parties?**

22          A    Yes.  And there were several data requests  
23          in which we provided analysis of the impacts of the  
24          Tax Cuts and Jobs Act on the proposals.

25

1           Q    Okay.  So if -- so exclusive of the tax  
2   number, if the number increases, if you're going  
3   from 40 percent to 50 percent, for example, and  
4   more is recovered in rate base, does that increase  
5   the risk on customers?

6           A    I wouldn't say that increases the risk on  
7   customers.  It depends.  So, for instance, if the  
8   percentage goes from 40 to 50, but because of  
9   various factors technological strong response to  
10  the RFP, perhaps the capital costs of wind projects  
11  come down, increased percentage, but on a decrease  
12  base would have not necessarily the impact on rates  
13  you're describing.

14          Q    Okay.  We'll move on.  If you go to page  
15  12, you have an example, again, of the capital  
16  contributions.  And that, again, is showing a 46  
17  split with 40 being contributed by Empire, correct?

18          A    That's what that shows.

19          Q    On page 13 of your testimony, this chart  
20  is substantially reproduced in paragraph 18 on page  
21  10 of the stipulation; is that correct?

22          A    That's correct.

23                MS. BELL:  I think I need to go in camera.

24                JUDGE BUSHMANN:  Okay.

25

1 (Went into in-camera session.)  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

1 CONTINUED CROSS-EXAMINATION OF MR. TODD MOONEY  
2 BY MS. BELL:

3 Q (By Ms. Bell) Okay. Turning to -- I  
4 think we're back on your direct. On page 14, the  
5 very first two lines, it said, Would Empire agree  
6 to enter into a tax equity partnership only under  
7 the terms as specified on the chart on the previous  
8 page? The answer was yes. Has your position  
9 changed?

10 A Our position is what's included in the  
11 stipulation and agreement.

12 Q If you flip to page 19 of your testimony,  
13 I think yesterday there were -- there was some  
14 conversation about, you know, what goes into the  
15 rate impact on customers on a very basic level.  
16 And the costs to Empire's customers are summarized  
17 there in the fourth column of your chart; is that  
18 right?

19 A That's correct.

20 Q Okay. So not only the capital  
21 contributions, but, also, third party O&M agreement  
22 costs?

23 A Correct.

24 Q And labor and materials for BOP

25

1 maintenance?

2 A Correct. BOP is balance of plant.

3 Q **And third party A&G expenses?**

4 A Correct. Administrative and general  
5 expenses.

6 Q **Labor for asset management?**

7 A Correct.

8 Q **And distributions?**

9 A Correct.

10 Q **Okay. In your surrebuttal testimony --**  
11 **okay. I think I'm going to skip that one. Let's**  
12 **go to -- are you generally aware -- have you**  
13 **reviewed Mr. Marke's affidavit?**

14 A I have read the affidavit.

15 Q **Okay. And are you familiar with the wind**  
16 **catcher program or -- proposal in Oklahoma?**

17 A I have seen certain news reports about it  
18 and read one or two paragraphs describing certain  
19 elements of it.

20 Q **And do you have -- can you flip to**  
21 **Attachment 2 of Mr. Marke's affidavit, which is**  
22 **that net benefits provision? And it's actually**  
23 **Attachment 2, or I think it's labeled GM -- and**  
24 **it's GM-1 is the schedule, and it's page 10.**

25

1           A    GM-1.  Page 10.  Okay.

2           Q    Do you have a general understanding of how  
3   **this net benefits provision works?**

4           A    No.  This is not one of the elements about  
5   the wind catcher project that I have reviewed.

6           Q    Okay.  But you have reviewed the  
7   **stipulations provision of market protection**  
8   **provision?**

9           A    I have looked at the -- Empire's  
10   stipulation and agreement and have a general  
11   understanding of the market price protection  
12   mechanism.

13          Q    And -- and would you agree that that  
14   **general understanding is there's a \$2 million bed**  
15   **ban and a 50/50 sharing of losses between the**  
16   **company and ratepayers up to a \$35 million cap?  Is**  
17   **that a fair summary?**

18          A    I would defer that response to Mr. Holmes.  
19   But at a very general level, that does not sound  
20   inaccurate.

21          Q    Okay.  And in Oklahoma, the net benefit  
22   **provision provides that -- essentially, the first**  
23   **sentence says they have this -- they have a**  
24   **calculation.  So cost versus revenue, essentially,**  
25

1 fuel capacity value, PTCs, minimum net capacity  
2 factor, guaranteed payments, Rex, carbon savings  
3 minus the revenue requirement. You're familiar  
4 with all of those inputs, correct?

5 MS. KNOWLTON: I'm going to object. The  
6 witness has indicated that he's not familiar with  
7 this calculation.

8 JUDGE BUSHMANN: I think he can answer to  
9 the question to the extent that he's able. So I'll  
10 allow -- allow the witness to answer the question  
11 if he can.

12 A Can you please repeat the question?

13 Q (By Ms. Bell) You're familiar with the  
14 inputs contained in the -- the net benefit formula?

15 A I'm familiar with the terms that are used  
16 in that calculation, but I'm not familiar with how  
17 they're defined in this specific agreement and  
18 would point out that each agreement has very  
19 specific definitions for terms that are used. And  
20 I have not read or understood what those  
21 definitions may be.

22 Q Okay. Fair enough. Well, I will  
23 summarize the net benefit provision in that if  
24 there's a positive -- if the formula ends up  
25



1 positive and the wind project is a benefit to  
2 customers, then in Oklahoma, what is stipulated is  
3 that the company -- nothing happens. The company  
4 doesn't owe customers anything. There's no  
5 sharing. So if it's a benefit, nothing happens.

6 In the event that there is a detriment to  
7 customers, then this provides a regulatory  
8 liability will be established. If customers are  
9 owed under this calculation, the regulatory  
10 liability will be amortized in retail rates over  
11 the remaining period of the commercial operation.

12 And so, essentially, if there is a  
13 negative to customers, you establish the regulatory  
14 liability, it's essentially a hold harmless, a do  
15 no harm provision for customers. Do you know,  
16 would Empire be opposed to -- or unable -- would  
17 Empire be opposed to such a provision?

18 A I think that the stipulation and agreement  
19 represents Empire's position. And it represents  
20 very substantial protection for customers that will  
21 protect it, as Mr. McMahon indicated yesterday,  
22 even in one of the lowest likelihood scenarios that  
23 we modeled that contemplated pretty much a worst  
24 case scenario, but it offered sufficient protection  
25

1 to its customers to cover that scenario as  
2 Mr. McMahon -- Mr. McMahon indicated yesterday.

3 **Q So if the probability of the worst case**  
4 **scenario is so small, then what would be the harm**  
5 **in holding customers harmless?**

6 A If the probability was so small, if it  
7 were not zero, there still would be a probability.  
8 I think Empire's position is reflected in the  
9 stipulation and agreement. And we feel that it  
10 achieves the right level of customer protection.

11 MS. BELL: No further questions at this  
12 time.

13 JUDGE BUSHMANN: This time seems like a  
14 good time to break for lunch. We'll be in recess  
15 until 1:15.

16 (Lunch recess.)

17 JUDGE BUSHMANN: Okay. Let's get started  
18 again. All right. We're back on the record.  
19 We're ready for cross-examination by Public  
20 Counsel.

21 MR. WILLIAMS: Thank you.

22 CROSS-EXAMINATION

23 BY MR. WILLIAMS:

24 **Q Good afternoon, Mr. Mooney.**

25

1           A    Good afternoon.

2           **Q    Will Empire need the authorization of its**  
3 **Board of Directors to enter into the tax equity**  
4 **financing agreement that's contemplated as part of**  
5 **the stipulation agreement?**

6           A    I believe that Empire does need  
7 authorization of its Board of Directors.  Yes.

8           **Q    Does it have that authorization at this**  
9 **point in time?**

10          A    Since we don't have definitive agreements,  
11 there is -- it would be premature to authorize  
12 things that are not yet finalized.

13          **Q    Has the production tax credits for wind**  
14 **been available since at least 1994?**

15          A    I know they have been available since the  
16 mid 1990s.  I don't recall at present whether it  
17 was '94 or '95.

18          **Q    Were not the original production tax**  
19 **credits for wind sent at 1.5 cents per kilowatt**  
20 **hour and \$93 which are annually adjusted for**  
21 **inflation?**

22          A    That sounds to be correct.  Yes.

23          **Q    And is the inflation factor for 2018**  
24 **1.5792, which results in a credit of 2.4 cents per**  
25

1 kilowatt hour?

2 A I can't speak to the exact inflation  
3 factor. I have not looked at that figure for many  
4 months. However, the 2.4 cents per kilowatt hour  
5 is, indeed, correct.

6 Q And that would be the same as \$24 per  
7 megawatt hour, correct?

8 A Correct.

9 Q Are there still production tax credits  
10 available for wind projects that commence  
11 construction in 2017, 2018 or 2019?

12 A Yes. PTCs are available for projects that  
13 begin construction in those years. However, the  
14 value of the PTC, the previously mentioned \$24 per  
15 megawatt hour decreases each of those years. In 20  
16 -- for projects that commence construction in 2017,  
17 there is an 80 percent factor applied to the \$24.

18 Projects that commence construction in  
19 2018, there is a 60 percent factor. And 2019 begun  
20 projects a 40 percent factor, after which the PTCs  
21 have no value.

22 Q PTCs have no value, or are there no PTCs  
23 available?

24 A PTCs -- sorry. I should correct myself.

25

1 PTCs for projects -- PTCs are not available for  
2 projects that begin construction after 2019.

3 Projects that are placed in service and  
4 already in service will continue to receive the --  
5 the PTCs to which they are eligible.

6 **Q If there is no energy generated from wind,**  
7 **there is no production tax credit for wind,**  
8 **correct?**

9 A Correct.

10 **Q Would you explain what risk the tax equity**  
11 **partner is undertaking with the scenario that**  
12 **Empire has put forward?**

13 A The tax equity partner takes risks  
14 commensurate with an equity partner. That is one  
15 of the requirements of the IRS rules surrounding  
16 partnerships of this nature.

17 They take all the risks, whether it be the  
18 risk that -- equipment malfunctions and it costs  
19 money to repair the equipment, whether it is that  
20 the wind resources are more or less than originally  
21 anticipated. Those are risks borne by both Empire  
22 and tax equity partner.

23 I would point out, however, that those  
24 risks are mitigated through a number of different  
25

1 ways. For instance, a fixed price operating  
2 maintenance agreement, I believe that Mr. Mertens  
3 mentioned earlier this morning, there are many ways  
4 to mitigate those risks for the combined equity  
5 partners of the project.

6 **Q What I'm really trying to get to is with**  
7 **all of the protections that are proposed to be put**  
8 **in place, what risk is the tax equity partner**  
9 **actually exposed to?**

10 A The tax equity partner is exposed to the  
11 same risks as Empire. And that is a requirement of  
12 structuring to meet IRS purposes for the  
13 partnership to be recognized for tax filing  
14 purposes.

15 **Q So is the tax equity partner at risk if**  
16 **the Commission decides in some future -- well,**  
17 **let's assume the Commission approves the plan, the**  
18 **600 megawatts is built and that, at some point, the**  
19 **Commission decides not to allow Empire to fully**  
20 **recover its investment in that plan. Is the tax**  
21 **equity partner exposed to that risk?**

22 A It's important to realize the tax equity  
23 partner is a member of the Wind Project Holdco,  
24 that is a separate legal entity than Empire.

25

1           So decisions about Empire do not -- and  
2           how its rates are calculated do not directly impact  
3           Wind Project Holdco or the wind project company  
4           itself.

5           **Q    So the tax equity partner's risk is**  
6           **determined by either Wind Holdco or the wind energy**  
7           **partner owner?**

8           A    Can you please clarify what you mean by  
9           the wind energy partner owner?

10          **Q    Well, my understanding is there's a**  
11          **holding company and then there will be specific**  
12          **entities for project --**

13          A    Right.

14          **Q    -- that will be wholly owned by the Wind**  
15          **HoldCo. Is the tax equity partner's interest -- is**  
16          **it a partner in Wind HoldCo?**

17          A    The tax equity partner will be a partner  
18          in Wind Hold Co.

19          **Q    So Empire has -- the risk of the tax**  
20          **equity partner is exposed to is the risk that Wind**  
21          **Hold Co has, correct?**

22          A    Correct.

23          **Q    And what's the purpose of what you've**  
24          **described as the hedge?**

25

1           A    The purpose of the hedge is to provide  
2 price certainty to enable the wind project to be  
3 financable.

4           **Q    Price certainty to who?**

5           A    To the wind project.

6           **Q    The hedge is between Empire and the wind  
7 project Hold Co.?**

8           A    The hedge will be between Empire and the  
9 wind project company.

10          **Q    So the hedge provides price certainty for  
11 the wind project company?**

12          A    Correct.

13          **Q    Which in turn then provides some, I guess  
14 I'll use the word price certainty for the Wind Hold  
15 Co since it's -- it wholly -- wholly owns the wind  
16 partnership company?**

17          A    You can view Wind Hold Co and wind project  
18 as one consolidated set of entities, yes.

19          **Q    How does the price certainty benefit  
20 Empire if it's on both sides of the hedge?**

21          A    The benefit to Empire is enabling the tax  
22 equity financing without price certainty of some  
23 kind. The wind project would not be able to obtain  
24 conventional financing, nor would it be able to  
25



1 obtain tax equity financing.

2 Q Earlier, you testified that there is a  
3 financial model. Do you recall that?

4 A That is correct.

5 Q Was that financial model ever provided to  
6 the parties?

7 A Yes, indeed.

8 Q And how was it provided to the parties?

9 A There were numerous data requests.

10 Q Do you know if it was provided to Public  
11 Counsel?

12 A I do believe so. I can't state that for a  
13 known fact.

14 Q But it wasn't provided as work papers to  
15 testimony?

16 A I don't recall. I do know the models were  
17 provided. I don't recall exactly in what manner  
18 they were provided.

19 Q All other things being equal, would a  
20 change in the capacity factor change tax -- the  
21 amount that a tax equity partner would be willing  
22 to -- let me back up.

23 Leaving everything else the same, do  
24 different levels of capacity factors for wind

25

1 production from the wind farms change how much the  
2 tax equity partner would be willing to invest in  
3 the kind of tax equity financing that you're --  
4 that Empire is proposing in this case?

5 A Yes. The annual energy production is a  
6 factor. It -- multiplied by the value per megawatt  
7 hour or per kilowatt hour of the PTCs determines  
8 the value of the PTCs.

9 And since tax equity partner is investing  
10 to earn its return on and of its investment  
11 primarily based upon PTCs, there is a direct link  
12 between the energy production of the wind project  
13 and the value of the contribution that the tax  
14 equity partner is willing to make. There are other  
15 factors including the capital cost of the facility,  
16 which drives the --

17 Q I think you've answered my question with  
18 direct. It's strictly to the changes in the --

19 A Sure.

20 Q -- capacity of the wind generation. If I  
21 understand you correctly, basically, you're saying  
22 that if you have the same size wind farm that  
23 that's going to cost the same amount if two of them  
24 and one of them has a higher capacity factor than  
25

1 the other, tax equity partner would be willing to  
2 invest more in the one that has the higher capacity  
3 factor than other, the kind of tax equity financing  
4 arrangement that you have put forward in this case?

5 A All else being equal, yes. But I would  
6 point out at that, in that scenario, the cost of  
7 Empire to purchase the wind farm with the lower  
8 capacity factor would be lower.

9 Q I know this is based on the generation  
10 fleet savings analysis. But would you turn your  
11 attention to page 8 of your direct testimony?  
12 Would you look in particular at lines 9 through 11?

13 A Yes.

14 Q And there you talk about the time value of  
15 money, tax equity financing and compare that to  
16 direct ownership of the wind project by Empire not  
17 having tax equity financing, correct?

18 A Correct.

19 Q And you attribute that to between 4 and \$7  
20 per megawatt hour, more savings for Empire  
21 customers, correct?

22 A Correct.

23 Q Is that important 4 to \$7 per megawatt  
24 hour of additional savings dependent on the SPP

25

1 market price -- prices and other assumptions in  
2 Empire's generation fleet savings analysis?

3 A That savings is dependent upon the  
4 financing method only. We did hold constant. The  
5 absolute value of the savings may change if other  
6 variables were changed. But in short, that is the  
7 change caused by a change in financing assumptions.

8 Q So you're saying that if you do tax equity  
9 financing, it's going to be cheaper per megawatt  
10 hour for Empire customers than if you don't?

11 A Correct.

12 Q But the magnitude of that depends upon  
13 variables. That was just -- at the time this was  
14 done, you came up with four to seven, and it was  
15 based on the modeling at that point in time,  
16 correct?

17 A Correct.

18 Q I think you've already testified that  
19 Empire has not entered into any tax equity  
20 agreements at this point or any affiliate of Empire  
21 as well, correct?

22 A Empire has not entered into definitive tax  
23 equity agreements, although Empire is in advanced  
24 discussions with tax equity partners and

25

1 anticipates doing -- making progress in the near  
2 term.

3 Q And if I wasn't clear enough, I intended  
4 that question to be limited to the plan we're  
5 talking about here now, not -- I understand that  
6 some Empire affiliates do have some tax equity  
7 partners at this point in time.

8 A Right.

9 Q Have any of Empire's affiliates used tax  
10 equity financing to build a rate-based wind farm?

11 A Not a wind farm, no. But a solar  
12 facility, yes.

13 Q And that solar facility is in California,  
14 is it not?

15 A The facility is physically located in  
16 Nevada. But the Liberty Utility Affiliate, Liberty  
17 Utilities Calpeco is located in California.

18 Q Was there any state authorization for the  
19 construction of that facility? And I'm looking  
20 towards -- let me back up. Was the affiliate who  
21 used that tax equity financing a regulated utility?

22 A The Liberty Utility Calpeco affiliate  
23 employed a similar structure with a holding company  
24 and a project company. The holding company and  
25

1 project company are not rate regulated. But  
2 Liberty Utilities Calpeco is by the California  
3 Public Utilities Commission.

4 **Q And did the California Public Utilities**  
5 **Commission approve that plan to build that plant?**

6 A Yes.

7 **Q Are circumstances in California different**  
8 **than they are in Missouri?**

9 A Can you please clarify what you mean by  
10 circumstances?

11 **Q Well, let's limit it to regulatory**  
12 **environment.**

13 A I was going to say it's sunnier there.  
14 But regulatory environment, I -- I am not a subject  
15 matter expert in terms of the regulatory  
16 environment. I would defer that question to  
17 Mr. Krygier.

18 **Q And what is it that Empire is offering now**  
19 **to ensure it's customers that they will realize**  
20 **savings from Empire's stipulated plan?**

21 A I think the stipulation and agreement with  
22 the market price protection mechanism is the -- the  
23 mechanism by which we are offering protections to  
24 customers.

25

1           **Q**    If the anticipated credit -- production  
2    **tax credits and revenue stream from the wind**  
3    **projects are not what is projected, if they're less**  
4    **than what's projected for the first ten years, what**  
5    **happens?**

6           **A**    If production is lower than anticipated  
7    for the first ten years of the project, then the  
8    contributions by the tax equity partner for Years 1  
9    to 10 would decrease.

10           But given that the corrections are based  
11    on the actual realization of production and are  
12    only made after the fact, that would not change the  
13    time frame of the estimated ten-year time frame.

14           **Q**    Let's go to the first five years. If the  
15    **production tax credits and the revenue streams are**  
16    **lower than anticipated during the first ten years,**  
17    **what happens with respect to payments to the -- or**  
18    **I'm not sure if payments is the right word --**  
19    **compensation on the tax equity partner to recover**  
20    **-- recoup its investment plus its return on an**  
21    **investment?**

22           **A**    If production, for example, is less than  
23    anticipated during the first five years, the tax  
24    equity partner will still not receive any cash  
25

1 distributions from the wind project before those  
2 one -- Years 1 through 5.

3 The cash contribution is anticipated as  
4 part of the structure described as PayGo,  
5 pay-as-you-go contributions. Those contributions  
6 would decrease because production was less than  
7 anticipated. That would be the impact over that  
8 first five-year period.

9 **Q And what ramifications, if any, would that**  
10 **then have on the second five-year period with**  
11 **regard to the tax equity partner?**

12 A There wouldn't be any ramifications to the  
13 second five-year period. The decrease in  
14 contributions would ensure that the tax equity  
15 partner still would achieve its expected return in  
16 the ten-year anticipated time frame.

17 **Q What circumstance could occur where the**  
18 **tax equity partner would not achieve its expected**  
19 **return within the ten-year period?**

20 A If wind production were low for the entire  
21 ten-year period, and, hypothetically speaking,  
22 sufficiently low that the -- the contributions were  
23 decreased to the point of -- of not existing, then  
24 the tax equity -- then the -- the return on and of  
25



1 their investment would not have been achieved  
2 during that ten-year period.

3 **Q You've used the term contributions. What**  
4 **are you referring to when you use that term?**

5 A So contributions are the cash that the tax  
6 equity partner will pay to the wind project company  
7 after it has produced power in excess of a  
8 threshold.

9 That is what is termed in the testimony as  
10 PayGo contributions. Those PayGo contributions are  
11 then immediately paid from the wind project company  
12 through the wind project hold company. And forgive  
13 me. I used the wind project as -- as the entity.  
14 Let me back up a step.

15 Tax equity makes a contribution to wind  
16 project hold company. And its the hold co. that  
17 then pays a dividend to Empire of that amount.

18 **Q Is there any circumstance when the tax**  
19 **equity partner remains a partner for longer than**  
20 **ten years?**

21 A That is a possibility. Yes.

22 **Q And what would -- under what circumstances**  
23 **would that occur?**

24 A There are tax equity partnerships and  
25

1 structures that don't contemplate PayGo  
2 contributions, in which case tax equity contributes  
3 a sum of money upfront and only upfront.

4 And in those circumstances, if there's  
5 variability in the wind production and wind  
6 production is less than normal, the mechanism for  
7 tax equity to earn its targeted return is for it to  
8 stay as a partner longer than the ten-year time  
9 frame.

10 With a pay good structure, however, since  
11 a portion of the contributions are made in arrears  
12 after the production has generated PTCs and value  
13 tax equity partner, that risk is significantly  
14 mitigated.

15 **Q With the tax equity partnership --**  
16 **structure that you're proposing and -- or put**  
17 **forward in this case, is the only time a tax equity**  
18 **partner might be -- continue to be a partner beyond**  
19 **ten years because Empire or whoever has the right**  
20 **doesn't exercise the right to buy out the tax**  
21 **equity partner?**

22 A No. There -- there could be  
23 possibilities. One can think of a hypothetical  
24 example. If there is, for instance, a large  
25

1 tornado, for example, that impacts the wind  
2 facility. Although insurance proceeds conceivably  
3 would make up for some of that loss, the economic  
4 value.

5 That's why I say there are hypothetical  
6 possibilities and contractual arrangements. With  
7 tax equity will contemplate those contractual --  
8 those hypothetical possibilities.

9 The PayGo structure is a good risk  
10 mitigating factor. But it -- one could conceive of  
11 various notions where the tax equity partner could  
12 hypothetically stay longer than a ten-year period.

13 **Q Do all of those entail some extraordinary**  
14 **event, like a tornado?**

15 A Well, when I -- I would say no. But it --  
16 low probability events like, for example, not  
17 achieving the expected production or even a  
18 fraction of the expected production for ten years  
19 in a row.

20 The due diligence that's done for the wind  
21 projects takes a very close look at the expected  
22 wind production, and those values are used to  
23 ensure that even in a very low probability  
24 scenario, the tax equity partner does achieve its  
25

1 expected return in the desired time frame.

2 MR. WILLIAMS: No further questions for  
3 this witness at this time.

4 JUDGE BUSHMANN: Mr. Chairman, any  
5 questions?

6 CHAIRMAN HALL: Just a few.

7 CROSS-EXAMINATION

8 BY CHAIRMAN HALL:

9 Q Good afternoon.

10 A Good and.

11 Q You adopted the testimony of Mr. Sager; is  
12 that correct?

13 A That's correct.

14 Q Okay. Could you turn to page 5 of -- of  
15 his direct testimony? And on line 16, 17 -- well,  
16 15 through 18, I believe you -- what Mr. Swain said  
17 and what you have adopted is -- is that unless the  
18 -- the company obtains a regulatory asset for the  
19 retired Asbury plant, the company will not --  
20 actually, let me -- let me -- let me rephrase that.

21 Would -- would the company ever be willing  
22 to close the plant without obtaining a regulatory  
23 asset for the undepreciated amount? Or do you  
24 know?

25

1           A    I don't know if such a factor would exist.  
2    I -- I can't definitively answer whether --

3           **Q    I'm sorry.  You don't know if such a**  
4    **factor exists?**

5           A    If such a scenario exists, I don't know.  
6    I know that the company's desire is to ensure its  
7    -- its -- it would receive a return on and of its  
8    invested capital that was made prudently and  
9    approved by the Commission.

10           I think I would defer to Mr. Swain in  
11    terms of what the company's intentions would be in  
12    that scenario.

13           **Q    Unfortunately, Mr. Swain's been excused.**

14           **JUDGE BUSHMANN:  No.**

15           **Q    (By Chairman Hall)  Oh, I'm sorry.  Okay.**  
16    **I will do that.  Were you in the -- in the hearing**  
17    **room, and I'm sure you were, during my questioning**  
18    **of Mr. Mertens concerning the value of owning the**  
19    **wind farm versus obtaining the energy through --**  
20    **through PPAs?**

21           A    Yes.

22           **Q    Is that a subject that you have any**  
23    **familiarity with?**

24           A    I have read the testimony.  And I wouldn't  
25

1 say I'm a subject matter expert, but I have  
2 familiarity.

3 Q Do you have anything -- any additional  
4 light to shed on that issue as to -- as to why it  
5 would be in the best interest of -- of ratepayers  
6 for the company to own that -- that wind generation  
7 as opposed to obtaining it through PPAs?

8 A I think my view would be similar to  
9 Mr. Mertens. I think there is value in owning a  
10 wind facility past a 20-year power purchase  
11 agreement.

12 I think that given that current wind  
13 technology has not yet achieved the life span that  
14 is expected, the owners who enter into PPAs and the  
15 financiers who finance wind projects want to get  
16 their money back in that 20-year period.

17 And, hence, the -- the price of the PPA is  
18 a 20-year period that reflects a turn on and of 20  
19 years. With Empire ownership having that -- that  
20 cost spread over 30 years, I think -- or even  
21 longer, depending on what depreciation studies  
22 eventually reveal is of benefit to Empire  
23 customers.

24 The -- the owner of the facility benefits  
25

1 to the extent that the -- a life is at a 30 year  
2 anticipated. To the extent that it is perhaps  
3 less, that's something that would be mitigated with  
4 a proper operating maintenance agreement and  
5 prudent operating maintenance practices that --  
6 that Empire conducts through all of its existing  
7 facilities.

8 Q Okay. To follow up on some questioning  
9 from -- from Mr. Woodsmall, is it true that the  
10 main reason why the tax equity financing is -- is  
11 appropriate or necessary or beneficial in this case  
12 is solely a result of the fact that the company  
13 doesn't have sufficient taxable income to make the  
14 -- so that the PTC would be of benefit?

15 A That's not the sole rationale --  
16 rationale. The utilities, when they claim  
17 accelerated tax depreciation, there are tax rules  
18 surrounding how much can be passed through to  
19 customers in rates.

20 With the tax equity structure with the  
21 wind project company being a non-regulated entity,  
22 not subject to those tax rules, it does allow for a  
23 pass-through of that accelerated depreciation in a  
24 more accelerated fashion.

25

1           Q    Well, so what are -- what are some of the  
2   other reasons why the tax equity financing approach  
3   is appropriate in this case?

4           A    Well, when you say other reasons, in  
5   addition to --

6           Q    Well --

7           A    Sorry. I just want to be responsive to  
8   your question.

9           Q    I mean, one of the reasons why I thought  
10   the company was interested in it and I think this  
11   was referenced in opening, but I haven't heard any  
12   discussion of it in testimony, is simply just the  
13   size of the investment and relative to the size of  
14   the company that that was one reason why it was  
15   necessary or appropriate.

16          A    That is, indeed, a -- a benefit.  
17   Obtaining sources of financing, you're always  
18   looking to achieve the best weighted average cost  
19   of capital.

20                And as well in relation to the size of  
21   your company, a project of a billion dollars for  
22   Empire, a billion dollars of asset value compared  
23   to the overall company's assets is a larger  
24   proportion. Obtaining tax equity financing does  
25



1 make it easier to -- to finance that in a cost  
2 effective way.

3 Q Okay. So other than the size of the  
4 investment relative to the size of the company and  
5 then, second, the -- the fact that the company  
6 lacks the taxable income to cover the PTC, what are  
7 the other significant factors that make tax equity  
8 financing appropriate in this case?

9 A I think the third factor is what I  
10 mentioned about the ability to more quickly monitor  
11 the accelerated tax depreciation. Even if Empire  
12 were taxable, it would not be able to utilize the  
13 accelerated tax depreciation to reduce rates to the  
14 customers in its revenue requirement calculation.

15 The tax equity structure allows that  
16 accelerated tax depreciation benefit to be passed  
17 through.

18 Q Okay. Switching gears for a second, other  
19 -- let's assume that -- that the -- that Empire  
20 goes -- goes forward with -- with this wind  
21 generation project and the -- and the actual costs  
22 -- construction costs are one billion dollars as --  
23 as projected.

24 What are the -- the factors or scenarios  
25

1 that would -- that would -- that would result in  
2 the worst effect for ratepayers in terms of high  
3 prices or -- or increased penetration of wind in  
4 general or -- or just any factor that you can think  
5 of? What would be the worst possible scenario?

6 A Well, I think the worst possible scenario  
7 would be to incorrectly estimate the amount of  
8 energy produced by the wind projects since that  
9 does drive, naturally, not only the PTC value and  
10 the upfront contribution by tax equity, but, also,  
11 the -- the revenues derived from the facility.

12 Pricing less so because with the value of  
13 \$24 on an after tax basis, PTC is worth \$30 of  
14 revenue, and \$30 of revenue equivalent from PTC is  
15 more valuable than current market pricing.

16 So even if pricing went down to zero, the  
17 facility would still be generating economic value  
18 of \$30 per megawatt hour. So I don't see pricing  
19 as a -- a factor that is as relatively important as  
20 the -- the production.

21 Q Okay. So let's say the production was 50  
22 percent or 75 percent of what is projected. Do you  
23 know what that negative impact would be on the  
24 ratepayers?

25

1           A    I -- I don't know what that impact would  
2    be.  I would suggest that, you know, given  
3    utilities experience with wind facility over the  
4    past 12 or so years that a -- a very bad year for  
5    wins in a given year is maybe five or 6 percent  
6    below the expected value over an extended period,  
7    that -- that value decreases.

8           So if it's several percent below expected  
9    value over a ten-year period, at that would be the  
10   type of deviation that we have seen in general with  
11   the operating fleet of Algonquin Utilities Corp.  
12   and its affiliates.  Over the long-term, they have  
13   experienced the expected levels of production.

14          **Q    So I'm trying to -- trying to understand**  
15    **what the worst case scenario is for ratepayers.**  
16    **And so far, what you've said is there could be a 3,**  
17    **4 percent reduction in the -- in -- in the expected**  
18    **generation.**

19                **Is there any -- is there -- and -- and**  
20    **you've -- you can't quantify how that would affect**  
21    **ratepayers or -- I'm just -- I'm trying to figure**  
22    **out what the worst case scenario is.**

23          A    Right.  I -- I can't, on the stand, do  
24    that type of quantification.  I do know that  
25

1 whether it's -- I'm not sure which scenarios  
2 exactly were considered as part of the stipulation  
3 and agreement.

4 But I know Mr. Holmes has contemplated the  
5 elements that went into the market price production  
6 provision.

7 **Q All right. I'll ask him.**

8 **A** Sure.

9 CHAIRMAN HALL: Thank you.

10 MR. MOONEY: You're welcome.

11 COMMISSIONER COLEMAN: No questions.

12 JUDGE BUSHMANN: Recross based on  
13 Commission questions? Staff?

14 MS. MERS: No questions.

15 JUDGE BUSHMANN: MECG?

16 MR. WOODSMALL: No questions. Thank you.

17 JUDGE BUSHMANN: Division of Energy?

18 MR. POSTON: No questions.

19 JUDGE BUSHMANN: Renew Missouri?

20 MR. OPITZ: No, thank you, Judge.

21 JUDGE BUSHMANN: Sierra Club?

22 MR. ROBERTSON: No, thank you.

23 JUDGE BUSHMANN: City of Joplin?

24 MS. BELL: Yeah. Just one question, I  
25

1 think.

2 RE CROSS EXAMINATION

3 BY MS. BELL:

4 Q So you've seen the charts from OPC's  
5 opening that talk about capacity factors, correct?

6 A I saw those charts presented on screen. I  
7 have to admit, I was not able to read them from  
8 where I was sitting in the back. Thank you.

9 Q I think you're already flipped to page 20  
10 of that chart, which is the capacity factor chart  
11 that has been referenced today. Are you on that  
12 chart?

13 A Yes.

14 Q And so when Chairman Hall was asking you  
15 about the worst case scenario and you said that  
16 typically you would only expect a 3 to 4 percent  
17 difference in capacity, so if -- so here, I believe  
18 the original model is modeled at 54 percent  
19 capacity; is that correct?

20 A I do recall that figure to be correct.  
21 But I'm subject to check.

22 Q And so under your analysis, then, you  
23 would expect that if it's modeled at 54 percent,  
24 you would see 51 to 57 percent?

25

1           A    My reference to Chairman Hall was with  
2   respect to annual energy production.

3           **Q    Okay.**

4           A    Not capacity factor.

5           **Q    Not capacity.**

6           A    And it was in reference to an extended  
7   period of time, about a ten-year time frame I was  
8   estimating.

9           **Q    Okay.  Would you agree that the RFP  
10   capacity factor is 7 percent lower than what was  
11   originally modeled?**

12          A    When you mean the RFP, you mean the  
13   amounts modeled in the stipulation and agreement?

14          **Q    Yes.**

15          A    I do believe that the capacity factor is  
16   in the range of being that much lower, but, as  
17   well, the prices are that much lower as well and,  
18   hence, the levelized cost of energy has actually  
19   improved versus what was originally in the GFSA.

20                MS. BELL:  Okay.  No further questions.

21                JUDGE BUSHMANN:  Public Counsel?

22                MR. WILLIAMS:  Thank you.

23                                RE CROSS EXAMINATION

24   BY MR. WILLIAMS:

25

1           Q    Do you recall putting out a figure of  
2   production might be reduced in the neighborhood of  
3   5 to 6 percent from wind farms based on the, I  
4   guess I'll use the word, Algonquin's experience?  
5   Do you recall saying that in response to  
6   Commissioner Hall's question?

7           A    Yes.

8           Q    Over what time period were you referring?

9           A    That higher percentage reduction was my  
10   estimate based on an annual time frame.

11          Q    Okay. Annual time frame based on a period  
12   of ten years? Five years? One year?

13          A    A one-year time frame.

14          Q    So you've just seen one year of  
15   information, and you saw a 5 to 6 percent -- I  
16   don't understand how the answer can be that. I  
17   understand you're -- if I understand you correctly,  
18   you're saying the annual reduction that you've seen  
19   deviation from an average has been -- or maybe  
20   projected has been about 5 to 6 percent. Compared  
21   to what?

22          A    Well, so in any given year, a single year,  
23   Algonquin has seen, with its existing facilities,  
24   that a single facility could achieve production  
25

1 that was 5 or 6 percent lower than the long-term  
2 average resource.

3 But in the following year, it would -- it  
4 would achieve 5 or 6 percent higher. And on  
5 average, over a five, six, seven, eight-year  
6 period, it will hinge towards the mean, long-term  
7 average resource.

8 **Q So you're looking at a reduction in one**  
9 **year compared to a period of seven to eight years?**  
10 **Is that what I'm hearing?**

11 A No. The comparison is to the expected  
12 production, the average projection of that wind  
13 facility.

14 **Q And where are those wind facilities**  
15 **located that you're referring to where Algonquin**  
16 **has experienced that 5 to 6 percent reduction in a**  
17 **particular year, deviation from the expected**  
18 **production?**

19 A Algonquin has wind facilities in various  
20 locations. There is Pennsylvania, Illinois,  
21 Minnesota, Texas as well in Canada and Quebec,  
22 Manitoba and Saskatchewan.

23 **Q Which part of Illinois?**

24 A We have two facilities in Illinois. One  
25



1 called Shady Oaks and another called Benonk. Both  
2 are southwest of Chicago. I'm not sure just how  
3 far, but maybe a 2-hour drive. I've been to the  
4 facility. I think it's about a 2-hour drive from  
5 Chicago.

6 MR. WILLIAMS: No further questions.

7 JUDGE BUSHMANN: Redirect by Empire?

8 REDIRECT EXAMINATION

9 BY MS. KNOWLTON:

10 Q Mr. Mooney, before Empire buys any wind  
11 farm pursuant to the plan that its proposing here,  
12 would Empire require that there be any testing of  
13 the wind farms production?

14 A Yes. There's an evaluation by an  
15 independent engineer. It's a rigorous evaluation  
16 that assesses based on the wind data gathered at  
17 the site over a multi-year period of what the  
18 estimated production will be in conjunction with  
19 the equipment.

20 And I stress it is an independent engineer  
21 that assesses and evaluates the expected wind  
22 production.

23 Q The City of Joplin asked you a series of  
24 questions about the percentage of Empire's capital  
25

1 contribution and the possibility that Empire might  
2 be incentivized to some extent to increase the  
3 capital contribution because it would -- would  
4 result in a larger rate base for Empire. Do you  
5 remember those lines of questioning that you were  
6 asked?

7 MR. WILLIAMS: I'm going to object. I'm  
8 going to object to the characterization of  
9 incentivizing Empire.

10 JUDGE BUSHMANN: I don't think she's asked  
11 a question yet, so hold it for a little bit.

12 A I -- I do recall.

13 Q (By Ms. Knowlton) Are you familiar with  
14 the market price protection mechanism that's  
15 included in the stipulation?

16 A Yes, I am familiar.

17 Q Are you aware of any aspect in that  
18 mechanism that would incentivize the company with  
19 regard to the amount of money it spends to purchase  
20 wind farms?

21 A Yes. As I understand it, the market price  
22 protection mechanism provides that the revenues --  
23 the actual revenues from the wind facility must  
24 exceed the revenue requirement from the wind  
25

1 facility.

2 And because the revenue requirement based  
3 on a number of factors, including the capital costs  
4 that Empire invests in the facility, Empire is  
5 motivated to minimize that capital cost.

6 MS. KNOWLTON: No further questions.

7 JUDGE BUSHMANN: Thank you your testimony,  
8 Mr. Moody. You're excused.

9 MR. MOODY: Thank you.

10 MS. KNOWLTON: The company calls Timothy  
11 Wilson.

12 JUDGE BUSHMANN: Please raise your right  
13 hand.

14 TIMOTHY WILSON,  
15 being first duly sworn to testify the truth, the whole  
16 truth, and nothing but the truth, testified as follows:

17 DIRECT EXAMINATION

18 BY MS. KNOWLTON:

19 JUDGE BUSHMANN: Please be seated.

20 Q (By Ms. Knowlton) Good afternoon,

21 Mr. Wilson.

22 A Good afternoon.

23 Q Please state your name for the record.

24 A Timothy N. Wilson.

25

1           Q    By whom are you employed and in what  
2    **capacity?**

3           A    Liberty Utilities Service Corp. I am the  
4    Central Region Director of Electric Operations and  
5    Services.

6           Q    Have you caused to be prepared for the  
7    **purposes of this proceeding certain direct and**  
8    **surrebuttal testimony in question and answer form?**

9           A    Yes.

10          Q    Is it your understanding that that  
11   **testimony has been marked as Exhibits 19-C, 19-P**  
12   **and 20 for identification?**

13          A    Yes.

14          Q    Do you have any changes that you would  
15   **like to make to that testimony at this time?**

16          A    I do not.

17          Q    If I asked you the questions which are  
18   **contained in this Exhibits 19-C, P and 20 today,**  
19   **would your answers be the same?**

20          A    Yes.

21          Q    Are those answers true and correct to the  
22   **best of your information, knowledge and belief?**

23          A    Yes.

24                MS. KNOWLTON: Your Honor, I'd offer  
25

1 Exhibits 19-C, P and 20 into evidence and tender  
2 Mr. Wilson for cross-examination.

3 JUDGE BUSHMANN: Any objections? Hearing  
4 none, they're admitted.

5 (Empire Exhibits 19-C, 19-P and 20 were  
6 offered and accepted into evidence.)

7 JUDGE BUSHMANN: First cross is by Staff.

8 CROSS-EXAMINATION

9 BY MS. FORCK:

10 Q Good afternoon.

11 A Good afternoon.

12 Q Is the Elk River and Meridian Way wind  
13 generation currently needed to allow Empire to meet  
14 the Missouri renewable portfolio standard  
15 requirements?

16 A Yes, they are.

17 Q And what is the approximate amount of  
18 megawatts currently associated with those two  
19 purchase power contracts?

20 A Megawatt is capacity. So they're claimed  
21 capacity is 150 megawatts at Elk River and 105  
22 megawatts at Meridian Way.

23 Q Once the Elk River and Meridian Way  
24 contracts expire, will the additional wind

25

1 generation at issue in this proceeding be needed in  
2 part to allow Empire to continue to meet the  
3 Missouri RPS requirements?

4 A When those contracts expire, Empire will  
5 need some sort of renewable generation to meet that  
6 requirement of 15 percent subsequent to 20, 21 as  
7 it relates to our Missouri retail sales.

8 MS. FORCK: Thank you. I have nothing  
9 further.

10 JUDGE BUSHMANN: MECG?

11 MR. WOODSMALL: No questions. Thank you.

12 JUDGE BUSHMANN: Division of Energy?

13 MR. POSTON: No questions.

14 JUDGE BUSHMANN: Renew Missouri?

15 MR. OPITZ: No, thank you, Judge.

16 JUDGE BUSHMANN: Sierra Club?

17 MR. ROBERTSON: No questions.

18 JUDGE BUSHMANN: City of Joplin?

19 MS. BELL: Yes. Thank you.

20 CROSS-EXAMINATION

21 BY MS. BELL:

22 Q Good afternoon, Mr. Wilson.

23 A Good afternoon.

24 Q On your direct testimony -- well, first,

25

1 just to be clear, you didn't file an affidavit in  
2 support of the stipulation, did you?

3 A I did not.

4 Q And in your direct testimony on page 3 on  
5 lines 22 and 23, you talk about the second option  
6 for a developer to construct a wind project on site  
7 is currently being developed by Empire; is that  
8 correct?

9 A That's correct.

10 Q Can you talk more about that?

11 A Yes. So with respect to the options that  
12 were given, they could offer up -- or bid in the  
13 RFP sites that they had developed or sites that we  
14 had developed, which is what you're referring to.

15 For several months now, Empire has been  
16 developing two seats in southwest Missouri for  
17 which we have applied to the Southwest Power Pool  
18 250 megawatt generator interconnect request at both  
19 of those sites. And we have procured options on  
20 land leases in that area as well.

21 Q Do you have figures for how much money has  
22 already been spent by Empire for those project  
23 sites?

24 A I do not have that in front of me. No.

25

1 Q Is that in the record?

2 A It is not.

3 Q Is Empire going to be seeking to recover  
4 that amount from ratepayers?

5 A As -- as a total of the capital  
6 investment, the money spent to develop those sites  
7 would be sought in terms of the total capital cost  
8 with respect to those sites in southwest Missouri,  
9 yes.

10 Q And if Empire chooses not to go forward  
11 with the plan as stipulated or originally proposed,  
12 what happens to those costs?

13 A That would be a decision we would have to  
14 make in the future.

15 Q Okay. If you'd turn to page 5 of your  
16 direct testimony, you're answering a question about  
17 purchase and sale agreements there, correct?

18 A Yes.

19 Q And that's a negotiation between what  
20 parties?

21 A That would be a negotiation that's  
22 currently ongoing between Empire and negotiating  
23 team and the short-listed bidders as a result of  
24 the RFP analysis.

25



1           **Q**    Okay.  On line 5 of page 5, you talk about  
2   there's going to be a written report.  And I  
3   believe Mr. Mooney referenced this independent  
4   engineer.  There's going to be a written report.  
5   And that written report will contain something  
6   about reasonable likelihood the wind project tested  
7   capacity will exceed a certain guaranteed level?

8           A    Uh-huh.

9           **Q**    So that's in the agreement?

10          A    That is currently being contemplated in  
11   the agreements that are unsigned, yes.  I think I  
12   would make a clarification that there are two  
13   different tests there.  The one that Mr. Mooney was  
14   referring to was more on the overall expected  
15   energy over a 20-year period.

16                And this is with respect to a specific  
17   generator output curve as it relates to name plate  
18   capacity of the turbines that were selected for  
19   each project.

20          **Q**    Are you aware of a certain guaranteed  
21   capacity required by the stipulation?

22          A    I think the -- the stipulation  
23   contemplates up to 600 megawatts of -- of wind  
24   energy.

25

1           Q    I guess is there a test -- you know, we've  
2    seen these capacity factor numbers. They range  
3    from 47 to 54 percent. Will there be any agreement  
4    between the -- the two parties here -- will there  
5    be an agreement between the two of you of a minimum  
6    capacity of those projects?

7           A    Yes.

8           Q    But there is --

9           A    Again, I want to make a clarification.  
10   There's a difference between capacity and capacity  
11   factor. Capacity is the name plate rated capacity  
12   of the generators, which would be a one-time test  
13   based upon the output curve supplied by the  
14   manufacturer. Capacity factor is the expected  
15   annual energy output over the rated name plate  
16   capacity.

17          Q    Thank you for the clarification.

18          A    Okay.

19          Q    So there is not a capacity factor  
20   guarantee in the stipulation as currently drafted,  
21   correct?

22          A    Those are being currently negotiated.  
23   Those are highly confidential. But there has been  
24   a lot of due diligence with each one of the  
25

1 projects that have been submitted to us in terms of  
2 a third party independent engineer's evaluation  
3 that Mr. Mooney referenced and will be a part of  
4 the test as we move forward with the PSAs.

5 Q And I think your answer was speaking to  
6 the agreement. I'm talking about the stipulation  
7 that was filed in this case.

8 A So could you repeat the question with  
9 respect to stipulation filed in this case?

10 Q There's not a capacity factor guarantee in  
11 the stipulation filed in this case, correct?

12 A There is not.

13 Q Thank you. Turning to your surrebuttal  
14 testimony, on page 6, you talk about -- I think  
15 there were ten bidders that responded to the RFP;  
16 is that correct?

17 A That is correct.

18 Q Okay. And you talked about one bidder  
19 provided an actual price that was net of tax  
20 equity. Is there a reason why only one bidder  
21 would factor that in?

22 A I think as -- as discussed with witness Mr  
23 Mooney earlier, there were a lot of questions  
24 surrounding tax reform at the time.

25

1           And folks just decided at the end of the  
2 day, the tax equity agreement was going to be done  
3 at a subsequent time. And so they could give us  
4 indications of what tax equity financing could be  
5 with respect to their bid. But at the end of the  
6 day, it would be ultimately be decided later.

7           **Q    Okay. Were you in the room earlier for**  
8 **the discussion of the Oklahoma windcatcher project?**

9           A    I was.

10          **Q    And do you generally understand the no net**  
11 **harm provision or net benefit provision for**  
12 **customers that's being proposed in Oklahoma?**

13          A    I have not read anything with regard to  
14 any of the stipulations or agreements made in  
15 Oklahoma with the windcatcher project.

16          **Q    Okay. Do you know Empire's position on**  
17 **including some type of no net harm to customers**  
18 **provision?**

19          A    I think our position has been outlined in  
20 the -- the non-unanimous stip and agreement that  
21 we've -- are talking about here today.

22               MS. BELL: No further questions.

23               JUDGE BUSHMANN: Public Counsel?

24               MR. WILLIAMS: Well, now a few.

25

1 CROSS-EXAMINATION

2 BY MR. WILLIAMS:

3 Q Good afternoon, Mr. Wilson.

4 A Good afternoon.

5 Q Do you remember Staff asked you about Elk  
6 River and Meridian Way and the -- if this 600  
7 megawatt wind project is developed that's part of  
8 the stipulation plan it can be used for satisfying  
9 the renewable energy standard of Missouri?

10 A I remember that question. Yes.

11 Q Cannot that requirement also be met with  
12 purchases of renewable energy credits?

13 A Yes, it can.

14 Q And do you recall -- well, maybe you do or  
15 not. Mr. Mertens earlier testified that the  
16 contracts for the responses to the request for  
17 proposals, you're hoping to have those negotiated  
18 and completed by the end of this month. Is that  
19 consistent with your understanding of what's  
20 occurring in those negotiations?

21 A As a member of the negotiating team  
22 myself, yes, I'm aware of that.

23 Q And what he said is accurate?

24 A What he said is accurate. That is the  
25

1 goal.

2 MR. WILLIAMS: No further questions.

3 JUDGE BUSHMANN: Questions by  
4 Commissioners?

5 CHAIRMAN HALL: No questions. Thank you.

6 COMMISSIONER COLEMAN: No questions.

7 JUDGE BUSHMANN: Redirect by Empire?  
8 Redirect by Empire?

9 MS. KNOWLTON: The company has none.

10 JUDGE BUSHMANN: Mr. Wilson, you may step  
11 down. Thank you for your testimony.

12 MR. WILSON: Thank you, Judge.

13 MS. KNOWLTON: The company calls  
14 Christopher Krygier.

15 CHRISTOPHER KRYGIER,  
16 being first duly sworn to testify the truth, the whole  
17 truth, and nothing but the truth, testified as follows:

18 DIRECT EXAMINATION

19 BY MS. KNOWLTON:

20 JUDGE BUSHMANN: Please be seated.

21 Q (By Ms. Knowlton) Good afternoon,  
22 Mr. Krygier.

23 A Good afternoon.

24 Q Please state your name for the record.

25

1           A    Chris Krygier.

2           Q    By whom are you employed and in what  
3    **capacity?**

4           A    Liberty Utility Services Corp. as the  
5    Director of Rates and Regulatory Affairs.

6           Q    Have you caused to be prepared for the  
7    **purposes of this proceeding certain direct and**  
8    **surrebuttal testimony as well as an affidavit in**  
9    **question and answer form?**

10          A    Yes, I have.

11          Q    Is it your understanding that that  
12    **testimony and -- and the affidavit have been marked**  
13    **respectively as Exhibits 2, 3, 4-C and 4-P for**  
14    **identification?**

15          A    Yes, it is.

16          Q    Do you have any changes that you would  
17    **like to make to that testimony or affidavit at this**  
18    **time?**

19          A    I do have two typographical errors. I  
20    actually forgot my binder for that, if I could go  
21    grab that real quick.

22                JUDGE BUSHMAN: You may.

23          A    Thank you. They relate to my surrebuttal  
24    testimony. The first is on page 5, line -- page 5,  
25

1 line 3. There I have a reference to an incorrect  
2 statute. It says four CSR 240-3. And I believe  
3 that should be 240-20.

4 The second is on page 9 of my surrebuttal.  
5 line 20. I have an extra decimal in the middle of  
6 that sentence that should be deleted.

7 **Q If I asked you the questions which are**  
8 **contained in Exhibits 2, 3, 4-c and 4-P today,**  
9 **would your answers as amended be the same?**

10 A Yes.

11 **Q Are those answers as amended true and**  
12 **correct to the best of your information, knowledge**  
13 **and belief?**

14 A Yes.

15 MS. KNOWLTON: Your Honor, I'd offer  
16 Exhibits 2, 3, 4-C and 4-P into evidence and tender  
17 Mr. Krygier for cross-examination.

18 JUDGE BUSHMANN: Any objections to those  
19 exhibits? Hearing none, they're admitted.

20 (Empire Exhibit Nos. 2, 3, 4-C and 4-P  
21 were offered and entered into evidence.)

22 JUDGE BUSHMANN: Next cross is by Staff.

23 CROSS-EXAMINATION

24 BY MS. FORCK:

25



1 Q Good afternoon, Mr. Krygier.

2 A Good afternoon.

3 Q Empire filed an application related to  
4 this customer savings plan in four states, correct?

5 A That's correct.

6 Q And in Oklahoma, there was a stipulation  
7 that was filed; is that correct?

8 A Yes.

9 Q Can you provide an update as to that  
10 Oklahoma application and -- and stipulation?

11 A Yes. The hearing for the Oklahoma  
12 settlement is currently scheduled for May 22nd.  
13 However, the parties are in discussions about  
14 potentially looking at revising the settlement  
15 based on the settlement here in Missouri.

16 Q And that settlement agreement with  
17 Oklahoma was involving the original application to  
18 -- to close Asbury; is that correct?

19 A That's correct.

20 Q So is that one of those revisions that  
21 would be discussed?

22 A Yes.

23 Q Okay. Have you read OPC witness John  
24 Robinette's affidavit statement in opposition of

25

1 the stipulation?

2 A Yes, I have.

3 Q Do you have a copy of that with you?

4 A Yes.

5 Q Please refer to paragraph 5.

6 A I am there.

7 Q Would you agree that both a decision to  
8 begin construction on up to 800 megawatts of wind  
9 project and a decision to close Asbury 15 years  
10 before its scheduled retirement date needs  
11 regulatory certainty before Empire would be willing  
12 to move forward on either decision?

13 A Generally speaking, yes. This was  
14 obviously the subject of much discussion yesterday  
15 as to the different legal considerations and  
16 aspects. But, generally speaking, yes.

17 Q And what would you -- how would you define  
18 regulatory certainty?

19 A I would -- well, what we're looking for  
20 here is that the decision to acquire the wind is  
21 reasonable. And then, ultimately, the prudence  
22 will be determined in a subsequent regulatory  
23 filing as it relates to the wind projects.

24 Q Does the fact that Empire has agreed to  
25

1 keep Asbury open for the time being changed  
2 certainty for the construction of the wind  
3 projects?

4 A No, it does not.

5 Q Does the fact that the magnitude of the  
6 wind projects has decreased by 200 megawatts  
7 changed the need for regulatory certainty for  
8 construction of the wind projects?

9 A No, it does not.

10 Q All right. Look at Paragraph 11.

11 A I'm there.

12 Q Does the stipulation address prudence  
13 related to Asbury upgrades in the event Missouri  
14 law transfers compliance to Missouri Department of  
15 Natural Resources?

16 A The stip, the way I read it, is that it  
17 doesn't contemplate the jurisdiction from a legal  
18 perspective.

19 Q So is it reasonable to assume that  
20 signatories did not intend to trump state law when  
21 contemplating the compliance with EPA coal  
22 combustion residual rules and effluent limitation  
23 guidelines for Asbury?

24 A I do not think that was the intent to

25

1 trump State law.

2 Q Please refer to paragraph 14 of  
3 Mr. Robinette's affidavit.

4 A I am there.

5 Q This is marked confidential. I'm not  
6 intending to ask anything confidential. So if it's  
7 possible to answer without providing confidential  
8 information, what is Empire's plan for Missouri  
9 jobs associated with construction and operation of  
10 the wind projects?

11 A Trying to keep it high level without going  
12 into a confidentiality, that's something that we'll  
13 be looking at the jobs and how they'll be staffed  
14 once we get a decision on the wind farms  
15 themselves.

16 Q And that would include construction and  
17 operation?

18 A Yes.

19 Q Okay. Are you familiar with OPC witness  
20 Lena Mantle's affidavit and statement in opposition  
21 of the stipulation?

22 A Yes, I am.

23 Q Do you have a copy of that?

24 A Yes, I do.

25

1 Q Please refer to paragraphs 22 through 27.

2 A I'm there.

3 Q I'll give you a chance to review that  
4 before I ask you this next set of questions.

5 A Okay.

6 Q What is your understanding of  
7 Ms. Mantle's argument here?

8 A My understanding of Ms. Mantle's argument  
9 is that there is some uncertainty about the  
10 accounting as it relates to the wind revenues.

11 Q Is it your understanding that revenues  
12 from the wind projects would flow through the fuel  
13 adjustment clause?

14 A Yes. That's my understanding.

15 Q Are you familiar with Chapter 4  
16 CSR 240-3.161?

17 A Not by the number.

18 Q Well, I'll -- I'll read it, and then I'll  
19 ask you a few questions. Paragraph 1-A-2, If  
20 off-system sales revenues are reflected in the RAM,  
21 fuel and purchase power costs reflect both, A, the  
22 prudently incurred fuel and purchase power costs  
23 necessary to serve the electric utilities of  
24 Missouri retail customers, and, B, the prudently  
25

1 incurred fuel and purchased power costs associated  
2 with the electric utility's off-system sales. So  
3 for clarification, the RAM means Rate Adjustment  
4 Mechanism; is that right?

5 A That's my understanding.

6 Q And a fuel adjustment clause or FAC is a  
7 type of RAM; is that right?

8 A That's my understanding. Yes.

9 Q Does -- does Empire currently have an FAC?

10 A Yes, it does.

11 Q And that FAC was established in a general  
12 rate proceeding, right?

13 A Yes.

14 Q And the FAC can be continued or modified  
15 through a general rate proceeding as well; is that  
16 right?

17 A That's right.

18 Q Would you agree that the Commission  
19 determines whether or not to reflect off-system  
20 sales revenues and associated costs in an FAC?

21 A Could you please repeat?

22 Q Would you agree that it's the Commission's  
23 determination whether or not to reflect off-system  
24 sales revenues and associated costs in an FAC?

25

1           A    Through the accounting for them, yes.

2           Q    Does Empire's current FAC include  
3 off-system sales revenues?

4           A    Yes, it does.

5           Q    Would inclusion of the revenues from the  
6 wind projects and the FAC be a mechanism for  
7 flowing benefits back to customers in a more timely  
8 manner than would otherwise be possible?

9           A    Yes. I think that was our assumption as  
10 it relates to the customer savings plan is that the  
11 wind revenues would flow through the FAC.

12          Q    Have you read OPC witness Jeff Marke's  
13 affidavit in opposition of the stipulation?

14          A    Yes, I have.

15          Q    Do you have a copy of that?

16          A    I do.

17          Q    Are you familiar with the case he  
18 discussed regarding the two gigawatt windcatcher  
19 facility and 756 kilovolt dedicated generation tie  
20 line in Oklahoma?

21          A    Generally, yes.

22          Q    So Dr. Marke discusses a number of  
23 customer guarantees from that Oklahoma case. One  
24 such guarantee is that the project provides net

25

1 benefits during the initial ten years of the  
2 project's operation. The agreement in the Oklahoma  
3 case Dr. Marke cites does not perform its  
4 calculation of net benefits until Year 11 of the  
5 project; isn't that right?

6 A Yes. I think that's what the page -- page  
7 8 contemplates in the net benefits bullet.

8 Q So when customers are owed money in that  
9 situation, they could potentially go ten years  
10 before they would see any of that money again; is  
11 that right?

12 A Potentially, yes.

13 Q And when that money is, I'll say, returned  
14 to the customers, the company creates a regulatory  
15 liability to be amortized over the next 15 years;  
16 is that right?

17 A That's what I read here. Yes.

18 Q The non-unanimous stipulation filed in  
19 this case doesn't provide for a guarantee of net  
20 benefits, but it does provide for a sharing in the  
21 detriment; is that right?

22 A It does provide for a sharing in -- in  
23 conjunction with rate case filings.

24 Q And under the terms of the stipulation,  
25



1 Empire's rates will be adjusted to pool money in  
2 the appropriate direction in each rate case?

3 A If there's money owed, yes. It would be  
4 -- the stipulation contemplates at that time.

5 Q Would you anticipate that a rate case  
6 would be filed before the eleventh year of the  
7 operation of the wind projects?

8 A Yes. We, under that FAC statute, are  
9 required to no less than every four years is my  
10 understanding.

11 Q The stipulation also provides for revenues  
12 from the wind projects to flow through the FAC; is  
13 that right?

14 A Ask that question one more time.

15 Q The stipulation also provides for revenues  
16 from the wind projects to flow through the FAC?

17 A That's what it contemplates. Yes.

18 Q So does that mean that customers would see  
19 these revenues as soon as the FAC is updated?

20 A Yes, generally.

21 Q And how soon could that occur?

22 A Empire typically updates its FAC twice a  
23 year.

24 Q Okay. Would you please look at page 6 of  
25

1 Dr. Marke's affidavit beginning with the last  
2 paragraph? It starts, If empire's modeling.

3 A I'm there.

4 **Q Would you please read that entire**  
5 **paragraph aloud?**

6 A If Empire's modeling suggests retiring  
7 significant amounts of base load generation  
8 prematurely is prudent, then other SPP members  
9 modeling must show similar results.

10 Under these circumstances in near term  
11 future where excess SPP reserve margins are erased  
12 entirely appears plausible, which would mean that  
13 during high demand hours (in the summer when it is  
14 not windy), there will likely be significant  
15 residual effects, namely, higher costs generating  
16 units coming online than what would be predicted in  
17 a modeling exercise that does not account for other  
18 market actors reactions.

19 **Q And then would you also please read the**  
20 **first sentence on page 7?**

21 A Starting with Given?

22 **Q Yes.**

23 A Given the market signals apparent to OPC,  
24 Empire's customer savings plan does not appear to  
25

1 be a sound investment for Empire's ratepayers.

2 Q So the way I read that, it sounds as  
3 though OPC is suggesting that if Empire makes  
4 prudent decisions based on its modeling and other  
5 SPP members make prudent decisions based on their  
6 modeling, the outcome would be an imprudent  
7 investment by Empire. Does that sound like what  
8 you just read?

9 A The way I read this is -- feels like a  
10 Catch 22 of modeling follow -- following other  
11 modeling.

12 The way I think about it is each utility's  
13 model stands alone as it relates to what decision  
14 it's looking at for its fleet. And if those  
15 decisions are good for it, then regardless of what  
16 other utilities are doing, they'll be prudent  
17 decisions for that utility.

18 Q Do you think Empire would be accused of  
19 imprudency if it ignored its modeling research that  
20 suggested a course of action would result in lower  
21 rates?

22 A What do you mean by that question?

23 Q So you were just discussing how each  
24 utility's modeling should stand alone and should  
25

1 help determine what course of action we need to  
2 take.

3 A Yes.

4 Q So if Empire ignored its modeling and  
5 research, and the modeling and research suggested  
6 that a certain course of action would result in  
7 lower rates, but Empire decided not to take that  
8 course of action, do you think that Empire could be  
9 accused of imprudency?

10 A Potentially. It obviously all depends on  
11 -- on the fact pattern, as we were talking about  
12 yesterday, there's other considerations besides  
13 cost that have to go into these decisions and have  
14 to be looked at as a whole. But, ultimately, the  
15 modeling for each utility stands alone.

16 Q Okay. On page 3 of Dr. Marke's affidavit,  
17 he accuses Empire's modeling of being opaque and  
18 flawed. Can you reconcile Dr. Marke's statements  
19 here, first being that Empire's modeling is opaque  
20 and flawed, and the second being that if Empire's  
21 modeling suggests retiring significant amounts of  
22 base load generation prematurely as prudent and  
23 other SPP's modeling show similar results, and  
24 that's what you had just read into the record?

25

1           A    Yeah.  So big picture, which is from being  
2   part of the modeling process, I don't think our  
3   modeling is opaque and flawed.  We spent a  
4   significant amount of time going through a pretty  
5   robust process, as Mr. Mertens alluded to and  
6   Mr. McMahon earlier.

7                    So I think to that part of the question,  
8   it was a pretty thorough process.  What was your  
9   second question?

