

Staff's Investigation of Matters Concerning the Rush Island Energy Center

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Hearing before:

Judge Morris Woodruff

August 17, 2022

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**PHIPPS REPORTING**

*Raising the Bar!*

BEFORE THE PUBLIC SERVICE COMMISSION  
STATE OF MISSOURI

TRANSCRIPT OF PROCEEDINGS  
On-the-Record Presentation

Wednesday, August 17, 2022  
11:10 a.m. - 11:59 a.m.

Missouri Public Service Commission  
200 Madison Street, Room 310  
Jefferson City, MO 65102

VOLUME 1  
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In the Matter of Staff's            )  
Investigation of Matters            )  
Concerning the Rush Island        ) File No. EO-2022-0215  
Energy Center Belonging to        )  
Union Electric Company            )  
d/b/a Ameren Missouri             )

MORRIS WOODRUFF, Presiding  
CHIEF REGULATORY LAW JUDGE

RYAN A. SILVEY, Chairman  
JASON R. HOLSMAN, Commissioner  
GLEN KOLKMEYER, Commissioner

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22  
23  
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I N D E X

Page

Oral Entries of Appearance	4
Presentation by Andrew Meyer, Ameren	5
Questions by Chairman Silvey	23
Questions by Commissioner Holsman	29
Questions by Judge Woodruff	31
Questions by Chairman Silvey	32
Questions by Commissioner Holsman	34
Certificate of Reporter	37

E X H I B I T I N D E X

Company's Exhibit	Marked	Received
1 Ameren Missouri's presentation handout	36	35
(Company's Exhibit 1 was retained by Judge Woodruff.)		

1 The following proceedings began at 11:10 a.m.

2 JUDGE WOODRUFF: Let's go ahead and get  
3 started then. Welcome this morning. This is an  
4 On-the-Record proceeding in File No. EO-2022-0215, which  
5 is an Investigation of Matters Concerning the Rush  
6 Island Energy Center Belonging to Union Electric Company  
7 d/b/a as Ameren Missouri.

8 We're here today for this On-the-Record  
9 proceeding, which the Commission has asked Ameren to  
10 appear. And we will begin by first of all welcoming  
11 Ameren Missouri. We'll take an entry of appearance from  
12 Ameren and then you can explain who else is here for  
13 Ameren.

14 MS. TATRO: Good morning. My name is Wendy  
15 Tatro, 1901 Chouteau Avenue, St. Louis, Missouri 63103.  
16 I have with me today Senior Director Andrew Meyer,  
17 Director of Corporate Analysis Matt Michels, and  
18 Director of Regulatory Steve Wills.

19 JUDGE WOODRUFF: And I see Staff Counsel is  
20 here.

21 MR. THOMPSON: Thank you, Judge. Kevin  
22 Thompson for the Staff of the Missouri Public Service  
23 Commission, Post Office Box 360, Jefferson City,  
24 Missouri 65102.

25 JUDGE WOODRUFF: For Public Counsel.

1           MR. WILLIAMS: Nathan Williams appearing on  
2    behalf of the Office of the Public Counsel and the  
3    public, and I've provided my information to the court  
4    reporter.

5           JUDGE WOODRUFF: Thank you. And the purpose  
6    of this proceeding is to allow the Commissioners an  
7    opportunity to ask questions of Ameren. We're going to  
8    start with a presentation from Ameren. Following that  
9    we'll allow questions from the Commissioners. This is  
10   not a contested case. It's an investigation. So there  
11   will be no cross-examination questions from the parties.

12          MS. TATRO: Your Honor, do you want him at the  
13   witness chair or to talk from here? I'm just not sure  
14   how you want this to work.

15          JUDGE WOODRUFF: I think it would be best if  
16   you have people come up to the witness, or the podium,  
17   as you'd like to make presentations. I'm told the  
18   podium would be the place to go. Thank you.

19          MR. MEYER: Good morning.

20          JUDGE WOODRUFF: Good morning.

21          MR. MEYER: Andrew Meyer, Ameren Missouri. So  
22   I'm here to address the questions in the Rush Island  
23   order. I'm going to skip -- perfect, got it. I figured  
24   the best place to begin would be with the most recent  
25   capacity information offered by MISO which was the OMS

1 survey results. This chart that's being displayed is  
2 directly from that presentation, and what it's showing  
3 is a 2023 capacity deficiency, a forecasted deficiency  
4 for MISO Zone 4 Illinois, Zone 5 Missouri, and Zone 6  
5 Indiana.

6 Particular note Zone 5 is the Missouri  
7 served portion of MISO where Ameren Missouri's electric  
8 service load resides. The key takeaway when looking at  
9 this slide and considering a deficiency is that Ameren  
10 Missouri responded to this survey and we demonstrated  
11 sufficient capacity to meet Ameren Missouri's  
12 obligations in the survey results.

13 Same approach was taken in the MISO Planning  
14 Resource Auction that took place in April for this  
15 current planning year. Ameren Missouri demonstrated  
16 sufficient capacity in that auction to meet all of our  
17 obligations there too. So while this chart shows a  
18 deficiency in Missouri, it theoretically would not exist  
19 if MISO presented the data in a slightly different  
20 fashion. What I'm getting at there is part of the  
21 Ameren Missouri generation fleet is simple cycle  
22 combustion turbine peakers, which we'll discuss a lot  
23 throughout this presentation. They reside in Illinois.

24 And so MISO reflects them in the Zone 4  
25 resource numbers. And so if you shuffle the deck

1 slightly differently and you actually showed, you know,  
2 those units which are pseudo tied into the Ameren  
3 Missouri balancing authority as Missouri resources, Zone  
4 5 would show sufficient capacity and Zone 4 would be  
5 even shorter. So it's all in the presentation of how  
6 they slice the data essentially.

7 Another key aspect of this slide is the units  
8 that we're showing on the vertical axis there, UCAP  
9 megawatts, UCAP again referring to unforced capacity.  
10 So MISO calculates a UCAP value for each of our units  
11 annually, and in that process it begins with the full  
12 load generator test and then they look back at the last  
13 36 months and say what was your average forced outage  
14 rate, what percentage of time were you unavailable for  
15 forced outages, and they haircut how much capacity you  
16 can sell.

17 So those resource totals you're seeing in that  
18 slide and in the next slide we're going to get to are  
19 going to reflect that UCAP value. It's pretty  
20 significant because in calculating this UCAP, it's a  
21 lagging indicator, and I say that and offer this example  
22 to explain that.

23 For planning year 21/22, the Callaway plant  
24 had a UCAP value of 1,150 megawatts approximately. So  
25 very near its full load capability. But for the most



1 recent Planning Resource Auction, PRA, it only qualified  
2 for 887 megawatts of UCAP. It's a 262 megawatt delta  
3 year over year, and that is the result of the  
4 eight-month forced outage for generator repairs that we  
5 had, you know, late 2021 and rolling into the next year.  
6 And so that's why it's a lagging indicator.

7 Callaway is fully available at this point in  
8 time, but we're still dealing with that UCAP haircut  
9 from an outage that happened in the past. Not only was  
10 our UCAP value for Callaway reduced for this planning  
11 year, but it will be for two more years because of that  
12 36-month forced outage rate calculation. So a key  
13 consideration there.

14 There's a few other, you know, key items here  
15 about capacity position modeling. So in June, Ameren  
16 filed a change in the preferred plan or the IRP. And if  
17 you looked, you know, through that information in the  
18 workpapers there were capacity position slides by season  
19 summer and winter. What you saw was a slightly long  
20 summer capacity position and a slightly short winter  
21 capacity position. So the charts that we're going to  
22 talk about, they get to relatively the same conclusion  
23 but the numbers are pretty different in terms of how  
24 we're adding up the resources and what we factored into  
25 the load and what's not.

1           The first difference again is to address the  
2   order when are we going to have to procure capacity. We  
3   will be procuring on this MISO basis, which is on the  
4   UCAP construct, and so again that's a lagging indicator.  
5   It also results in some shifting of accreditation  
6   values. So if you have units that are largely  
7   unavailable in the winter, well, that gets all averaged  
8   in to this annual UCAP number. So it reflects that  
9   haircut in the summer. So there's some accreditation  
10  shifting that's happening there too.

11           And then for the IRP if you're trying to  
12  reconcile those charts, the IRP really reflects the  
13  installed capacity of each of the generators. The only  
14  time that we make adjustments of that is for the  
15  renewables. So those adjustments again we'll discuss  
16  later on, but we default back to the MISO accreditation  
17  values.

18           So if you have a wind resource in MISO, the  
19  MISO class average accreditation is only about 14  
20  percent of it can be counted as capacity. The other 86  
21  percent is not. For solar, it's like a 50/50 split. So  
22  that adjustment is made in the IRP filing. Then we  
23  reflect that for some of the purposes in the later  
24  discussion.

25           Just one more disclaimer on some of these

1 modeling differences. The load forecast also differs  
2 somewhat from the load we have in the IRP, because when  
3 we're submitting data to MISO for Module E purposes, the  
4 load forecast is a coincident peak. And so we still go  
5 through and develop a normalized peak load forecast, and  
6 we're a summer peaking utility so that would be our peak  
7 load, and then MISO provides us a day to which all the  
8 utilities tie out.

9 And so the coincident peak forecast is  
10 generally lower than the non-coincident peak forecast  
11 which reflects the diversity of the 15-state MISO  
12 footprint and generally reflects that every load is not  
13 peaking at the same time. So a little bit difference  
14 there as well.

15 Then jumping to the heart of the question here  
16 of, you know, how are we going -- the issue of securing  
17 capacity really in regards to planning obligations. So  
18 the chart we have here illustrates Ameren Missouri's  
19 position and MISO's PRA, you know, for the planning year  
20 that just cleared and the next several years what our  
21 position is going to look like.

22 What's being reflected here is based on MISO's  
23 current construct which is an annual construct. You  
24 clear for the full planning year. I think we're all  
25 aware that MISO has filed with FERC to make some changes

1 to this construct. They want to break it into seasons,  
2 and they've also proposed some changes to how the units  
3 get accredited, how much capacity you can sell for any  
4 given unit. But not knowing when or if FERC is going to  
5 approve that, we thought it prudent to reflect the rules  
6 as they exist today.

7 So the available UCAP that you're seeing in  
8 the bars here, all the current resources are in the dark  
9 blue. For planning year 23/24 and 24/25, we've broken  
10 out the Rush Island units to show in the light blue to  
11 highlight their participation in the auction. And in  
12 the later years we've included some additional green  
13 shading which represents the renewable, essentially all  
14 solar projects that Ameren Missouri has proposed to  
15 bring on line in advance of 2025.

16 So generally those renewables are justified  
17 just based on their energy market contributions, but  
18 based on current rules they will get a 50 percent  
19 capacity accreditation. So they'll be an ancillary  
20 benefit if they are available to operate or to market  
21 into those auctions.

