

STATE OF NORTH DAKOTA  
PUBLIC SERVICE COMMISSION

Montana-Dakota Utilities Co. :  
Advance Determination of Prudence - : Case No.  
Big Stone Air Application : PU-11-163

Otter Tail Power Company :  
Advance Determination of Prudence - : Case No.  
Big Stone Air Application : PU-11-165

TRANSCRIPT OF  
CONSOLIDATED HEARING

Taken At  
State Capitol  
600 East Boulevard Avenue  
Bismarck, North Dakota  
November 29, 2011

BEFORE AL WAHL  
-- ADMINISTRATIVE LAW JUDGE --

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A P P E A R A N C E S

COMMISSIONERS PRESENT:

COMMISSIONER TONY CLARK, Chairman  
 COMMISSIONER KEVIN CRAMER  
 COMMISSIONER BRIAN P. KALK

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 UTILITIES CO. AND OTTER  
 TAIL POWER COMPANY.

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 UTILITIES CO.

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FOR THE APPLICANT,  
 OTTER TAIL POWER  
 COMPANY.

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A P P E A R A N C E S (Cont'd)

MR. MARK E. GRUMAN  
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FOR THE PUBLIC SERVICE  
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PUBLIC SERVICE  
COMMISSION ADVISOR.

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**C O N T E N T S (Continued)**

No.	Description	Off'd	Rec'd
1	OTP/MDU 108	AQCS Contract Cost Strategy	22 24
2	OTP/MDU 109	Natural Gas Conversion Study	22 24
3	OTP/MDU 109A	Natural Gas Conversion Study (trade secret)	22 24
4	OTP/MDU 110	Prefiled Rebuttal Testimony of Terry Graumann	22 24
5	OTP/MDU 111	South Dakota Regional Haze SIP	22 24
6	OTP/MDU 112	Assessment of Anticipated Federal and State Environmental Regulations	22 24
7	OTP/MDU 113	South Dakota Regional Haze Administrative Rules 74:36:21	22 24
8	OTP/MDU 114	Prefiled Revised Rebuttal Testimony of Jeffrey T. Kopp	20 20
9	OTP/MDU 115	Burns & McDonnell AQCS Pro Forma Economic Analysis	22 24
10	OTP/MDU 115A	Burns & McDonnell AQCS Pro Forma Economic Analysis (Trade secret)	22 24
11	OTP/MDU 116	Modeling Report for a BART Assessment of the Big Stone I Coal-Fired Power Plant, Big Stone City, South Dakota	140 140
12	OTP/MDU 117	(Late-filed) Copy of Minnesota Commission decision	206 209
13	OTP 201	Prefiled Rebuttal Testimony of Ward L. Uggerud	23 23
14	OTP 202	Otter Tail Application of Advance Determination of Prudence	23 23



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1 (The proceedings herein were had and made  
 2 of record, commencing at 8:30 a.m., Tuesday,  
 3 November 29, 2011, as follows:)  
 4 JUDGE WAHL: Good morning. I am Al Wahl,  
 5 the Administrative Law Judge, pursuant to temporary  
 6 appointment, designated by the Office of  
 7 Administrative Hearings upon the request of the  
 8 North Dakota Public Service Commission to serve as  
 9 the hearing officer for this consolidated hearing.  
 10 This is the consolidated hearing of the  
 11 applications of Montana-Dakota Utilities Co. and  
 12 Otter Tail Power Company for an advance  
 13 determination of prudence for their respective  
 14 investments in air quality control equipment at the  
 15 Big Stone Generating Plant. Those applications are  
 16 North Dakota Public Service Commission Cases No.  
 17 PU-11-163 and PU-11-165, respectively.  
 18 Before proceeding with the consolidated  
 19 hearing, I will ask the Commissioners for their  
 20 comments and any directions for the hearing.  
 21 Commission President Tony Clark.  
 22 COMMISSIONER CLARK: Just good morning and  
 23 welcome. I look forward to a good hearing over the  
 24 next day or so. We have a couple days set aside  
 25 for this, although I'd remind folks that's an end

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1 limit and not a goal necessarily. Thank you.  
 2 JUDGE WAHL: Commissioner Kevin Cramer.  
 3 COMMISSIONER CRAMER: Just good morning,  
 4 welcome. Thanks for all the hard work. I would  
 5 just -- I would just admonish the advocates to read  
 6 the five verses of Deuteronomy 20 this morning, and  
 7 it will speak for itself.  
 8 JUDGE WAHL: Commissioner Brian Kalk.  
 9 COMMISSIONER KALK: Just good morning and  
 10 thank you for all your work. And I just want to  
 11 know who's minding the store back at Otter Tail and  
 12 MDU. I look forward to a thorough hearing.  
 13 JUDGE WAHL: Thank you, Commissioners.  
 14 For the record, it is a little after 8:30  
 15 o'clock a.m., November 29, 2011, at the hearing  
 16 room of the North Dakota Public Service Commission,  
 17 Capitol Building, Bismarck, the time, date and  
 18 place duly noticed pursuant to and in accordance  
 19 with statute and rule for the consolidated hearing  
 20 of the applications of Montana-Dakota Utilities Co.  
 21 and Otter Tail Power Company for an advance  
 22 determination of prudence for their respective  
 23 investments in air quality control equipment at the  
 24 Big Stone Generating Plant, North Dakota Public  
 25 Service Commission Cases No. PU-11-163 and

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1 PU-11-165, respectively.  
 2 The Notice of Consolidated Hearing for  
 3 this hearing issued by the Commission dated  
 4 September 7, 2011, specified the issue to be  
 5 considered and determined in each case upon this  
 6 consolidated hearing as to whether the resource  
 7 addition is prudent.  
 8 Counsel, please state your appearance for  
 9 the record. Mr. Brown.  
 10 MR. BROWN: Your Honor, good morning. For  
 11 the applicants, Andy Brown from the law firm of  
 12 Dorsey & Whitney, and with me is my colleague Pam  
 13 Marentette.  
 14 JUDGE WAHL: Mr. Kuntz.  
 15 MR. KUNTZ: Dan Kuntz, 1200 West Century  
 16 Avenue, appearing on behalf of the applicant,  
 17 Montana-Dakota Utilities Co.  
 18 JUDGE WAHL: Mr. Bring.  
 19 MR. BRING: Good morning, Your Honor.  
 20 Mark Bring on behalf of Otter Tail Power Company.  
 21 JUDGE WAHL: Mr. Gruman.  
 22 MR. GRUMAN: Mark Gruman, advocacy staff;  
 23 Richard Hahn also on behalf of advocacy staff; and  
 24 Chris Marohl.  
 25 JUDGE WAHL: And Ms. Jeffcoat-Sacco.

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1 MS. JEFFCOAT-SACCO: Illona  
 2 Jeffcoat-Sacco, advisory staff.  
 3 JUDGE WAHL: If there is anyone present  
 4 other than those persons who will testify on behalf  
 5 of Montana-Dakota Utilities or Otter Tail Power  
 6 Company who would address the Commission regarding  
 7 either or both of these cases, I ask, please, that  
 8 you talk to me during the recess of the hearing to  
 9 arrange to do that. The same would apply for  
 10 anyone who happens to be listening by the Internet  
 11 stream, if you have interest in either of these  
 12 cases and think that you would wish to address the  
 13 Commission concerning these cases, again, please,  
 14 arrange to talk to me sometime during a recess to  
 15 arrange to do that.  
 16 I expect to take approximately a 10-minute  
 17 recess roughly every 90 minutes or so in the course  
 18 of the hearing. We'll recess for lunch, of course,  
 19 and about five o'clock we'll recess for the day.  
 20 I'll be available at all of those times to talk  
 21 with anyone who wishes to address the Commission  
 22 and I'll be glad to assist you however I can to do  
 23 that.  
 24 Mr. Brown, you may proceed.  
 25 MR. BROWN: Thank you, Your Honor. Good

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1 morning, Commissioners.  
 2 The applicants are here to seek an advance  
 3 determination of prudence for the installation of  
 4 an air quality control system at the Big Stone  
 5 plant in South Dakota. The air quality control  
 6 system is necessary to comply with the South Dakota  
 7 Regional Haze Rule, which requires that best  
 8 available retrofit technology be applied at this  
 9 particular plant. If this air quality control  
 10 system is not installed at the plant, then the Big  
 11 Stone plant would not be able to continue to  
 12 operate.  
 13 We believe that we are able to present a  
 14 case to you today that will show that it is  
 15 reasonable and prudent to proceed with the air  
 16 quality control system. Under the South Dakota  
 17 Regional Haze Rule, the deadline for complying with  
 18 that requirement is two-part. It provides that it  
 19 must be done as expeditiously as possible and no  
 20 later than five years after EPA's final review and  
 21 action on the South Dakota SIP as it pertains to  
 22 the BART requirement.  
 23 The cost of the project is estimated to be  
 24 \$489 million in 2015 dollars. The companies have  
 25 worked to come up with a proposal to ensure the

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1 lowest reasonable cost that really has two parts,  
 2 and we'll cover this in the testimony of Mark  
 3 Rolfes and some of the other witnesses that you'll  
 4 hear from later, by getting to the market sooner,  
 5 getting there before so many other plants in the  
 6 country have to comply with this type of  
 7 requirement and other Clean Air Act requirements,  
 8 and also by pursuing it through a hybrid contract  
 9 strategy where Otter Tail, as the operating agent  
 10 for the three co-owners of the Big Stone plant,  
 11 would solicit bids for major parts of the work and  
 12 then use a single erection contractor in order to  
 13 proceed with the work. And, again, Mark Rolfes,  
 14 one of our witnesses, our first witness today, will  
 15 be able to discuss that in more detail for you.  
 16 The reason for coming to you today and  
 17 requesting this ADP is that this is obviously a  
 18 large project, it's an important one for both  
 19 companies. The Big Stone plant is the largest  
 20 single resource for both Montana-Dakota and for  
 21 Otter Tail. It supplies roughly 39 percent of the  
 22 North Dakota customer annual energy requirement for  
 23 Otter Tail and approximately 25 percent of that  
 24 requirement for MDU.  
 25 There's obviously a long lead time in a

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1 project of this scale. It's very important to both  
 2 companies that they are able to obtain some  
 3 regulatory certainty so that they can proceed  
 4 readily and efficiently to obtain access to capital  
 5 and to the vendors and the others that will be  
 6 necessary to make this project a reality.  
 7 They have applied in 2011, as you know,  
 8 they applied in May of this year, and are looking  
 9 for a determination so that they can proceed with  
 10 the project on the schedule that you'll hear from  
 11 Mark Rolfes.  
 12 If the ADP were denied and if the AQCS in  
 13 particular were not to go forward, it could have  
 14 some very serious consequences for both companies  
 15 and their customers. It could mean that they would  
 16 lose access to a very valuable plant site at Big  
 17 Stone and that could result in higher cost and more  
 18 uncertainty for both companies and their customers.  
 19 We also take into account and cover this  
 20 in our testimony that any alternative resource  
 21 would not only be expensive, but it might not be  
 22 ready in time for a compliance deadline, which  
 23 we'll have testimony later that will indicate that  
 24 it is expected that EPA will take final action on  
 25 the South Dakota SIP by the end of March 2012,

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1 which would mean that the five years from that  
 2 period would run in March of 2017.  
 3 The evidence that I think you'll hear  
 4 today will show that the AQCS is a reasonable and  
 5 the lowest-cost option, and we think we established  
 6 that through the evidence that it is the lowest  
 7 cost by a substantial margin. It's an existing and  
 8 large and well-operated facility with a significant  
 9 remaining life.  
 10 In the analysis the companies did consider  
 11 what the alternatives would be. Some of the  
 12 options like new nuclear or coal did not seem to be  
 13 viable.  
 14 The three options or alternatives that  
 15 were considered, and this would be in the analysis  
 16 from Burns & McDonnell, were to repower the Big  
 17 Stone plant with natural gas, to build a new  
 18 combined cycle gas plant, or to build a new  
 19 combined cycle and combine that with wind.  
 20 We did a comparative economic analysis  
 21 that we'll cover in the testimony again from Jeff  
 22 Kopp where we look at initial capital cost, O&M  
 23 cost and the other factors to give you some sense  
 24 about how the proposed project would stack up  
 25 against the alternatives.

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1 When we complete that analysis, what our  
 2 testimony will show is that the proposed project is  
 3 42 percent less expensive than the next lowest-cost  
 4 option, which was in the Burns & Mac analysis the  
 5 new combined cycle and wind. They also have tested  
 6 that against a wide variety of sensitivity  
 7 analyses, including a capital cost range of plus  
 8 and minus 30 percent, fuel cost of plus and minus  
 9 20 percent, an O&M cost of plus and minus 20  
 10 percent.

11 As Mr. Kopp can explain, the analysis was  
 12 done with a number of very conservative assumptions  
 13 that favor the alternatives to the proposed  
 14 project, and, in spite of that, it still came out  
 15 by a substantial margin as the lowest-cost option.

16 Backing that up is also the IRP analyses  
 17 that have been provided by both companies. Otter  
 18 Tail's IRP did 22 different scenarios, and in 21 of  
 19 those the proposed project was the lowest-cost  
 20 option. The only exception to that was one that  
 21 was entirely dependent upon market purchases.

22 MDU similarly did their analysis, and they  
 23 found that under all scenarios the proposed project  
 24 was the least-cost option.

25 We will provide testimony in response to

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1 the advocacy staff's witness, Richard Hahn. The  
 2 companies would note that Mr. Hahn has agreed that  
 3 the proposed project is the preferred option, that  
 4 the estimated costs for the proposed project are  
 5 comparable to other projects of its kind around the  
 6 country, and that the South Dakota Department of  
 7 Environment and Natural Resources has selected  
 8 reasonable technologies in order to comply with the  
 9 BART requirements.

10 So, Your Honor, at this time I would just  
 11 like to briefly identify the witnesses that we  
 12 intend to call today and talk about the exhibits  
 13 that we intend to offer.

14 Your Honor, we will have four witnesses  
 15 who will be appearing on behalf of both companies,  
 16 so as joint witnesses. Those include Mark Rolfes,  
 17 who is the manager of generation development at  
 18 Otter Tail Power. He's also the project manager  
 19 for the Big Stone AQCS project. Terry Graumann,  
 20 who is the manager of environmental services.

21 Your Honor, with your leave, we'd also  
 22 like to bring forward someone who has not filed  
 23 prefiled written testimony. That's Stacie Hebert.  
 24 She's the manager of supply services. We'd like to  
 25 offer her because we believe that there is interest

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1 in issues pertaining to fuel and rail rates, and  
 2 she would be able to address those issues. But if  
 3 leave was granted, we would propose to have her as  
 4 our third witness and appearing jointly for both  
 5 companies.

6 And then our final witness -- joint  
 7 witness is Jeffrey Kopp, as I mentioned, an  
 8 engineer from Burns & McDonnell. He is the manager  
 9 of the project development unit of the energy  
 10 consulting department of the business and  
 11 technology services division of Burns & Mac, and  
 12 he's responsible for what in the application was  
 13 Attachment 9, the economic analysis.

14 Then after those four witnesses, Your  
 15 Honor, we have one witness for Otter Tail Company,  
 16 Ward Uggerud, the senior vice president. He will  
 17 be addressing the proposed conditions to the ADP  
 18 that have been offered by the advocacy staff's  
 19 witness, Richard Hahn.

20 And we have available today, but are not  
 21 intending to call, Brian Draxten, who is in charge  
 22 of resource planning at Otter Tail, but he could be  
 23 available if that would be of interest to address  
 24 issues pertaining to the IRP for Otter Tail.

25 Then finally for Montana-Dakota, Andrea

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1 Stomberg, the vice president of electrical supply.  
 2 She will also be addressing the proposed conditions  
 3 to the ADP, as well as the role of the Big Stone  
 4 plant in the generation fleet for MDU. And Darcy  
 5 Neigum, who is system operations and planning  
 6 manager. He will be prepared to address the IRP  
 7 for MDU.

8 In terms of the exhibits, we do have 30  
 9 exhibits that we intend to offer for the record.  
 10 The great majority of them consist of the  
 11 application, which I'll come back to in just a  
 12 moment. The other two parts of the exhibits are  
 13 the prefiled testimony of the witnesses that I just  
 14 listed and also the IRP documents from both  
 15 companies.

16 We have provided to Your Honor and to the  
 17 Commissioners a notebook that has our exhibits in  
 18 it. In the front of that I think you'll find an  
 19 exhibit list that we've prepared that contains all  
 20 of these exhibits. You'll notice that the joint  
 21 exhibits are prefixed OTP/MDU and then that's the  
 22 100 series. The 200 series is for the Otter Tail  
 23 exhibits, the 300 series is for the MDU exhibits,  
 24 the 400 series has been reserved for advocacy.

25 I might note for the record we do have

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1 some trade secret material. We haven't supplied  
 2 that, of course, in the room. It consists of five  
 3 of the attachments. Those are Attachment 4, which  
 4 is Exhibit 105. On your exhibit list that's marked  
 5 as 105A. Attachment 5 -- Attachment 8 -- I'm  
 6 sorry. Attachment 6, Attachment 8 and Attachment 9  
 7 are all trade secret. Also, there's very limited  
 8 trade secret material in the testimony of Mr. Hahn  
 9 and Mr. Kopp.

10 Your Honor, at this point and after the  
 11 close of opening statements, we'd be ready to  
 12 present our case, but we appreciate your time  
 13 today.

14 JUDGE WAHL: Mr. Gruman.

15 MR. GRUMAN: Thank you, Your Honor. I'll  
 16 be very brief. Good morning. As you are all well  
 17 aware, today's hearing concerns whether the Big  
 18 Stone AQCS project is prudent.

19 Although there remains a distinct  
 20 possibility that advocacy staff will support the  
 21 companies in this matter, we nevertheless welcome  
 22 this opportunity to help provide you the most full  
 23 and complete record practical.

24 As far as our witnesses, advocacy staff  
 25 intends to call Mr. Richard Hahn.

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1 As far as our exhibits, we have four. ADV  
 2 401 is comprised of the public version of Richard  
 3 Hahn's prefiled testimony. 401A is the nonpublic,  
 4 unredacted version of the same testimony, and that  
 5 will be 401A. 402 is comprised of a large volume  
 6 of documents, several spreadsheets and a number of  
 7 FERC Form 1s from MDU. And ADV 403 is a discovery  
 8 request LCA-3-1. And that comprises advocacy  
 9 staff's exhibits.

10 So as Mr. Brown indicated, I thank you for  
 11 your time.

12 JUDGE WAHL: I understand for the record  
 13 that Ms. Jeffcoat-Sacco will not make an opening  
 14 statement. Mr. Brown, you may proceed.