10           **Q    So can you reconcile that with Dr. Marke's**  
11   **statement that other SPP members modeling would**  
12   **show similar results to Empire's modeling?**

13           A    I cannot.

14                    MS. FORCK:  Okay.  I have nothing further.

15                    JUDGE BUSHMANN:  MECG?

16                    MR. WOODSMALL:  Briefly, your Honor.

17                                    CROSS-EXAMINATION

18           BY MR. WOODSMALL:

19                    MR. WOODSMALL:  First off, there's some  
20   question about what the FAC does.  And I would ask  
21   the Commission to take official notice of Empire's  
22   FAC tariff.  And I have those specific citations.  
23   It's PSC MO No. 5, Section 4, Original Sheet No.  
24   17U through 17AC.

25

1 JUDGE BUSHMANN: Say that again.

2 MR. WOODSMALL: PSC MO, No. 5, Section 4,  
3 Original Sheet Nos. 17U through 17AC.

4 JUDGE BUSHMANN: Any party have objection  
5 to taking official notice of those tariffs?  
6 Hearing none, the Commission will take official  
7 notice of those tariffs on file.

8 MR. WOODSMALL: Thank you.

9 Q (By Mr. Woodsmall) Mr. Krygier, were you  
10 here yesterday during the opening statements?

11 A Yes, I was.

12 Q And -- and did you hear a question from  
13 the Chairman to Counsel regarding PSA, plant and  
14 service accounting?

15 A Yes. Yes.

16 Q And can you tell me what your  
17 understanding of PSA is?

18 A My understanding is that it generally  
19 allows a utility to defer to its balance sheet  
20 certain items that would typically be included on  
21 its income statement, all in a direction to  
22 alleviate regulatory lag.

23 Q And so a layperson's understanding, I  
24 mean, it would allow Empire to defer depreciation

25

1 expense and return on investment to those in  
2 service between rate cases; is that correct?

3 A That's my understanding.

4 Q Okay. Do you believe that the stipulation  
5 in any way contemplates PSA for these investments?

6 A No, I do not.

7 MR. WOODSMALL: Okay. Thank you. No  
8 further questions.

9 JUDGE BUSHMANN: Division of Energy?

10 MR. POSTON: No questions. Thank you.

11 JUDGE BUSHMANN: Renew Missouri?

12 MR. OPITZ: No, thank you, Judge.

13 JUDGE BUSHMANN: Sierra Club?

14 MR. ROBERTSON: No questions.

15 JUDGE BUSHMANN: City of Joplin?

16 MS. BELL: Sure.

17 CROSS-EXAMINATION

18 BY MS. BELL:

19 Q Good afternoon, Mr. Krygier.

20 A Good afternoon.

21 Q Today there has been a lot of discussion.  
22 I think the chairman had some question about PPA  
23 agreements. Are you familiar with Empire's current  
24 PPA agreements?

25

1           A    Very generally.

2           Q    Okay.  Earlier, it was said that the  
3   current PPA agreements, I think, have 20-year  
4   terms; is that correct?

5           A    I heard that statement.  Yes.

6           Q    Okay.  Do you know if Empire has the  
7   authority to negotiate for longer PPA agreements?

8           A    I'd have to defer that to Mr. Mertens  
9   probably is the best person -- I don't -- I haven't  
10  reviewed the contracts in terms of negotiating  
11  rights or things like that.

12          Q    You're not aware of like a statute that  
13  limits PPA agreements to 20 years?

14          A    You mean like a Missouri statute?

15          Q    Right.

16          A    Not that I'm aware of.

17          Q    Okay.  And Mr. Mertens said something  
18  about how -- and maybe this is more in your area  
19  since it has to do with rates -- that the current  
20  PPA agreements are locked in on a price, and that  
21  price is actually higher than what's currently in  
22  the market; is that correct?

23          A    Again, I heard him say that.  Yes.

24          Q    But that affects Empire's rates, right?

25



1 That --

2 A The price of the PPAs does impact rates.

3 Yes.

4 Q Okay. Do you know if Empire has the  
5 authority to negotiate a provision that would  
6 change that price based on fluctuating market  
7 prices much like is within the stipulation, you  
8 know, some type of production that would protect  
9 Empire and its customers?

10 A As it relates generally to those  
11 contracts, I would again defer you if it's related  
12 to those specific contracts -- again, I know  
13 they're -- I don't know of a statute that would  
14 prevent it.

15 Q Okay. Would it -- would it better protect  
16 Empire's customers if that market price provision  
17 and PPA was variable based on the market price?

18 A I don't know. I think you'd have to do  
19 some spreadsheet calculations and modeling to look  
20 at that.

21 Q Okay. What is Empire's calculation of  
22 their rate impact of the stipulation and agreement?

23 A So if you reference Mr. Meyers' affidavit,  
24 and Mr. Cooper -- I'm looking specifically at pages  
25

1 7 and 8, and Mr. Cooper alluded to this during the  
2 opening statement, the stipulation plan is  
3 approximately -- you know, it assumes an 11.75  
4 percent rate increase rounded to 12 compared to the  
5 status quo.

6 The current preferred plan that Empire  
7 operates under is approximately 8.42 percent, which  
8 rounding to 8 for simplicity.

9 **Q So does Empire adopt Mr. Meyers' rate --**  
10 **rate calculations?**

11 A What I was suggesting was those  
12 calculations came from the stipulation plan, and I  
13 was pointing to where they were referenced.

14 **Q Does Empire agree with those calculations**  
15 **made by Mr. Meyer?**

16 A Yes.

17 **Q Okay. Have you reviewed -- I think it's**  
18 **called Appendix A, Exhibit B to the stipulation?**  
19 **And it -- it's titled Wind Data Spreadsheet.**

20 A Yes. I'm there.

21 **Q You've reviewed that document?**

22 A Generally, yes.

23 **Q Okay. And so this -- on the second page,**  
24 **it has a row called Total Wind Revenue Requirement.**

25

1 Correct?

2 A I see that. Yeah.

3 Q Okay. And so in order to get to  
4 Mr. Meyers' calculations under 600 megawatt wind  
5 Asbury, he just added this total wind revenue  
6 requirement plus the current wind revenue  
7 requirement. Is that your understanding?

8 A I would need to go back and look at the  
9 spreadsheets. I think this was an illustrated  
10 example of what the potential could look like for  
11 those calculations.

12 The revenue requirement modeling that the  
13 8.42 percent and the 11.75 we talked about, those  
14 were runs from the ABB modeling that essentially  
15 compared the preferred plan that Empire operates  
16 under today to the stipulation plan.

17 So I'd have to go back and look at the  
18 spreadsheets to see where if these link and  
19 reconcile, it's probably a little more nuanced than  
20 simply adding those two things up that you  
21 referenced.

22 Q Okay. So let's go to your direct  
23 testimony. And I am on CDK-1, the first schedule  
24 attached to your testimony.

25

1 A I'm there.

2 Q Okay. Line No. 2 also says the words Wind  
3 Revenue Requirement. Is that your estimation of  
4 the wind revenue requirement from the GFSA plans, I  
5 believe?

6 A Yes. That was an estimate of the GFSA as  
7 originally filed in direct.

8 Q Okay. I believe it was Mr. Wilson who  
9 testified sites are already being developed. So  
10 why is the wind revenue requirement zero in 2018?

11 A I don't know offhand.

12 Q Okay.

13 A I suspect -- or I don't know offhand.

14 Q Okay. So I'm looking at this wind revenue  
15 requirement number compared with the appendix that  
16 was attached to the stipulation. And I -- I  
17 understand they are new on two different plans.

18 But I just have some questions about how  
19 those numbers relate. So in the -- in your  
20 attachment, CDK-1, in 2020, it's showing a wind  
21 revenue requirement basically in the first year  
22 that it hits at one thirty-two sixty-two. Do you  
23 see that?

24 A Yes.

25

1           **Q**   **Okay. And that's just for the wind,**  
2   **correct?**

3           **A**    I would need to pull the underlying work  
4 papers to tell you what -- each component that  
5 reconciles to the one thirty-two sixty-two. But  
6 big picture, that relates to the wind.

7           **Q**    **On the appendix for the stipulation, the**  
8   **first year that it hits, you see -- it's basically**  
9   **2021, and you see \$75 million -- or 75 for the**  
10 **total wind revenue requirement; is that correct?**

11          **A**    If you're referencing total revenue  
12 requirement in 2021, I see 75. Yes.

13          **Q**    **Okay.**

14          **A**    I think one thing to keep in mind is these  
15 aren't necessarily like-for-like comparisons. I  
16 think this was a -- an example calculation shown  
17 that does have, obviously, some of the underlying  
18 data.

19                But I'd have to go back to look to see if  
20 you can directly compare these two. I'm not sure  
21 directly offhand if you can.

22          **Q**    **Do you know what the differences might be?**

23          **A**    I don't offhand, no.

24          **Q**    **So I guess my question is more -- I'm just**  
25

1 trying to understand why these figures are  
2 different. I understand that we've moved from 800  
3 megawatts to 600 megawatts, you know, which is a 75  
4 percent difference. And maybe the costs aren't,  
5 you know, exactly 75 percent.

6 But I think that 75 number when it hits is  
7 something less than 75 percent. Do you know why  
8 that would be?

9 A I can tell you big picture. So these  
10 calculations done direct --

11 **Q Okay.**

12 A -- did not have the updated RFP data that  
13 Mr. McMahon and others have referred to, which  
14 obviously now has in the stipulation, there is the  
15 difference in megawatts that we've talked about,  
16 800, 600.

17 And then, finally, obviously, there's a  
18 difference status for Asbury for what was in the  
19 direct filing versus the stipulation filing. And  
20 subject to check, the difference in the price  
21 forecasts from the ABB reference cases might also  
22 be a difference between the two.

23 **Q Okay. One final question about these**  
24 **charts. If you're looking at CDK-1, you start with**  
25

1 that wind revenue requirement being 132 in 2020.  
2 And it decreases substantially essentially through  
3 2030, you're at ninety-one twenty-four.

4 So if you were to chart this on a graph,  
5 it's going significantly down over time. And if  
6 you look at Appendix A attached to the stipulation,  
7 it's pretty much steady.

8 So in 2021, you're looking at 75. And  
9 2030, you're at 72-ish. So you're looking at  
10 bottom line. Do you know why those would trend  
11 differently? Is that all related to Asbury?

12 A Could be. Part -- generally speaking, the  
13 wind revenue requirement can -- some components of  
14 it will decrease over time.

15 As an example, rate base will decline over  
16 time due to additional depreciation each year. But  
17 you'd have to go component by component and compare  
18 the two.

19 **Q Okay. Back to your direct, on page 6,**  
20 **line 19, you state, Empire seeks the following**  
21 **approvals in order to implement the CSP. Is that**  
22 **what you're seeking is approval for the wind**  
23 **projects?**

24 A What page? I'm sorry.

25

1 Q Page 6, line 19.

2 A And the question was?

3 Q Is Empire seeking approvals from the  
4 Commission?

5 A Well, I think we've had that discussion  
6 the last two days.

7 Q Okay. On page 12, you talk about minimum  
8 filing requirements in Kansas.

9 A Yes.

10 Q And I am not licensed in Kansas, but I'm  
11 hoping you can fill me in about these requirements.  
12 What's the -- do you have an update on status of  
13 the situation in Kansas?

14 A So are you asking me about what we -- the  
15 relief we requested here.

16 Q Well, yeah. What -- what were you  
17 requesting in Kansas?

18 A So there were essentially two pieces  
19 related to Kansas. But those were two specific  
20 pieces that we had to call out for our filing  
21 there.

22 And the first piece that's talked about on  
23 page 12 relates to us providing all of the  
24 requirements that are listed there on lines 15  
25



1 through 19. And then page 13 was a separate  
2 statute that was contemplated as it related to wind  
3 farms.

4 **Q Okay. What's the status of that filing in**  
5 **Kansas?**

6 A In Kansas, we have filed a motion to  
7 withdraw that case.

8 **Q And on page 13, line 20, I think you're**  
9 **talking about incentives that were available in**  
10 **Kansas; is that correct?**

11 A Yes.

12 **Q And were those available in Kansas and**  
13 **incorporated into your modeling?**

14 A They were not. And -- they were not.

15 **Q Why were they not included in your**  
16 **modeling?**

17 A The -- the statute had not been utilized  
18 in Kansas yet for any wind projects. And so there  
19 was some uncertainty about how they were to be  
20 applied and to be modeled.

21 And so in subsequent discussions with the  
22 parties there and filings, we ultimately withdrew  
23 the part of this request.

24 **Q If you'd flip to your surrebuttal.**

25

1 A I'm there.

2 Q Okay. On page 5, you talk about the --  
3 lines 15 -- 14, 15, you talk about the company's  
4 general rate case process; is that correct?

5 A On page 5, line --

6 Q 14. No. Okay. FAC -- it says, the  
7 following elements will be reflected in the  
8 company's general rate case process. And that's  
9 the just the general rate case process, right?

10 Am I on the wrong document? Okay. In  
11 regard -- I'll strike that question. But capital  
12 contributions are one thing that go into that  
13 general rate case process; is that correct?

14 A Capital investment?

15 Q Yes.

16 A Yes.

17 Q And so to the extent Empire's capital  
18 investment changes, based -- the share -- based on  
19 the tax equity partner and that -- that  
20 relationship -- that has the potential to change  
21 customer rates; is that correct?

22 A If you look at just that element, it does.  
23 However, you'd obviously look at all the other  
24 elements, take a look at it holistically.

25

1           Q    Okay. I think you still have the witness  
2   copy up there of OPC's opening which has been  
3   marked Joplin 502?

4           A    I don't see 502 on here. But I'll  
5   assume --

6           Q    Okay. Yes. Thank you. If you flip to  
7   page 20 about capacity factors --

8           A    I'm there.

9           Q    Okay. Is it your opinion -- I think  
10   yesterday Mr. McMahon said it's pretty much  
11   understood that Kansas has better wind than  
12   Missouri. Is that your understanding?

13          A    Maybe at a 50,000 foot level. But I'm not  
14   an expert at capacity factors.

15          Q    Okay. But it -- is it your opinion --  
16   would it be your opinion that it's a reasonable  
17   model to estimate a capacity factor in excess of  
18   any capacity that's been seen in Kansas for  
19   Missouri?

20          A    Again, I'm sorry. I'm not an expert in  
21   capacity factors.

22          Q    Okay. Just as a business person, as a  
23   layperson, if you see no actual data has ever been  
24   this high and you're going to get an estimate  
25

1 that's higher than anything that's ever been  
2 reported before, would you consider that a  
3 reasonable assumption?

4 A It's hard without kind of knowing the  
5 underlying fact pattern and current information.

6 Q You spoke earlier about the Oklahoma  
7 stipulation on the windcatcher project.

8 A No. I spoke with this project in  
9 Oklahoma.

10 Q Okay. And you've reviewed Mr. Marke's  
11 affidavit?

12 A Yes, I have.

13 Q So --

14 A What page?

15 Q I think -- it's an attachment to I think  
16 the synthetic benefits provision in Attachment 22  
17 to GM-1.

18 A I think I'm there.

19 Q Okay. So is it your opinion that the  
20 market protection provision in the stipulation in  
21 this case provides more protection to consumers  
22 than the one in Oklahoma?

23 A I haven't looked at any of the modeling on  
24 the Oklahoma windcatcher settlement or any of the  
25

1 underlying spreadsheet or work papers to do that  
2 kind of comparison.

3 I think our market protection provision is  
4 a good protection provision and has a lot of  
5 benefits to it. But I have not done a direct  
6 comparison to the pluses and minuses of the  
7 windcatcher provision.

8 Q Okay. If the Commission was to decide to  
9 adopt a provision similar to that in Oklahoma being  
10 and its guarantee, do you know Empire's position on  
11 that?

12 A Is that a settlement offer?

13 Q No. I just -- if that's what -- I mean,  
14 the Commission has -- putting aside the  
15 pre-approval question, if we assume the Commission  
16 has the authority to actually do what Empire is  
17 wanting, then the Commission has, I would think,  
18 broad discretion to accept the stipulation,  
19 additional provisions looked at all of the evidence  
20 in the case, which includes this other stipulation.

21 I think the Commission -- would you agree  
22 that Commissions often turn to other jurisdictions  
23 to decide public policy, correct?

24 A They look at usually national landscape.  
25

1           Q    Okay.  And would you -- you would agree  
2   that the Commission has the authority to adopt a  
3   stipulation in whole or in -- come up with an  
4   order, including any or all of that stipulation or  
5   other provisions, correct?

6           MS. KNOWLTON:  Objection.  Mr. Krygier is  
7   not a legal witness.

8           Q    (By Ms. Bell)  Okay.  Does Empire have a  
9   -- have a position on a net benefits guarantee?

10          A    I think net benefits guarantee can be a  
11   really loaded concept.  It really depends on what's  
12   in the details, what does the modeling scenario  
13   look like?

14          So as an example, Mr. McMahon and  
15   Mr. Holmes and others look at a multitude of  
16   scenarios for production prices, and you'd probably  
17   want to look at a number of different factors as it  
18   relates to this model and compare it directly.

19          I think our position if the Commission  
20   adopted, let's just say, verbatim the windcatcher  
21   frame work, we'd have to go back and look and think  
22   about it.  So I don't know what our position would  
23   be until we saw what shook out ultimately.

24          And it would be just be a discussion  
25

1 amongst ourselves. Obviously, there are other  
2 signatories to the agreement that would do some  
3 sort of similar review, I suspect.

4 Q Okay. Let's talk a little bit about  
5 market prices. The schedule that we looked at  
6 earlier attached to your direct testimony has that  
7 wind revenue requirement, right?

8 A Yes.

9 Q And the stipulation and agreement, as far  
10 as customer savings, anticipated that that is  
11 offset by wind sales; is that correct?

12 A Yes.

13 Q And so would you agree that benefits to  
14 customers depend on revenues received by SPP for  
15 wind?

16 A Generally speaking, yes.

17 Q And would you agree that those revenues  
18 are dependent on wind energy generated?

19 A That is one of the factors, yes.

20 Q And you would agree that the forecast used  
21 by Empire decreased between 2016 and 2017 for  
22 market prices; is that correct?

23 A Of my general knowledge, yes. You  
24 probably need to speak to Mr. McMahon or others on  
25

1 what the ABB forecasts show in detail.

2 Q Holding all other things equal, if we're  
3 talking about -- if we go back to capital  
4 contributions by Empire for the wind projects --

5 A Our portion. Capital investment.

6 Q Correct. Holding all other things equal,  
7 if you increase that capital contribution, that  
8 affects Empire's savings calculation?

9 A Holding all other things equal, yes.  
10 However, as I mentioned earlier, probably can't  
11 look at it just as holding one element equally, One  
12 element by itself. You'd have to look at the  
13 entire package.

14 Q And you would agree, holding all else  
15 equal, that those savings would be lower if  
16 Empire's portion of the contribution is higher?

17 A Again, it depends on the other elements of  
18 the package.

19 Q Okay. And adding additional sums to rate  
20 base would affect Empire's ratepayer impact  
21 calculations, correct?

22 A If you looked at just rate base by itself  
23 and nothing else, higher rate base would have  
24 higher rates for customers.

25



1 MS. BELL: Okay. No further questions.

2 JUDGE BUSHMANN: Let's take a break.

3 We'll be in recess until 3:15.

4 (Break in proceedings.)

5 JUDGE BUSHMANN: Let's go back on the

6 record. How many exhibits do you have,

7 Mr. Williams?

8 MR. WILLIAMS: Two.

9 JUDGE BUSHMANN: Two. At this point. The

10 next number will be 216. Which one do you want to

11 make 216 and which 217?

12 MR. WILLIAMS: The thicker one is 216.

13 JUDGE BUSHMANN: The one that says OPC

14 DR-5?

15 MR. WILLIAMS: Yes.

16 CROSS-EXAMINATION

17 BY MR. WILLIAMS:

18 Q Mr. Krygier, I'm handing you what has been

19 marked as Exhibit 216 and 217, review those.

20 MS. FORCK: This is 216?

21 MR. WILLIAMS: Yes.

22 JUDGE BUSHMANN: Did you need a recess to

23 sort something out?

24 MR. WILLIAMS: Sure.

25

1 JUDGE BUSHMANN: Let's go off the record.

2 (Break in proceedings.)

3 JUDGE BUSHMANN: Okay. We're back on the  
4 record and ready for cross-examination by Public  
5 Counsel.

6 MR. WILLIAMS: Thank you.

7 Q (By Mr. Williams) Mr. Krygier, good  
8 afternoon.

9 A Good afternoon, Mr. Williams.

10 Q You have in front of you what has been  
11 marked as Exhibits 216 and 217. Do you recognize  
12 what Exhibit 216 is?

13 A Yes. Exhibit 216 looks like the  
14 spreadsheet that was attached to OPC DR-5.

15 Q When you say the spreadsheet that was  
16 attached to OPC DR-5, are you referring to Empire's  
17 response to OPC Data Request No. 5?

18 A Yes.

19 MS. KNOWLTON: I want to -- the company is  
20 not going to object to this exhibit, but I do want  
21 to note for the record that the printed version  
22 that Attorney Williams has handed out does not  
23 match the electronic version that was produced in  
24 response to OPC-5. It's missing a few numbers that  
25

1 relate to depreciation.

2 But I think, for purposes of this line of  
3 questioning, we're not going to object. But I do  
4 want to note for the record that it's not complete.

5 JUDGE BUSHMANN: Thank you.

6 Q (By Mr. Williams) I want to -- do you  
7 recognize Exhibit 216?

8 A Generally, yes.

9 Q And turning to -- let's see. If you look  
10 at the first three pages of that exhibit --

11 A I have them.

12 Q And are those showing an estimate that  
13 Empire created of the revenue requirement impacts  
14 associated with particular aspects of the  
15 stipulated agreement?

16 A Yes.

17 Q And is that based upon using as the basis  
18 the current revenue requirement -- as the current  
19 revenue requirement, \$750 million? I mean,  
20 \$570 million. I'm sorry. I misspoke.

21 A Yes. That's the current estimated revenue  
22 requirement on a total company basis.

23 Q Thank you for that clarification. And so,  
24 for example, 2019, you're reflecting that the new

25

1 ash landfill would cause an increase in rates based  
2 on that 570 current revenue -- million -- current  
3 revenue requirement of approximately -- well,  
4 revenue requirement increase of .1 percent  
5 attributable to the new ash landfill, correct?

6 A That's the estimate. Yes.

7 Q And for the conveyance system, that's a .3  
8 percent increase?

9 A Yes.

10 Q Okay. And no increase due to the wind  
11 farms in 2019, correct?

12 A Correct.

13 Q And then the impacts of tax reform, which  
14 is moving from -- I believe it is 35 percent to 21  
15 percent, corporate federal income tax rate is --  
16 has an impact of reducing the revenue requirement  
17 based on that 570 million by 3.3 percent?

18 A Correct.

19 Q And then if we move over to year 2020,  
20 there's a showing at that point of an impact  
21 associated as a wind farms of approximately --  
22 estimated to be 1.1 percent, correct?

23 A Yes.

24 Q Now, that wind farm impact includes not  
25

1 only the capital costs of the wind farms but, also,  
2 revenues that they're to generate, correct?

3 A Yes.

4 Q And where in Exhibit 216 are the revenues  
5 associated -- well, if you look at the last -- go  
6 to the end of the document and go back to page --  
7 right here. Five of them. Do you see that in the  
8 lower right-hand corner?

9 A Top left-hand corner says Items 4 and 5 up  
10 to 600 megawatts?

11 Q Yes.

12 A I'm with you.

13 Q And then the next to last line shows model  
14 SPP revenue.

15 A I'm with you.

16 Q Those are the model SPP revenue associated  
17 with the 700 megawatts of wind, are they not?

18 A Did you say 700 megawatts of wind?

19 Q If I did, I misspoke. It would be 600.

20 A Yes, with the 600 megawatts.

21 Q So you're anticipating -- or estimated  
22 revenues of about \$12 million in 2020, 65 million  
23 in 2021, what's shown on that line?

24 A Yes. That is what's shown on that line.

25

1 Q And those went out from -- started in 2020  
2 and run out through 2047 in the estimation?

3 A Yes.

4 Q Then I want to turn your attention to  
5 Exhibit 217.

6 A I'm there.

7 Q And it says up at the top left Impact With  
8 No SPP Revenues. But, also, Items 4 and 5 up to  
9 600 megawatt of wind and associated transmission?

10 A Yes, it does.

11 Q And on these sheets, the model SPP revenue  
12 has been changed from what Empire did to show no  
13 SPP -- model SPP revenue?

14 A That's what it shows.

15 Q So that the percent changed to Empire's  
16 revenue requirement that the results would be  
17 associated with the wind farms themselves would be  
18 attributable to the cost of the wind farms without  
19 any revenues, correct?

20 A Let me restate to make sure I understand  
21 what you're attempting to capture here is if you --  
22 if you assume zero SPP revenue, you would just look  
23 at the wind farm revenue requirement and then  
24 trying to calculate the rate impact of just that  
25

1 piece.

2 Q Correct.

3 A Then yes.

4 Q So that's shown in the last line on those  
5 three sheets for each different year? I mean,  
6 that's the only change that was done to the  
7 modeling that Empire provided?

8 A Yes. That is what's shown there.

9 Q That looks correct to you?

10 A Without, you know, going in each cell and  
11 check subject to check, yes. It's correct  
12 mathematically, obviously. From a philosophical  
13 perspective, I think assuming a zero percent SPP  
14 revenue, there's -- you know, you'd have to consult  
15 Mr. McMahon. But I suspect that, you know, that  
16 just feels a little off.

17 Q Well, we're looking for math, not  
18 philosophy here at this point. I mean, basically,  
19 it breaks apart the impact due to model SPP  
20 revenues and the impact due to the capital  
21 additions, correct?

22 A I think it would be total revenue  
23 requirement additions.

24 Q But attributable -- only attributable to  
25

1 the wind?

2 A Right. Yes.

3 MR. WILLIAMS: With that, I'd like -- I'll  
4 offer Exhibits 216, 217. Counsel for Empire has  
5 already explained the differences between what's on  
6 216 and what was actually provided in the  
7 spreadsheet, and we acknowledge those differences.

8 JUDGE BUSHMANN: Any objections to those  
9 exhibits being admitted? Hearing none, they're  
10 admitted.

11 (OPC Exhibits 216 and 217 are offered and  
12 admitted into evidence.)

13 Q (By Mr. Williams) What is Empire's  
14 current preferred plan?

15 A It is Plan 5 from the 2016 triennial IRP.

16 Q Why hasn't Empire gone ahead and changed  
17 its preferred plan in light -- since it has entered  
18 into the stipulation -- stipulated plan in this  
19 case?

20 A I believe I referred in my direct  
21 testimony, page 15, starting on line 11 through  
22 page 16, essentially, we're waiting -- we would  
23 make a change in the preferred plan if the  
24 Commission grants the relief that we're requesting.

25



1 So we're ultimately -- we're waiting for if the  
2 Commission approves it.

3 **Q Why are you waiting for Commission**  
4 **approval?**

5 A I think what would happen if the  
6 Commission ultimately did not approve the plan that  
7 we've requested, we would have to go back and --  
8 and think through what our options are and what the  
9 next steps are.

10 **Q Well, is Commission approval required?**

11 A Required for what?

12 **Q For Empire's plan to build 600 megawatts**  
13 **of wind.**

14 A I think that's part of the relief that  
15 we're contemplating here. And that's why we filed  
16 the application and ultimately reached the  
17 non-unanimous stipulation. So we're looking for,  
18 as we talked about before the last two days, that  
19 the plan reasonable is to proceed with.

20 **Q Well, I understand you're asking the**  
21 **Commission for that.**

22 A Yeah.

23 **Q Does Empire believe it's required to**  
24 **obtain that authorization or finding from this**

25

1 Commission at this point in time?

2 A While I'm not an attorney and there might  
3 be some legal aspects to that, and I think our  
4 perspective is it's a significant undertaking and  
5 that's why we've brought the plan to the Commission  
6 for consideration.

7 **Q When is it that Empire projects its**  
8 **customers will start to see savings on their bills**  
9 **from Empire's plan and let's make it the 600**  
10 **megawatts stipulated plan?**

11 A We project that if you compare the  
12 stipulation plan to the status quo cuff, and status  
13 quo being compared to the 2016 preferred plan that  
14 we're operating under, customers would start seeing  
15 savings in 2024.

16 **Q That's savings on their little bills?**

17 A A lower revenue requirement. You'd have  
18 to -- you ultimately -- obviously, there's an FAC  
19 timing consideration and a rate case timing  
20 consideration that you'd have to look at, but,  
21 conceptually, a lower revenue requirement for  
22 customers.

23 **Q When you say a lower revenue requirement,**  
24 **are you including revenue requirement that you're**  
25

1 saying is attributable to the fuel adjustment  
2 clause?

3 A That's a good question. The -- and I'm  
4 looking at Table 8 of Mr. Meyers' testimony, which  
5 is the ABB modeling outputs. And that is base  
6 margin plus fuel together.

7 Q On page 6 of -- well, let me just ask it  
8 this way. Is Empire seeing any rate relief in this  
9 case?

10 A No, we're not.

11 Q But you will seek rate relief in future  
12 cases, will you not?

13 A Yes, we would.

14 Q And will not Empire file a rate case in  
15 Missouri in 2019 seeking to continue -- or be  
16 authorized to continue to have a fuel adjustment  
17 clause?

18 A Was the question will we file a case in  
19 2019?

20 Q Yes.

21 A Yes, we will.

22 Q And the reason you'll file that is because  
23 you want to continue your fuel adjustment clause?

24 A Plus, seek relief related to investments  
25

1 and operating expenses and other aspects of the  
2 business. But no doubt the FAC is part of that  
3 consideration.

4 **Q Will you file one if you weren't seeking**  
5 **to continue your fuel adjustment clause? Or have**  
6 **you decided at this point?**

7 A I don't think we've looked at it in that  
8 -- in that context at this juncture.

9 **Q Did Empire include in its 2018 integrated**  
10 **resource plan annual update its generation fleet**  
11 **savings analysis?**

12 A And when you say that, do you mean what  
13 was attached to Mr. McMahon's direct testimony?

14 **Q I'm just asking whether or not when you**  
15 **did your update to your 2018 integrated resource**  
16 **plan update for 2018, did you include your**  
17 **generation fleet savings analysis?**

18 A We included discussion of the GFSA and  
19 references to this docket. It was being looked at  
20 and undertaken. But I think if the question is did  
21 we attach Mr. McMahon's report that was in his  
22 direct testimony to the 2018 annual update, the  
23 answer to that is no. We simply included  
24 references to this docket.

25

1           Q    Well, let me come back at it in a little  
2   different way. Did you update your resource  
3   planning that you reported in your 2018 annual  
4   update what you did in your generation fleet  
5   savings analysis?

6           A    I'm still not understanding the question.

7           Q    Well -- you do resource planning, do you  
8   not?

9           A    Yes.

10          Q    And --

11          A    The company does.

12          Q    And you're saying that everybody should  
13   rely on the output of that resource planning in  
14   order to approve, at this point, the stipulation  
15   plan, correct?

16          A    That is one of the underlying drivers for  
17   support.

18          Q    Did you include that kind of -- or that  
19   analysis as part of your resource planning that you  
20   reported in your 2018 annual update?

21          A    So maybe I'll add this color from an  
22   answer earlier. We didn't include that exact  
23   report. We included references. And my  
24   understanding, subject to check, is all the same  
25

1 stakeholders that -- to this docket were also  
2 stakeholders in that docket and would have read  
3 those references in the 2018 update.

4 Q So what I'm understanding you to say is  
5 that you did references to it, but you didn't  
6 include that analysis as part of your annual  
7 update?

8 Or maybe the way I should phrase it is you  
9 didn't include the full-blown analysis in your  
10 annual update other than you made a reference to it  
11 in this case; is that accurate?

12 A That's accurate.

13 Q And to have a 2019 triennial planning  
14 report to file with the Commission by April of next  
15 year, will the analysis that you conducted for the  
16 generation fleet savings analysis be a part of that  
17 annual -- or triennial report or something similar  
18 to it?

19 A Potentially. And the reason I say  
20 potentially is part of it depends on the outcome  
21 here. And so I think that's to be determined. As  
22 Mr. Mertens was referring to earlier, we're going  
23 to start undertaking those efforts soon to start  
24 getting that work done. But part of it will be  
25

1 contingent upon what happens here.

2 **Q Why would it be contingent upon what**  
3 **happens here?**

4 A I think from a big picture perspective,  
5 ultimately, if the Commission were not to approve  
6 the stipulation, I think -- or even if it did  
7 approve it, you'd want to take that into  
8 consideration as to what may be modeling  
9 assumptions that you would make or other items you  
10 might look at further than you did before.

11 **Q Well, shouldn't you be looking at all the**  
12 **alternatives out there that you think are**  
13 **appropriate and that other parties provide input as**  
14 **to what they think are appropriate in conducting**  
15 **your resource planning analysis?**

16 A We will definitely incorporate feedback  
17 from stakeholders, absolutely. But I think,  
18 ultimately, there -- there's no doubt that the  
19 conclusion in this docket will at least have some  
20 impact on how we consider looking at 2019, the  
21 triennial and the training for it.

22 **Q Did you receive input from stakeholders**  
23 **whenever you did your generation fleet savings**  
24 **analysis?**

25

1 A Yes.

2 Q Which stakeholders did you obtain that  
3 input from?

4 A We had meetings. At a minimum, with the  
5 Staff and the office of the Public Counsel  
6 participated in a few of them as we were starting  
7 to work through talking about what we were doing  
8 and the analysis that we were looking at.

9 Q Did you solicit input from those  
10 stakeholders or make presentations?

11 A I think feedback was requested as part of  
12 the process and discussion. And we sought opinions  
13 and comments on the thought process we've been  
14 looking at.

15 Q Did you provide and seek input to the  
16 modeling?

17 A I'd have to go back and look at my notes  
18 to see each aspect of it. But I know we talked  
19 about deny changes we were looking at and why we  
20 were looking at some of those changes.

21 Q And did you solicit from the stakeholders  
22 what they thought about those assumptions and  
23 changes?

24 A We definitely asked what their thoughts  
25



1 were and what their opinions were.

2 Q I want to turn to your affidavit. If you  
3 look at page 8 on -- in paragraph 19. Do you state  
4 that the second stipulation provides many  
5 protections for Empire's customers?

6 A Where in the paragraph? I'm sorry.

7 Q Now you're gonna make me find it.

8 MS. FORCK: Halfway down.

9 A The second -- the stipulation provides  
10 many protections for Empire's customers?

11 Q Yes.

12 A I'm there.

13 Q Does the Stipulation provide a rate cap  
14 for Empire's wind investment?

15 A It doesn't explicitly include a rate cap.  
16 However, the market protection provision has -- has  
17 a -- the way it's structures and it's incentive for  
18 us to find the lowest cost project.

19 Q You have an incentive to find the lowest  
20 cost project anyway, don't you?

21 A Yes. Further incentives to do that.

22 Q Does the stipulation provide tax equity  
23 partner protections?

24 A For customers? Is that what you mean?

25

1           **Q   No.   Protections for tax equity partners.**

2           A    I guess I'm not sure what you would define  
3   as a tax equity partner protection. Do you have  
4   something in specific you're contemplating?

5           **Q   I'm thinking of the hedging for one item.**  
6   **Is that something that's done for the benefit of**  
7   **the tax equity partners?**

8           A    I'd have to refer to Mr. Mooney for those  
9   details. But my understanding from him in the  
10   hearing earlier is that the fixed -- the hedge  
11   piece is important to secure the financing  
12   ultimately to get the significant discount on the  
13   project. So, to me, there's customer benefits to  
14   that being a lower cost to acquire it.

15          **Q   And it does that by providing better**  
16   **assurances for the tax equity partner of obtaining**  
17   **it -- a return on and a return of its investment,**  
18   **correct?**

19          A    That -- that is part of it.

20          **Q   And doesn't the stipulation provide**  
21   **benefits to Empire shareholders that they would not**  
22   **have if this was being done as an independent power**  
23   **producer project?**

24          A    I'm not sure what you're contemplating

25

1 under -- if it was an independent power producer, I  
2 think the stipulation provides benefits to  
3 shareholders, but I also think it provides to  
4 customers as well. And I think that's reflective  
5 of the diverse group of signatories.

6 **Q Let's turn to paragraph 19 on page 9 of**  
7 **your affidavit, lower down. And there's a sentence**  
8 **there, if I copied it correctly that says, Finally,**  
9 **the stipulation ensures for the near term, the**  
10 **Asbury plant will remain in place.**

11 A Yes. I'm there.

12 **Q How short is the near term for which the**  
13 **stipulation ensures that the Asbury plant will**  
14 **remain open?**

15 A Obviously, there's not a specified time  
16 here that's listed in the stipulation. But I  
17 think, as Mr. Mertens alluded to earlier, that's --  
18 the Asbury plant is going to be just like the rest  
19 of the -- all assets that Empire owned, that it's  
20 going to continue to be looked at and analyzed.  
21 But there's no time frame that's included here on  
22 page 9.

23 **Q Well, according to your generation fleet**  
24 **savings analysis, you should shut down Asbury,**  
25

1 correct?

2 A If you look at it solely from that  
3 economic perspective, yes.

4 MR. WILLIAMS: No further questions.

5 JUDGE BUSHMANN: Commissioner questions?

6 CHAIRMAN HALL: No questions. Thank you.

7 JUDGE BUSHMANN: Redirect by Empire?

8 MS. KNOWLTON: Just a few. Thank you.

9 REDIRECT EXAMINATION

10 BY MS. KNOWLTON:

11 Q Mr. Krygier, prior to making its filing in  
12 this case, did the company conduct any type of  
13 technical session or outreach with Staff or OPC or  
14 other stakeholders?

15 A Yes, we did. If you look at Mr. Swain's  
16 surrebuttal testimony, on lines 13 and 14, we  
17 listed three dates there that we had met with Staff  
18 and OPC specifically.

19 And then later down in that paragraph, it  
20 talks about the technical sessions that we also  
21 held as part of this -- as part of this process.

22 And then the other piece of that is,  
23 obviously, we had significant discovery in the case  
24 and ran a number of different modeling runs so --  
25

1 directly at OPC's request. So --

2 Q Do you know whether the company conducted  
3 any public outreach after the filing was made, not  
4 necessarily to -- to Staff of the Commission, but  
5 to parties outside of the regulatory process?

6 A Yes, we did. We made a -- an effort to  
7 reach out to a number of stakeholders that were  
8 impacted by the project in the community and  
9 reached out to a number of them.

10 Q Okay. I'm going to ask you a question  
11 about the windcatcher project. Are you aware of  
12 whether there are any differences in that  
13 windcatcher project from what Empire proposes here?

14 A Yes. There are at least two that I know  
15 of that are definitely significant. And the first  
16 one is the windcatcher project has two components  
17 to it.

18 The first one is, obviously, the wind farm  
19 that generates the electricity. But the second  
20 piece of it is that it has a -- a one billion  
21 dollar transmission line that's associated with the  
22 project because it's so far away from the load that  
23 it's serving. Obviously contrasts with our  
24 project, which Mr. Wilson and Mertens discussed  
25

1 earlier, the -- these projects are putting wind  
2 farms in or near our service territory. So that's  
3 a big one, significant transmission investment  
4 versus hours.

5 So the second piece of that, it's my  
6 understanding on windcatcher, is that they did not  
7 do a public RFP process or request for proposal in  
8 terms of finding potentially the lowest cost  
9 project per customer whereas Mr. -- as Mr. Wilson  
10 discussed earlier, we undertook a very robust  
11 request for proposal process. So those are two  
12 that stick out.

13 MS. KNOWLTON: The company has no further  
14 questions for Mr. Krygier.

15 JUDGE BUSHMANN: That completes your  
16 testimony, sir. You're excused.

17 MR. KRYGIER: Thank you.

18 MS. KNOWLTON: The company calls David  
19 Holmes.

20 JUDGE BUSHMANN: Raise your right hand,  
21 please.

22 DAVID HOLMES,  
23 being first duly sworn to testify the truth, the whole  
24 truth, and nothing but the truth, testified as follows:

25 DIRECT EXAMINATION

1 BY MS. KNOWLTON:

2 Q Good afternoon, Mr Holmes.

3 A Good afternoon.

4 Q Please state your name for the record.

5 A David Holmes.

6 Q By whom are you employed and in what  
7 capacity?

8 A Liberty Utilities Canada Corp. I'm the  
9 Director of Enterprise Accident Management  
10 Strategy.

11 Q Have you caused to be prepared for  
12 purposes of --

13 JUDGE BUSHMANN: Excuse me. Could you  
14 please speak into the microphone?

15 A Do I go back to the company?

16 JUDGE BUSHMANN: Go ahead. Ask your  
17 questions.

18 A Okay. Sorry.

19 Q (By Ms. Knowlton) Have you caused to be  
20 prepared for the purposes of this proceeding an  
21 affidavit, I believe it goes through in paragraphs  
22 in numeric form?

23 A I did.

24 Q It is your -- is it your understanding  
25

1 that that affidavit has been marked for  
2 identification as Exhibit 1?

3 A I did.

4 Q Do you have any changes that you would  
5 like to make to that affidavit at this time?

6 A I do not.

7 Q If I asked you the information that's  
8 contained in your affidavit today, would your  
9 answers be the same?

10 A They would.

11 Q Are those answers true and correct to the  
12 best of your information, knowledge and belief?

13 A They are.

14 MS. KNOWLTON: Your Honor, I'd offer  
15 Exhibit 1 into evidence and tender Mr. Holmes for  
16 cross-examination.

17 JUDGE BUSHMANN: Any objections? Hearing  
18 none, it's admitted.

19 (Empire Exhibit 1 was offered and admitted  
20 into evidence.)

21 JUDGE BUSHMANN: Cross-examination would  
22 be Staff?

23 CROSS-EXAMINATION

24 BY MS. FORCK:

25



1 Q Good afternoon.

2 A Good afternoon.

3 Q Are you familiar with OPC witness Lena  
4 Mantle's surrebuttal testimony?

5 A I've reviewed it. I do not have a copy of  
6 it.

7 Q Okay.

8 A Thank you.

9 Q I'll refer to you pages 8 and 9.

10 A Okay.

11 Q So on these pages, Ms. Mantle discusses  
12 the Southwest Power Pool changing its structure nor  
13 to give the SPP the ability to sell a wind  
14 generator, that it would not take the energy from  
15 the wind -- oh, my goodness. I'm not reading this  
16 right. Sorry. Strike that.

17 So on these pages, Ms. Mantle discusses a  
18 change in structure to the Southwest Power Pool.  
19 And she talks about this change in order to give  
20 the SPP the ability to sell a wind generator, that  
21 it would not take the energy from the wind  
22 generator's wind turbines. Do you -- does this  
23 sound familiar?

24 A It does.

25

1           **Q**    Would such a change be covered by the  
2   customer protection mechanism described in the  
3   stipulation?

4           A    It would.

5           **Q**    And how would that be covered?

6           A    In the customer savings mechanism, if  
7   there is a change to the amount of PayGo received  
8   from tax equity to -- to Empire of the wind project  
9   Co., or if there's a reduction from SPP, it would  
10   flow into the mechanism.

11          **Q**    Okay. Were you in the room during my  
12   cross-examination of Mr. McMahon?

13          A    I was.

14          **Q**    So he deferred to you on a few lines of  
15   questioning. So I'd like to ask you, are you  
16   familiar with OPC witness John Robinette's  
17   affidavit in opposition of the stipulation?

18          A    I have reviewed it.

19          **Q**    Do you have a copy of that? If not, I can  
20   provide one.

21          A    I believe I do. The first one or the  
22   second one?

23          **Q**    The first one.

24          A    I have it. Yes.

25

1 Q Okay. Please refer to paragraph 8.

2 A Okay.

3 Q Mr. Robinette discusses a 30-year plan  
4 related to the stipulation. Did the modeling  
5 associated with the stipulation project out as far  
6 as 30 years?

7 A It did.

8 Q Okay. And is Mr. Robinette correct that  
9 the modeling did not include the retirements of  
10 Energy Center, Units 3 and 4 and State Line 1  
11 Combustion Turbine or IATAN 1?

12 A Correct. The capacity expansion model  
13 that optimizes the portfolio is done over 20 years.  
14 After 20 years, they use Endofex for projecting  
15 forward.

16 And so there were not the specific  
17 retirements as there are in the future, and we  
18 would suspect the same type of costs and decisions  
19 made in any plan. And, therefore, we do not feel  
20 that it was changing the results of one decision or  
21 another at that time in the future.

22 Q Are you familiar with OPC witness John  
23 Riley's affidavit in opposition to the stipulation?

24 A I am.

25

1 Q Do you have a copy of that?

2 A I do.

3 Q Please refer to paragraph 12.

4 A Okay.

5 Q About halfway down, Mr. Riley states, Yet  
6 my analysis is that this wind project will lose  
7 money every year. In fact, my projections show the  
8 Wind Project Cos. will lose nearly \$61 million in  
9 the first 1.25 years. Have you reviewed  
10 Mr. Riley's analysis?

11 A I have.

12 Q Would you agree that, based on his  
13 projections, the Wind Project Cos. will lose money  
14 every year?

15 A I agree that his attachment to his  
16 affidavit shows a shortfall in revenue every year.

17 Q Do you agree with the analysis that he  
18 performed?

19 A I do not.

20 Q Can you explain -- I'll break this up into  
21 two. One, why don't you agree with his analysis?

22 A There are different lines and -- and rows  
23 and numbers within with the attachment JSR-1 that  
24 -- that I think are -- should be represented

25

1 differently.

2           **Q**    **Can you explain how Mr. Riley reached his**  
3           **conclusion about this -- his projections as**  
4           **compared to how Empire modeled the source costs and**  
5           **revenues?**

6           A    I -- I can explain where I think there are  
7           differences more than trying to explain Mr. Riley's  
8           creation of the document.

9           **Q**    **Okay. Please.**

10          A    The -- the first item, it's relatively  
11          minor. But in -- in the rate base tab on JSR-1 --  
12          or line item, in the 2030 row, the rate base number  
13          doesn't add up between the accumulated depreciation  
14          of the product investment, which is what I would  
15          have expected to have seen as per the other years.  
16          And it's a very minor difference. I would have  
17          expected it to be 352.75 rather than 355. So very  
18          minor.

19          **Q**    **Okay.**

20          A    The Empire PTCs, the way they are modeled  
21          here -- so within the way the agreements work is  
22          Empire will get 1 percent of the PTCs generated  
23          based on value of the PTCs.

24                   And I don't -- I don't believe that those  
25

1 numbers are exactly the same. I actually think  
2 that those are showing more benefit than what they  
3 are. It's just that they are different.

4 We did have a difference on the income tax  
5 rate. I'm not entirely sure what the 0.335 number  
6 is. But if I back calculate the numbers, it looks  
7 like he's using roughly about 24.95 percent  
8 combined tax rate. And I think we have about 23  
9 point -- 23.90 in -- in our other examples of the  
10 calculation. So, again, relatively minor.

11 On the interest line item, you -- it looks  
12 like he's calculating the interest costs at 5.33  
13 percent. I'm not entirely sure what -- where that  
14 number comes from. It's possible that it's a  
15 weighted average cost of debt potentially.

16 Empire had been using the last -- the last  
17 known total cost of debt from our equity issue --  
18 or debt issuance, which is 4 percent. And the --  
19 the difference there is -- is a significant  
20 difference between the cost of debt shown in this  
21 stip. agreement at the 4 percent number. So there  
22 is -- there is a multi-million dollars per year  
23 impact difference there.

24 On the depreciation line item, there --  
25

1 again, relatively minor. We're modeling the wind  
2 farms at 30-year depreciation and the transmission  
3 assets at 40 years. So there is a minor difference  
4 there in the way those were calculated.

5 On the property tax line item, while I  
6 wasn't able to back calculate all of them because  
7 the property taxes shown here are higher than what  
8 we have calculated in Exhibit B of Appendix A of  
9 the stip. agreement, I think this looks like it's  
10 approximately 1.73 percent that is being used in  
11 JSR-1, and we had been using 0.86.

12 In the first year, prorating might be a  
13 little different in -- in mechanisms. So there is  
14 a difference in the manner in which we got up to  
15 the revenue requirement line item. There -- do you  
16 want me to keep going?

17 **Q Can I stop you and then let you keep**  
18 **going?**

19 A Yes. Yes.

20 **Q Do you see next to property tax, it says**  
21 **.86 percent?**

22 A I do.

23 **Q But you're saying that the numbers that --**  
24 **that are in line with that don't mesh a .86 percent**

25

1 property tax rate? Is that -- am I to understand  
2 that right?

3 A So when we'd been looking at property  
4 taxes, we have been taking the 0.86 and multiplying  
5 it by the rate base amount.

6 Q Okay.

7 A And I did not get -- if I do that in 2021,  
8 0.86 times 505.75, I get 4.34, not .75.

9 Q Okay. And then you said you had some  
10 speculation as to where the interest 5.33 percent  
11 came from, but you're not exactly sure?

12 A Yeah.

13 Q He would be the better person to ask for  
14 that?

15 A Correct. I'd be guessing. I'd rather not  
16 guess on his behalf.

17 Q Okay. Please continue.

18 A Under projected revenues, in the notes,  
19 you can see the revenues he's using from the stip.  
20 agreement using the P-76 wind production number,  
21 which is the amount of wind that has a 75 percent  
22 probability that you will exceed it, which is what  
23 the P-75 stands for and the low market prices.

24 So rather than the expected revenues,  
25



1 which -- which is what we have been using to -- to  
2 look at it. Other than when we're running  
3 sensitivities, he's using what would be a 2.5  
4 percent probability outcome.

5 And that's, again, 25 percent probability  
6 on the wind and the low market price from APP  
7 relating to a tenth percent percentile occurrence.  
8 And so I believe the projected revenues are  
9 understated.

10 The operating costs -- and, again, if you  
11 see the notes, it's coming back from one of the  
12 technical sessions, and I believe the -- through  
13 the work papers were provided that showed the  
14 numbers from -- from this technical session quite  
15 -- quite a little ways back and then were prorated  
16 to the 600 megawatts from the time of Mr. McMahon's  
17 surrebuttal when we had started doing the modeling  
18 with the RFP results.

19 We updated the operating costs to show  
20 them starting lower as you expect less maintenance  
21 in the first couple of years when you're under the  
22 turbine wind agreements.

23 And so we believe that the operating costs  
24 shown in Exhibit B, Appendix A of the stip.

25

1 agreement to be more accurate.

2 The -- the next item, the add back, the  
3 price guarantee hedge, so I kind of as per Todd's  
4 -- Mr. Mooney's testimony a little while ago, we  
5 believe that that should be zeroed out as it's an  
6 internal term payment, and, therefore, doesn't  
7 affect the net position.

8 The next line item of the add back  
9 distribution to the tax equity, that's that --  
10 those costs are actually included in our less tax  
11 equity.

12 So the less contributions in tax equity is  
13 the sum of any PayGo contributions from tax equity  
14 and any payments to tax equity. And that's why you  
15 see the step-down in that line item between 2025  
16 and 2026 while PayGo is still continuing your  
17 seeing it come down from the new payments that will  
18 be made to tax equity.

19 So when -- when you go through and make  
20 those changes, you end up with numbers, I believe,  
21 that would be as shown in OPC's Data Request 5 that  
22 at least we -- we talked a little bit about. It  
23 was with Mr. Krygier, so I don't know the Exhibit  
24 No. But as per that spreadsheet.

25

1 Q All right. So there was Exhibit 217,  
2 which was the smaller one. And this has all -- a  
3 lot of line items here.

4 A I believe it was the bigger one.

5 Q Okay. Oh, you said OPC DR-5. Okay. I  
6 see that.

7 A Items 4 and 5 of OPC DR-5 was to calculate  
8 and show all of the costs and revenues associated  
9 with the wind projects. And so it -- as a similar  
10 structure and is set up to JSR-1.

11 Q Okay. You mentioned the note about  
12 revenues, assuming P-75 wind production and low  
13 market prices and that being lower than what would  
14 be expected. When you did your modeling for the  
15 stipulation and agreement, did you model lower  
16 production and lower market price as well as higher  
17 production and higher market prices?

18 A Correct. For the stipulation agreement,  
19 we -- we set up a way so you could look at  
20 combinations of different wind outputs with  
21 different market prices.

22 And we provided four such of those  
23 scenarios related to the stip. agreement in -- in  
24 that Appendix A so you can look at how a couple  
25

1 that had gone through.

2 The other place to look is in -- in OPC  
3 response 8045 provided by Greg Meyer. There are in  
4 that document all the combinations of expected  
5 revenues from the different wind outputs and the  
6 different market cases.

7 MS. FORCK: Okay. Okay. I think that's  
8 all I have for you. Thank you.

9 JUDGE BUSHMANN: Cross by MECG?

10 MR. WOODSMALL: Yes, briefly. Staff made  
11 my life easier.

12 CROSS-EXAMINATION

13 BY MR. WOODSMALL:

14 Q So first off, there were some questions  
15 of Mr. Wilson that had to do with finding fault  
16 with the stipulation because it didn't include a  
17 capacity factor guarantee. Do you recall that?

18 A I do.

19 Q Would you agree that the -- because it  
20 considered SPP revenues in the market price  
21 protection provision that there is some capacity  
22 factor guarantee?

23 A I would.

24 Q And can you tell me how that exists?

25

1           A     Sure.  So the way the market protection  
2 mechanism works is you're looking at the value  
3 created by the wind farm on an annual basis.

4                     And the -- the primary positive impact is  
5 the SPP market revenue that I think has been  
6 discussed at length today.  The amount of revenue  
7 is a combination of the amount of production  
8 created and the price paid for that production.

9                     So if wind production is low, then  
10 that revenue number is going to drop, and there's a  
11 greater probability of reg. liability created to  
12 try to help protect customers in -- in a down  
13 event.

14           Q     Okay.  Moving on to rate impacts -- and I  
15 believe Mr. McMahon punted this to you.  Do you  
16 recall Mr. Meyers' affidavit where he discusses a  
17 rate impact of 12 percent?

18           A     I do.  If you have the page reference, I  
19 would -- I wouldn't mind that.  Oh.  No.  19.  Got  
20 it.  Or paragraph 19.

21           Q     Yes.  Can you tell me what that 12 percent  
22 -- what's that -- what is that comparing?  What two  
23 numbers?

24           A     The 12 percent, which Mr. Krygier did  
25

1 speak of briefly, it shows the -- the \$637 million  
2 of revenue requirement in his table on page 8 of  
3 Mr. Meyers' affidavit divided by 570 million being  
4 the current company's total revenue requirement to  
5 come up with the -- that 12 percent.

6 **Q And do you believe that that is an**  
7 **appropriate way to judge the stipulation and**  
8 **agreement? Let me phrase it a different way.**

9 **Will the company's current rates -- are**  
10 **they likely to be in effect in -- in 2021 when the**  
11 **wind goes into effect?**

12 A Are -- are you asking if there's going to  
13 be a rate case that would change the rates from 570  
14 to some other number between and 2021?

15 **Q Correct.**

16 A I believe Mr. Krygier says that due to the  
17 FAC, there will have to be a rate case filed in  
18 2019. And I believe also as a result of  
19 stipulation, there is the tax reform piece that  
20 would change the revenue requirement from 570 down  
21 and have that read more toward --

22 **Q But absent the stipulation, the 2016**  
23 **preferred plan would be in effect, and there would**  
24 **be rate increases resulting from that; is that**

25

1 correct?

2 A Correct. And, again, in Mr. Meyers'  
3 affidavit on -- on page 8 in the table, he shows  
4 the modeling shows a revenue requirement of  
5 618 million on the current preferred plan, which is  
6 an 8.4 percent increase in this status quo option.

7 Q So just to -- so it's clear, 12 percent  
8 compares to rates under the stipulation to the  
9 status quo, but does not consider rate increases  
10 that may be occurring because -- under the  
11 preferred plan that would otherwise meet up for  
12 that?

13 A Correct. 12 percent is not the  
14 incremental getting back of the wind. It is -- it  
15 is the entirety of the plan through modeling the  
16 modeling.

17 MR. WOODSMALL: Okay. No further  
18 questions. Thank you.

19 JUDGE BUSHMANN: Division of Energy?

20 MR. POSTON: No questions. Thank you.

21 JUDGE BUSHMANN: Renew now Missouri?

22 MR. OPITZ: No, thank you, Judge.

23 JUDGE BUSHMANN: City of Joplin?

24 MS. BELL: Yes. Thank you.

25

1 CROSS-EXAMINATION

2 BY MS. BELL:

3 Q If you'd turn to OPC Exhibit 216, which I  
4 think is the bigger packet that was just introduced  
5 by Mr. Williams --

6 A Can I have a copy?

7 Q Thank you. I believe we have one.

8 A All right. Thank you.

9 Q And if you'd turn to page -- toward the  
10 back, I think it's page 5 out of 10.

11 A Okay.

12 Q There you see the wind projects capital  
13 costs figure of 429; is that correct?

14 A That's correct.

15 Q And does that represent a 44 percent  
16 capital cost sharing paid by Empire?

17 A It -- if that was the percentage with Jim  
18 McMahon yesterday, then -- then yes.

19 Q Okay. The Chairman was asking about --  
20 earlier today about worst case scenarios. So if  
21 you're looking basically at this -- this chart,  
22 which is what Empire has applied versus the Riley  
23 chart, which you just went over with Ms. Forck, I  
24 believe, if you were to assume -- assume that

25



1 Mr. Riley's information is correct and operate the  
2 market protection provision on top of that, then.  
3 According to Mr. Riley, the \$35 million cap would  
4 be exceeded in, I believe -- is it Year 2022?

5 And I may be thinking about this wrong.  
6 But it's not really -- it's really a \$70 million  
7 loss if there was sharing, so you would have to get  
8 to \$70 million first?

9 A So this is without the Missouri  
10 jurisdictional. So the 35 million is the Missouri  
11 jurisdictional. So -- but -- but, otherwise,  
12 you're -- you're mostly correct.

13 If -- if you would assume that this is the  
14 delta in the -- between the SPP revenues and the  
15 wind revenue requirement of PPA replacement value  
16 in the stip. and if you were negative as per the  
17 way this would show to the end of 2022, then you  
18 would apply the deadpan of the sharing and work  
19 your way towards the cap -- the maximum cap on  
20 the --

21 **Q Okay. So I think I just did the math in**  
22 **2022, adding 1545 and 29, we're at 89. So that**  
23 **would exceed that \$70 million cap; is that right?**

24 A One second. Yes. So if you were to add  
25

1 those together, you would more than likely hit the  
2 maximum company guarantee, if those numbers were to  
3 be the way reality worked out.

4 Q Okay. And so worst case scenario, then  
5 you're in your -- so imagine this happens and  
6 you're in Year 4 of the stipulation. And something  
7 goes wrong and -- or even assume his -- his  
8 calculation is true and the loss that year is 2585.  
9 At that point, customers or ratepayers bear all of  
10 those losses; is that correct?

11 A If you were in a scenario where this is  
12 how the numbers worked out, that is true. I'm not  
13 certain what scenario it would require to come up  
14 with these numbers. But, otherwise, yes.

15 Q Okay. If you turn to -- you were -- you  
16 were in the room for my questioning of Mr. Krygier;  
17 is that correct?

18 A That is correct.

19 Q And you -- and we were comparing his wind  
20 revenue requirement sheet that was attached to his  
21 direct testimony with Exhibit B of Appendix A to  
22 the stipulation, which I believe you have in front  
23 of you as well. Do you recall that questioning?

24 A I recall the questioning. I don't  
25

1 remember Mr. Krygier's document, but I -- I recall  
2 the questioning.

3 Q Okay. And one of my questions had to do  
4 with the trending of the wind requirement in that  
5 the initial analysis of Mr. Krygier showed the  
6 trending of the wind revenue requirement declining  
7 significantly.

8 And I noticed a sim -- a similar trend in  
9 Mr. Riley's projections in just that the revenues  
10 requirement tends to -- if you were to draw a line,  
11 it would declined over time.

12 It's only -- I guess they're mostly the  
13 same, this OPC 216 and Appendix A, Exhibit B, where  
14 the depreciation seems to -- or not the  
15 depreciation, but the revenue requirement seems to  
16 be fairly steady over time. Do you -- do you know  
17 why that is?

18 A The revenue requirement in JSR-1 has  
19 different values than the revenue requirement in  
20 Exhibit B, Appendix A. The -- the more appropriate  
21 comparison would be the carrying charge line item  
22 in Exhibit B.

23 Q Okay.

24 A That I believe has all of the same items  
25

1 as JSR-1's revenue requirement with the exception  
2 of the Empire PTCs, which -- which has been  
3 mentioned as not a big number.

4 And there, you do see that natural decline  
5 in costs as all those items up there are really  
6 cost items that decline over time.

7 **Q If you'd turn to the flow cart associated**  
8 **with the stipulation, did you prepare this flow**  
9 **chart?**

10 A I did.

11 **Q And the flow chart has associated**  
12 **definitions, I believe?**

13 A It does.

14 **Q Okay. I think within the -- within the**  
15 **flow chart itself and the associated definitions,**  
16 **Empire is allowed to -- there's a PPA value that is**  
17 **factored in. Can you explain how that PPA value is**  
18 **included?**

19 A Sure. The PPA value goes in -- so a lot  
20 of the -- the market price mechanism starts with  
21 what is the benefit added by the wind? And the  
22 stipulation agreement agreed to the benefits being  
23 the SPP revenues and the avoided replacement of the  
24 PPA wind farms currently less the revenue  
25

1 requirement.

2 And in the stip. agreement -- I forget  
3 what section it is -- there is the calculation that  
4 shows the PPA amount being created, which  
5 essentially is what the amount of megawatt hours  
6 that don't need to be replaced from Elk River and  
7 Meridian Way and then assigning that kind of  
8 prorated costs through. So that's in Exhibit C of  
9 Appendix A of the stip. agreement.

10 **Q And so how does that PPA value or PPA**  
11 **input affect the market provision?**

12 A It impacts the market provision up at the  
13 top series of steps where you calculate the annual  
14 wind value. And that PPA replacement value comes  
15 in in Years 6 through 10. So it is a -- is a  
16 benefit to the annual wind value in the stip.  
17 agreement.

18 **Q What do you mean by benefit?**

19 A When we calculate what the annual wind  
20 value is, its' SPP market revenue minus wind  
21 revenue requirement plus PPA replacement value.  
22 In that manner, if it's a positive number, it helps  
23 increase the value of the wind project.

24 **Q Okay. Does -- so -- I think it was**

25

1 mentioned earlier today that there are ways to  
2 possibly capture wind through a battery or  
3 something like that, correct?

4 A Sure.

5 Q Okay. So if customers were to invest in  
6 something through, you know, a rate case or  
7 whatever and also achieve some type of benefit, is  
8 that captured in any way in the provision, in the  
9 market provision?

10 Empire gets the benefit of these PPA --  
11 these added PPA benefits. But if customers somehow  
12 also add benefit to the calculation, do they get  
13 that benefit through this calculation?

14 A This calculation is looking at these --  
15 these items as defined in the stip. agreement. So  
16 I -- I'm not aware of other factors that would  
17 impact this calculation.

18 Q Okay. If you'd go back to Appendix A,  
19 Exhibit B, the wind data spreadsheet.

20 A Okay.

21 Q And -- let's see. All right. That  
22 doesn't include the SPP revenue on it, does it?

23 A It does not.

24 Q Okay. Then let's go to OPC 216. You  
25

1 would agree that the modeled SPP revenue, the  
2 factors that go into determining those numbers are  
3 capacity and market price?

4 A Production.

5 Q **Production.**

6 A Production. Yeah. Quantity times market  
7 price.

8 Q **Okay. And quantity -- so capacity is a**  
9 **factor of the quantity, is it not?**

10 A You -- yeah. You could -- yeah. You  
11 could -- if you wanted to relate to capacity, you  
12 take capacity times capacity factor to equal  
13 quantity.

14 Q **So the capacity factor is a factor of --**  
15 **it goes into the SPP revenue, ultimately?**

16 A Sure. It's an incorrect factor, but yep.

17 Q **Okay. And so the benefits that Empire**  
18 **projects to customers are essentially entirely**  
19 **dependent on the revenues received from SPP,**  
20 **correct?**

21 A Related to the stip. agreement, yes.  
22 Related to the rest of the integrated modeling,  
23 there are obviously other capacity benefits that  
24 flow through.