22 But for planning year 22/23, we demonstrated  
23 sufficient capacity to meet our planning reserve margin  
24 requirement and we utilize both Rush Island units to do  
25 so. Before the auction we had discussed with MISO's

1 IMM, the Independent Market Monitor, about Rush Island  
2 participation. That discussion is really required by  
3 the tariff for any unit with sort of uncertain standing.  
4 The IMM came to the conclusion that it was appropriate  
5 to utilize Rush Island units as resources in the auction  
6 for us to sell it essentially. So in advance of the  
7 next two PRAs, Ameren will repeat that process.  
8 Arguably it's still uncertain standing as we work  
9 through this system support resource contract that we  
10 have for Rush Island, but we will have the same  
11 conversation with the IMM and we would expect similar  
12 conclusions.

13 For planning year 24/25, Ameren does expect  
14 that the 8th Circuit Federal Court will issue an order  
15 about the NSR litigation. That order will probably say  
16 that Rush Island is planning to retire in 2024, although  
17 we know that some of the transmission reliability  
18 projects that need to be done in order for retire may  
19 extend into 2025. So there's a good probability that we  
20 will have to have a conversation about extending that to  
21 some extent. If the Rush Island units remain available  
22 to that point, then likely they would be utilized as  
23 resources for all of the planning year 24/25 capacity  
24 auction.

25 Going out to the last two bars, planning year

1 25/26 when Rush is retired, you'll notice that the dark  
2 blue bar steps up some. And what that reflects is the  
3 Callaway UCAP value recovers. So it's being held down  
4 for three years because of the extended outage, but it  
5 will recover after that point. Same thing for Taum Sauk  
6 II which also had an extended forced outage which is  
7 currently impacting its UCAP accreditation but it will  
8 step up in that time frame as well.

9           There's a few other changes embedded in that  
10 dark blue there. Modest growth of the business demand  
11 response program is anticipated. And then you notice  
12 the green bars there offer some detail of what those  
13 represent. Ameren's proposed 800 megawatts of solar  
14 being commercially operable by 2025. The expectation  
15 that we're modeling here is that 350 megawatts of it  
16 would be available for planning year 24/25, which at a  
17 50 percent accreditation would get you 175 megawatts of  
18 capacity, and then for planning year 26/27 we're showing  
19 all 800 which represents 400 megawatts of capacity.

20           And then finally on this chart the load curve.  
21 And so the load curve that we submit to MISO for Module  
22 E purposes reflects current amounts of energy efficiency  
23 reductions, you know, that we've already realized. So  
24 in the next evolution of MIEAA we may see growth in some  
25 of the energy efficiency programs that we have. If that

1 happens, all that would do is bend down that demand  
2 curve such that we have -- it would be easier to  
3 demonstrate that we're meeting our obligations.

4 Pivoting to the next question in the order  
5 about real time load obligations and stressor events. I  
6 just -- All this slide is intended to do is acknowledge  
7 that Ameren Missouri takes a very proactive approach to  
8 our generation fleet prep. And the bullets provide some  
9 but not all of the actions that we take to respond to  
10 system conditions. But we are continually monitoring  
11 the system and trying to plan accordingly such that our  
12 generation is available during these peak events.

13 I'm going to jump right to the heart of the  
14 question here though about a stressor event. So I  
15 started with winter. A winter peak load event is  
16 arguably more stressful than a summer peak load event.  
17 On this chart you're going to see that last year during  
18 Winter Storm Uri Ameren Missouri set a new retail load  
19 winter peak. So that's for a full integrated hour a  
20 retail load averaged just over 6,600 megawatts. And  
21 when you think of that load, I mean, what that actually  
22 represents is for capacity purposes you would use  
23 normalized weather approach to forecast a peak load and  
24 then you would apply a reserve margin to it of whatever  
25 appropriate percentage. That 6,600 really represents

1 the peak load plus the reserve margin. That's what we  
2 saw on that day when it was so bitter cold. And so the  
3 stacked bar chart, the waterfall stacked bar chart here  
4 is the resources that we expect to have to meet that  
5 load if we see it again on such a cold day.

6 The values that we have listed for the units  
7 here, it's not -- they're not installed capacity like we  
8 talk about in the IRP, it's not UCAP like we talk about  
9 for the MISO auction. What those values are are the  
10 true capability expectations of what Callaway or any  
11 other resource there will be able to get to on that day  
12 with those ambient temperatures. So it's the best  
13 reflection of reality for that actual stressor event day  
14 that we have. Those rates change by season obviously.

15 There's just one difference here that I should  
16 highlight before we get into it which is the renewables.  
17 So the second piece of the bar says wind and solar  
18 capacity and then you also see wind and solar balance  
19 out in the far right. So what we've done there again is  
20 divided it up by the MISO accreditations. So if you  
21 have 800 megawatts of wind, you would expect 14 percent  
22 of it to actually be operating that day, the other 86  
23 percent depends on circumstances and wind production on  
24 that day.

25 So there's two key takeaways from the slide.



1 First we need Rush Island to cover that load, you know,  
2 currently, currently. And so there will be a gap to  
3 address when Rush Island retires or in advance of Rush  
4 Island's retirement rather. The second key takeaway --  
5 The answer to that is related to the second key takeaway  
6 which is the combustion turbine fleet. We showed a CTG  
7 fleet there. It shows 466 megawatts in that bar. That  
8 CTG fleet is really on an installed capacity basis  
9 closer to 2,700 megawatts. So there's a significant  
10 availability haircut going on there.

11 The issue that we run into during severe cold  
12 weather is the natural gas pipelines require very strict  
13 adherence to their tariff rules and they also issue  
14 operational flow orders, or OFOs, both of which reduce  
15 our availability of our combustion turbine fleet. So  
16 when it's severely cold, the pipelines require that gas  
17 can only be scheduled on firm transportation contracts  
18 and much of the CTG fleet that we have is served by  
19 interruptible transportation on the gas pipelines.

20 So the logical question is can't Ameren go buy  
21 more FTE or firm transport, but the second pipeline  
22 action is what makes that simple answer impractical.  
23 It's the pipeline OFOs that require us to ship a  
24 rateable volume of gas across all 24 hours of the day.  
25 And this is not how MISO would want to utilize the

1 units, nor can all these units actually run for that  
2 full 24-hour window.

3           The way MISO would like to deploy these simple  
4 cycle CTGs on these cold days is they want to turn them  
5 on for three hours, four hours on that bitter cold  
6 morning and then shut them off and they want to turn  
7 them on again late in the evening to catch that lighting  
8 load as the load bumps up again in the winter. It's the  
9 pipelines on these severely cold days are already maxed  
10 out. So from their perspective they just see that  
11 Ameren wants to flow a big slug of gas for three hours  
12 in the morning and three hours in the evening and they  
13 simply cannot accommodate it. So we really have no  
14 choice but to make the units unavailable because we  
15 couldn't flow the gas if we wanted to even with firm  
16 transport.

17           So back to the first question of the fact that  
18 Rush Island is needed to meet that level of winter load.  
19 Ameren is exploring some internal projects intended to  
20 address the winter resource availability. So there's  
21 two projects. We're studying restarting the existing  
22 idled equipment for dual fuel capability at our Peno  
23 Creek Combustion Turbine Energy Center. There's four  
24 units there. What that means is they normally run on  
25 natural gas, but this would allow for them to run on

1 fuel oil as well. So if you can't get the gas on a cold  
2 day, you're running on fuel oil. We can typically keep  
3 one of those four units available on gas during the  
4 severely cold weather. So this would allow us to regain  
5 the use of the other three units on fuel oil during  
6 those days to help meet that load.

7 The other option that we're analyzing right  
8 now is installing dual fuel capability at Audrain Energy  
9 Center. So Audrain Energy Center is eight units all  
10 simple cycle combustion turbines roughly, you know, 80  
11 megawatts. In the winter they could probably maybe  
12 reach closer to 90 megawatts with the ambient  
13 temperatures being down. So that would add another 700  
14 megawatts of oil-fired capability to meet the load on  
15 these critically cold days. But that option will  
16 require a review of the current operating permit, and I  
17 believe the operating permit only allows them to operate  
18 on natural gas.

19 So pivoting to the summer. We just recently  
20 set a retail load peak here last month. So on July 5  
21 temperatures were 101 or reached a high of 101. And we  
22 saw our retail load exceed 7,000 megawatts, 7,068, I  
23 believe, you know, for a fully integrated hour. So the  
24 question is how are we going to serve that load in the  
25 summer of 2023 or beyond, right, because in the summer

1 of 2023 we won't have Meramec. Go out a couple more  
2 years summer of 2025 we may not have Rush Island. So  
3 those resources will be removed here. But using the  
4 same stacking of generation, hopefully where your focus  
5 narrows to is again on the CTG fleet because those are  
6 our peakers fleet that we run during these critical  
7 times.

8 So we've broken the CTG fleet up into two  
9 different boxes here. The distinction that's being made  
10 is that a portion of the fleet, 1,581 megawatts of CTGs  
11 is available for normal economic commitment. So MISO,  
12 we'll just look at their offered price and turn them on  
13 as needed. The second grouping of CTGs, roughly 1,200  
14 megawatts, is only available for emergency commitments,  
15 and that is because those units reside in Illinois and  
16 their availability has been limited by the emissions  
17 restrictions of the Illinois Clean Energy Jobs Act,  
18 CEJA. So those Illinois CTGs are subject to limits on  
19 emissions which include CO2 and NOx equal to their unit  
20 specific average from 2018 to 2020. And we're going to  
21 have to manage to those emissions restrictions through  
22 2029. At that point, further reductions to emissions  
23 will be required stepping from 2030 out through 2040.  
24 What that will result in is closing of Venice Energy  
25 Center in 2029. And we may see further operating

1 restrictions on the other CTGs and they will ultimately  
2 -- those four other Illinois CTG sites will likely be  
3 closed by 2040. But in the CEJA law there's a provision  
4 that these CTGs may be allowed to exceed these Illinois  
5 emissions limits in order to maintain reliability of the  
6 electric system. So what that means is that 1,200  
7 megawatts of Illinois CTGs again is offered for  
8 emergency use only.

9 MISO has to issue an emergency declaration and  
10 advance through the steps in their emergency procedure  
11 until they get to the point that they can deploy  
12 emergency resources and turn on all those units. So in  
13 this chart, again, you can see that we have sufficient  
14 resources that are economically available to meet that  
15 summer stressor event load, but there's another 1,200  
16 megawatts of CTGs and currently another 140 megawatts of  
17 demand response programs that MISO would only get to  
18 deploy if they declared an emergency and hit the right  
19 procedural step.

20 The demand response may be turned on also by  
21 the company if we meet a percentage of load trigger as  
22 well. So it may be operating regardless.