15 MR. BROWN: Your Honor, at this time we  
 16 would like to move the admission of exhibits. We  
 17 have conferred with counsel and I believe we have a  
 18 stipulation in place that would provide for the  
 19 admission of the exhibits that appear on the  
 20 exhibit list that is in front of you and the  
 21 Commissioners. So at this time I'd like to move  
 22 first for the admission of Exhibits Otter Tail/MDU  
 23 101 through 115A.

24 JUDGE WAHL: Mr. Gruman?  
 25 MR. GRUMAN: No objection, Your Honor.

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1 JUDGE WAHL: That is, you join in the  
 2 stipulation?

3 MR. GRUMAN: That is correct.

4 JUDGE WAHL: Ms. Jeffcoat-Sacco?

5 MS. JEFFCOAT-SACCO: I have no objection.

6 JUDGE WAHL: You join in the --

7 MS. JEFFCOAT-SACCO: I join.

8 JUDGE WAHL: -- in the stipulation for the  
 9 admission of the exhibits identified by Mr. Brown?

10 MS. JEFFCOAT-SACCO: Yes.

11 JUDGE WAHL: All right. Mr. Gruman -- I'm  
 12 sorry. Mr. Brown.

13 MR. BROWN: Your Honor, I have some  
 14 further exhibits. If I could move them, as well.

15 JUDGE WAHL: Please.

16 MR. BROWN: We also have the exhibits for  
 17 Otter Tail Power Company. Those are Exhibits 201  
 18 through 204. I would like to move for their  
 19 admission at this time.

20 JUDGE WAHL: Mr. Gruman?

21 MR. GRUMAN: Advocacy staff so stipulates.

22 JUDGE WAHL: Ms. Jeffcoat-Sacco?

23 MS. JEFFCOAT-SACCO: Also.

24 JUDGE WAHL: Exhibits are received.

25 MR. BROWN: Your Honor, thank you. And,

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1 finally, we'd like to also move for the admission  
 2 of the MDU exhibits, 301 through 305.

3 JUDGE WAHL: Mr. Gruman?

4 MR. GRUMAN: Advocacy staff stipulates to  
 5 that, as well.

6 JUDGE WAHL: Ms. Jeffcoat-Sacco?

7 MS. JEFFCOAT-SACCO: As does advisory  
 8 staff.

9 JUDGE WAHL: Exhibits are received. And I  
 10 think for the record I did not state the receipt of  
 11 Exhibits OTP/MDU 102 -- 101 through 115.

12 MR. BROWN: 115A, Your Honor.

13 JUDGE WAHL: 115A. Those are also  
 14 received pursuant to the stipulation. Does that  
 15 complete your offer of the exhibits?

16 MR. BROWN: It does, Your Honor. Thank  
 17 you.

18 JUDGE WAHL: Mr. Gruman?

19 MR. GRUMAN: Likewise, the advocacy staff  
 20 offers ADV 401, 401A, 402 and 403 into the record.

21 JUDGE WAHL: Mr. Brown.

22 MR. BROWN: Your Honor, we are prepared to  
 23 stipulate to their admission.

24 JUDGE WAHL: Yes. Ms. Jeffcoat-Sacco?  
 25 MS. JEFFCOAT-SACCO: We agree.

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1 JUDGE WAHL: The exhibits are each  
 2 received. Now, Mr. Brown, back to you.  
 3 MR. BROWN: And, Your Honor, just on one  
 4 matter on the exhibits for advocacy staff, the one  
 5 that pertains to the spreadsheet, if I can ask  
 6 counsel to confer, is that 402?  
 7 MR. GRUMAN: Correct.  
 8 MR. BROWN: Exhibit 402, we would like to  
 9 limit our stipulation to the information pertaining  
 10 to the Big Stone and the Coyote plants, and I  
 11 understand that's agreeable to counsel.  
 12 JUDGE WAHL: Mr. Gruman?  
 13 MR. GRUMAN: It is agreeable, Your Honor.  
 14 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 15 MS. JEFFCOAT-SACCO: It is.  
 16 JUDGE WAHL: The limitation is  
 17 acknowledged for the record. Mr. Brown.  
 18 MR. BROWN: Thank you, Your Honor. At  
 19 this time we're prepared to call our first witness  
 20 and that would be Mark Rolfes.  
 21 JUDGE WAHL: Please be seated, Mr. Rolfes.  
 22 I almost hate to do this, but indeed, as you know,  
 23 your testimony is required to be under oath and I'm  
 24 required by law to advise you regarding perjury  
 25 before administering the oath. Perjury is a false

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1 statement of material fact which you do not believe  
 2 to be true. In North Dakota perjury is a Class C  
 3 felony, punishable by a fine up to \$5,000,  
 4 imprisonment for a period of up to five years, or  
 5 both. Will you raise your right hand, please?  
 6 **MARK ROLFES,**  
 7 being first duly sworn, was examined and testified  
 8 as follows:  
 9 JUDGE WAHL: Mr. Brown.  
 10 MR. BROWN: Thank you, Your Honor.  
 11 **DIRECT EXAMINATION**  
 12 **BY MR. BROWN:**  
 13 **Q.** Good morning.  
 14 **A.** Good morning.  
 15 **Q.** Could you please state your full name for  
 16 the record?  
 17 **A.** Mark Rolfes.  
 18 **Q.** And who is your employer?  
 19 **A.** I'm employed by Otter Tail Power Company.  
 20 **Q.** And what is your position there?  
 21 **A.** My title is manager, generation  
 22 development, and I'm acting as the project manager  
 23 for the Big Stone air quality control system  
 24 project.  
 25 **Q.** And, Mr. Rolfes, I think you'll find in

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1 front of you a document, and this has been  
 2 distributed to the Commissioners, to the judge and  
 3 to counsel, it's entitled applications and  
 4 supporting materials. Do you have that in front of  
 5 you?  
 6 **A.** Yes, I do.  
 7 MR. BROWN: And, Your Honor, I think on  
 8 the agreement that we reached earlier that I'd like  
 9 to be able to discuss this -- to proceed quickly,  
 10 but the intention here is to offer this as an  
 11 organizing document for the application for both  
 12 companies. So I just wanted to reference that  
 13 briefly with Mr. Rolfes.  
 14 JUDGE WAHL: Yes.  
 15 **Q.** (MR. BROWN CONTINUING) So, Mr. Rolfes,  
 16 the application that was submitted by both  
 17 companies consisted of a series of documents; is  
 18 that correct?  
 19 **A.** That's correct.  
 20 **Q.** And if we could quickly just identify  
 21 those for the record. Both companies submitted an  
 22 application; is that correct?  
 23 **A.** That's correct.  
 24 **Q.** And those have been marked as Otter Tail  
 25 Exhibit 202 and MDU Exhibit 302; is that right?

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1 **A.** That's correct.  
 2 **Q.** And then moving to the supporting  
 3 materials, there was a Big Stone project  
 4 description that was provided; is that right?  
 5 **A.** That's correct.  
 6 MR. BROWN: And I just note for the record  
 7 that that's been marked as Exhibit -- Joint Exhibit  
 8 Otter Tail/ MDU 102 and Mr. Rolfes is the  
 9 sponsoring witness for that.  
 10 **Q.** (MR. BROWN CONTINUING) Then there was a  
 11 discussion of the reasonableness of the proposed  
 12 project; is that right?  
 13 **A.** That's correct.  
 14 **Q.** And that's found in Exhibit 103?  
 15 **A.** That's correct.  
 16 **Q.** And then the next document in the  
 17 supporting materials is an assessment of the  
 18 financial and operational impacts of pending  
 19 environmental regulations; is that correct?  
 20 **A.** That's correct.  
 21 **Q.** You're also the sponsoring witness for  
 22 that?  
 23 **A.** Yes, I am.  
 24 **Q.** Then we move to three exhibits that  
 25 pertain to the regulations, the first one being the

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1 South Dakota Regional Haze SIP; is that correct?  
 2 **A. That's correct.**  
 3 **Q.** And that's Exhibit 111?  
 4 **A. Yes. Yes, it is.**  
 5 **Q.** And then there's an assessment of  
 6 anticipated federal and state environmental  
 7 regulations that's been marked as Exhibit 112?  
 8 **A. That's correct.**  
 9 **Q.** And followed by the South Dakota Regional  
 10 Haze Administrative Rules marked as 113?  
 11 **A. That's correct.**  
 12 **Q.** And then there are a series of attachments  
 13 that came with that that I believe you were  
 14 involved in the preparation of; is that correct?  
 15 **A. That's correct.**  
 16 **Q.** And the first one is the SO<sub>2</sub>, NO<sub>x</sub> and  
 17 Mercury Reduction Study marked as Exhibit 105; is  
 18 that correct?  
 19 **A. That's correct.**  
 20 **Q.** Can you briefly describe what that  
 21 document is?  
 22 **A. This is the summation of the work done by**  
 23 **our consulting engineer, in this case it was**  
 24 **Sargent & Lundy that came up with the conceptual**  
 25 **design for the proposed air quality control system**

30

1 **project at the plant.**  
 2 **Q.** And there's a trade secret version of that  
 3 document that's been marked as Exhibit 105A?  
 4 **A. That's correct.**  
 5 **Q.** Then the next document on the list is the  
 6 project cost estimate; is that right?  
 7 **A. That's correct.**  
 8 **Q.** Can you briefly describe that document?  
 9 **A. That is a fairly large document that gives**  
 10 **the cost estimate for the plant -- excuse me -- for**  
 11 **the project. It's broken down into the systems and**  
 12 **quite detailed as to how we came up with the cost**  
 13 **estimate that we're presenting.**  
 14 **Q.** And that's been marked as Exhibit 106,  
 15 with the trade secret version 106A; is that  
 16 correct?  
 17 **A. That's correct.**  
 18 **Q.** The next document is the AQCS operating  
 19 and maintenance cost calculation; is that right?  
 20 **A. That's correct.**  
 21 **Q.** Can you briefly describe that document?  
 22 **A. That's the document where we present the**  
 23 **information on the expected change and the cost to**  
 24 **operate and maintain the Big Stone unit with the**  
 25 **addition of the air quality control system.**

31

1 **Q.** And that's been marked as Exhibit 107,  
 2 with the trade secret version as 107A?  
 3 **A. That's correct.**  
 4 **Q.** The next document is the AQCS contract  
 5 cost strategy; is that right?  
 6 **A. Yes.**  
 7 **Q.** And can you describe that document,  
 8 please?  
 9 **A. This is the document that explains the**  
 10 **approach that we are taking for the contracting of**  
 11 **the project, how we're going to deliver it, procure**  
 12 **the equipment, procure the construction and such**  
 13 **and why we feel that the approach we're taking is**  
 14 **the most cost-effective in today's market.**  
 15 **Q.** And that's been marked as Exhibit 108?  
 16 **A. That's correct.**  
 17 **Q.** The next document is the natural gas  
 18 conversion study; is that right?  
 19 **A. That's correct.**  
 20 **Q.** And can you briefly describe that  
 21 document?  
 22 **A. As we looked at alternatives, and we'll**  
 23 **probably talk about this as the morning progresses,**  
 24 **one of the alternatives we considered was just the**  
 25 **removal of coal from the existing boiler and**

32

1 **replacing it with natural gas, and this was the**  
 2 **study that examined that and came up with the**  
 3 **feasibility and the cost if we pursued that option.**  
 4 **Q.** And that's been marked as Exhibit 109,  
 5 with a trade secret version as 109A?  
 6 **A. Correct.**  
 7 **Q.** The next document is the Burns & McDonnell  
 8 AQCS pro forma economic analysis; is that right?  
 9 **A. That's right.**  
 10 **Q.** And what is that document?  
 11 **A. Of the options that we felt we needed to**  
 12 **consider as we evaluated the AQCS project, we came**  
 13 **up with four options and we gave those to Burns &**  
 14 **McDonnell to do an economic analysis of to**  
 15 **determine what's the least-cost option.**  
 16 **Q.** And that document has been marked as  
 17 Exhibit 115, with the trade secret version as 115A?  
 18 **A. That's correct.**  
 19 **Q.** And then the last document is Montana-  
 20 Dakota's assessment of pending environmental  
 21 regulations; is that right?  
 22 **A. That's correct.**  
 23 **Q.** Can you describe that document?  
 24 **A. Mr. Neigum will be better suited to**  
 25 **describe that.**

33

1 MR. BROWN: Okay. Just for the record, I  
 2 would note that that's been marked as MDU 304, Your  
 3 Honor. So thank you.  
 4 **Q.** (MR. BROWN CONTINUING) Mr. Rolfes, could  
 5 you describe the major components of the AQCS,  
 6 please?  
 7 **A.** The proposed AQCS project is addressing  
 8 three pollutants, SO<sub>2</sub>, NO<sub>x</sub> and particulate matter,  
 9 and I would like to go through each one of those  
 10 components.  
 11 The equivalent that is being proposed to  
 12 address the SO<sub>2</sub>, or sulfur dioxide, is a scrubber.  
 13 The South Dakota requirements stipulate that the  
 14 control device has to be a dry or a semi-dry  
 15 scrubber. Just briefly explain that jargon. A  
 16 semi-dry scrubber is a type of scrubber that is on  
 17 the Antelope Valley Station or the Coyote Station  
 18 in North Dakota. It's a system where lime is  
 19 slurried and sprayed into the exhaust gases to  
 20 control SO<sub>2</sub> and it's very common, and that's  
 21 referred to as the semi-dry. You start with a wet  
 22 product and end up with a dry product.  
 23 The dry scrubber is very similar except  
 24 you begin with a dry product lime and it's put in a  
 25 circulating fluidized bed and the water is added to

34

1 the existing bed in the flue gas stream so you have  
 2 no wet material to begin with, it's dry product  
 3 going in and dry product coming out, and it's  
 4 referred to as a dry scrubber. That is what is  
 5 being proposed to address the SO<sub>2</sub>.  
 6 For the NO<sub>x</sub>, we are proposing -- or the  
 7 South Dakota regulation requires two pieces of  
 8 equipment or systems to address the nitric oxides,  
 9 first what's referred to as a separated overfire  
 10 air system that would be installed on the boiler.  
 11 This directs some of the combustion air above the  
 12 primary combustion area, and by doing this we  
 13 reduce the amount of NO<sub>x</sub> that is produced.  
 14 The second control device, which is the  
 15 larger, more complicated, costly one, is a  
 16 selective catalytic reduction unit, an SCR unit,  
 17 that's placed at the exit of the boiler before the  
 18 air heater, and it's very similar to the catalytic  
 19 converter on your car. You inject ammonia, and in  
 20 the presence of the catalyst, the NO<sub>x</sub> reacts and you  
 21 end up with N<sub>2</sub>, nitrogen, and water vapor, so you  
 22 break apart or destroy the nitrogen oxides that are  
 23 present.  
 24 And the final part of that is particulate  
 25 control, and this one is a little bit confusing

35

1 **because the current Big Stone unit has a baghouse**  
 2 **on the unit, and the baghouse is the control device**  
 3 **necessary for controlling particulates per the BART**  
 4 **requirements.**  
 5 **However, the existing Big Stone baghouse**  
 6 **is a retrofitted baghouse that was put inside the**  
 7 **original housing for the precipitator that the unit**  
 8 **had when it was built, and it is operating at the**  
 9 **maximum design pressure, actually vacuum, that the**  
 10 **unit can withstand. By adding an SCR and a**  
 11 **scrubber in front of the baghouse, we will**  
 12 **approximately double the negative pressure in the**  
 13 **existing baghouse if we do not replace it.**  
 14 **One of the first things we did in the**  
 15 **engineering work is we looked at the feasibility of**  
 16 **reusing the existing baghouse, and to do that, it**  
 17 **would have to be structurally reinforced and**  
 18 **repaired and, to make a long story short, the**  
 19 **engineering analysis showed it would be much more**  
 20 **cost-effective to build a new baghouse than to try**  
 21 **and upgrade the existing baghouse to withstand the**  
 22 **pressure and requirements with the other pollution**  
 23 **control devices added. So our proposed project**  
 24 **includes a new baghouse for particulate control**  
 25 **because it's more cost-effective than the reuse of**

36

1 **the existing baghouse.**  
 2 **Q.** Mr. Rolfes, could I ask you to pull out  
 3 Exhibit 102. It has been provided, it should be  
 4 the second folder there, I think, and it's in the  
 5 notebooks that have been provided to the judge and  
 6 the Commissioners, and that is the description of  
 7 the Big Stone project. Is that correct?  
 8 **A.** That's correct.  
 9 **Q.** And if I could refer you to page 8 for a  
 10 moment and the schematic on that page, and maybe  
 11 I'd just call attention to this, if you could use  
 12 this to help us all get our bearings in terms of  
 13 where the different parts of the AQCS would be  
 14 installed at the Big Stone Plant. Again, that's  
 15 page 8 at Exhibit 102.  
 16 **A.** What appears on page 8 is, of course, a 3D  
 17 model -- computer-generated model of the proposed  
 18 equipment. And just as reference, basically  
 19 everything that's green is existing equipment. You  
 20 can recognize the taller building as being the  
 21 boiler house with the turbine generator bay in  
 22 front of it. Everything that's not green is part  
 23 of the new equipment.  
 24 **Directly behind the boiler and between the**  
 25 **boiler building and the stack is where the new SCR**

37

1 would go. The distinguishing feature of the SCR,  
 2 it's basically a big box, but because of where it  
 3 has to sit in the flue gas stream, it has to  
 4 operate at a particular temperature, it has to be  
 5 very close to the boiler, and in the case of the  
 6 Big Stone unit, because the design is very high in  
 7 the air, the top of the SCR is approximately 250  
 8 feet in the air, so it's a very large structure  
 9 even though it's basically just a large box, and  
 10 it's in a turquoise-bluish color.

11 And on the bottom or below is where the  
 12 scrubber and baghouse would go. This particular  
 13 drawing shows a particular vendor for the scrubber  
 14 and baghouse, but the vendor has not been chosen.  
 15 It's -- the new scrubber and baghouse is being  
 16 proposed to sit directly -- we refer to it as plant  
 17 south. The exhaust gases would come out of the  
 18 boiler, take a turn and go out and through the  
 19 scrubber vessels, the baghouse, and then through ID  
 20 fans and go back to the existing stack.

21 In the very foreground is where the  
 22 limestone, ammonia and storage area would be.

23 Q. Thank you. Who was responsible for  
 24 preparing the cost estimate for the proposed AQCS?  
 25 A. Well, it was my responsibility, and we

38

1 hired Sargent & Lundy to do that.