25

1 But to related to this stip. agreement,  
2 it's ultimately related to SPP revenue and avoided  
3 PPA replacement.

4 Q And these revenues -- and are you familiar  
5 with the market prices used in Empire's analysis  
6 then?

7 A I am.

8 Q And are -- you're familiar with the  
9 capacity factors used?

10 A I am.

11 Q So here on Model SPP Revenue, what were  
12 the market prices that were used to calculate  
13 those?

14 A This is the mid case, so the expected case  
15 of the fall 2017 forward curve.

16 Q Is that the fall 2017 ABB forecast?

17 A That is correct.

18 Q Okay. Do we -- we have the actual numbers  
19 now, correct?

20 A For 2020?

21 Q 2017. You're saying -- so these are the  
22 fall 2017 forecast for 2020?

23 A Right. They do a 20-year -- and I think  
24 they actually do a 40. But, really, the 20 years,  
25



1 they're commonly refreshed one. And so that --  
2 that's what this is based on.

3 **Q Was the ABB 2017 forecast lower than the**  
4 **2016 forecast?**

5 A Yes, it was.

6 **Q And do you expect that trend to continue?**

7 A I don't think so. But I'd be speculating.

8 **Q Why don't you think so?**

9 A I believe in the fundamental build-up of  
10 the way these future models work. Obviously,  
11 Mr. McMahon is a much better person to talk about  
12 how they've built up this, you know, zero based  
13 fundamentals of supply and demand to create these  
14 curves. It's not in my area of expertise.

15 But, you know, the forecasts are pretty  
16 flat now when you take out inflation, and  
17 everything kind of looks reasonable. But, you  
18 know --

19 **Q But it is -- you would agree that it is**  
20 **known that there will be additional wind added to**  
21 **the SPP market in the near term?**

22 A Correct. And as per Mr. McMahon's  
23 statement, you know, when we ran it, the impact on  
24 market prices would stay less. Natural gas drives  
25

1 so much of our pricing.

2 Q Okay. But as a general economic  
3 principle, when you have a higher supply, it will  
4 drive the price down. You would agree with that?

5 A True.

6 Q Okay. I believe -- do you have a copy of  
7 -- it's labeled Jop -- I don't think it's labeled  
8 Joplin 502, but OPC's opening? Or no? Yes.

9 And my recollection is when I inquired of  
10 Mr. McMahon on a number of these graphs, he had  
11 deferred to you. If you are not the correct person  
12 to direct the questions, please let me know.

13 A Okay. Which graph?

14 Q Well, we'll start at the beginning. I  
15 think we have walked through what is labeled the  
16 Riley chart, which is on page 8, correct?

17 A Yes. Correct.

18 Q Let's turn to page 10. Do you agree that  
19 there is the wind performance degradation with  
20 time?

21 A Yes, I do.

22 Q And so the capacity factor that was used  
23 in the modeling that I think originally as modeled  
24 it was a 54 percent capacity factor, was that 54

25

1 percent in Year 1 or in Year 10 or some type of  
2 averaging over the years?

3 A It's an averaging. So it comes out of the  
4 wind software where you calculate your total  
5 performance, all your weak losses and your  
6 concluded degradation assumptions. So it's built  
7 in there to come out with an averaged annual output  
8 for modeling services.

9 Q Okay. So if that's an average and -- and  
10 it goes down over time, then the actual capacity  
11 factor in Year 1 would have been higher than 54  
12 percent, correct?

13 A I would think so.

14 Q Okay. Is it a reasonable assumption that  
15 the capacity factor would be something higher than  
16 54 percent given the actual data from Kansas has  
17 never -- none of the wind farms have ever been  
18 above 54 percent in your opinion?

19 A In my opinion, it's okay. And it's all  
20 subject to performance guarantees from the  
21 equipment manufacturers and whether or not they're  
22 going to stand behind their performance curves.

23 Obviously, we didn't have any projects  
24 that ended up bidding at 54 percent. But,  
25

1 technology comes all the time, no different than  
2 heat rate guarantees from thermal units. And as  
3 long as we have the appropriate guarantees, I have  
4 no issue with somebody with a big number.

5 **Q And so that performance guarantee would be**  
6 **between the actual wind farm equipment person and**  
7 **whatever entity ends up owning the wind farm?**

8 A I would assume so, but I'm not involved in  
9 the contracting, so I wouldn't have those details.

10 **Q Okay. So if there was any type of**  
11 **guarantee and the contractor didn't need that**  
12 **guarantee, what happens is whatever entity was in**  
13 **that contract might have some sort of recourse**  
14 **against the manufacturer, correct? That would be**  
15 **my assumption. Is that your assumption?**

16 A That with typically be the way those types  
17 of agreements would work.

18 **Q Is there any recourse for ratepayers?**

19 A I'm not -- if -- again, not knowing how  
20 the money would flow, I would imagine any benefit  
21 that comes back should go back to customers.

22 **Q Thank you. Turn to Slide 13. Is this**  
23 **typical for wind farms, in your opinion?**

24 A It is typical for Midwest wind to be  
25

1 higher output through the fall and the winter  
2 period.

3 Q And in that case, and in the modeling and  
4 proposal Empire has submitted, there's nothing that  
5 could capture the -- the wind when it was producing  
6 at a higher level; is that correct?

7 A I'm not exactly sure what you mean by  
8 that. The way -- well, the way it was modeled was  
9 with the SPP, so if there's a lot of wind or a  
10 little wind, it's something I'm going to have to  
11 ask SPP. Does that answer your question?

12 Q Well, I guess -- so if you have -- if  
13 you're in the summer and you're needing a lot of  
14 wind and you're not producing a lot of wind, you  
15 can't save the wind up from the winter and use it  
16 in the summer?

17 A That is correct. You cannot do that.

18 Q Okay. And in that same vein, if you turn  
19 to the chart starting on page 16, you can't save  
20 the wind up overnight and use it in the middle of  
21 the day when people need it, correct?

22 A Correct. As -- as Blake had mentioned or  
23 Mr. Mertens had mentioned, it -- it is an  
24 intermittent resource. And with it being in a  
25

1 portfolio of other dispatchable assets, gas assets  
2 and coal assets, there will be different mixes at  
3 different times as -- as the wind blows and doesn't  
4 blow.

5 Q Okay. If you go on to slide 20, which,  
6 again, is the capacity factor slide, we talked a  
7 little bit just about the modeling percentage.  
8 But, also, we talked a little bit about new  
9 technology. Are you familiar with these Kansas  
10 wind projects?

11 A I am not.

12 Q Okay. If you look to the next slide, page  
13 21, were these the ABB forecasts that you had  
14 mentioned earlier that were used in the modeling?

15 A I -- I would have to verify. But with the  
16 stip. agreement, we are using now the fall 2017.  
17 During the GFSA we were using the fall of 2016.  
18 And --

19 Q So is the fall 2017 forecast on page 22?

20 A Again, subject to check.

21 Q Okay. And page 23 shows the difference in  
22 those two forecasts. Do you -- do you know why  
23 ABB's forecast decreased so much in just a single  
24 year?

25

1           A    The -- I believe we responded with --  
2   because I think it was on a data request.  ABB  
3   produces a report with each one of their forecasts  
4   that talk about macro factors that adjust.

5                   And while I'm not an expert on that  
6   document, my understanding was just there -- there  
7   is less tightening in gas from Mexico exports and  
8   L&B.  But, again, Mr. McMahon is a much better  
9   person if you want a detailed explanation on -- on  
10  what's been happening in the market world.

11           **Q    Okay.  On Slide 27, it talks about**  
12 **negative market price intervals.  Were you aware**  
13 **that negative price intervals doubled in two years?**

14           A    I was aware that the negative price in the  
15  real-time has been going up.

16           **Q    With more wind adding to SPP, would you**  
17 **expect that trend to continue?**

18           A    I'm not sure certain of that.  To me,  
19  negative pricing is an imbalance of generators  
20  following market signals in the real-time.

21                   And there's many ways in which that can be  
22  accomplished.  And I do believe that RTOs work to  
23  -- to -- to eliminate deltas and with the day  
24  ahead.  But what that means, I don't know enough to  
25

1 know.

2 Q Okay. On the next slide, page 28, do you  
3 know of any explanation from ABB why their  
4 projections were so wrong?

5 A I'm sorry. What are you -- what are you  
6 meaning? Are you specifically referring to the one  
7 data point in the real-time market of the actual  
8 versus the -- the minimum in the 2016 forward  
9 curve?

10 MR. WOODSMALL: Your Honor, I'm going to  
11 object to the question asking why ABB's forecasts  
12 were so wrong. Assumes facts not in evidence.  
13 This is not evidence. No one has laid a  
14 foundation for this. If she want to ask  
15 hypotheticals, I don't have a problem. But there's  
16 no foundation yet.

17 JUDGE BUSHMANN: What's your response?

18 MS. BELL: Well, I think the foundation  
19 will be laid through OPC's witnesses, and I am  
20 happy to call Ms. Mantle to -- I believe she's the  
21 one who prepared this chart. And I'll offer it  
22 now. Otherwise, for now, I'd like to just ask my  
23 question, and I believe she'll establish the  
24 foundation later.

25



1 MR. WOODSMALL: Then it's a hypothetical.

2 JUDGE BUSHMANN: Yeah. You could ask it  
3 as a hypothetical.

4 Q (By Ms. Bell) Okay.

5 A Can you repeat the question?

6 Q Okay. Hypothetically, if you are relying  
7 on a forecast and the forecast is wildly different,  
8 the actual -- turns out to be wildly different, the  
9 new forecast, would you not seek an explanation for  
10 why the forecast is incorrect and would that  
11 forecast versus actual not cast doubt on any model  
12 that used the data?

13 MS. KNOWLTON: I'm going to object.  
14 That's -- first of all, that's a compound question.

15 JUDGE BUSHMANN: Overruled. He can answer  
16 it if he understood it.

17 A I -- I don't think the data sets here are  
18 enough to make any conclusions. You've got a  
19 minimum and a maximum.

20 And that means that there are at least  
21 eighty-seven thousand five -- and 58 other hours  
22 that are not reflected. And the only other thing I  
23 would say is a forecast is a forecast. And all  
24 forecasts are wrong.

25

1 Q Okay.

2 A But that's why you run forecasts and  
3 probabilities to try to end up with the best  
4 decision-making capability you can.

5 Q Can you turn to Slide 35?

6 A I'm there.

7 Q It is your understanding that this  
8 calculation is from Mr. -- based on Mr. Meyers 12  
9 percent rate impact calculation?

10 A I don't know this calculation.

11 Q Okay. Have you calculated the actual bill  
12 impacts for customers?

13 A I have not.

14 MS. BELL: No further questions.

15 JUDGE BUSHMANN: Public Counsel?

16 MR. WILLIAMS: Thank you. No questions.

17 JUDGE BUSHMANN: Commission questions?

18 CHAIRMAN HALL: No questions. Thank you.

19 JUDGE BUSHMANN: Redirect?

20 MS. KNOWLTON: Thank you.

21 REDIRECT EXAMINATION

22 BY MS. KNOWLTON:

23 Q Mr. Holmes, are you aware of whether or  
24 not the current preferred plan -- Empire's current  
25

1 preferred plan is based on forecasts?

2 A That's my understanding.

3 Q Do you know which forecasts is based on?

4 A My understanding of the 2016 hour PSA is  
5 from the 2015 spring ABB forward curve.

6 Q Is it realistic to assume that there would  
7 be no revenue derived from sale of wind into SPP  
8 from Empire's proposed wind projects?

9 A No.

10 Q How realistic is it to describe a worst  
11 case scenario based on numbers in JSR-1 that you  
12 know to be incorrect?

13 A I don't believe it to be a realistic  
14 scenario.

15 Q Was any risk weighting or stochastic  
16 analysis done to test to the results that the  
17 company has put forth in its case to show a savings  
18 to customers as a result of the proposed plan,  
19 stipulation -- or I'm sorry -- in the customer  
20 savings plan?

21 A The customer savings plan went through the  
22 stochastic decision tree analysis that went through  
23 both high, mid and low market prices. It looked at  
24 different types of bases assumptions. It looked at  
25

1 carbon. And then there was another -- it doesn't  
2 come to me right now. And then the stipulation  
3 agreement we looked at lower probabilities of wind  
4 output and the high and the low market cases, and I  
5 provided that to -- to everyone through -- through  
6 the OPC Data Request from Greg Meyer.

7 **Q Were any of those run at the request of**  
8 **Staff?**

9 A During the customer savings plan and the  
10 GFSA?

11 **Q Uh-huh.**

12 A Yes. We added DSM into -- and lowered as  
13 a critical resource -- we had a DSM plan, and we  
14 had to load as a critical and uncertain factor  
15 during the GSFA work.

16 **Q Any plans run at the request OPC?**

17 A My understanding is that the local  
18 forecast and the high wind penetration scenario was  
19 -- was a request from OPC.

20 **Q You were asked a number of questions about**  
21 **negative pricing that related to the real-time**  
22 **market. When Empire bids its units into the**  
23 **market, is it bidding to the day ahead market?**

24 A The -- the majority of Empire's wind  
25

1 assets are bid into the day ahead market as per the  
2 marketing procedure.

3 Q Would that be the case as to the wind  
4 proposed in this filing?

5 A It would.

6 Q With regard to the market protection  
7 mechanism, do customers receive a hundred percent  
8 of the upside?

9 A They do.

10 MS. KNOWLTON: I have no further questions  
11 for Mr. Holmes.

12 JUDGE BUSHMANN: That completes your  
13 testimony, Mr. Holmes. You are excused. Why don't  
14 we take a break at this point? We'll be in recess  
15 until 6:00.

16 (Break in proceedings.)

17 JUDGE BUSHMANN: Okay. Let's go back on  
18 the record and see what we can get accomplished in  
19 the next little while. Ready for our last Empire  
20 witness, I believe.

21 MR. COOPER: That's correct, your Honor.  
22 We would call Mr. David Swain.

23 DAVID SWAIN,  
24 being first duly sworn to testify the truth, the whole  
25 truth, and nothing but the truth, testified as follows:

1

DIRECT EXAMINATION

2

3 BY MR. COOPER:

4 JUDGE BUSHMANN: Please be seated.

5 Q (By Mr. Cooper) Please state your name.

6 A David Swain.

7 Q By whom are you employed and in what  
8 capacity?

9 A I'm employed by Liberty Utility Services  
10 Corporation, and I'm President of the Central  
11 Division.

12 Q Have you caused to be prepared for  
13 purposes of this proceeding certain direct and  
14 surrebuttal testimony in question and answer form?

15 A I have.

16 Q Is it your understanding that that  
17 testimony has been marked as Exhibits 16 and 17 for  
18 identification?

19 A Yes, it is.

20 Q Do you have any changes that you would  
21 like to make to that testimony at this time?

22 A Only one change.

23 Q What page is that on? Or I guess which  
24 piece of testimony is that in?

25 A Yeah. On page 4 of my testimony, the

1 question, Have I testified before any other state  
2 regulatory Commissions. There was an omission  
3 there. It should also include Oklahoma.

4 JUDGE BUSHMANN: Is this -- excuse me.  
5 Was that in your direct, sir?

6 Q (By Mr. Cooper) Page 4 of your direct  
7 testimony?

8 A That's correct.

9 Q If I were to ask you the questions which  
10 are contained in Exhibits 16 and 17 today, would  
11 your answers as now amended be the same?

12 A Yes, they would.

13 Q Are those answers as amended true and  
14 correct to the best of your information, knowledge  
15 and belief?

16 A Yes, they are.

17 MR. COOPER: Your Honor, I would offer  
18 Exhibits 16 and 17 and tender the witness for  
19 cross-examination

20 JUDGE BUSHMANN: Any objections? Hearing  
21 none, those are admitted.

22 (Empire Exhibits 16 and 17 were offered  
23 and admitted into evidence.)

24 JUDGE BUSHMANN: First cross is Staff.

25

1 CROSS-EXAMINATION

2 BY MS. MERS:

3 Q Good evening, Mr. Swain. In your direct  
4 testimony on page 7, you discuss the leverage and  
5 knowledge Liberty Utilities provided for further  
6 opportunities for customer savings.

7 In particular, you mentioned their  
8 experience with renewable projects and tax equity  
9 partners. In your review of those projects, would  
10 you say that Empire's customer savings plan as  
11 amended by the stip. is unique in the fact that  
12 much of the value comes from off-system sales? Or  
13 is that common throughout the project?

14 A I don't know that I can specifically --  
15 that I can specifically talk about that. The  
16 purpose of my statements there was to say that,  
17 within our company, we have people that have that  
18 expertise.

19 And so to say what the makeup of those  
20 other projects are and how they work, I don't  
21 specifically know that.

22 Q Okay. That's fair enough. And if we turn  
23 to your surrebuttal testimony, you discuss the  
24 community outreach that Empire has undertaken in  
25



1 regards to this project. Would you describe the  
2 reception as positive?

3 A I would describe it as positive. We had  
4 several different meetings and several different  
5 forums with people with residents, with business  
6 people. And, generally, across the board, the  
7 reception was positive. That's correct.

8 Q Okay. And since you -- you wrote your  
9 surrebuttal testimony, has there been any further  
10 updates or information that you have about  
11 community interactions or business reactions to the  
12 project?

13 A No. I don't think so.

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

16 JUDGE BUSHMANN: MECG?

17 MR. WOODSMALL: No, thank you.

18 JUDGE BUSHMANN: Division of Energy?

19 MR. POSTON: No questions.

20 JUDGE BUSHMANN: Renew Missouri?

21 MR. OPITZ: No, thank you, Judge.

22 JUDGE BUSHMANN: City of Joplin?

23 CROSS-EXAMINATION

24 BY MS. BELL:

25

1 Q Good evening, Mr. Swain.

2 A Good evening.

3 Q Turning to -- let's go back to Mr. Holmes'  
4 testimony. Are you familiar with the stipulation  
5 and agreement that's been filed in this case?

6 A I am.

7 Q And I believe Mr. Holmes testified that  
8 customers get a hundred percent of the benefits; is  
9 that correct? Did you hear hem testify to that?

10 A I'm not sure what you mean by a hundred  
11 percent of the benefits.

12 Q Okay. I think it was in the context of  
13 there was a 50/50 sharing on the downside risk, and  
14 Mr. Holmes' point was that on the upside the  
15 customers get a hundred percent. Is that -- do you  
16 know if that's accurate?

17 A I'm not positive about that.

18 Q Okay. Are you familiar that there is a  
19 dead band within the customer --

20 A I am.

21 Q -- plan? Is that a yes?

22 A Yes.

23 Q Okay. And so if there is basically a --  
24 when you net, if there's \$1 million positive,

25

1 nothing happens; is that correct, essentially?

2 A Nothing happens in regard to --

3 Q The -- I'll ask it another way. Are you  
4 -- the revenues that come in from any wind project,  
5 could they flow through the FAC?

6 A Yes.

7 Q And is it your understanding that then  
8 through the FAC that there's a 95/5 sharing between  
9 the company and the ratepayers?

10 A Yes.

11 Q Okay. If you'd turn to your direct  
12 testimony, page 6.

13 A Okay.

14 Q Lines 10 and lines 18, your testimony is  
15 that the company is requesting the Commission  
16 improve the customer savings plan; is that correct?

17 A I think the line says we're seeking  
18 approval of the fundamental concepts.

19 Q Okay. And on page 11 of your testimony,  
20 lines 13, that's contemplating -- that answer is  
21 contemplating a 40 percent capital cost share by  
22 Empire; is that correct?

23 A That's correct.

24 Q And I believe this came up earlier. If  
25

1 you go to page 15, lines 18 through 20, and there  
2 it says, Without the assurance of a regulatory  
3 asset to recover Empire's investment to date, the  
4 company will not be able to move forward with its  
5 customer savings plan. Is that still your opinion  
6 today?

7 A It's hard for me to see how there's a path  
8 forward without some assurance from the Commission  
9 that this project is appropriate and taking us in  
10 the right direction.

11 Q And so if the company decides to close  
12 Asbury in the future, will they be seeking a  
13 regulatory asset before the Commission?

14 A Ask me that again.

15 Q If, in the future, the company decides to  
16 close Asbury, will the company be coming to the  
17 Commission looking to establish a regulatory asset?

18 A Yes. Whenever we deal with the Asbury, we  
19 will be looking that. That's correct.

20 Q Okay. In your --

21 MS. BELL: No further questions.

22 JUDGE BUSHMANN: Public Counsel?

23 MR. WILLIAMS: Thank you.

24 CROSS-EXAMINATION

25

1 BY MR. WILLIAMS:

2 Q Good evening, Mr. Swain.

3 A Good evening.

4 Q With its original application, was it not  
5 Empire's position that in order to build the 800  
6 megawatts of wind, it would require that Asbury be  
7 retired and that Empire continue to recover its  
8 investment in Asbury that was as yet unrecovered as  
9 well as a return on that investment?

10 A Yes.

11 Q And has that position changed in the  
12 stipulation and agreement, that -- or the  
13 stipulated plan?

14 A Has specifically what changed?

15 Q Well, I think that my question to you.  
16 With regard to Asbury, has your position --  
17 Empire's position changed?

18 A On?

19 Q That in order to build wind, Asbury must  
20 be retired.

21 A As part of the stipulation, yes. Our  
22 position has changed.

23 Q And do you recall in your direct testimony  
24 stating that -- this is on a page 17, I believe,

25

1 and around Line 13. You reference Ameren Missouri  
2 recently announcing a plan to ask -- to add at  
3 least 700 megawatt of wind generation to its fleet  
4 and AEP recently announcing a plan to add 2000  
5 megawatts of wind generation.

6 A You're asking me if that's what it says?

7 Q Yes.

8 A Yes.

9 Q Do you know why Ameren Missouri is adding  
10 at least 700 megawatts of wind generation, planning  
11 to?

12 A No.

13 Q Do you know if Empire included these  
14 planned wind generation additions in its modeling?

15 A The -- our wind?

16 Q No. Well, actually I'm asking about the  
17 700 megawatts that Ameren has indicated it's  
18 planning to add and the 2,000 megawatts that AEP is  
19 planning to add.

20 A No. I don't know that.

21 Q Do you know if Empire included the  
22 additions it was proposing to make, originally the  
23 800 megawatts in its modeling of future wind?

24 A I'm sorry. Ask me that again.

25

1 Q Well, my understanding is in it's  
2 conducting its modeling, Empire looked at what the  
3 future wind would be in the SPP footprint. Did  
4 Empire include the 800 megawatts that it's asking  
5 this Commission to approve -- or was originally  
6 asking this Commission to approve when it did that  
7 modeling?

8 A Yes.

9 Q And did it include, then, the 600  
10 megawatts of wind according to the stipulated plan  
11 when it modeled the impacts on pricing?

12 A Has it -- have they adjusted the model for  
13 the 600 versus the 800?

14 Q Well, we can start with that. Has it?

15 A I don't know that. Actually, as I think  
16 about that question, would you like me to clarify  
17 it?

18 Q If you want to change your answer, I'm  
19 fine with that. Or clarify it. Sure.

20 A Yeah. So I'm thinking about the results  
21 of the most recent study. And there are changes to  
22 the results that do reflect the 600 versus the 800.

23 Q And did -- when it was modeling to find  
24 out the impacts, the savings under the stipulated  
25

1 plan, did Empire include the 700 megawatts that  
2 it's planning to build as to what would be  
3 potential generation in the future at SPP, if you  
4 know?

5 A I'm not sure what the model shows  
6 concerning the impact to SPP.

7 MR. WILLIAMS: No further questions.

8 JUDGE BUSHMANN: Redirect by Empire.

9 REDIRECT EXAMINATION

10 BY MR. COOPER:

11 Q Mr. Swain, in terms of the modeling  
12 questions that Mr. Williams was asking you, whose  
13 primarily responsible for -- for the models? The  
14 GFSA, the -- the other runs associated with the  
15 GFSA and then, ultimately, the runs associated with  
16 the stipulation plan?

17 A Yes. Our -- some of our other witnesses  
18 which have already testified about that, David  
19 Holmes and Jay McMahon.

20 Q And to the extent details are wanted or  
21 known about those, those are the -- the witnesses  
22 that would have that information?

23 A That's correct.

24 MR. COOPER: Okay. That's all the  
25



1 questions I have.

2 JUDGE BUSHMANN: Mr. Swain, that completes  
3 your testimony, sir. Thank you very much. Ready  
4 for Staff's witnesses.

5 MS. MERS: Staff calls Natelle Dietrich.

6 NATELLE DIETRICH,  
7 being first duly sworn to testify the truth, the whole  
8 truth, and nothing but the truth, testified as follows:

9 DIRECT EXAMINATION

10 BY MS. MERS:

11 MR. BUSHMANN: Please be seated.

12 Q (By Ms. Mers) Can you please state and  
13 spell your name for the record?

14 A Natelle, N-a-t-e-l-l-e, Dietrich,  
15 D-i-e-t-r-i-c-h.

16 Q By whom are you employed and in what  
17 capacity?

18 A The Missouri Public Service Commission as  
19 Commission Staff Director.

20 Q Did you prepare rebuttal testimony and  
21 contribute to the Staff's statement in support of  
22 the non-unanimous stipulation?

23 A I can.

24 Q Do you have any changes to that testimony?

25

1 A Not to the testimony.

2 Q Did you have any changes to the statement  
3 in support?

4 A Yes.

5 Q Okay. And what are those changes?

6 A On -- on the version that was handed out  
7 the beginning of the hearing that has page numbers,  
8 on page 6, right above where it says Tax Equity, it  
9 makes a reference to paragraph 18-C of the  
10 agreement. That should be 17-C of the agreement.  
11 And that section is sponsored by Staff Witness John  
12 Rogers.

13 MR. WILLIAMS: You're referring -- I'm  
14 sorry. I don't have a paginated copy with me.

15 A It's -- it's the section on Customer  
16 Protections, and it's the paragraph right above the  
17 tax equity portion.

18 MR. WILLIAMS: Okay. I'm with you.

19 A Okay. And it says 18-C, paragraph 18-C of  
20 the agreement. It should say 17-C.

21 MS. MERS: Here's a paginated copy.

22 MR. WILLIAMS: Thank you.

23 MS. MERS: You're welcome.

24 A And the next change is on page 8. The  
25

1 section most favored nations clause near the end of  
2 that paragraph. It says, Staff provides -- or  
3 excuse me. Supports the most favored nations  
4 clause as providing additional customer protection  
5 should Missouri Kansas or, to an extent, Oklahoma  
6 order additional conditions or concessions.  
7 Missouri should be Arkansas. So it -- it should  
8 read Arkansas, Kansas or, to an extent, Oklahoma.  
9 And -- and that section is sponsored by me.

10 **Q (By Ms. Mers) Okay. So with those**  
11 **changes, and, also, the addition of the page**  
12 **numbers for ease of reference to Staff's statement**  
13 **in support, is your testimony true and accurate?**  
14 **Or if I asked you the same questions today, would**  
15 **your answers be the same?**

16 A Yes.

17 **Q And is -- are those answers true and**  
18 **accurate to the best of your knowledge and belief?**

19 A Yes.

20 Ms. MERS: I will go ahead and enter  
21 Exhibit 100, which is the rebuttal testimony. But  
22 I think since we have other witnesses that  
23 contributed to the Staff Statement in Support, I'll  
24 hold off on offering 103 and 104.

25

1 JUDGE BUSHMANN: I would prefer that.

2 Thank you.

3 MS. MERS: Okay.

4 JUDGE BUSHMANN: Exhibit 100 has been  
5 offered. Are there any objections? Hearing none,  
6 it's admitted.

7 (Staff Exhibit 100 was offered and  
8 admitted into evidence.)

9 MS. MERS: Okay. I tender the witness for  
10 cross.

11 JUDGE BUSHMANN: And one other thing to  
12 make sure -- I want to make sure that the Staff  
13 affidavit, the one that gets to the court reporter,  
14 is the official copy that is the paginated copy.

15 MS. MERS: Yes.

16 JUDGE BUSHMANN: Okay. First cross would  
17 be by Empire.

18 CROSS-EXAMINATION

19 BY MR. COOPER:

20 Q Ms. Dietrich, on page 4 your rebuttal  
21 testimony, lines 1 through 11 -- and I'll give you  
22 a chance to get there.

23 A Okay.

24 Q You have a question and answer concerning,  
25

1 essentially, what sort of plan would be acceptable  
2 to the Staff. Would you agree with that  
3 characterization?

4 A The type of approval that's being  
5 requested, not -- not necessarily the actual plan.

6 Q The type of approval being requested?

7 A Right. Uh-huh.

8 Q And you talk about the type of approval  
9 for -- for the decision. And then I think you  
10 close by talking about making sure that the  
11 Commission issues a finding that it hasn't  
12 relinquished its responsibility as an arbitor and a  
13 variety of other things there in the last sentence,  
14 correct?

15 A Correct.

16 Q The stipulation, the non-unanimous  
17 stipulation that Staff entered into, does that  
18 package of requests and reservations for the  
19 Commission meet these requirements?

20 A Yes.

21 MR. COOPER: That's all the questions I  
22 have.

23 JUDGE BUSHMANN: MECG?

24 MR. WOODSMALL: Thank you. Briefly.

25

1 CROSS-EXAMINATION

2 BY MR. WOODSMALL:

3 Q Following up on that question, you were  
4 asked if it meets the conditions or whatever in  
5 this answer. Is it your understanding that the  
6 stipulation is asking for a decisional  
7 pre-approval?

8 A The stipulation is asking for a  
9 determination of reasonableness.

10 Q And --

11 A And not getting into the legality of  
12 reasonableness versus prudence. And in some of the  
13 discussions that have been had, I -- I would  
14 consider it from a layman's perspective to be  
15 decisional pre-approval.

16 Q Without getting into the -- the settlement  
17 communications, could you just characterize -- use  
18 an adjective to describe how complicated the  
19 settlement communications -- or settlement talks  
20 were?

21 A Extremely.

22 Q Okay.

23 A I think that's an adverb, but --

24 Q Yeah. So when I expressed to Commissioner  
25

1 Rupp that this was a complicated settlement and  
2 encouraged him not to change things because it  
3 opens up Pandora's box, would you share that  
4 concern?

5 A Yes.

6 MR. WOODSMALL: Okay. No further  
7 questions. Thank you.

8 JUDGE BUSHMANN: Division of Energy?

9 MR. POSTON: No questions.

10 JUDGE BUSHMANN: Renew Missouri?

11 MR. OPITZ: No, thank you, Judge.

12 JUDGE BUSHMANN: City of Joplin?

13 MS. BELL: Yes.

14 CROSS-EXAMINATION

15 BY MS. BELL:

16 Q When you -- looking at your rebuttal  
17 testimony, right where Mr. Woodsmall was just  
18 referencing, I think I'm on page 3, and you use the  
19 words just now decisional pre-approval, do you have  
20 any authority, citation to authority for the  
21 Commission being allowed to grant decisional  
22 pre-approval?

23 A Well, I'm not an attorney, so I don't.

24 But in our position statement and, also, in

25

1 response to at least one of or DRs, there's  
2 citations or a discussion of it.

3 Q Okay. And if -- if you'd turn to the  
4 affidavit, in the affidavit, you are -- there's a  
5 graph on page -- is it not numbered? A Figure 5.

6 A Okay. That's on page 2.

7 Q Okay. And you -- how was that 10-year  
8 savings calculation arrived at?

9 A That is in a section sponsored by  
10 Mr. Rogers, so he probably would be more adapt to  
11 explain..

12 Q Okay. Is it your understanding -- did  
13 Staff conduct any independent analysis with respect  
14 to the calculations of the wind revenue  
15 requirement?

16 A Staff received many data and information  
17 from Empire, but then used that information to  
18 perform its own analysis modifying various inputs,  
19 calculations and changing some things around to  
20 determine the appropriate number, the appropriate  
21 structure of, for instance, the customer savings  
22 plan.

23 Q So did Staff -- so what inputs were  
24 changed?

25



1           A    Well, again, you'd have to ask Mr. Rogers.  
2   He was more closely involved in that.

3           **Q    Okay.  Is that typical in a PSC case?  In**  
4   **a general rate case, does Staff usually perform its**  
5   **own independent analysis?**

6           A    Yes.

7           **Q    Okay.  And what about in a certificate**  
8   **case?**

9           A    In any case, to the extent that we have  
10   information or have access to information, Staff  
11   performs an independent analysis or review or  
12   audit, depending on what it is.

13          **Q    So did Staff gather data relative to**  
14   **market prices, or did Staff use the market price**  
15   **data provided by the company?**

16          A    Again, you probably need to ask  
17   Mr. Rogers.  He was more closely involved in the  
18   actual analysis.

19          **Q    Okay.  So which page of the affidavit were**  
20   **you responsible for?**

21          A    The executive summary.  The future  
22   regulatory reviews on page 4.

23          **Q    Okay.**

24          A    The most favored nation clause on page 8,  
25

1 those are the ones that were under my expert  
2 witness -- witness name.

3 Q Sure. Have you compared the most favored  
4 nation clause in this statement to the most favored  
5 nation clause in the Oklahoma windcatcher  
6 stipulation?

7 A At a high level, yes.

8 Q And what are the -- and is it fair to say  
9 that the -- most favored nations clause in the  
10 stipulation and agreement contains a number of  
11 exceptions?

12 A In the Missouri?

13 Q Correct.

14 A Yes. I don't -- I don't know that I'd  
15 characterize it as a number, but there are  
16 exceptions.

17 Q Exceptions. Okay. And have you reviewed  
18 the Riley affidavit and the numbers by Mr. Riley?

19 A I've seen them, but not in-depth.

20 Q Do you have a general understanding for  
21 why the numbers for provided by Mr. Riley differ  
22 substantially from the company's?

23 A I -- I did not do that type of review.  
24 That would be Mr. Rogers to the extent that he's  
25

1 able to answer the question.

2 MS. BELL: Okay. No further questions.

3 JUDGE BUSHMANN: Public Counsel?

4 MR. WILLIAMS: Thank you.

5 CROSS-EXAMINATION

6 BY MR. WILLIAMS:

7 Q When you talk about decisional  
8 pre-approval and, in particular, how you used that  
9 term, or that phrase, in the context of your direct  
10 testimony, are you referring to Empire's decisions  
11 to retire Asbury and build wind generation assets  
12 and interconnect them to -- them to its existing  
13 system?

14 A Yes. The various provisions that were in  
15 the application.

16 Q Do you know if the Commission's ever  
17 issued a Certificate of Convenience & Necessity for  
18 a utility project or facility not located in  
19 Missouri?

20 A Not to my knowledge.

21 Q You indicated there's a difference between  
22 Staff audit and a Staff analysis. Would you  
23 explain what the difference is?

24 A I don't think I indicated there was a  
25

1 difference. I was just saying depending on the  
2 type of case, we would -- we would be analyzing  
3 information. We would be auditing the information.

4 For instance, in a rate case, the account  
5 -- Accounting Department would be auditing the  
6 books and records. In this type of case, we're  
7 doing an analysis of information.

8 **Q Well, where I'm really wanting to go with**  
9 **this, did Staff review what Empire did and, I**  
10 **guess, reach a comfort level? Or did Staff do a**  
11 **completely independent analysis of -- let's limit**  
12 **it to the stipulated plan?**

13 A To the extent that we had information  
14 available, we did an independent analysis by nature  
15 of the type of project and the -- the information  
16 -- some of the information had to come from Empire,  
17 but it was in a form that we were able to  
18 manipulate it to look at different calculations,  
19 different structures as far as the customer savings  
20 plan.

21 It had -- as you know, it has the high,  
22 medium and low probabilities, and so we were able  
23 to go in and -- and change numbers related to that,  
24 to -- to view and get an idea of where the proper  
25

1 structure should be.

2 Q Did you rely on different source  
3 information than Empire did? For example, the ABB  
4 data with future forecast, did you rely on that?  
5 Or did you rely on something else?

6 A I would have to ask Mr. Rogers. I -- I  
7 was in there and saw some of the manipulation, if  
8 you will, but I wasn't involved in where the  
9 numbers came from and that type of thing.

10 Q By manipulation, you're talking about  
11 changing parameters in Empire's modeling?

12 A Right.

13 MR. WILLIAMS: No further questions of  
14 this witness at this time.

15 JUDGE BUSHMANN: Questions by the  
16 Commission?

17 COMMISSIONER COLEMAN: No questions.

18 JUDGE BUSHMANN: Ms. Dietrich, I don't  
19 have any questions, but the Chairman, who wasn't  
20 able to be here, he did send me a question to ask  
21 on his behalf.

22 A Okay.

23 CROSS-EXAMINATION

24 BY JUDGE BUSHMANN:

25

1           Q    His question was, in the event that a  
2 majority of the Commission looks favorably toward  
3 the amended plan that's contained in the  
4 stipulation and agreement, would you have any --  
5 any concerns about a Commission order that said,  
6 one, that the plan was reasonable with regard to  
7 the 600 megawatts of wind, and, two, reasonable  
8 with regard to the financing mechanism contained in  
9 the stipulation, three, book expenses as plant of  
10 service; four, set depreciation at 3.33; and, five,  
11 grant the variance that was requested? He wanted  
12 to know your thoughts and concerns about that  
13 order.

14           A    It's -- what you read sounds consistent  
15 with the agreement, so I would not have any  
16 concerns with an order that stated those various  
17 parameters or those various things.

18                   JUDGE BUSHMANN:   Okay.   Thank you.

19                   MS. DIETRICH:   Uh-huh

20                   JUDGE BUSHMANN:   Now, do any parties have  
21 any recross based on that one question?

22                   Mr. Williams?

23                                   RE CROSS EXAMINATION

24                   BY MR. WILLIAMS:

25

1           Q    **Ms. Dietrich, you're not an attorney, are**  
2   **you?**

3           A    No, I'm not.

4           MR. WILLIAMS: No further questions.

5           JUDGE BUSHMANN: Anybody else? Redirect  
6 by Staff?

7                                REDIRECT EXAMINATION

8 BY MS. MERS:

9           Q    **Counsel for Joplin referred you to a**  
10 **provision in the wind project stipulation for**  
11 **Oklahoma. Are you generally familiar with the**  
12 **testimony of the affidavit in opposition of Geoff**  
13 **Marke that goes over that stipulation?**

14          A    Generally.

15          Q    **Okay. If you would turn to page 7 of that**  
16 **statement in opposition, you were asked to do a**  
17 **comparison. So I'm going to ask you to compare**  
18 **some other items.**

19                        **There's a statement made that refers that**  
20 **the Oklahoma stipulation that has assurances that**  
21 **customer benefit from the Federal PTCs. Is that**  
22 **applicable in this case?**

23          A    Just one second. I -- I wasn't following  
24 you because I realized I have the surrebuttal.

25

1 Page 7 of the --

2 Q It's page 8.

3 A Okay.

4 Q I said 7. It's page 8.

5 A Assurances that the customers benefit from  
6 Federal PTCs? So that's -- that's the bullet?

7 Q Right. Is -- is there a -- how do you  
8 believe the tax equity partner in this case would  
9 make that provision not applicable to this case?

10 A Well, my understanding is that in the  
11 Oklahoma windcatcher project, the utility, I'm not  
12 sure which utility at this point without going back  
13 and reading through it, would actually, owned the  
14 project.

15 In -- in this case, it's a joint ownership  
16 with different structure, and the tax equity  
17 partner would be doing the role, if you will,  
18 applicable believe to the PTC.

19 Q Okay. So to summarize, the differences --  
20 and I believe it's AEP, is not using a tax equity  
21 partner and ratepayers are paying the entire  
22 \$4.5 billion bill that's not the case in this  
23 situation?

24 A First question, that's my understanding.

25



1 And the second part, that's correct.

2 Q Okay. There's also a bulletpoint that  
3 says that there's caps on investments to point out.  
4 Costs below the caps have no presumption of  
5 prudence, and costs above the caps are not  
6 recoverable in rates.

7 From your understanding of the  
8 stipulation, is there a presumption of prudence for  
9 costs that the parties have agreed to?

10 A No.

11 Q Are you familiar with the benefit  
12 guarantee provision? I think it's described on  
13 page 8 as well.

14 A The guarantee project net benefits?

15 Q Yes.

16 A Okay. Yes.

17 Q Are there items in that guarantee that  
18 reduce the revenue requirement of the wind project  
19 that the non-unanimous stipulation does not  
20 contain?

21 A I think a better reference would be page  
22 10 of GM-1, which is Attachment 2, which is the  
23 actual outline of the net benefits. And in --  
24 within -- that -- it's easier to see the  
25

1 calculation.

2 Q Sure.

3 A And there are things within there that are  
4 not included in the Missouri stipulation.

5 Q Okay. Could you list those items?

6 A Well, it would probably be easier to go  
7 the other way --

8 Q Okay.

9 A -- and talk about what -- what Missouri  
10 is.

11 Q What are --

12 A We -- without getting into details of  
13 settlement, we, as Staff, had considered different  
14 methods of calculating customers protections.

15 And we had looked at something similar to  
16 this with all of the different components. And it  
17 was our opinion that a simpler approach would --  
18 would be better.

19 And so what the Missouri stipulation has  
20 is a comparison of revenues and costs associated  
21 with the projects and then goes from there as far  
22 as the protections for the customers.

23 Q So the stipulation in this case is simply  
24 00 the formula is simply wind revenue requirement

25

1 plus -- or minus revenues received from SPP, plus  
2 the value of the PPA agreement, which is those  
3 three items?

4 A I believe so.

5 Q Okay. I guess in a simpler way, the --  
6 the money that Empire receives, we are only looking  
7 at if it covers cost of the wind project?

8 A Correct.

9 Q So there's no benefit or offsetting the  
10 costs for things like carbon savings, project  
11 capacity values, PTCs, wrecks, items like that.  
12 It's just simply costs versus costs in and -- and  
13 revenues in?

14 A Well, I -- I wouldn't characterize it as  
15 there's no benefits offsetting. There are not  
16 those items offsetting. I -- I think inherent in  
17 the plan -- in the protections itself there is  
18 benefit.

19 Q Okay. And you were asked a question from  
20 Counsel from OPC about if we had reached a comfort  
21 level or if we had done an independent analysis.

22 Typically, in rate cases, where -- where  
23 do we get the information? Or any of our cases,  
24 where do we get the information from?

25

1           A     From the utility.  And that's what the  
2     distinction I was trying to making.  To the extent  
3     that we have information, it typically does come  
4     from the utility.  We don't have our own  
5     information.

6           **Q     Okay.  So that's not unusual for this**  
7     **case?**

8           A     Correct.

9           **Q     Can you -- can you point to any examples**  
10    **of any of the other parties even -- even opposing**  
11    **parties relying upon information Empire has**  
12    **provided to come up with their own analysis?**

13          A     Well, I would say all the parties used  
14    information provided by Empire.

15                 MS. MERS:  Okay.  I have nothing further.

16                 JUDGE BUSHMANN:  Thank you, Ms.  Dietrich.  
17    You're next, Mr. Rogers.

18                         JOHN ROGERS,  
19    being first duly sworn to testify the truth, the whole  
20    truth, and nothing but the truth, testified as follows:

21                                 DIRECT EXAMINATION

22    BY MS. FORCK:

23                         JUDGE BUSHMANN:  Please be seated.

24           **Q     (By Ms. Forck)  Good evening, Mr. Rogers.**

25

1           A    Evening.

2           Q    Please state your name and spell it for  
3   the record.

4           A    John A. Rogers, R-o-g-e-r-s.

5           Q    How are you employed?

6           A    I'm the Utility -- or the Regulatory  
7   Utility Manager for the Energy Resources Department  
8   of the Missouri Public Service Commission.

9           Q    Did you prepare or cause to be prepared  
10   rebuttal testimony marked as Exhibit 102 and  
11   portions of Staff's affidavit in support of the  
12   non-unanimous stipulation marked as 103  
13   confidential and 104 public?

14          A    Yes.

15          Q    Do you have any corrections to make to any  
16   of that testimony that have not already been  
17   outlined by Ms. Dietrich?

18          A    Yes, I did. To my rebuttal testimony, on  
19   page 11, there's a Table 3 that I have ahead  
20   corrections to. And those corrections were made as  
21   a result of Mr. McMahon pointing out that I had an  
22   error in one of my formulas and my work papers.

23          Q    Continue. So would you point out what the  
24   -- what the changes were? Did you have any --

25

1           A    Well, there's -- there's quite a few  
2   changes to the table. I prepared a corrected --

3           **Q    Okay.**

4           A    -- copy of the table.

5           JUDGE BUSHMANN: You may want to  
6   considering introducing that as a separate exhibit.

7           MS. FORCK: Okay. I handed that out  
8   before we began.

9           JUDGE BUSHMANN: And has that been  
10  provided to other Counsel?

11          MS. FORCK: It has. I provided it to the  
12  Commission, the Judge, the court reporter and the  
13  other Counsel. It's the corrected Table 3 for page  
14  11 of your rebuttal testimony of John A. Rogers.

15          JUDGE BUSHMANN: Would you like to mark  
16  that as Exhibit 105?

17          MS. FORCK: Sure. If that makes things  
18  easier, we can mark it as 105.

19          JUDGE BUSHMANN: I think that would be  
20  clearer than trying to orally from the stand trying  
21  to make a bunch of number corrections.

22          MS. FORCK: All right. We'll do that.

23          **Q    (By Ms. Forck) So corrected Table 3 has**  
24  **been marked as Exhibit 105. Mr. Rogers, did you**  
25

1 have any other changes?

2 A Yes. As a result of the corrections to  
3 Table 3, on page 11, there's two amounts on at that  
4 page that need to be corrected. On line 8,  
5 48 million should be changed to 130 million.

6 And on line 9, 160 million should be  
7 changed to 281 million. And there's one other  
8 minor change to my rebuttal testimony on page 14,  
9 line 1. PVRR should just be RR, revenue  
10 requirement.

11 Q Okay. Okay. With those changes, if I  
12 were to ask you the same questions contained in  
13 your testimony and if you were to write the  
14 portions of your affidavit today, would those  
15 documents be substantially the same?

16 A Yes.

17 Q And is this testimony and affidavit true  
18 and accurate to the best of your knowledge and  
19 belief?

20 A Yes.

21 MS. FORCK: Your Honor, I move to admit  
22 Staff Exhibits 102 and 105. And we'll hold off on  
23 that affidavit until after Mr. Oligschlaeger  
24 testifies.

25

1 JUDGE BUSHMANN: Any objections? Hearing  
2 none, those are admitted.

3 (Exhibits 102 and 105 were offered and  
4 admitted into evidence.)

5 MS. FORCK: I tender the witness for  
6 cross.

7 JUDGE BUSHMANN: First cross is by Empire.

8 MR. COOPER: No questions.

9 JUDGE BUSHMANN: MECG?

10 MR. WOODSMALL: Briefly, your Honor.

11 CROSS-EXAMINATION

12 BY MR. WOODSMALL:

13 Q Good evening, sir.

14 A Good evening.

15 Q Would you turn to the Staff -- Staff's  
16 affidavit, specifically Chart 3, which I believe is  
17 -- I don't know what page it is, but Chart 3. It's  
18 under customer protections. And let me know when  
19 you get there.

20 A Okay.

21 Q Earlier today, Mr. Mertens was talking  
22 about the margin from Asbury. Do you recall that?

23 A Yes.

24 Q And he indicated that the -- the margin  
25



1 has declined over the last couple years. Did you  
2 hear that?

3 A Yes, I did.

4 Q Can you tell me whether Chart 3 provides  
5 any evidence regarding the projected profitability,  
6 economics of Asbury?

7 A Yes, it does. Throughout this entire  
8 process, between the analysis and the application,  
9 the surrebuttal, the company, as well as the  
10 modeling for the stipulation and agreement, there's  
11 really only two -- two plans that allow a  
12 comparison of value of Asbury.

13 And those are in the application filing.  
14 And that's what's reflected on Chart 3, page 5 of  
15 the affidavit. The two plans that you can compare  
16 are Plan 2, which is the original customer savings  
17 plan with 800 megawatts of wind and Asbury being  
18 retired, and then Plan 10, which is a plan that  
19 keeps Asbury and has 800 megawatts of wind, and  
20 also, Plan 10 corrected for some -- some problems,  
21 some errors in what was Plan 4.

22 So looking at Plan 2 and Plan 10, you can  
23 look at the difference between the annual revenue  
24 requirements of those plan -- those two plans, and  
25

1 you can see by looking at the red line, which is  
2 Plan 2 --

3 **Q And by the red line, you mean the solid**  
4 **red line?**

5 A The solid red line.

6 **Q Okay. Please continue.**

7 A And then the solid black line allows you  
8 to see year by year the difference in the expected  
9 revenue requirement for Plan 4 -- or Plan 2  
10 compared to Plan 10.

11 And what this tells us is that keeping  
12 Asbury does have value in the marketplace in terms  
13 of overall revenue requirement savings beginning in  
14 2020 and extending throughout the planning horizon  
15 after that.

16 **Q And that is based upon current conditions;**  
17 **is that correct? Current conditions forecast; is**  
18 **that correct?**

19 A It's based upon all the assumptions in the  
20 applic -- well, generation fleet savings analysis.

21 **Q So if -- if SPP implemented a capacity**  
22 **market, Asbury's economics may even approve**  
23 **further; is that correct?**

24 A They could. Yes.

25

1 Q Okay. So it's Staff's position, then,  
2 that Asbury should stay open; is that correct?

3 A We support the -- the stipulation and  
4 agreement. And that's part of the stipulation and  
5 agreement. Yes.

6 Q Okay. There was some discussion earlier  
7 about what costs could be avoided by Asbury  
8 closing. Do you recall Mr. Mertens having that  
9 conversation?

10 A Yes.

11 Q Okay. And he mentioned that there were  
12 going to be costs that are incurred either way.  
13 But there are certain environmental costs that  
14 could be avoided. And I think he put it at roughly  
15 \$20 million.

16 A Right.

17 Q Do you recall that?

18 A Yes.

19 Q But then he mentioned that there are costs  
20 that haven't been modeled, approximately \$20  
21 million of dismantlement. Do you recall him saying  
22 that?

23 A I recall him saying that. And the figure  
24 was 24 million, as I recall.

25

1           **Q**    Okay.  So if Asbury were closed, we could  
2    avoid the 20 million of environmental costs.  But  
3    we would then incur the 24 million of dismantlement  
4    costs?

5           A    Yes.  Which is not included in the  
6    analysis presently.

7           MR. WOODSMALL:  Okay.  I have no further  
8    questions.  Thank you, sir.

9           JUDGE BUSHMANN:  Division of Energy?

10          MR. POSTON:  No questions.

11          JUDGE BUSHMANN:  Renew Missouri?

12          MR. OPITZ:  No thank you, Judge.

13          JUDGE BUSHMANN:  City of Joplin?

14          MS. BELL:  Yes.  Thank you.

15                                    CROSS-EXAMINATION

16    BY MS. BELL:

17           **Q**    **Good evening, Mr. Rogers.**

18           A    Good evening.

19           **Q**    **Can you describe the analysis performed by**  
20    **Staff?**

21           A    Okay.  Staff did not perform any analysis  
22    of its own.  What we did was request that the  
23    company perform an analysis.  We do not have the --  
24    the software models that are necessary to do the  
25

1 integrated resource analysis. It was performed by  
2 ABB.

3 So to the extent that we wanted additional  
4 analysis performed, we requested that through data  
5 request.

6 Q Okay. In a typical rate case or  
7 certificate case, when you request the information  
8 from the company, you request actual figures from  
9 the company looking backwards; is that correct?

10 A In a rate case, yes.

11 Q What about a certificate case?

12 A I'm not -- I'm -- I've never been a party  
13 to a certificate case.

14 Q Okay. Fair enough. In this case, the  
15 data that was provided wasn't backwards looking  
16 actual data. It was forecast; is that correct?

17 A It was all estimated, yes.

18 Q You testified in your rebuttal testimony  
19 that the -- how important it is, the modeling. And  
20 you stated on page 12, the modeling is very  
21 important. Is that still your opinion?

22 A Yes.

23 Q And on page 14, you essentially conclude  
24 your discussion of the sensitivity of the model by

25

1 stating, This demonstrates how sensitive customer  
2 savings are to less favorable electricity  
3 marketplace conditions that cause market prices to  
4 be lowered. Is that still your opinion today?

5 A Yes.

6 Q And is it that sensitivity -- is that why  
7 we see such different estimates among the parties,  
8 among OPC and the company?

9 A I can't speak for OPC.

10 Q Okay. But when you talk about  
11 sensitivity, you're really talking about how -- so  
12 if a model is extremely sensitive, if you change  
13 one variable, you're going to get wildly different  
14 outcomes; is that correct? That's what you mean by  
15 sensitivity?

16 A I wouldn't say wildly different.

17 Q Okay.

18 A There's a lot of inputs to the analysis.  
19 And if you change one input, normally, it will  
20 change the outcome.

21 Q Okay. And so for a less sensitive model,  
22 if you changed the input, then would you expect a  
23 smaller difference in the -- in the end result; is  
24 that correct?

25

1           A    I believe that's correct.

2           Q    Okay.  On page 17, you testified that --  
3   or wrote that Mr. McMahon acknowledges that relying  
4   on off-system sales to manage costs induces --  
5   introduces risk.  Can you explain what you mean by  
6   introduces risk?

7           A    Yes.  The customer savings plan is based  
8   upon future performance in the marketplace.  And  
9   the sale of energy into the marketplace would  
10  result from the plan.

11                   And so there's a lot of uncertainty in the  
12  future concerning how much energy will be sold and  
13  at what price.  There's other variables, but those  
14  are the two that -- that are primarily driving the  
15  results.

16           Q    And so when you say introduce risk, is  
17  that -- would you say that risk is on customers?

18           A    It is.

19           Q    That sounded more like a question.  Is it  
20  -- would you say it was on anybody else?

21           A    Well, the company as well in terms of the  
22  -- the performance of those assets and the  
23  resulting retained earnings.

24           Q    After the -- if we end up in a worst case  
25

1 scenario and that \$35 million cap is exceeded, at  
2 that point, is the risk entirely on customers?

3 A My understanding, it would be.

4 Q **With an unlimited cap?**

5 A That's my understanding. Not -- not  
6 likely with many of the modeling that I've seen.  
7 But --

8 Q **Okay. If we go back in your rebuttal**  
9 **testimony to page 7, line 12, and there is the**  
10 **question is about summarizing your analysis.**

11 **And you wrote, Expected customer savings**  
12 **are minimal or possibly non-existent in the first**  
13 **ten years. Is that correct?**

14 A Page 7? Can you give me the reference  
15 again?

16 Q **Yeah. I'm actually -- I think I might be**  
17 **just on -- page 5. I apologize.**

18 A Page 5.

19 Q **Line 11.**

20 A Okay.

21 Q **Okay. Do you see that answer on --**

22 A Yes.

23 Q **So expected customer savings are minimal**  
24 **or possibly non-existent. And then you say, Due to**  
25



1 the amount of equity cost.

2 I don't know that I've heard that term  
3 equity cost yet or much in the hearing so far. So  
4 can you tell me what you mean by equity cost?

5 A Yes. And I have a chart on page 6 that  
6 shows the discounted value of the annual equity  
7 cost. And this comes from the company's analysis.

8 And at the bottom of each income  
9 statement, the last line is earnings cost. My  
10 understanding is that represents the total -- or  
11 equity cost. Excuse me. The total equity cost in  
12 the plan, which would be -- in total, not just for  
13 the wind projects, but for the entire income  
14 statement for Empire District Electric.

15 So my chart on Plan -- Chart 1 on page 6  
16 is just showing the increase in equity cost for  
17 Plans 2, 3 and then 10 relative to the annual  
18 equity cost in the modeling for Plan 1, which is  
19 the current adopted preferred resource plan, the  
20 business plan of the company.

21 Q Okay. When you reference in line 12  
22 expected customer savings, was that a reference to  
23 the saving -- savings -- the GFSA savings estimated  
24 by Mr. Krygier in his chart? I think it was  
25

1 labeled CDK-1.

2 A I'm having trouble following what --  
3 Mr. Krygier's chart. I'd have to see it.

4 Q Okay. I'll approach.

5 A Can you ask the question again?

6 Q Sure. So when you said expected customer  
7 savings, was that a reference to the savings  
8 estimated by Mr. Krygier?

9 A Well, in -- in my statement, it's a  
10 reference to the performance of -- of the customer  
11 savings plan relative to the current business plan,  
12 Plan 1.

13 Q Okay. And Mr. Krygier's estimates were --  
14 were estimates of the GFSA analysis, correct?

15 A That is correct. I'm not sure, as I look  
16 at Mr. Krygier's, I'm referring to the same results  
17 as I was when I did my analysis. But I can't say  
18 for sure.

19 Q Okay. Assuming that is Mr. Krygier's  
20 estimate of customer savings, if you look at the  
21 first ten years in his chart --

22 A Uh-huh.

23 Q -- he is estimating -- or that chart  
24 purports to estimate, if you sum all those numbers,  
25

1 something like a hundred million dollars in  
2 customer savings over the first ten years. Is that  
3 your understanding?

4 A It looks like that's right. I'm looking  
5 at the -- okay. What was confusing me was I -- I  
6 see the timeline goes out.

7 Q **Yeah. They have 20 years --**

8 A Retired 20 years. And you're just asking  
9 about the first ten years, which would be the top  
10 line.

11 Q **Correct.**

12 A Okay. All right. I think we are at the  
13 same thing.

14 Q **Okay. So he estimates customer savings at  
15 about a hundred million for the first ten years.**

16 A Okay.

17 Q **Correct?**

18 A Subject -- subject to check, this is Plan  
19 2, which I think it is the preferred -- or the  
20 customer savings plan. What I got was 71 million  
21 and not 100 million.

22 Q **Okay. 71 million. Your testimony on page  
23 5, line 12 said that the customer savings are  
24 minimal or possibly non-existent. He would  
25**

1 estimate \$71 million in savings, and you're at  
2 zero, possibly zero?

3 A Because we don't know what the -- the  
4 ultimate plan will be. Plan 2 was -- was one plan  
5 that was modeled. Plan 3 was a second plan that  
6 was modeled, which had different wind attributes.

7 And Plan 3, in fact, had no savings in the  
8 first -- as modeled in the first ten years. It  
9 would actually cost customers \$16 million.

10 Q Is there anything different about the  
11 stipulation -- the calculations under the  
12 stipulation and agreement and the calculations  
13 performed by Mr. Krygier in that chart?

14 A Yes.

15 Q What are those differences?

16 A Well, the stipulation and agreement is for  
17 only 600 megawatts of wind, not 800.

18 Q Okay.

19 A Another big change was updating the market  
20 prices for the ABB fall 1027 prices. The other one  
21 was that Asbury would be retained and remain in  
22 operation as proposed to being retired in the  
23 customer savings plan. Those -- I think those are  
24 the -- the three most significant changes.

25

1           Q    Okay.  The retirement of Asbury doesn't  
2   affect wind revenue requirements or wind benefits,  
3   does it, whether or not Asbury is retired?

4           A    I don't believe so.

5           Q    Okay.

6           A    I'm not absolutely certain.  But the way I  
7   understand it, the wind would be dispatched before  
8   Asbury would, so it wouldn't -- keeping or retiring  
9   Asbury wouldn't impact the wind.

10          Q    And that changing the wind projects from  
11   800 megawatts to 600 megawatts changes the  
12   magnitude of the wind for revenue requirement, but  
13   it doesn't change the way you would calculate the  
14   wind revenue requirement; is that correct?

15          A    Correct.

16          Q    And you said that market prices were  
17   updated to reflect the 2017 forecast; is that  
18   correct?

19          A    Yes.

20          Q    And that -- that would change the wind  
21   revenue requirement, correct?

22          A    Yes, it would.

23          Q    Okay.  And those market prices came in  
24   lower in 2017; is that correct?

25

1 A Correct.

2 Q Okay. So based on simply lower market  
3 prices, the wind revenue requirement would be even  
4 less than what was originally projected by  
5 Mr. Krygier?

6 A The -- the revenue from the sales of the  
7 wind would be less.

8 Q Okay.

9 A I'm not sure that's the same as the  
10 revenue requirement, but --

11 Q And if the revenue is just netted with the  
12 benefits to get the total savings, then if you have  
13 less benefits, you have less savings, assuming that  
14 the benefits stayed the same?

15 A I'm not sure what you're talking about  
16 with benefits, when you say benefits.

17 Q Okay. If you look the Mr. Krygier's  
18 chart, he nets the wind revenue requirement with  
19 what he calls wind benefits.

20 A Okay.

21 Q And so if the revenue requirement is  
22 coming down, then the savings would also decrease;  
23 is that correct?

24 A The wind is -- at any point in time, the  
25

1 wind revenue requirement is not a function of the  
2 amount of wind that's sold. Wind revenue  
3 requirement is pretty much a fixed cost each year.

4 **Q Okay.**

5 **A** The -- the benefits from the wind are not  
6 fixed. The benefits from the wind derived from the  
7 amount of wind generation and the price in the  
8 marketplace, that changes a lot. But I don't think  
9 the revenue requirement is at all a function of the  
10 benefits.

11 **MS. BELL:** Okay. No further questions at  
12 this time.

13 **JUDGE BUSHMANN:** Public Counsel?

14 **MR. WILLIAMS:** Helpfully just a few.

15 **CROSS-EXAMINATION**

16 **BY MR. WILLIAMS:**

17 **Q** You testified earlier -- well, you  
18 probably heard me asking Ms. Dietrich about  
19 auditing and analysis by Staff, and I heard one of  
20 your answers earlier to a question.

21 You emphasized that Empire did the  
22 analysis in response to data requests that Staff  
23 issued to Empire; is that correct?

24 **A** Correct.

25

1           **Q    What was the purpose of Staff having**  
2           **Empire do additional analyses?  Or purposes?**

3           A    Well, to -- to test some of the -- the  
4           assumptions that were made.  And they -- the plans  
5           that were presented in the customer savings plan --  
6           well, as part of the generation fleet savings  
7           analysis.

8                    I think originally there were nine plants  
9           and -- and three of primary interest along with  
10          Plan 1, which was the current plan.  But Plan 2, 3  
11          and 4.  And then through our -- our data requests,  
12          we were very much interested in refining and  
13          understanding the plan that would keep Asbury to be  
14          sure that we understood that.

15                   There were some other plans that we  
16          requested that moved some of the retirement dates  
17          around to be more consistent with what we thought  
18          was more reasonable.

19           **Q    When you say test assumptions, what do you**  
20           **mean by -- what assumptions were you testing?**

21          A    We were -- well, one was treating load as  
22          an uncertain factor.  In the application, load was  
23          treated with certainty.  And so we had analysis  
24          requested and analysis was performed to treat load  
25



1 is uncertain, a high case and a low case.

2 The other ones primarily centered around  
3 the timing of the retirement of some of the -- the  
4 other assets like the Energy Center 1 and 2. Some  
5 of the timing of the -- I think the seller. I  
6 can't recall exactly.

7 **Q Well, would it be accurate to characterize**  
8 **what you're calling testing the assumptions to ask**  
9 **the runs be done to test the sensitivity of the**  
10 **assumptions?**

11 A Well, basically, create different  
12 alternative resource plans.

13 **Q And what was the purpose of having Empire**  
14 **create different -- or alternative resource plans?**

15 A To understand if there were modifications  
16 to some of the primary plans that would improve the  
17 results or -- or not improve the results.

18 **Q And I gather, at some point, Staff reached**  
19 **a comfort level?**

20 A We did. As well as we ran out of time. I  
21 -- I think we -- I think we achieved some -- a  
22 better understanding on Asbury in particular and  
23 whether to retire or to keep Asbury.