23 So the order asked about stressor events on  
24 both Ameren and MISO's systems. So if we're pivoting to  
25 the MISO-declared emergencies, after this year's PRA

1 results were announced, there were several public  
2 warnings of the increased likelihood of emergency  
3 events. And this chart was published by MISO in their  
4 summer readiness materials shortly after the PRA results  
5 were announced. And it offers a slightly different  
6 perspective about the deficiency that MISO is seeing.

7           So before I discuss the chart, I'll just level  
8 set here in recent years we've seen MISO declare six to  
9 seven maximum generation events a year. That's up.  
10 Prior to 2016, I'd say they were relatively rare, but in  
11 recent years it has gone up. They're generally caused  
12 by a combination of extreme weather, high electric load,  
13 and sometimes load generator availability which can  
14 include low availability of renewables due to lack of  
15 fuel, wind, solar.

16           But focusing on the July information, the  
17 middle bar of this chart, MISO offers two load  
18 forecasts. There's the probable load forecast of 124  
19 gigawatts and then there's a high load scenario of 131  
20 gigawatts. The bar chart represents generation  
21 available economically that MISO can turn on via their  
22 normal processes to meet that load, 119.2 gigawatts of  
23 resources. Once they reach that point where they've  
24 deployed all those, they will step into their maximum  
25 generation emergency event. And once they've reached a

1 certain step of that procedure, it will unlock the units  
2 offered for emergency use only which is the 10.8  
3 gigawatts reflected in the brown shading. In that 10.8  
4 gigawatts, that includes Ameren Missouri's 1,200  
5 megawatts of Illinois CTGs, it includes the 140  
6 megawatts of demand response that you'd see that's  
7 available for summer peak events. And so those would  
8 only be deployed at that time.

9 Tying those loads that MISO is modeling there  
10 back to the July 5 retail peak that Ameren Missouri just  
11 set, the MISO peak load on July 5 was 115.9 gigawatts.  
12 And MISO had issued a conservative ops declaration but  
13 it did not reach the point of a maximum gen event. And  
14 so those resources were not unlocked on that day.

15 And then just to offer a little more context  
16 about those loads that MISO is planning for. The MISO  
17 all-time peak load was 127 gigawatts which they saw back  
18 in 2011. The MISO topology looked fairly different at  
19 that time. There was no Entergy and Duke Ohio was still  
20 a member of MISO. Quite a different context when you  
21 consider the loads that they're planning for here in  
22 terms of summer readiness. And that's all of the  
23 prepared remarks.

24 JUDGE WOODRUFF: Thank you. Mr. Chairman, do  
25 you have questions?

1 CHAIRMAN SILVEY: Thank you. Appreciate that.

2 I do have a couple questions. Forgive me if I bounce  
3 around.

4 QUESTIONS

5 BY CHAIRMAN SILVEY:

6 Q. Let's go back to page 6 real quick. So you  
7 had mentioned here that these numbers are the most  
8 accurate, not nameplate, not accredited but the most --  
9 so how are those numbers arrived at?

10 A. So Ameren develops a seasonal capability table  
11 every year where the engineers will look at ambient  
12 temperatures in the unit and say this is the expectation  
13 for unit production based on those temperature  
14 scenarios. So it's an engineering analysis based on  
15 expected conditions for those months.

16 Q. Okay. And then on page 8 just the last one  
17 there you were talking about in real time being able to  
18 unlock the emergency capacity. What is that process?  
19 How long does that take? Are we talking hours? Are we  
20 talking days?

21 A. Generally when MISO is issuing emergency  
22 declarations, I mean, they can see critical days coming  
23 a few days in advance. So we may see a MISO  
24 conservative ops declaration. We may see MISO issue a  
25 hot weather alert, and then they'll step into a maximum



1 generation alert, which really doesn't unlock any  
2 actions, then a maximum generation warning, and then a  
3 maximum generation event which is where the real key  
4 steps in their emergency procedures take place. And so  
5 generally they would only be in that event stage for the  
6 critical hours of the day where they're short capacity.  
7 So it's within the operating day that we're talking  
8 about. Those resources there like Ameren Missouri's  
9 1,200 megawatts of CTGs, they can all be on line between  
10 ten and thirty minutes and operate, you know, from that  
11 perspective. So it's truly a real time response.

12 **Q. Back on slide three, second bullet point**  
13 **there, how is that reflected in Ameren's IRP?**

14 A. So the bullet referencing the IRP utilizes  
15 installed capacity, is that?

16 **Q. I was thinking about the one with after Rush**  
17 **retires.**

18 MR. MICHELS: I'm having trouble telling which  
19 bullet you're referring to.

20 CHAIRMAN SILVEY: Second main bullet point.

21 MR. MICHELS: Okay. Got it.

22 MR. MEYER: So the question is after Rush  
23 retires -- the comment is after Rush retires, we will be  
24 very near flat in our capacity position modeling. Matt  
25 can speak to the IRP position modeling. But for the

1 MISO PRA, those 1,200 megawatts of CTGs that are offered  
2 for emergency use only are still allowed to qualify as  
3 capacity resources. So they participate in the PRA as  
4 well. So we're still counting them as capacity to meet  
5 that peak load on those stressor events.

6 BY CHAIRMAN SILVEY:

7 Q. And then given the Illinois legislation,  
8 you're expected to continue to have access to them, just  
9 not full access to those gas plants in Illinois; is that  
10 what I heard?

11 A. Their operation is limited based on their  
12 historic emissions, and the window of which they  
13 baseline historic emissions 2018, '19, and '20, some of  
14 those units didn't have a significant amount of run  
15 time. So going forward they're capped at that level.  
16 And so yes, we'll be managing to those emissions levels  
17 which correlate into run time hours really for the  
18 remainder of these units lives.

19 Q. Okay. And then -- which one was that. Sorry.  
20 So you said that you expect Rush Island to continue  
21 operating through early '24. Is that based on the  
22 current litigation like what you expect to be the  
23 resolution or?

24 A. That comment was based on after reading the  
25 MISO Y1 study results that identified transmission

1 projects that need to be done such as there is no  
2 reliability issue when Rush Island retires. And our  
3 understanding is that some of these projects may extend  
4 all the way through that '24 time frame and possibly  
5 into spring of 2025.

6 Q. Okay. I don't think it was in this  
7 presentation necessarily, but my understanding is, and I  
8 think maybe you touched on it though, there's about  
9 three projects that need to be completed for Rush to be  
10 fully retired?

11 A. Transmission projects or generation projects?

12 Q. The installation of the larger transformer at  
13 the Wildwood substation is one. Installation of  
14 capacitor bank at the Overton substation. Installation  
15 of four static compensators in and around St. Louis.  
16 Where are we in that process? Are those being built?  
17 Are some of them completed?

18 A. I don't think -- Well, I don't think any of  
19 them -- I think they're still in the engineering and  
20 procurement phase. I don't know that construction has  
21 started on any of them.

22 Q. So what is the time horizon for completion,  
23 because we don't know the outcome of litigation. We  
24 don't know. We think we have some ideas. With that in  
25 mind, what is the time horizon for the completion of

1 **those?**

2 A. Those projects, depending on which one we're  
3 discussing, the time horizon will most likely be -- the  
4 latest estimate I've seen is sometime into 2025.

5 **Q. Okay. So if Rush has to retire in '24 and**  
6 **those are not completed until '25 but they're necessary**  
7 **for the full retirement, what is the contingency plan**  
8 **then?**

9 A. If they're not available to operate as system  
10 support resources for MISO's approach, then MISO will  
11 have to identify other mitigating measures. I don't  
12 know what those would look like right now.

13 **Q. Is it just buying more out of the auction?**

14 A. I think in terms of reliability issues  
15 impacting Rush's retirement it's more about voltage  
16 support in the area of Rush Island and the potential for  
17 load drop until those transmission upgrades are  
18 completed. If you're asking about if Rush has to retire  
19 early in 2024 and therefore would not be available to  
20 participate as a resource in the 24/25 capacity auction,  
21 then that would create a short position for us and we  
22 would have to go to the market, either the bilateral  
23 market and try to procure capacity in advance of the  
24 auction or just carry that short position into the  
25 auction and we would fill it at the clearing price of

1 the auction.

2 Q. And then there was -- I'm trying to figure out  
3 which slide it was on. We talked about Callaway  
4 recovering. If it wasn't able to recover to that full  
5 capacity, does that just again go back to the auction or  
6 is there another contingency plan if there's another  
7 forced outage?

8 A. So again, that UCAP accreditation in the chart  
9 on slide four is -- it's a lagging indicator. Callaway  
10 has already recovered from the outage. They're capable  
11 of full load right now. It's just that through this  
12 MISO accreditation process we're being haircut for three  
13 additional years into the future and that's how the MISO  
14 process works. There's a potential that some other unit  
15 could have a large forced outage and the haircut show up  
16 at a different energy center. If that's the case, then,  
17 you know, that would drive us to reduce resources in the  
18 auction and potentially short and we'd be looking at the  
19 same approaches to procuring capacity in advance of or  
20 in the MISO PRA.

21 Q. Okay. So given that several of these answers  
22 are going back to the PRA and that there's a shortfall  
23 not only in our zone but also footprint wide, are you  
24 confident that that energy will be available in the PRA?

25 A. I guess if I can rephrase the question. Are

1 you asking if the MISO planning resource auction will  
2 clear a deficiency again for these planning years?  
3 That's very hard to predict. The MISO auction construct  
4 is really a feast or famine approach such that if  
5 there's sufficient capacity, you know, you generally get  
6 a low clearing price until there's not when it clears  
7 high. There's no mechanism right now for the MISO  
8 clearing price to demonstrate a mild or moderate or, you  
9 know, elevated concern for capacity deficiency. You go  
10 from bottom to the top essentially is how it works.  
11 It's very hard to predict where we land in the event  
12 like you described.

13 CHAIRMAN SILVEY: All right. Thank you,  
14 Judge. I don't have any other questions at this time.

15 JUDGE WOODRUFF: Commissioner Holsman on line,  
16 do you have any questions?

17 COMMISSIONER HOLSMAN: Yes, I do.

18 QUESTIONS

19 BY COMMISSIONER HOLSMAN:

20 Q. So it seems like when the original ruling was  
21 handed down, I read a note that said that had scrubbers  
22 been added to this it might have prolonged its life.  
23 What was the cost benefit analysis of deciding to retire  
24 versus adding the scrubbers and if adding the scrubbers  
25 would have solved the problem?

1           MR. MICHELS: Yes. This is Matt Michels with  
2 Ameren. So the cost benefit analysis that we did  
3 demonstrated a benefit of, I believe it was between \$300  
4 and \$400 million to retiring the units early rather than  
5 installing the pollution controls.

6 BY COMMISSIONER HOLSMAN:

7           Q. That is significant. Also in one of the  
8 briefing that my staff provided for me, it shows that  
9 you guys are going to use TVRs potentially. Can you  
10 explain a little bit about what those devices might look  
11 like and how they might be deployed and what kind of  
12 impact they would have?