2 Q. And how was the cost estimate developed?  
 3 A. It was a fairly long process. First,  
 4 Sargent & Lundy began by doing a screening study to  
 5 answer some of the basic questions like what's the  
 6 best location for the SCR, can we reuse the  
 7 baghouse. Once the screening study was done, then  
 8 we went on and did a conceptual design to come up  
 9 with how big the SCR would have to be, how high.  
 10 All the design parameters were calculated and  
 11 compiled.

12 Once that was done, then we actually got  
 13 into the actual cost estimate, and that was done by  
 14 looking through basically two means. One was  
 15 Sargent & Lundy's database on all the projects  
 16 they've done, and they have done more of these  
 17 projects than any other engineering firm in the  
 18 country, and by getting cost estimates for all the  
 19 major pieces of equipment.

20 We then took this very detailed cost  
 21 estimate and the indicative bid prices from vendors  
 22 and combined them. And in this project we actually  
 23 went a step further because the construction  
 24 portion is the largest single cost. After Sargent  
 25 & Lundy had completed the cost estimates, we then

39

1 went out to one of the major construction companies  
 2 and had them give a cost estimate to do the  
 3 project. And their cost estimate and the number  
 4 that Sargent & Lundy had come up with were very  
 5 close. This was all compiled to produce the cost  
 6 estimate that is in this application.

7 Q. And what is the estimated cost for the  
 8 proposed project?  
 9 A. For the AQCS system, it's approximately  
 10 \$489 million. For the mercury control, that's an  
 11 additional roughly \$5 million.

12 Q. And can you explain the purpose of the  
 13 mercury controls?  
 14 A. The mercury controls -- let me back up.  
 15 The air quality control project is being done to  
 16 address the South Dakota BART SIP requirements, and  
 17 Mr. Graumann will get into those, but the mercury  
 18 control was engineered and planned in anticipation  
 19 of the utility MACT, maximum achievable control  
 20 technology, rules that are supposed to be finalized  
 21 in December. And the time frame would be the same  
 22 as the AQCS system. And the purpose is to control  
 23 mercury and other hazardous air pollutants. And so  
 24 because of the timing and the likelihood of those  
 25 regulations, we did the engineering to incorporate

40

1 the MACT -- the MACT controls, mercury controls, as  
 2 well, and with the air quality control system  
 3 project.

4 Q. What have the owners of the plant done to  
 5 ensure the lowest reasonable cost?  
 6 A. Well, there are a number of steps that are  
 7 taken. One of them we've touched on already is the  
 8 contracting method, and that's probably the largest  
 9 single thing we can do. Right now it is a buyer's  
 10 market for these types of projects. Because of the  
 11 economy and some of the uncertainty, there's quite  
 12 an interest from vendors and contractors to do this  
 13 work, so we have come up with the hybrid approach  
 14 which allows us to get to the market sooner for the  
 15 procuring of this equipment.

16 The biggest feature of getting to the  
 17 market soon is because of the proposed MACT  
 18 regulations and what's referred to as the cross-  
 19 state air pollution, or CSAPR, rules, which, once  
 20 they are finalized, will create a huge demand for  
 21 similar types of equipment. And in the past we've  
 22 seen the costs escalate tremendously during these  
 23 bubbles that are caused by new regulation. So the  
 24 contracting method, the project delivery method was  
 25 trying to take advantage of the current market.

41

1 **Beyond that we're doing the competitive**  
 2 **bidding process to ensure we have the lowest cost**  
 3 **and we're -- it sounds like a cliché, but we are**  
 4 **aggressively managing the project to ensure that we**  
 5 **get the best value for our customers.**  
 6 **Q.** Can you briefly describe the  
 7 implementation schedule?  
 8 **A.** Very quickly, the project has already been  
 9 in the works for roughly two years. The work that  
 10 was done to do the screening study and conceptual  
 11 design and to get to this point have taken about  
 12 two years of work.  
 13 **Going on from where we are today, we are**  
 14 **in the process of negotiating the first major**  
 15 **supply contracts. Because of the long lead times,**  
 16 **we're prepared to enter into those very soon with**  
 17 **limited notice to proceed. The detailed**  
 18 **engineering has started to support that procurement**  
 19 **work, and the bulk of the procurement will be**  
 20 **completed in 2012, so that by late summer, early**  
 21 **fall we can go to the market to get the erection**  
 22 **contractor, and so that contractor can be selected**  
 23 **by the beginning of 2013.**  
 24 **Then construction would start as soon as**  
 25 **possible in the spring of 2013, with roughly a**

42

1 **two-year construction window to erect all of this**  
 2 **material, and targeting a tie-in outage in the**  
 3 **spring of 2015 to coincide with a planned major**  
 4 **outage of the unit, and then we're looking at the**  
 5 **remainder of 2015 to early 2016 for startup,**  
 6 **tuning, testing, shakedown so that the unit is**  
 7 **ready to operate in 2016.**  
 8 **Q.** What would be the consequences if the  
 9 companies were unable to adhere to the schedule  
 10 that you just laid out?  
 11 **A.** Well, basically there are two  
 12 consequences, cost and compliance. I think the  
 13 bigger issue, which I've talked about, is the cost.  
 14 We are in a very good time frame to be doing this  
 15 work, and delay will drive up the cost. If the  
 16 past bubbles are any indication, a one-year delay  
 17 could easily increase the cost by 20 percent. So  
 18 the biggest issue is, of course, cost.  
 19 **The second one, of course, is compliance.**  
 20 **Like Mr. Brown read from the South Dakota rules, we**  
 21 **are obligated to do this as soon as practical,**  
 22 **although we do have the end date five years after**  
 23 **the EPA SIP approval that the unit would have to**  
 24 **stop operating if this isn't in place, which could**  
 25 **be extremely costly if we don't make that and we**

43

1 **have to go to the market for replacement power.**  
 2 **Q.** Mr. Rolfes, the company retained Burns &  
 3 McDonnell to do an economic analysis of the project  
 4 and alternatives; is that correct?  
 5 **A.** That's correct.  
 6 **Q.** Can you briefly describe their analysis?  
 7 **A.** Mr. Kopp can go into great detail on it,  
 8 but basically after reviewing the options for Big  
 9 Stone, we came up with four options: The proposed  
 10 AQCS project; repowering with natural gas, just  
 11 taking the coal out and putting gas in; and then  
 12 replacing the unit with a large combined cycle; and  
 13 also then that combined cycle paired with wind.  
 14 **Like Mr. Brown said in his opening**  
 15 **statement, we've looked at other things, but**  
 16 **nothing seemed to be able to meet the functionality**  
 17 **of the existing unit.**  
 18 **Those four options were then given to**  
 19 **Burns & McDonnell to do a levelized cost analysis,**  
 20 **basically an economic pro forma, that came up with**  
 21 **a single number and a cost per megawatt-hour over**  
 22 **the period that was investigated so that the**  
 23 **projects could be easily and directly compared.**  
 24 **Q.** And the Burns & Mac analysis has been  
 25 provided in Exhibit 115; is that correct?

44

1 **A.** That's correct.  
 2 **Q.** That's the document you were just  
 3 referring to?  
 4 **A.** Yes.  
 5 **Q.** And, finally, Mr. Rolfes, can you discuss  
 6 the assumptions that were made by Burns & McDonnell  
 7 regarding the federal protection tax credit?  
 8 **A.** Yes. You know, one of the options  
 9 included wind, and for all of the options -- all  
 10 the options and sensitivities where wind was  
 11 investigated, we made the assumption that the  
 12 production tax credit would continue. We took a  
 13 number of assumptions that were conservative or  
 14 favored the alternatives, and I think the PTC was  
 15 one of those where we assumed it would be  
 16 continued. I think there's good reason to question  
 17 whether it will or won't with the current economic  
 18 conditions, but we used the PTC in all the analysis  
 19 done.  
 20 **MR. BROWN:** Your Honor, at this time we  
 21 would like to offer this witness for  
 22 cross-examination.  
 23 **JUDGE WAHL:** Mr. Gruman.  
 24 **MR. GRUMAN:** Thank you, Your Honor.  
 25

45

**CROSS-EXAMINATION**

**BY MR. GRUMAN:**

**Q.** It indicates in your application that SCR only works well within specified temperature ranges and that a number of changes to the boiler are necessary to ensure that proper temperatures are maintained; is that correct?

**A.** **That's correct.**

**Q.** Is that the case for SNCR technology, as well?

**A.** **I believe so, yes.**

**Q.** If you could please explain.

**A.** **The reaction that we're looking for, and, you know, it's a chemical reaction, it only happens at -- it happens best at a particular temperature range, and for SCR that is at a temperature range that is lower than the temperature that is seen at times from the Big Stone boiler.**

**Q.** What are the differences in cost between SCR and SNCR technology?

**A.** **We didn't analyze SNCR as that was not an option for this project. I know that the ongoing operation and maintenance costs are somewhat similar because you're again using a consumable, but we didn't analyze that because that wasn't an**

46

**option for us.**

**Q.** It's my understanding, though, in the -- I believe in the South Dakota State Implementation Plan that there is an indication of cost for both, and, if I remember correctly, SNCR is around the \$11-million range and SCR is around -- in the 80s. Does that sound correct?

**A.** **That sounds reasonable. I mean, there's a lot less capital investment for an SNCR than an SCR.**

**Q.** And that's a good segue to my next question. I mean, could you please explain to the Commissioners why the differentiation in cost between the two?

**A.** **In very simple terms, an SNCR is you are injecting the ammonia directly into the gas stream without the presence of the catalyst. The SCR adds the catalyst, like the catalytic converter under your car, so you can get much greater NO<sub>x</sub> removal in the presence of the catalyst than you can without that catalyst present.**

**Q.** And the catalyst, is that part of the cost increase for the SCR versus the SNCR?

**A.** **That is almost the entire thing. I mean, the catalyst is what resides in those big boxes**

47

**that I tried to point out on the drawing.**

**Q.** Okay. What is the catalyst, perchance? What is that material?

**A.** **It's a vanadium-type compound. I can get you the answer, but I don't know.**

**Q.** Okay. Thanks. Now, OTP operates the Coyote facility, as well; is that correct?

**A.** **That's correct.**

**Q.** And as with Big Stone, both are jointly owned and at least in part by OTP and MDU; is that correct?

**A.** **That's correct.**

**Q.** Could you please explain to the Commission the similarities between the Coyote plant and the Big Stone plant in summary?

**A.** **First, let me set the stage. Big Stone was built six years earlier than Coyote, and because of what transpired in six years, that accounts for most of the differences. The actual boiler is very similar. The turbine generator is almost identical. The differences come about because of the -- what transpired in six years and the location. The biggest difference is Coyote has a scrubber on it. Big Stone does not have a scrubber on it.**

48

**The other very obvious difference is the type of cooling. Big Stone has a cooling pond, the plant has its own lake and has a zero discharge where no water goes back to any stream. Coyote, because of the availability of the water from the Missouri River and such, is a little bit more common, it has a cooling tower, and it has a discharge back to the Missouri River.**

**Those are the biggest differences. If you look at the plants, they look very similar. Many of the same drawings were used.**

**Q.** How about fuel source, is that different between the two plants and, if so, could you please explain?

**A.** **Well, the fuel has always been different. Coyote is a mine-mouth plant, Big Stone is a plant that has rail delivery. Big Stone's first 20 years were on lignite coal. Since 1995 it has been on Powder River Basin subbituminous coal.**

**Q.** Could you please explain to the Commission what NO<sub>x</sub> controls do you currently have in place at the Coyote plant?

**A.** **Basically none.**

**Q.** Obviously you're aware of the fight between the Department of Health and the EPA right

49

1 now. And what's the future for NO<sub>x</sub> controls for  
 2 Coyote? Do you have any thoughts in that regard  
 3 and, if so, please explain?  
 4 **A. Well, we are here -- and Mr. Graumann can**  
 5 **go into great detail on this, but we're here**  
 6 **because of regional haze requirements, and the**  
 7 **plants that are subject to regional haze are based**  
 8 **on a time frame when they were permitted. Big**  
 9 **Stone falls in that time frame. Leland Olds,**  
 10 **Milton R. Young falls in that time frame. Coyote**  
 11 **does not. So the rules that Big Stone and the**  
 12 **North Dakota plants are trying to address today**  
 13 **don't affect Coyote because it was permitted after**  
 14 **the cutoff date.**  
 15 **Q.** Is there any chance that that could be  
 16 changed in the future?  
 17 **A. Anything is possible in the future.**  
 18 **Q.** Sure. Now, as I indicated before, there's  
 19 this disagreement between the North Dakota  
 20 Department of Health and the EPA. It's our  
 21 understanding, at least in summary, if you can  
 22 simplify such a subject, that the Department of  
 23 Health -- its determination that BART for lignite  
 24 plants does not include SCR technology. Do you  
 25 understand that?

50

1 **A. Yes. Yes.**  
 2 **Q.** And do you agree with the Department of  
 3 Health in that situation that SCR should not be  
 4 implemented for lignite plants?  
 5 **A. My understanding -- again, Mr. Graumann**  
 6 **can elaborate on this -- the test is a**  
 7 **cost-effectiveness test, you know, how much does it**  
 8 **cost to remove a ton of NO<sub>x</sub>. And based on what I've**  
 9 **seen from the North Dakota Department of Health,**  
 10 **their number which they are using to justify why**  
 11 **the North Dakota plants shouldn't, that same number**  
 12 **would say that Big Stone should have an SCR.**  
 13 **So based on what the Department of Health**  
 14 **has said, I believe that they would -- if Big Stone**  
 15 **was sitting on the other side of the border, would**  
 16 **say the exact same thing that South Dakota said,**  
 17 **that an SCR is required for Big Stone based on the**  
 18 **statements they've made.**  
 19 **Q.** So essentially, if I understand  
 20 correctly -- I don't want to put words in your  
 21 mouth -- essentially the SCR technology for lignite  
 22 coal plants is just not efficient enough?  
 23 **A. I would use the term it's not**  
 24 **cost-effective.**  
 25 **Q.** Now, as you had indicated, the South

51

1 Dakota State Implementation Plan for the regional  
 2 haze rule indicated that SCR and separated overfire  
 3 air is NO<sub>x</sub> BART for Big Stone. That's correct?  
 4 **A. That's correct.**  
 5 **Q.** As indicated before, one of the  
 6 differences between the Big Stone plant and the  
 7 Coyote plant is the fuel differentiation that  
 8 Coyote is lignite and Big Stone is Powder River  
 9 Basin coal; is that correct?  
 10 **A. That's correct.**  
 11 **Q.** But as you also indicated, Big Stone used  
 12 to be powered by lignite; is that correct?  
 13 **A. That's correct.**  
 14 **Q.** And when was that changeover? Was that  
 15 about 1995? Is that what you indicated?  
 16 **A. Yes.**  
 17 **Q.** So I guess the question that arises is  
 18 that in hindsight, if that changeover hadn't been  
 19 made from lignite -- or from lignite coal to Powder  
 20 River Basin coal in Big Stone, right now for the  
 21 AQCS project we'd be looking at SNCR technology  
 22 rather than SCR technology?  
 23 **MR. BROWN:** Your Honor, I object on  
 24 relevance.  
 25 **MR. GRUMAN:** Well, Your Honor, what I

52

1 would indicate is that, of course, as indicated,  
 2 Coyote plant and Big Stone plant have a number of  
 3 same -- similarities, both companies operate them.  
 4 Really the only differentiation, of course, is the  
 5 fuel source, but we're here today for prudence.  
 6 **JUDGE WAHL:** Overruled. You may proceed.  
 7 **THE WITNESS:** I think that's a gross  
 8 oversimplification. You have to remember Big Stone  
 9 was -- when it was operating on lignite, was the  
 10 only plant that had a rail haul for lignite. All  
 11 of the lignite units are mine-mouth, and Big Stone  
 12 was not competitive with lignite and a rail haul.  
 13 If we had stayed with lignite, we would have not  
 14 been competitive. Our customers would have been  
 15 paying a premium since 1995 for that.  
 16 Also, it is my opinion -- and this is all  
 17 opinion -- that we would have been in effect in  
 18 front of this Commission in 2000 because at that  
 19 point in time on lignite we would be facing the  
 20 same thing we are today with putting a scrubber on  
 21 the unit, and we have to remember that the scrubber  
 22 is the bigger cost of the AQCS, and we would have  
 23 been facing that decision in 2000, not 15 years  
 24 later.  
 25 **Q.** (MR. GRUMAN CONTINUING) Now, on page 16

53

1 of your application, that's Exhibit OTP/MDU 104,  
 2 you indicate an expected net dispatchable energy  
 3 generation of 3,120,750 megawatt-hours, which  
 4 equates to a capacity factor of about 75 percent.  
 5 Does that sound correct?  
 6 **A. That's correct.**  
 7 **Q.** Now, if you ran Big Stone without any type  
 8 of load following, what capacity factor do you  
 9 think could technically be achievable post-AQCS?  
 10 **A. Well, there's a number of questions in**  
 11 **that question.**  
 12 **Q.** Mm-hmm.  
 13 **A. First, we believe and we're designing the**  
 14 **AQCS to not affect the ability of Big Stone to run.**  
 15 **It's not going to be less reliable, et cetera. So**  
 16 **the plant is capable and has run close to 90**  
 17 **percent capacity factor if there was no economic**  
 18 **dispatch, et cetera, so I would expect that the**  
 19 **plant would be capable of running a 90 percent**  
 20 **capacity factor if we didn't have to worry about**  
 21 **cost.**  
 22 **Q.** Thank you. According to MDU's filed FERC  
 23 Form 1s, it appears that you achieved an overall  
 24 capacity factor at Big Stone of about 66 percent  
 25 and 68 percent in 2009 and 2010, respectively.