24 MR. WILLIAMS: No further questions.

25

1 JUDGE BUSHMANN: Redirect by Staff? Do  
2 you have any redirect?

3 MS. FORCK: Oh, sorry. Yes.

4 REDIRECT EXAMINATION

5 BY MS. FORCK:

6 Q I guess I'll start where we left off.  
7 Mr. Rogers, Mr. Williams was asking you about  
8 whether Staff reached a comfort level after  
9 requesting all this modeling be done.

10 Is it fair to say that Staff reached a  
11 comfort level with the stipulation that Staff  
12 signed onto?

13 A Yes.

14 Q Okay. There was a lot of discussion about  
15 the fact that Staff does independent analysis. But  
16 that the company provides the data.

17 When you reviewed company data, were you  
18 able to create, for example, charts to help you  
19 analyze and reach your own conclusions?

20 A Yes. And some of those important charts  
21 are in my testimony.

22 Q Okay. Do you recall the questions from  
23 Ms. Bell regarding forecasted data and the use of  
24 forecast?

25

1 A Yes.

2 Q Isn't it common in every IRP for the  
3 company to perform and run modeling?

4 A Yes.

5 Q And Staff then reviews the company's  
6 models, right?

7 A Correct.

8 Q And isn't the purpose of an IRP to be  
9 forward-looking?

10 A Yes.

11 Q And so do the company models for IRPs use  
12 forecasted data?

13 A It's all you have to -- have to use. Yes,  
14 it is.

15 Q Okay. In the original application in this  
16 case, did Empire's original projections rely on  
17 2016 forecasts or 2017 forecasts?

18 A It was the ABB fall 2016 forecast.

19 Q And did Staff ask that the models be run  
20 using 2017 forecasts?

21 A No.

22 Q So at what point did you recognize a need  
23 to update the forecast?

24 MR. WILLIAMS: I'm going to object. He  
25

1 just said that Staff didn't require -- request that  
2 there be an update. And I think this goes beyond  
3 the scope of the cross.

4 MS. FORCK: I'll withdraw. Nothing  
5 further.

6 JUDGE BUSHMANN: Thank you, Mr. Rogers.  
7 You may step down. I think we're ready for our  
8 last Staff witness and last witness of the day.

9 MARK OLIGSCHLAEGER,  
10 being first duly sworn to testify the truth, the whole  
11 truth, and nothing but the truth, testified as follows:

12 DIRECT EXAMINATION

13 BY MS. MERS:

14 JUDGE BUSHMANN: Please be seated.

15 **Q (By Ms. Mers) Can you please state and**  
16 **spell your name for the record?**

17 A My name is Mark L. Oligschlaeger,  
18 O-l-i-g-s-c-h-l-a-e-g-e-r.

19 **Q And who are you employed by and in what**  
20 **capacity?**

21 A I am employed by the Missouri Public  
22 Service Commission as the Manager of the Auditing  
23 Department.

24 **Q And did you prepare rebuttal testimony**  
25

1 that has been marked as Exhibit 101 and contribute  
2 to the Staff affidavit in support of the  
3 non-unanimous stipulation and agreement, which has  
4 been marked as 103-C and 104-P?

5 A I did.

6 Q Okay. Do you have any changes to your  
7 testimony?

8 A I do not.

9 Q If I asked you the questions today, would  
10 your answers be same?

11 A They would.

12 Q And are those answers true and accurate to  
13 the best of your knowledge and belief?

14 A They are.

15 MS. MERS: I would tender the witness for  
16 cross.

17 JUDGE BUSHMANN: Do you want to offer the  
18 exhibits?

19 MS. MERS: Oh, yes. Yes, I will. I would  
20 offer Exhibit 101, and then I'll go ahead and offer  
21 103 and 104.

22 JUDGE BUSHMANN: Any objections to their  
23 receipt? Hearing none, they're admitted.

24 (Staff Exhibits 101, 103 and 104 were  
25

1 offered and admitted into evidence.)

2 MS. MERS: Now I will tender the witness  
3 for cross.

4 JUDGE BUSHMANN: First cross would be  
5 Empire.

6 CROSS-EXAMINATION

7 BY MS. KNOWLTON:

8 Q Good evening, Mr. Oligschlaeger.

9 A Good evening.

10 Q Can you think of another case where Empire  
11 filed the stipulation with other parties governing  
12 a situation involving the future participation in  
13 the generation unit to be built?

14 A I think that generally describes Empire's  
15 application for what was known as a regulatory plan  
16 in relation to its involvement with the IATAN 2  
17 generating unit.

18 Q Would you describe at a high level what  
19 that experimental regulatory plan approval related  
20 to?

21 A Well, what Empire and, actually, KCP&L had  
22 a companion case, what these companies were  
23 seeking, I guess, was some sort of road map to  
24 proceed with construction of a -- what was going to  
25

1 be a very expensive generating station.

2 And, ultimately, the parties were able to  
3 agree, or to stipulate, in my recollection, that  
4 the decisional prudence of entering into the IATAN  
5 2 generating unit would not be challenged by the  
6 parties in future rate cases.

7 In relation, now I'm not -- the Commission  
8 -- that's the signatories. The Commission itself,  
9 I don't think was asked to make any specific  
10 prudence pre-approvals. And I don't believe they  
11 did.

12 And there were also a number of other  
13 provisions in the regulatory plan involving a  
14 number of different rate-making areas and making  
15 commitments in terms of future rate treatment of  
16 various items.

17 MS. KNOWLTON: I have no further  
18 questions.

19 JUDGE BUSHMANN: MECG?

20 MR. WOODSMALL: No questions.

21 JUDGE BUSHMANN: Division of Energy?

22 MR. POSTON: No questions.

23 JUDGE BUSHMANN: Renew Missouri?

24 MR. OPITZ: No, thank you, Judge.

25

1 JUDGE BUSHMANN: City of Joplin?

2 MS. BELL: Yes. Thank you.

3 CROSS-EXAMINATION

4 BY MS. BELL:

5 Q In your rebuttal testimony, you talked  
6 about Asbury and the regulatory asset treatment  
7 that Empire requested; is that correct?

8 A That's correct.

9 Q And you heard Mr. Swain's testimony is  
10 that, in the future if Empire seeks to take Asbury  
11 offline early, it would still make a request that  
12 that regulatory asset -- it would be booked as a  
13 regulatory asset; is that correct?

14 A Well, nothing in the -- the stipulation  
15 would prevent Empire from seeking treatment.  
16 There's also nothing in the stipulation that would  
17 require other signatories to support it or not  
18 support it.

19 Q Okay. Do you agree with Mr. Meyers'  
20 calculation that the rate impact will be 12 percent  
21 on Empire's customers as a result of the wind?

22 A I have not done any kind of in-depth  
23 analysis of that.

24 Q Okay. Okay. So if next year Empire  
25



1 decides to take Asbury offline and request  
2 treatment as a regulatory asset, then, essentially,  
3 if customers are required to pay the return on and  
4 return of that investment, then they're paying the  
5 same as when it's open; is that correct?

6 A Well, I mean, I guess Empire theoretically  
7 could ask for a number of different rate-making  
8 treatments.

9 I suspect, as they did in this case, they  
10 would ask for full recovery of a return on and of  
11 that station. If they do ask that and if that's  
12 granted, then your -- your assumption would be  
13 correct.

14 There would be no real difference between  
15 that and inclusion in rate of the unit while it is  
16 operating.

17 Q Okay. But customers would lose the  
18 benefit of the generation from Asbury that sold  
19 into the SPP market, correct?

20 A If Asbury is retired, that's correct.

21 Q And if Asbury is retired and the  
22 regulatory asset treatment is granted by the  
23 Commission, then that would be an additional rate  
24 increase on customers?

25

1           A    Well, in terms of the return on and of the  
2   unit, I think we earlier discussed there probably  
3   wouldn't be a material difference.

4            If there were other impacts of taking  
5   Asbury offline, that would increase Empire's  
6   revenue requirement. Yes. That would be  
7   additional beyond what is being considered today.

8           **Q    Can you summarize your comments on tax**  
9   **equity in your -- in the Staff affidavit?**

10          A    Let me turn to it. Essentially, I am  
11   stating that Staff, in this particular application  
12   and these circumstances, support the use of tax  
13   equity financing for these specific projects within  
14   the parameters already agreed to by Empire and, as  
15   well, there is -- in conjunction with the customer  
16   protections that are also in the agreement.

17          **Q    The stipulation contains a range of**  
18   **sharing between Empire and the tax equity partner**  
19   **as far as capital cost. Is that your**  
20   **understanding?**

21          A    In terms of their -- the tax equity  
22   partner's capital contribution?

23          **Q    Yes.**

24          A    Yes. I -- my understanding, that is the  
25

1 not, at this point, a fixed percentage.

2 **Q Okay. And changing that percentage**  
3 **changes the estimated customer savings; is that**  
4 **correct?**

5 A Yes. If you were to -- I mean, the  
6 capital contribution goes towards rate base  
7 evaluation. And if you change the valuation of  
8 rate base, certainly, in isolation, that will  
9 impact customers -- customer rates, customer  
10 savings, all those things.

11 **Q So it impacts rate and savings, correct?**

12 A Well, let me think about that. Yes. I  
13 think it would impact both.

14 **Q Did Staff ask Empire to perform an**  
15 **analysis at the higher threshold proposed in the**  
16 **stipulation?**

17 A I'm not aware that we did.

18 **Q So you have not seen what the customer**  
19 **savings would be under that scenario?**

20 A Under a different scenario than the 40  
21 percent that I think was initially?

22 **Q Correct.**

23 A No. I have not seen anything.

24 **Q Okay. And do you know the rate impacts**  
25

1 with a -- if Empire was forced to contribute the  
2 higher threshold of capital contributions?

3 A What the impact of that would be on  
4 customer rates?

5 Q Correct.

6 A I do not know.

7 Q And Staff is comfortable with -- is it  
8 reasonable for Staff to be comfortable with the  
9 situation that authorizes -- with -- with the  
10 stipulation without seeing that data?

11 A I -- I think Staff is satisfied, as a  
12 general concept, tax equity financing can lead to  
13 savings for customers.

14 And I think within the broad parameters of  
15 what's been discussed here, that is certainly our  
16 expectation that that would take place.

17 MS. BELL: No further questions.

18 JUDGE BUSHMANN: Public Counsel?

19 MR. WILLIAMS: I didn't until Empire asked  
20 you about the Empire regular plan.

21 CROSS-EXAMINATION

22 BY MR. WILLIAMS:

23 Q Do you recall when Empire and Staff and  
24 other parties entered into the Empire regulatory

25

1 plan regarding IATAN 2?

2 A My recollection is it was in 2005.

3 Q And at that point in time, was Empire  
4 participating in the SPP energy market?

5 A I'm not sure that the SPP energy market  
6 existed at that time. So I -- I would have to say  
7 I don't know.

8 Q So you don't know when the SPP energy  
9 market started?

10 A No. Not off the top of my head.

11 Q Would you be surprised if it was after  
12 2010?

13 A I recall I think the day ahead market  
14 started around that time. And maybe we're talking  
15 about the same thing. I'm not sure. But --

16 Q Well, day ahead in the real-time market.

17 A Okay. Yes. I generally recall that that  
18 would have been, you know, seven, eight years ago.

19 Q And at the time of the Empire regulatory  
20 plan for IATAN 2, did Empire have sufficient owned  
21 generation and long-term purchase power agreements  
22 to meet its capacity and energy needs?

23 A At the time it entered into the IATAN 2 --

24 Q Regulatory plan.

25

1           A    -- regulatory plan? I can't answer that  
2 definitively. I do know that Empire -- about the  
3 same time it started receiving power from IATAN 2  
4 also started receiving power from another project  
5 for another project, the Plum Point plant. So my  
6 -- I guess my general belief would be that they  
7 were in the position of needing power at that time,  
8 additional power sources.

9           **Q    And that would be to serve native -- their**  
10 **residential customers in any wholesale contracts it**  
11 **may have had?**

12          A    Well, their -- their retail customers.  
13 Yes.

14          **Q    IATAN 2 is jointly owned, is it not?**

15          A    It is.

16          **Q    And did Empire, I guess I'll use the word**  
17 **lead the building and construction of IATAN 2?**

18          A    I -- Empire has a minority ownership in  
19 the plant. I think the majority ownership is held  
20 by Kansas City Power & Light.

21          **Q    And did Kansas City Power & Light Company**  
22 **also have a similar regulatory plan?**

23          A    It wasn't identical, but similar, yes.

24          **Q    And which plan was created first?**

25

1           A    I think it was KCP&L, but I'm not totally  
2   sure of that.

3           MR. WILLIAMS:  No further questions.

4           JUDGE BUSHMANN:  Questions, Commissioner?  
5   I have a couple of questions that the Chairman  
6   wanted me to ask on his behalf.

7                            CROSS-EXAMINATION

8   BY JUDGE BUSHMANN:

9           **Q    The first one was regarding the IATAN 2**  
10   **agreement that you talked about earlier.  How does**  
11   **what the Commission is being asked to do in this**  
12   **case compare to what the Commission was asked to do**  
13   **in the IATAN situation?**

14          A    Well, first of all, I don't -- it's been a  
15   while since I've even looked at the regulatory plan  
16   and the Commission's orders approving that  
17   stipulation and so on.  So I'm going off memory  
18   there.

19                  But I think I indicated earlier under  
20   cross, I don't believe the Commission was asked to  
21   make a decisional -- to make decisional  
22   pre-approval or prudence findings relating the  
23   IATAN 2 unit at that time.

24                  That was something that bound the  
25

1 signatories. And I would say, in general, my  
2 understanding is what's being sought from the  
3 Commission here would be similar.

4 Q Okay. Okay. Second question was, if a  
5 majority of the Commission ended up being in favor  
6 of the amended plan that the company has put  
7 forward, in your opinion, what do you think the  
8 worst case scenario would be for rate --  
9 ratepayers?

10 A I think it depends on how you define worst  
11 case scenario. I think, from my knowledge of the  
12 discussions that went into the customer protection  
13 plan that's part of the stip., the \$35 million cap  
14 in terms of the shareholder risk, I think, was  
15 pretty close to what we considered to be a worst  
16 case scenario.

17 In other words, customers would be covered  
18 under that case. And that's not impossible,  
19 obviously. But things could, I guess, be worse.  
20 But we -- we just don't see much of a chance of  
21 that.

22 JUDGE BUSHMANN: Okay. Thank you. Is  
23 there any recross based on either of those  
24 questions? Mr. Williams?

25



1 MR. WILLIAMS: Oh, yes.

2 RECROSS EXAMINATION

3 BY MR. WILLIAMS:

4 Q Mr. Oligschlaeger, was a certificate  
5 involved in the IATAN regulatory plan?

6 A A certificate -- like a CCN case or  
7 application?

8 Q CCN case.

9 A It may have been. I don't recall.

10 Q Was an IATAN 2 constructed on an existing  
11 generation site?

12 A It was.

13 Q And didn't that plan involve a series of  
14 rate cases that were designed to maintain  
15 investment grade debt ratings for the utility?

16 A There were provisions in both regulatory  
17 plans of special regulatory mechanisms designed to  
18 ensure that the companies at least had a reasonable  
19 opportunity to maintain their debt credit ratings  
20 at reasonable levels.

21 Q And wasn't that accomplished by amounts  
22 included in -- What do they call those? Regulatory  
23 amortizations?

24 A Regulatory plan amortizations.

25

1           **Q    Okay.  Regulatory plan amortizations that**  
2           **effectively required increased amounts from**  
3           **Empire's customers than it would have gotten**  
4           **strictly on a standard cost of service based**  
5           **rate-making?**

6           A    Yes, it did.  With the additional amounts  
7           collected ultimately being booked to the company's  
8           depreciation reserve, so the customers would get  
9           credit for those amounts forwarded, if you will, to  
10          the company in order to maintain their credit  
11          ratings.

12          **Q    That's substantially different than what's**  
13          **present in this stipulation plan, is it not?**

14          A    Yeah.  I don't believe there's been -- the  
15          company made any claim that entering into these  
16          plans would necessarily have an expected major  
17          detrimental impact on their credit ratings.

18          **Q    And when you're saying these plans, you're**  
19          **referring to the plan in this case, are you not?**

20          A    The additional wind.  Yes.

21                MR. WILLIAMS:  No further questions.

22                JUDGE BUSHMANN:  Any other recross?

23          Redirect?

24                                REDIRECT EXAMINATION

25

1 BY MS. MERS:

2 Q We can start with the regulatory plan.  
3 Can you list the signatories to the regulatory plan  
4 for KCPL or Empire?

5 A Certainly not a comprehensive list.  
6 Obviously, the companies were signatories. The  
7 Staff was. My -- I'm about 99 percent sure the  
8 Office of Public Counsel was and I believe some of  
9 the major customer groups. MIEC, MECG to the  
10 extent they existed at that time and so on.

11 Q Okay. And you had a lot of questions from  
12 Counsel from OPC about the -- the need of the  
13 utilities at that time for capacity.

14 Are you -- when you discussed the  
15 regulatory plan, would you describe your comparison  
16 as more a comparison of the requests involved as  
17 opposed to the specifics of the project or the  
18 needs behind them?

19 A Yeah. In general, the type of -- what's  
20 the word I want to use? Yes. It goes to the type  
21 of the request, certainly more to the specifics  
22 which -- which are quite different in the two  
23 cases.

24 Q Okay. You also had a question from  
25

1 Counsel from OPC about the regulatory plan being  
2 designed to maintain debt and credit ratings. Can  
3 you point to anything in the -- even in the  
4 stipulation that is similar to that?

5 A Certainly, the intent of the section which  
6 deals, among other things, with maintaining costs  
7 equivalent to a BBB credit rating for Empire, which  
8 I understand is the their credit rating would --  
9 would fill much the same purpose.

10 Q And I think there was also mention of it  
11 being a -- a plan of rate cases going forward.  
12 Would you consider what the signatories  
13 contemplated as part of the customer protection  
14 plan also being a plan of rate cases going forward  
15 to provide the flow back of the customer benefit  
16 mechanism as -- as activated, that \$35 million?

17 A Yes. The -- it is the least, to some  
18 degree, an agreement on how to handle certain  
19 situations as they arrive in the future if there's  
20 a major discrepancy between the assumptions made in  
21 entering into the agreement as -- from actual  
22 conditions.

23 Q You had a question from Counsel for Joplin  
24 about if we modeled -- or asked Empire to model a  
25

1 40 -- or anything higher than the 40 percent tax  
2 equity contribution. Can Staff model or request  
3 the company to model every scenario outcome  
4 alternative that could happen in a case?

5 A I think there are restrictions that has to  
6 be, you know, reasonable requests in terms of both  
7 the -- the time and the efforts the company would  
8 have to put in in such activities.

9 Q And would you describe the stipulation, in  
10 Staff's view, coming to that stipulation as having  
11 customer protections and enough modeling support  
12 that provided us comfort that -- for most  
13 situations?

14 A Yes.

15 Q Okay. And is it -- is there anything in  
16 the stipulation that you can point to that talks  
17 about, you know, notice of the agreement with the  
18 tax equity partner or signatories' ability to make  
19 sure things are consistent with the parameters that  
20 were discussed?

21 A Well, yes. I believe the stipulation  
22 requires the company to, on a timely basis, inform  
23 at least the signatories of decisions made in  
24 regard to the tax equity partners.

25

1           And there's also a provision to -- if any  
2   of the final agreements differ from the parameters  
3   outlined in the agreement, then the company must  
4   come forward and discuss why they believe that --  
5   those -- those changes in the parameters are  
6   reasonable.

7           **Q   One last question.  From -- from your**  
8   **recollection, is the total dollar cap on**  
9   **shareholder sharing over what Staff believed the**  
10  **worst case scenario to be?**

11          A   I think you kind of threw me there.  Can  
12  you repeat that?

13          **Q   The 35 million, from your recollection,**  
14  **was -- is that amount over what the worst case**  
15  **scenario Staff believed could happen?**

16          A   It was either, I think, over or equivalent  
17  to is my understanding.

18          MS. MERS:  Okay.  I have nothing further.  
19  Thank you.

20          JUDGE BUSHMANN:  Thank you,  
21  Mr. Oligschlaeger.  You may step down, sir.  That  
22  completes our testimony for today.

23          MR. WOODSMALL:  Your Honor?

24          JUDGE BUSHMANN:  Yes, sir.

25

1           MR. WOODSMALL: Mr. Meyer, if at all  
2 possible -- I don't know how much time people have  
3 for him. Anyway, he'd like to get back to  
4 St. Louis.

5           JUDGE BUSHMANN: How much cross do we have  
6 for Mr. Meyer?

7           MS. BELL: Quite a bit. Not as much as  
8 Empire, but more than Staff.

9           JUDGE BUSHMANN: It will be a while. I  
10 think we need to take him first in the morning

11          MR. WOODSMALL: Okay. Thank you.

12          JUDGE BUSHMANN: All right. Sorry that  
13 can't work out.

14          MR. WOODSMALL: I understand. What time  
15 are we starting tomorrow?

16          JUDGE BUSHMANN: 8:30.

17          (The proceedings ended at 7:40 p.m.)

18

19

20

21

22

23

24

25

1	I N D E X	
2	WITNESS: BLAKE MERTENS	PAGE
3	Direct Examination by Mr. Cooper	300
4	Cross-Examination by Ms. Forck	302
5	Cross-Examination by Mr. Woodsmall	306
6	Cross-Examination by Mr. Poston	309
7	Cross-Examination by Mr. Robertson	311
8	Cross-Examination by Ms. Bell	319
9	Cross-Examination by Mr. Williams	342
10	Cross-Examination by Chairman Hall	392
11	Recross Examination by Ms. Forck	406
12	Recross Examination by Mr. Woodsmall	410
13	Redirect Examination by Mr. Cooper	413
14	WITNESS: TODD MOONEY PAGE	
15	Direct Examination by Ms. Knowlton	417
16	Cross-Examination by Ms. Mers	419
17	Cross-Examination by Mr. Woodsmall	421
18	Cross-Examination by Ms. Bell	437
19	In-Camera Cross-Examination by Ms. Bell	446
20	Continued Cross-Examination by Ms. Bell	454
21	Cross-Examination by Mr. Williams	459
22	Cross-Examination by Chairman Hall	477
23	Recross Examination by Ms. Bell	486
24		
25	Redirect Examination by Ms. Knowlton	490



1	I N D E X (CONTINUED)	
2	WITNESS: TIMOTHY WILSON	PAGE
3	Direct Examination by Ms. Knowlton	492
4	Cross-Examination by Ms. Bell	495
5	Cross-Examination by Mr. Williams	502
6	WITNESS: CHRISTOPHER KRYGIER	PAGE
7	Direct Examination by Ms. Knowlton	503
8	Cross-Examination by Ms. Forck	505
9	Cross-Examination by Mr. Woodsmall	518
10	Cross-Examination by Ms. Bell	520
11	Cross-Examination by Mr. Williams	538
12	Redirect Examination by Ms. Knowlton	557
13		
14	WITNESS: DAVID HOLMES	PAGE
15	Direct Examination by Ms. Knowlton	559
16	Cross-Examination by Ms. Forck	561
17	Cross-Examination by Mr. Woodsmall	573
18	Cross-Examination by Ms. Bell	577
19	Redirect Examination by Ms. Knowlton	595
20	WITNESS: DAVID SWAIN	PAGE
21	Direct Examination by Mr. Cooper	598
22	Cross-Examination by Ms. Mers	601
23	Cross-Examination by Ms. Bell	602
24	Cross-Examination by Mr. Williams	605
25	Redirect Examination by Mr. Cooper	609

I N D E X (CONTINUED)		
1		
2	WITNESS: NATELLE DIETRICH	PAGE
3	Direct Examination by Ms. Mers	610
4	Cross-Examination by Mr. Cooper	613
5	Cross-Examination by Mr. Woodsmall	615
6	Cross-Examination by Ms. Bell	616
7	Cross-Examination by Mr. Williams	620
8	Cross-Examination by Judge Bushmann	622
9	Recross Examination by Mr. Williams	623
10	Redirect Examination by Ms. Mers	624
11	WITNESS: JOHN ROGERS	PAGE
12	Direct Examination by Ms. Forck	629
13	Cross-Examination by Mr. Woodsmall	633
14	Cross-Examination by Ms. Bell	637
15	Cross-Examination by Mr. Williams	648
16	Redirect Examination by Ms. Forck	651
17	WITNESS: MARK OLIGSCHLAEGER	PAGE
18	Direct Examination by Ms. Mers	653
19	Cross-Examination by Ms. Knowlton	655
20	Cross-Examination by Ms. Bell	657
21	Cross-Examination by Mr. Williams	661
22	Cross-Examination by Judge Bushmann	664
23	Recross Examination by Mr. Williams	666
24	Redirect Examination by Ms. Mers	667
25	Reporter's Certificate	680

E X H I B I T S				
EMPIRE	EXHIBIT	DESCRIPTION	OFFERED	ADMITTED
1				
2	Exhibit 1	Affidavit of	561	561
3		David Holmes		
4	Exhibit 2	Direct Testimony	505	505
5		of Christopher		
6		Krygier		
7	Exhibit 3	Surrebuttal	505	505
8		Testimony of		
9		Christopher		
10		Krygier		
11	Exhibit 4-C	Affidavit	505	505
12	Exhibit 4-P	Affidavit	505	505
13	Exhibit 5	Direct Testimony	***	***
14		of Gregory E.		
15		Macias		
16	Exhibit 6-C	Direct Testimony	***	***
17		of James McMahon		
18	Exhibit 6-P	Direct Testimony	***	***
19		of James McMahon		
20	Exhibit 7-C	Surrebuttal	***	***
21		Testimony of		
22		James McMahon		
23	Exhibit 8-C	Affidavit of	***	***
24		James McMahon		
25	Exhibit 8-P	Affidavit	***	***
26	Exhibit 9	Direct Testimony	302	302
27		of Blake Mertens		
28	Exhibit 10	Surrebuttal	302	302
29		Testimony of		
30		Blake Mertens		
31	Exhibit 11	Direct Testimony	419	419
32		of Todd Mooney		

E X H I B I T S				
EMPIRE EXHIBIT	DESCRIPTION	OFFERED	ADMITTED	
1				
2				
3	Exhibit 12-C	Surrebuttal Testimony of Todd Mooney	419	419
4				
5	Exhibit 12-P	Surrebuttal Testimony of Todd Mooney	419	419
6				
7	Exhibit 13	Affidavit of Charlotte T. North	***	***
8				
9	Exhibit 14	Direct Testimony of Robert Sager	419	419
10				
11	Exhibit 15	Revise Direct Attachment RWS-1	419	419
12				
13	Exhibit 16	Direct Testimony of David Swain	600	600
14				
15	Exhibit 17	Surrebuttal Testimony of David Swain	600	600
16				
17	Exhibit 18	Direct Testimony of Dane Watson	***	***
18	Exhibit 19-C	Direct Testimony of Timothy Wilson	494	494
19				
20	Exhibit 19-P	Direct Testimony of Timothy Wilson	494	494
21	Exhibit 20	Surrebuttal Testimony of Timothy Wilson	494	494
22				
23				
24				
25				

1	E X H I B I T S (CONTINUED)			
2				
3	STAFF			
4	EXHIBIT	DESCRIPTION	OFFERED	ADMITTED
5	Exhibit 100	Rebuttal	613	613
6		Testimony of		
		Natelle Dietrich		
7	Exhibit 101	Rebuttal	632	632
8		Testimony of		
		Mark Oligschlaeger		
9	Exhibit 102	Rebuttal	632	632
10		Testimony of		
		John Rogers		
11	Exhibit 103	Staff Affidavit	654	654
12	Exhibit 104	Staff Affidavit	654	654
13	Exhibit 105	Corrected Table 5	632	632
14				
15	OPC			
16	EXHIBIT	DESCRIPTION	OFFERED	ADMITTED
17	Exhibit 212	Not Described	***	***
18	Exhibit 213	Not Described	***	***
19	Exhibit 214	Data Request	354	354
20	Exhibit 215	Update to Data	354	354
		Request		
21	Exhibit 216	Spreadsheet	545	545
22	Exhibit 217	Document Showing	545	545
		Estimate		
23				
24				
25				

1	E X H I B I T S (CONTINUED)			
2	CITY OF			
	JOPLIN			
3	EXHIBIT	DESCRIPTION	OFFERED	ADMITTED
4	Exhibit 501	Public Comments	299	Not Admitted
5	Exhibit 502	Not Identified	***	***
6				
7				
8	(Original exhibits were retained by the Missouri Public Service Commission.)			
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				



EVIDENTIARY HEARING - Vol. 5 5/10/2018

<b>A</b>	<p><b>accepted</b> 494:6  <b>access</b> 618:10  <b>accessing</b> 393:1  <b>Accident</b> 560:9  <b>accomplished</b>  592:22  598:18 666:21  <b>account</b> 395:5  416:19 515:17  621:4  <b>accounting</b>  510:10 512:1  519:14 621:5  <b>accredited</b>  317:2 388:17  388:23  389:10,15,21  390:15,17,21  <b>accrediting</b>  390:6  <b>accumulated</b>  566:13  <b>accuracy</b>  338:10,11  <b>accurate</b> 347:8  347:15,21  348:15 420:4  420:9 428:9  502:23,24  551:11,12 571:1  603:16 612:13  612:18 632:18  650:7 654:12  <b>accurately</b>  353:4 431:23  432:2 434:13  680:12  <b>accused</b> 516:18  517:9  <b>accuses</b> 517:17  <b>achieve</b> 473:15  473:18 476:24  481:18 488:24  489:4 583:7  <b>achieved</b>  366:14 474:1  479:13 650:21</p>	<p><b>achieves</b>  459:10  <b>achieving</b>  476:17  <b>acknowledge</b>  545:7  <b>acknowledges</b>  640:3  <b>acquire</b> 360:15  360:20  507:20  555:14  <b>acquisition</b>  324:15  <b>act</b> 441:11,19,24  <b>action</b> 516:20  517:1,6,8  <b>activated</b>  669:16  <b>active</b> 403:19  <b>activities</b> 383:5  402:22 404:8  670:8  <b>activity</b> 403:16  <b>actors</b> 515:18  <b>actual</b> 304:21  338:24  339:21 340:3  347:5 369:8  406:1 421:22  425:16 472:11  482:21 491:23  500:19  532:23  585:18 588:10  588:16 589:6  593:7 594:8  594:11 595:11  614:5 618:18  626:23 638:8  638:16 669:21  <b>adapt</b> 617:10  <b>add</b> 374:7 391:5  432:8 433:18  434:7 550:21  566:13 571:2  571:8 578:24</p>	<p>583:12 607:2  607:4,18,19  <b>added</b> 318:11  324:7 358:9  359:4 433:22  440:24 524:5  581:21 583:11  586:20  597:12  <b>adding</b> 392:9  415:21 416:10  524:20  537:19  578:22  592:16 607:9  <b>addition</b> 303:9  323:16 361:2  391:7,21 481:5  612:11  <b>additional</b>  310:19 345:21  371:9,18 374:7  396:9,10  397:11,12  400:12,23,24  407:24 422:6  468:24 479:3  494:24  528:16 534:19  537:19  586:20 612:4  612:6 638:3  649:2 658:23  659:7 663:8  667:6,20  <b>additions</b>  391:20 544:21  544:23  607:14,22  <b>address</b> 357:2  432:24  508:12  <b>adjective</b> 615:18  <b>adjust</b> 592:4  <b>adjusted</b>  460:20 514:1  608:12</p>	<p><b>adjusting</b> 346:1  <b>adjustment</b>  386:11,14  510:13 511:3,6  548:1,16,23  549:5  <b>Administration</b>  418:3  <b>Administrative</b>  455:4  <b>admit</b> 486:7  632:21  <b>admits</b> 433:12  <b>admitted</b>  302:16 354:17  419:17,19  494:4 505:19  545:9,10,12  561:18,19  600:21,23  613:6,8 633:2  633:4 654:23  655:1 676:2  677:2 678:3  678:15 679:3  679:4  <b>adopt</b> 418:22  523:9 534:9  535:2  <b>adopted</b> 477:11  477:17 535:20  642:19  <b>advanced</b> 314:9  469:23  <b>advancements</b>  377:13  <b>advancing</b> 421:1  436:16  <b>advantage</b> 318:1  <b>advantageous</b>  393:8  <b>adverb</b> 615:23  <b>AEP</b> 607:4,18  625:20  <b>Affairs</b> 504:5  <b>affect</b> 371:14  484:20</p>
----------	---	--	---	---



EVIDENTIARY HEARING - Vol. 5 5/10/2018

537:20 571:7 582:11 646:2 <b>affidavit</b> 302:24 303:7 320:19 335:23 340:16,20,24 341:8 362:4,7 363:1 423:12 430:6 434:19 439:20,22,23 455:13,14,21 496:1 504:8 504:12,17 506:24 509:3 509:20 512:13 515:1 517:16 522:23 533:11 554:2 556:7 560:21 561:1,5 561:8 563:17 564:23 565:16 574:16 575:3 576:3 613:13 617:4,4 618:19 619:18 624:12 630:11 632:14,17,23 633:16 634:15 654:2 659:9 676:3,9,10,18 676:20 677:7 678:11,12 <b>affiliate</b> 361:5,6 361:7 469:20 470:16,20,22 <b>affiliates</b> 361:18 470:6,9 484:12 <b>afternoon</b> 459:24 460:1 477:9 492:20 492:22 494:10,11 495:22,23 502:3,4 503:21,23 506:1,2	520:19,20 539:8,9 560:2,3 562:1 562:2 <b>ago</b> 571:4 662:18 <b>agree</b> 307:8 334:16,18,20 336:3,5,7 337:5,8 378:24 383:15 383:17 384:10 384:12 387:20 388:5 420:13,14 436:8,19,23 436:24 454:5 456:13 487:9 507:7 511:18 511:22 523:14 534:21 535:1 536:13,17,20 537:14 565:12 565:15,17,21 573:19 584:1 586:19 587:4 587:18 614:2 656:3 657:19 <b>agreed</b> 313:19 358:5 507:24 581:22 626:9 659:14 <b>agreement</b> 311:6,8,16 321:8 335:24 341:13,22 376:9 380:4 384:18 389:12 394:8 398:6 398:18 423:8 424:1,5,9,11,18 425:12,14 454:11,21 456:10 457:17 457:18 458:18 459:9 460:4 460:5 463:2	471:21 479:11 480:4 485:3 487:13 498:9 499:3,5 500:6 501:2 501:20 506:16 513:2 522:22 536:2 536:9 540:15 567:21 568:9 569:20 571:1 572:15,18,23 575:8 581:22 582:2,9,17 583:15 584:21 585:1 591:16 597:3 603:5 606:12 611:10 611:10,20 619:10 623:4 623:15 628:2 634:10 636:4 636:5 645:12 645:16 654:3 659:16 664:10 669:18,21 670:17 671:3 <b>agreements</b> 318:20 322:14 329:4,12,16 374:10 389:4 435:23 436:1 436:7 460:10 469:20,23 497:17 498:11 501:14 520:23 520:24 521:3 521:7,13,20 566:21 570:22 589:17 662:21 671:2 <b>ahead</b> 333:6 350:10 361:5 369:20 372:14 381:6 413:18,23,24	414:3,6,15,18 414:20,23 545:16 560:16 592:24 597:23 598:1 612:20 630:19 654:20 662:13,16 <b>Alaris</b> 296:22 <b>Algonquin</b> 362:2 484:11 488:23 489:15,19 <b>Algonquin's</b> 488:4 <b>Algonquin/Lib...</b> 324:2 <b>all-time</b> 301:23 327:1 344:15 <b>alleviate</b> 519:22 <b>allow</b> 328:16 346:2,21 358:1,2 367:18 407:3 410:4 457:10 457:10 463:19 480:22 494:13 495:2 519:24 634:11 <b>allowed</b> 325:9 325:13,16 348:7 349:1,13 349:18,19,24 352:21,21 353:7 407:20 421:21 581:16 616:21 <b>allows</b> 313:22 482:15 519:19 635:7 <b>alluded</b> 518:5 523:1 556:17 <b>aloud</b> 515:5 <b>alternative</b> 409:8,16 650:12,14 670:4	<b>alternatives</b> 552:12 <b>amended</b> 302:4,6 505:9,11 600:11,13 601:11 623:3 665:6 <b>Ameren</b> 390:24 391:4 607:1,9 607:17 <b>American</b> 314:19 <b>amortization</b> 426:19 <b>amortizations</b> 666:23,24 667:1 <b>amortized</b> 458:10 513:15 <b>amount</b> 307:11 307:12,12,19 323:2 393:24 402:8 422:13 424:2,19 426:18 429:12 429:21 432:11 466:21 467:23 474:17 477:23 483:7 491:19 494:17 497:4 518:4 563:7 569:5 569:21 574:6 574:7 582:4,5 642:1 648:2,7 671:14 <b>amounts</b> 307:16 487:13 515:7 517:21 632:3 666:21 667:2 667:6,9 <b>analyses</b> 356:5 649:2 <b>analysis</b> 306:4 326:23 334:8 350:1 361:24
---	---	---	---	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

366:9,10,11,12 366:17,17,18 368:11,15,17,18 368:23 369:5 370:6,10 371:2,9,21,23 372:21,24 373:1,23 387:19 391:23 396:12,16,17 438:6 441:18 441:20,23 468:10 469:2 486:22 497:24 549:11 549:17 550:5 550:19 551:6 551:9,15,16 552:15,24 553:8 556:24 565:6,10,17,21 580:5 585:5 596:16,22 617:13,18 618:5,11,18 620:22 621:7 621:11,14 628:21 629:12 634:8 635:20 637:6,19,21 637:23 638:1 638:4 639:18 641:10 642:7 643:14,17 648:19,22 649:7,23,24 651:15 657:23 660:15 analyze 349:8 370:16 651:19 analyzed 556:20 analyzing 337:1 621:2 announcing 607:2,4 annual 317:6	331:19 338:16 369:1,5,5 467:5 487:2 488:10,11,18 499:15 549:10 549:22 550:3 550:20 551:6 551:10,17 574:3 582:13 582:16,19 588:7 634:23 642:6,17 annually 313:11 460:20 answer 301:12 315:21 325:20 334:9,16 336:16 337:20,21 341:18 352:11 359:17 372:19 373:18 374:2 374:3 385:10 391:13 400:18 410:5 416:13 418:6 454:8 457:8,10 478:2 488:16 493:8 500:5 504:9 509:7 549:23 550:22 590:11 594:15 599:14 604:20 608:18 613:24 615:5 620:1 641:21 663:1 answered 315:19 333:16 368:15 372:18 382:2 392:1 467:17 answering 393:5 431:20 497:16 answers 302:4	302:6 419:6,8 493:19,21 505:9,11 561:9 561:11 600:11 600:13 612:15 612:17 648:20 654:10,12 anticipate 360:9 514:5 anticipated 385:20 428:15 462:21 472:1,6,16,23 473:3,7,16 480:2 536:10 anticipates 470:1 anticipating 384:15,21,24 385:8 542:21 anticipation 426:15 anybody 436:21 624:5 640:20 anyone's 333:15 anyway 325:23 326:7 372:12 554:20 672:3 apart 544:19 apologize 438:22 641:17 APP 570:6 apparent 515:23 Appeals 434:22 appear 363:7 423:7 515:24 appears 304:10 304:16 306:4 408:24 433:15 515:12 appendix 523:18 525:15 526:7 528:6 568:8 570:24 572:24	579:21 580:13 580:20 582:9 583:18 appetite 421:12 421:13,17 422:4 apples 415:1 applic 635:20 applicable 624:22 625:9 625:18 application 296:8 309:19 323:21 506:3 506:10,17 546:16 606:4 620:15 634:8 634:13 649:22 652:15 655:15 659:11 666:7 applied 441:15 461:17 496:17 530:20 577:22 apply 578:18 approach 303:5 345:8 375:10 393:20 481:2 627:17 643:4 appropriate 432:22 433:21 480:11 481:3,15 482:8 514:2 552:13,14 575:7 580:20 589:3 605:9 617:20,20 appropriately 433:5 approval 296:9 324:17,18 439:5 528:22 546:4,10 604:18 614:4	614:6,8 655:19 approvals 324:14 528:21 529:3 approve 360:8 471:5 546:6 550:14 552:5 552:7 608:5 608:6 635:22 approved 478:9 approves 463:17 546:2 approving 664:16 approximate 494:17 approximately 308:5,21 384:16,22 385:8,15,16 523:3,7 541:3 541:21 568:10 636:20 April 308:13 323:23 351:20 370:6 404:19,23 405:15,20 406:3 551:14 AQCS 407:16 arbitor 614:12 area 350:5 372:12 496:20 521:18 586:14 areas 310:20 656:14 argue 317:24 argument 510:7 510:8 Arkansas 612:7 612:8 arrangement 425:23 428:13 468:4
--	--	---	---	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

arrangements 476:6	635:22	aspects 507:16	Associates	524:24
arrears 475:11	ash 308:19	540:14 547:3	297:23	525:16 528:6
arrive 669:19	309:1 344:19	549:1	assume 332:10	536:6 539:14
arrived 430:24	345:19 346:2	assertion	347:12 355:15	539:16 549:13
617:8	346:15,17	396:14	429:10 463:17	579:20
Asbury 307:8	405:8,21	assesses	482:19 508:19	attachment
307:20 308:2	406:1 541:1,5	490:16,21	532:5 534:15	304:5 340:24
308:18 309:5	aside 534:14	assessment	543:22	341:9,10
309:8,21	asked 325:17	316:4,9 370:1	577:24,24	418:19 430:8
310:9,24 311:5	332:20	asset 379:20	578:13 579:7	455:21,23
311:9 314:6	351:23 352:18	439:5 455:6	589:8 596:6	525:20
318:21 324:14	362:14 368:12	477:18,23	assumed	533:15,16
325:1,1,5,19	382:1 407:23	481:22 605:3	352:21	565:15,23
330:8,9 349:9	409:10 413:10	605:13,17	assumes 523:3	626:22 677:11
349:19 356:4	413:16 415:15	657:6,12,13	593:12	attachments
356:6 383:13	490:23 491:6	658:2,22	assuming 340:7	306:1
383:16,24	491:10 493:17	assets 313:18	350:21 423:3	attempt 392:22
388:19	502:5 505:7	322:12 378:4	544:13 572:12	430:4
389:22 401:6	553:24 561:7	378:14 379:19	643:19 647:13	attempting
401:18 402:12	597:20 612:14	380:2,7,13	assumption	543:21
403:22	615:4 624:16	381:20 382:19	371:16 512:9	attempts
406:21 407:3	628:19 654:9	383:7 386:18	533:3 588:14	430:18 431:2
407:9,10 411:7	656:9 661:19	386:23,24	589:15,15	attend 300:4
411:12,15,22	664:11,12,20	395:20	658:12	attention
412:2,3 416:4	669:24	481:23 556:19	assumptions	345:13 375:15
439:6,10	asking 311:7	568:3 591:1,1	348:22 371:7	375:24 378:2
477:19 506:18	321:3 322:7	591:2 598:1	371:18 430:21	379:14 383:10
507:9 508:1	333:11 341:16	620:11 640:22	430:23 469:1	423:18 468:11
508:13,23	348:16 350:7	650:4	469:7 552:9	543:4
524:5 527:18	352:3 356:20	assigning 582:7	553:22 588:6	attorney 298:4
528:11 556:10	359:10 361:12	associated	596:24	539:22 547:2
556:13,18,24	362:15 364:3	308:8 334:13	635:19 649:4	616:23 624:1
605:12,16,18	364:6 365:11	346:3 366:22	649:19,20	attributable
606:6,8,16,19	365:12,19,21	368:19 370:13	650:8,10	541:5 543:18
620:11 633:22	395:6 409:22	386:14 403:16	669:20	544:24,24
634:6,12,17,19	411:5 431:19	413:12 414:18	assurance	548:1
635:12 636:2	486:14 529:14	415:21 428:7	605:2,8	attribute 468:19
636:7 637:1	546:20	428:18 494:18	assurances	attributes
645:21 646:1	549:14 575:12	509:9 511:1,20	555:16	645:6
646:3,8,9	577:19 593:11	511:24 540:14	624:20 625:5	audit 618:12
649:13	607:6,16	541:21 542:5	assure 376:19	620:22
650:22,23	608:4,6	542:16 543:9	attach 549:21	auditing 621:3,5
657:6,10	609:12 615:6	543:17 558:21	attached 303:7	648:19
658:1,18,20,21	615:8 644:8	564:5 572:8	335:23	653:22
659:5	648:18 651:7	581:7,11,15	340:20	author 315:17
Asbury's	aspect 439:7	609:14,15	362:24	authority 521:7
	491:17 553:18	627:20	420:19	522:5 534:16

EVIDENTIARY HEARING - Vol. 5 5/10/2018

535:2 616:20 616:20 <b>authorization</b> 359:20 460:2 460:7,8 470:18 546:24 <b>authorizations</b> 360:5 <b>authorize</b> 460:11 <b>authorized</b> 386:10 548:16 <b>authorizes</b> 661:9 <b>automatically</b> 358:24 <b>auxiliaries</b> 390:6,9,22 <b>auxiliary</b> 390:14 <b>availability</b> 396:4 <b>available</b> 340:6 367:23 368:1 368:3 396:16 460:14,15 461:10,12,23 462:1 530:9 530:12 621:14 <b>Avenue</b> 298:15 <b>average</b> 337:18 339:12 481:18 488:19 489:2 489:5,7,12 567:15 588:9 <b>averaged</b> 588:7 <b>averages</b> 339:13,15 <b>averaging</b> 339:23 399:18 588:2 588:3 <b>avoid</b> 637:2 <b>avoided</b> 309:5 581:23 585:2 636:7,14 <b>aware</b> 320:12	335:14 339:1 396:13 455:12 491:17 498:20 502:22 521:12 521:16 558:11 583:16 592:12 592:14 595:23 660:17 <hr/> <b>B</b> <b>B</b> 510:24 523:18 568:8 570:24 579:21 580:13 580:20,22 583:19 676:1 677:1 678:1 679:1 <b>B-l-a-k-e</b> 301:4 <b>back</b> 299:2 303:23 313:23,24 318:3,14 322:18 343:5 357:10,18 366:19 372:17 380:11 381:10 390:6,9,14 394:7,8,21 395:8 398:11 401:11 405:19 407:15 411:5 424:22 426:16,19,22 427:3,7 428:1 432:9 433:18 434:7 454:4 459:18 466:22 470:20 474:14 479:16 486:8 512:7 524:8 524:17 526:19 528:19 535:21 537:3 538:5 539:3 542:6 546:7 550:1	553:17 560:15 567:6 568:6 570:11,15 571:2,8 576:14 577:10 583:18 589:21 589:21 598:17 603:3 625:12 641:8 669:15 672:3 <b>back-up</b> 307:14 <b>backwards</b> 638:9,15 <b>bad</b> 341:4 401:1 484:4 <b>balance</b> 380:7 385:3 430:2 455:2 519:19 <b>ball</b> 386:1 <b>ban</b> 456:15 <b>band</b> 603:19 <b>bar</b> 362:5,22 363:6,7 <b>base</b> 361:14 371:6,16,18 416:20,22,23 440:24 441:8 442:4,12 491:4 515:7 517:22 528:15 537:20,22,23 548:5 566:11 566:12 569:5 660:6,8 <b>based</b> 304:16 305:22 321:4 328:3 353:16 361:24 362:21 374:17 383:21 385:1 386:17 386:22 406:3 406:15 412:10 414:23 425:16 432:17 436:6 438:3 467:11 468:9 469:15 472:10 485:12	488:3,10,11 490:16 492:2 499:13 506:15 516:4,5 522:6 522:17 531:18 531:18 540:17 541:1,17 565:12 566:23 586:2 586:12 595:8 596:1,3,11 623:21 635:16 635:19 640:7 647:2 665:23 667:4 <b>bases</b> 312:22 596:24 <b>basic</b> 372:20 454:15 <b>basically</b> 322:23 344:8 371:15 414:11 467:21 525:21 526:8 544:18 577:21 603:23 650:11 <b>basis</b> 299:18 300:10 312:12 312:18,23 316:3,8 321:2 340:7 362:10 363:8,18 364:8 379:13 414:3 415:18 422:12 483:13 540:17,22 574:3 670:22 <b>batteries</b> 328:13,16,20 <b>battery</b> 583:2 <b>BBB</b> 669:7 <b>Beach</b> 325:12 349:21 <b>bear</b> 579:9 <b>bed</b> 456:14 <b>began</b> 631:8 <b>beginning</b>	387:14 408:9 515:1 587:14 611:7 635:13 <b>begun</b> 461:19 <b>behalf</b> 423:14 569:16 622:21 664:6 <b>belief</b> 302:8 404:22 419:10 493:22 505:13 561:12 600:15 612:18 632:19 654:13 663:6 <b>believe</b> 303:19 314:8,15 318:4 321:6 323:12 327:1,9,13 330:15 332:7 335:17 338:1 338:15,21 339:21 343:4 343:22 346:19 353:12 386:12 395:17 407:8 430:20 431:23 432:1 432:21 434:13 437:18 438:7 438:17 441:5 460:6 463:2 466:12 477:16 486:17 487:15 498:3 505:2 520:4 525:5 525:8 541:14 545:20 546:23 560:21 563:21 566:24 570:8 570:12,23 571:5,20 572:4 574:15 575:6,16,18 577:7,24 578:4 579:22 580:24 581:12
--	--	---	---	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

586:9 587:6	<b>Bench</b> 407:7	319:12 343:21	385:5,17	<b>bought</b> 428:12
592:1,22	<b>beneficial</b>	419:9 431:9	481:21,22	<b>Boulevard</b>
593:20,23	358:18 380:14	479:5 481:18	482:22	296:23
596:13	480:11	493:22	558:20	<b>bound</b> 664:24
598:20 603:7	<b>benefit</b> 341:1,11	505:12 521:9	625:22	<b>box</b> 297:4,10
604:24	341:15 342:2	561:12 595:3	<b>bills</b> 387:8	298:9,14
606:24 625:8	394:23	600:14 612:18	547:8,16	616:3
625:18,20	396:20,20	632:18 654:13	<b>binder</b> 504:20	<b>break</b> 380:24
628:4 633:16	397:5 425:21	<b>better</b> 333:9	<b>bit</b> 305:15	381:4,9
640:1 646:4	428:6,7	337:21 364:14	326:20 328:8	459:14 538:2
656:10	456:21 457:14	379:21 381:22	330:22 347:2	538:4 539:2
664:20	457:23 458:1	382:4,20	400:2 406:8	565:20
667:14 668:8	458:5 465:19	385:10 393:5	411:8 415:6	598:14,16
670:21 671:4	465:21	393:15,19	424:23 426:6	<b>breaks</b> 544:19
<b>believed</b> 671:9	479:22	395:4,7,13	491:11 536:4	<b>brief</b> 416:12
671:15	480:14 481:16	522:15 532:11	571:22 591:7	<b>briefly</b> 303:2
<b>Bell</b> 297:23	482:16 501:11	555:15 569:13	591:8 672:7	306:12 340:17
299:7,21	555:6 567:2	586:11 592:8	<b>black</b> 635:7	340:22 363:5
320:1,3	581:21 582:16	626:21 627:18	<b>Blake</b> 300:17	410:19 518:16
330:22 331:9	582:18 583:7	650:22	300:20 301:4	573:10 575:1
331:13 333:4,7	583:10,12,13	<b>beyond</b> 399:16	590:22 673:2	614:24 633:10
333:20,22	589:20	408:17 409:5	676:21,23	<b>bring</b> 320:6
336:19 342:7	624:21 625:5	430:4 475:18	<b>blow</b> 405:8	<b>bringing</b> 382:8
413:3,10	626:11 628:9	653:2 659:7	591:4	<b>broad</b> 534:18
437:13 442:23	628:18 658:18	<b>bid</b> 496:12	<b>blowing</b> 378:9	661:14
454:2,3	669:15	501:5 598:1	<b>blows</b> 387:21	<b>brought</b> 324:11
457:13 459:11	<b>benefits</b> 334:16	<b>bidder</b> 500:18	387:24 388:2	370:3 547:5
485:24 486:3	341:3 361:8	500:20	591:3	<b>Brydon</b> 298:14
487:20	378:18,20	<b>bidders</b> 497:23	<b>blue</b> 304:10	<b>budget</b> 347:13
495:19,21	395:20 426:4	500:15	<b>Bluff</b> 332:3,6	<b>build</b> 308:22
501:22	455:22 456:3	<b>bidding</b> 588:24	<b>board</b> 359:20	361:7 369:22
520:16,18	479:24 512:7	597:23	360:1 460:3,7	395:13 398:21
535:8 538:1	513:1,4,7,20	<b>bids</b> 597:22	602:6	470:10 471:5
576:24 577:2	533:16 534:5	<b>big</b> 349:5	<b>boiler</b> 309:2	546:12 606:5
593:18 594:4	535:9,10	365:14 373:1	<b>bold</b> 431:3	606:19 609:2
595:14	536:13 555:13	379:12 403:13	<b>bonus</b> 421:19	620:11
602:24	555:21 556:2	518:1 526:6	<b>book</b> 623:9	<b>build-up</b> 586:9
605:21 616:13	581:22 583:11	527:9 552:4	<b>booked</b> 657:12	<b>building</b> 297:15
616:15 620:2	584:17,23	559:3 581:3	667:7	395:12 398:19
637:14,16	603:8,11	589:4 645:19	<b>books</b> 621:6	405:22
648:11 651:23	626:14,23	<b>bigger</b> 572:4	<b>BOP</b> 454:24	663:17
657:2,4	628:15 646:2	577:4	455:2	<b>built</b> 303:17
661:17 672:7	647:12,13,14	<b>biggest</b> 322:21	<b>borne</b> 462:21	397:16,19,20
673:8,18,19	647:16,16,19	415:12	<b>bottom</b> 307:2	398:3 400:12
673:20,23	648:5,6,10	<b>bill</b> 595:11	308:24 405:8	463:18 586:12
674:4,10,17,23	<b>Benonk</b> 490:1	625:22	406:1 431:13	588:6 655:13
675:6,14,20	<b>best</b> 302:7	<b>billion</b> 384:22	528:10 642:8	<b>bullet</b> 513:7

EVIDENTIARY HEARING - Vol. 5 5/10/2018

625:6 <b>bulletpoint</b> 626:2 <b>bullets</b> 321:24 322:4 <b>bunch</b> 631:21 <b>burned</b> 388:7 <b>BUSHMAN</b> 413:2 504:22 <b>Bushmann</b> 296:13 299:2 299:12,20 300:12,18 301:2 302:13 302:17 306:10 309:13 311:22 311:24 319:24 331:6,12 333:3 333:6 336:16 342:9 350:12 351:9 354:14 372:13 375:11 380:23 381:6 381:10 392:16 406:15 407:13 409:19 410:4 410:18 412:20 412:22,24 413:4,6 417:2 417:5,9,16 419:15,20 421:5 437:5,7 437:9,11 442:24 457:8 459:13,17 477:4 478:14 485:12,15,17 485:19,21,23 487:21 490:7 491:10 492:7 492:12,19 494:3,7 495:10,12,14 495:16,18 501:23 503:3 503:7,10,20 505:18,22	518:15 519:1,4 520:9,11,13,15 538:2,5,9,13 538:22 539:1 539:3 540:5 545:8 557:5,7 559:15,20 560:13,16 561:17,21 573:9 576:19 576:21,23 593:17 594:2 594:15 595:15 595:17,19 598:12,17 599:4 600:4 600:20,24 602:16,18,20 602:22 605:22 609:8 610:2,11 613:1 613:4,11,16 614:23 616:8 616:10,12 620:3 622:15 622:18,24 623:18,20 624:5 629:16 629:23 631:5 631:9,15,19 633:1,7,9 637:9,11,13 648:13 651:1 653:6,14 654:17,22 655:4 656:19 656:21,23 657:1 661:18 664:4,8 665:22 667:22 671:20,24 672:5,9,12,16 675:8,22 <b>business</b> 532:22 549:2 602:5,11	642:20 643:11 <b>buy</b> 475:20 <b>buyer's</b> 318:5 <b>buys</b> 490:10 <hr/> <b>C</b> <hr/> <b>C</b> 297:1 298:1 299:1 582:8 <b>cal</b> 300:17 <b>calculate</b> 335:1 422:12 543:24 567:6 568:6 572:7 582:13,19 585:12 588:4 646:13 <b>calculated</b> 337:2 388:23 432:12 464:2 568:4,8 595:11 <b>calculates</b> 431:6 <b>calculating</b> 421:23 567:12 627:14 <b>calculation</b> 317:18 341:15 389:8 432:5 434:11 456:24 457:7,16 458:9 482:14 513:4 522:21 526:16 537:8 567:10 579:8 582:3 583:12 583:13,14,17 595:8,9,10 617:8 627:1 657:20 <b>calculations</b> 522:19 523:10 523:12,14 524:4,11 527:10 537:21 617:14,19 621:18 645:11 645:12	<b>California</b> 470:13,17 471:2,4,7 <b>call</b> 299:6 300:15 362:24 370:23 417:5 529:20 593:20 598:22 666:22 <b>called</b> 398:8 490:1,1 523:18 523:24 <b>calling</b> 650:8 <b>calls</b> 417:7 492:10 503:13 559:18 610:5 647:19 <b>Calpeco</b> 470:17 470:22 471:2 <b>camera</b> 442:23 <b>Canada</b> 418:1 489:21 560:8 <b>cap</b> 456:16 554:13,15 578:3,19,19 578:23 641:1 641:4 665:13 671:8 <b>capabilities</b> 353:24 <b>capability</b> 390:17 595:4 <b>capable</b> 390:11 <b>capacities</b> 389:11,16,22 <b>capacity</b> 301:6 315:24 316:1,3 316:8,19 317:2 317:11 319:7,12 319:16 320:5 323:3,5,5 331:18,19 332:16 333:9 333:17 337:5 337:15,17	340:13 364:20 373:5 373:11,20 374:7 388:17 388:18,23 390:3,5,7,15 390:20,21 407:2,18,18 410:14 415:5,7 415:13 416:5 417:24 418:2 457:1,1 466:20,24 467:20,24 468:2,8 486:5,10,17,19 487:4,5,10,15 493:2 494:20 494:21 498:7 498:18,21 499:2,6,10,10 499:11,11,14,16 499:19 500:10 504:3 532:7 532:14,17,18 532:21 560:7 564:12 573:17 573:21 584:3 584:8,11,12,12 584:14,23 585:9 587:22 587:24 588:10,15 591:6 599:8 610:17 628:11 635:21 653:20 662:22 668:13 <b>capital</b> 323:9 337:12 347:13 378:16,21 393:22 402:24 421:18 426:16,16 429:4 438:18 442:10,15
--	--	--	---	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

454:20	513:3,19,23	<b>Catch</b> 516:10	425:2,6,9	472:12 522:6
467:15 478:8	514:2,5 530:7	<b>catcher</b> 340:9	426:9,10	531:20 544:6
481:19 490:24	531:4,8,9,13	340:21 455:16	465:2,4,10,14	545:23
491:3 492:3,5	533:21	456:5	465:19,22	562:18,19
497:5,7 531:11	534:20	<b>caught</b> 307:10	507:11,18	563:1,7 575:13
531:14,17	545:19 547:19	<b>cause</b> 312:24	508:2,7	575:20
537:3,5,7	548:9,14,18	313:2 314:11,12	649:23	599:22
542:1 544:20	551:11 557:12	541:1 630:9	<b>certificate</b> 618:7	608:18 611:24
577:12,16	557:23 575:13	639:3	620:17 638:7	616:2 621:23
604:21 659:19	575:17 577:20	<b>caused</b> 301:10	638:11,13	632:8 639:12
659:22 660:6	579:4 583:6	398:9 418:4	666:4,6	639:19,20
661:2	585:14,14	469:7 493:6	675:25 680:1	645:19 646:13
<b>capitalizing</b>	590:3 596:11	504:6 560:11	<b>Certified</b> 680:6	646:20 660:7
322:19	596:17 598:3	560:19 599:12	680:7	<b>changed</b>
<b>Capitol</b> 298:15	603:5 618:3,4	<b>CCN</b> 666:6,8	<b>certify</b> 680:9	303:20 356:3
<b>caps</b> 626:3,4,5	618:8,9 621:2	<b>CCR</b> 296:22	<b>CFO</b> 355:11,12	369:14 439:8
<b>caption</b> 680:10	621:4,6	403:9 680:20	<b>chairman</b>	441:9 454:9
<b>capture</b> 327:23	624:22 625:8	<b>CDK-1</b> 524:23	296:15 392:18	469:6 508:1,7
346:22	625:9,15,22	525:20	406:11 407:8	543:12,15
543:21 583:2	627:23 629:7	527:24 643:1	407:23 409:6	545:16 606:11
590:5	638:6,7,10,11	<b>Cedar</b> 332:3,6	409:10,22	606:14,17,22
<b>captured</b> 433:2	638:13,14	<b>cell</b> 544:10	411:5 416:13	617:24 632:5
583:8	640:24 650:1	<b>Center</b> 297:19	477:4,6,8	632:7 639:22
<b>carbon</b> 457:2	650:1 652:16	349:20	478:15 485:9	<b>changes</b> 301:18
597:1 628:10	655:10,22	564:10 650:4	486:14 487:1	323:16 324:3
<b>carried</b> 422:19	658:9 664:12	<b>centered</b> 650:2	503:5 519:13	366:23 389:8
<b>carrying</b> 580:21	665:8,11,16,18	<b>Centers</b> 325:10	520:22 557:6	394:23 418:12
<b>cart</b> 581:7	666:6,8	<b>central</b> 301:9	577:19 595:18	419:1 467:18
<b>case</b> 300:8	667:19 670:4	304:3 493:4	622:19 664:5	493:14 504:16
303:1 309:20	671:10,14	599:10	673:10,22	531:18 553:19
318:19 323:19	<b>cases</b> 364:5	<b>cents</b> 460:19,24	<b>challenged</b>	553:20,23
326:5 340:14	520:2 527:21	461:4	656:5	561:4 571:20
361:4 368:19	548:12 573:6	<b>certain</b> 301:11	<b>chance</b> 423:12	599:20
386:9,13	597:4 628:22	315:11 317:22	510:3 613:22	608:21 610:24
387:2,4 413:14	628:23 656:6	372:3,4 418:5	665:20	611:2,5 612:11
416:18 423:4	666:14	430:23	<b>change</b> 301:24	630:24 631:2
434:20,22	668:23 669:11	455:17,18	338:12 342:15	632:1,11
435:1,20	669:14	493:7 498:7	344:2 346:20	645:24 646:11
436:2 458:24	<b>cash</b> 422:2,5,7	498:20 504:7	358:13 365:1	648:8 654:6
459:3 467:4	427:8,19	517:6 519:20	365:3,9,10,14	660:3 671:5
468:4 475:2	428:18,22,23	579:13 592:18	369:21	<b>changing</b> 357:1
475:17 480:11	429:2,5,10,13	599:13 636:13	372:23 373:1	562:12
481:3 482:8	429:21,22	646:6 669:18	400:11 408:22	564:20 617:19
484:15,22	430:2 433:3	<b>certainly</b> 660:8	439:12 441:12	622:11 646:10
486:15 500:7	472:24 473:3	661:15 668:5	441:17 466:20	660:2
500:9,11	474:5	668:21 669:5	466:20 467:1	<b>Chapter</b> 510:15
512:17,23	<b>cast</b> 594:11	<b>certainty</b> 377:3	469:5,7,7	<b>characteristics</b>