13          A. I don't know if we have the right person in  
14 the room. If you're talking about transient voltage  
15 regulators, that may be the Statcom devices that were  
16 being discussed earlier to keep the voltage support up  
17 in the location of Rush Island.

18          MS. TATRO: My apologies, Commissioner. I did  
19 not bring one of the engineers.

20          COMMISSIONER HOLSMAN: Okay. That was just  
21 one as I was looking through some of the potential  
22 consequences of retirement the voltage regulation was  
23 one of them and I was curious to get more information on  
24 that mitigation and what those devices were.

25          MS. TATRO: Commissioner, if you'd like, we

1 can always supplement the record with an explanation of  
2 that.

3 COMMISSIONER HOLSMAN: Okay. Thank you.

4 The Chairman covered most of the questions I  
5 also had. Those were the two I was curious about.  
6 Thank you.

7 JUDGE WOODRUFF: Commissioner Kolkmeier, did  
8 you have any questions?

9 COMMISSIONER KOLKMEYER: Yes -- no, not  
10 honestly. The Chairman's questions and Commissioner  
11 Holsman's questions pretty well answered my questions on  
12 this. So thank you.

13 JUDGE WOODRUFF: I have a couple questions  
14 also I'd like to ask.

15 QUESTIONS

16 BY JUDGE WOODRUFF:

17 Q. It's about the emergency process in the CTGs  
18 in Illinois. You indicated that there's a restriction  
19 based on environmental laws and your air permits I  
20 assume. Can you tell me how that emergency process  
21 works as far as getting permission from the  
22 environmental authorities in Illinois to have to go back  
23 and get advanced permission from them to start using  
24 these or is this something that -- explain to me how  
25 that works.



1           A.    We do not request advanced permission.  If  
2   MISO steps into an emergency event and issues operating  
3   commands for those units, we will respond and then we  
4   will document the reason for the start instruction and  
5   provide that to the Illinois EPA after the fact.

6           **Q.    Okay.  And are there similar restrictions on**  
7   **the CTGs in Missouri?**

8           A.    There are not.  Outside of the normal air  
9   permit limitations that they have.

10          **Q.    So there's no emergency CTGs in Missouri?**

11          A.    No.  They're all offered for MISO's economic  
12   use.

13                    JUDGE WOODRUFF:  That's all the questions I  
14   have.

15                    CHAIRMAN SILVEY:  Can I have some follow up on  
16   that?

17                    JUDGE WOODRUFF:  Sure.

18    QUESTIONS

19   BY CHAIRMAN SILVEY:

20          **Q.    On the Illinois side again, you said you're**  
21   **constrained to their historical operating output of**  
22   **emissions?**

23          A.    Uh-huh.

24          **Q.    And that you don't have to get advanced**  
25   **permission; you just do it and then report after the**

1 fact. So what are the penalties for violating? Like  
2 what if there was an event and you ramped up to make  
3 sure you met your load and then found out that you'd  
4 somehow violated the Illinois statute, what is the  
5 penalty for that?

6 A. I don't know that that penalty is clearly  
7 defined. It's part of the vague aspects of the law. So  
8 we would report to the Illinois EPA and then we would be  
9 awaiting their feedback if they determined that we had  
10 violated those emissions and then wait to see what they  
11 thought the penalty should be.

12 Q. So follow up. Do those plants serve any  
13 Illinois customers or only Missouri customers?

14 A. They are Ameren Missouri units that are from a  
15 MISO settlement perspective electrically pseudo tied  
16 into that Ameren Missouri local balancing authority. So  
17 they are Ameren Missouri units that they're there to  
18 serve Ameren Missouri load.

19 Q. So in the event of such an emergency, is it  
20 more important to serve the load or is it more important  
21 not to violate the emissions standard?

22 A. We're trusting that if there's a critical  
23 decision about whether or not to serve the load, then  
24 MISO has progressed into the emergency steps and were  
25 operating the units.

1 CHAIRMAN SILVEY: Okay. Thank you.

2 MS. TATRO: To put that maybe --

3 COMMISSIONER HOLSMAN: Judge, I've got a  
4 follow up question.

5 JUDGE WOODRUFF: Go ahead.

6 COMMISSIONER HOLSMAN: No, I didn't want to  
7 step on -- go ahead and finish that thought.

8 MS. TATRO: I was just going to say maybe to  
9 put it a little more directly when we think we need to  
10 operate the load or we would lose load, we'll operate  
11 the system and then we'll deal with the Illinois EPA  
12 after.

13 CHAIRMAN SILVEY: Thank you. That's what I  
14 was driving at.

15 JUDGE WOODRUFF: Commissioner Holsman.

16 MS. TATRO: If we do get penalized, we'll come  
17 back to you.

18 CHAIRMAN SILVEY: Of course.

19 JUDGE WOODRUFF: Commissioner Holsman.

20 QUESTIONS

21 BY COMMISSIONER HOLSMAN:

22 Q. I want to go back to the earlier MISO  
23 discussion that we came on the heels of this meeting and  
24 talk a little bit about what the capacity plan is  
25 surrounding renewables and storage. Is this something

1 that, you know, we learned that Zone 5 has a 1,200  
2 megawatt deficit and that storage while limited can make  
3 a difference in that capacity. I just wanted to know  
4 what your plans were to focus on and ramp up storage  
5 capability to help with that shortfall.

6 MR. MICHELS: Yes, this is Matt Michels with  
7 Ameren again. So storage is something that we have  
8 included in our recently updated IRP preferred plan  
9 although it's not showing up in the plan until the 2030s  
10 largely because of cost. So the costs are pretty  
11 expensive right now. We expect those to decline over  
12 time and for the technology to improve.

13 That said, if there were some kind of a hole  
14 created in our capacity position that we did not expect,  
15 that would be one of a number of options that we might  
16 consider for filling in.

17 COMMISSIONER HOLSMAN: Okay. Thank you.

18 JUDGE WOODRUFF: All right. Anything else  
19 from Commissioners?

20 Ms. Tatro, we had discussed before we went on  
21 the record about marking the slides here as an exhibit.  
22 We'll go ahead and mark them as Exhibit 1, and we will  
23 put them in the record and they will be available on  
24 EFIS.

25 MS. TATRO: Thank you.

1 (COMPANY'S EXHIBIT 1 WAS MADE A PART OF THIS  
2 RECORD.)

3 JUDGE WOODRUFF: Anything further from anyone?  
4 All right. Then we are adjourned. Thank you all.

5 (COMPANY EXHIBIT 1 WAS MARKED FOR  
6 IDENTIFICATION BY THE COURT REPORTER.)

7 (Thereupon, the proceedings concluded at 11:59  
8 a.m.)

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CERTIFICATE OF REPORTER

STATE OF MISSOURI )  
COUNTY OF COLE )

I, Beverly Jean Bentch, RPR, CCR No. 640, do hereby certify that I was authorized to and did stenographically report the foregoing Public Service Commission On-the-Record presentation and that the transcript, pages 1 through 36, is a true record of my stenographic notes.

I FURTHER CERTIFY that I am not a relative, employee, attorney, or counsel of any of the parties, nor am I a relative or counsel connected with the action, nor am I financially interested in the action.

Dated this 30th day of August, 2022.

Beverly Jean Bentch

Beverly Jean Bentch, RPR, CCR No. 640

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	9:19 15:21	19:22,25	<b>360</b>
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30:3	20:16 22:5	19:23	<hr/>
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<b>1</b>	13:17	19:23 20:3	6:4,24 7:4
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<b>1</b>	25:13	7:23	13:19
35:22 36:1,5	<b>1901</b>	<b>22/23</b>	<b>466</b>
<b>1,150</b>	4:15	11:22	16:7
7:24	<hr/>	<b>23/24</b>	<hr/>
<b>1,200</b>	<b>2</b>	11:9	<b>5</b>
19:13 20:6,15	<hr/>	<b>24</b>	<hr/>
22:4 24:9	<b>2,700</b>	16:24 25:21	<b>5</b>
25:1 35:1	16:9	26:4 27:5	6:4,6 7:4
<b>1,581</b>	<b>20</b>	<b>24-hour</b>	18:20 22:10,
19:10	25:13	17:2	11 35:1
<b>10.8</b>	<b>2011</b>	<b>24/25</b>	<b>50</b>
22:2,3	22:18	11:9 12:13,23	11:18 13:17
<b>101</b>	<b>2016</b>	13:16 27:20	<b>50/50</b>
18:21	21:10	<b>25</b>	9:21
<b>115.9</b>	<b>2018</b>	27:6	<hr/>
22:11	19:20 25:13	<b>25/26</b>	<b>6</b>
<b>119.2</b>	<b>2020</b>	13:1	<hr/>
21:22	19:20	<b>26/27</b>	<b>6</b>
<b>11:10</b>	<b>2021</b>	13:18	6:4 23:6
4:1	8:5	<b>262</b>	<b>6,600</b>
<b>11:59</b>	<b>2023</b>	8:2	14:20,25
36:7	6:3 18:25	<hr/>	<b>63103</b>
<b>124</b>	19:1	<b>3</b>	4:15
21:18	<b>2024</b>	<hr/>	<b>65102</b>
<b>127</b>	12:16 27:19	<b>350</b>	4:24
22:17	<b>2025</b>	13:15	<hr/>
<b>131</b>	11:15 12:19	<b>36</b>	<b>7</b>
21:19	13:14 19:2	7:13	<hr/>
	26:5 27:4	<b>36-month</b>	<b>7,000</b>
			18:22
			<b>7,068</b>