54

1 Does that seem about right to you?  
 2 **A. No. I would argue that -- the Form 1 is**  
 3 **right, but that is MDU's number. You have to**  
 4 **remember that the plant is jointly owned. And the**  
 5 **75 percent capacity factor that we used is not only**  
 6 **our projection forward, but it is almost exactly**  
 7 **looking backward on what the plant has averaged for**  
 8 **the past five years.**  
 9 **Q.** Okay. So if that 66 percent and 68  
 10 percent are incorrect, what would those values be?  
 11 **A. Well, they are correct for MDU. Each**  
 12 **owner can dispatch the unit as they see fit. But**  
 13 **we're here talking about the entire plant. And the**  
 14 **entire plant's capacity factor is very, very close**  
 15 **to the 75 percent number that we used in our**  
 16 **economic analysis.**  
 17 **Q.** Are you familiar with what then OTP's FERC  
 18 Form 1s were in that regard?  
 19 **A. I know they're a little bit higher than**  
 20 **MDU'S.**  
 21 **Q.** Who ultimately pays for unused capacity?  
 22 **A. Well, the answer is pretty simple. At the**  
 23 **end of the day the ratepayers pay for whatever we**  
 24 **build.**  
 25 **Q.** Now, it's my understanding that coal

55

1 plants in particular are very expensive to run at a  
 2 capacity factor of less than 70 percent. Would you  
 3 agree?  
 4 **A. Depends upon very expensive. It's not as**  
 5 **economical to run it below.**  
 6 **Q.** If you could please expand upon that.  
 7 **A. Well, the plant heat rate, the term we use**  
 8 **for the amount of coal or energy it takes to**  
 9 **produce a kilowatt-hour, is best at a load, and it**  
 10 **depends upon the plant condition, but best at a**  
 11 **load that's close to full output of the unit. And**  
 12 **as the unit produces less electricity, its heat**  
 13 **rate goes up, it takes more energy, and it's a**  
 14 **curve. It's not a step function. So, I mean,**  
 15 **there isn't a place where it drops off. The lower**  
 16 **load, the more expensive it is. It's a gradual**  
 17 **decline in performance.**  
 18 **Q.** Now, before you had testified -- I'm going  
 19 back to the capacity factor that Big Stone had an  
 20 average of about 75 percent. However, if there  
 21 were no load following, 90 percent could  
 22 technically be achievable. Why the differentiation  
 23 in the two values?  
 24 **A. Because we live in the real world where**  
 25 **load varies, and now, with the addition of wind,**

56

1 **resources vary and, you know, as an electric**  
 2 **utility, as MISO, the operator of the electrical**  
 3 **system, we have to balance load and demand, and two**  
 4 **o'clock in the morning on a nice fall day there's**  
 5 **not a lot of demand as opposed to 95 degrees in**  
 6 **summer. So the reality, we have to have resources**  
 7 **that ramp up and ramp down as the load and the**  
 8 **supply changes.**  
 9 **Q.** Clearly you have a number of years of  
 10 experience. Before you had mentioned in your  
 11 answer about wind. If you could expand upon that.  
 12 How does wind in particular affect the capacity  
 13 factor of a coal-fired plant?  
 14 **A. Well, the idea is to always dispatch the**  
 15 **cheapest resource, and that in very simple terms is**  
 16 **based on the variable cost, or the fuel cost. It's**  
 17 **not based on a day-to-day basis of how expensive**  
 18 **the plant was to build. It's based on how**  
 19 **expensive it is to run. And with the addition of**  
 20 **wind, because it has virtually no fuel cost and**  
 21 **only small, variable O&M cost, when wind is**  
 22 **available, it is dispatched first because zero cost**  
 23 **or very low cost. So when wind is available, it's**  
 24 **used and other resources have to back off if**  
 25 **there's not sufficient load.**

57

1 **Q.** If you could expand upon that. You were  
 2 talking about how wind is dispatched because it's  
 3 least cost. What is all a part -- what is that  
 4 predicated upon as far as cost? Is it just fuel?  
 5 **A.** It's basically the variable costs, which  
 6 are primarily fuel.  
 7 **Q.** Now, as indicated before, the FERC Form 1  
 8 filings from MDU indicate that a 10-year capacity  
 9 average of Big Stone is about 74 percent, 75  
 10 percent; is that correct?  
 11 **A.** Mm-hmm.  
 12 **Q.** If you could please explain -- in your  
 13 application you indicate that post-AQCS, that 75  
 14 percent rating is still going to be able to be  
 15 achieved. If you could explain just how exactly  
 16 that's going to take place.  
 17 **A.** Well, there's two pieces of that. One is  
 18 we are not -- our engineering and this project is  
 19 being put together so that we, by the addition of  
 20 this equipment, do not affect the ability to do  
 21 what's required. I mean, we're not going to  
 22 compromise the ability of the unit to produce  
 23 because of it.  
 24 The other piece of that is a little bit  
 25 more speculative, and what is the market going to

58

1 be. And we could spend a lot of time speculating  
 2 is the market such that with the coming of MACT  
 3 regulations and CSAPR, that older coal units will  
 4 be retired and the demand for the existing baseload  
 5 units go up, or is the future that there's a lot  
 6 more wind built and that the Big Stone, the  
 7 existing baseload units are backed off more? I  
 8 mean, it's a crystal ball analysis, but it seemed  
 9 very feasible that with the likely retirement of  
 10 marginal coal units and returning to more normal  
 11 economic growth that Big Stone would certainly be  
 12 able to maintain its capacity factor that it's  
 13 seen, maybe it will increase. But, again, that's  
 14 the more speculative side of the two pieces.  
 15 **Q.** Thank you. According to MDU's FERC Form  
 16 1s for the Coyote Station, the plant enjoyed a  
 17 capacity factor of 83 percent during 2010, an  
 18 average capacity factor of 82 percent for the last  
 19 10 years. Do you have an opinion as to what would  
 20 be causing the run time differential between Coyote  
 21 and Big Stone? And, if so, please explain.  
 22 **A.** Well, let me give you what I look at again  
 23 on the total plant, and I'm looking back in the  
 24 last 10 years. Coyote's capacity factor from  
 25 looking at the total plant is about 3 percent

59

1 higher than Big Stone's -- 3 percent higher  
 2 capacity factor.  
 3 The other thing that you have to remember,  
 4 because of the nature of the fuel and such, Big  
 5 Stone's cruise rating is roughly 10 percent higher  
 6 than Coyote's. So even though Coyote's capacity  
 7 factor may be higher, Big Stone is producing more  
 8 megawatt-hours, especially more megawatt-hours on  
 9 peak, than what Coyote is.  
 10 So the reason Coyote's capacity factor is  
 11 higher -- is higher is because its variable cost,  
 12 its fuel cost, is a little bit more lower. But the  
 13 other side of it, Big Stone is producing more  
 14 megawatt-hours in the year. So to me it's kind of  
 15 a horse apiece.  
 16 **Q.** Well, it's kind of intriguing. You were  
 17 talking about cruise factor. Could you please  
 18 explain that further?  
 19 **A.** Cruise rating, cruise factor is the level  
 20 of generation that the plant will produce day in,  
 21 day out if called to do. And Big Stone's is  
 22 higher, and a lot of that is to do with the fuel  
 23 it's burning. So when we ask the plants to produce  
 24 full load because it's a hot day in July, Big Stone  
 25 will be producing about 50 megawatts more than what

60

1 Coyote is.  
 2 **Q.** As I understand the MISO energy market you  
 3 participate in, generation units are bid into the  
 4 market on a daily basis, and the cheapest units  
 5 needed to meet the electric demands of the day are  
 6 then dispatched. Is that essentially correct?  
 7 **A.** Yes.  
 8 **Q.** According to the FERC 1 filed by MDU, the  
 9 production expense, fuel cost and O&M to run the  
 10 plant is consistently lower for Coyote when  
 11 compared to Big Stone, about 17 percent lower on  
 12 average over the last 10 years. Given your  
 13 understanding of how MISO works, wouldn't you  
 14 expect Coyote to run more often because it is a  
 15 cheaper resource?  
 16 **A.** Yes, and that's why the capacity factor is  
 17 3 percent higher.  
 18 **Q.** What are the main drivers causing the  
 19 difference in production expense whereby Coyote  
 20 consistently outperforms Big Stone on a cost per  
 21 megawatt-hour?  
 22 **A.** Again, it's the fuel cost. Coyote is a  
 23 mine-mouth plant. Big Stone has a rail delivery.  
 24 MR. GRUMAN: Just one moment, Your Honor.  
 25 **Q.** (MR. GRUMAN CONTINUING) On page 14 of

61

1 your application, that's Joint Exhibit No. 2,  
 2 OTP/MDU 103, it is stated that Big Stone is  
 3 frequently used for load following. You also talk  
 4 about load following that is necessary to  
 5 accommodate peak periods of use during the day and  
 6 the lower energy needs at night. Is this correct?  
 7 **A. That's correct.**  
 8 **Q.** Would you also agree that load following  
 9 also occurs because of the vast amounts of  
 10 intermittent resources in the Dakotas and Minnesota  
 11 that have come online over the past several years?  
 12 **A. I would definitely agree with that.**  
 13 **Q.** If you could please expand, why do you  
 14 agree?  
 15 **A. Well, in the past we had basically one**  
 16 **variable, and that was load, and load changed with**  
 17 **weather and time of day and such. Now we've added**  
 18 **a second variable into the equation and that is**  
 19 **these intermittent resources that are dependent**  
 20 **upon when the wind blows. So there are now two**  
 21 **variables in the equation, and they don't**  
 22 **necessarily move in the same direction. So the**  
 23 **need to respond to changes is greater through the**  
 24 **whole MISO system.**  
 25 **Q.** Are you familiar with the Buffalo Ridge

62

1 project in Minnesota?  
 2 **A. Well, I mean, it's a number of projects,**  
 3 **but, yes.**  
 4 **Q.** If you could please explain. What's your  
 5 understanding of Buffalo Ridge?  
 6 **A. Buffalo Ridge is just a geological**  
 7 **formation that starts in Minnesota and continues up**  
 8 **into South Dakota and then towards North Dakota,**  
 9 **and there's a vast amount of wind turbines that**  
 10 **have been located on the Buffalo Ridge.**  
 11 **Q.** Do you have an understanding of about how  
 12 many megawatts we're talking about in Buffalo  
 13 Ridge?  
 14 **A. No, I don't.**  
 15 **Q.** Well, in particular I guess what I'm  
 16 getting at is, obviously Buffalo Ridge is fairly  
 17 proximate to Big Stone; is that correct?  
 18 **A. Yes. Geographically, yes.**  
 19 **Q.** How in particular -- or specifically  
 20 Buffalo Ridge, how does that affect your capacity  
 21 rating?  
 22 **A. I don't think there's any direct tie. I**  
 23 **mean, we are dispatched in the MISO system, so it's**  
 24 **more the availability of wind through the whole**  
 25 **system and the load for the whole system than just**

63

1 **what is geographically close to Big Stone, if I'm**  
 2 **understanding your question, that is.**  
 3 **Q.** Thank you. Now, a number of times today  
 4 we've spoken about load following for a coal plant.  
 5 Is a coal plant designed to run that way? Are  
 6 there negatives to that? Does it reduce plant  
 7 life?  
 8 **A. Well, a coal plant can be designed for**  
 9 **whatever you want it to do. There are a lot of**  
 10 **units in the world that are designed to start up in**  
 11 **the morning, come up to full load and then be taken**  
 12 **off at night. Big Stone, Coyote were not designed**  
 13 **for that type of load following. We don't take it**  
 14 **on and off. But it certainly can go from full load**  
 15 **to minimum load every day. So instead of a zero to**  
 16 **a hundred percent, we have a 40 percent to 100**  
 17 **percent range that the units definitely can operate**  
 18 **very successfully in.**  
 19 **Q.** And in your operation of Big Stone in the  
 20 last several years, are you within the design  
 21 thresholds?  
 22 **A. Yes. I mean, 40 to a hundred percent is**  
 23 **common operation.**  
 24 **Q.** So if you had to describe, I mean, the  
 25 effects of ramping up and ramping down within those

64

1 thresholds, how does that affect a plant life, in  
 2 your opinion?  
 3 **A. Well, it's increasing cost like we talked**  
 4 **about because of the heat rate, and the other --**  
 5 **the cycles up and down do increase the maintenance**  
 6 **cost.**  
 7 **Q.** So in particular, I guess -- you discussed  
 8 before two variables, demand and wind. How has  
 9 wind in particular affected the plant life of Big  
 10 Stone?  
 11 **A. Well, there is no way as an operator to**  
 12 **know exactly why the unit goes up or down. I mean,**  
 13 **Big Stone from day one in 1975 when there was no**  
 14 **wind still did a certain amount of load following**  
 15 **and did it in spring and fall, so the going from**  
 16 **minimum load to full load has been common through**  
 17 **the life of the plant. It's happening more, but is**  
 18 **it happening more because of wind, is it happening**  
 19 **more because it's a poor economy, that's where it**  
 20 **gets tough to distinguish why. I mean, we're**  
 21 **operators. When we're told to go down, we go down.**  
 22 **When we're told to come up, we come up. And what's**  
 23 **really causing it? Because the plant did follow**  
 24 **load from day one to some degree.**  
 25 **Q.** Clearly, what you do is a science

65

1 dependent upon a number of variables, for instance,  
 2 change in natural gas prices, and et cetera. Now,  
 3 you indicated that you know that the capacity  
 4 factor is changing, but you haven't focused on wind  
 5 in particular. Has there ever been a study by MDU  
 6 or OTP in this regard concerning the  
 7 differentiation of your capacity factor tied  
 8 specifically to wind?  
 9 **A. I am not aware of a study that reached a**  
 10 **concrete result.**  
 11 **Q.** Could you please expand upon that?  
 12 **A. Well, I know people have looked at the**  
 13 **issue, but I'm not aware that anybody has**  
 14 **successfully been able to say this much, this**  
 15 **effort is caused by wind and this much is caused by**  
 16 **economics and this much is caused by weather.**  
 17 **There's just -- I'm not aware of anything that has**  
 18 **been able to pin down which factor causes what**  
 19 **percentage of these variable changes.**  
 20 **Q.** When you say tied down, have there been  
 21 any kind of hypothetical guesses in memorandums or  
 22 anything like that in that regard?  
 23 **A. Not that I'm aware of.**  
 24 **Q.** I guess just using as a common example, if  
 25 you're going to a used car lot and you're buying a

66

1 vehicle, one of the questions you're going to have  
 2 is, okay, does this vehicle have a number of  
 3 highway miles or city miles. Could you please  
 4 explain, why would someone ask that?  
 5 **A. I drive a van that has 203,000 miles on**  
 6 **it. It's a number of factors whether it's a car or**  
 7 **a power plant, how is it used and how is it**  
 8 **maintained. And it takes both of those. You know,**  
 9 **as an operator, I would love to have the unit put**  
 10 **on at full load and just run steady because it's**  
 11 **the easiest and it's the best, but that's not the**  
 12 **real world today.**  
 13 **Q.** Before you had testified that you weren't  
 14 aware of any type of determination as far as tying  
 15 wind specifically towards the lower capacity rating  
 16 for Big Stone plant. What are your thoughts if the  
 17 Commission were to predicate the determination of  
 18 this ADP upon having such an analysis performed by  
 19 the companies? Would that be achievable?  
 20 **A. I don't know if it would be achievable. I**  
 21 **don't see the relevance to the air quality project,**  
 22 **but that's --**  
 23 **Q.** Certainly. Well, there's a relevancy  
 24 legal determination and then there's a technical  
 25 differentiation, as well. From a technical

67

1 standpoint, is that something that could be  
 2 accomplished?  
 3 **A. I don't know if we could get agreement on**  
 4 **the parameters. I'm not the study expert, but I**  
 5 **don't know if that's going to be technically**  
 6 **possible.**  
 7 **Q.** Would there be another witness present  
 8 today that would be able to more fully expand upon  
 9 that that you're aware of?  
 10 **A. Well, Mr. Kopp deals with many utilities.**  
 11 **He may have some thoughts. And Mr. Uggerud is more**  
 12 **familiar with other parts of the company than I am,**  
 13 **but I don't know if they can shed any light that I**  
 14 **can't.**  
 15 **Q.** Thank you. Going now toward the  
 16 integrated resource plan, when placing wind  
 17 projects into your integrated resource plan model  
 18 for planning purposes, does the model consider the  
 19 negative impacts wind load following has on coal  
 20 generation facilities?  
 21 **A. I'm not the expert on that. I don't**  
 22 **believe it does, but I'm not the expert.**  
 23 **Q.** Do you know who would -- is there someone  
 24 that would better be able to answer that question?  
 25 **A. Mr. Draxten would be able to answer that.**

68

1 MR. GRUMAN: Just one moment, Your Honor.  
 2 **Q.** (MR. GRUMAN CONTINUING) The application  
 3 talks about levelized cost. Can you explain what  
 4 that means and how it is calculated?  
 5 **A. Again, Mr. Kopp can go into the details**  
 6 **and I'm sure he can explain it better, but**  
 7 **basically it's taking a planning period, 20 years,**  
 8 **and doing a pro forma analysis over that and then**  
 9 **deriving that down to a single number for**  
 10 **comparison. In really oversimplified terms, and**  
 11 **the people who work with that will probably**  
 12 **shudder, but it's coming up with an average number**  
 13 **for the whole period. That's certainly not**  
 14 **technically correct, but it gives the idea.**  
 15 **Q.** Turning now to baghouses. It's my  
 16 understanding in the life of the plant for Big  
 17 Stone there's been a number of baghouses. What is  
 18 the life expectancy of the new baghouse proposed  
 19 for this AQCS project?  
 20 **A. Well, first, I'd like to comment on a**  
 21 **number of baghouses --**  
 22 **Q.** Please.  
 23 **A. -- because there really hasn't been a**  
 24 **number of baghouses. Just, quick, let me go over**  
 25 **that the Big Stone was built with an electrostatic**

69

1 precipitator, which was common technology at the  
 2 time. The precipitator was reaching the end of its  
 3 life and subbituminous coal has a more difficult  
 4 coal ash to collect than lignite, so we had two --  
 5 it had two strikes against it, you know, the more  
 6 difficult ash and aging and failing, so the owners  
 7 were faced with we had to do something.

8       **The University of North Dakota Energy**  
 9 **Research Center approached the plant with a unique**  
 10 **technology that, with the Department of Energy and**  
 11 **a commercializer and the Energy Research Center, a**  
 12 **prototype unit was installed at Big Stone trying to**  
 13 **advance the technology. It was a combination of**  
 14 **precipitator and baghouse, and if it had succeeded,**  
 15 **it would have been a step forward in the use of --**  
 16 **and the cost, because you only use a fraction of**  
 17 **the bags. And a large share of the cost was funded**  
 18 **by the Department of Energy.**

19       **Unfortunately, with all commercialization**  
 20 **efforts, they're not all successful, and this one**  
 21 **was not. It was able to remove the particulates,**  
 22 **but the bag life for the bags in it was extremely**  
 23 **short, so the plant was faced with having to do**  
 24 **something, and that's what drove the plant to put**  
 25 **its first baghouse on, which is the one that's**

70

1 operating today.