EVIDENTIARY HEARING - Vol. 5 5/10/2018

364:15 365:17 366:2 <b>characterizati...</b> 491:8 614:3 <b>characterize</b> 388:20,21 615:17 619:15 628:14 650:7 <b>charge</b> 312:12 580:21 <b>Charlotte</b> 677:8 <b>chart</b> 331:18 335:20,22 336:6,14 408:11,14,15,21 409:2,14,16 410:1,22 411:2 411:3,4,11,24 440:6,12,13 442:19 454:7 454:17 486:10 486:10,12 528:4 577:21 577:23 581:9 581:11,15 587:16 590:19 593:21 633:16 633:17 634:4 634:14 642:5 642:15,15,24 643:3,21,23 645:13 647:18 <b>charts</b> 342:1 362:5,12,15 362:22 486:4 486:6 527:24 651:18,20 <b>cheaper</b> 469:9 <b>check</b> 411:16 486:21 527:20 544:11 544:11 550:24 591:20 644:18 <b>Chicago</b> 490:2 490:5 <b>choose</b> 311:4 <b>chooses</b> 497:10	<b>chose</b> 326:7 <b>Chris</b> 504:1 <b>Christopher</b> 503:14,15 674:6 676:5,8 <b>Circuit</b> 434:21 <b>circumstance</b> 473:17 474:18 <b>circumstances</b> 310:9 471:7,10 474:22 475:4 515:10 659:12 <b>citation</b> 616:20 <b>citations</b> 518:22 617:2 <b>cites</b> 513:3 <b>cities</b> 379:23 382:5,22 <b>City</b> 296:6,23 297:5,10,22 297:24 298:5 298:10,15 319:24 413:2 434:22 435:3 435:8,11 437:11 485:23 490:23 495:18 520:15 576:23 602:22 616:12 637:13 657:1 663:20,21 679:2 <b>claim</b> 480:16 667:15 <b>claimed</b> 494:20 <b>clarification</b> 352:23 353:15 376:21 498:12 499:9 499:17 511:3 540:23 <b>clarify</b> 385:17 464:8 471:9 608:16,19 <b>clarifying</b> 352:8 352:19	<b>classified</b> 301:20 <b>classify</b> 362:11 <b>clause</b> 386:11,14 423:20 510:13 511:6 548:2,17 548:23 549:5 612:1,4 618:24 619:4,5,9 <b>clear</b> 430:3 470:3 496:1 576:7 <b>clearer</b> 631:20 <b>close</b> 309:21 310:24 311:5 311:13 330:9 344:13 346:5 381:1 403:11 476:21 477:22 506:18 507:9 605:11,16 614:10 665:15 <b>closed</b> 308:20 309:5 310:22 325:21 346:4 346:12,18 382:6 637:1 <b>closely</b> 618:2,17 <b>closes</b> 309:9 <b>closing</b> 345:18 347:10 359:3 636:8 <b>closure</b> 308:16 345:20,23 346:16 347:5 439:10 <b>closures</b> 344:19 <b>Cloud</b> 380:10 <b>Club</b> 297:17 311:24 345:3 412:24 437:9 485:21 495:16 520:13 <b>coal</b> 307:12,16 308:10 346:22 379:3 388:6 508:21	591:2 <b>coal-fired</b> 379:12 388:5 388:19 <b>COLEMAN</b> 296:16 485:11 503:6 622:17 <b>collapse</b> 428:5 <b>collected</b> 667:7 <b>collecting</b> 421:13 <b>color</b> 550:21 <b>Columbia</b> 297:15 <b>column</b> 454:17 <b>columns</b> 336:24 <b>combination</b> 397:22,24 574:7 <b>combinations</b> 572:20 573:4 <b>combined</b> 379:2,2 399:22 407:18 463:4 567:8 <b>combustion</b> 508:22 564:11 <b>come</b> 300:9 317:10,17 328:15 338:6 339:5,7 340:8 357:10 414:15 432:12 442:11 535:3 550:1 571:17 575:5 579:13 588:7 597:2 604:4 621:16 629:3 629:12 671:4 <b>comes</b> 370:14 371:6,13 405:15 567:14 582:14 588:3 589:1,21 601:12 642:7	<b>comfort</b> 366:7 621:10 628:20 650:19 651:8 651:11 670:12 <b>comfortable</b> 423:9 431:19 661:7,8 <b>coming</b> 304:17 326:12 328:15 348:21 515:16 570:11 605:16 647:22 670:10 <b>commence</b> 461:10,16,18 <b>commensurate</b> 462:14 <b>comment</b> 332:12 336:5 412:11 <b>comments</b> 299:10,15,16 300:1,5,7 404:10 553:13 659:8 679:4 <b>commercial</b> 458:11 <b>Commission</b> 296:1 297:2,4 299:22,23 300:6,7,11 314:20 323:19 324:17 341:23 361:3,12,16 369:2 370:4,7 371:4,20 372:5 392:16 463:16,17,19 471:3,5 478:9 485:13 511:18 518:21 519:6 529:4 534:8 534:14,15,17 534:21 535:2 535:19 545:24 546:2 546:3,6,10,21
---	--	--	--	--



EVIDENTIARY HEARING - Vol. 5 5/10/2018

552:5 558:4	655:22	309:19 438:4	405:2,17	<b>conceptually</b>
595:17 604:15	666:18 668:6	478:6,11	438:6 540:4	547:21
605:8,13,17	<b>companion</b>	481:23 531:3	<b>completed</b>	<b>concern</b> 317:19
608:5,6	655:22	531:8 575:4,9	406:4 502:18	616:4
610:18,19	<b>company</b> 296:9	619:22 642:7	<b>completely</b>	<b>concerned</b>
614:11,19	298:12 301:7	652:5 667:7	361:10 400:22	392:5 405:10
616:21 622:16	309:21,23	<b>compare</b> 305:7	621:11	<b>concerning</b>
623:2,5	310:6,13,16,20	305:16 336:14	<b>completes</b>	478:18 609:6
630:8 631:12	310:23 311:3	395:10 420:5	559:15 598:12	613:24 640:12
653:22 656:7	311:10 324:14	468:15	610:2 671:22	<b>concerns</b>
656:8 658:23	355:12 375:3	526:20	<b>complex</b> 379:1	415:20 416:10
664:11,12,20	383:3 393:15	528:17 535:18	379:4	433:8,10
665:3,5 679:8	417:7 439:6,8	547:11 624:17	<b>compliance</b>	623:5,12,16
<b>Commission's</b>	456:16 458:3	634:15 664:12	308:1 403:18	<b>concessions</b>
511:22 620:16	458:3 464:3	<b>compared</b>	405:3 406:7	612:6
664:16	464:11 465:9	318:2 481:22	508:14,21	<b>conclude</b>
<b>Commissioner</b>	465:11,16	488:20 489:9	<b>complicated</b>	638:23
324:20	470:23,24,24	523:4 524:15	394:18 615:18	<b>concluded</b>
406:13,14,16	471:1 474:6,11	525:15 547:13	616:1	588:6
409:5 485:11	474:12,16	566:4 619:3	<b>comply</b> 308:12	<b>conclusion</b>
488:6 503:6	477:18,19,21	635:10	347:3 404:20	552:19 566:3
557:5 615:24	479:6 480:12	<b>compares</b> 317:8	405:14	<b>conclusions</b>
622:17 664:4	480:21 481:10	410:10 576:8	<b>complying</b>	594:18 651:19
<b>Commissioners</b>	481:14,21	<b>comparing</b>	398:23	<b>concrete</b>
296:17 503:4	482:4,5	341:14 574:22	<b>component</b>	360:13 397:4
<b>Commissions</b>	491:18 492:10	579:19	526:4 528:17	<b>conditions</b>
534:22 600:2	503:9,13	<b>comparison</b>	528:17	612:6 615:4
<b>commit</b> 436:20	513:14 539:19	364:17 388:18	<b>components</b>	635:16,17
<b>commitments</b>	540:22 550:11	413:18 414:24	528:13 558:16	639:3 669:22
309:22 310:7	557:12 558:2	415:2 430:13	627:16	<b>conduct</b> 441:19
311:4,10	559:13,18	430:18 489:11	<b>compound</b>	557:12 617:13
656:15	560:15 579:2	534:2,6	594:14	<b>conducted</b>
<b>common</b> 601:13	596:17 601:17	580:21 624:17	<b>comprehensive</b>	348:2 551:15
652:2	604:9,15	627:20	668:5	558:2
<b>commonly</b>	605:4,11,15,16	634:12 668:15	<b>compression</b>	<b>conducting</b>
440:8 586:1	618:15 634:9	668:16	308:10	552:14 608:2
<b>communicatio...</b>	637:23 638:8	<b>comparisons</b>	<b>compromise</b>	<b>conducts</b> 480:6
615:17,19	638:9 639:8	526:15	316:5,10	<b>confidential</b>
<b>communities</b>	640:21	<b>compensation</b>	<b>concede</b> 366:1	394:4 420:20
379:23 382:6	642:20 651:16	472:19	<b>conceivably</b>	420:21
382:12,13,22	651:17 652:3	<b>competing</b>	476:2	499:23 509:5
383:1	652:11 663:21	402:9	<b>conceive</b>	509:6,7
<b>community</b>	665:6 667:10	<b>competitive</b>	476:10	630:13
382:14 383:4	667:15 670:3	318:1	<b>concept</b> 535:11	<b>confidentiality</b>
558:8 601:24	670:7,22	<b>complete</b> 315:11	661:12	509:12
602:11	671:3	366:8 368:22	<b>concepts</b>	<b>confirm</b> 367:24
<b>companies</b>	<b>company's</b>	369:4 398:22	604:18	<b>confused</b> 371:11

EVIDENTIARY HEARING - Vol. 5 5/10/2018

374:24 386:20 <b>confusing</b> 347:2 644:5 <b>confusion</b> 376:20 <b>conjunction</b> 324:15 490:18 513:23 659:15 <b>connect</b> 397:18 398:6 <b>consider</b> 369:17 370:21 412:12 426:17 432:22 533:2 552:20 576:9 615:14 669:12 <b>considerably</b> 362:19 379:11 402:6 <b>consideration</b> 547:6,19,20 549:3 552:8 <b>considerations</b> 507:15 517:12 <b>considered</b> 323:21 358:6 358:12 485:2 573:20 627:13 659:7 665:15 <b>considering</b> 403:14 631:6 <b>consistent</b> 363:9,21 364:4,7 365:13 367:20 502:19 623:14 649:17 670:19 <b>consistently</b> 353:20 361:1 <b>consolidated</b> 465:18 <b>constant</b> 469:4 <b>constitute</b> 309:4	<b>constraints</b> 348:6 <b>construct</b> 393:16 496:6 <b>constructed</b> 666:10 <b>construction</b> 322:2 461:11 461:13,16,18 462:2 470:19 482:22 507:8 508:2,8 509:9,16 655:24 663:17 <b>consult</b> 544:14 <b>consulted</b> 356:18 <b>consumers</b> 533:21 <b>consuming</b> 400:4,5 <b>contain</b> 329:16 498:5 626:20 <b>contained</b> 302:3 329:11 341:12 419:5 457:14 493:18 505:8 561:8 600:10 623:3 623:8 632:12 <b>contains</b> 341:1 619:10 659:17 <b>contemplate</b> 475:1 476:7 508:17 <b>contemplated</b> 303:10 309:20 458:23 460:4 485:4 498:10 530:2 669:13 <b>contemplates</b> 498:23 513:7 514:4,17 520:5 <b>contemplating</b>	508:21 546:15 555:4,24 604:20,21 <b>contemporary</b> 368:16 <b>Contents</b> 376:1 <b>context</b> 549:8 603:12 620:9 <b>contingent</b> 552:1,2 <b>continual</b> 328:8 372:21,24 377:13,16 379:6 390:15 <b>continually</b> 379:9 391:19 393:23 <b>continuation</b> 366:9 <b>continue</b> 310:14 310:15 318:7 324:6 338:3 346:5 386:10 391:24 403:14 404:3 412:4 416:4 462:4 475:18 495:2 548:15,16,23 549:5 556:20 569:17 586:6 592:17 606:7 630:23 635:6 <b>continued</b> 298:1 384:4 422:19 454:1 511:14 673:20 674:1 675:1 678:1 679:1 <b>continues</b> 379:17 403:4 <b>continuing</b> 571:16 <b>contract</b> 334:3 357:24 374:11 374:22 394:13 394:15 395:23 396:7	436:14,18 589:13 <b>contracting</b> 589:9 <b>contractor</b> 333:23 397:17 397:20 589:11 <b>contractors</b> 330:16 334:2 <b>contracts</b> 359:23,24 360:8,10 380:17,20 395:4 494:19 494:24 495:4 502:16 521:10 522:11,12 663:10 <b>contractual</b> 476:6,7 <b>contrasts</b> 558:23 <b>contribute</b> 610:21 654:1 661:1 <b>contributed</b> 442:17 612:23 <b>contributes</b> 475:2 <b>contribution</b> 438:10,12,19 440:11,15 441:13 467:13 473:3 474:15 483:10 491:1,3 537:7,16 659:22 660:6 670:2 <b>contributions</b> 434:2,3,5 442:16 454:21 472:8 473:5,5 473:14,22 474:3,5,10,10 475:2,11 531:12 537:4 571:12,13	661:2 <b>control</b> 358:2 378:5,15 380:3 <b>controlled</b> 348:10 <b>Convenience</b> 620:17 <b>conventional</b> 465:24 <b>conversation</b> 393:3 401:19 416:12 454:14 636:9 <b>conversations</b> 349:2 358:13 384:3 420:22 420:24 <b>conveyance</b> 309:1,1 346:2 406:2 541:7 <b>Cooper</b> 298:13 299:14 300:16 300:25 301:3 302:10 336:12 372:6 413:7,9 416:24 522:24 523:1 598:21 599:3 599:5 600:6 600:17 609:10 609:24 613:19 614:21 633:8 673:3,13 674:21,25 675:4 <b>copied</b> 556:8 <b>copy</b> 299:12 303:3 315:8,11 341:6,7,8 345:9 375:12 408:5 507:3 509:23 512:15 532:2 562:5 563:19 565:1 577:6 587:6 611:14,21
--	--	--	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

613:14,14 631:4 <b>corner</b> 542:8,9 <b>Corp</b> 418:2 484:11 493:3 504:4 560:8 <b>corporate</b> 323:17 541:15 <b>corporation</b> 422:13 599:10 <b>correct</b> 302:7 303:6 306:7 307:22 308:7 309:6,10,24 310:1,4,24 311:2 314:18,21 317:4 319:1 320:20,24 321:2,5,16,23 322:9,10,12 325:11,11,23 325:24 326:2 326:3 327:3,6 329:12,17,18 329:20,21 331:14,15 332:11 333:24 334:4 335:4,6 338:20,21 342:21,24 348:8 352:13 352:17 353:13 353:17 366:4 366:5 370:8 372:20 376:23,24 378:6,7 380:17,18,21 380:22 383:22 384:8 384:9,13 385:3,23 386:8 387:5 388:3,4 397:13,14 398:15 400:24 401:9	401:12 404:21 411:4,9,10 412:5 413:15 415:18,19 416:20 419:9 422:9,10 423:2,22,23 424:7,15,16 424:20,21 427:12,13,21 427:22 428:2 428:3,8,14 432:24 434:9 434:17 435:5 435:8 436:11 436:12,15,16 437:19,20 440:3,4,9,10 440:16,17,22 441:4 442:17 442:21,22 454:19,23 455:2,4,7,9 457:4 460:22 461:5,7,8,24 462:8,9 464:21,22 465:12 466:4 468:17,18,21 468:22 469:11 469:16,17,21 477:12,13 486:5,19,20 493:21 496:8 496:9 497:17 499:21 500:11 500:16,17 505:12 506:4 506:5,7,18,19 520:2 521:4 521:22 524:1 526:2,10 530:10 531:4 531:13,21 534:23 535:5 536:11,22 537:6,21	541:5,11,12,18 541:22 542:2 543:19 544:2 544:9,11,21 550:15 555:18 557:1 561:11 564:8,12 569:15 572:18 575:15 576:1 576:2,13 577:13,14 578:1,12 579:10,17,18 583:3 584:20 585:17,19 586:22 587:11 587:16,17 588:12 589:14 590:6,17,21 590:22 598:21 600:8 600:14 602:7 603:9 604:1 604:16,22,23 605:19 609:23 614:14 614:15 619:13 626:1 628:8 629:8 635:17 635:18,23 636:2 638:9 638:16 639:14 639:24 640:1 641:13 643:14 643:15 644:11 644:17 646:14 646:15,18,21 646:24 647:1 647:23 648:23,24 652:7 657:7,8 657:13 658:5 658:13,19,20 660:4,11,22 661:5 <b>corrected</b> 339:11 411:21	631:2,13,23 632:4 634:20 678:13 <b>correction</b> 351:4 352:24 353:1 377:2 385:4 441:7 <b>corrections</b> 472:10 630:15 630:20,20 631:21 632:2 <b>correctly</b> 353:9 388:9 467:21 488:17 556:8 <b>Cos</b> 565:8,13 <b>cost</b> 308:24 317:23 318:1 321:22 326:15 326:20 328:20,22 329:8 330:7 344:18 345:17 346:16 347:10 356:13 361:22 373:13,23 379:11 383:13 385:5 396:10 403:1 406:21 412:12 415:11 456:24 467:15,23 468:6 479:20 481:18 482:1 487:18 492:5 497:7 517:13 543:18 554:18 554:20 555:14 559:8 567:15,17,20 577:16 581:6 604:21 628:7 642:1,3,4,7,9 642:11,11,16,18 645:9 648:3 659:19 667:4 <b>costing</b> 384:6 <b>costly</b> 318:20	<b>costs</b> 308:6 309:5,8 323:9 325:18 326:1,5,6,9,10 328:23 329:11 329:19 349:8 385:18 387:2 394:11 401:7 402:15,17,20 403:1,1 412:5 413:13 434:11 442:10 454:16 454:22 462:18 482:21 482:22 492:3 497:12 510:21 510:22 511:1 511:20,24 515:15 527:4 542:1 564:18 566:4 567:12 570:10,19,23 571:10 572:8 577:13 581:5 582:8 626:4 626:5,9 627:20 628:10,12,12 636:7,12,13,19 637:2,4 640:4 669:6 <b>Council</b> 314:20 <b>Counsel</b> 297:7 297:9 344:22 381:12 393:14 413:4 459:20 466:11 487:21 501:23 519:13 539:5 545:4 553:5 595:15 605:22 620:3 624:9 628:20 631:10,13 648:13 661:18 668:8,12 669:1,23 <b>counted</b> 436:4
--	--	--	---	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

counter 424:11	502:12	674:22,23,24	435:5,9,19	361:2,23
counterpart 424:8	criteria 373:9	675:4,5,6,7,8	436:22 437:1	362:1 366:14
counting 433:16	critical 597:13	675:13,14,15	curve 365:23	374:8 378:18
County 376:8	597:14	675:19,20,21	498:17 499:13	379:23
380:10 680:4	criticism 306:21	675:22	585:15 593:9	380:14 382:6
couple 306:17	cross 302:17	crosscross-ex... 302:12	596:5	382:22 387:8
354:8 357:3	306:10 319:24	302:12	curves 359:7,7	387:16 391:16
381:7 399:18	342:9 406:15	CSP 528:21	586:14	392:3,6
411:7,9 421:9	419:20 421:5	CSR 296:22	588:22	394:22,23
421:10 570:21	494:7 505:22	505:2 510:16	customer	395:20 396:11
572:24 634:1	573:9 600:24	680:20	296:10 316:9	398:12
664:5	613:10,16	CT 349:8	335:2 336:21	399:20 415:12
course 376:22	633:6,7 653:3	cuff 547:12	341:15,21	441:3 442:5,7
516:20 517:1,6	654:16 655:3	curious 380:24	368:20 374:4	454:15,16
517:8	655:4 664:20	396:15	384:15 387:9	458:2,4,7,8,13
court 298:4	672:5	current 308:12	392:23	458:15,20
372:17 434:21	cross-examin... 302:20	394:20 406:4	394:10 403:13	459:1,5
435:20 613:13	306:13 309:15	409:3,7,11	437:23 441:17	468:21 469:10
631:12 680:7	312:2 320:2	410:10,13	459:10 506:4	471:19,24
cover 459:1	342:11 381:11	479:12 483:15	512:10,23	479:23
482:6	392:17 419:14	512:2 520:23	515:24 531:21	480:19 482:14
covered 563:1	419:22 421:7	521:3,19	536:10 555:13	501:12,17
563:5 665:17	437:12 454:1	523:6 524:6	559:9 563:2	510:24 512:7
covers 628:7	459:19,22	533:5 540:18	563:6 596:19	513:8,14
create 586:13	477:7 494:2,8	540:18,21	596:21 597:9	514:18 522:9
650:11,14	495:20 502:1	541:2,2	601:6,10	522:16 536:14
651:18	505:17,23	545:14 575:4	603:19 604:16	537:24 547:8
created 540:13	518:17 520:17	575:9 576:5	605:5 611:15	547:14,22
574:3,8,11	538:16 539:4	595:24,24	612:4 617:21	554:5,10,24
582:4 663:24	561:16,21,23	635:16,17	621:19 624:21	556:4 574:12
creates 379:21	563:12 573:12	642:19 643:11	633:18 634:16	579:9 583:5
381:20,21	577:1 600:19	649:10	639:1 640:7	583:11 584:18
513:14	601:1 602:23	currently	641:11,23	589:21 595:12
creation 566:8	605:24 613:18	383:15,24	642:22 643:6	596:18 598:7
credit 317:2	615:1 616:14	384:6,21	643:10,20	603:8,15
318:8 322:22	620:5 622:23	385:9 399:18	644:2,14,20	625:5 627:14
368:8 422:11	633:11 637:15	400:14 494:13	644:23	627:22
460:24 462:7	648:15 655:6	494:18 496:7	645:23 649:5	640:17 641:2
472:1 666:19	657:3 661:21	497:22	659:15 660:3	645:9 657:21
667:9,10,17	664:7 673:4,5	498:10	660:9,9,18	658:3,17,24
669:2,7,8	673:6,7,8,9,10	499:20,22	661:4 665:12	660:9 661:13
credits 367:8,16	673:16,17,18	506:12 511:9	668:9 669:13	663:10,12
367:19,22	673:19,20,21	521:21 581:24	669:15 670:11	665:17 667:3
368:9 460:13	673:22 674:4	curtail 358:1	customers	667:8
460:19 461:9	674:5,8,9,10	curtailment	316:4 322:22	customers'
472:2,15	674:11,15,16,17	435:14 436:3	324:12 334:16	314:1
		curtailments	360:14,19	cut 323:9

EVIDENTIARY HEARING - Vol. 5 5/10/2018

cuts 441:11,19 441:24 cutter 376:1 cycle 313:12 379:2,3 407:18 cycles 399:23	678:18,19 date 304:5 343:1 375:22 376:15 383:17 384:1 406:9 507:10 605:3 dated 351:20 dates 305:23 374:18 557:17 649:16 David 298:3 307:4 355:9 559:18,22 560:5 598:22 598:23 599:6 609:18 674:13 674:20 676:4 677:13,15 day 300:5 304:12,15 305:11 306:6 347:24 362:17 413:18,23,24 414:2,2,6,15 414:18,20,23 427:16 501:2 501:6 590:21 592:23 597:23 598:1 653:8 662:13 662:16 day-to-day 355:5,6 363:17 366:3 378:15,16,21 days 305:13,21 362:20 365:7 529:6 546:18 dead 603:19 deadline 318:11 322:21 403:18 404:7,23,24 405:1,4,4,13 deadlines 404:14 deadpan 578:18	deal 314:6 605:18 deals 669:6 Dean 298:13 debt 393:1 567:15,17,18 567:20 666:15,19 669:2 decade 368:5 December 305:2,3 318:10 decide 311:13 534:8,23 decided 324:14 348:5,24 356:7 501:1,6 517:7 549:6 decides 403:10 463:16,19 605:11,15 658:1 decimal 505:5 decision 354:19 392:22 401:17 403:7 404:1,6 497:13 507:7 507:9,12,20 509:14 516:13 564:20 596:22 614:9 decision-maker 354:24 355:13 decision-mak... 355:7 decision-maki... 393:2 401:21 595:4 decisional 615:6,15 616:19,21 620:7 656:4 664:21,21 decisions 359:15 378:15	380:12 393:22 404:13 406:10 407:16 464:1 516:4,5,15,17 517:13 564:18 620:10 670:23 decline 528:15 581:4,6 declined 411:8 580:11 634:1 declining 580:6 decrease 441:12,14 442:11 472:9 473:6,13 528:14 647:22 decreased 473:23 508:6 536:21 591:23 decreases 337:6 461:15 484:7 528:2 dedicated 512:19 deduction 422:8 deeper 324:6 defer 334:7,11 335:14 456:18 471:16 478:10 519:19,24 521:8 522:11 deferred 563:14 587:11 deferring 320:16 353:18 439:17 define 507:17 555:2 665:10 defined 380:4 457:17 583:15 definitely 552:16 553:24	558:15 definition 352:4 432:18 definitions 342:1 457:19 457:21 581:12 581:15 definitive 360:13 460:10 469:22 definitively 478:2 663:2 degradation 337:7,10,14 587:19 588:6 degree 319:19 425:1 427:9 428:4 669:18 delay 403:17,20 404:6,18 406:10 deleted 505:6 delta 578:14 deltas 592:23 demand 515:13 586:13 demonstrate 430:12 demonstrates 639:1 denies 371:20 deny 553:19 Department 298:8 391:18 391:22 508:14 621:5 630:7 653:23 depend 334:17 536:14 depended 438:12 dependent 334:21 335:3 428:23 468:24 469:3 536:18 584:19 depending
--	---	---	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

387:5 479:21 618:12 621:1 <b>depends</b> 334:12 427:15 442:7 469:12 517:10 535:11 537:17 551:20 665:10 <b>depicted</b> 305:24 <b>depicts</b> 304:9 440:7 <b>depreciation</b> 383:20 421:20,20 479:21 480:17 480:23 482:11 482:13,16 519:24 528:16 540:1 566:13 567:24 568:2 580:14,15 623:10 667:8 <b>depth</b> 325:15 <b>derived</b> 432:13 483:11 596:7 648:6 <b>describe</b> 596:10 602:1 602:3 615:18 637:19 655:18 668:15 670:9 <b>described</b> 425:10 464:24 473:4 563:2 626:12 678:16,17 <b>describes</b> 655:14 <b>describing</b> 442:13 455:18 <b>DESCRIPTION</b> 676:2 677:2 678:3,15 679:3 <b>designation</b> 358:14	<b>designed</b> 666:14,17 669:2 <b>desire</b> 478:6 <b>desired</b> 477:1 <b>detail</b> 349:9 537:1 <b>detailed</b> 592:9 <b>details</b> 535:12 555:9 589:9 609:20 627:12 <b>determination</b> 511:23 615:9 <b>determine</b> 303:9 314:10 366:13 369:18 517:1 617:20 <b>determined</b> 464:6 507:22 551:21 <b>determines</b> 467:7 511:19 <b>determining</b> 403:10 427:2 584:2 <b>detriment</b> 425:21 458:6 513:21 <b>detrimental</b> 667:17 <b>develop</b> 497:6 <b>developed</b> 496:7,13,14 502:7 525:9 <b>developer</b> 496:6 <b>developers</b> 396:2 <b>developing</b> 496:16 <b>development</b> 298:8 379:22 381:22 382:5 382:21 383:5 440:2 <b>developments</b>	321:12 <b>deviation</b> 484:10 488:19 489:17 <b>devices</b> 405:11 <b>dialogue</b> 411:17 <b>dictates</b> 426:11 <b>Dietrich</b> 610:5,6 610:14 613:20 622:18 623:19 624:1 629:16 630:17 648:18 675:2 678:6 <b>differ</b> 619:21 671:2 <b>difference</b> 336:9,19,22 371:3 382:18 390:16 399:14 408:16 413:22 425:19 486:17 499:10 527:4 527:15,18,20 527:22 566:16 567:4 567:19,20,23 568:3,14 591:21 620:21 620:23 621:1 634:23 635:8 639:23 658:14 659:3 <b>differences</b> 337:2 526:22 545:5,7 558:12 566:7 625:19 645:15 <b>different</b> 303:23 304:2 305:15,23 313:12 314:3 315:20 325:15 326:21 333:5 341:12 351:22 354:7 362:20 364:11 370:19 370:21	388:24 391:3 427:6 462:24 466:24 471:7 498:13 507:15 525:17 527:2 535:17 544:5 550:2 557:24 565:22 567:3 568:13 572:20,21 573:5,6 575:8 580:19 589:1 591:2,3 594:7 594:8 596:24 602:4,4 621:18,19 622:2 625:16 627:13,16 639:7,13,16 645:6,10 650:11,14 656:14 658:7 660:20 667:12 668:22 <b>differently</b> 528:11 566:1 <b>difficulties</b> 384:4 <b>diligence</b> 476:20 499:24 <b>direct</b> 300:24 301:11,21 308:1 312:6 318:3 320:22 321:9 323:15 324:24 327:15 329:2 342:18 366:6 377:5 378:1,2 381:16 383:10 383:11 393:12 417:14 418:5 418:19 421:11 424:10 437:18 438:21 439:13	439:24 440:1 440:5 454:4 467:11,18 468:11,16 477:15 492:17 493:7 495:24 496:4 497:16 503:18 504:7 524:22 525:7 527:10,19 528:19 534:5 536:6 545:20 549:13,22 559:25 579:21 587:12 599:1,13 600:5,6 601:3 604:11 606:23 610:9 620:9 629:21 653:12 673:3,15 674:3,7,14,21 675:3,12,18 676:5,11,13,15 676:21,24 677:9,11,13,16 677:18,19 <b>directed</b> 381:18 409:7 <b>directing</b> 365:1 <b>direction</b> 514:2 519:21 605:10 <b>directly</b> 322:13 464:2 526:20 526:21 535:18 558:1 <b>Director</b> 493:4 504:5 560:9 610:19 <b>Directors</b> 359:20 460:3 460:7 <b>disabandonm...</b> 406:21 <b>disappear</b> 428:13 <b>discount</b>
--	---	--	---	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

555:12 <b>discounted</b> 642:6 <b>discovery</b> 557:23 <b>discrepancy</b> 669:20 <b>discretion</b> 310:24 534:18 <b>discuss</b> 314:23 420:2 431:9 433:8 601:4 601:23 671:4 <b>discussed</b> 299:5 316:14 322:20 328:6 349:18 357:4 357:21 364:19 369:23 373:12 413:24 500:22 506:21 512:18 558:24 559:10 574:6 659:2 661:15 668:14 670:20 <b>discusses</b> 434:20 512:22 562:11 562:17 564:3 574:16 <b>discussing</b> 434:13 516:23 <b>discussion</b> 307:6,24 393:14 421:11 421:14 481:12 501:8 507:14 520:21 529:5 535:24 549:18 553:12 617:2 636:6 638:24 651:14 <b>discussions</b> 349:5 354:23 436:17	469:24 506:13 530:21 615:13 665:12 <b>dismantle</b> 326:17 <b>dismantlement</b> 636:21 637:3 <b>dismantling</b> 326:5 <b>dispatch</b> 312:16 312:21 313:3 327:20 328:17 357:23 384:5 <b>dispatchable</b> 357:13 358:12 358:15,22 359:5,12 591:1 <b>dispatched</b> 312:15 414:2,6 646:7 <b>dispatches</b> 312:11 <b>dispatching</b> 312:11 327:16 358:24 <b>distinction</b> 629:2 <b>distribution</b> 429:22 433:1 433:19 434:7 571:9 <b>distribution/c...</b> 434:15 <b>distributions</b> 433:4,16 434:1 455:8 473:1 <b>District</b> 296:9 298:12 361:21 375:13 642:14 <b>diverse</b> 306:22 307:9,11,14,18 556:5 <b>divide</b> 386:6 <b>divided</b> 384:10 575:3 <b>dividend</b> 474:17	<b>Division</b> 298:7 298:9 309:13 412:20 437:5 485:17 495:12 520:9 576:19 599:11 602:18 616:8 637:9 656:21 <b>docket</b> 418:16 549:19,24 551:1,2 552:19 <b>document</b> 341:18 523:21 531:10 542:6 566:8 573:4 580:1 592:6 678:22 <b>documents</b> 376:22 632:15 <b>doing</b> 330:17 347:3 367:1 379:9 436:19 470:1 516:16 553:7 570:17 621:7 625:17 <b>dollar</b> 326:23 422:11,12 558:21 671:8 <b>dollars</b> 309:2 326:14 384:22 385:5 385:17 481:21 481:22 482:22 567:22 644:1 <b>double</b> 344:7 353:13 433:16 <b>doubled</b> 592:13 <b>doubt</b> 549:2 552:18 594:11 <b>downside</b> 603:13 <b>Dr</b> 340:15,24 352:9 512:22 513:3 515:1 517:16,18	518:10 <b>DR-5</b> 538:14 539:14,16 572:5,7 <b>drafted</b> 499:20 <b>drastically</b> 365:10 <b>draw</b> 580:10 <b>drive</b> 297:14 415:10,10 483:9 490:3,4 587:4 <b>driven</b> 405:4 <b>drivers</b> 321:21 321:23 550:16 <b>drives</b> 467:16 586:24 <b>driving</b> 640:14 <b>drop</b> 574:10 <b>dropped</b> 402:6 <b>DRs</b> 617:1 <b>DSM</b> 597:12,13 <b>Dual</b> 344:8 <b>due</b> 339:23 366:22 370:6 386:13 476:20 499:24 528:16 541:10 544:19,20 575:16 641:24 <b>duly</b> 300:21 417:12 492:15 503:16 559:23 598:24 610:7 629:19 653:10 <b>DVER</b> 357:11,12 <b>dyslexia</b> 330:23	<b>earlier</b> 304:17 316:14,18 347:9,16,21 349:18 352:8 353:9 357:4 357:21 364:1 374:6 381:19 389:3 402:2 413:24 416:12 463:3 466:2 500:23 501:7 502:15 518:6 521:2 533:6 536:6 537:10 550:22 551:22 555:10 556:17 559:1 559:10 577:20 583:1 591:14 604:24 633:21 636:6 648:17,20 659:2 664:10 664:19 <b>early</b> 406:5 407:3 413:10 657:11 <b>earn</b> 425:3 467:10 475:7 <b>earnings</b> 640:23 642:9 <b>ease</b> 612:12 <b>easier</b> 386:2 482:1 573:11 626:24 627:6 631:18 <b>East</b> 298:15 <b>economic</b> 298:8 312:22 312:23 357:22 373:15 379:22 381:22 382:5 382:21 383:5 384:5 392:12 403:5 415:10 415:17 422:22
---	--	---	---	---

**E**

**E** 297:1,1,24  
298:1,1 299:1,1  
673:1 674:1  
675:1 676:1,12  
677:1 678:1  
679:1

EVIDENTIARY HEARING - Vol. 5 5/10/2018

435:5,9,14,19	387:21 388:6	347:24 348:5	462:21 463:11	597:22
436:21 437:1	558:19 639:2	348:9,19	463:19,24	598:19
476:3 483:17	<b>electronic</b>	349:8,14	464:1,19	600:22
557:3 587:2	539:23	352:5,16	465:6,8,20,21	601:24
<b>economical</b>	<b>element</b> 433:1	353:20 354:2	467:4 468:7	604:22 606:7
328:21	531:22 537:11	354:10 355:13	468:16,20	607:13,21
394:22	537:12	359:19 360:15	469:10,19,20	608:2,4 609:1
<b>economics</b>	<b>elements</b> 427:1	360:20 361:4	469:22,23	609:8 613:17
634:6 635:22	429:15 455:19	361:7,17	470:6 471:18	617:17 621:9
<b>EI</b> 403:17	456:4 485:5	362:10 366:16	474:17 475:19	621:16 622:3
<b>effect</b> 371:15	531:7,24	368:10,13	479:19,22	628:6 629:11
483:2 575:10	537:17	369:1,14,20	480:6 481:22	629:14 633:7
575:11,23	<b>eleventh</b> 514:6	370:9 373:4	482:11,19	642:14 648:21
<b>effective</b> 482:2	<b>eligible</b> 462:5	373:20 375:4	490:7,10,12	648:23 649:2
<b>effectively</b>	<b>eliminate</b>	375:13 378:4	491:1,4,9	650:13 655:5
328:19 667:2	592:23	379:24	492:4,4 494:5	655:10,21
<b>effects</b> 515:15	<b>eliminated</b>	380:14 382:2	494:13 495:2	657:7,10,15
<b>efficiency</b>	330:8	382:3,11,14	495:4 496:7	657:24 658:6
322:2	<b>Elk</b> 303:8,11,16	383:2,15,24	496:15,22	659:14,18
<b>efficient</b> 394:9	304:17,22	384:14,21,23	497:3,10,22	660:14 661:1
<b>effluent</b> 508:22	317:1 318:23	385:1,8 386:9	503:7,8	661:19,20,23
<b>effort</b> 558:6	319:3,11 328:3	386:15,16,21	505:20 506:3	661:24 662:3
<b>efforts</b> 551:23	338:16 357:16	387:9 391:10	507:11,24	662:19,20
670:7	363:15 364:19	391:14 392:3	511:9 514:22	663:2,16,18
<b>Eichler</b> 355:9	368:6 374:9	392:4,4,7	516:3,7,18	668:4 669:7
<b>eight</b> 308:23	374:11 376:13	397:16,17,17	517:4,7,8	669:24 672:8
343:24 344:1	380:10 389:11	399:1 400:23	519:24 521:6	676:2 677:2
489:9 662:18	394:2 425:14	413:6 414:15	522:4,9	<b>empire's</b> 304:11
<b>eight-year</b>	425:15,17,20	415:22 419:18	523:6,9,14	314:24 316:19
489:5	494:12,21,23	421:12,16,18	524:15	318:18,19
<b>Eighth</b> 434:21	502:5 582:6	422:2,6,7,16	528:20 529:3	322:11 327:1
<b>eighty-seven</b>	<b>Ellinger</b> 297:23	424:1,5,9,12	534:16 535:8	336:10 342:3
594:21	<b>Elmo</b> 341:2,7	424:13,14,18	536:21 537:4	360:14,19
<b>either</b> 309:7	<b>emphasized</b>	425:14,17,17	540:13 543:12	361:14 362:16
367:12,13	648:21	426:2,4	544:7 545:4	363:8 375:1
395:11 397:17	<b>Empire</b> 296:9	427:15,21,23	545:16	387:8 389:11
464:6 507:12	298:12 299:5	428:2,7 429:7	546:23 547:7	389:16 392:10
636:12	300:16 302:15	429:10,14,16	548:8,14	399:10 408:1
665:23 671:16	307:9 315:24	430:2 431:24	549:9 555:21	409:23 423:1
<b>electric</b> 296:9	319:3 322:9	432:20	556:19 557:7	440:22 441:2
298:12 301:8	323:17,21,24	435:17 436:8	558:13 561:19	454:16 456:9
314:19 493:4	324:18 325:2	436:19,20,23	563:8 566:4	458:19 459:8
510:23 511:2	325:6 330:15	436:24	566:20,22	469:2 470:9
642:14	335:2,13	440:12 442:17	567:16 577:16	471:20
<b>Electric's</b> 375:13	336:20	454:5 458:16	577:22 581:2	490:24 501:16
<b>electricity</b>	338:19 341:17	458:17 460:2	581:16 583:10	509:8 512:2
378:6,8	344:7 346:16	460:6 462:12	584:17 590:4	514:1 515:2,6



EVIDENTIARY HEARING - Vol. 5 5/10/2018

515:24 516:1 517:17,19,20 518:12,21 520:23 521:24 522:16 522:21 531:17 534:10 537:8 537:16,20 539:16 543:15 545:13 546:12 547:9 554:5 554:10,14 585:5 595:24 596:8 597:24 601:10 605:3 606:5,17 620:10 622:11 652:16 655:14 657:21 659:5 667:3 <b>employed</b> 301:5 417:23 418:1 470:23 493:1 504:2 560:6 599:7 599:9 610:16 630:5 653:19 653:21 <b>employee</b> 348:19 <b>employees</b> 309:22 310:14 311:4,9,14 330:12,16,18 382:15 383:8 <b>employment</b> 309:23 311:14 <b>enable</b> 465:2 <b>enabling</b> 465:21 <b>encouraged</b> 616:2 <b>ended</b> 375:22 588:24 665:5 672:17 <b>Endofex</b> 564:14 <b>ends</b> 335:2	361:3 457:24 589:7 <b>energy</b> 298:7,9 309:13 312:14 314:20 318:21 325:10 328:14 334:22,22 335:3 349:20 357:12,13 358:6,12 359:22 379:20 388:16 394:10 398:11 399:12 402:9 412:20 424:24 425:3 425:7 426:12 426:14 437:5 462:6 464:6 464:9 467:5 467:12 478:19 483:8 485:17 487:2,18 495:12 498:15 498:24 499:15 502:9 502:12 520:9 536:18 562:14 562:21 564:10 576:19 602:18 616:8 630:7 637:9 640:9 640:12 650:4 656:21 662:4 662:5,8,22 <b>engineer</b> 490:15,20 498:4 <b>engineer's</b> 500:2 <b>engineering</b> 406:23 <b>England</b> 298:14 <b>ensure</b> 312:16 312:16 313:14 313:24 378:16 426:20 471:19	473:14 476:23 478:6 666:18 <b>ensures</b> 556:9 556:13 <b>ensuring</b> 312:7 427:5 <b>entail</b> 476:13 <b>entails</b> 366:3 <b>enter</b> 319:3 359:23 395:4 395:23 454:6 460:3 479:14 612:20 <b>entered</b> 359:24 469:19,22 505:21 545:17 614:17 661:24 662:23 <b>entering</b> 395:11 395:14 397:7 656:4 667:15 669:21 <b>Enterprise</b> 560:9 <b>entire</b> 317:11 473:20 515:4 537:13 625:21 634:7 642:13 <b>entirely</b> 428:9 515:12 567:5 567:13 576:15 584:18 641:2 <b>entities</b> 464:12 465:18 <b>entity</b> 314:13 422:2 463:24 474:13 480:21 589:7,12 <b>environment</b> 471:12,14,16 <b>environmental</b> 297:19 308:1 308:6 383:12 405:1,2 636:13 637:2 <b>envisioned</b> 435:15	<b>EO-2018-0092</b> 296:9 <b>EPA</b> 308:11 404:11,15,19 508:21 <b>EPA's</b> 404:6 <b>equal</b> 429:16 466:19 468:5 537:2,6,9,15 584:12 <b>equalize</b> 327:24 <b>equally</b> 537:11 <b>equate</b> 322:24 <b>equation</b> 431:14 <b>equipment</b> 390:14 462:18 462:19 490:19 588:21 589:6 <b>equity</b> 323:18 385:2,6,19 392:24,24 393:6 420:3,5 420:20 423:4 423:22 424:1 424:5,15,20 425:5 426:3 426:14 428:11 428:21 429:3 429:24 431:16 433:4,9,17,19 434:1,2,3,6,8 434:15 435:4 435:22 436:1 436:5,7,10,13 437:1 438:10 438:12,19 440:8 441:13 454:6 460:3 462:10,13,14 462:22 463:4 463:8,10,15,21 463:22 464:5 464:15,17,20 465:22 466:1 466:21 467:2 467:3,9,14	468:1,3,15,17 469:8,19,23 469:24 470:6 470:10,21 472:8,19,24 473:11,14,18 473:24 474:6 474:15,19,24 475:2,7,13,15 475:17,21 476:7,11,24 480:10,20 481:2,24 482:7,15 483:10 500:20 501:2 501:4 531:19 554:22 555:1 555:3,7,16 563:8 567:17 571:9,11,12,13 571:14,18 601:8 611:8,17 625:8,16,20 642:1,3,4,6,11 642:11,16,18 659:9,13,18,21 661:12 670:2 670:18,24 <b>equivalent</b> 483:14 669:7 671:16 <b>erased</b> 515:11 <b>error</b> 351:6 376:18 630:22 <b>errors</b> 504:19 634:21 <b>ESP</b> 439:7 <b>essentially</b> 325:18 327:19 330:7 456:22 456:24 458:12,14 524:14 528:2 529:18 545:22 582:5
---	---	---	---	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

584:18 604:1 614:1 638:23 658:2 659:10 <b>establish</b> 458:13 593:23 605:17 <b>established</b> 458:8 511:11 <b>estimate</b> 303:9 334:5 347:15 406:24 483:7 488:10 525:6 532:17,24 540:12 541:6 643:20,24 645:1 678:22 <b>estimated</b> 304:20 305:6 305:8 330:4 428:24 472:13 490:18 540:21 541:22 542:21 638:17 642:23 643:8 660:3 <b>estimates</b> 432:16 639:7 643:13,14 644:14 <b>estimating</b> 487:8 643:23 <b>estimation</b> 525:3 543:2 <b>evaluates</b> 490:21 <b>evaluating</b> 427:4 <b>evaluation</b> 490:14,15 500:2 660:7 <b>evening</b> 601:3 603:1,2 606:2 606:3 629:24 630:1 633:13 633:14 637:17 637:18 655:8	655:9 <b>event</b> 427:6 458:6 476:14 508:13 574:13 623:1 <b>events</b> 476:16 <b>eventual</b> 345:22 <b>eventually</b> 479:22 <b>everybody</b> 550:12 <b>evidence</b> 302:11,16 332:20,21 333:2 354:17 419:13,19 494:1,6 505:16,21 534:19 545:12 561:15,20 593:12,13 600:23 613:8 633:4 634:5 655:1 <b>EVIDENTIARY</b> 296:5 <b>exact</b> 343:18,20 433:22 461:2 550:22 <b>exactly</b> 324:9 347:1 430:12 466:17 485:2 527:5 567:1 569:11 590:7 650:6 <b>Examination</b> 300:24 406:18 410:20 413:8 417:14 486:2 487:23 490:8 492:17 503:18 557:9 559:25 595:21 599:1 609:9 610:9 623:23 624:7	629:21 651:4 653:12 666:2 667:24 673:3 673:11,12,13,15 673:23,25 674:3,7,12,14 674:18,21,25 675:3,9,10,12 675:16,18,23 675:24 <b>example</b> 348:7 357:16 394:24 403:22 440:19 442:3 442:15 472:22 475:24 476:1 476:16 524:10 526:16 528:15 535:14 540:24 622:3 651:18 <b>examples</b> 567:9 629:9 <b>exceed</b> 491:24 498:7 569:22 578:23 <b>exceeded</b> 578:4 641:1 <b>Excel</b> 341:24 <b>exception</b> 581:1 <b>exceptions</b> 619:11,16,17 <b>excess</b> 328:17 421:14 474:7 515:11 532:17 <b>excited</b> 320:18 <b>exclude</b> 326:7 326:10 <b>exclusive</b> 442:1 <b>excuse</b> 560:13 600:4 612:3 642:11 <b>excused</b> 417:3 478:13 492:8 559:16 598:13	<b>executes</b> 386:21 <b>execution</b> 374:20 <b>executive</b> 618:21 <b>exercise</b> 310:23 475:20 515:17 <b>exhibit</b> 299:8 301:15 312:6 314:22 315:6 331:2 345:12 350:11,13,16 351:8,10,14,16 418:17,20 505:20 523:18 538:19 539:12,13,20 540:7,10 542:4 543:5 561:2,15,19 568:8 570:24 571:23 572:1 577:3 579:21 580:13,20,22 582:8 583:19 612:21 613:4,7 630:10 631:6 631:16,24 654:1,20 676:2,3,5,7,9 676:10,11,13,15 676:16,18,20 676:21,22,24 677:2,3,5,7,9 677:11,13,14,16 677:18,19,21 678:3,5,7,9,11 678:12,13,15 678:16,17,18 678:19,21,22 679:3,4,5 <b>exhibits</b> 302:3 302:11,15 354:13,16 418:9 419:5,9 419:13,16,18	493:11,18 494:1,5 504:13 505:8 505:16,19 538:6 539:11 545:4,9,11 599:17 600:10 600:18,22 632:22 633:3 654:18,24 679:7 <b>exist</b> 478:1 <b>existed</b> 662:6 668:10 <b>existing</b> 308:16 309:1 346:1,3 346:21 349:5 349:14 352:5 364:9,10 373:8 374:11 380:9 394:1,6 394:15 397:19 398:7 405:8 405:21 473:23 480:6 488:23 620:12 666:10 <b>exists</b> 322:17 478:4,5 573:24 <b>expand</b> 373:5 373:10,20 415:4,7 <b>expansion</b> 407:2 564:12 <b>expect</b> 318:6,9 338:3 365:14 365:22 486:16,23 570:20 586:6 592:17 639:22 <b>expectation</b> 420:12,16 661:16 <b>expectations</b>
---	---	--	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

426:21 <b>expected</b> 406:21 411:19 427:7 473:15 473:18 476:17 476:18,21 477:1 479:14 484:6,8,13,17 489:11,17 490:21 498:14 499:14 566:15 566:17 569:24 572:14 573:4 585:14 635:8 641:11,23 642:22 643:6 667:16 <b>expended</b> 325:23 <b>expense</b> 413:11 520:1 <b>expenses</b> 429:20 455:3 455:5 549:1 623:9 <b>expensive</b> 401:5 656:1 <b>experience</b> 323:18 393:11 427:16 484:3 488:4 601:8 <b>experienced</b> 484:13 489:16 <b>experimental</b> 655:19 <b>expert</b> 327:18 471:15 479:1 532:14,20 592:5 619:1 <b>expertise</b> 324:9 324:11 586:14 601:18 <b>expiration</b> 376:15 <b>expire</b> 367:2,8 494:24 495:4	<b>expires</b> 318:7 374:11,15 376:9 <b>explain</b> 304:8 349:9 382:19 390:8 408:14 409:2 432:10 462:10 565:20 566:2 566:6,7 581:17 617:11 620:23 640:5 <b>explained</b> 303:21 397:9 545:5 <b>explanation</b> 339:1,22 373:19 592:9 593:3 594:9 <b>explicitly</b> 554:15 <b>exports</b> 592:7 <b>exposed</b> 463:9 463:10,21 464:20 <b>expressed</b> 615:24 <b>extend</b> 374:12 <b>extended</b> 367:5 367:11 484:6 487:6 <b>extending</b> 380:16 635:14 <b>extension</b> 366:24 374:15 394:17 <b>extent</b> 391:2 399:9 400:20 415:2,3 424:2 424:17 425:22 427:23 441:14 457:9 480:1,2 491:2 531:17 609:20 612:5 612:8 618:9 619:24 621:13	629:2 638:3 668:10 <b>extra</b> 505:5 <b>extraordinary</b> 476:13 <b>extremely</b> 615:21 639:12 <hr/> <b>F</b> <hr/> <b>FAC</b> 401:12,15 416:15 511:6,9 511:11,14,20,24 512:2,6,11 514:8,12,16,19 514:22 518:20 518:22 531:6 547:18 549:2 575:17 604:5 604:8 <b>face</b> 403:4 <b>faces</b> 403:23 <b>facilities</b> 327:17 480:7 488:23 489:14,19,24 <b>facility</b> 325:6,7 402:1 420:6 426:22 467:15 470:12 470:13,15,19 476:2 479:10 479:24 483:11 483:17 484:3 488:24 489:13 490:4 491:23 492:1 492:4 512:19 620:18 <b>fact</b> 420:14,24 425:13 433:11 433:13 466:13 472:12 480:12 482:5 507:24 508:5 517:11 533:5 565:7 601:11 645:7 651:15 <b>factor</b> 319:12	323:3,5,5 332:16 337:5 337:15,17 364:21 403:9 403:13,24 457:2 460:23 461:3,17,19,20 466:20 467:6 467:24 468:3 468:8 476:10 478:1,4 482:9 483:4,19 486:10 487:4 487:10,15 499:2,11,14,19 500:10,21 532:17 573:17 573:22 584:9 584:12,14,14 584:16 587:22,24 588:11,15 591:6 597:14 649:22 <b>factored</b> 581:17 <b>factors</b> 316:12 316:13,17 319:7,16 320:5 331:18 331:19 333:17 340:13 373:16 395:5 401:20 415:10 442:9 466:24 467:15 482:7 482:24 486:5 492:3 532:7 532:14,21 535:17 536:19 583:16 584:2 585:9 592:4 <b>facts</b> 593:12 <b>factual</b> 322:5 <b>Failure</b> 439:4 <b>fair</b> 456:17 457:22 601:22 619:8	638:14 651:10 <b>fairly</b> 580:16 <b>fall</b> 405:5,23 585:15,16,22 590:1 591:16 591:17,19 645:20 652:18 <b>falloff</b> 318:10 <b>familiar</b> 302:24 308:2 315:21 331:22,23,24 332:6 335:12 340:4,9 353:14,20 354:9 356:21 362:9,13 363:12,14,19 364:8 374:24 375:3,4 390:23 408:2 418:15 434:23 434:24 437:24 438:1 455:15 457:3 457:6,13,15,16 491:13,16 509:19 510:15 512:17 520:23 562:3,23 563:16 564:22 585:4 585:8 591:9 603:4,18 624:11 626:11 <b>familiarity</b> 336:13 362:16 478:23 479:2 <b>family</b> 323:17 382:8,11 383:6,8 <b>far</b> 344:12,13 355:6 365:21 405:19 484:16 490:3 536:9 558:22 564:5 621:19 627:21
--	--	---	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

<b>farm</b> 313:18 332:3,3,17 335:11 357:17 359:11 376:6 376:8,13 389:11,17 393:23 397:6 397:19,20 398:7,9 424:3 467:22 468:7 470:10,11 478:19 490:11 541:24 543:23 558:18 574:3 589:6,7	480:24 <b>fast</b> 403:2 <b>fault</b> 573:15 <b>favor</b> 665:5 <b>favorable</b> 639:2 <b>favorably</b> 623:2 <b>favored</b> 612:1,3 618:24 619:3 619:4,9 <b>FCC</b> 375:1 <b>federal</b> 314:20 541:15 624:21 625:6 <b>fee</b> 425:17 <b>feedback</b> 552:16 553:11 <b>feel</b> 459:9 564:19 <b>feels</b> 404:12 516:9 544:16 <b>feet</b> 323:7 405:8 <b>felt</b> 310:10 326:19 <b>FERC</b> 314:17 <b>figure</b> 342:19 342:22 343:2 347:9 371:8 461:3 484:21 486:20 488:1 577:13 617:5 636:23 <b>figures</b> 433:13 433:21,23 496:21 527:1 638:8 <b>file</b> 296:9 300:8 311:3 320:19 324:5 386:12 439:20,22 496:1 519:7 548:14,18,22 549:4 551:14 <b>filed</b> 303:1 309:20 323:24 324:9	367:11 369:1,4 369:8 370:6 375:5 409:16 418:16 500:7 500:9,11 506:3,7 513:18 514:6 525:7 530:6 546:15 575:17 603:5 655:11 <b>filing</b> 321:5 367:1,6,7,9 370:11,14 372:1,22 373:3 375:21 383:18 386:9 463:13 507:23 527:19,19 529:8,20 530:4 557:11 558:3 598:4 634:13 <b>filings</b> 375:1,3 513:23 530:22 <b>fill</b> 529:11 669:9 <b>final</b> 355:23 404:16 527:23 671:2 <b>finalized</b> 436:12 460:12 <b>finally</b> 527:17 556:8 <b>financable</b> 465:3 <b>finance</b> 380:6 385:6 392:22 418:2 424:24 479:15 482:1 <b>financed</b> 385:19 <b>financial</b> 396:20 397:5 421:22 432:15 433:3 466:3,5 <b>financially</b> 393:18	<b>financiers</b> 426:12 479:15 <b>financing</b> 323:18 369:24,24 392:24 393:6 394:19 425:4 425:5 426:17 426:18,20 460:4 465:22 465:24 466:1 467:3 468:3 468:15,17 469:4,7,9 470:10,21 480:10 481:2 481:17,24 482:8 501:4 555:11 623:8 659:13 661:12 <b>find</b> 311:14 352:20 438:22 554:7 554:18,19 608:23 <b>finding</b> 546:24 559:8 573:15 614:11 <b>findings</b> 664:22 <b>fine</b> 331:12 343:21 353:1 386:5 608:19 <b>finished</b> 381:2 <b>first</b> 300:21 302:17 304:4 306:18 327:7 327:14 351:24 375:17 383:11 387:15 411:5 417:12 419:20 421:10 423:11 423:21 424:4 426:8 427:10 427:20 435:17 454:5 456:22 472:4,7,14,16 472:23 473:8	492:15 494:7 495:24 503:16 504:24 515:20 517:19 518:19 524:23 525:21 526:8 529:22 540:10 558:15 558:18 559:23 563:21,23 565:9 566:10 568:12 570:21 573:14 578:8 594:14 598:24 600:24 610:7 613:16 625:24 629:19 633:7 641:12 643:21 644:2,9,15 645:8,8 653:10 655:4 663:24 664:9 664:14 672:10 <b>firsthand</b> 332:22 <b>five</b> 322:19 323:13 330:17 339:7 343:6 343:15 374:12 380:16,17 399:19 400:5 427:20 472:14 472:23 484:5 488:12 489:5 542:7 594:21 623:10 <b>five-minute</b> 339:5 340:7 <b>five-year</b> 374:14 473:8,10,13 <b>fixed</b> 402:20 403:1,1 424:2 424:19 425:17 427:18 429:12
---	---	---	---	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

429:16 463:1 555:10 648:3 648:6 660:1 <b>flat</b> 586:16 <b>flawed</b> 517:18 517:20 518:3 <b>fleet</b> 468:10 469:2 484:11 516:14 549:10 549:17 550:4 551:16 552:23 556:23 607:3 635:20 649:6 <b>flip</b> 331:16 338:14 339:20 440:5 454:12 455:20 530:24 532:6 <b>flipped</b> 486:9 <b>Floor</b> 297:24 <b>flow</b> 313:14 341:24 401:11 401:15 440:6 440:12,13 510:12 512:11 514:12,16 563:10 581:7 581:8,11,15 584:24 589:20 604:5 669:15 <b>flowed</b> 416:14 <b>flowing</b> 512:7 <b>fluctuating</b> 522:6 <b>folks</b> 355:4 382:10 501:1 <b>follow</b> 358:7 390:10 427:8 438:23 480:8 516:10 <b>followed</b> 359:7 <b>following</b> 334:24 361:11 440:7 489:3 516:10 528:20	531:7 592:20 615:3 624:23 643:2 <b>follows</b> 300:23 417:13 492:16 503:17 559:24 598:25 610:8 629:20 653:11 <b>foot</b> 532:13 <b>footnotes</b> 322:5,6 <b>footprint</b> 608:3 <b>force</b> 310:10 330:11,14 <b>forced</b> 661:1 <b>Forck</b> 297:3 302:19,21 303:5,6 306:8 406:17 406:19 407:8 407:21 409:9 409:14,21 410:8,16 494:9 495:8 505:24 518:14 538:20 554:8 561:24 573:7 577:23 629:22,24 631:7,11,17,22 631:23 632:21 633:5 651:3,5 653:4 673:4,11 674:8,15 675:12,16 <b>forecast</b> 338:18 339:16,16,17 339:18 348:11 414:19,19,20 536:20 585:16,22 586:3,4 591:19,23 594:7,7,9,10,11 594:23,23 597:18 622:4	635:17 638:16 646:17 651:24 652:18,23 <b>forecasted</b> 651:23 652:12 <b>forecasters</b> 414:8 <b>forecasting</b> 357:5 415:1 <b>forecasts</b> 335:13 338:11 338:19 413:19 414:23 527:21 537:1 586:15 591:13,22 592:3 593:11 594:24 595:2 596:1,3 652:17,17,20 <b>forget</b> 362:3 582:2 <b>forgive</b> 474:12 <b>forgot</b> 504:20 <b>form</b> 301:12 346:6 375:13 375:21 418:6 425:9,11 427:24 429:5 493:8 504:9 560:22 599:14 621:17 <b>formula</b> 457:14 457:24 627:24 <b>formulas</b> 630:22 <b>forth</b> 370:3 596:17 680:10 680:13 <b>forums</b> 602:5 <b>forward</b> 308:5 324:1 371:7 373:2 386:15 395:2,10 403:2,12,23 412:3 422:19 439:7,10	462:12 468:4 475:17 482:20 497:10 500:4 507:12 564:15 585:15 593:8 596:5 605:4 605:8 665:7 669:11,14 671:4 <b>forward-looki...</b> 652:9 <b>forwarded</b> 667:9 <b>found</b> 423:19 430:9 <b>foundation</b> 333:1 593:14 593:16,18,24 <b>four</b> 321:23,24 323:13 330:17 399:20 469:14 505:2 506:4 514:9 572:22 623:10 <b>fourth</b> 454:17 <b>fraction</b> 476:18 <b>frame</b> 344:4 360:13 406:4 472:13,13 473:16 475:9 477:1 487:7 488:10,11,13 535:21 556:21 <b>front</b> 340:18 360:1 408:5 411:2 430:6,10 496:24 539:10 579:22 <b>fuel</b> 307:13 317:24 318:2 318:19 330:17 386:10,14 402:15,19 416:20,22	457:1 510:12 510:21,22 511:1,6 548:1,6 548:16,23 549:5 <b>full</b> 330:10 331:11 345:23 345:23 367:17 395:21 658:10 <b>full-blown</b> 551:9 <b>fully</b> 463:19 680:12 <b>function</b> 395:23 396:1 400:22 648:1,9 <b>functioning</b> 388:8 <b>fundamental</b> 586:9 604:18 <b>fundamentals</b> 586:13 <b>further</b> 299:3 300:14 306:9 309:11 342:7 353:15 368:17 392:14 406:11 410:16 412:18 437:2 459:11 477:2 487:20 490:6 492:6 495:9 501:22 503:2 518:14 520:8 538:1 552:10 554:21 557:4 559:13 576:17 595:14 598:10 601:5 602:9 605:21 609:7 616:6 620:2 622:13 624:4 629:15 635:23 637:7 648:11 650:24 653:5 656:17 661:17 664:3 667:21 671:18 <b>future</b> 326:18
--	---	---	---	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

422:7,20,22 463:16 497:14 515:11 548:11 564:17,21 586:10 605:12 605:15 607:23 608:3 609:3 618:21 622:4 640:8 640:12 655:12 656:6,15 657:10 669:19 futures 370:21	514:20 519:18 521:1 522:10 523:22 528:12 536:16 540:8 602:6 624:11,14 655:14 662:17 generate 378:8 387:24 542:2 generated 334:22 335:4 425:18 426:21 427:20 430:15 462:6 475:12 536:18 566:22 generates 424:3 558:19 generating 382:9 386:18 386:23 388:6 388:19 483:17 515:15 655:17 656:1,5 generation 303:8,17 304:15,16 307:17 316:23 321:13,22 325:6 328:5 328:9,12 360:16,21 361:2 362:12 364:14 366:8 368:22 369:4 373:8,16 377:7,10,10,12 377:14 378:4 378:5 391:1,5 391:21 399:7 399:15 407:23,24 408:16,17 409:3 410:14 414:12 416:2,9 416:11 422:6 438:6 467:20	468:9 469:2 479:6 482:21 484:18 494:13 495:1,5 512:19 515:7 517:22 549:10,17 550:4 551:16 552:23 556:23 607:3 607:5,10,14 609:3 620:11 635:20 648:7 649:6 655:13 658:18 662:21 666:11 generator 313:19 390:3 398:5,18 399:7 496:18 498:17 562:14 562:20 generator's 562:22 generators 499:12 592:19 Geoff 624:12 getting 324:19 367:1 371:15 382:10 387:2 393:17 426:15 426:16 551:24 576:14 615:11 615:16 627:12 GFSA 306:21 368:15 370:10 371:1 438:13 487:19 525:4 525:6 549:18 591:17 597:10 609:14,15 642:23 643:14 gigawatt 512:18 gist 391:12 give 314:8 343:11 373:17 388:10 395:1	400:15 423:15 501:3 510:3 562:13,19 613:21 641:14 given 427:16,16 472:10 479:12 484:2,5 488:22 496:12 515:21 515:23 588:16 glare 341:4 GM 455:23 GM-1 455:24 456:1 533:17 626:22 go 299:2,3 312:18,19 313:10,10,11,16 313:19,21 316:15,15 317:6,16 323:4 333:6 337:3 350:10 361:5 361:5,7,18 364:23 366:19 369:20 371:21 372:14,15 381:1,6 387:1 394:7,8,21 398:2,4,8,21 400:16 404:16 427:1 442:14 442:23 455:12 472:14 497:10 504:20 513:9 517:13 524:8 524:17,22 526:19 528:17 531:12 535:21 537:3 538:5 539:1 542:5,6 546:7 553:17 560:15,16 571:19 583:18 583:24 584:2	589:21 591:5 598:17 603:3 605:1 612:20 621:8,23 627:6 641:8 654:20 goal 503:1 goes 352:2,2 386:15 442:8 454:14 482:20,20 560:21 575:11 579:7 581:19 584:15 588:10 624:13 627:21 644:6 653:2 660:6 668:20 going 300:12 308:5,17,18,19 309:7 313:1 314:3 318:3 323:13 326:6 330:19 336:14 338:13 346:6 346:10 349:3 351:12 361:16 365:1,19,21 371:3,7,16,20 372:6 375:17 378:1 379:14 381:7 395:2 395:10 396:3 396:8 397:12 403:23 407:12 409:4 410:6,6 412:2 420:21 423:17 428:1 441:7 442:2 455:11 457:5 467:23 469:9 471:13 491:7,8 497:3 498:2,4 501:2 509:11 518:4 528:5 532:24 539:20 540:3 544:10 551:22
<b>G</b>				
G 299:1 gas 307:12,16 316:20,24 399:22 402:4 402:7,8 586:24 591:1 592:7 gas-fired 379:2 gather 618:13 650:18 gathered 490:16 gears 482:18 general 334:13 387:1 404:12 405:9 410:12 438:1 455:4 456:2,10,14,19 483:4 484:10 511:11,15 531:4 531:8,9,13 536:23 587:2 618:4 619:20 661:12 663:6 665:1 668:19 generally 304:8 321:11,12 336:22 363:24 439:14 455:12 501:10 507:13 507:16 512:21				