18:22	<b>accredited</b>	<b>advanced</b>	<b>analyzing</b>
<b>700</b>	11:3 23:8	31:23 32:1,24	18:7
18:13	<b>accurate</b>	<b>ahead</b>	<b>ancillary</b>
	23:8	4:2 34:5,7	11:19
<hr/>	<b>acknowledge</b>	35:22	<b>Andrew</b>
<b>8</b>	14:6	<b>air</b>	4:16 5:21
<hr/>	<b>Act</b>	31:19 32:8	<b>announced</b>
<b>8</b>	19:17	<b>alert</b>	21:1,5
23:16	<b>action</b>	23:25 24:1	<b>annual</b>
<b>80</b>	16:22	<b>all-time</b>	9:8 10:23
18:10	<b>actions</b>	22:17	<b>annually</b>
<b>800</b>	14:9 24:2	<b>allowed</b>	7:11
13:13,19	<b>actual</b>	20:4 25:2	<b>answers</b>
15:21	15:13	<b>ambient</b>	28:21
<b>86</b>	<b>add</b>	15:12 18:12	<b>anticipated</b>
9:20 15:22	18:13	23:11	13:11
<b>887</b>	<b>added</b>	<b>Ameren</b>	<b>apologies</b>
8:2	29:22	4:7,9,11,12,	30:18
<b>8th</b>	<b>adding</b>	13 5:7,8,21	<b>appearance</b>
12:14	8:24 29:24	6:7,9,11,15,	4:11
<hr/>	<b>additional</b>	21 7:2 8:15	<b>appearing</b>
<b>9</b>	11:12 28:13	10:18 11:14	5:1
<hr/>	<b>address</b>	12:7,13 14:7,	<b>apply</b>
<b>90</b>	5:22 9:1 16:3	18 16:20	14:24
18:12	17:20	17:11,19	<b>approach</b>
<hr/>	<b>adherence</b>	20:24 22:4,10	6:13 14:7,23
<b>A</b>	16:13	23:10 24:8	27:10 29:4
<hr/>	<b>adjoined</b>	30:2 33:14,	<b>approaches</b>
<b>a.m.</b>	36:4	16,17,18 35:7	28:19
4:1 36:8	<b>adjustment</b>	<b>Ameren's</b>	<b>approve</b>
<b>access</b>	9:22	13:13 24:13	11:5
25:8,9	<b>adjustments</b>	<b>amount</b>	<b>approximately</b>
<b>accommodate</b>	9:14,15	25:14	7:24
17:13	<b>advance</b>	<b>amounts</b>	<b>April</b>
<b>accreditation</b>	11:15 12:6	13:22	6:14
9:5,9,16,19	16:3 20:10	<b>analysis</b>	<b>area</b>
11:19 13:7,17	23:23 27:23	4:17 23:14	27:16
28:8,12	28:19	29:23 30:2	
<b>accreditations</b>			
15:20			



<b>arguably</b> 12:8 14:16	<b>aware</b> 10:25	7:11	<b>brown</b> 22:3
<b>arrived</b> 23:9	<b>axis</b> 7:8	<b>behalf</b> 5:2	<b>built</b> 26:16
<b>aspect</b> 7:7	<hr/> <b>B</b> <hr/>	<b>Belonging</b> 4:6	<b>bullet</b> 24:12,14,19, 20
<b>aspects</b> 33:7	<b>back</b> 7:12 9:16	<b>bend</b> 14:1	<b>bullets</b> 14:8
<b>assume</b> 31:20	17:17 22:10, 17 23:6 24:12	<b>benefit</b> 11:20 29:23 30:2,3	<b>bumps</b> 17:8
<b>auction</b> 6:14,16 8:1 11:11,25 12:5,24 15:9 27:13,20,24, 25 28:1,5,18 29:1,3	28:5,22 31:22 34:17,22	<b>big</b> 17:11	<b>business</b> 13:10
<b>auctions</b> 11:21	<b>balance</b> 15:18	<b>bilateral</b> 27:22	<b>buy</b> 16:20
<b>Audrain</b> 18:8,9	<b>balancing</b> 7:3 33:16	<b>bit</b> 10:13 30:10 34:24	<b>buying</b> 27:13
<b>authorities</b> 31:22	<b>bank</b> 26:14	<b>bitter</b> 15:2 17:5	<hr/> <b>C</b> <hr/>
<b>authority</b> 7:3 33:16	<b>bar</b> 13:2 15:3,17 16:7 21:17,20	<b>blue</b> 11:9,10 13:2, 10	<b>calculates</b> 7:10
<b>availability</b> 16:10,15 17:20 19:16 21:13,14	<b>bars</b> 11:8 12:25 13:12	<b>bottom</b> 29:10	<b>calculating</b> 7:20
<b>Avenue</b> 4:15	<b>based</b> 10:22 11:17, 18 23:13,14 25:11,21,24 31:19	<b>bounce</b> 23:2	<b>calculation</b> 8:12
<b>average</b> 7:13 9:19 19:20	<b>baseline</b> 25:13	<b>Box</b> 4:23	<b>Callaway</b> 7:23 8:7,10 13:3 15:10 28:3,9
<b>averaged</b> 9:7 14:20	<b>basis</b> 9:3 16:8	<b>boxes</b> 19:9	<b>capability</b> 7:25 15:10 17:22 18:8,14 23:10 35:5
<b>awaiting</b> 33:9	<b>began</b> 4:1	<b>break</b> 11:1	<b>capable</b> 28:10
	<b>begin</b> 4:10 5:24	<b>briefing</b> 30:8	<b>capacitor</b> 26:14
	<b>begins</b>	<b>bring</b> 11:15 30:19	
		<b>broken</b> 11:9 19:8	

<b>capacity</b> 5:25 6:3,11, 16 7:4,9,15 8:15,18,20,21 9:2,13,20 10:17 11:3, 19,23 12:23 13:18,19 14:22 15:7,18 16:8 23:18 24:6,15,24 25:3,4 27:20, 23 28:5,19 29:5,9 34:24 35:3,14	<b>Chairman's</b> 31:10 <b>change</b> 8:16 15:14 <b>chart</b> 6:1,17 10:18 13:20 14:17 15:3 20:13 21:3,7,17,20 28:8 <b>charts</b> 8:21 9:12 <b>choice</b> 17:14 <b>Chouteau</b> 4:15 <b>Circuit</b> 12:14 <b>circumstances</b> 15:23 <b>City</b> 4:23 <b>class</b> 9:19 <b>Clean</b> 19:17 <b>clear</b> 10:24 29:2 <b>cleared</b> 10:20 <b>clearing</b> 27:25 29:6,8 <b>clears</b> 29:6 <b>closed</b> 20:3 <b>closer</b> 16:9 18:12	<b>closing</b> 19:24 <b>CO2</b> 19:19 <b>coincident</b> 10:4,9 <b>cold</b> 15:2,5 16:11, 16 17:4,5,9 18:1,4,15 <b>combination</b> 21:12 <b>combustion</b> 6:22 16:6,15 17:23 18:10 <b>commands</b> 32:3 <b>comment</b> 24:23 25:24 <b>commercially</b> 13:14 <b>Commission</b> 4:9,23 <b>Commissioner</b> 29:15,17,19 30:6,18,20,25 31:3,7,9,10 34:3,6,15,19, 21 35:17 <b>Commissioners</b> 5:6,9 35:19 <b>commitment</b> 19:11 <b>commitments</b> 19:14 <b>company</b> 4:6 20:21 36:5	<b>COMPANY'S</b> 36:1 <b>compensators</b> 26:15 <b>completed</b> 26:9,17 27:6, 18 <b>completion</b> 26:22,25 <b>concern</b> 29:9 <b>concluded</b> 36:7 <b>conclusion</b> 8:22 12:4 <b>conclusions</b> 12:12 <b>conditions</b> 14:10 23:15 <b>confident</b> 28:24 <b>consequences</b> 30:22 <b>conservative</b> 22:12 23:24 <b>consideration</b> 8:13 <b>constrained</b> 32:21 <b>construct</b> 9:4 10:23 11:1 29:3 <b>construction</b> 26:20 <b>contested</b> 5:10 <b>context</b> 22:15,20
---	--	---	---

<b>contingency</b> 27:7 28:6	<b>cover</b> 16:1	6:21 17:4 18:10	<b>decline</b> 35:11
<b>continually</b> 14:10	<b>covered</b> 31:4	<hr/> <b>D</b> <hr/>	<b>default</b> 9:16
<b>continue</b> 25:8,20	<b>create</b> 27:21	<b>d/b/a</b> 4:7	<b>deficiency</b> 6:3,9,18 21:6 29:2,9
<b>contract</b> 12:9	<b>created</b> 35:14	<b>dark</b> 11:8 13:1,10	<b>deficit</b> 35:2
<b>contracts</b> 16:17	<b>Creek</b> 17:23	<b>data</b> 6:19 7:6 10:3	<b>defined</b> 33:7
<b>contributions</b> 11:17	<b>critical</b> 19:6 23:22 24:6 33:22	<b>day</b> 10:7 15:2,5, 11,13,22,24 16:24 18:2 22:14 24:6,7	<b>delta</b> 8:2
<b>controls</b> 30:5	<b>critically</b> 18:15	<b>days</b> 17:4,9 18:6, 15 23:20,22, 23	<b>demand</b> 13:10 14:1 20:17,20 22:6
<b>conversation</b> 12:11,20	<b>cross-</b> <b>examination</b> 5:11	<b>deal</b> 34:11	<b>demonstrate</b> 14:3 29:8
<b>Corporate</b> 4:17	<b>CTG</b> 16:6,8,18 19:5,8 20:2	<b>dealing</b> 8:8	<b>demonstrated</b> 6:10,15 11:22 30:3
<b>correlate</b> 25:17	<b>CTGS</b> 17:4 19:10, 13,18 20:1,4, 7,16 22:5 24:9 25:1 31:17 32:7,10	<b>deciding</b> 29:23	<b>depending</b> 27:2
<b>cost</b> 29:23 30:2 35:10	<b>curious</b> 30:23 31:5	<b>decision</b> 33:23	<b>depends</b> 15:23
<b>costs</b> 35:10	<b>current</b> 6:15 10:23 11:8,18 13:22 18:16 25:22	<b>deck</b> 6:25	<b>deploy</b> 17:3 20:11,18
<b>Counsel</b> 4:19,25 5:2	<b>customers</b> 33:13	<b>declaration</b> 20:9 22:12 23:24	<b>deployed</b> 21:24 22:8 30:11
<b>counted</b> 9:20	<b>cycle</b> 13:20,21 14:2	<b>declarations</b> 23:22	<b>detail</b> 13:12
<b>counting</b> 25:4		<b>declare</b> 21:8	<b>determined</b> 33:9
<b>couple</b> 19:1 23:2 31:13		<b>declared</b> 20:18	<b>develop</b> 10:5
<b>court</b> 5:3 12:14 36:6			<b>develops</b> 23:10