2       **So we're really talking about the second**  
 3 **baghouse for Big Stone. And what's driving it is**  
 4 **not because the existing one is not doing its job.**  
 5 **It's because the box that it sits in was designed**  
 6 **for a maximum of minus 25 inches, and it's running**  
 7 **at a maximum of 24 inches today in and out -- I**  
 8 **mean, day in and day out. With the proposed air**  
 9 **quality control system it will see normally minus**  
 10 **50 inches. The thing will implode if we don't do**  
 11 **something, and that's why it's not practical to**  
 12 **continue with the existing baghouse.**

13       **The baghouse that we're proposing should**  
 14 **last the life of the unit. It should certainly**  
 15 **last 30 years. It's proven technology and it's**  
 16 **running on a lot of other units that are burning**  
 17 **the same type of fuel. Long answer. I apologize.**

18       **Q. Oh, not at all. Thank you. What exactly**  
 19 **is the cost of the new expected baghouse?**

20       **A. I will have to give you a very generalized**  
 21 **answer because as we look at the scrubber**  
 22 **technology that I talked about, dry versus**  
 23 **semi-dry, there's a tradeoff. One, you have a more**  
 24 **expensive baghouse and a cheaper scrubber, and vice**  
 25 **versa. But basically to put a new baghouse on with**

71

1 **the spray dryer, we're talking roughly \$30 million**  
 2 **purchase and installed cost.**

3       **Q. Now, it's my understanding that at least**  
 4 **as of right now -- of course, you made an**  
 5 **application in Minnesota also for an advance**  
 6 **determination of prudence, a different law, their**  
 7 **law, of course. In that proposed findings of fact,**  
 8 **conclusions of law and order from the ALJ, which,**  
 9 **of course, has not been accepted by the Minnesota**  
 10 **Commission, I believe they did not allow for the**  
 11 **new baghouse because it was not BART. Is that your**  
 12 **understanding? And please reconcile or explain.**

13       **A. In Minnesota the advocacy staff is the**  
 14 **Department of Commerce, and in Minnesota the**  
 15 **Department of Commerce took the position that the**  
 16 **baghouse should be excluded. They also took the**  
 17 **position that they're not saying Otter Tail should**  
 18 **not be able to recover the cost for that. It's**  
 19 **just they felt that the wording of the advance**  
 20 **determination of prudence statute in Minnesota**  
 21 **would exclude the baghouse.**

22       **We do not necessarily agree with that**  
 23 **position, but sometimes discretion is the better**  
 24 **part of valor, it didn't seem worth the fight, so**  
 25 **we have agreed that we would not oppose the**

72

1 **Department of Commerce in that. We do not believe**  
 2 **that they're correct. In my reading of the ALJ**  
 3 **report, I think he takes that position in the last**  
 4 **page of his report. It's one of those issues**  
 5 **that -- especially when they came out saying that**  
 6 **they believe it's -- in my opinion, it's a prudent**  
 7 **expenditure, it's just not part of the way they**  
 8 **interpret the ADP statute.**

9       **Q. Thank you. Clearly there have been a**  
 10 **number of questions and discussions about wind**  
 11 **today. Just out of curiosity -- it's my**  
 12 **understanding the production tax credit for wind**  
 13 **ends in 2012 currently; is that correct?**

14       **A. That's correct.**

15       **Q. Do you have any opinion as to whether or**  
 16 **not that's going to get extended?**

17       **A. Well, I can give you my opinion, and I**  
 18 **have to disclaim, it's certainly not MDU's opinion,**  
 19 **it's not Otter Tail's. But, I mean, I, personally,**  
 20 **believe that it's either going to be not extended**  
 21 **or greatly reduced just because of the economic**  
 22 **condition, the concerns for balancing the budget**  
 23 **and such. I would think there's a good chance that**  
 24 **it will not be extended, but my opinion isn't worth**  
 25 **anything more than anyone else's opinion.**

73

1 **Q.** From your understanding, I mean, is  
 2 that -- that position, is that predicated solely  
 3 upon the lack of federal dollars, or are  
 4 stakeholders -- are there any complaints, and  
 5 et cetera, that this is -- the electricity system  
 6 is too dynamic and it's -- perhaps that it can't  
 7 take -- incorporate all this extra wind? Do you  
 8 have any opinion in that regard?  
 9 **A.** I'm not the resource planner. I'm the guy  
 10 who has worked for 35 years in coal, so I'm very  
 11 biased. I mean, I'm a coal guy, I gotta admit it.  
 12 That's what I've done my career. And, you know, I  
 13 see wind having its place, but I don't --  
 14 personally, I don't think that the production tax  
 15 credit is necessary, but, like I said, I'm very  
 16 biased and you're getting my opinion, certainly not  
 17 Otter Tail's opinion.  
 18 **Q.** Just reiterating, I guess, some of your  
 19 prior testimony. If the companies were to receive  
 20 conditional ADP, what would you -- what would you  
 21 expect would be the project cost between now and  
 22 when the EPA is likely to issue their final ruling  
 23 concerning the South Dakota SIP, I believe, in  
 24 March 2012?  
 25 **A.** I would -- my guesstimation is that we

74

1 will have spent total project by March roughly \$6  
 2 million total project.  
 3 **Q.** Could you break that down, the 6 million,  
 4 in regards to, for instance, construction costs  
 5 versus engineering planning?  
 6 **A.** Well, there are no construction costs in  
 7 that. There are no procurement. It is basically  
 8 the engineering that was necessary for these types  
 9 of hearings and to begin the detailed design. So  
 10 it's my time, the engineer's time. And there's  
 11 nothing solid. We haven't bought any steel. We  
 12 have done some exploration, you know, bore holes in  
 13 the ground and things that are necessary to do the  
 14 design work, but we haven't bought anything.  
 15 **Q.** And thank you for the correction, and  
 16 that's what I meant, too, as far as procurement of  
 17 materials, and et cetera, when I say construction.  
 18 So it's my understanding then of the \$6  
 19 million, essentially it's going to be engineering  
 20 between now and March? There isn't going to be any  
 21 acquisition of materials or --  
 22 **A.** The intention -- the schedule, if we  
 23 continue, we will enter into contracts for  
 24 material, but the contracts will be limited notice  
 25 to proceed so that the engineering work can start

75

1 to keep the project on schedule.  
 2 **Q.** Well, I note -- in government here, of  
 3 course, our standard contracts are that there's  
 4 always a caveat that if there's a lack of funding,  
 5 et cetera, that it's essentially not breach of  
 6 contract and you can leave. In your type of  
 7 contracts, I mean, are they written in such a way  
 8 so that if the EPA were to do something unexpected  
 9 and not accept the South Dakota State  
 10 Implementation Plan or if there's something that  
 11 changes where you would no longer need it, is there  
 12 a way that you can essentially leave your contracts  
 13 without facing breach?  
 14 **A.** There will be costs of cancellation. We  
 15 can't walk away without -- once material has been  
 16 ordered and the fabrication as such has started,  
 17 there will be in effect penalties to be paid if we  
 18 walk away from it. It's not the same as doing  
 19 engineering work that you can stop immediately. So  
 20 we will get to a point, you know, next year where  
 21 there will be penalties if something goes astray.  
 22 **Q.** And more specifically, hypothetically, if  
 23 this Commission were to submit an order essentially  
 24 saying that to preclude any kind of engineering,  
 25 procurement and construction contracts until the

76

1 time that the EPA formally accepts the South Dakota  
 2 SIP, how will that affect you? Is that something  
 3 you would be in favor of? Or, if not, please  
 4 explain either way.  
 5 **A.** Well, I certainly would not be in favor  
 6 of. If we suspend activity for even three months,  
 7 that three months could easily -- you know, not  
 8 turn into two years. It certainly would turn into  
 9 six months to a year. All of the work, all the  
 10 estimates are very time-sensitive. I mean, the  
 11 procurements that we're working on now will have  
 12 expired. We will probably have to go back on the  
 13 street, and if the MACT rule has come about or  
 14 other developments, the price will be different and  
 15 now we're back into the arena, will this  
 16 Commission, will the Minnesota Commission want to  
 17 relook at this because now the price is different?  
 18 And if we start that process over, it's very easy  
 19 that a three-month hiatus could turn into a year to  
 20 two years of delay and greatly increase costs.  
 21 **Q.** I have a couple of questions about  
 22 ultimately if the AQCS is, of course, accepted and  
 23 it's something that you're building. It's my  
 24 understanding that as of right now Big Stone has a  
 25 planned outage in 2015; is that correct?

77

1 **A. That's correct.**  
 2 **Q.** You also state that the 2015 maintenance  
 3 will occur notwithstanding any time with the AQCS  
 4 project due to otherwise necessary maintenance; is  
 5 that also correct?  
 6 **A. That's correct, within reason. I mean, if**  
 7 **we're a week late, they'll probably wait a week,**  
 8 **but they certainly can't wait three months, six**  
 9 **months. There's maintenance that will have to be**  
 10 **addressed.**  
 11 **Q.** So essentially in a perfect world from a  
 12 planning perspective, if AQCS is accepted and  
 13 you've got this maintenance, clearly you want to  
 14 tie them both in in 2015; is that correct?  
 15 **A. That's correct.**  
 16 **Q.** My question is, since there's this routine  
 17 maintenance, is that set in stone? Does that have  
 18 to occur in 2015, or if the AQCS project were to be  
 19 extended, again, you could tie it in, it would just  
 20 be later than 2015?  
 21 **A. Well, it's not a simple answer. You have**  
 22 **to remember these units go a long time between**  
 23 **major outages, and Big Stone has just completed an**  
 24 **outage and it does not intend to take a major**  
 25 **outage until 2015. That's a long time to run**

78

1 without being able to change the tires on the car,  
 2 so to speak. Because these outages are very  
 3 expensive, they're all -- as you can expect,  
 4 they're concentrated in spring and fall when the  
 5 demand is lowest, you get in line, so to speak,  
 6 with the other units in this area so that there's  
 7 enough manpower, enough resources for them to take  
 8 place. So Big Stone has two factors: One, can its  
 9 facilities, its equipment make it another year,  
 10 which is doubtful, but potential; and then the  
 11 other is, is there a slot where we're not going to  
 12 be competing with other units so that there is  
 13 enough labor, manpower, resources available. So I  
 14 can't say it wouldn't be possible to move, but it  
 15 could be very difficult. It could be very  
 16 expensive to move.  
 17 **Q.** Before you had discussed on a number of  
 18 occasions that essentially if the MACT rule comes  
 19 into place, and et cetera, there could be a number  
 20 of companies that are looking for essentially the  
 21 same materials that you're looking for for the  
 22 AQCS; is that correct?  
 23 **A. That's correct.**  
 24 **Q.** I.e., more demand?  
 25 **A. Right.**

79

1 **Q.** Now, you know, along those lines then,  
 2 when the Big Stone plant is shut down, whenever it  
 3 may be, where is that power -- is that going to be  
 4 purchased power, or how are you going to make up  
 5 that shortfall?  
 6 **A. Well, to begin, like I said, it's always**  
 7 **scheduled in spring and fall to minimize the need,**  
 8 **but each company will go out and -- well, they**  
 9 **could go to the market. Most likely they will go**  
 10 **and get contracts to cover that, so months and**  
 11 **months in advance our people will be looking to**  
 12 **purchase energy to cover that outage.**  
 13 **Q.** Now, clearly purchased energy is a finite  
 14 amount. I think there's a corollary between trying  
 15 to acquire all of this technology. This equipment,  
 16 of course, also is finite, as with limited amount  
 17 of capacity available in the MISO market. I  
 18 believe there's a number of articles that indicate  
 19 that there potentially -- it could affect perhaps  
 20 the robust system for the electricity. Have there  
 21 been discussions in that regard and concerns, and,  
 22 if so, if you could please explain that further.  
 23 **A. Well, most of those that I have heard**  
 24 **relate to the MACT rules, and it's based on the**  
 25 **speculation of how many units will put equipment on**

80

1 versus how many older, marginal units will just  
 2 retire. And there's a lot of opinions out there,  
 3 some that it's no problem, others it's a serious  
 4 problem, and I think it is an issue that we all  
 5 should be concerned about because some of the  
 6 proposed EPA rules have a very tight implementation  
 7 time frame that could exacerbate the problem. So,  
 8 I mean, it's something to be concerned about and  
 9 that's part of the reason we're trying to stay as  
 10 much as we can ahead of the pack.  
 11 **Q.** I mean, is there a potentiality of  
 12 brownouts? Is that something that you've discussed  
 13 internally?  
 14 **A. I guess I would -- probably would not be**  
 15 **part of those discussions. I'm on the project**  
 16 **side.**  
 17 **Q.** Obviously there's been a number of  
 18 discussions today concerning the Coyote plant.  
 19 If -- and there's also been some discussions about  
 20 a change in price between SCR and SNCR technology  
 21 and this whole litigation going on. From a  
 22 ratepayer's standpoint, our curiosity is that  
 23 clearly we're here before with an ADP. If either  
 24 of your principals or OTP or MDU were to change the  
 25 fuel source at the Coyote plant from lignite to

81

1 Powder River Basin coal, is that something that the  
 2 company would be open to, making this ADP  
 3 contingent upon them coming back for an ADP under  
 4 such a circumstance, i.e., that before they would  
 5 change their fuel source, they would ask this  
 6 Commission for an advance determination of prudence  
 7 on that issue?  
 8 **A. I think that's a question more for Mr.**  
 9 **Uggerud.**  
 10 MR. GRUMAN: If I may have a moment, Your  
 11 Honor.  
 12 JUDGE WAHL: You may.  
 13 MR. GRUMAN: Thank you.  
 14 JUDGE WAHL: In fact, counsel, let's take  
 15 this opportunity for a recess.  
 16 MR. GRUMAN: Very good.  
 17 JUDGE WAHL: We'll recess until 10 after  
 18 10, please. 10 after 10.  
 19 (Recess taken.)  
 20 JUDGE WAHL: All right. Mr. Gruman.  
 21 MR. GRUMAN: Thank you, Your Honor.  
 22 **Q. (MR. GRUMAN CONTINUING) I just have one**  
 23 **final question. Before, if I remember right, your**  
 24 **testimony indicated that at peak demand, Big Stone**  
 25 **is producing 50 more megawatts than Coyote Station;**

82

1 is that correct?  
 2 **A. Approximately 50, yes.**  
 3 **Q. But it's also true that the change or the**  
 4 **actual maximum capacity of both Big Stone and**  
 5 **Coyote is about that same differentiation, so,**  
 6 **therefore, Big Stone isn't technically more**  
 7 **efficient than Coyote, that probably has more to do**  
 8 **with it? Would you agree or not agree?**  
 9 **A. I'm not sure I understand your question.**  
 10 **Q. Well, again, there's a 50-megawatt**  
 11 **differential at peak demand between Big Stone and**  
 12 **Coyote. However, the rating for Coyote and Big**  
 13 **Stone, Coyote is 414 and Big Stone is about 475.**  
 14 **Now, before you had testified that there was**  
 15 **different ratings and whatnot so that Big Stone**  
 16 **could run longer, and et cetera. However, is that**  
 17 **more of an explanation for that 50-megawatt**  
 18 **differentiation capacity factor?**  
 19 **A. No. I mean, capacity factor is basically**  
 20 **that number, 475, times 8,760 hours in the year**  
 21 **becomes the hundred percent, and then the number of**  
 22 **-- let me start over.**  
 23 **Capacity factor is the percentage that the**  
 24 **unit generates versus what it theoretically could,**  
 25 **475 all the time. So when we say it's 50 percent,**

83

1 **it's generating 50 percent of what it theoretically**  
 2 **could. Because Big Stone is 475 and Coyote is**  
 3 **414 -- I think it's actually a little higher than**  
 4 **that, but it's 50 percent of the 475 or 50 percent**  
 5 **of the smaller number. So you will get more**  
 6 **megawatt-hours if the cruise rating is higher. I**  
 7 **don't know if I'm answering your question.**  
 8 **Q. I'll reiterate, too. So there's a 50-**  
 9 **megawatt differentiation at peak demand between the**  
 10 **two plants. However, Big Stone is a bigger plant.**  
 11 **So, I mean --**  
 12 **A. No. It's the same equipment. It's the**  
 13 **same generator, same turbine. The difference is a**  
 14 **lot due to the fuel. I mean, the unit runs based**  
 15 **on where we can run continuously and produce at.**  
 16 **Because Coyote burns a poorer fuel, it has to run**  
 17 **at a lower rating so that it doesn't plug the**  
 18 **boiler and such. So that difference is -- there**  
 19 **are other minor things, but it's primarily fuel**  
 20 **related.**  
 21 MR. GRUMAN: No further questions.  
 22 JUDGE WAHL: I assume Ms. Jeffcoat-Sacco  
 23 has no questions. Questions from the Commission.  
 24 Commissioner Clark.  
 25

84

**EXAMINATION**

1 **BY COMMISSIONER CLARK:**  
 2 **Q. Thank you. I do have some, in no**  
 3 **particular order so these may be a little bit**  
 4 **random.**  
 5 **Can you go over for me again the hybrid**  
 6 **procurement approach and how that would differ from**  
 7 **a traditional procurement approach?**  
 8 **A. Well, there are basically two traditional**  
 9 **procurement approaches. One that's referred to as**  
 10 **EPC, engineering procurement construction, where**  
 11 **basically you would go to a company -- a large**  
 12 **company usually for a project like this and say, I**  
 13 **want you to engineer it, buy it and build it and**  
 14 **give me the keys when it's done.**  
 15 **The other approach is what's sometimes**  
 16 **referred to as multiple prime, where you go and you**  
 17 **get a contractor to do every piece. I'll go and**  
 18 **buy a generator and have that company install it.**  
 19 **I'll go and buy a boiler and that company will**  
 20 **install it and I'll buy a baghouse and that company**  
 21 **will install it.**  
 22 **Those are kind of the two extremes. One**  
 23 **is a turnkey, I hire Bechtel to do everything or I**  
 24 **hire 30 contractors to do everything.**  
 25

85

1 **Our hybrid, and we call it that because**  
 2 **it's really halfway between, we're going out and**  
 3 **buying the equipment through competitive process**  
 4 **from whoever we feel is best and we're doing that**  
 5 **and then we're going and hiring a single contractor**  
 6 **to construct, erect it all. So we have a number of**  
 7 **procurements, but only one erection contractor.**  
 8 **And by doing that we can go to the market sooner.**  
 9 **If you were doing an EPC contract, you**  
 10 **would have to do a tremendous amount of engineering**  
 11 **work upfront because you're bidding the whole**  
 12 **process when you go out, and you'd probably take**  
 13 **eight to ten months longer to do all that work and**  
 14 **then do the bidding. This way we can do the work**  
 15 **on the equipment and get on the street for that and**  
 16 **then do -- in parallel do the work for the erection**  
 17 **contractor and go onto the street later once we**  
 18 **know exactly what we're going to build.**  
 19 **Q.** Why isn't the hybrid approach typically  
 20 done, and why does it make sense in this particular  
 21 case?  
 22 **A.** It all depends upon the market in, you  
 23 know, how many -- you know, is it a buyer's market,  
 24 is it a seller's market, if it's -- at certain  
 25 times people like EPC because if you have the time