EVIDENTIARY HEARING - Vol. 5 5/10/2018

556:18,20	655:8,9	571:3 573:17	Hall 296:15	hardships
558:10 568:16	<b>goodness</b>	573:22 579:2	392:18 406:11	405:11
568:18 574:10	562:15	589:5,11,12	407:23	<b>harm</b> 458:15
575:12	<b>gotten</b> 667:3	626:12,14,17	409:10 411:5	459:4 501:11
588:22	<b>governing</b>	<b>guaranteed</b>	477:6,8	501:17
590:10	655:11	420:4 457:2	478:15 485:9	<b>harmless</b>
592:15 593:10	<b>grab</b> 504:21	498:7,20	486:14 487:1	458:14 459:5
594:13 624:17	<b>grade</b> 666:15	<b>guarantees</b>	503:5 557:6	<b>head</b> 316:21
625:12 636:12	<b>grant</b> 616:21	512:23	595:18 673:10	319:21 343:3
639:13	623:11	588:20 589:2	673:22	389:14,18
652:24	<b>granted</b> 658:12	589:3	<b>Hall's</b> 324:20	662:10
655:24	658:22	<b>guess</b> 334:12	407:9 409:6	<b>health</b> 383:2
664:17 669:11	<b>grants</b> 545:24	334:24 336:8	488:6	<b>healthier</b> 379:21
669:14	<b>graph</b> 304:9	348:1 353:2	<b>hand</b> 300:19	379:24 380:8
<b>gonna</b> 554:7	305:7,11,18	361:10,10	330:19 351:13	381:21 382:2
<b>good</b> 302:22	412:10 528:4	362:24 371:5	417:10 492:13	382:13,14
302:23	587:13 617:5	371:10 372:19	559:20	<b>hear</b> 299:5
303:16 306:15	<b>graphs</b> 303:7	372:20 373:21	680:15	421:2 519:12
306:16 309:17	305:22,24	375:16 381:20	<b>handed</b> 350:15	603:9 634:2
309:18 310:13	306:5 327:21	390:17 395:2	375:18	<b>heard</b> 364:13
310:14 312:4,5	328:2 362:5	404:6 465:13	539:22 611:6	367:24 481:11
316:5 342:13	362:5,24	488:4 499:1	631:7	521:5,23
342:14 362:1	363:6,7,11,21	526:24 555:2	<b>handing</b> 345:9	642:2 648:18
392:19,20	364:17	569:16 580:12	375:12 538:18	648:19 657:9
416:21 417:17	365:24	590:12	<b>handle</b> 669:18	<b>hearing</b> 296:5
417:18,21	587:10	599:23 621:10	<b>handling</b> 330:17	299:17 300:4
419:24 420:1	<b>great</b> 297:19	628:5 651:6	<b>hands</b> 423:1,2	302:13 354:15
421:9 437:14	378:19 421:2	655:23 658:6	<b>hanging</b> 344:5	419:16 478:16
437:16 459:14	<b>greater</b> 425:23	663:6,16	344:6	489:10 494:3
459:24 460:1	427:18 574:11	665:19	<b>happen</b> 313:20	505:19 506:11
475:10 476:9	<b>Greg</b> 573:3	<b>guessing</b> 343:8	323:13 326:7	519:6 545:9
477:9,10	597:6	343:9 569:15	546:5 670:4	555:10 561:17
492:20,22	<b>Gregory</b> 676:12	<b>guidelines</b>	671:15	600:20 611:7
494:10,11	<b>grid</b> 312:8	429:3 508:23	<b>happening</b>	613:5 633:1
495:22,23	316:10 398:7	<b>guy</b> 423:7	592:10	642:3 654:23
502:3,4	<b>ground</b> 405:7		<b>happens</b> 428:17	<b>hearsay</b> 299:19
503:21,23	<b>group</b> 403:16,16	<b>H</b>	458:3,5 472:5	300:10,13
506:1,2 516:15	404:9 556:5	<b>H</b> 676:1 677:1	472:17 497:12	<b>heat</b> 589:2
520:19,20	<b>groups</b> 668:9	678:1 679:1	552:1,3 579:5	<b>hedge</b> 424:4,9
534:4 539:7,9	<b>growth</b> 382:15	<b>half</b> 323:9	589:12 604:1	424:11,23
548:3 560:2	<b>GSFA</b> 597:15	339:21 399:19	604:2	425:6,10,22
560:3 562:1,2	<b>guarantee</b>	399:24 400:1	<b>happy</b> 593:20	425:22 426:1
601:3 603:1,2	420:8 432:9	400:6,7,9,16	<b>hard</b> 341:6,7	426:4 427:10
606:2,3	499:20	400:17	380:5 533:4	427:14,18,24
629:24	500:10 512:24	402:20,21	605:7	428:7,15,18
633:13,14	513:19 534:10	<b>halfway</b> 554:8	<b>hardship</b>	429:6,7,8,12
637:17,18	535:9,10	565:5	403:22	429:16 432:4

EVIDENTIARY HEARING - Vol. 5 5/10/2018

432:7,9,16,19 433:2,6 434:14 464:24 465:1 465:6,8,10,20 555:10 571:3 <b>hedges</b> 431:16 431:24 <b>hedging</b> 423:8 555:5 <b>heights</b> 319:21 <b>held</b> 557:21 663:19 <b>help</b> 383:4 517:1 574:12 651:18 <b>Helpfully</b> 648:14 <b>helps</b> 582:22 <b>hem</b> 603:9 <b>Henry</b> 297:18 <b>hereof</b> 680:10 <b>hereunto</b> 680:15 <b>hesitate</b> 399:11 401:13 <b>high</b> 297:24 392:7 402:11 483:2 509:11 515:13 532:24 596:23 597:4 597:18 619:7 621:21 650:1 655:18 <b>higher</b> 319:8,16 319:20,20,21 320:6 328:5,7 328:22 349:8 365:4,8,9 394:6,20 396:7 402:5 402:15 410:13 467:24 468:2 488:9 489:4 515:15 521:21 533:1 537:16 537:23,24 568:7 572:16	572:17 587:3 588:11,15 590:1,6 660:15 661:2 670:1 <b>highest</b> 327:22 <b>highlighted</b> 433:11 <b>highly</b> 499:23 <b>hinge</b> 489:6 <b>historical</b> 301:22 317:8 <b>hit</b> 579:1 <b>hits</b> 525:22 526:8 527:6 <b>hold</b> 343:22 458:14 464:18 464:21 465:7 465:14,17 469:4 474:12 474:16,16 491:11 612:24 632:22 <b>Holdco</b> 463:23 464:3,6,15,16 <b>holder</b> 394:8 <b>holding</b> 322:18 459:5 464:11 470:23,24 537:2,6,9,11 537:14 <b>holistically</b> 531:24 <b>Holmes</b> 325:10 334:7 335:15 337:21 341:20 353:12,19,21 354:1,18,22 355:18 356:16 387:19 400:14 400:17 431:9 456:18 485:4 535:15 559:19 559:22 560:2 560:5 561:15 595:23 598:11 598:13 603:7	609:19 674:13 676:4 <b>Holmes'</b> 603:3 603:14 <b>honor</b> 299:15 300:16 302:10 302:19 306:11 310:12 332:19 333:21 407:8 409:9 410:19 413:7 417:1 419:12 421:6 493:24 505:15 518:16 561:14 593:10 598:21 600:17 632:21 633:10 671:23 <b>hopefully</b> 381:14 403:20 <b>hoping</b> 502:17 529:11 <b>horizon</b> 635:14 <b>hour</b> 339:19,24 424:3,19 425:18 427:16 460:20 461:1 461:4,7,15 467:7,7 468:20,24 469:10 483:18 596:4 <b>hour's</b> 339:11 <b>hour-to-hour</b> 359:15 366:4 <b>hourly</b> 339:13 339:15 363:18 <b>hours</b> 328:5,12 381:7 399:19 400:1,1,6,7,10 515:13 559:4 582:5 594:21 <b>hovering</b> 343:16 <b>Howell</b> 376:8 <b>hundred</b> 379:5 598:7 603:8	603:10,15 644:1,15 <b>hurdles</b> 403:5 <b>hydro</b> 307:13 <b>hypothetical</b> 436:6 475:23 476:5,8 594:1 594:3 <b>hypothetically</b> 473:21 476:12 594:6 <b>hypotheticals</b> 593:15	339:10 592:19 <b>imbalances</b> 338:6 414:10 <b>immediate</b> 422:18 <b>immediately</b> 423:4 474:11 <b>impact</b> 334:6 358:19 370:16 387:7 414:14 416:14,16 433:2 441:17 442:12 454:15 464:2 473:7 483:23 484:1 522:2,22 537:20 541:16 541:20,24 543:7,24 544:19,20 552:20 567:23 574:4 574:17 583:17 586:23 595:9 609:6 646:9 657:20 660:9 660:13 661:3 667:17 <b>impacted</b> 558:8 <b>impacts</b> 398:10 409:22 441:23 476:1 540:13 541:13 574:14 582:12 595:12 608:11 608:24 659:4 660:11,24 <b>implement</b> 359:21 528:21 <b>implementation</b> 404:7 <b>implemented</b> 399:23 635:21 <b>important</b> 463:22 468:23
--	---	---	--	---

I

**IATAN** 379:12  
564:11 655:16  
656:4 662:1  
662:20,23  
663:3,14,17  
664:9,13,23  
666:5,10  
**idea** 343:11,19  
621:24  
**identical**  
663:23  
**identification**  
301:16 331:11  
333:23 345:11  
350:14,16  
351:11,13  
418:10,17,20  
493:12 504:14  
561:2 599:18  
**identified**  
436:11 679:5  
**identify** 321:23  
433:14  
**ignored** 516:19  
517:4  
**Illinois** 489:20  
489:23,24  
**illustrated**  
524:9  
**imagine** 579:5  
589:20  
**imbalance**



EVIDENTIARY HEARING - Vol. 5 5/10/2018

483:19 555:11 638:19,21 651:20 imposed 348:6 impossible 323:11 665:18 impoundment 345:20 346:15 improve 338:9 604:16 650:16 650:17 improved 319:18,20 322:1,2 357:5 487:19 improvement 323:2 improvements 377:17,18 378:16,22 393:22,23 improves 338:12 improving 321:15 322:15 322:16 imprudence 516:19 517:9 imprudent 516:6 in-camera 443:1 673:19 in-depth 366:9 366:16 368:10 368:17 370:9 619:19 657:22 inaccurate 456:20 inappropriate 434:6 incentive 554:17,19 incentives 530:9 554:21 incentivize 491:18	incentivized 491:2 incentivizing 491:9 include 326:9 359:3 368:22 371:1 385:17 411:12 427:4 435:23 436:2 509:16 512:2 549:9,16 550:18,22 551:6,9 554:15 564:9 573:16 583:22 600:3 608:4,9 609:1 included 310:17 326:1 328:23 356:7 361:13 369:10 411:15 413:13 434:4 454:10 491:15 519:20 530:15 549:18,23 550:23 556:21 571:10 581:18 607:13 607:21 627:4 637:5 666:22 includes 345:3 427:4 534:20 541:24 including 467:15 492:3 501:17 535:4 547:24 inclusion 512:5 658:15 income 421:21 421:24 422:2 422:9,16 480:13 482:6 519:21 541:15 567:4 642:8 642:13 incorporate	552:16 incorporated 530:13 incorrect 349:16,23 505:1 584:16 594:10 596:12 incorrectly 483:7 increase 386:17 386:22 387:16 442:4 491:2 523:4 537:7 541:1,4 541:8,10 576:6 582:23 642:16 658:24 659:5 increased 442:11 483:3 667:2 increases 377:23,23 440:20 441:6 441:8 442:2,6 575:24 576:9 increasing 338:2 incremental 576:14 incur 346:16,23 347:10 637:3 incurred 346:11 510:22 511:1 636:12 Independence 434:22 435:4 435:8,11 independent 391:16 392:4 490:15,20 498:3 500:2 555:22 556:1 617:13 618:5,11 621:11,14 628:21 651:15 independently	433:20 indicate 345:17 377:6 435:2 indicated 336:13 344:18 424:10 428:20 433:24 457:6 458:21 459:2 607:17 620:21 620:24 633:24 664:19 indicates 305:2 376:9 424:18 indicating 383:23 434:3 indication 324:21 indications 501:4 individual 357:5 individually 408:8 individuals 300:2 induces 640:4 industry 321:15 324:4 377:7,11 377:15 404:12 inflate 326:18 inflation 326:16 460:21,23 461:2 586:16 inform 670:22 information 302:7 303:14 322:5 327:8 364:5 374:21 419:10 420:22 488:15 493:22 505:12 509:8 533:5 561:7 561:12 578:1 600:14 602:10	609:22 617:16 617:17 618:10 618:10 621:3,3 621:7,13,15,16 622:3 628:23 628:24 629:3 629:5,11,14 638:7 inherent 628:16 inherently 379:20,24 381:21 382:2 initial 348:22 352:19 353:10 356:3 374:19 387:18 394:19 438:18 513:1 580:5 initially 660:21 input 355:22 358:3 552:13 552:22 553:3 553:9,15 582:11 639:19 639:22 inputs 348:10 354:20 355:1 355:20 356:3 356:7,9 457:4 457:14 617:18 617:23 639:18 inquired 587:9 installed 303:23 332:7 332:15 357:18 378:23 instance 313:1 429:13 435:17 442:7 463:1 475:24 617:21 621:4 instantaneous 414:11 institution 426:20 insurance 476:2
--	--	--	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

integrated 312:15 323:24 357:20,22 358:4 368:24 549:9,15 584:22 638:1	370:4 371:10 <b>Intervenors</b> 360:24 <b>introduce</b> 640:16 <b>introduced</b> 577:4 <b>introduces</b> 640:5,6 <b>introducing</b> 631:6 <b>intuitively</b> 396:15 <b>invest</b> 426:14 467:2 468:2 583:5 <b>invested</b> 478:8 <b>investing</b> 384:21 467:9 <b>investment</b> 384:14 385:9 386:17,22 387:10 403:9 420:6,11,17 463:20 467:10 472:20,21 474:1 481:13 482:4 497:6 516:1,7 520:1 531:14,18 537:5 554:14 555:17 559:3 566:14 605:3 606:8,9 658:4 666:15 <b>investments</b> 337:12 420:15 420:15,16 421:19 520:5 548:24 626:3 <b>investors</b> 376:22 <b>invests</b> 492:4 <b>invoking</b> 382:10 <b>involve</b> 666:13 <b>involved</b> 348:17	348:18,21 349:4 353:21 354:2,22 356:17 382:10 391:23 392:21 393:1 401:16 401:21 589:8 618:2,17 622:8 666:5 668:16 <b>involvement</b> 655:16 <b>involving</b> 434:22 506:17 655:12 656:13 <b>IPP</b> 361:19 362:2 <b>IRP</b> 355:7 366:17,17,20 367:6 369:16 373:2 383:18 383:18 407:2 407:15 545:15 652:2,8 <b>IRPs</b> 348:18 652:11 <b>IRS</b> 429:2 462:15 463:12 <b>isolation</b> 660:8 <b>issuance</b> 567:18 <b>issue</b> 312:23,24 313:2 479:4 495:1 567:17 589:4 <b>issued</b> 404:18 620:17 648:23 <b>issues</b> 314:12 368:16 380:6 614:11 <b>item</b> 555:5 566:10,12 567:11,24 568:5,15 571:2,8,15	580:21 <b>items</b> 373:24 429:5,18 432:2 519:20 542:9 543:8 552:9 572:3,7 580:24 581:5 581:6 583:15 624:18 626:17 627:5 628:3 628:11,16 656:16 <b>its'</b> 582:20 <hr/> <b>J</b> <hr/> <b>James</b> 676:14 676:15,17,19 <b>January</b> 301:25 304:5,12 305:8 327:5 342:23 351:2 354:4 <b>Jay</b> 609:19 <b>Jeff</b> 512:12 <b>Jefferson</b> 296:6,23 297:5,10,24 298:5,10,15 <b>Jenti</b> 397:18 <b>Jim</b> 577:17 <b>job</b> 361:21 <b>jobs</b> 329:23 330:1,4,6 441:11,19,24 509:9,13 <b>jog</b> 345:6 <b>John</b> 303:1 345:10 408:3 506:23 563:16 564:22 611:11 629:18 630:4 631:14 675:11 678:10 <b>joint</b> 325:3,8 349:2 625:15 <b>jointly</b> 663:14	<b>Jop</b> 587:7 <b>Joplin</b> 297:22 299:9 319:24 331:10 335:16 413:2 437:11 485:23 490:23 495:18 520:15 532:3 576:23 587:8 602:22 616:12 624:9 637:13 657:1 669:23 679:2 <b>JSR-1</b> 430:8,12 565:23 566:11 568:11 572:10 580:18 596:11 <b>JSR-1's</b> 581:1 <b>judge</b> 296:13,14 299:2,7,12,20 300:12,18 301:2 302:13 306:10 309:13 311:22,23,24 319:24 331:6 331:12 333:3,6 336:16 342:9 350:12 351:7 351:9 354:12 354:14 372:13 375:11 380:23 381:6,10 392:16 406:15 407:13 409:4 409:19 410:4 410:18 412:20 412:22,23,24 413:2,4,6 417:2,5,9,16 419:15,20 421:5 437:5,7 437:8,9,11 442:24 457:8 459:13,17 477:4 478:14 485:12,15,17 485:19,20,21
--	---	--	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

485:23	655:4 656:19	<b>key</b> 425:19	387:17,18,19	663:2 670:6
487:21 490:7	656:21,23,24	<b>kilovolt</b> 512:19	389:5,15,19,21	670:17 672:2
491:10 492:7	657:1 661:18	<b>kilowatt</b> 460:19	389:23 391:4	<b>knowing</b> 533:4
492:12,19	664:4,8	461:1,4 467:7	395:16 396:9	589:19
494:3,7	665:22	<b>kind</b> 327:24	398:17,23	<b>knowledge</b>
495:10,12,14	667:22	363:21 364:4	399:9,17	302:8 332:22
495:15,16,18	671:20,24	377:21 387:15	401:4 403:15	333:1 349:4
501:23 503:3	672:5,9,12,16	407:11 422:17	405:23	395:3 419:10
503:7,10,12	675:8,22	465:23 467:3	407:15 409:21	493:22
503:20	<b>juncture</b> 549:8	468:3 533:4	414:7 415:23	505:12
504:22	<b>June</b> 406:5	534:2 550:18	416:3 430:9	536:23 561:12
505:18,22	<b>jurisdiction</b>	571:3 582:7	432:11 454:14	600:14 601:5
518:15 519:1,4	508:17	586:17	458:15 460:15	612:18 620:20
520:9,11,12,13	<b>jurisdictional</b>	657:22 671:11	466:10,16	632:18 654:13
520:15 538:2	578:10,11	<b>knew</b> 326:11	468:9 477:24	665:11
538:5,9,13,22	<b>jurisdictions</b>	<b>know</b> 306:3	478:1,3,5,6	<b>Knowlton</b>
539:1,3 540:5	315:20	307:10,11,16	483:23 484:1	298:13 417:7
545:8 557:5,7	534:22	310:13 314:5	484:2,24	417:15,17
559:15,20	<b>justify</b> 317:20	316:22 319:2	485:4 499:1	419:12 457:5
560:13,16		319:7,11	501:16 521:6	490:9 491:13
561:17,21	<b>K</b>	322:20,24	522:4,8,12,13	492:6,10,18
573:9 575:7	<b>Kansas</b> 304:3	323:7,9 324:11	522:18 523:3	492:20
576:19,21,22	319:9,12,14,17	324:19 326:14	525:11,13	493:24 503:9
576:23 593:17	331:19 333:8	326:22	526:22 527:3	503:13,19,21
594:2,15	333:9 529:8	327:10 328:6	527:5,7	505:15 535:6
595:15,17,19	529:10,13,17	328:13,20	528:10 534:10	539:19 557:8
598:12,17	529:19 530:5	331:8,17	535:22	557:10 559:13
599:4 600:4	530:6,10,12,18	336:14,21,23	544:10,14,15	559:18 560:1
600:20,24	532:11,18	336:24 339:5	553:18 558:2	560:19 561:14
602:16,18,20	588:16 591:9	340:2,2,6,12	558:14 571:23	594:13
602:21,22	612:5,8	341:6,17,23	580:16 583:6	595:20,22
605:22 609:8	663:20,21	346:24 347:14	586:12,15,18	598:10 655:7
610:2 613:1,4	<b>KCP&amp;L</b> 655:21	350:4 353:14	586:23	656:17 673:15
613:11,16	664:1	353:16 354:3	587:12 591:22	673:25 674:3
614:23 616:8	<b>KCPL</b> 668:4	354:4,5	592:24 593:1	674:7,12,14,18
616:10,11,12	<b>keep</b> 401:4	355:20 356:2	593:3 595:10	675:19
620:3 622:15	410:23 411:12	356:11,24	596:3,12	<b>known</b> 441:11
622:18,24	411:21 508:1	357:8 359:17	601:14,21	466:13 567:17
623:18,20	509:11 526:14	359:18,19	603:16 607:9	586:20
624:5 629:16	568:16,17	364:18,19	607:13,20,21	609:21 655:15
629:23 631:5	649:13	365:6,16,16	608:15 609:4	<b>knows</b> 336:17
631:9,12,15,19	650:23	368:1 369:7	619:14 620:16	<b>Krygier</b> 439:23
633:1,7,9	<b>keeping</b> 412:2	371:17 373:13	621:21 623:12	471:17 503:14
637:9,11,12,13	635:11 646:8	377:1 379:8	633:17,18	503:15,22
648:13 651:1	<b>keeps</b> 634:19	380:3,10	642:2 645:3	504:1 505:17
653:6,14	<b>KENNEY</b>	382:24 384:4	660:24 661:6	506:1 519:9
654:17,22	296:15 406:13	385:7,11 387:7	662:7,8,18	520:19 535:6

EVIDENTIARY HEARING - Vol. 5 5/10/2018

538:18 539:7 557:11 559:14 559:17 571:23 574:24 575:16 579:16 580:5 642:24 643:8 645:13 647:5 674:6 676:6,8 Krygier's 580:1 643:3,13,16,19 647:17 KW 323:10	405:23 406:5 <b>latest</b> 332:10 404:5 <b>law</b> 296:14 297:19 298:4 508:14,20 509:1 <b>lay</b> 333:1 <b>layman's</b> 615:14 <b>layperson</b> 532:23 <b>layperson's</b> 519:23 LCOE 438:15 <b>lead</b> 306:21 307:17 661:12 663:17 <b>leading</b> 310:9 <b>leads</b> 307:20 <b>learnings</b> 441:15 <b>lease</b> 379:19 <b>leases</b> 496:20 <b>leave</b> 417:4 <b>leaves</b> 307:20 <b>leaving</b> 307:8 466:23 <b>left</b> 320:4 356:4 358:24 381:11 429:21 543:7 651:6 <b>left-hand</b> 542:9 <b>legal</b> 463:24 507:15 508:17 535:7 547:3 <b>legality</b> 615:11 Lena 315:3 509:20 562:3 <b>lender</b> 427:2 <b>length</b> 574:6 <b>let's</b> 299:2 305:16 342:15 361:6 364:19 375:9 379:15 381:7 386:1 394:1 395:10 424:22 426:6 427:8 429:10	430:5 437:17 455:11 459:17 463:17 471:11 472:14 482:19 483:21 524:22 535:20 536:4 538:2,5 539:1 540:9 547:9 556:6 583:21 583:24 587:18 598:17 603:3 621:11 <b>letters</b> 420:20 <b>level</b> 317:22 318:6 344:14 356:12 365:4 365:9 402:11 454:15 456:19 459:10 498:7 509:11 532:13 590:6 619:7 621:10 628:21 650:19 651:8 651:11 655:18 <b>levelized</b> 328:8 487:18 <b>levels</b> 466:24 484:13 666:20 <b>leverage</b> 601:4 <b>levers</b> 356:11 <b>liability</b> 422:11 458:8,10,14 513:15 574:11 <b>Liberty</b> 301:7 355:9,10 418:1 470:16,16,22 471:2 493:3 504:4 560:8 599:9 601:5 <b>licensed</b> 529:10 <b>life</b> 384:8 385:21 387:11 395:21 396:17 441:16 479:13 480:1 573:11	<b>light</b> 479:4 545:17 663:20,21 <b>like-for-like</b> 526:15 <b>likelihood</b> 458:22 498:6 <b>limit</b> 471:11 621:11 <b>limitation</b> 508:22 <b>limited</b> 320:22 470:4 <b>limits</b> 521:13 <b>line</b> 301:22 304:14,20,20 305:7,8 315:13 324:16 345:19 346:16 362:5 363:11 365:20 372:7 378:2 379:15 381:15 407:11 431:3 432:6,8 432:21 433:7 433:18 434:2 434:5,7 477:15 498:1 504:24 505:1 505:5 512:20 525:2 528:10 528:20 529:1 530:8 531:5 540:2 542:13 542:23,24 544:4 545:21 558:21 564:10 566:12 567:11 567:24 568:5 568:15,24 571:8,15 572:3 580:10 580:21 604:17 607:1 632:4,6 632:9 635:1,3 635:4,5,7 641:9,19	642:9,21 644:10,23 <b>lines</b> 304:10 314:4 315:22 318:4,18 324:13 336:24 366:7 377:5 383:11 391:10 397:18 431:15,20 433:8 434:12 438:20 439:2 440:6,14 454:5 468:12 491:5 496:5 529:24 531:3 557:16 563:14 565:22 604:14,14,20 605:1 613:21 <b>link</b> 467:11 524:18 <b>list</b> 334:1 627:5 668:3,5 <b>listed</b> 355:8 395:15 529:24 556:16 557:17 <b>litigation</b> 296:22 404:19 <b>little</b> 326:20 328:8 330:22 347:2 360:17 371:11 374:24 378:21 379:1,8 383:6 389:6 400:2 405:9 406:8 411:8 415:6 424:22 426:6 491:11 524:19 536:4 544:16 547:16 550:1 568:13 570:15 571:4 571:22 590:10 591:7,8
<b>L</b>				
L 298:13 653:17 L&B 592:8 L&Ps 339:7 340:6 labeled 455:23 587:7,7,15 643:1 labor 402:20,21 403:1 454:24 455:6 lacks 482:6 lag 519:22 laid 593:13,19 land 496:20 landfall 405:22 landfill 308:23 405:24 541:1 541:5 landscape 534:24 language 341:1 large 313:18 319:19 328:13 359:22 377:20 379:1 398:5,18 475:24 largely 334:21 larger 365:7 383:6 481:23 491:4 late 360:12				

EVIDENTIARY HEARING - Vol. 5 5/10/2018

598:19 live 382:15 living 382:11 LLC 297:23 load 304:11 314:1 317:9,9 344:5 362:9 362:16 363:8 364:8 374:4,8 392:10 399:15 399:20,20 407:24 408:17 414:12 415:8 416:6 515:7 517:22 558:22 597:14 649:21 649:22,24 loaded 535:11 loan 426:13,18 426:22,24 427:3,7 local 322:2 379:22 382:4 382:21 383:1,1 597:17 locally 382:16 located 332:1 387:22 470:15,17 489:15 620:18 location 304:1 locations 489:20 lock 322:17 locked 385:7 521:20 long 344:2 354:1,9 367:3 380:9 381:3 388:8 394:11 403:20 589:3 long-term 323:11 329:3 367:4 369:19 371:8 378:17 378:18 380:12	382:12,14 396:3 401:24 484:12 489:1 489:6 662:21 longer 355:12 396:6 474:19 475:8 476:12 479:21 521:7 look 304:4 305:1 306:19 313:12 323:23 324:6 328:2 332:2 335:18 337:22 340:2 361:22 363:3 363:9 365:16 370:19,20 373:12,16 380:9 401:23 408:11 412:3 468:12 476:21 508:10 514:24 522:19 524:8 524:10,17 526:19 528:6 531:22,23,24 534:24 535:13,15,17 535:21 537:11 537:12 540:9 542:5 543:22 547:20 552:10 553:17 554:3 557:2 557:15 570:2 572:19,24 573:2 591:12 621:18 634:23 643:15,20 647:17 looked 363:5 407:17 456:9 461:3 517:14 533:23 534:19 536:5 537:22 549:7 549:19	556:20 596:23,24 597:3 608:2 627:15 664:15 looking 305:18 324:10,21 334:2 357:1,4 357:8 362:12 363:6,11 364:24 373:22 375:22 381:15 387:14 391:19 399:6 423:6 439:10 470:19 481:18 489:8 506:14 507:19 509:13 516:14 522:24 525:14 527:24 528:8 528:9 544:17 546:17 548:4 552:11,20 553:8,14,19 553:20 569:3 574:2 577:21 583:14 605:17 605:19 616:16 628:6 634:22 635:1 638:9 638:15 644:4 looks 317:7 351:17 357:22 539:13 544:9 567:6,11 568:9 586:17 623:2 644:4 lose 565:6,8,13 658:17 loss 428:6 476:3 578:7 579:8 losses 421:22 421:23,23 422:1,4 456:15 579:10	588:5 lost 422:17,18,21 430:5 lot 305:10 307:10 310:8 310:11 315:20 324:11 327:21 329:7 353:18 353:21,23 355:19,23 356:2,5 363:13 370:21 381:1 389:1 404:12 415:23 499:24 500:23 520:21 534:4 572:3 581:19 590:9,13,14 639:18 640:11 648:8 651:14 668:11 lots 379:7,7 Louis 297:20 672:4 low 329:7 388:18 415:11 438:15 473:20,22 476:16,23 569:23 570:6 572:12 574:9 596:23 597:4 621:22 650:1 lower 319:8,10 322:1,8 389:1 394:10 429:12 468:7,8 472:6 472:16 487:10 487:16,17 489:1 516:20 517:7 537:15 542:8 547:17 547:21,23 555:14 556:7 570:20 572:13,15,16	586:3 597:3 646:24 647:2 lowered 597:12 639:4 lowering 321:21 lowest 458:22 554:18,19 559:8 lunch 459:14,16 <hr/> <b>M</b> <hr/> <b>M-e-r-t-e-n-s</b> 301:4 Macias 676:12 macro 592:4 Madison 297:5 297:9 magnitude 469:12 508:5 646:12 MAIDA 296:16 main 428:21 480:10 maintain 337:12 346:4 415:11 666:14,19 667:10 669:2 maintaining 391:15 392:3 669:6 maintenance 329:10,17,24 378:15,21 379:6 402:22 413:11 455:1 463:2 480:4,5 570:20 major 321:21 667:16 668:9 669:20 majority 348:22 378:14 401:9 414:17 597:24 623:2 663:19 665:5 makeup 601:19 making 335:8
---	---	--	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

354:19 383:6 391:14 393:23 407:16 470:1 557:11 614:10 629:2 656:14 <b>malfunctions</b> 462:18 <b>manage</b> 640:4 <b>management</b> 310:23 403:10 455:6 560:9 <b>management's</b> 404:1 <b>Manager</b> 630:7 653:22 <b>manipulate</b> 621:18 <b>manipulation</b> 622:7,10 <b>Manitoba</b> 489:22 <b>manner</b> 327:24 466:17 512:8 568:14 582:22 <b>Mantle</b> 315:3,23 357:8 423:13 562:11,17 593:20 <b>Mantle's</b> 315:5 318:15 509:20 510:7,8 562:4 <b>manufacturer</b> 499:14 589:14 <b>manufacturers</b> 588:21 <b>manufacturing</b> 322:3 <b>map</b> 655:23 <b>Marc</b> 298:8 <b>Marcella</b> 297:3 <b>March</b> 402:12 403:2 <b>Marcy</b> 410:23 <b>margin</b> 316:3,8 373:6,22 402:13,24	548:6 633:22 633:24 <b>margin/capac...</b> 373:14 <b>margins</b> 316:1 411:6 412:2,4 412:7,11 515:11 <b>mark</b> 331:10 631:15,18 653:9,17 675:17 678:8 <b>Marke</b> 512:22 513:3 624:13 <b>Marke's</b> 340:15 340:24 455:13,21 512:12 515:1 517:16,18 518:10 533:10 <b>marked</b> 301:15 330:20 331:1 345:11 350:11 350:13,16 351:8,10,13 418:9,17,20 493:11 504:12 509:5 532:3 538:19 539:11 561:1 599:17 630:10,12 631:24 654:1 654:4 <b>market</b> 317:23 318:5 323:16 334:10,12,14 338:16,17 357:1 372:23 392:11 393:1 394:7,16,20 399:21 400:2 402:5,10,14 403:6 412:9 414:11 425:16 425:23 427:15 429:11 429:14 430:13 432:16,17	456:7,11 469:1 471:22 483:15 485:5 491:14 491:21 515:18 515:23 521:22 522:6,16,17 533:20 534:3 536:5,22 554:16 569:23 570:6 572:13,16,17 572:21 573:6 573:20 574:1 574:5 578:2 581:20 582:11 582:12,20 583:9 584:3,6 585:5,12 586:21,24 592:10,12,20 593:7 596:23 597:4,22,23 597:23 598:1 598:6 618:14 618:14 635:22 639:3 645:19 646:16,23 647:2 658:19 662:4,5,9,13 662:16 <b>marketing</b> 598:2 <b>marketplace</b> 312:15 357:20 357:22 358:4 358:8 635:12 639:3 640:8 640:9 648:8 <b>markets</b> 394:21 <b>match</b> 301:25 306:7 539:23 <b>material</b> 434:10 659:3 <b>materials</b> 454:24 <b>math</b> 386:2 544:17 578:21	<b>mathematically</b> 544:12 <b>matter</b> 296:8 299:18 346:24 348:4 352:8 432:22 471:15 479:1 <b>matters</b> 299:4 <b>mature</b> 377:15 <b>maturing</b> 377:8 377:11 <b>max</b> 339:16 340:3 <b>maximum</b> 344:1 344:2 390:17 578:19 579:2 594:19 <b>McMahon</b> 303:21 325:14 347:23 349:18 355:18 356:16 359:6 367:24 458:21 459:2 459:2 518:6 527:13 532:10 535:14 536:24 544:15 563:12 574:15 577:18 586:11 587:10 592:8 609:19 630:21 640:3 676:14,15,17 676:19 <b>McMahon's</b> 320:13 439:14 549:13,21 570:16 586:22 <b>MCOE</b> 438:16 <b>Mealy</b> 296:22 680:6,20 <b>mean</b> 315:21 317:14 331:23 334:12 343:11 344:13 355:6 355:22	356:23 364:16 365:13 365:18 371:2 372:2 378:11 381:4 390:4,9 390:19 391:17 393:3 394:24 395:6,22 403:12 404:11 409:11 464:8 471:9 481:9 487:12,12 489:6 514:18 515:12 516:22 519:24 521:14 534:13 540:19 544:5,18 549:12 554:24 582:18 590:7 603:10 635:3 639:14 640:5 642:4 649:20 658:6 660:5 <b>meaning</b> 593:6 <b>means</b> 412:1 511:3 592:24 594:20 <b>meant</b> 347:20 422:1 <b>MEC</b> 331:1 <b>MECG</b> 298:2 306:10 330:20 410:18 421:5 485:15 495:10 518:15 573:9 602:16 614:23 633:9 656:19 668:9 <b>mechanism</b> 456:12 471:22 471:23 475:6 491:14,18,22 511:4 512:6 563:2,6,10 574:2 581:20 598:7 623:8
---	---	---	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

669:16 <b>mechanisms</b> 568:13 666:17 <b>medium</b> 621:22 <b>meet</b> 315:24 373:6 374:7 392:10 404:14 415:8 416:5 429:2 463:12 494:13 495:2 495:5 576:11 614:19 662:22 <b>meetings</b> 553:4 602:4 <b>meets</b> 615:4 <b>megawatt</b> 343:1 399:19,24 400:1,6,7,10 424:3,19 425:18 461:7 461:15 467:6 468:20,23 469:9 483:18 494:20 496:18 502:7 524:4 543:9 582:5 607:3 <b>megawatts</b> 301:22,24 303:10,13,15 304:16,22 316:22,23 330:4 342:19 342:20 344:3 344:6 359:4 360:16,21 369:22 371:19 384:20 385:1 389:24 390:5 390:7,12,13,15 390:21,24 391:5,8 392:9 397:11 399:2 400:12 415:16 415:21 416:3,5 416:6,11 463:18 494:18	494:21,22 498:23 507:8 508:6 527:3,3 527:15 542:10 542:17,18,20 546:12 547:10 570:16 606:6 607:5,10,17,18 607:23 608:4 608:10 609:1 623:7 634:17 634:19 645:17 646:11,11 <b>member</b> 463:23 502:21 <b>members</b> 299:24 312:10 312:19 515:8 516:5 518:11 <b>memory</b> 345:7 438:11,17 664:17 <b>mention</b> 669:10 <b>mentioned</b> 390:19 408:1 437:22 461:14 463:3 482:10 537:10 572:11 581:3 583:1 590:22,23 591:14 601:7 636:11,19 <b>mentions</b> 437:21 <b>merely</b> 315:23 <b>merger</b> 323:20 324:1 354:4 <b>Meridian</b> 303:8 303:12,16 304:18,21 317:1 318:24 319:5 328:3 363:14 374:9 374:15 376:6 389:16 394:2 425:15 494:12	494:22,23 502:6 582:7 <b>Mers</b> 297:3 419:23 421:3 485:14 601:2 602:14 610:5 610:10,12 611:21,23 612:10,20 613:3,9,15 624:8 629:15 653:13,15 654:15,19 655:2 668:1 671:18 673:16 674:22 675:3 675:10,18,24 <b>Mertens</b> 300:17 300:20 301:4 302:12,22 341:2 342:13 351:12 352:1 406:20 417:2 417:4 463:2 478:18 479:9 502:15 518:5 521:8,17 551:22 556:17 558:24 590:23 633:21 636:8 673:2 676:21 676:23 <b>mesh</b> 568:24 <b>met</b> 502:11 557:17 <b>method</b> 469:4 <b>methods</b> 627:14 <b>metric</b> 373:15 373:22 <b>Mexico</b> 592:7 <b>Meyer</b> 523:15 573:3 597:6 672:1,6 <b>Meyers</b> 595:8 <b>Meyers'</b> 522:23 523:9 524:4	548:4 574:16 575:3 576:2 657:19 <b>MICHAEL</b> 296:13 <b>microphone</b> 560:14 <b>mid</b> 460:16 585:14 596:23 <b>middle</b> 315:13 315:13 360:18 385:14 505:5 590:20 <b>midnight</b> 414:5 <b>Midwest</b> 589:24 <b>MIEC</b> 668:9 <b>million</b> 308:6,14 308:16,17,21 308:23 309:2 309:3,4 325:22 326:12,15,16 336:1,4,20 344:20 345:20,21,22 346:7,10,15 346:24 347:9 347:9,15 384:10,11 385:1,15,24 386:6,7 399:19,24 400:1,7,10,10 400:16,16,17 402:13,15,19 402:23,24 403:3,3,8,20 403:21 407:1 411:20,20 437:23 456:14 456:16 526:9 540:19,20 541:2,17 542:22,22 565:8 575:1,3	576:5 578:3,6 578:8,10,23 603:24 632:5 632:5,6,7 636:15,21,24 637:2,3 641:1 644:1,15,20,21 644:22 645:1 645:9 665:13 669:16 671:13 <b>min</b> 339:16 <b>mind</b> 526:14 574:19 <b>minimal</b> 641:12 641:23 644:24 <b>minimize</b> 330:11 416:1 492:5 <b>minimizing</b> 330:13 <b>minimum</b> 338:16,17,24 339:17,18 365:5 457:1 499:5 529:7 553:4 593:8 594:19 <b>minimums</b> 305:17 <b>Minnesota</b> 489:21 <b>minor</b> 566:11,16 566:18 567:10 568:1,3 632:8 <b>minority</b> 663:18 <b>minus</b> 389:9,20 457:3 582:20 628:1 <b>minuses</b> 534:6 <b>minute</b> 333:20 339:9 <b>minutes</b> 339:8 381:8 437:15 <b>mischaracteri...</b> 339:4 <b>misconception</b> 420:3
---	---	--	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

<p>missing 539:24  <b>Missouri</b> 296:1                  296:6 297:2                  297:4,12,14                  304:2 311:22                  365:17 387:8                  387:16                  390:24                  412:22 437:7                  471:8 485:19                  494:14 495:3                  495:7,14                  496:16 497:8                  502:9 506:15                  508:13,14                  509:8 510:24                  520:11 521:14                  532:12,19                  548:15 576:21                  578:9,10                  602:20 607:1                  607:9 610:18                  612:5,7 616:10                  619:12 620:19                  627:4,9,19                  630:8 637:11                  653:21                  656:23 679:8                  680:3,8  <b>Missouri's</b> 391:4  <b>misspoke</b>                  540:20                  542:19  <b>mistaken</b> 347:17  <b>misunderstan...</b>                  358:10 359:13  <b>mitigate</b> 463:4  <b>mitigated</b>                  462:24                  475:14 480:3  <b>mitigating</b>                  476:10  <b>mix</b> 306:22                  307:9  <b>mixes</b> 591:2  <b>MJS</b> 430:8  <b>MO</b> 296:23</p>	<p>297:5,10,15                  297:20,24                  298:5,10,15                  518:23 519:2  <b>model</b> 348:23                  352:22                  354:23 355:5                  355:6 356:19                  383:18 438:9                  438:16,17                  466:3,5                  486:18 516:13                  532:17 535:18                  542:13,16                  543:11,13                  544:19 564:12                  572:15 585:11                  594:11 608:12                  609:5 638:24                  639:12,21                  669:24 670:2                  670:3  <b>modeled</b> 337:16                  338:10 392:10                  432:14 433:4                  433:5 438:5                  458:23                  486:18,23                  487:11,13                  530:20 566:4                  566:20 584:1                  587:23 590:8                  608:11 636:20                  645:5,6,8                  669:24  <b>modeling</b> 325:9                  326:2,8                  328:24                  334:13,19                  339:19 348:2                  349:1,13                  353:5,7,22                  354:20 355:1                  355:15,15,16                  355:19,21,24                  356:8,10,14                  359:3,8,11,15</p>	<p>360:23 371:9                  392:8,12                  407:3 411:23                  413:13 414:22                  414:22 415:15                  415:17 432:15                  432:18 433:3                  433:22                  469:15 515:2                  515:6,9,17                  516:4,6,10,11                  516:19,24                  517:4,5,15,17                  517:19,21,23                  518:2,3,11,12                  522:19 524:12                  524:14 530:13                  530:16                  533:23                  535:12 544:7                  548:5 552:8                  553:16                  557:24 564:4                  564:9 568:1                  570:17 572:14                  576:4,15,16                  584:22                  587:23 588:8                  590:3 591:7                  591:14 607:14                  607:23 608:2                  608:7,23                  609:11 622:11                  634:10 638:19                  638:20 641:6                  642:18 651:9                  652:3 670:11  <b>models</b> 387:12                  431:23 432:2                  466:16 586:10                  609:13                  637:24 652:6                  652:11,19  <b>modifications</b>                  650:15  <b>modified</b> 511:14  <b>modifying</b></p>	<p>617:18  <b>moment</b> 423:15  <b>money</b> 335:8                  422:21 426:13                  426:14 427:11                  427:14,24                  428:1 462:19                  468:15 475:3                  479:16 491:19                  496:21 497:6                  513:8,10,13                  514:1,3 565:7                  565:13                  589:20 628:6  <b>monitor</b> 482:10  <b>Monnie</b> 296:22                  680:6,20  <b>month</b> 429:22                  502:18  <b>months</b> 314:9                  354:5 402:12                  403:2 405:14                  405:16 461:4                  496:15  <b>Moody</b> 492:8,9  <b>Mooney</b> 385:10                  393:4 417:8,11                  417:19,22                  419:14,24                  437:4 454:1                  459:24                  485:10 490:10                  498:3,13                  500:3,23                  555:8 673:14                  676:25 677:4                  677:6  <b>Mooney's</b> 571:4  <b>morning</b> 299:3                  302:22,23                  306:15,16                  309:17,18                  312:4,5                  342:13,14                  392:19,20                  414:1 417:17,18                  417:21 419:24</p>	<p>420:1 421:9                  437:14,16                  463:3 672:10  <b>motion</b> 530:6  <b>motivated</b>                  492:5  <b>move</b> 310:20                  372:14 442:14                  500:4 507:12                  541:19 605:4                  632:21  <b>moved</b> 527:2                  649:16  <b>moving</b> 329:22                  345:24 346:1                  379:7 423:6                  434:18 439:6                  439:13 541:14                  574:14  <b>mow</b> 576:21  <b>multi-million</b>                  567:22  <b>multi-year</b>                  490:17  <b>multiplied</b>                  467:6  <b>multiplying</b>                  569:4  <b>multitude</b>                  535:15</p> <hr/> <p style="text-align: center;"><b>N</b></p> <p><b>N</b> 297:1 298:1                  299:1 492:24                  673:1 674:1                  675:1  <b>N-a-t-e-l-l-e</b>                  610:14  <b>nailed</b> 436:15  <b>name</b> 301:3                  349:22                  353:13                  390:20                  417:20,21                  492:23                  498:17 499:11                  499:15</p>
---	--	--	--	--



EVIDENTIARY HEARING - Vol. 5 5/10/2018

503:24 560:4 599:5 610:13 619:2 630:2 653:16,17 <b>names</b> 331:23 <b>Natelle</b> 610:5,6 610:14 675:2 678:6 <b>Nathan</b> 297:8 <b>nation</b> 618:24 619:4,5 <b>national</b> 534:24 <b>nations</b> 612:1,3 619:9 <b>native</b> 399:15 399:20 407:24 408:17 663:9 <b>natural</b> 307:12 307:16 316:24 379:2 399:22 402:4,7,8 508:15 581:4 586:24 <b>naturally</b> 483:9 <b>nature</b> 435:24 462:16 621:14 <b>NDVER</b> 357:11 357:11 <b>near</b> 470:1 515:10 556:9 556:12 559:2 586:21 612:1 <b>nearly</b> 420:14 565:8 <b>necessarily</b> 412:7 441:9 442:12 526:15 558:4 614:5 667:16 <b>necessary</b> 403:8 424:2 480:11 481:15 510:23 637:24 <b>Necessity</b> 620:17	<b>need</b> 299:4 306:19 308:5 313:13 327:20 327:22 328:18 373:4 373:10,18,20 374:7 380:23 415:4 426:9 426:10 442:23 460:2 460:6 495:5 508:7 517:1 524:8 526:3 536:24 538:22 582:6 589:11 590:21 618:16 632:4 652:22 668:12 672:10 <b>needed</b> 378:22 397:12 494:13 495:1 <b>needing</b> 590:13 663:7 <b>needs</b> 425:1 507:10 662:22 668:18 <b>negative</b> 338:1 338:5,24 339:4,7 356:22 357:2 398:10 413:17 458:13 483:23 578:16 592:12 592:13,14,19 597:21 <b>negotiate</b> 374:13 380:20 394:16 521:7 522:5 <b>negotiated</b> 499:22 502:17 <b>negotiating</b>	497:22 502:21 521:10 <b>negotiation</b> 497:19,21 <b>negotiations</b> 502:20 <b>neighborhood</b> 344:19 488:2 <b>neighbors</b> 416:8 <b>NERC</b> 314:16 <b>net</b> 341:1,3,11,15 342:2 399:22 400:2 408:1 409:23,24 428:5 429:21 432:19 455:22 456:3 456:21 457:1 457:14,23 500:19 501:10 501:11,17 512:24 513:4 513:7,19 535:9,10 571:7 603:24 626:14,23 <b>nets</b> 647:18 <b>netted</b> 434:1 647:11 <b>network</b> 313:23 398:9,16 <b>Nevada</b> 470:16 <b>never</b> 322:11 414:8 435:22 588:17 638:12 <b>new</b> 308:22,24 313:17 314:4,4 319:9,14 327:5 332:5 333:8 342:22 358:8,11,18,21 364:14,21 365:22 367:20 380:20 386:17,23	395:12 405:20 525:17 540:24 541:5 571:17 591:8 594:9 <b>newer</b> 317:13 <b>news</b> 455:17 <b>Nicole</b> 297:3 <b>nine</b> 339:12,15 649:8 <b>ninety-one</b> 528:3 <b>nominal</b> 317:11 388:17 389:11 389:16,22 390:1,3,20 <b>nominally</b> 390:4 <b>non-dispatch...</b> 357:12,16 358:6,15,23 <b>non-existent</b> 641:12,24 644:24 <b>non-regulated</b> 480:21 <b>non-unanimous</b> 423:13 501:20 513:18 546:17 610:22 614:16 626:19 630:12 654:3 <b>normal</b> 475:6 <b>normally</b> 639:19 <b>North</b> 314:19 677:8 <b>Nos</b> 505:20 519:3 <b>note</b> 539:21 540:4 572:11 <b>notes</b> 553:17 569:18 570:11 <b>notice</b> 314:9 518:21 519:5,7 670:17 <b>noticed</b> 580:8	<b>notions</b> 476:11 <b>nuanced</b> 524:19 <b>number</b> 330:9 331:2 332:23 335:3 339:21 347:6,13 370:19,21 385:7 416:20 425:8 434:4 437:24 438:1 438:3 439:17 440:20,21 441:6,7,9 442:2,2 462:24 492:3 510:17 512:22 525:15 527:6 535:17 538:10 557:24 558:7 558:9 566:12 567:5,14,21 569:20 574:10 575:14 581:3 582:22 587:10 589:4 597:20 617:20 619:10 619:15 631:21 656:12,14 658:7 <b>numbered</b> 331:17 617:5 <b>numbers</b> 303:8 317:10 336:9 336:10 399:17 400:15 432:12 432:22 499:2 525:19 539:24 565:23 567:1 567:6 568:23 570:14 571:20 574:23 579:2 579:12,14 584:2 585:18 596:11 611:7
---	--	--	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

612:12 619:18 619:21 621:23 622:9 643:24 <b>numeric</b> 560:22 <b>numerous</b> 466:9	415:12 436:14 507:14 517:10 526:17 527:14 527:17 531:23 536:1 544:12 547:18 556:15 557:23 558:18,23 584:23 586:10 588:23 665:19 668:6 <b>occur</b> 308:18 358:17 398:13 473:17 474:23 514:21 <b>occurred</b> 343:9 343:18 <b>occurrence</b> 570:7 <b>occurring</b> 356:21 502:20 576:10 <b>occurs</b> 313:21 <b>October</b> 405:5 405:6,12,12 <b>OE</b> 329:4 <b>OEM</b> 329:12,15 <b>OEMs</b> 329:4 <b>off-peak</b> 328:12 <b>off-system</b> 399:10 400:24 401:10 401:13 408:22 409:1 410:9,10 410:13 411:13 412:6,15 510:20 511:2 511:19,23 512:3 601:12 640:4 <b>offer</b> 299:8 302:10 309:22 354:13 419:12 493:24	496:12 505:15 534:12 545:4 561:14 593:21 600:17 654:17 654:20,20 <b>offered</b> 302:15 354:16 414:4 419:19 458:24 494:6 505:21 545:11 561:19 600:22 613:5 613:7 633:3 655:1 676:2 677:2 678:3 678:15 679:3 <b>offering</b> 471:18 471:23 612:24 <b>offers</b> 299:23 299:23 <b>offhand</b> 525:11 525:13 526:21 526:23 <b>office</b> 297:7,9 553:5 668:8 <b>officer</b> 375:2 <b>official</b> 299:21 300:5,11 518:21 519:5,6 613:14 <b>officials</b> 383:1 <b>offline</b> 657:11 658:1 659:5 <b>offset</b> 401:6 402:24 536:11 <b>offsetting</b> 402:19 628:9 628:15,16 <b>oh</b> 329:3 350:8 413:11 478:15 562:15 572:5 574:19 651:3 654:19 666:1 <b>oil</b> 307:14 <b>okay</b> 305:1,5,12 305:16 306:8 306:24 307:23 309:7	309:11 311:20 313:5 316:19 317:1 319:18 321:9 324:23 325:17 326:24 327:15 329:2 329:15,22 330:19 331:9 331:13,21 332:2,9,15 333:18 334:5 334:9,20 335:16,16,22 337:3,22 338:14 339:20 340:5 340:19,23 341:10,23 342:7 345:14 351:15 364:13 373:19 380:15 390:8 393:12 395:10 399:14 400:8 401:10 407:2,21 408:10 409:14 410:4,15 411:17 412:1,16 416:24 421:2 422:15 423:6 423:11,17,19 423:24 424:8 424:14,17,22 427:10,23 428:4,10,17 430:11,22 431:13,22 433:7 434:18 435:2,13 436:18 437:2 437:21 438:3 438:8,20 439:3 440:14 440:20 441:6 442:1,14,24 454:3,20	455:10,11,15 456:1,6,21 457:22 459:17 477:14 478:15 480:8 482:3,18 483:21 487:3 487:9,20 488:11 497:15 498:1 499:18 500:18 501:7 501:16 506:23 509:19 510:5 514:24 517:16 518:14 520:4 520:7 521:2,6 521:17 522:4 522:15,21 523:17,23 524:3,22 525:2,8,12,14 526:1,13 527:11,23 528:19 529:7 530:4 531:2,6 531:10 532:1,6 532:9,15,22 533:10,19 534:8 535:1,8 536:4 537:19 538:1 539:3 541:10 558:10 560:18 562:7 562:10 563:11 564:1,2,8 565:4 566:9 566:19 569:6 569:9,17 572:5,5,11 573:7,7 574:14 576:17 577:11,19 578:21 579:4 579:15 580:3 580:23 581:14 582:24 583:5 583:18,20,24
--	--	--	---	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

584:8,17	652:15 654:6	367:20	<b>OPC-5</b> 539:24	602:21 616:11
585:18 587:2	657:19,24,24	380:20 415:13	<b>open</b> 307:8,20	637:12
587:6,13	658:17 660:2	619:1 650:2	309:9 325:21	656:24
588:9,14,19	660:24	<b>ongoing</b>	508:1 556:14	<b>opportunities</b>
589:10 590:18	662:17 665:4	329:24	636:2 658:5	309:23 310:15
591:5,12,21	665:4,22	358:13 368:15	<b>opening</b> 299:8	311:15 379:22
592:11 593:2	667:1 668:11	368:18	299:11 327:11	381:22 382:5
594:4,6 595:1	668:24	372:24 380:5	330:19 331:3	382:21 601:6
595:11 598:17	670:15 671:18	384:3 393:21	331:11,14 481:11	<b>opportunity</b>
601:22 602:8	672:11	402:20,21	486:5 519:10	299:24 300:3
602:14 603:12	<b>Oklahoma</b>	403:1 420:23	523:2 532:2	363:3 666:19
603:18,23	340:10,20	497:22	587:8	<b>opposed</b>
604:11,13,19	342:2 455:16	<b>ongoings</b>	<b>opens</b> 616:3	352:24
605:20	456:21 458:2	369:18	<b>operate</b> 393:16	392:24
609:24 611:5	501:8,12,15	<b>online</b> 317:17	406:6 578:1	393:17 395:14
611:18,19	506:6,10,11,17	411:12,16 412:3	<b>operates</b> 357:2	396:22 397:6
612:10 613:3,9	512:20,23	515:16	523:7 524:15	414:16 422:23
613:16,23	513:2 533:6,9	<b>onset</b> 377:21	<b>operating</b>	458:16,17
615:22 616:6	533:22,24	<b>opaque</b> 517:17	346:5 378:4	479:7 668:17
617:3,6,7,12	534:9 600:3	517:19 518:3	401:5 429:20	<b>opposing</b>
618:3,7,19,23	612:5,8 619:5	<b>OPC</b> 315:3	463:1 480:4,5	629:10
619:17 620:2	624:11,20	331:14 341:7	484:11 547:14	<b>opposition</b>
622:22	625:11	342:9 350:13	549:1 570:10	335:23
623:18 624:15	<b>old</b> 358:19	351:10 352:1	570:19,23	423:12
625:3,19	367:20,21	354:16 423:14	658:16	506:24
626:2,16	<b>older</b> 328:9	506:23	<b>operation</b>	509:20 512:13
627:5,8	333:9 349:8	509:19 512:12	458:11 509:9	563:17
628:5,19	<b>Oligschlaeger</b>	515:23 516:3	509:17 513:2	564:23
629:6,15	632:23 653:9	538:13 539:14	514:7 645:22	624:12,16
631:3,7 632:11	653:17 655:8	539:16,17	<b>operations</b>	<b>optimization</b>
632:11 633:20	666:4 671:21	545:11 557:13	301:8 354:10	349:14
635:6 636:1,6	675:17 678:8	557:18 562:3	493:4	<b>optimizes</b>
636:11 637:1,7	<b>Olive</b> 297:19	563:16	<b>opinion</b> 323:12	564:13
637:21 638:6	<b>omission</b> 600:2	564:22 572:5	378:12 396:7	<b>option</b> 374:12
638:14 639:10	<b>on-peak</b> 328:5	572:7 573:2	532:9,15,16	380:15 496:5
639:17,21	<b>on-site</b> 330:17	577:3 580:13	533:19 588:18	576:6
640:2 641:8	<b>once</b> 313:21	583:24 597:6	588:19	<b>options</b> 370:20
641:20,21	314:7 317:16	597:16,19	589:23 605:5	415:14 496:11
642:21 643:4	378:22	628:20 639:8	627:17 638:21	496:19 546:8
643:13,19	386:24 408:4	639:9 668:12	639:4 665:7	<b>orally</b> 631:20
644:5,12,14,16	494:23	669:1 678:14	<b>opinions</b> 553:12	<b>orange</b> 304:20
644:22	509:14	<b>OPC's</b> 306:20	554:1	<b>oranges</b> 415:2
645:18 646:1	<b>one-time</b>	317:19 330:19	<b>Opitz</b> 297:13	<b>orangest</b>
646:5,23	499:12	336:20 486:4	311:23 412:23	304:14
647:2,8,17,20	<b>one-year</b>	532:2 558:1	437:8 485:20	<b>order</b> 346:21
648:4,11	488:13	571:21 587:8	495:15 520:12	394:12 398:2
651:14,22	<b>ones</b> 328:10	593:19	576:22	415:11 424:24

EVIDENTIARY HEARING - Vol. 5 5/10/2018

426:22 524:3 528:21 535:4 550:14 562:19 606:5,19 612:6 623:5 623:13,16 667:10 <b>orders</b> 664:16 <b>original</b> 306:21 321:2,4 357:23 384:24 438:4 438:6 460:18 486:18 506:17 518:23 519:3 606:4 634:16 652:15,16 679:7 <b>originally</b> 462:20 487:11 487:19 497:11 525:7 587:23 607:22 608:5 647:4 649:8 <b>OSAGE</b> 680:4 <b>outage</b> 405:20 406:1,8 414:9 <b>outcome</b> 516:6 551:20 570:4 639:20 670:3 <b>outcomes</b> 639:14 <b>outline</b> 626:23 <b>outlined</b> 501:19 630:17 671:3 <b>output</b> 317:8 363:14,18,22 364:9,24 365:2,5,19,24 393:24 498:17 499:13 499:15 550:13 588:7 590:1 597:4 <b>outputs</b> 548:5 572:20 573:5 <b>outrageous</b>	420:11 <b>outreach</b> 557:13 558:3 601:24 <b>outside</b> 558:5 <b>overall</b> 313:9 321:22 326:23 357:5 365:3,10 370:1 382:9 390:4 415:11 441:17 481:23 498:14 635:13 <b>overcome</b> 300:9 <b>overnight</b> 590:20 <b>Overruled</b> 407:13 594:15 <b>oversee</b> 312:10 <b>overstatement</b> 434:10 <b>owe</b> 458:4 <b>owed</b> 458:9 513:8 514:3 <b>owes</b> 422:13 <b>owned</b> 322:13 322:13 394:21 424:12,14 425:20 464:14 556:19 625:13 662:20 663:14 <b>owner</b> 358:1 426:2,5 435:17 464:7 464:9 479:24 <b>owners</b> 429:23 479:14 <b>ownership</b> 325:3,8 378:13 379:18 380:1 381:19 396:18 468:16 479:19 625:15 663:18,19	<b>owning</b> 378:3 379:23 381:20 382:1 382:4,7,18,18 382:20,20,24 478:18 479:9 589:7 <b>owns</b> 465:15 <b>Ozark</b> 325:12 349:21 <hr/> <b>P</b> <hr/> <b>P</b> 297:1,1 298:1,1 299:1 493:18 494:1 <b>P-75</b> 569:23 572:12 <b>P-76</b> 569:20 <b>p.m</b> 672:17 <b>P.O</b> 297:4,10 298:9,14 <b>pace</b> 322:16 <b>Pacica</b> 355:10 <b>package</b> 537:13 537:18 614:18 <b>packet</b> 577:4 <b>page</b> 301:21 305:1 306:19 307:1,2 315:12 315:14 318:3,4 318:15 321:10 321:11,11,14,20 323:15 324:13 324:23,24 326:24 327:15 329:2 329:23 331:16 331:17,18 335:18,18 337:22 339:21 342:18 345:13,15 366:6 375:15 375:24 377:5 378:2 379:15 379:15,17 381:16 383:10	391:9 393:12 408:12 411:3 420:2 423:15 423:18 434:19 437:21 438:20 439:1 439:2 440:5 440:14 442:14 442:19,20 454:4,8,12 455:24 456:1 468:11 477:14 486:9 496:4 497:15 498:1 500:14 504:24,24 505:4 513:6,6 514:24 515:20 517:16 523:23 528:19,24 529:1,7,23 530:1,8 531:2 531:5 532:7 533:14 542:6 545:21,22 548:7 554:3 556:6,22 574:18 575:2 576:3 577:9 577:10 587:16 587:18 590:19 591:12,19,21 593:2 599:23 599:25 600:6 601:4 604:12 604:19 605:1 606:24 611:7 611:8,24 612:11 613:20 616:18 617:5,6 618:19 618:22,24 624:15 625:1 625:2,4 626:13,21 630:19 631:13 632:3,4,8 633:17 634:14	638:20,23 640:2 641:9 641:14,17,18 642:5,15 644:22 673:2 673:14 674:2 674:6,13,20 675:2,11,17 <b>pages</b> 314:23 315:11 331:3,7 331:8 341:24 522:24 540:10 562:9 562:11,17 680:13 <b>paginated</b> 611:14,21 613:14 <b>paid</b> 422:2 426:19 427:7 429:9 436:6 474:11 574:8 577:16 <b>Pandora's</b> 616:3 <b>paper</b> 332:24 <b>papers</b> 395:19 466:14 526:4 534:1 570:13 630:22 <b>paragraph</b> 376:4,5,12 379:16 381:14 423:18,19 442:20 507:5 508:10 509:2 510:19 515:2,5 554:3,6 556:6 557:19 564:1 565:3 574:20 611:9 611:16,19 612:2 <b>paragraphs</b> 455:18 510:1 560:21 <b>parameters</b> 348:1 622:11
---	--	--	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