<b>devices</b> 30:10,15,24	<b>drive</b> 28:17	29:9	34:11
<b>difference</b> 9:1 10:13 15:15 35:3	<b>driving</b> 34:14	<b>embedded</b> 13:9	<b>equal</b> 19:19
<b>differences</b> 10:1	<b>drop</b> 27:17	<b>emergencies</b> 20:25	<b>equipment</b> 17:22
<b>differently</b> 7:1	<b>dual</b> 17:22 18:8	<b>emergency</b> 19:14 20:8,9, 10,12,18	<b>essentially</b> 7:6 11:13 12:6 29:10
<b>differs</b> 10:1	<b>due</b> 21:14	21:2,25 22:2 23:18,21 24:4 25:2 31:17,20	<b>estimate</b> 27:4
<b>directly</b> 6:2 34:9	<b>Duke</b> 22:19	32:2,10 33:19,24	<b>evening</b> 17:7,12
<b>Director</b> 4:16,17,18	<hr/> <b>E</b> <hr/>	<b>emissions</b> 19:16,19,21, 22 20:5 25:12,13,16 32:22 33:10, 21	<b>event</b> 14:14,15,16 15:13 20:15 21:25 22:13 24:3,5 29:11 32:2 33:2,19
<b>disclaimer</b> 9:25	<b>earlier</b> 30:16 34:22	<b>energy</b> 4:6 11:17 13:22,25 17:23 18:8,9 19:17,24 28:16,24	<b>events</b> 14:5,12 20:23 21:3,9 22:7 25:5
<b>discuss</b> 6:22 9:15 21:7	<b>early</b> 25:21 27:19 30:4	<b>engineering</b> 23:14 26:19	<b>evolution</b> 13:24
<b>discussed</b> 11:25 30:16 35:20	<b>easier</b> 14:2	<b>engineers</b> 23:11 30:19	<b>exceed</b> 18:22 20:4
<b>discussing</b> 27:3	<b>economic</b> 19:11 32:11	<b>Energy</b> 22:19	<b>exhibit</b> 35:21,22 36:1,5
<b>discussion</b> 9:24 12:2 34:23	<b>economically</b> 20:14 21:21	<b>entry</b> 4:11	<b>exist</b> 6:18 11:6
<b>displayed</b> 6:1	<b>efficiency</b> 13:22,25	<b>environmental</b> 31:19,22	<b>existing</b> 17:21
<b>distinction</b> 19:9	<b>EFIS</b> 35:24	<b>EO-2022-0215</b> 4:4	<b>expect</b> 12:11,13 15:4,21 25:20,22 35:11,14
<b>diversity</b> 10:11	<b>eight-month</b> 8:4	<b>EPA</b> 32:5 33:8	
<b>divided</b> 15:20	<b>electric</b> 4:6 6:7 20:6 21:12		
<b>document</b> 32:4	<b>electrically</b> 33:15		
	<b>elevated</b>		

<b>expectation</b> 13:14 23:12	6:20	<b>flow</b> 16:14 17:11, 15	14:19 17:2 25:9 27:7 28:4,11
<b>expectations</b> 15:10	<b>feast</b> 29:4	<b>focus</b> 19:4 35:4	<b>fully</b> 8:7 18:23 26:10
<b>expected</b> 23:15 25:8	<b>Federal</b> 12:14	<b>focusing</b> 21:16	<b>future</b> 28:13
<b>expensive</b> 35:11	<b>feedback</b> 33:9	<b>follow</b> 32:15 33:12 34:4	<hr/> <b>G</b> <hr/>
<b>explain</b> 4:12 7:22 30:10 31:24	<b>FERC</b> 10:25 11:4	<b>footprint</b> 10:12 28:23	<b>gap</b> 16:2
<b>explanation</b> 31:1	<b>figure</b> 28:2	<b>forced</b> 7:13,15 8:4, 12 13:6 28:7, 15	<b>gas</b> 16:12,16,19, 24 17:11,15, 25 18:1,3,18 25:9
<b>exploring</b> 17:19	<b>figured</b> 5:23	<b>forecast</b> 10:1,4,5,9,10 14:23 21:18	<b>gen</b> 22:13
<b>extend</b> 12:19 26:3	<b>File</b> 4:4	<b>forecasted</b> 6:3	<b>generally</b> 10:10,12 11:16 21:11 23:21 24:5 29:5
<b>extended</b> 13:4,6	<b>filed</b> 8:16 10:25	<b>forecasts</b> 21:18	<b>generation</b> 6:21 14:8,12 19:4 21:9,20, 25 24:1,2,3 26:11
<b>extending</b> 12:20	<b>filing</b> 9:22	<b>Forgive</b> 23:2	<b>generator</b> 7:12 8:4 21:13
<b>extent</b> 12:21	<b>fill</b> 27:25	<b>forward</b> 25:15	<b>generators</b> 9:13
<b>extreme</b> 21:12	<b>filling</b> 35:16	<b>found</b> 33:3	<b>gigawatts</b> 21:19,20,22 22:3,4,11,17
<hr/> <b>F</b> <hr/>	<b>finally</b> 13:20	<b>frame</b> 13:8 26:4	<b>good</b> 4:14 5:19,20
<b>fact</b> 17:17 32:5 33:1	<b>finish</b> 34:7	<b>FTE</b> 16:21	
<b>factored</b> 8:24	<b>firm</b> 16:17,21 17:15	<b>fuel</b> 17:22 18:1,2, 5,8 21:15	
<b>fairly</b> 22:18	<b>flat</b> 24:24	<b>full</b> 7:11,25 10:24	
<b>famine</b> 29:4	<b>fleet</b> 6:21 14:8 16:6,7,8,15, 18 19:5,6,8, 10		
<b>fashion</b>			

12:19	11:11 15:16	<b>identify</b>	<b>Indiana</b>
<b>green</b>	<b>historic</b>	27:11	6:5
11:12 13:12	25:12,13	<b>idled</b>	<b>indicator</b>
<b>grouping</b>	<b>historical</b>	17:22	7:21 8:6 9:4
19:13	32:21	<b>II</b>	28:9
<b>growth</b>	<b>hit</b>	13:6	<b>information</b>
13:10,24	20:18	<b>Illinois</b>	5:3,25 8:17
<b>guess</b>	<b>hole</b>	6:4,23 19:15,	21:16 30:23
28:25	35:13	17,18 20:2,4,	<b>installation</b>
<b>guys</b>	<b>Holsman</b>	7 22:5 25:7,9	26:12,13,14
30:9	29:15,17,19	31:18,22	<b>installed</b>
<hr/>	30:6,20 31:3	32:5,20 33:4,	9:13 15:7
<b>H</b>	34:3,6,15,19,	8,13 34:11	16:8 24:15
<hr/>	21 35:17	<b>illustrates</b>	<b>installing</b>
<b>haircut</b>	<b>Holsman's</b>	10:18	18:8 30:5
7:15 8:8 9:9	31:11	<b>IMM</b>	<b>instruction</b>
16:10 28:12,	<b>honestly</b>	12:1,4,11	32:4
15	31:10	<b>impact</b>	<b>integrated</b>
<b>handed</b>	<b>Honor</b>	30:12	14:19 18:23
29:21	5:12	<b>impacting</b>	<b>intended</b>
<b>happened</b>	<b>horizon</b>	13:7 27:15	14:6 17:19
8:9	26:22,25 27:3	<b>important</b>	<b>internal</b>
<b>happening</b>	<b>hot</b>	33:20	17:19
9:10	23:25	<b>impractical</b>	<b>interruptible</b>
<b>hard</b>	<b>hour</b>	16:22	16:19
29:3,11	14:19 18:23	<b>improve</b>	<b>investigation</b>
<b>heard</b>	<b>hours</b>	35:12	4:5 5:10
25:10	16:24 17:5,	<b>include</b>	<b>IRP</b>
<b>heart</b>	11,12 23:19	19:19 21:14	8:16 9:11,12,
10:15 14:13	24:6 25:17	<b>included</b>	22 10:2 15:8
<b>heels</b>	<hr/>	11:12 35:8	24:13,14,25
34:23	<b>I</b>	<b>includes</b>	35:8
<b>held</b>	<b>ideas</b>	22:4,5	<b>Island</b>
13:3	26:24	<b>increased</b>	4:6 5:22
<b>high</b>	<b>IDENTIFICATION</b>	21:2	11:10,24
18:21 21:12,	36:6	<b>Independent</b>	12:1,5,10,16,
19 29:7	<b>identified</b>	12:1	21 16:1,3
<b>highlight</b>	25:25		17:18 19:2
			25:20 26:2

27:16 30:17	<b>justified</b>	<b>laws</b>	14:5,15,16,
<b>Island's</b>	11:16	31:19	18,20,21,23
16:4	<hr/>	<b>learned</b>	15:1,5 16:1
<b>issue</b>	<b>K</b>	35:1	17:8,18 18:6,
10:16 12:14	<hr/>	<b>legislation</b>	14,20,22,24
16:11,13 20:9	<b>Kevin</b>	25:7	20:15,21
23:24 26:2	4:21	<b>level</b>	21:12,13,17,
<b>issued</b>	<b>key</b>	17:18 21:7	18,19,22
22:12	6:8 7:7 8:12,	25:15	22:11,17 25:5
<b>issues</b>	14 15:25	<b>levels</b>	27:17 28:11
27:14 32:2	16:4,5 24:3	25:16	33:3,18,20,23
<b>issuing</b>	<b>kind</b>	<b>life</b>	34:10
23:21	30:11 35:13	29:22	<b>loads</b>
<b>items</b>	<b>knowing</b>	<b>light</b>	22:9,16,21
8:14	11:4	11:10	<b>local</b>
<hr/>	<b>Kolkmeyer</b>	<b>lighting</b>	33:16
<b>J</b>	31:7,9	17:7	<b>location</b>
<hr/>	<hr/>	<b>likelihood</b>	30:17
<b>Jefferson</b>	<b>L</b>	21:2	<b>logical</b>
4:23	<b>lack</b>	<b>limitations</b>	16:20
<b>Jobs</b>	21:14	32:9	<b>long</b>
19:17	<b>lagging</b>	<b>limited</b>	8:19 23:19
<b>Judge</b>	7:21 8:6 9:4	19:16 25:11	<b>looked</b>
4:2,19,21,25	28:9	35:2	8:17 22:18
5:5,15,20	<b>land</b>	<b>limits</b>	<b>lose</b>
22:24 29:14,	29:11	19:18 20:5	34:10
15 31:7,13,16	<b>large</b>	<b>listed</b>	<b>lot</b>
32:13,17	28:15	15:6	6:22
34:3,5,15,19	<b>largely</b>	<b>litigation</b>	<b>Louis</b>
35:18 36:3	9:6 35:10	12:15 25:22	4:15 26:15
<b>July</b>	<b>larger</b>	26:23	<b>low</b>
18:20 21:16	26:12	<b>lives</b>	21:14 29:6
22:10,11	<b>late</b>	25:18	<b>lower</b>
<b>jump</b>	8:5 17:7	<b>load</b>	10:10
14:13	<b>latest</b>	6:8 7:12,25	<hr/>
<b>jumping</b>	27:4	8:25 10:1,2,	<b>M</b>
10:15	<b>law</b>	4,5,7,12	<hr/>
<b>June</b>	20:3 33:7	13:20,21	<b>made</b>
8:15			9:22 19:9