86

1 and the market is right, you know, you can get a  
 2 firm price at the start instead of in pieces. It's  
 3 all dependent upon the market.  
 4 **At times, if it is a seller's market, you**  
 5 **may be in a position where you wouldn't get a**  
 6 **contractor for a large project to bid EPC. So**  
 7 **there is no right approach. It all depends upon**  
 8 **the conditions today. You know, if we're back in**  
 9 **front of this Commission in two years with a**  
 10 **different project, it might be a different delivery**  
 11 **method because the market may be different. We**  
 12 **think this is the right approach for us at this**  
 13 **time with the market the way it is.**  
 14 **Q.** Okay. So if you could just describe the  
 15 market, why this -- what are the characteristics of  
 16 this market that make this approach the right one?  
 17 **A.** Right now it is a buyer's market. We are  
 18 getting a much greater response from vendors, much  
 19 more interest, much more competitive process than  
 20 what we saw three, four years ago. But we believe  
 21 that it's going to change if -- the MACT rules will  
 22 cause a huge run-up in demand and it could very  
 23 quickly switch from a buyer's market to a seller's  
 24 market.  
 25 **Q.** Okay. Could you walk me through again the

87

1 rationale, and this is from discussion that you had  
 2 had with Mr. Gruman, on why there would be a  
 3 difference between MDU's -- I can't remember if it  
 4 was capacity factor on FERC Form 1 and Otter  
 5 Tail's. I understand that you said it had to do  
 6 with how each company dispatches. Walk me through  
 7 that, why you wouldn't just have a -- this is the  
 8 capacity coming out of the plant and both companies  
 9 would have the same factor.  
 10 **A.** Okay. If I'm going into too much detail,  
 11 please stop me. Basically each company can  
 12 dispatch or call upon the unit as it sees fit for  
 13 its share as long as it is above the minimum. I  
 14 mean, you can't have MDU say I don't want to run  
 15 the plant and Otter Tail says I want to run the  
 16 plant, so we establish a minimum load. And above  
 17 that, then each company can say I want to take it  
 18 all or I want to take nothing above minimum, and  
 19 they're free to do that. And each company will  
 20 pick their resources depending upon their options.  
 21 MDU has Heskett and they have Lewis & Clark and  
 22 such. Otter Tail has Hoot Lake and gas turbines  
 23 and it's a different mix. You may have units that  
 24 you have to run in your area because of voltage  
 25 support or something else. So each company has

88

1 different options available, resources, so their  
 2 choice may be different.  
 3 **Just as an example, we'll pick on the**  
 4 **third party in Big Stone, Northwestern. For years**  
 5 **they had an arrangement with WAPA to market all of**  
 6 **their energy so they just took Big Stone and, I**  
 7 **think, Coyote and said we're going to take our full**  
 8 **share around the clock because they had an outlet**  
 9 **for it. So that's the extreme case. You know,**  
 10 **Otter Tail and MDU would be backing it off as load**  
 11 **went down. At that time when WAPA was short of**  
 12 **water, they took it around the clock. So there can**  
 13 **be some extreme differences, and that can account**  
 14 **for the difference at Big Stone because**  
 15 **Northwestern has a larger share -- a much larger**  
 16 **share of Big Stone than Northwestern has of Coyote.**  
 17 **Q.** Northwestern is participating in this  
 18 project commensurate with its investment in  
 19 Big Stone?  
 20 **A.** It just doesn't have load in North Dakota.  
 21 **Q.** Right. Okay. Could you talk about why  
 22 the Department of Commerce in Minnesota opposed the  
 23 baghouse? You said that it had to do with some  
 24 statutory construct. Could you just talk a little  
 25 bit more about that?

89

1 **A. Well, it's basically the way they're**  
 2 **interpreting the ADP statute in Minnesota, and the**  
 3 **ADP statute is not the same as North Dakota. It's**  
 4 **similar, but it is different, and they're**  
 5 **interpreting that it's not required because the**  
 6 **South Dakota SIP says a baghouse is BART.**  
 7 **We don't interpret it that way because the**  
 8 **existing baghouse would need to be modified, and**  
 9 **it's not the most cost-effective alternative. It's**  
 10 **cheaper to build new than to modify the old, so we**  
 11 **have differences of opinion on how the statute is**  
 12 **interpreted.**  
 13 **Q. Okay. But the Department of Commerce**  
 14 **hasn't indicated that they're going to oppose it**  
 15 **through traditional ratemaking principles as**  
 16 **opposed to an advance determination?**  
 17 **A. No effect. To me they have said just the**  
 18 **opposite, that they believe it likely can be**  
 19 **recovered through other -- or through traditional**  
 20 **ratemaking processes, just not the ADP is their**  
 21 **position.**  
 22 **Q. Okay. Can you run me through again the**  
 23 **costs for scrubber, the control systems that will**  
 24 **be placed for the NO<sub>x</sub>, which will be the separated**  
 25 **air system and the SCR and then the particulate or**

90

1 the new baghouse?  
 2 **A. Well, the breakdown of that is trade**  
 3 **secret material --**  
 4 **Q. Okay.**  
 5 **A. -- so we'd have to --**  
 6 **Q. But it's in the trade secret file?**  
 7 **A. Yes.**  
 8 **Q. But in total you said that's 489?**  
 9 **A. 489 without the mercury control.**  
 10 **Q. And the 5 million mercury control. And,**  
 11 **again, the mercury control is -- how is that done?**  
 12 **A. It is basically activated carbon**  
 13 **injection.**  
 14 **Q. How much power is lost off the unit by**  
 15 **implementing the AQCS?**  
 16 **A. We think that -- I'm prefacing my remarks,**  
 17 **I think through engineering we can improve the**  
 18 **number, and that's a challenge, but we're looking**  
 19 **at roughly 9 megawatts at full load being consumed**  
 20 **by the unit. Now, there is an offset there because**  
 21 **the work on the boiler will actually cause some**  
 22 **improvements in boiler efficiency.**  
 23 **Q. Could you run down again the alternatives**  
 24 **that were considered? I know they were mentioned**  
 25 **during opening statement.**

91

1 **A. Quickly, we tried to come up with**  
 2 **alternatives that would match the capability and**  
 3 **flexibility and the attributes of the Big Stone**  
 4 **plant, and really at the end of the day we only**  
 5 **came up with three others than the AQCS. The**  
 6 **simple one is just removing the coal and replacing**  
 7 **it with natural gas. The other is a combined**  
 8 **cycle. And the final one is that same combined**  
 9 **cycle, but paired with wind.**  
 10 **Q. There was a good deal of talk about**  
 11 **lignite during the cross. Was lignite ever**  
 12 **considered switching back? The switch has been**  
 13 **made once. Gas conversion was considered.**  
 14 **A. It was not considered.**  
 15 **Q. Was there a -- what would be the reason**  
 16 **that it would not be considered or just dismissed**  
 17 **out of hand?**  
 18 **A. Well, very simple economics, the rail**  
 19 **haul. I mean, no one, that we're aware of, is**  
 20 **successfully burning lignite with a rail haul. The**  
 21 **mine that served Big Stone 15, 20 years ago has**  
 22 **been reclaimed and shut down, too. So we would be**  
 23 **looking at a capital investment somewhere, and,**  
 24 **like I said, the rail haul we believe would make it**  
 25 **uncompetitive.**

92

1 **Q. Were any newer technologies such as the**  
 2 **dry finding, things like that, that have come about**  
 3 **in the last 15 or so years studied as potentially**  
 4 **making rail haul feasible?**  
 5 **A. No.**  
 6 **Q. There were some discussions that you'd had**  
 7 **with Mr. Gruman regarding if there were conditional**  
 8 **natures of permits that could be granted by the**  
 9 **Commission. And you had said that the reason you**  
 10 **wouldn't support that is because it would delay**  
 11 **your implementation for months, which would add**  
 12 **cost. I'm not sure if I followed that exactly. As**  
 13 **I understand it, the Commission could condition a**  
 14 **permit in such a way that it's not a denial or an**  
 15 **indication to the companies that you not proceed;**  
 16 **it's, rather, a method of ratepayer protection**  
 17 **where you might have to come for those costs**  
 18 **through traditional ratemaking principles in the**  
 19 **same way that apparently Otter Tail acceded to in**  
 20 **Minnesota through the DOC. Could you walk me**  
 21 **through that again?**  
 22 **A. Well, it was my understanding from the**  
 23 **question that I thought Mr. Gruman had asked that**  
 24 **if we suspended all activity until we have an EPA**  
 25 **approval. If we don't suspend activity, of course,**

93

1 there won't be a delay. But I understood his  
 2 question was the effect if we just put -- in effect  
 3 put everything on hold until EPA has reached its  
 4 final decision.  
 5 Q. Okay. To what degree have you, as you  
 6 were considering gas conversion, considered  
 7 potential for other next EPA steps, specifically  
 8 carbon, and how was that factored or not into your  
 9 decisionmaking process?  
 10 A. I think everyone is aware that Otter Tail  
 11 operates in Minnesota and is doing a similar ADP in  
 12 Minnesota where we do have to consider carbon, and  
 13 part of the Burns & Mac analysis that was done  
 14 looked at the range of carbon that Minnesota  
 15 considers and we saw no case where the CO<sub>2</sub> costs --  
 16 reasonable CO<sub>2</sub> costs could make the AQCS not the  
 17 least-cost option.  
 18 Q. How high would carbon costs have to be per  
 19 ton to get the costs to the point where you would  
 20 tip towards, say, natural gas?  
 21 A. Well, the problem in answering that is,  
 22 you know, when do they start, is it phased in, are  
 23 there free allowances, what's the rate of  
 24 escalation? So just to give a number, you've got  
 25 to go through all the assumptions. But for the

94

1 range that Minnesota requires us to, we didn't see  
 2 that we were getting close to the tipping point.  
 3 Q. What is their range?  
 4 A. 9 to 34.  
 5 Q. So a carbon cost of up to \$34 wouldn't  
 6 actually cause the utility to actually change fuel  
 7 sources, it would just be simply an add-on to  
 8 ratepayer bills? Is that another way to interpret  
 9 it?  
 10 A. Yes.  
 11 Q. There wouldn't be a, quote/unquote,  
 12 environmental benefit; it would just be a rate  
 13 increase?  
 14 A. My opinion, yes.  
 15 Q. Okay. Thanks. And then I just have one  
 16 final question with regard to the EPA regs,  
 17 themselves, with regard to regional haze. Would  
 18 that be best addressed to you or another witness?  
 19 A. I think Mr. Graumann can probably do a  
 20 better job.  
 21 COMMISSIONER CLARK: Okay. That's all I  
 22 have. Thank you.  
 23 JUDGE WAHL: Commissioner Cramer.  
 24 COMMISSIONER CRAMER: Thank you.  
 25

95

**EXAMINATION**

2 **BY COMMISSIONER CRAMER:**  
 3 Q. And thanks, Mark, for your testimony and  
 4 for your endurance. Of course, that chair is  
 5 almost -- we could almost name it after you. But  
 6 we do appreciate your expertise.  
 7 And I might say as a statement, actually  
 8 the issue that Commissioner Clark was pursuing a  
 9 little bit with regard to the procurement process,  
 10 I suspect that having the right talent on staff  
 11 makes it a lot easier to go out and bid and  
 12 purchase equipment yourself, as well, before  
 13 bringing on a general contractor, and I just make  
 14 that as a statement as I look at you, because as I  
 15 listen to your testimony, I suspect that that had a  
 16 fair bit to do with it.  
 17 But with that, I really don't have a lot  
 18 more. I also appreciate -- you've renewed my  
 19 confidence in mine-mouth generation, by the way. I  
 20 appreciate that. I'm going to ask a question, I  
 21 think, you may have answered earlier, but I'm going  
 22 to ask it in a different way, not so much for the  
 23 record, but my brain record.  
 24 With regard to the South Dakota SIP and  
 25 its requirement for catalytic versus non-catalytic

96

1 reduction systems, and I understand that  
 2 subbituminous or Powder River is more  
 3 cost-effective with SCR than lignite, but it's  
 4 still a lot more expensive. My question to you  
 5 would be as an engineer with all this experience,  
 6 is SCR, in your view, a necessary requirement in  
 7 South Dakota.  
 8 A. Let me preface that by if you look at  
 9 other utilities, other plants, there are almost  
 10 none that have the combustion technology of Big  
 11 Stone that do not have SCRs on them. So if you  
 12 take the political position that what was done for  
 13 the rest of the country was the right thing to do,  
 14 we're not leading the pack. We're one of the last  
 15 ones to put SCRs on.  
 16 Now, the distinguishing thing you have to  
 17 remember, Big Stone is a cyclone-fired unit, and  
 18 there are four of them -- excuse me -- five of them  
 19 in this area, the three in North Dakota, Big Stone  
 20 and the Allen S. King plant in Minnesota. Allen S.  
 21 King already has an SCR on and basically everything  
 22 to the east that is cyclone that isn't on lignite  
 23 for one reason or another have already put SCRs on.  
 24 So I would say if we're going to continue to  
 25 operate for the next 30 years, we need to put an

97

1 **SCR on.**  
 2 COMMISSIONER CRAMER: I have nothing else.  
 3 Thank you.  
 4 JUDGE WAHL: Commissioner Kalk.  
 5 COMMISSIONER KALK: Thank you, Your Honor.  
 6 **EXAMINATION**  
 7 **BY COMMISSIONER KALK:**  
 8 **Q.** Thank you, Mark, for all your testimony.  
 9 I was kind of struck by how quickly you knew how  
 10 many hours there are in a year.  
 11 COMMISSIONER CRAMER: I was impressed with  
 12 that myself.  
 13 **Q.** (COMMISSIONER KALK CONTINUING) I was  
 14 thinking back to my days in the engineering lab at  
 15 NDSU and you knew how many hours in a year and how  
 16 many minutes in a week and you knew it just like  
 17 that. So, anyway, that added to your credibility.  
 18 As Kevin and Tony have pointed out, a lot  
 19 of ground has been covered, but I just want to  
 20 bounce by a couple things. In reading through your  
 21 testimony the total cost, 489 million, but of that  
 22 78 million for MDU ratepayers, 108 million for  
 23 Otter Tail ratepayers, about 16 percent; is that  
 24 accurate?  
 25 **A. North Dakota.**

98

1 **Q.** North Dakota. Correct. Okay. So we're  
 2 talking a little bit different numbers -- or not  
 3 little, but just defining them a little bit better.  
 4 Then I had the same question about the  
 5 power loss when we added these potential features  
 6 on. You said lose about 9 megawatts, but in the  
 7 next outage you may pick up some more.  
 8 **A. Well, one is we're beginning the**  
 9 **engineering work, and I think we can do better as**  
 10 **we actually design that, but 9 is what we have to**  
 11 **go with now from the conceptual design, but I think**  
 12 **we can do better. The other side of that is we**  
 13 **have to lower the temperature of the gases coming**  
 14 **out of the boiler. That will improve the boiler**  
 15 **efficiency, so there will be a little bit of a**  
 16 **tradeoff. Even though we're going to use more**  
 17 **station service, we're going to burn a little less**  
 18 **fuel to do that, so there is some tradeoff.**  
 19 **Q.** I think you answered it, but, once again,  
 20 if these features are put in place, how long do you  
 21 think the plant will be in compliance?  
 22 **A. Well, part --**  
 23 **Q.** Two questions. What is the life of the  
 24 plant as we sit here today? How many years forward  
 25 is this plant if you put the features on it, will

99

1 be the first question. And the second, how long do  
 2 you think the plant would be in compliance if we  
 3 put these features on it?  
 4 **A. Let me address the first one, the life of**  
 5 **the plant. From my experience, plants are shut**  
 6 **down because they're not economical, not because**  
 7 **they are worn out.**  
 8 **Q.** Okay.  
 9 **A. If a utility is doing proper maintenance**  
 10 **and proper operation, in effect you could run the**  
 11 **plant forever. I mean, it's like you could drive a**  
 12 **car forever if you change the tires and overhaul it**  
 13 **and such. So a lot of that depends upon how you**  
 14 **run it, how you maintain it.**  
 15 **And then the second question, how long is**  
 16 **it going to -- is this going to be good for. In**  
 17 **part of the application -- and Mr. Graumann can**  
 18 **address it better, but we looked at all pending EPA**  
 19 **regulations, the train wreck issues that are in the**  
 20 **pipeline, and really the only ones that this AQCS**  
 21 **project doesn't address are mercury, which we've**  
 22 **got the caveat for \$5 million we can, and the other**  
 23 **one is the potential that ash could be classified**  
 24 **as hazardous waste. And in our financial analysis**  
 25 **we did a -- we included a cost for that worst-case,**

100

1 **\$37 a ton additional cost if it was. So we think**  
 2 **that anything that is in the pipeline we have**  
 3 **included in the analysis, so it's going to have to**  
 4 **be something that isn't on the radar screen at all.**  
 5 **Q.** Okay. Then, I guess, the last two things  
 6 is, just one, I commend the company for putting  
 7 this together. This is a pretty good document that  
 8 I've seen. A lot of this is very complex and it's  
 9 easy to follow. So thank you all for putting it  
 10 together, because we've been to a lot of hearings  
 11 where it's hard to follow through where some of  
 12 this stuff is going.  
 13 Then the last question, maybe not so much  
 14 for you, but it would be nice if someone, and maybe  
 15 you're the one, could come up and tell me why  
 16 advance determination of prudence is so important,  
 17 because I've heard a lot about this is prudent.  
 18 This is not a prudence case. This is advance  
 19 determination of prudence. You know, my  
 20 understanding, you could just go build this right  
 21 now. You don't need us for anything. So if you  
 22 could answer that or tell me who can best make that  
 23 argument.  
 24 **A. Well, there are probably others that can**  
 25 **add to it, but there's really two factors. I mean,**