623:17 659:14 661:14 670:19 671:2,5 <b>part</b> 300:7 323:17 334:18 345:23 349:5 349:24 351:6 354:3 358:4 359:8 368:23 369:5,18 370:10 371:2 371:6,24 372:21,24 373:7 377:7 379:18 393:3 397:10 401:19 403:19 422:13 431:1,2,13,14 436:7 439:11 460:4 473:4 485:2 489:23 495:2 500:3 502:7 518:2,7 528:12 530:23 546:14 549:2 550:19 551:6 551:16,20,24 553:11 555:19 557:21,21 606:21 626:1 636:4 649:6 665:13 669:13 <b>participants</b> 358:5 <b>participated</b> 553:6 <b>participating</b> 382:12 662:4 <b>participation</b> 655:12 <b>particular</b> 345:12 375:15 381:18 393:8 468:12 489:17 540:14 601:7 620:8 650:22	659:11 <b>parties</b> 299:4,9 327:8,14 370:4 371:10 399:6 424:11 441:21 466:6 466:8 497:20 499:4 506:13 530:22 552:13 558:5 623:20 626:9 629:10,11,13 639:7 655:11 656:2,6 661:24 <b>partner</b> 385:2 385:19 420:3 420:5 423:22 424:2,6,15,20 426:3 428:12 428:21 433:4 433:9,17 434:16 435:4 436:5,10,13 437:1 438:10 438:12,19 441:13 462:11 462:13,14,22 463:8,10,15,21 463:23 464:7 464:9,16,17,17 464:20 466:21 467:2 467:9,14 468:1 472:8 472:19,24 473:11,15,18 474:6,19,19 475:8,13,18,18 475:21 476:11 476:24 531:19 554:23 555:3 555:16 625:8 625:17,21 659:18 670:18 <b>partner's</b> 464:5 464:15	659:22 <b>partnering</b> 416:8 <b>partners</b> 420:21 423:5 429:4 463:5 469:24 470:7 555:1,7 601:9 670:24 <b>partnership</b> 435:23 436:1 454:6 463:13 465:16 475:15 <b>partnerships</b> 462:16 474:24 <b>parts</b> 313:3 379:8 <b>party</b> 425:20,21 426:5 436:3 454:21 455:3 500:2 519:4 638:12 <b>party's</b> 423:1 <b>pass</b> 405:10 <b>pass-through</b> 480:23 <b>passed</b> 480:18 482:16 <b>passing</b> 405:12 <b>path</b> 605:7 <b>pattern</b> 517:11 533:5 <b>pause</b> 360:18 <b>pay</b> 361:14 379:19 423:3 426:22 427:3 427:11 429:8 429:20,22 435:4,8 437:1 474:6 475:10 658:3 <b>pay-as-you-go</b> 473:5 <b>PayGo</b> 473:4 474:10,10 475:1 476:9 563:7 571:13	571:16 <b>paying</b> 360:15 427:14 429:11 435:18 625:21 658:4 <b>payment</b> 432:19 435:11 436:3 436:21 571:6 <b>payments</b> 457:2 472:17 472:18 571:14 571:17 <b>pays</b> 425:15,17 427:23 474:17 <b>PC</b> 298:14 <b>peak</b> 301:23,25 304:6,12,12 305:2,3,9,13 317:9,9 327:1 327:5 344:5,9 344:15 374:7 416:9 <b>peaking</b> 344:7 344:8 <b>peaks</b> 344:11,11 <b>penetration</b> 483:3 597:18 <b>Pennsylvania</b> 489:20 <b>people</b> 353:18 590:21 601:17 602:5,6 672:2 <b>percent</b> 316:19 317:11 319:13 319:15 320:6 322:23 323:2 323:4,5 337:16,16 338:2 364:20 385:12,13 389:4,7,9,19 394:11 427:21 429:1 430:1,1 438:18 440:13 440:15 442:3 442:3 461:17	461:19,20 483:22,22 484:5,8,17 486:16,18,23 486:24 487:10 488:3 488:15,20 489:1,4,16 495:6 499:3 523:4,7 524:13 527:4 527:5,7 541:4 541:8,14,15,17 541:22 543:15 544:13 566:22 567:7 567:13,18,21 568:10,21,24 569:10,21 570:4,5,7 574:17,21,24 575:5 576:6,7 576:13 577:15 587:24 588:1 588:12,16,18 588:24 595:9 598:7 603:8 603:11,15 604:21 657:20 660:21 668:7 670:1 <b>percentage</b> 317:5 438:9,11 440:11 442:8 442:11 488:9 490:24 577:17 591:7 660:1,2 <b>percentages</b> 316:22 <b>percentile</b> 570:7 <b>perfect</b> 414:8 <b>perform</b> 513:3 617:18 618:4 637:21,23 652:3 660:14
---	--	--	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

<b>performance</b> 337:7 587:19 588:5,20,22 589:5 640:8 640:22 643:10	356:2,10 360:14,20 373:24 374:5 378:13 380:1 380:6 384:5 393:19 414:7 508:18 544:13 547:4 552:4 557:3 615:14	369:21 370:3 370:13,23,23 371:8 384:15 386:16,21 392:8,23 400:21 403:13 409:7,11,12,15 409:18 410:1 411:15,21,22 438:4,8 439:10 463:17 463:20 470:4 471:5,20 490:11 497:11 502:8 506:4 509:8 512:10 515:24 523:2 523:6,12 524:15,16 545:14,15,17 545:18,23 546:6,12,19 547:5,9,10,12 547:13 549:10 549:16 550:15 564:3,19 575:23 576:5 576:11,15 595:24 596:1 596:18,20,21 597:9,13 601:10 603:21 604:16 605:5 606:13 607:2 607:4 608:10 609:1,16 614:1 614:5 617:22 621:12,20 623:3,6 628:17 634:16 634:17,18,18 634:20,21,22 634:22,24 635:2,9,9,10 640:7,10 642:12,15,18 642:19,20	643:11,11,12 644:18,20 645:4,4,4,5,5 645:7,23 649:5,10,10,10 649:13 655:15 655:19 656:13 661:20 662:1 662:20,24 663:1,22,24 664:15 665:6 665:13 666:5 666:13,24 667:1,13,19 668:2,3,15 669:1,11,14,14 <b>planned</b> 329:10 329:17 607:14 <b>planning</b> 313:12 366:12 368:12 368:24 370:5 370:19 371:1,2 371:14 372:2 383:16,24 391:4,18,22 406:9 550:3 550:7,13,19 551:13 552:15 607:10,18,19 609:2 635:14 <b>plans</b> 346:7 348:24 359:21 408:18 408:23 409:8 409:17 410:10 411:11 525:4,17 597:16 634:11 634:15,24 642:17 649:4 649:15 650:12 650:14,16 666:17 667:16 667:18 <b>plant</b> 310:22 325:1,3 355:14,17 390:24 403:11	404:2 439:6 455:2 471:5 477:19,22 519:13 556:10 556:13,18 623:9 663:5 663:19 <b>plants</b> 348:6 388:6 408:24 411:14 649:8 <b>plate</b> 390:20 498:17 499:11 499:15 <b>plausible</b> 515:12 <b>play</b> 403:9 <b>please</b> 300:18 301:2,3 304:4 373:17 417:9 417:16,19 439:1 457:12 464:8 471:9 492:12,19,23 503:20,24 507:5 509:2 510:1 511:21 514:24 515:4 515:19 559:21 560:4,14 564:1 565:3 566:9 569:17 587:12 599:4 599:5 610:11 610:12 629:23 630:2 635:6 653:14,15 <b>Plum</b> 376:5 663:5 <b>plus</b> 304:1 347:8 389:9 389:19 472:20 524:6 548:6,24 582:21 628:1,1 <b>pluses</b> 534:6 <b>point</b> 308:19 332:19 344:24 360:7
<b>performed</b> 356:15 406:23 565:18 637:19 638:1,4 645:13 649:24	<b>ph</b> 397:18 <b>philosophical</b> 544:12 <b>philosophy</b> 544:18 <b>phrase</b> 551:8 575:8 620:9 <b>physically</b> 470:15 <b>pick</b> 309:7 343:17,20 <b>picture</b> 518:1 526:6 527:9 552:4 <b>piece</b> 332:24 529:22 544:1 555:11 557:22 558:20 559:5 575:19 599:24 <b>pieces</b> 529:18 529:20 <b>pile</b> 346:22 <b>place</b> 311:7,19 353:22 358:11 406:2 463:8 556:10 573:2 661:16 <b>placed</b> 340:23 462:3 <b>places</b> 421:10 <b>plan</b> 296:10 316:4,9 321:2 323:24 324:22 334:23 356:8 361:17 368:20 369:1,15,16,19			
<b>performing</b> 370:9				
<b>performs</b> 618:11				
<b>period</b> 314:7 337:19 339:11 375:5,14,22 405:16 429:6 430:19 458:11 473:8,10,13,19 473:21 474:2 476:12 479:16 479:18 484:6 484:9 487:7 488:8,11 489:6,9 490:17 498:15 590:2				
<b>periods</b> 337:11 377:17 416:9				
<b>permitted</b> 353:6				
<b>person</b> 314:13 349:13 431:9 521:9 532:22 569:13 586:11 587:11 589:6 592:9				
<b>personal</b> 420:15				
<b>personally</b> 361:20 401:1 680:9				
<b>perspective</b> 318:2 355:23				

EVIDENTIARY HEARING - Vol. 5 5/10/2018

361:17 369:14 369:21 370:12 375:8 376:5 399:2 403:4 405:18 407:6 416:21 457:18 460:9 462:23 463:18 468:6 469:15,20 470:7 473:23 538:9 541:20 544:18 547:1 549:6 550:14 567:9 579:9 593:7 598:14 603:14 625:12 626:3 629:9 630:23 641:2 647:24 650:18 652:22 660:1 662:3 663:5 669:3 670:16 <b>pointing</b> 523:13 630:21 <b>points</b> 372:3 <b>policy</b> 534:23 <b>pollution</b> 346:6 <b>pond</b> 308:17 344:19 405:8 405:21 <b>ponds</b> 308:19 345:18 346:1 346:3,11,17,21 347:11 <b>pool</b> 312:9,10,21 373:8 496:17 514:1 562:12 562:18 <b>portfolio</b> 494:14 564:13 591:1 <b>portion</b> 346:19 346:23 347:1 347:8 385:6,9 429:3 475:11 537:5,16 611:17	<b>portions</b> 630:11 632:14 <b>pose</b> 351:22 <b>position</b> 321:18 342:3,6 378:5 380:12 439:8 439:9 454:8 454:10 458:19 459:8 501:16 501:19 534:10 535:9,19,22 571:7 606:5,11 606:16,17,22 616:24 636:1 663:7 <b>positive</b> 339:10 343:23 457:24 458:1 574:4 582:22 602:2,3,7 603:17,24 <b>possession</b> 333:12 335:17 <b>possibilities</b> 475:23 476:6 476:8 <b>possibility</b> 324:4 340:1 474:21 491:1 <b>possible</b> 323:6 483:5,6 509:7 512:8 567:14 672:2 <b>possibly</b> 583:2 641:12,24 644:24 645:2 <b>Poston</b> 298:8 309:14,16 311:20 412:21 437:6 485:18 495:13 520:10 576:20 602:19 616:9 637:10 656:22 673:6 <b>potential</b> 403:20	407:10 420:20 524:10 531:20 609:3 <b>potentially</b> 356:12 387:6 409:24 427:13 506:14 513:9,12 517:10 551:19 551:20 559:8 567:15 <b>power</b> 312:9,10 312:21 317:20 318:20 322:14 373:8 374:10 380:4 389:12 394:8 425:11 425:13 435:10 474:7 479:10 494:19 496:17 510:21,22 511:1 555:22 556:1 562:12 562:18 662:21 663:3,4,7,8 663:20,21 <b>PPA</b> 319:3 389:17 394:2 394:15,19 395:6,16 396:18 425:22 479:17 520:22,24 521:3,7,13,20 522:17 578:15 581:16,17,19 581:24 582:4 582:10,10,14 582:21 583:10 583:11 585:3 628:2 <b>PPA's</b> 395:6 <b>PPAs</b> 318:23 358:20 364:9 364:10 393:17	395:4,12,14 396:22 397:7 478:20 479:7 479:14 522:2 <b>practices</b> 480:5 <b>pre-approval</b> 534:15 615:7 615:15 616:19 616:22 620:8 664:22 <b>pre-approvals</b> 656:10 <b>preceding</b> 440:7 680:13 <b>predicted</b> 515:16 <b>predicting</b> 336:20 <b>predominant</b> 414:14 <b>prefer</b> 613:1 <b>preferably</b> 398:17 <b>preferred</b> 369:15,16,17 369:19,21 370:23 523:6 524:15 545:14 545:17,23 547:13 575:23 576:5,11 595:24 596:1 642:19 644:19 <b>premature</b> 460:11 <b>prematurely</b> 515:8 517:22 <b>prepare</b> 350:2 581:8 610:20 630:9 653:24 <b>prepared</b> 301:10 418:4 440:2 441:10 493:6 504:6 560:11,20 593:21 599:12 630:9 631:2	<b>present</b> 320:13 330:23 331:13 439:14 460:16 667:13 680:9 <b>presentations</b> 553:10 <b>presented</b> 486:6 649:5 <b>presently</b> 637:6 <b>President</b> 301:8 418:2 599:10 <b>Presiding</b> 296:13 <b>presumably</b> 352:16 428:12 <b>presumption</b> 626:4,8 <b>pretends</b> 411:14 <b>pretty</b> 344:16 353:19 458:23 518:4 518:8 528:7 532:10 586:15 648:3 665:15 <b>prevent</b> 439:6 522:14 657:15 <b>prevention</b> 346:7 <b>previous</b> 305:7 305:11 352:9 352:9 356:5 356:10 414:2 454:7 <b>previously</b> 461:14 <b>price</b> 335:12 338:16,17,24 394:15,17,19 400:22 402:7 413:23,23 414:24 415:1 425:1,6,9 426:9,10 427:5,17,18 429:16 430:13 432:9 456:11 463:1 465:2,4
--	---	--	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

465:10,14,19 465:22 469:1 471:22 479:17 485:5 491:14 491:21 500:19 521:20,21 522:2,6,16,17 527:20 570:6 571:3 572:16 573:20 574:8 581:20 584:3 584:7 587:4 592:12,13,14 618:14 640:13 648:7 <b>price's</b> 427:15 <b>prices</b> 317:20 334:10,13,14 338:2,6 392:11,13 394:3,5 396:6 402:5,5 413:17,18,19 414:6,12,15,16 414:18 425:16 425:24 427:6 429:11 432:16 432:17 469:1 483:3 487:17 522:7 535:16 536:5,22 569:23 572:13,17,21 585:5,12 586:24 596:23 618:14 639:3 645:20 645:20 646:16,23 647:3 <b>pricing</b> 322:1,8 348:11,11 356:22 357:2 366:21 396:3 413:24 414:21 414:23 483:12 483:15,16,18	587:1 592:19 597:21 608:11 <b>pride</b> 383:3 <b>primarily</b> 415:18 467:11 609:13 640:14 650:2 <b>primary</b> 574:4 649:9 650:16 <b>principle</b> 426:23 587:3 <b>printed</b> 539:21 <b>prior</b> 330:10 354:5 357:18 367:12 398:19 409:16 557:11 <b>priority</b> 392:7 <b>prob</b> 405:18 <b>probabilities</b> 595:3 597:3 621:22 <b>probability</b> 459:3,6,7 476:16,23 569:22 570:4 570:5 574:11 <b>probably</b> 301:20 325:11 328:11 334:7 335:14 337:21 344:4,10,24 347:14 353:1 354:5 365:3 365:13 366:7 405:19,22 406:3,7 431:9 521:9 524:19 535:16 536:24 537:10 617:10 618:16 627:6 648:18 659:2 <b>problem</b> 593:15 <b>problems</b> 634:20 <b>procedure</b> 598:2 <b>proceed</b> 546:19	655:24 <b>proceeding</b> 301:11 418:5 493:7 495:1 504:7 511:12 511:15 560:20 599:13 <b>proceedings</b> 296:3 370:15 381:9 538:4 539:2 598:16 672:17 680:9 680:11 <b>proceeds</b> 476:2 <b>process</b> 312:19 312:20 313:20 313:22 314:10 317:6,16 371:22,24 393:2 398:2,8 401:22 518:2 518:5,8 531:4 531:8,9,13 553:12,13 557:21 558:5 559:7,11 634:8 <b>processes</b> 313:11 314:3,5 316:15 398:5 404:17 <b>procured</b> 496:19 <b>produce</b> 387:20 388:6 388:16 390:12 <b>produced</b> 328:18 338:8 435:10 474:7 483:8 539:23 <b>producer</b> 555:23 556:1 <b>produces</b> 400:21 592:3 <b>producing</b> 590:5,14 <b>product</b> 566:14	<b>production</b> 304:20,21 305:6,8,10 318:7 359:7 367:8,16,19 367:22 368:8 368:9 427:4 427:17 460:13 460:18 461:9 462:7 467:1,5 467:12 472:1,6 472:11,15,22 473:6,20 475:5,6,12 476:17,18,22 483:20,21 484:13 485:5 487:2 488:2 488:24 489:12,18 490:13,18,22 522:8 535:16 569:20 572:12,16,17 574:7,8,9 584:4,5,6 <b>professional</b> 323:12 680:7 680:21 <b>profile</b> 303:22 <b>profitability</b> 634:5 <b>program</b> 455:16 <b>progress</b> 470:1 <b>project</b> 325:19 337:15 340:10 361:13 367:15 384:24 385:5 387:12 424:12 424:14 425:7 425:7 426:13 426:13,15 427:2,11,14 428:24 429:13 430:14 431:15,24 435:9,10,12,15	435:18 436:2 436:5,11 438:16,16 441:18 456:5 458:1 463:5 463:23 464:3 464:3,12 465:2,5,7,9,11 465:17,23 467:12 468:16 470:24 471:1 472:7 473:1 474:6,11,12,13 474:16 480:21 481:21 482:21 496:6,22 498:6,19 501:8,15 502:7 507:9 512:24 513:5 533:7,8 547:11 554:18,20 555:13,23 558:8,11,13,16 558:22,24 559:9 563:8 564:5 565:6 565:8,13 582:23 601:13 602:1,12 604:4 605:9 620:18 621:15 624:10 625:11 625:14 626:14 626:18 628:7 628:10 663:4 663:5 668:17 <b>project's</b> 441:15 513:2 <b>projected</b> 338:7 412:4 472:3,4 482:23 483:22 488:20 569:18 570:8 634:5 647:4 <b>projecting</b>
--	---	---	---	---



EVIDENTIARY HEARING - Vol. 5 5/10/2018

336:21 564:14 <b>projection</b> 436:6 489:12 <b>projections</b> 339:22 409:17 565:7 565:13 566:3 580:9 593:4 652:16 <b>projects</b> 308:22 309:4 313:8 324:16 329:7 329:19 330:1 331:22 333:24 334:1 334:6,17 336:3 337:6 370:1,2 378:17 378:20 405:1 405:2,17 425:1,3 426:3 427:19 428:22 429:8 429:9,11,17 430:15 431:5 438:14 442:10 461:10,12,16,18 461:20 462:1 462:2,3 472:3 476:21 479:15 483:8 499:6 500:1 507:23 508:3,6,8 509:10 510:12 512:6 514:7,12 514:16 528:23 530:18 537:4 547:7 559:1 572:9 577:12 584:18 588:23 591:10 596:8 601:8,9 601:20 627:21 642:13 646:10 659:13 <b>proper</b> 480:4 621:24	<b>property</b> 568:5 568:7,20 569:1,3 <b>proportion</b> 481:24 <b>proposal</b> 455:16 559:7 559:11 590:4 <b>proposals</b> 441:24 502:17 <b>propose</b> 325:2 325:6 <b>proposed</b> 364:2,12 426:1 429:7 440:23 463:7 497:11 501:12 596:8,18 598:4 645:22 660:15 <b>proposes</b> 558:13 <b>proposing</b> 467:4 475:16 490:11 607:22 <b>proposition</b> 333:8 <b>prorata</b> 303:15 <b>prorated</b> 570:15 582:8 <b>prorating</b> 568:12 <b>protect</b> 458:21 522:8,15 574:12 <b>protection</b> 322:21 341:21 456:7,11 458:20,24 459:10 471:22 491:14,22 533:20,21 534:3,4 554:16 555:3 563:2 573:21 574:1 578:2 598:6 612:4	665:12 669:13 <b>protections</b> 341:16 463:7 471:23 554:5 554:10,23 555:1 611:16 627:14,22 628:17 633:18 659:16 670:11 <b>protocols</b> 313:4 <b>proven</b> 395:18 <b>provide</b> 310:15 332:20 373:18 382:4 396:24 416:9 422:8 424:1 424:19 425:6 426:9 465:1 506:9 513:19 513:20,22 552:13 553:15 554:13,22 555:20 563:20 669:15 <b>provided</b> 299:17 348:1 351:1,3 352:11 352:12,15 355:20 374:18 411:7 426:10 441:20 441:23 466:5 466:8,10,14,17 466:18 500:19 544:7 545:6 570:13 572:22 573:3 597:5 601:5 618:15 619:21 629:12,14 631:10,11 638:15 670:12 <b>provides</b> 322:22 379:21 381:21 382:20	456:22 458:7 465:10,13 491:22 512:24 514:11,15 533:21 554:4 554:9 556:2 556:3 612:2 634:4 651:16 <b>providing</b> 349:6 391:24 509:7 529:23 555:15 612:4 <b>provision</b> 327:2 341:2,3,11,12 342:2 421:24 430:13 435:23 436:2 436:20,23,24 455:22 456:3 456:7,8,22 457:23 458:15,17 485:6 501:11 501:11,18 522:5,16 533:16,20 534:3,4,7,9 554:16 573:21 578:2 582:11 582:12 583:8 583:9 624:10 625:9 626:12 671:1 <b>provisions</b> 329:11,16 341:21 357:24 358:7 534:19 535:5 620:14 656:13 666:16 <b>proxies</b> 303:17 <b>proxy</b> 303:13 317:14 <b>prudence</b> 507:21 508:12 626:5 656:4 656:10 664:22	<b>prudency</b> 387:2 615:12 626:8 <b>prudent</b> 383:2 480:5 515:8 516:4,5,16 517:22 <b>prudently</b> 478:8 510:22,24 <b>PSA</b> 519:13,17 520:5 596:4 <b>PSAs</b> 500:4 <b>PSC</b> 518:23 519:2 618:3 <b>PSO</b> 340:14 <b>PTC</b> 318:7 366:24 367:1 367:18 422:14 461:14 480:14 482:6 483:9 483:13,14 625:18 <b>PTCs</b> 367:3,5 421:14 422:6 422:8,10,15,17 422:18,24 457:1 461:12 461:20,22,22 461:24 462:1,1 462:5 467:7,8 467:11 475:12 566:20,22,23 581:2 624:21 625:6 628:11 <b>public</b> 296:1 297:2,4,7,7,9 299:10,17,22 299:23,24 300:1,4,5,6,6 300:11 344:22 381:11 393:14 413:4 459:19 466:10 471:3 471:4 487:21 501:23 534:23 539:4 553:5 558:3 559:7 595:15
---	--	---	---	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

620:3 630:8 630:13 648:13 653:21 661:18 668:8 679:4,8 <b>publications</b> 320:9 340:12 391:3 <b>publicly</b> 396:16 <b>pull</b> 306:23 526:3 <b>pulled</b> 356:11 <b>punted</b> 574:15 <b>purchase</b> 322:14 374:9 380:4 389:12 394:8 425:11 425:14 468:7 479:10 491:19 494:19 497:17 510:21,22 662:21 <b>purchased</b> 318:20 511:1 <b>purchases</b> 502:12 <b>purported</b> 319:11 413:19 <b>purports</b> 336:1 338:1,23 643:24 <b>purpose</b> 409:19 410:2 424:23 425:5 464:23 465:1 601:16 649:1 650:13 652:8 669:9 <b>purposes</b> 301:11 331:9,11 345:11 384:7 386:2,4 418:5 421:21 421:23 463:12 463:14 493:7 504:7 540:2 560:12,20 599:13 649:2 <b>pursuant</b> 490:11 <b>push</b> 405:19	<b>pushed</b> 404:12 <b>put</b> 308:11,24 313:17 317:7 319:10,11 326:15 332:13 333:2,14 336:6 341:5 341:20 357:8 357:24 359:24 370:12 385:2 385:2 387:15 396:9,9 397:5 399:1 401:15 403:12,17 406:1 462:12 463:7 468:4 475:16 596:17 636:14 665:6 670:8 <b>putting</b> 405:20 488:1 534:14 559:1 <b>PVRR</b> 632:9	352:17 353:10 361:11 365:1 372:11,14 374:2 381:13 382:3,3 386:3 386:4,20 391:13 392:2 392:2 407:22 408:20 409:20 410:3 410:5,7 416:13 418:6 457:9 457:10,12 467:17 470:4 471:16 481:8 485:24 488:6 491:11 493:8 497:16 500:8 502:10 504:9 514:14 516:22 518:7,9,20 519:12 520:22 526:24 527:23 529:2 531:11 534:15 548:3,18 549:20 550:6 558:10 590:11 593:11,23 594:5,14 599:14 600:1 606:15 608:16 613:24 615:3 620:1 622:20 623:1,21 625:24 628:19 640:19 641:10 643:5 648:20 665:4 668:24 669:23 671:7 <b>questioning</b> 344:17 372:7 407:11 478:17 480:8 491:5 540:3 563:15 579:16,23,24	580:2 <b>questions</b> 302:2 309:12 320:17 324:20 325:18 334:10 334:15 335:15 341:18 342:7 345:6 368:16 392:14,16 393:5,13 406:11,13,14,16 407:7,9,22 409:6,6 411:6 412:18,21 413:1 413:3,11,16 415:15 417:1 419:4 421:9 431:20 437:3 437:6,10 439:18 459:11 477:2,5 485:11 485:13,14,16 485:18 487:20 490:6 490:24 492:6 493:17 495:11 495:13,17 500:23 501:22 503:2 503:3,5,6 505:7 510:4 510:19 520:8 520:10,14 525:18 538:1 557:4,5,6 559:14 560:17 573:14 576:18 576:20 580:3 587:12 595:14 595:16,17,18 597:20 598:10 600:9 602:19 605:21 609:7 609:12 610:1 612:14 614:21	616:7,9 620:2 622:13,15,17 622:19 624:4 632:12 633:8 637:8,10 648:11 650:24 651:22 654:9 656:18,20,22 661:17 664:3 664:4,5 665:24 667:21 668:11 <b>queue</b> 399:2,8 <b>quick</b> 341:8 504:21 <b>quicker</b> 322:16 <b>quickly</b> 326:13 482:10 <b>quite</b> 304:2 305:14 320:18 365:21 368:4 404:13 425:13 570:14,15 631:1 668:22 672:7 <b>quo</b> 523:5 547:12,13 576:6,9 <b>quotation</b> 315:13 <b>quote</b> 382:4,6 <b>quoted</b> 299:10
	<b>Q</b>			
	<b>qualified</b> 367:15 <b>quantification</b> 484:24 <b>quantified</b> 432:23 <b>quantify</b> 364:6 484:20 <b>quantity</b> 364:23 365:7 584:6,8 584:9,13 <b>quarter</b> 405:24 430:1 <b>quarterly</b> 375:5 375:14 <b>Quebec</b> 489:21 <b>query</b> 340:8 <b>question</b> 301:12 307:3,5 333:4 334:11,24 336:8,10,17,18 349:7 351:22			
				<b>R</b>
				<b>R</b> 297:1 298:1 299:1 <b>R-o-g-e-r-s</b> 630:4 <b>Radio</b> 357:17 368:6 <b>raise</b> 300:18 417:9 492:12 559:20 <b>RAM</b> 510:20 511:3,7 <b>ramifications</b> 473:9,12

EVIDENTIARY HEARING - Vol. 5 5/10/2018

ran 557:24 586:23 650:20	rate-making 656:14 658:7 667:5	651:10	really 308:14 314:2 348:19 364:24	344:21 345:4 347:23 348:3 349:6 362:4
range 344:3 385:11,14 487:16 499:2 659:17	rated 499:11,15 ratepayer 334:6 537:20	515:18 602:11	393:18 463:6 535:11,11 578:6,6 581:5 585:24 621:8 634:11 639:11	367:14 369:3 369:12 407:14 421:14 438:15 439:17 460:16 466:3,16,17 486:20 488:1 488:5 491:12 502:14 573:17 574:16 579:23,24 580:1 606:23 633:22 636:8 636:17,21,23 636:24 650:6 651:22 661:23 662:13,17 666:9
rapid 377:22	ratepayers 317:21 361:13	read 315:5,7 340:12,13,17 340:22 341:5 345:5,6 372:17 408:4 434:24 455:14,18 457:20 478:24 486:7 501:13 506:23 508:16 510:18 512:12 513:17 515:4,19 516:2 516:8,9 517:24 551:2 575:21 612:8 623:14	reap 361:8 reason 323:18 361:4,15 364:10 480:10 481:14 500:20 548:22 551:19	633:22 636:8 636:17,21,23 636:24 650:6 651:22 661:23 662:13,17 666:9
rate 318:19 361:13 374:13 374:14 386:9 386:16,22 387:2,4,16 416:22 440:24 441:8 442:4 454:15 471:1 491:4 511:3,12,15 513:23 514:2 514:5 520:2 522:22 523:4 523:9,10 528:15 531:4 531:8,9,13 537:19,22,23 541:15 543:24 547:19 548:8 548:11,14 554:13,15 566:11,12 567:5,8 569:1 569:5 574:14 574:17 575:13 575:17,24 576:9 583:6 589:2 595:9 618:4 621:4 628:22 638:6 638:10 656:6 656:15 657:20 658:15,23 660:6,8,11,24 665:8 666:14 669:11,14	rates 360:15 383:20 387:3 387:9 416:23 421:20 440:22 441:2 441:3,3,14,18 442:12 458:10 464:2 480:19 482:13 504:5 514:1 516:21 517:7 521:19 521:24 522:2 531:21 537:24 541:1 575:9,13 576:8 626:6 660:9 661:4	reading 408:19 562:15 625:13	reasonability 370:2 reasonable 322:16 324:22 332:9 404:15 498:6 507:21 508:19 532:16 533:3 546:19 586:17 588:14 623:6 623:7 649:18 661:8 666:18 666:20 670:6 671:6	receipt 419:16 654:23 receive 324:17 420:6,7 429:13,14,17 429:19 462:4 472:24 478:7 552:22 598:7
rate-based 470:10	rating 669:7,8 ratings 666:15 666:19 667:11 667:17 669:2 rationale 480:15,16 reach 558:7 621:10 651:19 reached 398:14 546:16 558:9 566:2 628:20 650:18 651:8	real 365:6 414:20 427:2 504:21 658:14 real-time 338:5 413:18,23 414:7,10,11,16 414:21,24 592:15,20 593:7 597:21 662:16 realistic 596:6 596:10,13 reality 579:3 realization 472:11 realize 463:22 471:19 realized 624:24	reasonablene... 615:9,12 reasons 325:15 415:6 481:2,4 481:9 rebuttal 310:5 314:22 315:3 357:9 408:2 610:20 612:21 613:20 616:16 630:10,18 631:14 632:8 638:18 641:8 653:24 657:5 678:5,7,9 recall 306:22 307:5 315:19 320:16 343:3 343:7 344:20	received 302:14 334:17 354:15 402:14 536:14 563:7 584:19 617:16 628:1 receives 400:23 436:2 628:6 receiving 663:3 663:4 reception 602:2,7 recess 381:8 459:14,16 538:3,22 598:14 reciting 332:23 recognize

EVIDENTIARY HEARING - Vol. 5 5/10/2018

350:17 375:18 539:11 540:7 652:22 <b>recognized</b> 463:13 <b>recollection</b> 331:1 345:24 587:9 656:3 662:2 671:8 671:13 <b>recommendat...</b> 372:4 <b>reconcile</b> 517:18 518:10 524:19 <b>reconciles</b> 526:5 <b>record</b> 299:3 320:11 333:14 340:23 381:10 417:20 421:21 459:18 492:23 497:1 503:24 517:24 538:6 539:1,4,21 540:4 560:4 598:18 610:13 630:3 653:16 <b>records</b> 299:22 300:11 621:6 <b>recoup</b> 472:20 <b>recourse</b> 589:13,18 <b>recover</b> 463:20 472:19 497:3 605:3 606:7 <b>recoverable</b> 626:6 <b>recovered</b> 440:22 442:4 <b>recovering</b> 387:9 441:2 <b>recovery</b> 658:10 <b>recross</b> 406:18 410:18,20 485:12 486:2	487:23 623:21,23 665:23 666:2 667:22 673:11 673:12,23 675:9,23 <b>red</b> 635:1,3,4,5 <b>redirect</b> 413:6,8 490:7,8 503:7 503:8 557:7,9 595:19,21 609:8,9 624:5,7 651:1 651:2,4 667:23,24 673:13,25 674:12,18,25 675:10,16,24 <b>reduce</b> 422:11 482:13 626:18 <b>reduced</b> 422:14 488:2 <b>reducing</b> 541:16 <b>reduction</b> 484:17 488:9 488:18 489:8 489:16 563:9 <b>redundant</b> 372:7,11 <b>refer</b> 312:5 315:12 318:14 321:24 369:7 376:13 507:5 509:2 510:1 555:8 562:9 564:1 565:3 <b>reference</b> 416:16 487:1,6 505:1 522:23 527:21 551:10 574:18 607:1 611:9 612:12 626:21 641:14 642:21,22 643:7,10 <b>referenced</b> 481:11 486:11	498:3 500:3 523:13 524:21 <b>references</b> 549:19,24 550:23 551:3 551:5 <b>referencing</b> 526:11 616:18 <b>referred</b> 327:10 331:7 368:14 368:18,21 439:23 527:13 545:20 624:9 <b>referring</b> 307:21 311:9 366:11 378:12 383:8 384:17 409:12 432:7 474:4 488:8 489:15 496:14 498:14 539:16 551:22 593:6 611:13 620:10 643:16 667:19 <b>refers</b> 376:13 423:22 624:19 <b>refining</b> 649:12 <b>reflect</b> 387:12 510:21 511:19 511:23 608:22 646:17 <b>reflected</b> 387:3 459:8 510:20 531:7 594:22 634:14 <b>reflecting</b> 540:24 <b>reflective</b> 556:4 <b>reflects</b> 353:5 411:23 434:14 479:18 <b>reform</b> 441:11 500:24 541:13 575:19 <b>refreshed</b> 586:1	<b>reg</b> 574:11 <b>regard</b> 353:5 356:22 415:20 473:11 491:19 501:13 531:11 598:6 604:2 606:16 623:6,8 670:24 <b>regarding</b> 311:4 329:11,16 381:14 439:18 512:18 519:13 634:5 651:23 662:1 664:9 <b>regardless</b> 325:21 346:11 346:17 347:11 516:15 <b>regards</b> 602:1 <b>Region</b> 301:9 493:4 <b>Registered</b> 680:7,21 <b>regular</b> 425:4 426:17 661:20 <b>regulated</b> 361:21 470:21 471:1 <b>regulatory</b> 296:14 314:20 439:5 458:7,9 458:13 471:11 471:14,15 477:18,22 504:5 507:11 507:18,22 508:7 513:14 519:22 558:5 600:2 605:2 605:13,17 618:22 630:6 655:15,19 656:13 657:6 657:12,13 658:2,22 661:24 662:19	662:24 663:1 663:22 664:15 666:5 666:16,17,22 666:24 667:1 668:2,3,15 669:1 <b>relate</b> 504:23 525:19 540:1 584:11 <b>related</b> 308:22 314:4 316:23 322:21 334:23 355:7 368:16 387:8 392:2 393:22 402:17 407:9 407:10,16,22 407:23 410:9 415:16 506:3 508:13 522:11 528:11 529:19 530:2 548:24 564:4 572:23 584:21,22 585:1,2 597:21 621:23 655:19 <b>relates</b> 335:5,5 382:17 408:15 408:15 495:7 498:17 507:23 510:10 512:10 516:13 522:10 526:6 529:23 535:18 <b>relating</b> 421:22 570:7 664:22 <b>relation</b> 481:20 655:16 656:7 <b>relationship</b> 531:20 <b>relative</b> 388:17 409:3 481:13 482:4 618:13 642:17 643:11
--	--	---	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

326:12 483:19	<b>Renew</b> 297:12	550:3,20	<b>requesting</b>	582:1,21
566:10 567:10	297:14 311:22	<b>reporter</b> 372:17	529:17	617:15 626:18
568:1	412:22 437:7	613:13 631:12	545:24	627:24
<b>relevant</b> 435:14	485:19 495:14	680:6,7,8,21	604:15 651:9	632:10 635:9
435:16	520:11 576:21	<b>Reporter's</b>	<b>requests</b>	635:13 646:12
<b>reliability</b> 312:8	602:20	675:25 680:1	315:20 441:22	646:14,21
312:13,16,17	616:10 637:11	<b>reports</b> 319:15	466:9 614:18	647:3,10,18,21
312:24 313:2	656:23	455:17	648:22 649:11	648:1,3,9
313:5,14	<b>renewable</b>	<b>represent</b>	668:16 670:6	659:6
314:12,16,19	424:24 425:3	339:13 577:15	<b>require</b> 359:19	<b>requirements</b>
314:24 316:5	425:7 426:12	<b>representative</b>	436:21 490:12	358:24 373:7
316:10 373:15	426:13,14	304:11 308:15	579:13 606:6	404:21 462:15
391:11,15,18,24	494:14 495:5	<b>represented</b>	653:1 657:17	494:15 495:3
392:3,6	502:9,12	565:24	<b>required</b>	529:8,11,24
393:24 396:4	601:8	<b>represents</b>	329:24	614:19 634:24
415:13,21	<b>renewing</b>	304:15,21	386:12	646:2
416:8,10	380:16	364:20	435:22	<b>requires</b>
<b>reliable</b> 361:23	<b>rent</b> 379:19	458:19,19	498:21 514:9	670:22
<b>relied</b> 391:11	<b>repair</b> 413:11	642:10	546:10,11,23	<b>research</b>
<b>relief</b> 529:15	462:19	<b>reproduced</b>	658:3 667:2	396:24 516:19
545:24	<b>repairs</b> 329:10	442:20	<b>requirement</b>	517:5,5
546:14 548:8	329:17	<b>request</b> 315:14	336:2 373:14	<b>reservations</b>
548:11,24	<b>repeat</b> 307:3	315:17 327:12	373:23 374:5	614:18
<b>relinquished</b>	325:4 336:18	333:16 345:3	412:14 429:2	<b>reserve</b> 373:6
614:12	408:20 410:7	349:7,11,17	430:14 431:3,4	373:14,22
<b>rely</b> 316:13	439:1 457:12	350:2,19	431:5,7,10	515:11 667:8
373:10 376:22	500:8 511:21	351:18,23	457:3 463:11	<b>residential</b>
550:13 622:2	594:5 671:12	352:1,6,12,13	482:14 491:24	374:3,4
622:4,5	<b>repeated</b> 321:16	352:16,17,18	492:2 495:6	663:10
652:16	<b>rephrase</b>	403:17 496:18	502:11 523:24	<b>residents</b> 602:5
<b>relying</b> 382:19	399:14 477:20	502:16	524:6,7,12	<b>residual</b> 308:10
594:6 629:11	<b>replaced</b> 582:6	530:23	525:3,4,10,15	508:22 515:15
640:3	<b>replacement</b>	539:17 558:1	525:21 526:10	<b>resolutions</b>
<b>remain</b> 556:10	578:15 581:23	559:7,11	526:12 528:1	359:24 360:4
556:14 645:21	582:14,21	571:21 592:2	528:13 536:7	<b>resource</b>
<b>remaining</b>	585:3	597:6,7,16,19	540:13,18,19	306:22 307:9
384:8 411:15	<b>replacing</b>	637:22 638:5	540:22 541:3	323:24
458:11	407:17	638:7,8 653:1	541:4,16	357:12,13
<b>remains</b> 474:19	<b>replies</b> 404:11	657:11 658:1	543:16,23	366:12 368:11
<b>remarks</b> 327:11	<b>report</b> 369:1,9	668:21 670:2	544:23 547:17	368:24,24
<b>remember</b>	369:11 371:3	678:18,20	547:21,23,24	369:15 370:5
331:2 348:13	498:2,4,5	<b>requested</b>	568:15 575:2	370:18 371:2
372:19 413:20	549:21	529:15 546:7	575:4,20	371:14 372:2
491:5 502:5	550:23 551:14	553:11 614:5,6	576:4 578:15	372:21 373:5
502:10 580:1	551:17 592:3	623:11 638:4	579:20 580:4	373:11,20
<b>renegotiate</b>	<b>reported</b>	649:16,24	580:6,10,15,18	415:4,7 489:2
394:13,14,14	296:21 533:2	657:7	580:19 581:1	489:7 549:10

EVIDENTIARY HEARING - Vol. 5 5/10/2018

549:15 550:2 550:7,13,19 552:15 590:24 597:13 638:1 642:19 650:12 650:14 <b>resources</b> 322:18 357:16 358:7,12,16 358:23 359:22 373:13 462:20 508:15 630:7 <b>respect</b> 327:17 425:2 426:1 432:4 433:5 439:9 472:17 487:2 496:11 497:8 498:16 500:9 501:5 617:13 <b>respectively</b> 374:10 504:13 <b>respond</b> 306:20 315:2 317:19 359:15 373:21 380:5 414:13 <b>responded</b> 353:10 415:17 500:15 592:1 <b>responding</b> 411:6 <b>response</b> 299:20 315:14 315:18,23 333:3 344:17 345:3 349:6 349:12,13,17 350:3,20 351:1,4 352:1 352:6,8,13,15 352:17,20 353:4,11 393:13 442:9	456:18 488:5 539:17,24 573:3 593:17 617:1 648:22 <b>responses</b> 352:12 502:16 <b>responsibility</b> 350:5 614:12 <b>responsible</b> 312:7 349:12 437:19 609:13 618:20 <b>responsive</b> 481:7 <b>rest</b> 556:18 584:22 <b>restate</b> 346:13 543:20 <b>restrictions</b> 670:5 <b>result</b> 398:24 410:1 411:21 441:16 480:12 483:1 491:4 497:23 516:20 517:6 575:18 596:18 630:21 632:2 639:23 640:10 657:21 <b>resulting</b> 575:24 640:23 <b>results</b> 355:24 405:13 460:24 515:9 517:23 518:12 543:16 564:20 570:18 596:16 608:20,22 640:15 643:16 650:17,17 <b>retail</b> 374:4,8 387:8 458:10 495:7 510:24 663:12	<b>retained</b> 640:23 645:21 679:7 <b>retains</b> 300:7 <b>retire</b> 308:18 314:8,11 324:14 325:2 325:7,16 348:7 349:1 352:22 353:7 383:16,24 401:18 404:1 407:20 620:11 650:23 <b>retired</b> 325:13 349:24 407:3 439:5 477:19 606:7,20 634:18 644:8 645:22 646:3 658:20,21 <b>retirement</b> 310:9 314:6 326:13 349:19 349:20 407:10 507:10 646:1 649:16 650:3 <b>retirements</b> 353:6 564:9 564:17 <b>retiring</b> 314:13 349:8,14 515:6 517:21 646:8 <b>retrofit</b> 394:9 <b>return</b> 420:4,5 420:10,17 426:16 429:4 467:10 472:20 473:15 473:19,24 475:7 477:1 478:7 520:1 555:17,17 606:9 658:3 658:4,10	659:1 <b>returned</b> 427:20 513:13 <b>reveal</b> 479:22 <b>revenue</b> 335:10 336:2 402:14 409:1 410:11,13 412:6,8,14,15 430:14 431:2 431:4,4,7,10 436:4 456:24 457:3 472:2 472:15 482:14 483:14,14 491:24 492:2 523:24 524:5 524:6,12 525:3,4,10,14 525:21 526:10 526:11 528:1 528:13 536:7 540:13,18,19 540:21 541:2 541:3,4,16 542:14,16 543:11,13,16 543:22,23 544:14,22 547:17,21,23 547:24 565:16 568:15 574:5,6,10 575:2,4,20 576:4 578:15 579:20 580:6 580:15,18,19 581:1,24 582:20,21 583:22 584:1 584:15 585:2 585:11 596:7 617:14 626:18 627:24 632:9 634:23 635:9 635:13 646:2 646:12,14,21 647:3,6,10,11	647:18,21 648:1,2,9 659:6 <b>revenues</b> 334:17,21 335:1 408:22 410:9 411:13 414:17 416:14 416:19 425:2 425:16 426:21 427:3 429:14 429:17 430:15 431:14 436:4 483:11 491:22 491:23 510:10 510:11,20 511:20,24 512:3,5,11 514:11,15,19 536:14,17 542:2,4,22 543:8,19 544:20 566:5 569:18,19,24 570:8 572:8 572:12 573:5 573:20 578:14 580:9 581:23 584:19 585:4 604:4 627:20 628:1 628:13 <b>review</b> 299:9 371:9,22 510:3 536:3 538:19 601:9 618:11 619:23 621:9 <b>reviewed</b> 303:2 335:20 340:15,19 341:3 344:24 350:6 375:8 455:13 456:5 456:6 521:10 523:17,21 533:10 562:5
---	--	--	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

563:18 565:9 619:17 651:17 <b>reviewing</b> 353:23 354:6 355:5 <b>reviews</b> 618:22 652:5 <b>Revise</b> 677:11 <b>revised</b> 338:18 342:19 418:19 <b>revising</b> 506:14 <b>revisions</b> 506:20 <b>Rex</b> 457:2 <b>RFP</b> 337:16 356:1 442:10 487:9,12 496:13 497:24 500:15 527:12 559:7 570:18 <b>right</b> 300:18 310:3,18 311:12 311:20 315:22 316:1 318:6,14 318:24 329:4 330:14 338:9 344:6 352:20 372:13 394:23 395:11 399:9 402:8,18 408:9,11,23 416:17 417:9 420:12 423:16 437:17 440:23 454:18 459:10 459:18 464:13 470:8 472:18 475:19,20 484:23 485:7 492:12 508:10 511:4,7,12,16 511:17 513:5,11 513:16,21 514:13 521:15 521:24 531:9 536:7 542:7	545:2 559:20 562:16 569:2 572:1 577:8 578:23 583:21 585:23 597:2 605:10 611:8 611:16 614:7 616:17 622:12 625:7 631:22 636:16 644:4 644:12 652:6 672:12 <b>right-hand</b> 542:8 <b>rights</b> 521:11 <b>rigorous</b> 371:1 490:15 <b>Riley</b> 565:5 566:2 577:22 578:3 587:16 619:18,18,21 <b>Riley's</b> 335:23 430:6 433:11 434:18 435:6 435:7 564:23 565:10 566:7 578:1 580:9 <b>risk</b> 317:21 396:3,10 398:22 427:5 442:5,6 462:10,18 463:8,15,21 464:5,19,20 475:13 476:9 596:15 603:13 640:5,6,16,17 641:2 665:14 <b>risks</b> 462:13,17 462:21,24 463:4,11 <b>River</b> 303:8,12 303:16 304:18 304:22 317:1 318:23 319:3 319:11 328:3	338:16 357:17 363:15 364:20 368:6 374:9,11 380:10 389:11 394:2 425:14 425:15,17,20 494:12,21,23 502:6 582:6 <b>Rivers</b> 297:19 <b>ROA</b> 420:6 <b>road</b> 655:23 <b>Rob</b> 355:11 <b>Robert</b> 418:16 677:10 <b>Robertson</b> 297:18 312:1,3 319:22 413:1 437:10 485:22 495:17 520:14 673:7 <b>Robinette</b> 303:1 564:3,8 <b>Robinette's</b> 306:1 344:23 345:10 362:4 362:7 506:24 509:3 563:16 <b>robust</b> 316:15 360:23 371:9 371:22 518:5 559:10 <b>Rogers</b> 408:3 611:12 617:10 618:1,17 619:24 622:6 629:17,18,24 630:4 631:14 631:24 637:17 651:7 653:6 675:11 678:10 <b>role</b> 401:21 625:17 <b>room</b> 478:17 501:7 563:11 579:16	<b>rough</b> 317:10 <b>roughly</b> 316:22 323:10 325:24 330:11 330:15 331:24 332:16 343:24 347:15 364:20 385:13 389:4 390:11 407:1 567:7 636:14 <b>round</b> 399:17 <b>rounded</b> 523:4 <b>rounding</b> 523:8 <b>routine</b> 379:6 <b>row</b> 476:19 523:24 566:12 <b>rows</b> 565:22 <b>RPR</b> 296:22 <b>RPS</b> 495:3 <b>RR</b> 632:9 <b>RTOs</b> 592:22 <b>rubber</b> 361:16 <b>rule</b> 347:4 <b>rule-making</b> 404:16 <b>rules</b> 308:11,12 357:19 367:18 386:14 462:15 480:17,22 508:22 <b>ruling</b> 404:16 435:1 <b>run</b> 314:10 318:19 356:18 367:3 380:9 387:19 390:13 394:11 543:2 595:2 597:7 597:16 652:3 652:19 <b>running</b> 360:24 570:2 <b>runoff</b> 346:3,22 <b>runs</b> 524:14 557:24	609:14,15 650:9 <b>Rupp</b> 296:16 406:14 616:1 <b>RWS-1</b> 418:19 677:12 <hr/> <b>S</b> <hr/> <b>S</b> 296:22 297:1 298:1 299:1 676:1 677:1 678:1 679:1 680:6,20 <b>safe</b> 361:23 <b>Sager</b> 355:11 418:16 477:11 677:10 <b>Sager's</b> 437:17 438:21 <b>sake</b> 385:13 <b>sale</b> 497:17 596:7 640:9 <b>sales</b> 335:11 399:10 400:24 401:10 401:14,14 402:13 408:22 409:1 410:9,10,13 411:13 412:6,15 414:17 495:7 510:20 511:2 511:20,24 512:3 536:11 601:12 640:4 647:6 <b>Sarah</b> 298:13 <b>Saskatchewan</b> 489:22 <b>satisfied</b> 661:11 <b>satisfying</b> 502:8 <b>saturation</b> 318:6 318:12 <b>save</b> 422:5,7 590:15,19 <b>saving</b> 642:23
--	--	--	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

<b>savings</b> 296:10 316:4,9 330:7 335:3 336:21 361:1 366:8,13 368:20,23 369:4 384:15 387:13 392:23 400:21 403:13 437:24 438:6 457:2 468:10 468:20,24 469:2,3,5 471:20 506:4 512:10 515:24 536:10 537:8 537:15 547:8 547:15,16 549:11,17 550:5 551:16 552:23 556:24 563:6 596:17,20,21 597:9 601:6 601:10 604:16 605:5 608:24 617:8,21 621:19 628:10 634:16 635:13 635:20 639:2 640:7 641:11 641:23 642:22,23,23 643:7,7,11,20 644:2,14,20 644:23 645:1 645:7,23 647:12,13,22 649:5,6 660:3,10,11,19 661:13	364:15 371:5 377:14 383:7 390:10,16 412:13,16 467:21 469:8 488:5,18 548:1 550:12 568:23 585:21 621:1 636:21,23 667:18 <b>says</b> 305:18 311:2 315:23 318:18 361:16 411:18,18,22 431:4 433:18 434:5 439:4 456:23 505:2 525:2 531:6 538:13 542:9 543:7 556:8 568:20 575:16 604:17 605:2 607:6 611:8,19 612:2 626:3 <b>scale</b> 328:13 <b>scaled</b> 304:22 <b>scenario</b> 458:24 459:1 459:4 462:11 468:6 476:24 478:5,12 483:5,6 484:15,22 486:15 535:12 579:4,11,13 596:11,14 597:18 641:1 660:19,20 665:8,11,16 670:3 671:10 671:15 <b>scenarios</b> 361:1 407:17 438:5 438:13 458:22	482:24 485:1 535:16 572:23 577:20 <b>schedule</b> 426:19 455:24 524:23 536:5 <b>scheduled</b> 506:12 507:10 <b>scholarship</b> 396:12 <b>scope</b> 409:5 410:2 653:3 <b>SCOTT</b> 296:16 <b>scrap</b> 341:24 <b>screen</b> 486:6 <b>se</b> 355:22 365:4 382:8 395:18 <b>seal</b> 680:16 <b>seated</b> 417:16 492:19 503:20 599:4 610:11 629:23 653:14 <b>seats</b> 496:16 <b>SEC</b> 375:21 <b>second</b> 307:23 376:5 410:24 473:10,13 482:5,18 496:5 505:4 517:20 518:9 523:23 554:4 554:9 558:19 559:5 563:22 578:24 624:23 626:1 645:5 665:4 <b>secondly</b> 357:7 <b>section</b> 518:23 519:2 582:3 611:11,15 612:1 612:9 617:9 669:5 <b>secure</b> 555:11	<b>see</b> 304:7 311:18 315:15 318:22 323:1 328:4 334:15 337:14 338:12 340:3 344:8 345:15 350:8 350:22 363:10 364:16 365:4,7 366:21 367:2 367:4 375:9 376:2,3,7 379:15 387:12 392:9 405:7 407:6 412:16 430:11 431:3 431:17 483:18 486:24 513:10 514:18 524:2 524:18 525:23 526:8 526:9,12,19 532:4,23 540:9 542:7 547:8 553:18 568:20 569:19 570:11 571:15 572:6 577:12 581:4 583:21 598:18 605:7 626:24 635:1,8 639:7 641:21 643:3 644:6 665:20 <b>seeing</b> 318:13 324:3 327:21 327:21 342:4 342:4 365:15 365:24 377:22 547:14 548:8 571:17 661:10 <b>seek</b> 324:14 386:16,22 548:11,24 553:15 594:9	<b>seeking</b> 324:18 497:3 528:22 529:3 548:15 549:4 604:17 605:12 655:23 657:15 <b>seeks</b> 528:20 657:10 <b>seen</b> 304:23 319:15 320:5 320:8 344:22 363:22 364:5 377:22 384:5 391:2 404:10 435:22 436:8 455:17 484:10 486:4 488:14 488:18,23 499:2 532:18 566:15 619:19 641:6 660:18 660:23 <b>select</b> 370:20 370:22 <b>selected</b> 498:18 <b>selection</b> 436:13 <b>sell</b> 335:7,8 399:12,21,23 400:13 562:13 562:20 <b>seller</b> 379:20 399:22 400:2 408:1 409:23 409:24 650:5 <b>selling</b> 400:3,6 <b>send</b> 622:20 <b>sense</b> 396:14 <b>sensitive</b> 639:1 639:12,21 <b>sensitivities</b> 570:3 <b>sensitivity</b> 638:24 639:6 639:11,15 650:9
---	---	---	---	--



EVIDENTIARY HEARING - Vol. 5 5/10/2018

sent 460:19	374:14 394:5	sheet 380:7	542:23,24	557:23
<b>sentence</b>	394:19 416:23	518:23 519:3	544:4,8	558:15 559:3
351:24 378:11	432:17 465:18	519:19 579:20	567:20 568:7	567:19
381:19 456:23	510:4 572:10	680:10	570:24 571:21	645:24
505:6 515:20	572:19 623:10	<b>sheets</b> 543:11	<b>shows</b> 305:10	<b>significantly</b>
556:7 614:13	680:10,13,15	544:5	332:4 339:6	475:13 528:5
<b>separate</b> 434:7	<b>sets</b> 594:17	<b>shield</b> 422:9	349:12 376:15	580:7
463:24 530:1	<b>setting</b> 416:19	<b>shift</b> 366:21	408:21 409:3	<b>sim</b> 580:8
631:6	<b>settlement</b>	<b>shook</b> 535:23	410:12 411:4,11	<b>similar</b> 307:16
<b>September</b>	506:12,14,15	<b>short</b> 334:1	411:13 440:13	307:19 337:9
375:5,14,23	506:16	357:10 469:6	442:18 542:13	365:23 366:1
386:13	533:24	556:12	543:14 565:16	409:17,17
<b>series</b> 362:23	534:12 615:16	<b>short-listed</b>	575:1 576:3,4	425:13 435:19
490:23	615:19,19	497:23	582:4 591:21	470:23 479:8
582:13 666:13	616:1 627:13	<b>shortfall</b> 336:2	609:5 642:6	515:9 517:23
<b>serve</b> 399:15	<b>seven</b> 344:1	336:4,20	<b>shrunk</b> 403:3	518:12 534:9
407:24	469:14 489:5	565:16	<b>shut</b> 313:1	536:3 551:17
408:16 510:23	489:9 662:18	<b>Shorthand</b>	556:24	572:9 580:8
663:9	<b>severe</b> 336:22	680:6	<b>side</b> 323:8	627:15
<b>service</b> 296:1	<b>Shady</b> 490:1	<b>show</b> 332:4	339:10 362:2	663:22,23
297:2,4	<b>shape</b> 305:21	333:13 336:1	412:12	665:3 669:4
299:22,23	362:16 363:8	338:1,23	<b>sides</b> 465:20	<b>similarly</b> 305:16
300:6,7,11	<b>shapes</b> 305:12	347:4 383:3	<b>Sierra</b> 297:17	<b>simpler</b> 627:17
301:7 313:23	306:2 362:9	385:11 395:19	311:24 345:3	628:5
329:4 386:24	363:17 364:7	405:11 409:21	412:24 437:9	<b>simplicity</b> 523:8
387:15 398:9	364:16 365:12	410:2 411:14	485:21 495:16	<b>simply</b> 332:23
398:16 462:3	365:14,23	412:8 515:9	520:13	366:9 409:21
462:4 493:3	<b>share</b> 305:21	517:23 518:12	<b>sign</b> 396:8	481:12 524:20
519:14 520:2	428:22,23	537:1 543:12	<b>signals</b> 515:23	549:23
559:2 610:18	531:18 604:21	565:7 570:19	592:20	627:23,24
623:10 630:8	616:3	572:8 578:17	<b>signatories</b>	628:12 647:2
653:22 667:4	<b>shared</b> 327:8,14	596:17	508:20 536:2	<b>single</b> 488:22
679:8	<b>shareholder</b>	<b>showed</b> 318:19	556:5 656:8	488:24
<b>services</b>	420:15 665:14	361:1 570:13	657:17 665:1	591:23
296:22	671:9	580:5	668:3,6	<b>sir</b> 306:15 437:3
391:24 493:5	<b>shareholders</b>	<b>showing</b> 396:17	669:12	559:16 600:5
504:4 588:8	361:9 555:21	396:19 412:11	670:23	610:3 633:13
599:9	556:3	442:16	<b>signatories'</b>	637:8 671:21
<b>serving</b> 361:24	<b>sharing</b> 416:16	525:20	670:18	671:24
558:23	456:15 458:5	540:12 541:20	<b>signed</b> 334:3	<b>sit</b> 301:2 324:8
<b>session</b> 443:1	513:20,22	567:2 642:16	395:8 651:12	<b>site</b> 364:21
557:13 570:14	577:16 578:7	678:22	<b>significant</b>	490:17 496:6
<b>sessions</b>	578:18 603:13	<b>shown</b> 332:21	318:10 326:23	666:11
557:20	604:8 659:18	360:22	372:23 434:10	<b>sites</b> 399:3,4,5
570:12	671:9	363:20	482:7 515:7,14	496:13,13,19
<b>set</b> 301:25	<b>she'll</b> 593:23	364:12 440:12	517:21 518:4	496:23 497:6
343:4 367:8	<b>shed</b> 479:4	526:16	547:4 555:12	497:8 525:9

EVIDENTIARY HEARING - Vol. 5 5/10/2018

<p>sitting 333:12 347:1 486:8 situation 326:10 379:20 431:23 432:2 434:14,20 435:3,14,19 513:9 529:13 625:23 655:12 661:9 664:13 situations 669:19 670:13 six 314:9 354:5 399:24,24 400:6,6 405:14,16 489:5 sixty-two 525:22 526:5 size 467:22 481:13,13,20 482:3,4 skilled 310:10 skip 455:11 slide 337:3 338:14,15 589:22 591:5 591:6,12 592:11 593:2 595:5 small 301:20 365:6 459:4 459:6 smaller 572:2 639:23 software 588:4 637:24 solar 470:11,13 sold 640:12 648:2 658:18 sole 480:15 solely 480:12 557:2 solicit 553:9,21 solid 403:15 404:8 635:3,5</p>	<p>635:7 solutions 361:22 somebody 589:4 someone's 327:11 soon 380:24 514:19,21 551:23 sooner 324:16 sorry 307:3 316:7 318:4 324:23 325:4 329:15 339:17 347:22 388:13 397:23 399:8 404:9 408:7 461:24 478:3 478:15 481:7 528:24 532:20 540:20 554:6 560:18 562:16 593:5 596:19 607:24 611:14 651:3 672:12 sort 356:4 413:12,18 415:1 495:5 536:3 538:23 589:13 614:1 655:23 sought 497:7 553:12 665:2 sound 456:19 516:1,7 562:23 sounded 348:9 640:19 sounds 460:22 516:2 623:14 source 374:21 376:20 566:4 622:2 sources 481:17 663:8</p>	<p>southwest 304:2 312:9 312:10,21 338:5 365:17 373:7 490:2 496:16,17 497:8 562:12 562:18 SP 373:7 span 479:13 speak 311:8 321:11,12 362:2 391:6 432:4 439:12 461:2 536:24 560:14 575:1 639:9 speaking 438:11 438:17 473:21 500:5 507:13 507:16 528:12 536:16 special 666:17 specific 313:8 360:7 393:5 400:15 404:11 457:17,19 464:11 498:16 518:22 522:12 529:19 555:4 564:16 656:9 659:13 specifically 314:3 335:15 337:20 343:5 343:7 359:14 367:14 368:3 368:8 369:4 384:2 391:6 400:18 407:15 430:8 522:24 557:18 593:6 601:14,15,21 606:14 633:16 specifics 428:24 668:17,21</p>	<p>specified 454:7 556:15 speculating 586:7 speculation 569:10 spell 610:13 630:2 653:16 spend 403:8 spending 403:21 spends 491:19 spent 310:11 336:24 341:14 496:22 497:6 518:3 spills 434:19 split 442:17 spoke 533:6,8 sponsored 611:11 612:9 617:9 spot 423:16 SPP 312:8,19,24 313:5 314:15 315:24 317:3,7 317:9,20 318:5 324:7 327:17 334:21 335:9 338:9 356:21 357:1 357:15,19,21 358:2,4,8,13 359:1,5,13 388:16 389:10 389:15,21 390:1 391:11,16 391:23 392:4 392:11,13 398:2,19,24 399:2,13,21 400:2 401:15 402:10 403:5 414:1 416:1,8 425:15 429:14 468:24 515:8 515:11 516:5</p>	<p>518:11 536:14 542:14,16 543:8,11,13,13 543:22 544:13,19 562:13,20 563:9 573:20 574:5 578:14 581:23 582:20 583:22 584:1 584:15,19 585:2,11 586:21 590:9 590:11 592:16 596:7 608:3 609:3,6 628:1 635:21 658:19 662:4,5,8 SPP's 312:15 314:24 339:7 517:23 spread 479:20 spreadsheet 431:6 522:19 523:19 534:1 539:14,15 545:7 571:24 583:19 678:21 spreadsheets 341:24 524:9 524:18 spring 305:17 596:5 ss 680:3 St 297:20 672:4 staff 297:2 302:18 330:10 330:14 406:16 419:21 485:13 494:7 502:5 505:22 553:5 557:13,17 558:4 561:22 573:10 597:8 600:24 610:5</p>
--	---	---	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