36:1	23:25 24:2,3	<b>Michels</b>	4:7,11,15,22,
<b>main</b>	<b>means</b>	4:17 24:18,21	24 5:21 6:4,
24:20	17:24 20:6	30:1 35:6	6,10,15,18,21
<b>maintain</b>	<b>measures</b>	<b>middle</b>	7:3 11:14
20:5	27:11	21:17	14:7,18 22:10
<b>make</b>	<b>mechanism</b>	<b>MIEAA</b>	32:7,10
5:17 9:14	29:7	13:24	33:13,14,16,
10:25 17:14	<b>meet</b>	<b>mild</b>	17,18
33:2 35:2	6:11 11:23	29:8	<b>Missouri's</b>
<b>makes</b>	15:4 17:18	<b>million</b>	6:7,11 10:18
16:22	18:6,14	30:4	22:4 24:8
<b>manage</b>	20:14,21	<b>mind</b>	<b>mitigating</b>
19:21	21:22 25:4	26:25	27:11
<b>managing</b>	<b>meet all</b>	<b>minutes</b>	<b>mitigation</b>
25:16	6:16	24:10	30:24
<b>margin</b>	<b>meeting</b>	<b>MISO</b>	<b>modeling</b>
11:23 14:24	14:3 34:23	5:25 6:4,7,	8:15 10:1
15:1	<b>megawatt</b>	13,19,24 7:10	13:15 22:9
<b>mark</b>	8:2 35:2	9:3,16,18,19	24:24,25
35:22	<b>megawatts</b>	10:3,7,11,25	<b>moderate</b>
<b>MARKED</b>	7:9,24 8:2	13:21 15:9,20	29:8
36:5	13:13,15,17,	16:25 17:3	<b>Modest</b>
<b>market</b>	19 14:20	19:11 20:9,17	13:10
11:17,20 12:1	15:21 16:7,9	21:3,6,8,17,	<b>Module</b>
27:22,23	18:11,12,14,	21 22:9,11,	10:3 13:21
<b>marking</b>	22 19:10,14	12,16,18,20	<b>Monitor</b>
35:21	20:7,16 22:5,	23:21,23,24	12:1
<b>materials</b>	6 24:9 25:1	25:1,25 27:10	<b>monitoring</b>
21:4	<b>member</b>	28:12,13,20	14:10
<b>Matt</b>	22:20	29:1,3,7 32:2	<b>month</b>
4:17 24:24	<b>mentioned</b>	33:15,24	18:20
30:1 35:6	23:7	34:22	<b>months</b>
<b>Matters</b>	<b>Meramec</b>	<b>MISO's</b>	7:13 23:15
4:5	19:1	10:19,22	<b>morning</b>
<b>maxed</b>	<b>met</b>	11:25 20:24	4:3,14 5:19,
17:9	33:3	27:10 32:11	20 17:6,12
<b>maximum</b>	<b>Meyer</b>	<b>MISO-DECLARED</b>	
21:9,24 22:13	4:16 5:19,21	20:25	
	24:22	<b>Missouri</b>	



<hr/> <b>N</b> <hr/>	<hr/> <b>O</b> <hr/>	25:21 32:2,21 33:25	36:1
<b>nameplate</b> 23:8	<b>obligations</b> 6:12,17 10:17	<b>operation</b> 25:11	<b>participate</b> 25:3 27:20
<b>narrows</b> 19:5	14:3,5	<b>operational</b> 16:14	<b>participation</b> 11:11 12:2
<b>Nathan</b> 5:1	<b>offer</b> 7:21 13:12 22:15	<b>opportunity</b> 5:7	<b>parties</b> 5:11
<b>natural</b> 16:12 17:25 18:18	<b>offered</b> 5:25 19:12 20:7 22:2 25:1 32:11	<b>ops</b> 22:12 23:24	<b>past</b> 8:9
<b>necessarily</b> 26:7	<b>offers</b> 21:5,17	<b>option</b> 18:7,15	<b>peak</b> 10:4,5,6,9,10 14:12,15,16, 19,23 15:1 18:20 22:7, 10,11,17 25:5
<b>needed</b> 17:18 19:13	<b>Office</b> 4:23 5:2	<b>options</b> 35:15	<b>peakers</b> 6:22 19:6
<b>non-coincident</b> 10:10	<b>OFOS</b> 16:14,23	<b>order</b> 5:23 9:2 12:14,15,18 14:4 20:5,23	<b>peaking</b> 10:6,13
<b>normal</b> 19:11 21:22 32:8	<b>Ohio</b> 22:19	<b>orders</b> 16:14	<b>penalized</b> 34:16
<b>normalized</b> 10:5 14:23	<b>oil</b> 18:1,2,5	<b>original</b> 29:20	<b>penalties</b> 33:1
<b>note</b> 6:6 29:21	<b>oil-fired</b> 18:14	<b>outage</b> 7:13 8:4,9,12 13:4,6 28:7, 10,15	<b>penalty</b> 33:5,6,11
<b>notice</b> 13:1,11	<b>OMS</b> 5:25	<b>outages</b> 7:15	<b>Peno</b> 17:22
<b>NOX</b> 19:19	<b>On-the-record</b> 4:4,8	<b>outcome</b> 26:23	<b>people</b> 5:16
<b>NSR</b> 12:15	<b>operable</b> 13:14	<b>output</b> 32:21	<b>percent</b> 9:20,21 11:18 13:17 15:21, 23
<b>number</b> 9:8 35:15	<b>operate</b> 11:20 18:17 24:10 27:9 34:10	<b>Overton</b> 26:14	<b>percentage</b> 7:14 14:25 20:21
<b>numbers</b> 6:25 8:23 23:7,9	<b>operating</b> 15:22 18:16, 17 19:25 20:22 24:7	<hr/> <b>P</b> <hr/>	<b>perfect</b> 5:23
		<b>part</b> 6:20 33:7	

<b>permission</b> 31:21,23 32:1,25	29:1,2	<b>PRAS</b> 12:7	<b>procedures</b> 24:4
<b>permit</b> 18:16,17 32:9	<b>plans</b> 35:4	<b>predict</b> 29:3,11	<b>proceeding</b> 4:4,9 5:6
<b>permits</b> 31:19	<b>plant</b> 7:23	<b>preferred</b> 8:16 35:8	<b>proceedings</b> 4:1 36:7
<b>person</b> 30:13	<b>plants</b> 25:9 33:12	<b>prep</b> 14:8	<b>process</b> 7:11 12:7 23:18 26:16 28:12,14 31:17,20
<b>perspective</b> 17:10 21:6 24:11 33:15	<b>podium</b> 5:16,18	<b>prepared</b> 22:23	<b>processes</b> 21:22
<b>phase</b> 26:20	<b>point</b> 8:7 12:22 13:5 19:22 20:11 21:23 22:13 24:12, 20	<b>presentation</b> 5:8 6:2,23 7:5 26:7	<b>procure</b> 9:2 27:23
<b>piece</b> 15:17	<b>pollution</b> 30:5	<b>presentations</b> 5:17	<b>procurement</b> 26:20
<b>pipeline</b> 16:21,23	<b>portion</b> 6:7 19:10	<b>presented</b> 6:19	<b>procuring</b> 9:3 28:19
<b>pipelines</b> 16:12,16,19 17:9	<b>position</b> 8:15,18,20,21 10:19,21 24:24,25 27:21,24 35:14	<b>pretty</b> 7:19 8:23 31:11 35:10	<b>production</b> 15:23 23:13
<b>pivoting</b> 14:4 18:19 20:24	<b>possibly</b> 26:4	<b>price</b> 19:12 27:25 29:6,8	<b>program</b> 13:11
<b>place</b> 5:18,24 6:14 24:4	<b>Post</b> 4:23	<b>Prior</b> 21:10	<b>programs</b> 13:25 20:17
<b>plan</b> 8:16 14:11 27:7 28:6 34:24 35:8,9	<b>potential</b> 27:16 28:14 30:21	<b>proactive</b> 14:7	<b>progressed</b> 33:24
<b>planning</b> 6:13,15 7:23 8:1,10 10:17, 19,24 11:9, 22,23 12:13, 16,23,25 13:16,18 22:16,21	<b>potentially</b> 28:18 30:9	<b>probability</b> 12:19	<b>projects</b> 11:14 12:18 17:19,21 26:1,3,9,11 27:2
	<b>PRA</b> 8:1 10:19 20:25 21:4 25:1,3 28:20, 22,24	<b>problem</b> 29:25	<b>prolonged</b> 29:22
		<b>procedural</b> 20:19	<b>proposed</b> 11:2,14 13:13
		<b>procedure</b> 20:10 22:1	<b>provide</b> 14:8 32:5

<b>provided</b> 5:3 30:8	<b>quick</b> 23:6	5:24 8:1 21:8,11	13:2,22
<b>provision</b> 20:3	<hr/> <b>R</b> <hr/>	<b>recently</b> 18:19 35:8	<b>regain</b> 18:4
<b>prudent</b> 11:5	<b>ramp</b> 35:4	<b>reconcile</b> 9:12	<b>regulation</b> 30:22
<b>pseudo</b> 7:2 33:15	<b>ramped</b> 33:2	<b>record</b> 31:1 35:21,23 36:2	<b>regulators</b> 30:15
<b>public</b> 4:22,25 5:2,3 21:1	<b>rare</b> 21:10	<b>recover</b> 13:5 28:4	<b>Regulatory</b> 4:18
<b>published</b> 21:3	<b>rate</b> 7:14 8:12	<b>recovered</b> 28:10	<b>related</b> 16:5
<b>purpose</b> 5:5	<b>rateable</b> 16:24	<b>recovering</b> 28:4	<b>reliability</b> 12:17 20:5 26:2 27:14
<b>purposes</b> 9:23 10:3 13:22 14:22	<b>rates</b> 15:14	<b>recovers</b> 13:3	<b>remain</b> 12:21
<b>put</b> 34:2,9 35:23	<b>reach</b> 18:12 21:23 22:13	<b>reduce</b> 16:14 28:17	<b>remainder</b> 25:18
<hr/> <b>Q</b> <hr/>	<b>reached</b> 18:21 21:25	<b>reduced</b> 8:10	<b>remarks</b> 22:23
<b>qualified</b> 8:1	<b>read</b> 29:21	<b>reductions</b> 13:23 19:22	<b>removed</b> 19:3
<b>qualify</b> 25:2	<b>readiness</b> 21:4 22:22	<b>referencing</b> 24:14	<b>renewable</b> 11:13
<b>question</b> 10:15 14:4,14 16:20 17:17 18:24 24:22 28:25 34:4	<b>reading</b> 25:24	<b>referring</b> 7:9 24:19	<b>renewables</b> 9:15 11:16 15:16 21:14 34:25
<b>questions</b> 5:7,9,11,22 22:25 23:2,4 29:14,16,18 31:4,8,10,11, 13,15 32:13, 18 34:20	<b>real</b> 14:5 23:6,17 24:3,11	<b>reflect</b> 7:19 9:23 11:5	<b>repairs</b> 8:4
	<b>reality</b> 15:13	<b>reflected</b> 10:22 22:3 24:13	<b>repeat</b> 12:7
	<b>realized</b> 13:23	<b>reflection</b> 15:13	<b>rephrase</b> 28:25
	<b>reason</b> 32:4	<b>reflects</b> 6:24 9:8,12 10:11,12	<b>report</b> 32:25 33:8
	<b>recent</b>		<b>reporter</b> 5:4 36:6