101

1 one is the length of this project. I mean, it is a  
 2 long-term project that if at the end of the day we  
 3 come in and it is declared not prudent, it could  
 4 turn into a I-bet-the-company-type endeavor. For  
 5 Otter Tail, the larger share, \$260-some million of  
 6 investment, if at the end of the day we come in and  
 7 the Commission says this wasn't the right thing to  
 8 do, the company is not large enough to absorb \$260  
 9 million of capital investment. So, you know, do we  
 10 bet the company? We certainly don't want to.  
 11 And the other, in this day and age with  
 12 the economy and such, financing can be very  
 13 competitive, and I've been told by our financial  
 14 people that we will get better financing because of  
 15 this, which in the end will benefit the customers  
 16 because of the reduced costs.  
 17 Q. So are you saying then that if an advance  
 18 determination of prudence wouldn't be granted, that  
 19 you would have no alternative?  
 20 A. If it's -- well, if it's not granted  
 21 because you feel it's not prudent, then we have to  
 22 go back and say, Well, do you feel that a gas  
 23 option is the prudent thing to do? If you punt or,  
 24 excuse me, just say we're not going to decide now,  
 25 I don't know what the companies would do. That's a

102

1 very complicated question that the stakes are  
 2 pretty high.  
 3 COMMISSIONER KALK: Okay. Thank you.  
 4 Will there be any -- I guess I'll follow up with  
 5 that later. Thank you.  
 6 JUDGE WAHL: Further questions from the  
 7 Commission? Mr. Brown, followup?  
 8 MS. JEFFCOAT-SACCO: Judge. Excuse me.  
 9 JUDGE WAHL: Yes.  
 10 MS. JEFFCOAT-SACCO: May I ask a question?  
 11 JUDGE WAHL: I assumed you didn't have  
 12 any, but you may.  
 13 MS. JEFFCOAT-SACCO: It just was prompted.  
 14 **CROSS-EXAMINATION**  
 15 **BY MS. JEFFCOAT-SACCO:**  
 16 Q. I would just like to follow up on  
 17 Commissioner Kalk's question. I understand what  
 18 you responded, if the Commission denied this  
 19 application based on a decision that it was not  
 20 prudent, then you would have a certain signal, but  
 21 what would the companies' reaction or perception be  
 22 if the Commission, one, denied it not because it's  
 23 not prudent, but because they don't feel that  
 24 advance -- that it deserved designation of advance  
 25 prudence, because, after all, that is all the

103

1 statute is about, is advance prudence. And then  
 2 the second part of the question would be, I think  
 3 maybe following back around to Mr. Gruman's  
 4 questioning, if the advance determination was  
 5 conditioned on something. It's a two-part question  
 6 to you.  
 7 A. I'll start with the latter. I mean, the  
 8 condition, of course, it depends upon what the  
 9 conditions are. And, you know, in the testimony of  
 10 Mr. Hahn and such, there are conditions suggested  
 11 and most -- generally most of them seemed  
 12 reasonable. So assuming the conditions are  
 13 reasonable, I don't think it's a problem.  
 14 The other -- the first one, I can't speak  
 15 for any of the three companies on what their  
 16 position would be if the advance determination of  
 17 prudence is denied.  
 18 Q. Is there another witness that can answer  
 19 that, because it's a central component of this  
 20 case? You've answered the part about if prudence  
 21 is denied, but the statute is really about advance  
 22 decisions -- advance prudence determination. I  
 23 mean, the simple question is, would the companies  
 24 proceed or not?  
 25 A. I don't know.

104

1 Q. Is there another witness that we can ask?  
 2 A. Umm, Mr. Uggerud --  
 3 JUDGE WAHL: Maybe Mr. Brown can answer  
 4 that question in due course.  
 5 MS. JEFFCOAT-SACCO: Thank you. That's  
 6 all I have.  
 7 JUDGE WAHL: Followup, Mr. Brown?  
 8 MR. BROWN: Your Honor, I just have one  
 9 question. It pertains to the baghouse, which came  
 10 up a number of times.  
 11 **REDIRECT EXAMINATION**  
 12 **BY MR. BROWN:**  
 13 Q. Mr. Rolfes, could I refer you to the  
 14 document that's been marked as Exhibit 111. You  
 15 had identified that earlier as the South Dakota  
 16 Regional Haze SIP.  
 17 A. Okay.  
 18 Q. And if I could take you to page 99 of that  
 19 document.  
 20 A. I'm there now.  
 21 Q. Can you confirm for the record that what  
 22 we're looking at is the South Dakota State  
 23 Implementation Plan?  
 24 A. Yes, it is.  
 25 Q. And Section 6 of this State Implementation

105

1 Plan, it starts at page 72, covers the best  
 2 available retrofit technology; is that right?  
 3 **A. That's right.**  
 4 **Q.** And is that the part of the SIP that  
 5 contains the requirements that make up the AQCS?  
 6 **A. Yes.**  
 7 **Q.** And if I could refer you then to page 99  
 8 and specifically to Section 6.3.5.1, it's titled  
 9 particulate matter BART recommendation. Do you see  
 10 that?  
 11 **A. Yes, I do.**  
 12 **Q.** Just for the record, could you read the  
 13 first paragraph there? It consists of three  
 14 sentences.  
 15 **A. "Otter Tail Power Company already**  
 16 **installed and is operating a baghouse, which is the**  
 17 **top particulate control technology. Therefore,**  
 18 **there is no additional compliance cost, energy**  
 19 **impacts, et cetera, that Otter Tail Power Company**  
 20 **would have to endure. As such, DENR considers the**  
 21 **continual use of the baghouse as BART for**  
 22 **particulate matter."**  
 23 **Q.** Mr. Rolfes, you gave testimony earlier  
 24 about the Minnesota Department of Commerce and its  
 25 position on the eligibility of the baghouse under

106

1 the Minnesota ADP statute; is that correct?  
 2 **A. That's correct.**  
 3 **Q.** And in terms of the position as you  
 4 understand it taken by the Minnesota Department of  
 5 Commerce, does it relate to the requirement as set  
 6 forth in this paragraph on page 99?  
 7 **A. Yes, it does.**  
 8 MR. BROWN: Thank you, Your Honor.  
 9 JUDGE WAHL: Mr. Gruman, followup?  
 10 MR. GRUMAN: No, Your Honor.  
 11 JUDGE WAHL: Ms. Jeffcoat-Sacco, followup?  
 12 MS. JEFFCOAT-SACCO: No. Thank you.  
 13 JUDGE WAHL: Followup from the Commission?  
 14 Commissioner Kalk.  
 15 **FURTHER EXAMINATION**  
 16 **BY COMMISSIONER KALK:**  
 17 **Q.** Just, I guess, one question. I wanted to  
 18 clarify in my mind something you said before about  
 19 the life cycle of a plant, it gets to where it's no  
 20 longer cost-effective. Is that based on a price  
 21 per kilowatt? How do you run those numbers?  
 22 What's the model? I mean, when it becomes 30 cents  
 23 per kilowatt, you switch to something else or --  
 24 that number would always be moving, I would assume.  
 25 **A. Well, you're absolutely right. It's based**

107

1 **on the market. I mean, it's easier to relate**  
 2 **looking back. Next -- close to Big Stone, within**  
 3 **about five miles, Otter Tail used to have a plant**  
 4 **at Ortonville, Minnesota, it was built in 1950. It**  
 5 **stopped operating in 1982, only 32 years, and it**  
 6 **was torn down 10 years later, and the plant was**  
 7 **probably in physically its best condition of its**  
 8 **life when we tore it down, but because of its size,**  
 9 **it couldn't compete with the larger plants like Big**  
 10 **Stone. And that's the thing that put a lot of**  
 11 **smaller plants, you know, to bed, was they couldn't**  
 12 **compete with the economy of scale.**  
 13 **Today we're seeing things -- a different**  
 14 **economic factor. The need to put all of this**  
 15 **equipment on smaller plants, again, the economy of**  
 16 **scale is playing into the plants that are in the**  
 17 **25, 50 megawatt. The Ortonville plant was 15**  
 18 **megawatts. But now the plants that are still**  
 19 **running that are 25, 50 megawatts of size, to put**  
 20 **all this stuff on that we're talking about drives**  
 21 **its costs up so it may not be competitive anymore.**  
 22 **So it's what's going to happen in the**  
 23 **marketplace, what drives costs up for a unit, not**  
 24 **because they physically won't run, but because**  
 25 **there's some requirement that raises the cost that**

108

1 **they're no longer in the market, in the money.**  
 2 COMMISSIONER KALK: Okay. Thank you.  
 3 JUDGE WAHL: Further questions from the  
 4 Commission? Once more. Mr. Brown?  
 5 MR. BROWN: Nothing further, Your Honor.  
 6 JUDGE WAHL: Mr. Gruman?  
 7 MR. GRUMAN: No, Your Honor.  
 8 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 9 MS. JEFFCOAT-SACCO: No, Your Honor.  
 10 JUDGE WAHL: Thank you very much, Mr.  
 11 Rolfes.  
 12 THE WITNESS: Thank you.  
 13 JUDGE WAHL: Mr. Brown, your next witness.  
 14 MR. BROWN: Thank you, Your Honor. Our  
 15 next witness is Terry Graumann.  
 16 JUDGE WAHL: Mr. Graumann, your testimony  
 17 is required to be under oath and I'm required by  
 18 law to advise you regarding perjury before  
 19 administering the oath. Perjury is a false  
 20 statement of material fact which you do not believe  
 21 to be true. In North Dakota perjury is a Class C  
 22 felony, punishable by a fine up to \$5,000,  
 23 imprisonment for a period of up to five years, or  
 24 both.  
 25

109

1 **TERRY GRAUMANN,**  
 2 being first duly sworn, was examined and testified  
 3 as follows:  
 4 JUDGE WAHL: Mr. Brown.  
 5 **DIRECT EXAMINATION**  
 6 **BY MR. BROWN:**  
 7 **Q.** Good morning.  
 8 **A.** Good morning.  
 9 **Q.** Would you state your full name for the  
 10 record?  
 11 **A.** Terry Graumann.  
 12 **Q.** And who is your employer?  
 13 **A.** I'm employed by Otter Tail Power Company.  
 14 **Q.** And what is your current position?  
 15 **A.** I'm the manager of environmental services.  
 16 **Q.** And can you describe your responsibilities  
 17 in that position, please?  
 18 **A.** My responsibilities include the permitting  
 19 in the areas of air quality, solid waste and water  
 20 quality, including several other areas in the  
 21 environmental area, including the permitting for  
 22 the Big Stone plant.  
 23 **Q.** And you're testifying this morning on  
 24 behalf of both companies since Otter Tail serves as  
 25 the operating agent for the Big Stone plant; is

110

1 that correct?  
 2 **A.** That's correct.  
 3 **Q.** What has been your role in the Big Stone  
 4 AQCS project?  
 5 **A.** I've been primarily following on the  
 6 environmental type of issues associated with the  
 7 development of the determination of compliance for  
 8 Big Stone with respect to, first of all, the  
 9 modeling, and then would complete the project  
 10 ultimately with the permitting of the  
 11 construction -- for the construction of the  
 12 project, itself.  
 13 **Q.** And are you familiar with the South Dakota  
 14 SIP regulatory process as it pertains to the AQCS  
 15 project?  
 16 **A.** I am.  
 17 **Q.** And did Otter Tail as the operating agent  
 18 for the Big Stone plant participate in the South  
 19 Dakota SIP regulatory process?  
 20 **A.** We did.  
 21 **Q.** Can you explain what its involvement was?  
 22 **A.** Well, first of all, Big Stone is a BART-  
 23 eligible source. It was operated at the time --  
 24 began operating at the time that's regulated by the  
 25 regional haze rules, but that doesn't necessarily

111

1 mean that Big Stone is regulated by the BART  
 2 process or the visibility rule compliance process,  
 3 the regional haze process.  
 4 The key to whether or not Big Stone is  
 5 regulated by the BART process is whether or not  
 6 it's subject to the BART requirements, and that's  
 7 determined whether or not the emissions from the  
 8 Big Stone plant contributed to visibility  
 9 impairment in some of the Class I areas.  
 10 And what Otter Tail did, as well as our  
 11 air quality modeling expert and Hunton & Williams,  
 12 our outside counsel, we worked for a period of more  
 13 than two years to develop the modeling protocol  
 14 that was acceptable to EPA and also the federal  
 15 land managers for assessing whether or not BART --  
 16 or Big Stone plant emissions had regional haze  
 17 impacts, and that's then the hinge -- or the  
 18 linchpin as to whether or not ultimately the plant  
 19 needed to comply with the BART requirements or the  
 20 requirement to install best available retrofit  
 21 technology.  
 22 In September of 2009, the approved  
 23 modeling found that indeed Big Stone did contribute  
 24 to visibility impairment in the Class I areas, and  
 25 as a result of that finding Otter Tail and its

112

1 consultant, Burns & McDonnell, proceeded with a  
 2 BART -- or, excuse me, a best available retrofit  
 3 technology, or a BART, study that we were obligated  
 4 to complete under the protocol adopted by EPA in  
 5 2005, and that was protocol that was put into place  
 6 during the Bush administration.  
 7 **Q.** Mr. Graumann, have you supplied rebuttal  
 8 testimony in this case?  
 9 **A.** I have.  
 10 MR. BROWN: And I might just note for the  
 11 record that has been marked as Exhibit 110 in the  
 12 case.  
 13 **Q.** (MR. BROWN CONTINUING) And in your  
 14 rebuttal testimony did you respond to some of the  
 15 points that have been made by Mr. Hahn in his  
 16 testimony for advocacy staff?  
 17 **A.** I did.  
 18 **Q.** And one of the points that you responded  
 19 to, as I recall, pertained to Mr. Hahn's claim that  
 20 the owners of the Big Stone plant are not currently  
 21 required to install the AQCS project; is that  
 22 right?  
 23 **A.** That is correct.  
 24 **Q.** And what was your testimony on that point?  
 25 Do you agree with Mr. Hahn on that point?

113

1 **A. I do not agree with Mr. Hahn on that**  
 2 **point.**  
 3 **Q. Could you please explain?**  
 4 **A. Well, the co-owners of the Big Stone plant**  
 5 **are currently required to install the AQCS pursuant**  
 6 **to the South Dakota Regional Haze Rule. It's**  
 7 **Administrative Rules of South Dakota, Chapter**  
 8 **74:36:21 and particularly paragraph 07 of that**  
 9 **particular rule.**  
 10 **Q. And when was the South Dakota Regional**  
 11 **Haze Rule adopted?**  
 12 **A. The South Dakota Regional Haze Rule was**  
 13 **adopted by the South Dakota Board of Minerals and**  
 14 **Environment on September 15th of 2010.**  
 15 **Q. What were the major requirements in that**  
 16 **rule?**  
 17 **A. Well, the requirements of the rule**  
 18 **essentially included prescriptive requirements that**  
 19 **establish emission limits for SO<sub>2</sub>, NO<sub>x</sub> and**  
 20 **particulate matter for electric generating plants.**  
 21 **Now, just to be clear, the rule, itself, doesn't**  
 22 **specifically identify Big Stone plant, but, on the**  
 23 **other hand, Big Stone plant is really the only**  
 24 **BART-eligible electric utility generating unit in**  
 25 **the state of South Dakota.**

114

1 **Q. And does the rule establish a compliance**  
 2 **schedule?**  
 3 **A. It does.**  
 4 **Q. What is that?**  
 5 **A. What the rule requires is that the**  
 6 **upgrades must be made as expeditiously as**  
 7 **practicable, but no later than five years after**  
 8 **approval of the South Dakota Regional -- or the EPA**  
 9 **approval of the South Dakota Regional Haze SIP.**  
 10 **Q. This might be a good time to go to the**  
 11 **exhibit list again, and I believe there are three**  
 12 **exhibits, in addition to your rebuttal testimony,**  
 13 **that you're the sponsor of; is that correct?**  
 14 **A. That is correct.**  
 15 **Q. And the first one is OTP/MDU 111 that was**  
 16 **referred to earlier as the South Dakota State**  
 17 **Implementation Plan; is that correct?**  
 18 **A. That is correct.**  
 19 **Q. Can you briefly describe what that**  
 20 **document is?**  
 21 **A. Briefly what that document is, it's**  
 22 **Chapter 7 and it's a portion of the overall South**  
 23 **Dakota Regional Haze SIP that establishes and it**  
 24 **goes through the South Dakota rationale for its**  
 25 **decisionmaking process with respect to the air**

115

1 **quality control system at Big Stone.**  
 2 **Q. And did you mean to say Chapter 7?**  
 3 **A. It should be Chapter 6.**  
 4 **Q. I believe you said Chapter 7.**  
 5 **A. Excuse me.**  
 6 **Q. And Chapter 6 covers the BART**  
 7 **requirements; is that right?**  
 8 **A. Covers the BART requirements for Big**  
 9 **Stone.**  
 10 **Q. And then the second document marked as**  
 11 **112, it had been identified earlier as the**  
 12 **Assessment of Anticipated Federal and State**  
 13 **Environmental Regulations. Can you describe that**  
 14 **document, please?**  
 15 **A. As Mr. Rolfes mentioned previously, that**  
 16 **is the assessment of what we believe to be the**  
 17 **rules that are on the horizon that would be adopted**  
 18 **by either EPA -- or could be adopted by either EPA**  
 19 **or some of the states with respect to their ongoing**  
 20 **rulemaking processes, and we tried to relate the**  
 21 **implementation of those rules to what additional**  
 22 **requirements might be imposed at Big Stone.**  
 23 **Q. And just one more document. It's Exhibit**  
 24 **113, the South Dakota Regional Haze Administrative**  
 25 **Rules. Can you briefly describe that document?**

116

1 **A. That rule is essentially a rule that EPA**  
 2 **or South Dakota needed to develop as part of its**  
 3 **regional haze rulemaking progress -- process that**  
 4 **established the requirements that would apply to**  
 5 **facilities with respect to the BART process and**  
 6 **compliance with the requirements.**  
 7 **Q. And how does South Dakota implement the**  
 8 **regional haze rule?**  
 9 **A. Well, implementation of the regional haze**  
 10 **rule is essentially the development of the rule and**  
 11 **the development of the SIP, and both of those then**  
 12 **are submitted to EPA ultimately for their review**  
 13 **and hopefully their approval.**  
 14 **Q. And so South Dakota obviously has prepared**  
 15 **a state implementation plan; is that correct?**  
 16 **A. That is correct.**  
 17 **Q. And that's what is again Exhibit 111. Has**  
 18 **South Dakota submitted the SIP to EPA for approval?**  
 19 **A. Yes, they have.**  
 20 **Q. And when did they do that?**  
 21 **A. They did the initial submittal in January**  
 22 **of 2010.**  
 23 **Q. And -- 2010?**  
 24 **A. 2011. Excuse me.**  
 25 **Q. Thank you. And has the proposed SIP been**