610:19 611:11	516:13 517:15	351:5 353:9	<b>steady</b> 528:7	423:13
612:2,23	569:23	356:16 359:6	580:16	428:24
613:7,12 614:2	<b>start</b> 320:4	364:1 374:6	<b>steeper</b> 377:18	432:14 435:15
614:17 617:13	342:15 355:16	382:23	<b>stenotype</b>	439:11,18,21
617:16,23	379:16 396:3	623:16	680:11	440:2 442:21
618:4,10,13,14	404:24	638:20	<b>step</b> 474:14	454:11 456:10
620:22,22	405:20,22	<b>statement</b>	503:10 653:7	458:18 459:9
621:9,10	406:3,8	349:23	671:21	460:5 471:21
624:6 627:13	437:17 527:24	420:13 424:21	<b>step-down</b>	485:2 487:13
632:22	547:8,14	506:24	571:15	491:15 496:2
633:15	551:23,23	509:20 518:11	<b>Stephanie</b>	498:21,22
637:20,21	587:14 608:14	519:21 521:5	297:23	499:20 500:6
648:19,22	651:6 668:2	523:2 586:23	<b>steps</b> 546:9	500:9,11
649:1 650:18	<b>started</b> 324:2	610:21 611:2	582:13	502:8 506:6
651:1,8,10,11,15	354:6 415:5,9	612:12,23	<b>stick</b> 559:12	506:10 507:1
652:5,19	459:17 543:1	616:24 619:4	<b>stip</b> 501:20	508:12 509:21
653:1,8 654:2	570:17 662:9	624:16,19	508:16 567:21	512:13 513:18
654:24 659:9	662:14 663:3	642:9,14	568:9 569:19	513:24 514:4
659:11 660:14	663:4	643:9	570:24	514:11,15
661:7,8,11,23	<b>starting</b> 330:10	<b>statements</b>	572:23	520:4 522:7
668:7 670:2	366:20	517:18 519:10	578:16 582:2	522:22 523:2
671:9,15	370:12 414:5	601:16	582:9,16	523:12,18
672:8 678:3,11	515:21 545:21	<b>states</b> 315:23	583:15 584:21	524:16 525:16
678:12	553:6 570:20	352:2 366:15	585:1 591:16	526:7 527:14
<b>Staff's</b> 318:19	590:19 672:15	376:17 434:21	601:11 665:13	527:19 528:6
610:4,21	<b>starts</b> 351:24	506:4 565:5	<b>stipulate</b> 656:3	533:7,20
612:12 630:11	381:15 515:2	<b>stating</b> 327:4	<b>stipulated</b> 321:8	534:18,20
633:15 636:1	581:20	606:24 639:1	341:22 355:14	535:3,4 536:9
670:10	<b>state</b> 296:1	659:11	355:17 359:21	545:18 546:17
<b>staffed</b> 509:13	301:3 316:6	<b>station</b> 390:18	384:17,20	547:12 550:14
<b>stakeholders</b>	319:12 324:13	656:1 658:11	386:16 409:12	552:6 554:4
551:1,2 552:17	324:16 330:1	<b>status</b> 523:5	409:15,18	554:9,13,22
552:22 553:2	348:17 352:14	527:18 529:12	458:2 471:20	555:20 556:2
553:10,21	368:2 377:3	530:4 547:12	497:11 540:15	556:9,13,16
557:14 558:7	417:19 440:7	547:12 576:6	545:18 547:10	563:3,17
<b>stamp</b> 361:16	466:12 470:18	576:9	606:13 608:10	564:4,5,23
<b>stand</b> 343:9	492:23	<b>statute</b> 505:2	608:24 621:12	572:15,18
484:23	503:24	514:8 521:12	<b>stipulation</b>	573:16 575:7
516:24	508:20 509:1	521:14 522:13	303:10,18	575:19,22
588:22	528:20 554:3	530:2,17	307:20 310:21	576:8 579:6
631:20	560:4 564:10	<b>stay</b> 475:8	311:1 320:17	579:22 581:8
<b>standard</b>	599:5 600:1	476:12	320:20	581:22 596:19
494:14 502:9	610:12 630:2	586:24 636:2	335:24	597:2 603:4
667:4	653:15 680:3	<b>stayed</b> 647:14	340:19,21	606:12,21
<b>standards</b>	680:8	<b>staying</b> 412:3	341:13 342:1	609:16
314:16	<b>stated</b> 320:5	<b>stays</b> 309:9	356:8 359:3	610:22 614:16
<b>stands</b> 357:11	347:16,21	325:21	392:8 415:16	614:17 615:6,8

EVIDENTIARY HEARING - Vol. 5 5/10/2018

619:6,10 623:4,9 624:10,13,20 626:8,19 627:4,19,23 630:12 634:10 636:3,4 645:11,12,16 651:11 654:3 655:11 657:14 657:16 659:17 660:16 661:10 664:17 667:13 669:4 670:9 670:10,16,21 <b>stipulations</b> 456:7 501:14 <b>stochastic</b> 596:15,22 <b>stop</b> 354:21 568:17 <b>store</b> 327:19 328:13 <b>stormwater</b> 346:22 <b>straight</b> 365:20 426:18 <b>strategy</b> 391:7 560:10 <b>stream</b> 472:2 <b>streams</b> 472:15 <b>Street</b> 297:5,9 297:19,24 <b>stress</b> 490:20 <b>strictly</b> 467:18 667:4 <b>strike</b> 531:11 562:16 <b>strong</b> 404:22 442:9 <b>structure</b> 393:8 440:8 470:23 473:4 475:10 475:16 476:9 480:20 482:15 562:12 562:18 572:10	617:21 622:1 625:16 <b>structures</b> 475:1 554:17 621:19 <b>structuring</b> 463:12 <b>studies</b> 313:6 479:21 <b>study</b> 313:20,22 314:3,5,10 316:15 317:16 324:6 398:9 398:16,19,22 398:24 406:24 608:21 <b>studying</b> 408:19 <b>subject</b> 314:16 372:15 404:19 411:16 421:19 423:9 471:14 478:22 479:1 480:22 486:21 507:14 527:20 544:11 550:24 588:20 591:20 644:18 644:18 <b>submissions</b> 316:16 <b>submit</b> 299:24 300:5 312:20 405:13 414:1 <b>submitted</b> 350:7 404:10 500:1 590:4 <b>subsequent</b> 495:6 501:3 507:22 530:21 <b>substantial</b> 458:20 <b>substantially</b> 442:20 528:2 619:22 632:15 667:12	<b>substantive</b> 321:7 <b>suffers</b> 425:21 <b>sufficient</b> 426:21 458:24 480:13 662:20 <b>sufficiently</b> 473:22 <b>suggest</b> 484:2 <b>suggested</b> 516:20 517:5 <b>suggesting</b> 516:3 523:11 <b>suggests</b> 515:6 517:21 <b>Suite</b> 296:23 297:15,19 <b>sum</b> 475:3 571:13 643:24 <b>summarize</b> 457:23 625:19 659:8 <b>summarized</b> 454:16 <b>summarizing</b> 641:10 <b>summary</b> 456:17 618:21 <b>summer</b> 344:9 344:12,15 515:13 590:13 590:16 <b>sums</b> 537:19 <b>sunk</b> 325:18 <b>sunnier</b> 471:13 <b>superimposed</b> 363:12 <b>supplemented</b> 404:9 <b>supplied</b> 404:9 499:13 <b>supply</b> 586:13 587:3 <b>support</b> 320:20 333:8 396:13	439:20 496:2 550:17 610:21 611:3 612:13 612:23 630:11 636:3 654:2 657:17,18 659:12 670:11 <b>supported</b> 322:4 <b>Supports</b> 612:3 <b>suppose</b> 315:8 <b>supposed</b> 378:20 <b>sure</b> 306:24 315:19 318:12 329:15 350:9 353:15 362:11 364:1 368:14 368:17 371:24 378:24 385:17 391:14,23 392:1 398:16 407:19 410:8 412:15 426:7 438:24 439:2 467:19 472:18 478:17 485:1,8 490:2 520:16 526:20 538:24 543:20 555:2 555:24 567:5 567:13 569:11 574:1 581:19 583:4 584:16 590:7 592:18 603:10 608:19 609:5 613:12 613:12 614:10 619:3 625:12 627:2 631:17 643:6,15,18 647:9,15 649:14 662:5 662:15 664:2 668:7 670:19 <b>surprised</b>	662:11 <b>surrebuttal</b> 301:12 306:18 310:5 315:6 318:15 320:23 329:22 344:23 345:10 391:9 418:6 420:2 420:19 421:11 439:24 440:1 455:10 493:8 500:13 504:8 504:23 505:4 530:24 557:16 562:4 570:17 599:14 601:23 602:9 624:24 634:9 676:7,16,22 677:3,5,14,21 <b>surrounding</b> 462:15 480:18 500:24 <b>suspect</b> 525:13 536:3 544:15 564:18 658:9 <b>sustain</b> 300:12 <b>Swain</b> 355:8 477:16 478:10 598:22,23 599:6 601:3 603:1 606:2 609:11 610:2 674:20 677:13 677:15 <b>Swain's</b> 478:13 557:15 657:9 <b>Swearngen</b> 298:14 <b>Switching</b> 482:18 <b>sworn</b> 299:15 299:16 300:21 417:12 492:15 503:16 559:23
---	--	---	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

598:24 610:7 629:19 653:10 <b>synthetic</b> 533:16 <b>system</b> 307:13 307:18 309:1 312:12,13 313:13,15 314:24 316:17 328:22 346:2 382:9 391:17 397:19 398:10 398:11 400:14 406:2 414:9 415:22 541:7 620:13	356:6 358:11 416:19 <b>takes</b> 428:21 462:13 476:21 <b>talk</b> 306:18,20 307:23 308:4 323:16 324:24 327:16 329:23 364:19 367:7 378:3 381:19 394:3 415:24 468:14 486:5 496:5,10 498:1 500:14 529:7 531:2,3 536:4 586:11 592:4 601:15 614:8 620:7 627:9 639:10 <b>talked</b> 304:17 316:17 326:4 326:24 329:3 329:7 350:20 352:9 390:22 393:21 395:9 402:1 406:2 415:4 500:18 524:13 527:15 529:22 546:18 553:18 571:22 591:6 591:8 657:5 664:10 <b>talking</b> 310:18 321:7 324:2 357:9 359:12 366:23 390:2 431:16 440:15 470:5 500:6 501:21 517:11 530:9 537:3 553:7 614:10 622:10 633:21 639:11 647:15 662:14	<b>talks</b> 345:19 376:4,6 380:2 423:21,24 434:20 557:20 562:19 592:11 615:19 670:16 <b>tall</b> 323:7 <b>taper</b> 377:24 <b>targeted</b> 475:7 <b>targets</b> 420:7 <b>tariff</b> 518:22 <b>tariffs</b> 519:5,7 <b>tax</b> 318:7 322:22 323:18 367:16 367:19,22 368:8,9 385:2,6,19 392:23,24 393:6 420:3,5 420:20 421:12 421:13,17,21 421:24 422:3 422:3,4,10,11 422:13 423:4 423:22 424:1 424:5,15,20 425:5 426:3 428:11,21 429:3,24 431:16 433:4,8 433:16,19 434:1,2,3,5,7 434:15 435:4 435:22 436:1 436:5,7,10,13 437:1 438:10 438:12,19 440:8 441:10 441:11,13,14,19 441:24 442:1 454:6 460:3 460:13,18 461:9 462:7 462:10,13,22 463:8,10,13,15	463:20,22 464:5,15,17,19 465:21 466:1 466:20,21 467:2,3,9,13 468:1,3,15,17 469:8,19,22 469:24 470:6 470:9,21 472:2,8,15,19 472:23 473:11 473:14,18,24 474:5,15,18,24 475:2,7,13,15 475:17,20 476:7,11,24 480:10,17,17 480:20,22 481:2,24 482:7,11,13,15 482:16 483:10 483:13 500:19 500:24 501:2 501:4 531:19 541:13,15 554:22 555:1 555:3,7,16 563:8 567:4,8 568:5,20 569:1 571:9,10 571:12,13,14,18 575:19 601:8 611:8,17 625:8 625:16,20 659:8,12,18,21 661:12 670:1 670:18,24 <b>taxable</b> 421:22 422:1,9,16 480:13 482:6 482:12 <b>taxes</b> 422:2 568:7 569:4 <b>tbat</b> 531:21 <b>TE</b> 423:21 <b>team</b> 354:4 355:4 497:23	502:21 <b>technical</b> 557:13,20 570:12,14 <b>technically</b> 399:12 <b>technological</b> 442:9 <b>technology</b> 303:20 319:18 319:20 321:14 322:1,15,17,19 323:1 328:7,14 328:14 332:11 366:23 377:13 377:18,23 479:13 589:1 591:9 <b>tell</b> 308:8 323:6 333:15 337:1 342:5 343:5 355:5 369:7 396:23 401:20 402:11 406:20 407:19 410:8 413:22 415:6 421:16 424:4 428:10,17 431:22 432:1 432:6 435:13 519:16 526:4 527:9 573:24 574:21 634:4 642:4 <b>telling</b> 359:2 <b>tells</b> 635:11 <b>ten</b> 309:2 336:23,23 343:12,13 347:18,21 367:17,19 437:14 441:7 472:4,7,16 474:20 475:19 476:18 488:12 500:15 513:1,9
---	---	--	--	---

**T**

T 296:16 676:1  
677:1,8 678:1  
679:1  
**tab** 566:11  
**table** 331:19  
345:2,15  
376:1 401:17  
548:4 575:2  
576:3 630:19  
631:2,4,13,23  
632:3 678:13  
**take** 300:4  
305:1 310:19  
324:6 380:24  
381:4,4  
385:20,24  
387:4 393:19  
395:5 398:22  
422:4 423:20  
441:3 462:17  
517:2,7 518:21  
519:6 531:24  
538:2 552:7  
562:14,21  
584:12 586:16  
598:14 657:10  
658:1 661:16  
672:10  
**taken** 343:24

EVIDENTIARY HEARING - Vol. 5 5/10/2018

641:13 643:21 644:2,9,15 645:8 <b>ten-year</b> 472:13 473:16,19,21 474:2 475:8 476:12 484:9 487:7 <b>tender</b> 302:11 419:14 494:1 505:16 561:15 600:18 613:9 633:5 654:15 655:2 <b>tends</b> 580:10 <b>tenth</b> 570:7 <b>term</b> 353:1 396:6,9 436:7 436:8 470:2 474:3,4 515:10 556:9 556:12 571:6 586:21 620:9 642:2 <b>termed</b> 474:9 <b>terminate</b> 380:20 <b>terms</b> 303:18 310:21 357:10 363:18,22 364:8,16 374:19 380:4 380:11 395:7 395:16 405:9 414:19 454:7 457:15,19 471:15 478:11 483:2 497:7 500:1 513:24 521:4,10 559:8 609:11 635:12 640:21 656:15 659:1 659:21 665:14 670:6 <b>territory</b> 559:2 <b>test</b> 405:13	499:1,12 500:4 596:16 649:3,19 650:9 <b>tested</b> 498:6 <b>testified</b> 300:22 314:15 377:6 387:23 417:13 466:2 469:18 492:16 502:15 503:17 525:9 559:24 598:25 600:1 603:7 609:18 610:8 629:20 638:18 640:2 648:17 653:11 <b>testifies</b> 632:24 <b>testify</b> 300:21 332:14 366:8 367:24 379:18 383:12 391:10 417:12 492:15 503:16 559:23 598:24 603:9 610:7 629:19 653:10 <b>testimony</b> 301:12,15,19,21 306:17 307:6 308:1 309:20 310:2 311:11 312:6,14 314:22 315:2 315:3,6,11 317:15 318:3 320:14,22 321:1,4,10 323:15 324:24 326:2 326:4 327:16 329:3,9,23 342:16 344:23 345:10 348:3 348:13 357:9	364:13 366:6 366:15 377:5 378:2 381:16 383:11 385:12 391:9 397:2,3 397:8 408:2 418:6,9,13,15 418:22,23 419:2 423:7 424:10 425:10 426:2 428:20 429:1 433:12 433:24 435:6 435:7 437:18 437:23 439:12 439:13,15,24 439:24 440:6 441:10 442:19 454:12 455:10 466:15 468:11 474:9 477:11 477:15 478:24 481:12 492:7 493:8,11,15 495:24 496:4 497:16 500:14 503:11 504:8 504:12,17,24 524:23,24 536:6 545:21 548:4 549:13 549:22 557:16 559:16 562:4 571:4 579:21 598:13 599:14,17,21 599:24,25 600:7 601:4 601:23 602:9 603:4 604:12 604:14,19 606:23 610:3 610:20,24 611:1 612:13,21 613:21 616:17 620:10 624:12 630:10,16,18	631:14 632:8 632:13,17 638:18 641:9 644:22 651:21 653:24 654:7 657:5,9 671:22 676:5 676:7,11,13,15 676:17,21,23 676:24 677:4 677:6,9,13,15 677:16,18,19 677:21 678:5 678:7,9 <b>testing</b> 490:12 649:20 650:8 <b>tests</b> 405:5,7 498:13 <b>Texas</b> 489:21 <b>thank</b> 302:19 306:8,11 309:12,14 311:20,23 319:22 320:1 337:22 342:10 344:17 347:23 385:4 390:23 406:12,12 408:15 410:16 410:24 412:19 412:23 413:5,7 417:2 421:4,6 437:3,4,8 459:21 485:9 485:16,20,22 486:8 487:22 492:7,9 495:8 495:11,15,19 499:17 500:13 503:5,11,12 504:23 519:8 520:7,10,12 532:6 539:6 540:5,23 557:6,8 559:17 562:8	573:8 576:18 576:20,22,24 577:7,8 589:22 595:16,18,20 602:15,17,21 605:23 610:3 611:22 613:2 614:24 616:7 616:11 620:4 623:18 629:16 637:8,12,14 653:6 656:24 657:2 665:22 671:19,20 672:11 <b>theoretically</b> 658:6 <b>thermal</b> 313:18 318:2 337:9 378:14 388:24 389:1 416:3,5 589:2 <b>thicker</b> 538:12 <b>thing</b> 307:23 375:17 401:1 413:12 526:14 531:12 594:22 613:11 622:9 644:13 662:15 <b>things</b> 303:19 306:17 308:15 347:3 357:3 379:9 395:15 460:12 466:19 521:11 524:20 537:2,6,9 614:13 616:2 617:19 623:17 627:3 628:10 631:17 660:10 665:19 669:6 670:19 <b>think</b> 299:21 300:9,13 306:19 307:10 307:11,15
--	---	---	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

310:4 321:11,21 323:23 324:19,21 325:9,12,14,17 325:20 326:14 327:9 327:10 328:2 329:6 330:3 330:20 339:3 341:7 342:18 344:15 349:17 350:23 351:19 352:7,19,23 353:8,9 355:7 355:8,11,18,22 356:9 357:3 357:14 358:10 359:6 360:22 364:11,18 366:19 367:10 367:12 368:14 369:23 370:24 372:6 372:7,10,11 373:12 374:8 380:9 382:7 382:23,24 385:11 387:11 387:23 394:1 395:17 396:14 397:9 400:15 403:12 404:3 406:24 409:6 409:9 410:6 410:12 411:15 412:14 413:17 415:5,17 416:13,15 421:10 437:21 439:9 442:23 454:4,13 455:11,23 457:8 458:18 459:8 467:17 469:18 471:21 475:23 478:10 479:8,9,12,20	481:10 482:9 483:4,6 486:1 486:9 490:4 491:10 498:11 498:22 500:5 500:14,22 501:19 508:24 512:9 513:6 516:12,18 517:8 518:2,7 520:22 521:3 522:18 523:17 524:9 526:14 526:16 527:6 529:5 530:8 532:1,9 533:15,15,18 534:3,17,21 535:10,19,21 540:2 544:13 544:22 546:5 546:8,14 547:3 549:7 549:20 551:21 552:4,6,12,14 552:17 553:11 556:2,3,4,17 565:24 566:6 567:1,8 568:9 573:7 574:5 577:4,10 578:21 581:14 582:24 585:23 586:7 586:8 587:7 587:15,23 588:13 592:2 593:18 594:17 602:13 603:12 604:17 606:15 608:15 612:22 614:9 615:23 616:18 620:24 626:12,21 628:16 631:19 636:14 641:16 642:24	644:12,19 645:23 648:8 649:8 650:5 650:21,21 653:2,7 655:10,14 656:9 659:2 660:12,13,21 661:11,14 662:13 663:19 664:1,19 665:7,10,11,14 669:10 670:5 671:11,16 672:10 <b>thinking</b> 555:5 578:5 608:20 <b>third</b> 297:24 309:8 325:22 376:12 399:6 405:23 423:1 423:3 425:20 425:21 426:5 436:3 454:21 455:3 482:9 500:2 <b>thirty-two</b> 525:22 526:5 <b>Thomas</b> 417:21 <b>thorough</b> 306:3 518:8 <b>thought</b> 347:17 373:1 481:9 553:13,22 649:17 <b>thoughts</b> 553:24 623:12 <b>thousand</b> 594:21 <b>thousands</b> 323:7 <b>three</b> 308:15 314:2,2 318:18 372:8 383:11 434:12 540:10 544:5 557:17	623:9 628:3 645:24 649:9 <b>threshold</b> 474:8 660:15 661:2 <b>threw</b> 386:19 671:11 <b>tie</b> 411:5 433:13 512:19 <b>tied</b> 433:21 <b>ties</b> 407:6 <b>tightening</b> 592:7 <b>time</b> 299:9 300:3,4 301:19 310:11 310:22 313:17 327:7,14 337:1 337:6,9,18 341:14 342:8 344:4 354:12 359:23 360:13 361:17 367:6,9,10 368:4 369:14 369:21 372:3 372:4 377:24 392:15 402:4 405:16 406:4 406:6 418:13 419:2 422:21 426:19 459:12 459:13,14 460:9 468:14 469:13,15 470:7 472:13 472:13 473:16 475:8,17 477:1 477:3 487:7,7 488:8,10,11,13 493:15 500:24 501:3 504:18 508:1 514:4,14 518:4 528:5,14,16 547:1 556:15 556:21 561:5 564:21 570:16	580:11,16 581:6 587:20 588:10 589:1 599:21 622:14 647:24 648:12 650:20 662:3 662:6,14,19 662:23 663:3 663:7 664:23 668:10,13 670:7 672:2 672:14 680:11 <b>timeline</b> 644:6 <b>timely</b> 512:7 670:22 <b>times</b> 372:8 387:23 414:20 437:22 569:8 584:6,12 591:3 <b>timing</b> 326:13 387:5 547:19 547:19 650:3 650:5 <b>Timothy</b> 297:13 492:10,14,24 674:2 677:18 677:20,22 <b>titled</b> 338:15 432:8 523:19 <b>today</b> 302:3 303:21 311:6 311:19 320:7 321:16 322:18 323:6 326:15 326:16,20 327:2,7 328:12,21 333:12 347:1 347:14 373:6 394:6 395:7 397:2 401:15 414:4 418:23 419:5 422:5 422:23 486:11
--	---	--	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

493:18 501:21	<b>transcribed</b>	430:20 431:5	377:21 387:24	494:18 496:16
505:8 520:21	680:12	480:9 493:21	388:3 396:5	498:12 499:4
524:16 561:8	<b>TRANSCRIPT</b>	505:11 561:11	498:18	499:5 504:19
574:6 577:20	296:3	579:8,12	562:22	512:18 524:20
583:1 600:10	<b>transfers</b>	587:5 600:13	<b>turn</b> 313:2 321:9	525:17
605:6 612:14	508:14	612:13,17	321:20 375:15	526:20
632:14 633:21	<b>transition</b> 354:3	632:17 654:12	375:24 379:14	527:22
639:4 654:9	<b>transmission</b>	<b>Truman</b> 296:23	423:17 430:5	528:18 529:6
659:7 671:22	313:24 314:4	<b>trump</b> 508:20	465:13 468:10	529:18,19
<b>today's</b> 328:6	314:14 385:18	509:1	477:14 479:18	538:8,9
<b>Todd</b> 393:4	391:21 397:12	<b>truth</b> 300:21,22	497:15	546:18 558:14
417:7,11,21	397:15 398:1	300:22 417:12	534:22 543:4	558:16 559:11
454:1 673:14	398:14 543:9	417:13,13	554:2 556:6	565:21
676:25 677:4	558:21 559:3	492:15,16,16	577:3,9	574:22
677:6	568:2	503:16,17,17	579:15 581:7	591:22 592:13
<b>Todd's</b> 571:3	<b>transmissions</b>	559:23,24,24	587:18	623:7 632:3
<b>token</b> 435:21	391:20	598:24,25,25	589:22	634:11,11,15,24
<b>tomorrow</b>	<b>treat</b> 649:24	610:7,8,8	590:18 595:5	640:14
353:16 672:15	<b>treated</b> 359:11	629:19,20,20	601:22 604:11	668:22
<b>tonight</b> 414:5	384:7 649:23	653:10,11,11	617:3 624:15	<b>type</b> 317:18
<b>top</b> 316:21	<b>treating</b> 649:21	<b>try</b> 311:14 324:5	633:15 659:10	323:21 340:11
343:3 376:1	<b>treatment</b>	373:12 408:21	<b>turning</b> 345:12	360:4 369:24
389:13,18	656:15 657:6	410:7 416:1	423:11 454:3	377:17 391:19
431:1 542:9	657:15 658:2	426:6 427:8	500:13 540:9	398:2 484:10
543:7 578:2	658:22	438:22	603:3	484:24 501:17
582:13 644:9	<b>treatments</b>	574:12 595:3	<b>turns</b> 594:8	511:7 522:8
662:10	658:8	<b>trying</b> 341:5	<b>twelve</b> 339:12	557:12 564:18
<b>tornado</b> 476:1	<b>tree</b> 596:22	343:19 346:14	339:15	583:7 588:1
476:14	<b>trend</b> 338:3,13	353:3 357:15	<b>twenty-four</b>	589:10 614:4
<b>total</b> 304:11	528:10 580:8	366:20 371:11	528:3	614:6,8
334:23	586:6 592:17	382:17 386:1	<b>Twenty-year</b>	619:23 621:2
364:18 385:5	<b>trending</b> 580:4	394:24 401:14	374:19	621:6,15
497:5,7	580:6	405:18 463:6	<b>twice</b> 400:3	622:9 668:19
523:24 524:5	<b>tri</b> 369:5	484:14,14,21	514:22	668:20
526:10,11	<b>triennial</b> 324:5	509:11 527:1	<b>two</b> 303:13	<b>types</b> 377:12
540:22	367:1,7 370:5	543:24 566:7	304:2 305:13	589:16
544:22	370:11,14,17	629:2 631:20	305:21	596:24
567:17 575:4	372:1 373:3	631:20	308:22 309:3	<b>typical</b> 362:9,13
588:4 642:10	383:18 545:15	<b>turbine</b> 303:22	312:22 313:3	362:16 396:8
642:11,12	551:13,17	322:1,8 323:1	331:2,7,8	589:23,24
647:12 671:8	552:21	564:11 570:22	344:11 362:23	618:3 638:6
<b>totaled</b> 429:15	<b>tries</b> 410:1	<b>turbines</b>	398:4 399:3,4	<b>typically</b> 395:16
<b>totally</b> 401:3	<b>trouble</b> 643:2	303:20 304:1	400:17,17,17	486:16 514:22
664:1	<b>true</b> 302:6	319:21 323:7	425:21 429:15	519:20 589:16
<b>training</b> 310:11	317:13 325:1,5	328:7 330:5	454:5 455:18	628:22 629:3
310:12,17,19	366:14 419:9	332:13 335:6	467:23	<b>typographical</b>
311:15 552:21	425:4 430:19	364:21 365:8	489:24	376:18 504:19



EVIDENTIARY HEARING - Vol. 5 5/10/2018

<b>U</b>				
<b>Uh-huh</b> 348:8	491:21 501:10	601:24	<b>unreliability</b>	422:19 423:3
381:24 498:8	525:17 527:1	<b>undertaking</b>	388:12,15,21	428:6 465:14
597:11 614:7	527:2 543:20	462:11 547:4	<b>unsigned</b>	474:4 488:4
623:19	546:20 569:1	551:23	498:11	564:14 590:15
643:22	646:7 650:15	<b>undertook</b>	<b>unusual</b> 363:7	590:20 615:17
<b>ultimate</b> 645:4	669:8 672:14	559:10	420:11 629:6	616:18 618:14
<b>ultimately</b>	<b>understanding</b>	<b>Undoubtedly</b>	<b>unwind</b> 426:6	651:23 652:11
335:2 370:22	301:14 303:11	328:11	<b>upcoming</b>	652:13 659:12
501:6 507:21	304:19,23,24	<b>unexpectedly</b>	368:11	663:16
517:14 530:22	335:22 341:11	414:9	<b>update</b> 301:21	668:20
535:23 546:1	357:14 370:18	<b>Unfortunately</b>	351:3,17,19	<b>uses</b> 423:21
546:6,16	378:19 418:8	478:13	366:12,18	<b>usually</b> 534:24
547:18 552:5	427:9 430:16	<b>union</b> 311:17	368:11,12,13,13	618:4
552:18 555:12	430:17 431:8	<b>unique</b> 601:11	368:23 369:1	<b>utilities</b> 301:7
584:15 585:2	431:11 456:2,11	<b>unit</b> 313:1,17	369:6 506:9	324:2 355:9
609:15 656:2	456:14 464:10	314:8,13	529:12 549:10	355:10 379:21
667:7	493:10 502:19	317:12 356:12	549:15,16,22	381:21 396:21
<b>unable</b> 458:16	504:11 510:6,8	379:2,3,3,13	550:2,4,20	398:21 404:14
<b>uncertain</b>	510:11,14 511:5	384:5 388:24	551:3,7,10	418:1 470:17
317:20 597:14	511:8 514:10	389:1 390:11	652:23 653:2	471:2,3,4
649:22 650:1	519:17,18,23	407:20	678:19	480:16 484:3
<b>uncertainty</b>	520:3 524:7	655:13,17	<b>updated</b> 327:2	484:11 493:3
317:23 510:9	532:12 550:6	656:5 658:15	355:24	510:23 516:16
530:19 640:11	550:24 551:4	659:2 664:23	356:13 514:19	560:8 601:5
<b>unconcerned</b>	555:9 559:6	<b>United</b> 434:21	527:12 570:19	668:13
391:14	560:24 592:6	<b>units</b> 312:20	646:17	<b>utility</b> 380:8
<b>undepreciated</b>	595:7 596:2	313:9,23,24	<b>updates</b> 340:13	397:6 403:15
477:23	596:4 597:17	314:4 317:17	514:22 602:10	404:8 470:16
<b>underlying</b>	599:16 604:7	317:24 318:2	<b>updating</b>	470:21,22
526:3,17	608:1 615:5	325:10,12,13	645:19	504:4 516:17
533:5 534:1	617:12 619:20	328:9 337:9	<b>upfront</b> 347:4	517:15 519:19
550:16	625:10,24	349:5,9,15,20	441:13 475:3,3	599:9 620:18
<b>underneath</b>	626:7 641:3,5	349:21,24	483:10	625:11,12
350:5	642:10 644:3	352:5,20	<b>upgrade</b> 385:18	629:1,4 630:6
<b>understand</b>	649:13	353:6,23	<b>upgrades</b>	630:7 666:15
343:20 346:9	650:22	354:6,7 379:7	313:13 314:14	<b>utility's</b> 511:2
346:14 363:13	659:20,24	379:10,12	337:8,13	516:12,24
382:17 393:7	665:2 671:17	382:9 388:19	383:12 398:11	<b>utility/Empire</b>
393:18	<b>understands</b>	401:5 414:1	402:1 508:13	361:21
395:22 401:2	423:8	416:3 515:16	<b>upper</b> 319:15	<b>utilize</b> 482:12
430:11 432:15	<b>understated</b>	564:10 589:2	<b>upside</b> 598:8	<b>utilized</b> 530:17
433:12 440:21	570:9	597:22	603:14	
467:21 470:5	<b>understood</b>	<b>unlimited</b> 641:4	<b>usage</b> 390:18	<b>V</b>
484:14 488:16	457:20 532:11	<b>unplanned</b>	<b>use</b> 317:14,17	<b>valuable</b> 483:15
488:17,17	594:16 649:14	329:10,17	348:1 357:10	<b>valuation</b> 660:7
	<b>undertaken</b>	<b>unrecovered</b>	379:19 383:2	<b>value</b> 324:12
	549:20	606:8	390:13 422:18	326:23

EVIDENTIARY HEARING - Vol. 5 5/10/2018

384:18 422:21 422:22 457:1 461:14,21,22 467:6,8,13 468:14 469:5 475:12 476:4 478:18 479:9 481:22 483:9 483:12,17 484:6,7,9 566:23 574:2 578:15 581:16 581:17,19 582:10,14,14 582:16,20,21 582:23 601:22 628:2 634:12 635:12 642:6 <b>values</b> 476:22 580:19 628:11 <b>Vandiver</b> 297:14 <b>variability</b> 306:5 327:24 363:13,20,22 365:2,4,18 366:3,4 475:5 <b>variable</b> 357:12 357:13 358:6 358:15 365:10 522:17 639:13 <b>variables</b> 469:6 469:13 640:13 <b>variance</b> 623:11 <b>varies</b> 362:19 416:22 <b>variety</b> 614:13 <b>various</b> 360:24 360:24 408:18,22 442:9 476:11 489:19 617:18 620:14 623:16 623:17 656:16 <b>vary</b> 363:17 <b>vein</b> 590:18 <b>verbatim</b>	535:20 <b>verify</b> 332:24 591:15 <b>version</b> 539:21 539:23 611:6 <b>versus</b> 338:7 341:15 356:5 356:12 357:11 379:19 380:3 381:20 389:4 390:21 395:21 396:18 400:15 415:1 456:24 478:19 487:19 527:19 559:4 577:22 593:8 594:11 608:13 608:22 615:12 628:12 <b>viability</b> 378:17 396:4 401:24 <b>viable</b> 367:4 403:5 <b>Vice</b> 301:8 418:2 <b>view</b> 393:15 401:1 465:17 479:8 621:24 670:10 <b>vintage</b> 332:12 333:10 <b>Volume</b> 296:6 <hr/> <b>W</b> <hr/> <b>W</b> 296:23 <b>waiting</b> 545:22 546:1,3 <b>walked</b> 587:15 <b>want</b> 318:14 350:8 375:14 381:4 385:16 393:7 394:15 401:2 479:15 481:7 499:9 535:17 538:10 539:19,20 540:4,6 543:4	548:23 552:7 554:2 568:16 592:9 593:14 608:18 613:12 631:5 654:17 668:20 <b>wanted</b> 306:17 307:23 310:11 376:21 584:11 609:20 623:11 638:3 664:6 <b>wanting</b> 534:17 621:8 <b>wants</b> 369:22 <b>wasn't</b> 351:5 365:21 392:13 466:14 470:3 568:6 622:8 622:19 624:23 638:15 663:23 666:21 <b>waste</b> 403:15 404:8 405:21 <b>water</b> 346:6 405:7 <b>Watson</b> 677:17 <b>Waverly</b> 332:2 332:4,7,15 <b>way</b> 303:8,12,16 304:18,21 309:7 312:11 317:1 319:5 328:3 333:5 335:1 338:10 346:21 348:17 357:17 363:15 368:6 374:9 374:15 376:6 389:16 394:2 401:7 425:15 482:2 494:12 494:22,23 502:6 508:16 516:2,9,12 520:5 548:8	550:2 551:8 554:17 566:20,21 568:4 572:19 574:1 575:7,8 578:17,19 579:3 582:7 583:8 586:10 589:16 590:8 590:8 604:3 627:7 628:5 636:12 646:6 646:13 <b>ways</b> 374:1 463:1,3 570:15 583:1 592:21 <b>we'll</b> 314:8 317:16,17 320:4 334:15 372:14,15 396:23 403:19 442:14 459:14 509:12 538:3 587:14 598:14 631:22 632:22 <b>we're</b> 309:7 318:13 321:7 324:21 327:21 327:21 330:15 338:15 339:3 346:5 347:2 361:16 369:17 371:20 377:21 380:11 399:5 399:21 400:5 400:9 405:9 405:18 414:7 454:4 459:18 459:19 470:4 507:19 537:2 539:3 540:3 544:17 545:22,24 546:1,1,15,17 547:14 548:10	551:22 568:1 570:2 578:22 604:17 621:6 653:7 662:14 <b>we've</b> 322:20 343:16 344:5 360:22 361:1 364:13 366:23 372:8 381:7 404:12 405:10 406:9 434:12 437:14 499:1 501:21 527:2,15 529:5 546:7 547:5 549:7 553:13 <b>weak</b> 588:5 <b>weather</b> 362:21 <b>week</b> 404:10 <b>weighted</b> 481:18 567:15 <b>weighting</b> 596:15 <b>welcome</b> 485:10 611:23 <b>went</b> 324:1 325:14 329:13 348:23 354:4 355:19 371:22 371:23 386:24 443:1 483:16 485:5 543:1 577:23 596:21,22 665:12 <b>weren't</b> 549:4 <b>WHEREOF</b> 680:15 <b>whichever</b> 370:22 <b>whim</b> 380:3 <b>white</b> 395:19 <b>wholesale</b> 663:10 <b>wholly</b> 464:14 465:15,15
---	---	---	--	--

EVIDENTIARY HEARING - Vol. 5 5/10/2018

wildly 594:7,8 639:13,16 <b>WILLIAM</b> 296:15 <b>Williams</b> 297:8 330:24 342:10,12 345:8,9 350:10,15 351:7,12 354:12,18 372:10,16 373:4 375:10 375:12 380:23 381:3 381:13 392:14 402:2 407:5 409:4,11,13 413:5 459:21 459:23 477:2 487:22,24 490:6 491:7 501:24 502:2 503:2 538:7,8 538:12,15,17 538:21,24 539:6,7,9,22 540:6 545:3 545:13 557:4 577:5 595:16 605:23 606:1 609:7,12 611:13,18,22 620:4,6 622:13 623:22,24 624:4 648:14 648:16 650:24 651:7 652:24 661:19 661:22 664:3 665:24 666:1 666:3 667:21 673:9,21 674:5,11,24 675:7,9,15,21 675:23	<b>willing</b> 369:20 466:21 467:2 467:14 468:1 477:21 507:11 <b>Wilson</b> 492:11 492:14,21,24 494:2 495:22 502:3 503:10 503:12 525:8 558:24 559:9 573:15 674:2 677:18,20,22 <b>wind</b> 303:10,12 303:13,17,20 303:22 304:1 304:2,15,18 304:20 305:6 305:8,12,21 306:1,6 307:12,17 313:8,17 317:8 317:13 318:5,11 318:20 319:8 319:9,14,16 321:13,22 322:11,15 323:2 324:4,7 324:15 327:16 327:17,18,18 327:22 328:7 328:17 329:7 329:19 330:1 330:4 331:19 332:3,3,5,10 332:17 333:8 333:10,23 334:6,17,21,22 335:3,6,6,7,11 336:3 337:6,9 338:8,10,11 340:9,13,21 356:13 357:5 357:17,23 358:9,11,14,18 358:19,21 359:11 360:16 360:21 361:8	362:11 363:23 364:9,14,17 365:8,17,19 365:23,24 366:22 367:4 367:23 368:7 368:8 369:22 376:6,8,13 377:6,7,10,10 377:14,20 378:4,8,9,20 379:24 380:10 382:1 382:4,7,20 383:7 385:21 386:17,23 387:10,20,21 387:24,24 388:2,16 389:4,11,17 390:24 391:5 392:9 393:16 393:17,23 394:1 395:12 395:13,17 396:21 397:6 397:11,19,20 398:7,9 401:4 402:9 413:12 415:22,24 424:3,12,14 425:7 426:3 427:11,14 428:22 429:8 429:9,11,13,16 430:14,15 431:2,5,10,15 431:24 435:9 435:10,12,15 435:17 436:2 436:5 438:13 438:16,16 441:15 442:10 455:15 456:5 458:1 460:13 460:19 461:10 462:6,7,20	463:23 464:3 464:3,6,6,9,14 464:16,18,20 465:2,5,6,9,11 465:14,15,17 465:17,23 466:24 467:1 467:12,20,22 468:7,16 470:10,11 472:2 473:1 473:20 474:6 474:11,12,13,15 475:5,5 476:1 476:20,22 478:19 479:6 479:10,12,15 480:21 482:20 483:3 483:8 484:3 488:3 489:12 489:14,19 490:10,13,16 490:21 491:20 491:23,24 494:12,24 496:6 498:6 498:23 502:7 507:8,20,23 508:2,6,8 509:10,14 510:10,12 512:6,11 514:7 514:12,16 523:19,24 524:4,5,6 525:2,4,10,14 525:20 526:1 526:6,10 528:1,13,22 530:2,18 532:11 536:7 536:11,15,18 537:4 541:10 541:21,24 542:1,17,18 543:9,17,18,23	545:1 546:13 554:14 558:18 559:1 562:13 562:15,20,21 562:22 563:8 565:6,8,13 568:1 569:20 569:21 570:6 570:22 572:9 572:12,20 573:5 574:3,9 575:11 576:14 577:12 578:15 579:19 580:4 580:6 581:21 581:24 582:14 582:16,19,20 582:23 583:2 583:19 586:20 587:19 588:4 588:17 589:6 589:7,23,24 590:5,9,10,14 590:14,15,20 591:3,10 592:16 596:7 596:8 597:3 597:18,24 598:3 604:4 606:6,19 607:3,5,10,14 607:15,23 608:3,10 617:14 620:11 623:7 624:10 626:18 627:24 628:7 634:17,19 642:13 645:6 645:17 646:2 646:2,7,9,10 646:12,14,20 647:3,7,18,19 647:24 648:1 648:2,2,5,6,7 657:21
--	--	---	---	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

667:20 <b>windcatcher</b> 501:8,15 512:18 533:7 533:24 534:7 535:20 558:11 558:13,16 559:6 619:5 625:11 <b>windy</b> 515:14 <b>wins</b> 484:5 <b>Winston</b> 298:4 <b>winter</b> 304:6 305:2,3,9,13 343:4 344:9 344:10,11 590:1,15 <b>withdraw</b> 333:4 530:7 653:4 <b>withdrew</b> 530:22 <b>witness</b> 299:6 300:15 315:3 344:22 375:10 393:4 410:5 417:5 457:6,10 477:3 500:22 506:23 509:19 512:12 532:1 535:7 562:3 563:16 564:22 598:20 600:18 611:11 613:9 619:2,2 622:14 633:5 653:8,8 654:15 655:2 673:2,14 674:2,6,13,20 675:2,11,17 680:15 <b>witness'</b> 341:8 <b>witnesses</b> 397:10 593:19 609:17,21	610:4 612:22 <b>Woodsmall</b> 298:3 306:11 306:14,15 309:11 325:17 330:21 331:4 332:19 344:18 410:19,21,23 411:1 412:18 421:6,8 437:2 480:9 485:16 495:11 518:16 518:18,19 519:2,8,9 520:7 573:10 573:13 576:17 593:10 594:1 602:17 614:24 615:2 616:6,17 633:10,12 637:7 656:20 671:23 672:1 672:11,14 673:5,12,17 674:9,16 675:5,13 <b>word</b> 348:1 428:6 465:14 472:18 488:4 663:16 668:20 <b>words</b> 304:6 421:12 525:2 616:19 665:17 <b>work</b> 310:10 330:11,13 422:15 427:19 466:14 526:3 534:1 535:21 551:24 553:7 566:21 570:13 578:18 586:10 589:17 592:22 597:15 601:20 630:22 672:13	<b>worked</b> 322:9 361:20 579:3 579:12 <b>working</b> 338:9 354:2 360:3 360:11 <b>works</b> 456:3 574:2 <b>world</b> 592:10 <b>worse</b> 665:19 <b>worst</b> 458:23 459:3 483:2,5 483:6 484:15 484:22 486:15 577:20 579:4 596:10 640:24 665:8 665:10,15 671:10,14 <b>worth</b> 308:16 402:13 422:24 483:13 <b>wouldn't</b> 306:6 306:6 356:3 358:23 365:3 365:9,14 369:10 370:24 388:20 406:3 406:4,6,7 442:6 473:12 478:24 574:19 589:9 628:14 639:16 646:8 646:9 659:3 <b>wrecks</b> 429:18 628:11 <b>write</b> 632:13 <b>written</b> 397:3 498:2,4,5 <b>wrong</b> 339:2 378:23 531:10 578:5 579:7 593:4,12 594:24	<b>wrote</b> 602:8 640:3 641:11 <hr/> <b>X</b> <hr/> <b>X</b> 673:1 674:1 675:1 676:1 677:1 678:1 679:1 <hr/> <b>Y</b> <hr/> <b>Y</b> 296:15 <b>yeah</b> 301:20 303:2 307:2 311:16 328:19 331:5 336:12 340:11 344:8 344:16 348:4 349:16 350:9 352:7 356:23 357:3 363:24 367:18 368:6 375:7 376:8 377:16 388:11 390:19 393:10 399:17 401:3 401:8,13 404:8 485:24 518:1 524:2 529:16 546:22 569:12 584:6 584:10,10 594:2 599:25 608:20 615:24 641:16 644:7 667:14 668:19 <b>year</b> 302:1 319:2 327:5 337:17,17 343:8,18,20 384:11 386:7 389:8 395:21 405:6,24 428:14,16 429:24 433:1 480:1 484:4,5	488:12,14,22 488:22 489:3 489:9,17 513:4 514:6 514:23 525:21 526:8 528:16 541:19 544:5 551:15 565:7 565:14,16 567:22 568:12 578:4 579:6,8 588:1 588:1,11 591:24 635:8 635:8 648:3 657:24 <b>years</b> 322:19 323:14 328:15 336:2,23 343:4,6,12,13 343:15,17 344:1,1 348:20 354:8 354:11 367:17 367:19 374:13 377:8 380:17 384:7,11 385:21 386:7 395:17 396:2 399:18 411:7,9 411:18,19 425:8 427:9 427:20,24 428:4,11,18,20 461:13,15 472:4,7,8,14 472:16,23 473:2 474:20 475:19 476:18 479:19,20 484:4 488:12 488:12 489:9 507:9 513:1,9 513:15 514:9 521:13 564:6 564:13,14 565:9 566:15
--	---	---	--	---

EVIDENTIARY HEARING - Vol. 5 5/10/2018

568:3 570:21	379:12 391:10	626:22	<b>1199</b> 342:19	<b>14th</b> 680:16
582:15	427:9,24	634:18,20,22	343:1,17	<b>15</b> 317:10 318:4
585:24 588:2	428:4 434:19	635:10 642:17	344:10	323:10
592:13 634:1	472:8 473:2	676:22	<b>12</b> 309:2	336:24
641:13 643:21	541:4 561:2,15	<b>10-Q</b> 375:4,13	324:24	348:20 377:8
644:2,7,8,9,15	561:19 564:10	375:21 376:17	338:18 339:13	383:10 389:4
645:8 662:18	564:11 566:22	377:2	339:18 341:24	389:9,19
<b>yep</b> 305:5	588:1,11	<b>10-Qs</b> 376:22	347:15 402:12	395:16 396:8
584:16	603:24 613:21	<b>10-year</b> 313:11	403:2 442:15	418:20 419:5
<b>yesterday</b>	632:9 642:15	430:19 617:7	484:4 523:4	419:13,18
299:8 303:22	642:18 643:12	<b>100</b> 427:20	529:7,23	438:20 439:2
320:14	649:10 650:4	440:18 612:21	542:22 565:3	477:16 495:6
324:20	676:3	613:4,7 644:21	574:17,21,24	507:9 513:15
325:15 327:11	<b>1-A-2</b> 510:19	678:5	575:5 576:7	529:24 531:3
329:6 330:23	<b>1,199</b> 301:22	<b>101</b> 654:1,20,24	576:13 595:8	531:3 545:21
331:14 359:6	<b>1,200</b> 416:5	678:7	638:20 641:9	605:1 677:11
368:1 369:23	<b>1,211</b> 301:24	<b>102</b> 630:10	642:21	<b>150</b> 379:5
439:15 454:13	342:19	632:22 633:3	644:23	494:21
458:21 459:2	<b>1,400</b> 416:4	678:9	657:20	<b>1545</b> 578:22
507:14 517:12	<b>1.1</b> 541:22	<b>1027</b> 645:20	<b>12-C</b> 418:10	<b>16</b> 332:8 354:11
519:10 532:10	<b>1.25</b> 384:11	<b>103</b> 612:24	419:13,18	384:7,10
577:18	565:9	630:12 654:21	677:3	477:15
	<b>1.5</b> 460:19	654:24 678:11	<b>12-P</b> 418:10	545:22
<b>Z</b>	<b>1.5792</b> 460:24	<b>103-C</b> 654:4	419:13,18	590:19 599:17
<b>zero</b> 317:23	<b>1.6</b> 403:3	<b>104</b> 612:24	677:5	600:10,18,22
318:1 335:10	<b>1.73</b> 568:10	630:13 654:21	<b>12.8</b> 345:21,22	645:9 677:13
432:20 459:7	<b>1:15</b> 459:15	654:24	347:8,14,20	<b>160</b> 632:6
483:16 525:10	<b>10</b> 296:5 301:15	678:12	<b>1200</b> 344:3,6	<b>1600</b> 323:10
543:22	302:3,11,15	<b>104-P</b> 654:4	<b>1200-some-o...</b>	<b>17</b> 301:21 315:22
544:13 586:12	308:16,17,23	<b>105</b> 494:21	416:3	318:5 326:24
645:2,2	314:23 315:12	631:16,18,24	<b>1211</b> 344:10	342:18 354:11
<b>zeroed</b> 571:5	336:2 337:3	632:22 633:3	<b>13</b> 442:19 530:1	438:20 439:2
<b>zone</b> 366:7	337:18 344:20	678:13	530:8 557:16	477:15 599:17
	345:13 347:9	<b>11</b> 324:13 414:4	589:22	600:10,18,22
<b>O</b>	376:17 377:8	418:9 419:13	604:20 607:1	606:24 640:2
<b>0.335</b> 567:5	381:8 402:19	419:18 468:12	677:7	677:14
<b>0.86</b> 568:11	402:24	508:10 513:4	<b>130</b> 632:5	<b>17-C</b> 611:10,20
569:4,8	408:24 411:15	545:21 604:19	<b>132</b> 528:1	<b>17AC</b> 518:24
<b>00</b> 627:24	411:21 423:18	613:21 630:19	<b>14</b> 391:10	519:3
<b>0538</b> 680:7,20	428:14,19,21	631:14 632:3	408:12 411:3	<b>17U</b> 518:24
	429:24 433:1	641:19 676:24	418:17 419:5	519:3
<b>1</b>	440:14,14	<b>11.75</b> 523:3	419:13,18	<b>18</b> 304:5 315:23
<b>1</b> 324:13 325:10	442:21	524:13	454:4 509:2	327:15
331:19 336:2	455:24 456:1	<b>1157</b> 298:9	531:3,6	442:20 477:16
337:17 341:10	472:9 577:10	<b>1195</b> 343:16	557:16 632:8	604:14 605:1
345:15	582:15 587:18	<b>1198</b> 343:17	638:23 677:9	677:16
349:20,21	588:1 604:14	344:15	<b>1400</b> 316:23	<b>18-C</b> 611:9,19,19

EVIDENTIARY HEARING - Vol. 5 5/10/2018

18th 304:12	325:22 326:11	367:13 596:5	370:6,16 372:1	215 351:9,10,14
19 305:2,3	326:15,16	2016 304:5,13	373:3 386:9	351:16 354:13
375:15 376:1	331:17,17	305:2,3,8,17	386:13	354:16 678:19
404:23	375:16 377:6	318:19 323:23	404:20	216 538:10,11,12
454:12	383:13 384:10	324:3 338:17	405:15 461:11	538:19,20
528:20 529:1	386:7 390:13	338:22 366:11	461:19 462:2	539:11,12,13
530:1 554:3	395:16,21	366:17,20	540:24 541:11	540:7 542:4
556:6 574:19	396:2 403:8	367:6,13	548:15,19	545:4,6,11
574:20	403:20,21	368:12,23	551:13 552:20	577:3 580:13
19-C 493:11,18	411:20,20	369:16 373:2	575:18	583:24
494:1,5 677:18	461:15 479:18	375:6,14,23	2020 318:8,10	678:21
19-P 493:11	486:9 493:12	383:19 407:2	376:15 411:19	217 538:11,19
494:5 677:19	493:18 494:1	407:14,19	525:20 528:1	539:11 543:5
198 389:23	494:5 495:6	536:21 545:15	541:19 542:22	545:4,11 572:1
390:7,9,14,21	505:5 521:13	547:13	543:1 585:20	678:22
1990s 460:16	530:8 532:7	575:22 586:4	585:22	218 390:5,12,20
1994 367:23	564:13,14	591:17 593:8	635:14	22 324:16
368:2 460:14	585:24 591:5	596:4 652:17	2021 345:21	379:15 381:15
	605:1 636:15	652:18	347:5 526:9	496:5 510:1
<b>2</b>	636:20 637:2	2017 296:5	526:12 528:8	516:10 533:16
2 324:13 325:10	644:7,8	305:17 338:2	542:23 569:7	591:19
341:9 408:24	677:21	338:18,22	575:10,14	2230 297:10
423:18	20-year 396:8	340:3 354:5	2022 578:4,17	22nd 506:12
434:20	479:10,16,18	366:12,17	578:22	23 496:5 567:8
455:21,23	498:15 521:3	368:11,13	2024 547:15	591:21
456:14 504:13	585:23	402:12 461:11	2025 374:12	23.90 567:9
505:8,16,20	200 297:5,9	461:16 536:21	376:19 402:3	230-5609
525:2 617:6	508:6	585:15,16,21	571:15	297:25
626:22	2000 357:18	585:22 586:3	2026 571:16	231-4181
634:16,22	607:4	591:16,19	2028 374:16	297:20
635:2,9	2001 322:9	646:17,24	376:10	235 330:20
642:17 644:19	2005 303:24	652:17,20	203 345:12	24 407:1 461:6
645:4 649:10	319:4 368:7	2018 303:1	2030 528:3,9	461:14,17
650:4 655:16	380:11 395:8	342:23	566:12	483:13
656:5 662:1	662:2	345:20,23	2031 411:19	636:24 637:3
662:20,23	2007/2008	346:8,10,15	2035 383:16	24.95 567:7
663:3,14,17	344:4	347:5 351:2	2047 543:2	240-20 505:3
664:9,23	2008 303:24	351:21 368:13	205 297:15	240-3 505:2
666:10 676:5	319:6 368:7	368:24 369:5	207 296:23	240-3.161
2-hour 490:3,4	380:11 395:8	370:13 403:2	21 318:18 329:2	510:16
2,000 607:18	201 315:6	460:23 461:11	377:6 495:6	25 429:1 430:1
2.4 460:24	2010 407:15	461:19 525:10	541:14 591:13	570:5
461:4	662:12	549:9,15,16	212 678:16	250 303:13
2.5 570:3	2011 343:23	549:22 550:3	213 678:17	496:18
2.6 338:2	357:19 358:9	550:20 551:3	214 350:12,13,16	2585 579:8
20 308:5,14,21	2014 332:3	680:16	354:13,16	27 337:23 510:1
309:3,4	2015 332:4,8,16	2019 308:13	678:18	592:11

EVIDENTIARY HEARING - Vol. 5 5/10/2018

28 338:15 593:2 280-B 335:12 281 632:7 29 578:22 299 679:4	30th 375:23 311 673:7 312 298:15 314 297:20 319 673:8 31st 318:10 325 437:23 342 673:9 3432 296:23 35 411:20 456:16 541:14 578:3,10 595:5 641:1 665:13 669:16 671:13 352 330:21,22 352.75 566:17 354 678:18,18 678:19,19 355 566:17 360 297:4 380 336:1,4,20 392 673:10	385:12 411:20 440:13,15,18 440:20,21 442:3,8,17 461:20 568:3 585:24 604:21 660:20 670:1 670:1 402 297:16 406 673:11 409 297:14 40s 319:15 410 673:12 413 673:13 417 673:15 419 673:16 676:24,24 677:3,3,5,5,9 677:9,11,11 421 673:17 429 577:13 43 319:13 364:20 437 673:18 44 577:15 446 673:19 45 323:4 330:15 454 673:20 456 298:14 459 673:21 46 442:16 47 337:16 499:3 477 673:22 48 632:5 486 673:23 490 673:25 492 674:3 494 677:18,18 677:19,19,21 677:21 495 674:4	321:11 329:23 346:7,10,24 347:9 405:7 427:10 428:1 428:5 438:20 439:2 473:2 477:14 488:3 488:15,20 489:1,4,16 497:15 498:1,1 504:24,24 507:5 518:23 519:2 531:2,5 539:17 542:9 543:8 545:15 571:21 572:7 577:10 617:5 634:14 641:17 641:18 644:23 676:11 678:13 5.1 345:20,23 346:15 5.33 567:12 569:10 5/1/2016 305:19 5/21/2017 305:19 50 319:15 320:6 322:23 323:2 338:24 339:4 339:7 385:13 389:6 429:1 430:1 438:18 442:3,8 483:21 50,000 532:13 50/50 456:15 603:13 500 385:15,24 501 299:10 300:14 679:4 502 331:10 335:16 532:3 532:4 587:8 674:5 679:5 503 674:7 505 674:8	676:5,5,7,7,9 676:9,10,10 505.75 569:8 51 486:24 518 674:9 520 674:10 538 674:11 54 337:16 486:18,23 499:3 587:24 587:24 588:11 588:16,18,24 545 678:21,21 678:22,22 557 674:12 559 674:14 561 674:15 676:3,3 57 486:24 570 540:20 541:2,17 575:3 575:13,20 573 296:24 297:6,11,25 298:5,10,16 674:16 577 674:17 58 594:21 595 674:18 598 674:21 5th 351:2
<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	
3 325:12 408:24 411:3 437:21 484:16 486:16 496:4 504:13 505:1 505:8,16,20 517:16 541:7 564:10 616:18 630:19 631:13 631:23 632:3 633:16,17 634:4,14 642:17 645:5 645:7 649:10 676:7 3.3 402:13,15 402:23 403:3 541:17 3.33 623:10 3:15 538:3 30 308:6,14 325:22 326:12 385:21 386:6 395:21 479:20 480:1 483:13,14,18 564:6 30-year 395:19 396:17 564:3 568:2 30,000,000 383:13 300 673:3 302 673:4 676:21,21,22 676:22 306 673:5 308 297:24 309 673:6	4 325:12 345:13 349:20,21 420:2 468:19 468:23 484:17 486:16 510:15 518:23 519:2 542:9 543:8 564:10 567:18 567:21 572:7 579:6 599:25 600:6 613:20 618:22 634:21 635:9 649:11 4-c 504:13 505:8,16,20 676:9 4-P 504:13 505:8,16,20 676:10 4.34 569:8 4.5 625:22 40 330:4	5 296:6 297:15 318:15 321:10	6 318:4 321:11,14 366:6 377:5 428:18,20 429:24 433:1 484:5 488:3 488:15,20 489:1,4,16 500:14 514:24 528:19 529:1 548:7 582:15 604:12 611:8 642:5,15 6-C 676:13 6-P 676:15	

EVIDENTIARY HEARING - Vol. 5 5/10/2018

<p><b>6:00</b> 598:15  <b>60</b> 330:11  385:12 438:18  461:19  <b>600</b> 303:9  359:3 360:16  360:20  369:22 371:18  384:20 386:2  386:6 392:9  397:11 399:1  400:12 415:16  415:21 416:10  463:18  498:23 502:6  524:4 527:3  527:16 542:10  542:19,20  543:9 546:12  547:9 570:16  608:9,13,22  623:7 645:17  646:11 677:13  677:13,14,14  <b>601</b> 674:22  <b>602</b> 674:23  <b>605</b> 674:24  <b>609</b> 674:25  <b>61</b> 340:3 565:8  <b>610</b> 675:3  <b>613</b> 675:4  678:5,5  <b>614</b> 297:19  <b>615</b> 675:5  <b>616</b> 675:6  <b>618</b> 576:5  <b>620</b> 675:7  <b>622</b> 675:8  <b>623</b> 675:9  <b>624</b> 675:10  <b>629</b> 675:12  <b>63101</b> 297:20  <b>632</b> 678:7,7,9,9  678:13,13  <b>633</b> 675:13  <b>635-7122</b>  298:16</p>	<p><b>636-7551</b>  296:24  <b>637</b> 575:1  675:14  <b>648</b> 675:15  <b>65</b> 542:22  <b>651</b> 675:16  <b>65101</b> 297:24  298:5  <b>65102</b> 297:5,10  298:10,15  <b>65109</b> 296:23  <b>65202</b> 297:15  <b>653</b> 675:18  <b>654</b> 678:11,11,12  678:12  <b>655</b> 675:19  <b>657</b> 675:20  <b>661</b> 675:21  <b>664</b> 675:22  <b>666</b> 675:23  <b>667</b> 675:24  <b>680</b> 675:25</p> <hr/> <p style="text-align: center;"><b>7</b></p> <p><b>7</b> 301:22 306:19  307:1,2  314:23 321:20  338:2 366:7  378:3 468:19  468:23  487:10 515:20  523:1 601:4  624:15 625:1  625:4 641:9  641:14  <b>7-C</b> 676:16  <b>7:40</b> 672:17  <b>70</b> 578:6,8,23  <b>700</b> 385:1  390:24 391:5  391:7 542:17  542:18 607:3  607:10,17  609:1  <b>705</b> 297:19  <b>71</b> 644:20,22</p>	<p>645:1  <b>72-ish</b> 528:9  <b>75</b> 483:22  526:9,9,12  527:3,5,6,7  528:8 569:8  569:21  <b>750</b> 323:10  540:19  <b>751-3234</b> 297:6  <b>751-4857</b> 297:11  <b>751-5558</b>  298:10  <b>756</b> 512:19  <b>797-0005</b>  298:5</p> <hr/> <p style="text-align: center;"><b>8</b></p> <p><b>8</b> 323:15  324:23  335:18 378:3  391:9 440:14  468:11 513:7  523:1,8 548:4  554:3 562:9  564:1 575:2  576:3 587:16  611:24 618:24  625:2,4  626:13 632:4  <b>8-C</b> 676:18  <b>8-P</b> 676:20  <b>8.4</b> 576:6  <b>8.42</b> 523:7  524:13  <b>8:30</b> 672:16  <b>80</b> 461:17  <b>800</b> 330:4  384:24 507:8  527:2,16  606:5 607:23  608:4,13,22  634:17,19  645:17 646:11  <b>8045</b> 573:3  <b>807</b> 298:4  <b>8535</b> 351:18,23</p>	<p>352:1,6,13,18  353:9  <b>8535.1</b> 351:20  352:12,17,19  353:4,11  <b>855</b> 303:15  304:16,22  <b>86</b> 568:21,24  <b>89</b> 578:22</p> <hr/> <p style="text-align: center;"><b>9</b></p> <p><b>9</b> 301:15 302:3  302:11,15  312:6 314:23  318:4 338:18  339:13 366:8  378:2 379:15  381:16 393:12  440:5 468:12  505:4 556:6  556:22 562:9  632:6 676:21  <b>90</b> 323:5  <b>900</b> 316:22  <b>93</b> 460:20  <b>94</b> 460:17  <b>943-7938</b>  297:16  <b>95</b> 460:17  <b>95/5</b> 401:11  416:16,21  604:8  <b>99</b> 668:7  <b>9th</b> 303:1  351:20</p>
--	--	---	--