<b>represent</b> 13:13	<b>responded</b> 6:10	<b>room</b> 30:14	<b>season</b> 8:18 15:14
<b>represents</b> 11:13 13:19 14:22,25 21:20	<b>response</b> 13:11 20:17, 20 22:6 24:11	<b>roughly</b> 18:10 19:13	<b>seasonal</b> 23:10
<b>request</b> 32:1	<b>restarting</b> 17:21	<b>rules</b> 11:5,18 16:13	<b>seasons</b> 11:1
<b>require</b> 16:12,16,23 18:16	<b>restriction</b> 31:18	<b>ruling</b> 29:20	<b>securing</b> 10:16
<b>required</b> 12:2 19:23	<b>restrictions</b> 19:17,21 20:1 32:6	<b>run</b> 16:11 17:1, 24,25 19:6 25:14,17	<b>sell</b> 7:16 11:3 12:6
<b>requirement</b> 11:24	<b>result</b> 8:3 19:24	<b>running</b> 18:2	<b>Senior</b> 4:16
<b>reserve</b> 11:23 14:24 15:1	<b>results</b> 6:1,12 9:5 21:1,4 25:25	<b>Rush</b> 4:5 5:22 11:10,24 12:1,5,10,16, 21 13:1 16:1, 3 17:18 19:2 24:16,22,23 25:20 26:2,9 27:5,16,18 30:17	<b>serve</b> 18:24 33:12, 18,20,23
<b>reside</b> 6:23 19:15	<b>retail</b> 14:18,20 18:20,22 22:10	<b>Rush's</b> 27:15	<b>served</b> 6:7 16:18
<b>resides</b> 6:8	<b>retire</b> 12:16,18 27:5,18 29:23	<hr/> <b>s</b> <hr/>	<b>service</b> 4:22 6:8
<b>resolution</b> 25:23	<b>retired</b> 13:1 26:10		<b>set</b> 14:18 18:20 21:8 22:11
<b>resource</b> 6:14,25 7:17 8:1 9:18 12:9 15:11 17:20 27:20 29:1	<b>retirement</b> 16:4 27:7,15 30:22		<b>settlement</b> 33:15
<b>resources</b> 7:3 8:24 11:8 12:5,23 15:4 19:3 20:12,14 21:23 22:14 24:8 25:3 27:10 28:17	<b>retires</b> 16:3 24:17,23 26:2	<b>Sauk</b> 13:5	<b>severe</b> 16:11
<b>respond</b> 14:9 32:3	<b>retiring</b> 30:4	<b>scenario</b> 21:19	<b>severely</b> 16:16 17:9 18:4
	<b>review</b> 18:16	<b>scenarios</b> 23:14	<b>shading</b> 11:13 22:3
	<b>rolling</b> 8:5	<b>scheduled</b> 16:17	<b>shifting</b> 9:5,10
		<b>scrubbers</b> 29:21,24	<b>ship</b> 16:23
			<b>short</b> 8:20 24:6

27:21,24	<b>simply</b>	<b>stacked</b>	7
28:18	17:13	15:3	<b>Storm</b>
<b>shorter</b>	<b>sites</b>	<b>stacking</b>	14:18
7:5	20:2	19:4	<b>stressful</b>
<b>shortfall</b>	<b>skip</b>	<b>staff</b>	14:16
28:22 35:5	5:23	4:19,22 30:8	<b>stressor</b>
<b>shortly</b>	<b>slice</b>	<b>stage</b>	14:5,14 15:13
21:4	7:6	24:5	20:15,23 25:5
<b>show</b>	<b>slide</b>	<b>standard</b>	<b>strict</b>
7:4 11:10	6:9 7:7,18	33:21	16:12
28:15	14:6 15:25	<b>standing</b>	<b>study</b>
<b>showed</b>	24:12 28:3,9	12:3,8	25:25
7:1 16:6	<b>slides</b>	<b>start</b>	<b>studying</b>
<b>showing</b>	8:18 35:21	5:8 31:23	17:21
6:2 7:8 13:18	<b>slightly</b>	32:4	<b>subject</b>
35:9	6:19 7:1	<b>started</b>	19:18
<b>shows</b>	8:19,20 21:5	4:3 14:15	<b>submit</b>
6:17 16:7	<b>slug</b>	26:21	13:21
30:8	17:11	<b>Statcom</b>	<b>submitting</b>
<b>shuffle</b>	<b>solar</b>	30:15	10:3
6:25	9:21 11:14	<b>static</b>	<b>substation</b>
<b>shut</b>	13:13 15:17,	26:15	26:13,14
17:6	18 21:15	<b>statute</b>	<b>sufficient</b>
<b>side</b>	<b>solved</b>	33:4	6:11,16 7:4
32:20	29:25	<b>step</b>	11:23 20:13
<b>significant</b>	<b>sort</b>	13:8 20:19	29:5
7:20 16:9	12:3	21:24 22:1	<b>summer</b>
25:14 30:7	<b>speak</b>	23:25 34:7	8:19,20 9:9
<b>SILVEY</b>	24:25	<b>stepping</b>	10:6 14:16
23:1,5 24:20	<b>specific</b>	19:23	18:19,25 19:2
25:6 29:13	19:20	<b>steps</b>	20:15 21:4
32:15,19	<b>split</b>	13:2 20:10	22:7,22
34:1,13,18	9:21	24:4 32:2	<b>supplement</b>
<b>similar</b>	<b>spring</b>	33:24	31:1
12:11 32:6	26:5	<b>Steve</b>	<b>support</b>
<b>simple</b>	<b>St</b>	4:18	12:9 27:10,16
6:21 16:22	4:15 26:15	<b>storage</b>	30:16
17:3 18:10		34:25 35:2,4,	<b>surrounding</b>

34:25	<b>telling</b>	27:3 29:14	<b>turbines</b>
<b>survey</b>	24:18	35:12	18:10
6:1,10,12	<b>temperature</b>	<b>times</b>	<b>turn</b>
<b>system</b>	23:13	19:7	17:4,6 19:12
12:9 14:10,11	<b>temperatures</b>	<b>today</b>	20:12 21:21
20:6 27:9	15:12 18:13,	4:8,16 11:6	<b>turned</b>
34:11	21 23:12	<b>told</b>	20:20
<b>systems</b>	<b>ten</b>	5:17	<b>TVRS</b>
20:24	24:10	<b>top</b>	30:9
<hr/>	<b>terms</b>	29:10	<b>Tying</b>
<b>T</b>	8:23 22:22	<b>topology</b>	22:9
<hr/>	27:14	22:18	<b>typically</b>
<b>table</b>	<b>test</b>	<b>totals</b>	18:2
23:10	7:12	7:17	<hr/>
<b>takeaway</b>	<b>theoretically</b>	<b>touched</b>	<b>U</b>
6:8 16:4,5	6:18	26:8	<hr/>
<b>takeaways</b>	<b>thing</b>	<b>transformer</b>	<b>UCAP</b>
15:25	13:5	26:12	7:8,9,10,19,
<b>takes</b>	<b>thinking</b>	<b>transient</b>	20,24 8:2,8,
14:7	24:16	30:14	10 9:4,8 11:7
<b>talk</b>	<b>thirty</b>	<b>transmission</b>	13:3,7 15:8
5:13 8:22	24:10	12:17 25:25	28:8
15:8 34:24	<b>Thompson</b>	26:11 27:17	<b>Uh-huh</b>
<b>talked</b>	4:21,22	<b>transport</b>	32:23
28:3	<b>thought</b>	16:21 17:16	<b>ultimately</b>
<b>talking</b>	11:5 33:11	<b>transportation</b>	20:1
23:17,19,20	34:7	16:17,19	<b>unavailable</b>
24:7 30:14	<b>tie</b>	<b>trigger</b>	7:14 9:7
<b>tariff</b>	10:8	20:21	17:14
12:3 16:13	<b>tied</b>	<b>trouble</b>	<b>uncertain</b>
<b>Tatro</b>	7:2 33:15	24:18	12:3,8
4:14,15 5:12	<b>time</b>	<b>true</b>	<b>understanding</b>
30:18,25	7:14 8:8 9:14	15:10	26:3,7
34:2,8,16	10:13 13:8	<b>trusting</b>	<b>unforced</b>
35:20,25	14:5 22:8,19	33:22	7:9
<b>Taum</b>	23:17 24:11	<b>turbine</b>	<b>Union</b>
13:5	25:15,17	6:22 16:6,15	4:6
<b>technology</b>	26:4,22,25	17:23	<b>unit</b>
35:12			11:4 12:3

19:19 23:12, 13 28:14	<b>values</b> 9:6,17 15:6,9	<b>Wendy</b> 4:14	<hr/> <b>Y</b> <hr/>
<b>units</b> 7:2,7,10 9:6 11:2,10,24 12:5,21 15:6 17:1,14,24 18:3,5,9 19:15 20:12 22:1 25:14,18 30:4 32:3 33:14,17,25	<b>Venice</b> 19:24	<b>wide</b> 28:23	<b>Y1</b> 25:25
<b>unlock</b> 22:1 23:18 24:1	<b>versus</b> 29:24	<b>Wildwood</b> 26:13	<b>year</b> 6:15 7:23 8:3,5,11 10:19,24 11:9,22 12:13,23,25 13:16,18 14:17 21:9 23:11
<b>unlocked</b> 22:14	<b>vertical</b> 7:8	<b>Williams</b> 5:1	<b>year's</b> 20:25
<b>updated</b> 35:8	<b>violate</b> 33:21	<b>Wills</b> 4:18	<b>years</b> 8:11 10:20 11:12 13:4 19:2 21:8,11 28:13 29:2
<b>upgrades</b> 27:17	<b>violated</b> 33:4,10	<b>wind</b> 9:18 15:17, 18,21,23 21:15	<hr/> <b>Z</b> <hr/>
<b>Uri</b> 14:18	<b>violating</b> 33:1	<b>window</b> 17:2 25:12	<b>zone</b> 6:4,6,24 7:3, 4 28:23 35:1
<b>utilities</b> 10:8	<b>voltage</b> 27:15 30:14, 16,22	<b>winter</b> 8:19,20 9:7 14:15,18,19 17:8,18,20 18:11	
<b>utility</b> 10:6	<b>volume</b> 16:24	<b>WOODRUFF</b> 4:2,19,25 5:5,15,20 22:24 29:15 31:7,13,16 32:13,17 34:5,15,19 35:18 36:3	
<b>utilize</b> 11:24 12:5 16:25	<hr/> <b>W</b> <hr/>	<b>work</b> 5:14 12:8	
<b>utilized</b> 12:22	<b>wait</b> 33:10	<b>workpapers</b> 8:18	
<b>utilizes</b> 24:14	<b>wanted</b> 17:15 35:3	<b>works</b> 28:14 29:10 31:21,25	
<hr/> <b>V</b> <hr/>	<b>warning</b> 24:2		
<b>vague</b> 33:7	<b>warnings</b> 21:2		
	<b>waterfall</b> 15:3		
	<b>weather</b> 14:23 16:12 18:4 21:12 23:25		
	<b>welcoming</b> 4:10		