117

1 revised at any time?  
 2 **A. Yes, it has been.**  
 3 **Q.** And when was that?  
 4 **A. It was revised in September of 2011 in**  
 5 **response to some comments -- nontechnical type of**  
 6 **comments that EPA had made with respect to testing**  
 7 **and monitoring, recordkeeping and reporting**  
 8 **requirements for shutdown and malfunction periods.**  
 9 **Q.** And did those revisions pertain in any way  
 10 to the selection of technologies that constitute  
 11 BART for the Big Stone plant?  
 12 **A. No, they did not.**  
 13 **Q.** And Exhibit 113, the South Dakota Regional  
 14 Haze Administrative Rules, does that reflect the  
 15 revisions that were made more recently?  
 16 **A. I believe it does, yes.**  
 17 **Q.** Do you have any expectation at this time  
 18 as to when EPA will complete its review of the  
 19 South Dakota SIP?  
 20 **A. Based on an email exchange that I had in**  
 21 **response to a question that I posed to them in**  
 22 **August of this year, we're expecting that**  
 23 **essentially EPA would propose a draft approval of**  
 24 **the regional haze SIP today. It should appear**  
 25 **subsequently in the Federal Register. That**

118

1 schedule was confirmed yesterday afternoon in  
 2 conversation -- actually, in a voicemail message in  
 3 response to a message that I left with EPA asking  
 4 about the schedule and whether or not they're on  
 5 schedule. They are on schedule, they are expecting  
 6 that today, and they're expecting to proceed then  
 7 with the final approval and final administrative  
 8 signature on March 29th of next year, 2012.  
 9 **Q.** Could I refer you for a moment to Exhibit  
 10 110, please? I think there should be a copy of it  
 11 in that first Redwell. And I believe this is the  
 12 document that you've identified earlier as your  
 13 rebuttal testimony; is that right?  
 14 **A. That is correct.**  
 15 **Q.** And there is an attachment at the end of  
 16 your testimony. Could you turn to that for a  
 17 moment, please?  
 18 **A. I have it.**  
 19 **Q.** It's the last page of the document and it  
 20 appears to be an email; is that correct?  
 21 **A. It is.**  
 22 **Q.** Can you explain what this email  
 23 represents?  
 24 **A. Well, it's actually a series of to-me**  
 25 **emails. One, it's an email from myself to Monica**

119

1 **Morales of Region 8 EPA asking for an update on**  
 2 **EPA's schedule for the South Dakota Regional Haze**  
 3 **State Implementation Plan approval, and then the**  
 4 **second email, which would be the email that would**  
 5 **be located on the top, is her response.**  
 6 **Q.** And these are the emails that in large  
 7 part were the basis for the testimony that you just  
 8 gave about your expectations about how EPA intends  
 9 to proceed on its review of the SIP?  
 10 **A. They are, yes.**  
 11 **MR. BROWN:** I offer this witness for  
 12 cross-examination, Your Honor.  
 13 **JUDGE WAHL:** Mr. Gruman.  
 14 **MR. GRUMAN:** Thank you, Your Honor.  
 15 **CROSS-EXAMINATION**  
 16 **BY MR. GRUMAN:**  
 17 **Q.** What powers do you have to fight the state  
 18 implementation plan? What's available in that  
 19 regard?  
 20 **A. Otter Tail participated in the rulemaking**  
 21 **process. We were a part of the process. What**  
 22 **South Dakota had done is they had taken the**  
 23 **proposed BART analysis and they had essentially**  
 24 **adopted everything that we had proposed with**  
 25 **respect to SO<sub>2</sub> and particulate control technology.**

120

1 **They did not agree with our recommendation**  
 2 **that SNCR and a combination of that with separated**  
 3 **overfire air be BART for NO<sub>x</sub> control. We became**  
 4 **aware of that in their draft BART determination**  
 5 **that we first saw in January of 2010, and at that**  
 6 **particular time we took a look at their rationale**  
 7 **and then also considered other regulatory**  
 8 **activities that EPA is proceeding on with respect**  
 9 **to ambient air quality standards and other types of**  
 10 **activities, including EPA's -- new source review,**  
 11 **EPA Enforcement Initiative. We looked at that and**  
 12 **we said that -- and evaluated that in the context**  
 13 **of whether or not we felt we would be successful,**  
 14 **and at the end we supported the DENR's**  
 15 **determination.**  
 16 **Q.** In your opinion, do you feel that regional  
 17 haze will be materially altered within the next few  
 18 years?  
 19 **A. Could you clarify that question for me?**  
 20 **Do you mean in terms of the reduction of regional**  
 21 **haze of the Class I units -- in the Class I units,**  
 22 **or do you mean changes in the regional haze**  
 23 **regulations?**  
 24 **Q.** Changes in the regional haze regulations,  
 25 i.e., that hypothetically if there were a marked

121

1 change in the law thereby making this AQCS -- very  
 2 expensive AQCS project unnecessary and,  
 3 therefore -- along those lines, that's what I'm  
 4 looking for.

5 **A. We have to -- or at least I go back and**  
 6 **take a look at the source of the requirements for**  
 7 **the regional haze, and those are embedded in the**  
 8 **Clean Air Act. Subsequent to the adoption of the**  
 9 **Clean Air Act by Congress, EPA proceeded with**  
 10 **rulemakings that established the framework that the**  
 11 **regional haze evaluation needs to occur and how**  
 12 **those control technologies are deemed to be BART**  
 13 **for purposes of compliance. Those are all embedded**  
 14 **in the rules as they are embedded in the Clean Air**  
 15 **Act.**

16 **Beyond that EPA has entered into or lodged**  
 17 **a consent decree with the D.C. Circuit Court that**  
 18 **essentially establishes a schedule for adopting or**  
 19 **approving the regional haze SIPS for the states,**  
 20 **and South Dakota is included in that. So that**  
 21 **given the long history of the underlying regulatory**  
 22 **requirements, I don't expect any changes at all to**  
 23 **the regional haze rules.**

24 **Q. Notwithstanding if there's a significant**  
 25 **political shift at the next election? Is that**

122

1 something that could affect your analysis and, if  
 2 so, please explain.

3 **A. There would have to be a significant**  
 4 **enough shift for Congress to make a significant**  
 5 **change to the Clean Air Act in order for that to**  
 6 **happen.**

7 **Q. Hypothetically, of course, we're talking**  
 8 **about the Big Stone plant. You were here, of**  
 9 **course, for Mr. Rolfes' testimony where he**  
 10 **indicated that fuel source for Big Stone had**  
 11 **changed back in 1995 from lignite to Powder River**  
 12 **Basin coal.**

13 **A. Mm-hmm.**

14 **Q. Now, hypothetically let's say that that**  
 15 **changeover never occurred. What would be BART**  
 16 **under those circumstances?**

17 **A. I really can't answer that question**  
 18 **because South Dakota would have to go through their**  
 19 **BART analysis much like they did for Big Stone**  
 20 **under its current fuel, and whether or not they**  
 21 **would reach a similar conclusion or a different**  
 22 **conclusion, I guess I can't really say right now.**  
 23 **And ultimately whatever they adopted would have to**  
 24 **be adopted by EPA.**

25 **Q. Well, clearly you're aware of what's going**

123

1 on in North Dakota with essentially the fight  
 2 between the Department of Health and the EPA in  
 3 regards to the effectiveness of SCR technology on  
 4 lignite coal. In your opinion and your knowledge  
 5 of the South Dakota DENR, would they take a similar  
 6 approach under the same circumstances as the  
 7 Department of Health is now with our lignite coal  
 8 plants here in North Dakota?

9 **A. I can't be certain of that one way or the**  
 10 **other.**

11 **Q. I would like to expand upon a little bit**  
 12 **the powers available to essentially challenge the**  
 13 **South Dakota DENR. I mean, were there any lobbying**  
 14 **efforts or anything in that regard expended to try**  
 15 **to mitigate essentially the financial ramifications**  
 16 **of this to the ratepayers or the shareholders, for**  
 17 **that matter?**

18 **A. With respect to their decision, there**  
 19 **wasn't any specific lobbying. Obviously we were**  
 20 **disappointed by their decision. But between the**  
 21 **time that we filed our BART analysis, which was our**  
 22 **study, and their decisionmaking we didn't have any**  
 23 **communication with those folks with respect to**  
 24 **their technology selection other than a discussion**  
 25 **with them to make sure that they were on track with**

124

1 **the decision in terms of the schedule. But from**  
 2 **what I know of the DENR, the DENR -- when we saw**  
 3 **their BART analysis, it was very complete and**  
 4 **well-done, and on that basis and knowing those**  
 5 **folks as I know them, we decided not to pursue any**  
 6 **challenge to their decision.**

7 **Q. Along those lines, were there any**  
 8 **resources expended to try to sway public sentiment**  
 9 **like ads noting "say no to EPA," or something in**  
 10 **that regard?**

11 **A. No, there were not.**

12 **Q. As indicated before in prior testimony,**  
 13 **the rates for North Dakota ratepayers for Otter**  
 14 **Tail Power and MDU are going to increase both by 16**  
 15 **percent. How does that affect your competitiveness**  
 16 **in the marketplace?**

17 **A. I guess I wouldn't be the one to speak to**  
 18 **that question.**

19 **Q. Who would?**

20 **A. Perhaps our resource planner.**

21 **Q. Mr. Draxten?**

22 **A. Mr. Draxten.**

23 **Q. Have there ever been any cost-saving**  
 24 **measures implemented in the Big Stone plant to help**  
 25 **mitigate the negative ramifications of this AQCS**

125

1 project as far as financial ramifications?

2 **A. I don't quite understand your question.**

3 **Q.** Well, as I indicated before, I mean, if

4 the AQCS project is implemented, the rates will be

5 going up for -- 16 percent for ratepayers for both

6 OTP and MDU. To help lower that impact, have there

7 been any other type of cost savings that have been

8 implemented in the Big Stone plant to help

9 mitigate, cushion that ultimate effect?

10 **A. None that I can specifically think of or**

11 **that I'm aware of. Obviously we always look for**

12 **opportunities to improve plant efficiencies and to**

13 **improve our generation. But beyond that I'm not**

14 **aware of anything specific.**

15 **Q.** Now, before -- obviously in the state

16 implementation plan there's discussing about -- I

17 believe there's Class I areas. Could you please

18 explain how the modeling works to determine which

19 areas are Class I areas?

20 **A. Well, the modeling doesn't determine the**

21 **Class I areas. The Class I areas were essentially**

22 **set by congressional action as a part of the Clean**

23 **Air Act. There were 156, I believe, Class I areas**

24 **that were established across the United States that**

25 **Congress at the time the Clean Air Act was adopted**

126

1 felt they deserved extra protection. Not all of

2 those Class I areas are regulated for visibility

3 purposes, and I can think of one in Wisconsin, the

4 Lostwoods Wildlife Area -- Lostwoods Area, but then

5 there are many others, including several of those

6 in -- the Rainbow Lakes -- excuse me -- in

7 Wisconsin. Lostwoods is in North Dakota.

8 **Q.** Well, really what I'm looking for is a

9 nexus between the Big Stone plant and the Class I

10 areas in particular. How has that modeling

11 occurred, i.e., that I believe the three Class 1

12 areas are the Boundaries Water, Isle Royale in

13 Michigan and Voyageurs. Please explain. I mean,

14 essentially a model determined that there was

15 either a cause or a contribution by the Big Stone

16 plant to those areas. Please explain that process.

17 **A. First of all, I'm not intimately familiar**

18 **with the ins and outs of the modeling process. But**

19 **from a high-level perspective, modeling is designed**

20 **to determine the visibility impacts of the**

21 **emissions from -- specific to Big Stone plant. It**

22 **doesn't look at any other facilities, but it just**

23 **looks at the contribution from Big Stone plant, and**

24 **if the emissions from Big Stone plant contribute to**

25 **a visibility impairment at any of the Class I areas**

127

1 **above .5 deciviews for 98 percent of the time, then**

2 **the regulatory agencies would -- are of the opinion**

3 **or they've made the decision that those sources**

4 **then are subject to BART requirements.**

5 **Q.** Well, it's -- my understanding through

6 this process is that there were Class I areas that

7 were originally determined by South Dakota, there

8 was a negotiation between Otter Tail Power and the

9 South Dakota DENR in that regard which ultimately

10 resulted in a reclassification of which the Class I

11 areas were. So that's my understanding. The

12 modeling involved, clearly there had to have been

13 some type of substantiation offered in that regard

14 for them to change their mind, and that's what I'm

15 looking for, that technical analysis.

16 **A. South Dakota initially was planning on**

17 **embarking on modeling that would have been done**

18 **under their direction through the Western Regional**

19 **Air Partnership, WRAP, and that modeling was done**

20 **and that modeling showed some impacts on some Class**

21 **I areas, and I don't remember which Class I areas**

22 **that showed impacts. We didn't rely -- or we**

23 **didn't know that that modeling was going on behind**

24 **the scenes, but we hadn't seen any of those results**

25 **until about August of 2007.**

128

1 **We took a look at that data and we asked**

2 **for the detailed model inputs and information and**

3 **we found out that there were a number of errors**

4 **with respect to plant emissions and stack**

5 **parameters and other factors that led us to believe**

6 **that even though it showed visibility impacts, it**

7 **was inaccurate. So at that particular time we went**

8 **back to the South Dakota DENR and asked to do a**

9 **modeling of our own, and they agreed to allow us to**

10 **do that.**

11 **Q.** Very good. Regional haze, of course, is

12 aesthetic? That's correct? I mean, it's not

13 something that's a pollutant, harmful?

14 **A. Correct.**

15 **Q.** I have a couple questions about, I guess,

16 the dynamics of the regional haze determination.

17 Can coal plant-induced haze be observed when the

18 wind is blowing strongly, for instance?

19 **A. I can't really answer that question. I'm**

20 **not in a position to answer that question.**

21 **Q.** Okay. Who would within your company or

22 MDU?

23 **A. I don't believe anyone could. I think**

24 **it's a matter of opinion.**

25 **Q.** So essentially there's a determination

129

1 made as far as the cause and contribution of  
 2 regional haze, but there's been no analysis and no  
 3 one is available within your companies to make that  
 4 determination of what specifically is affected in  
 5 that regard? I mean, is that what I'm  
 6 understanding or --  
 7 **A. We haven't done any specific analysis.**  
 8 **What we've been going by in order to determine**  
 9 **whether or not there's a legitimate regulatory**  
 10 **reason for us to install ambient air quality**  
 11 **control equipment, we've been relying on the**  
 12 **regulations, which we have no choice but to do, and**  
 13 **those regulations that establish some of the**  
 14 **parameters as a part of this process were those**  
 15 **that were adopted in 2005 as a part of 40 CFR Part**  
 16 **51.**  
 17 **Q.** Now, I mean, you can understand from a  
 18 ratepayer's standpoint our anxiety in that we're  
 19 spending potentially \$489 million plus or minus 20  
 20 percent, and from what I'm understanding is that  
 21 there's been no discussion towards the scientific  
 22 fundamentals of whether regional haze -- of even  
 23 the dynamics about how it works and those type of  
 24 characteristics.  
 25 MR. BROWN: Objection. I think that

130

1 mischaracterizes the witness's testimony.  
 2 JUDGE WAHL: Your witness is doing very  
 3 well, Mr. Brown. Overruled.  
 4 MR. GRUMAN: Just one moment, Your Honor.  
 5 **Q.** (MR. GRUMAN CONTINUING) So really, I  
 6 mean, essentially if I had any questions about the  
 7 dynamics of regional haze and how it's affected by  
 8 wind speed, and et cetera, are you qualified to  
 9 answer any of those questions?  
 10 **A. I am not.**  
 11 **Q.** Okay. And I guess just to reiterate, no  
 12 one available here and no one that you're aware of  
 13 can answer those questions?  
 14 **A. No one that I'm aware of either within**  
 15 **Otter Tail or MDU.**  
 16 **Q.** I just have one further question then. I  
 17 guess out of curiosity -- of course, the  
 18 implementation of the state implementation plan  
 19 once it's accepted by the EPA, there's this  
 20 language expeditiously as practical or within five  
 21 years. This expeditiously as practical, is it  
 22 essentially toothless, I mean as far as -- I mean,  
 23 you're never going to get fined as long as it's  
 24 implemented in five years? Could you please  
 25 explain that further?

131

1 **A. I guess I would need to have a little bit**  
 2 **more explanation of your question.**  
 3 **Q.** Well, I mean, it's the federal rule or  
 4 wherever it comes out, it says as expeditiously as  
 5 practical or it talks about implementation within  
 6 five years. So clearly they added "expeditiously  
 7 as practical" within that language. However, it's  
 8 my understanding that if a company were to comply  
 9 within that five-year period, that would be  
 10 acceptable and there would be no fines, or et  
 11 cetera. I'm just wondering what -- why  
 12 "expeditiously as practical" is included in that  
 13 language as far as implementation.  
 14 **A. I am not certain of the rationale for the**  
 15 **DENR's adding that to their statute.**  
 16 **Q.** More specifically, are you aware of any  
 17 circumstances whereby a company has complied within  
 18 the five-year period, but they were otherwise fined  
 19 because they weren't expeditiously as practical?  
 20 That's essentially what I'm getting at.  
 21 **A. I'm not aware of any, but that doesn't**  
 22 **mean they don't exist.**  
 23 MR. GRUMAN: Just one moment, Your Honor.  
 24 No further questions, Your Honor.  
 25 JUDGE WAHL: Ms. Jeffcoat-Sacco?

132

1 MS. JEFFCOAT-SACCO: We have no questions  
 2 at this time. Thank you.  
 3 JUDGE WAHL: Questions from the  
 4 Commission. Commissioner Clark.  
 5 **EXAMINATION**  
 6 **BY COMMISSIONER CLARK:**  
 7 **Q.** Could you explain for me the consent  
 8 decree process that you've talked about with regard  
 9 to the -- I think it had to do with the EPA rules  
 10 with regard to regional haze? What is that  
 11 process? Who is EPA entering a consent with? I  
 12 assume it's with the blessing of the court, but are  
 13 they negotiating with themselves or other parties?  
 14 **A. No, they're negotiating with other**  
 15 **parties, including WildEarth Guardians and Sierra**  
 16 **Club. We're not a party to it.**  
 17 **Q.** So how does that work? I mean, you're the  
 18 impacted entity, but outside groups that have,  
 19 what, sued the EPA go behind closed doors and they  
 20 strike a deal and it's blessed by the court? I  
 21 mean, at what point do ratepayers, utilities have  
 22 an ability to impact it, or do you not? I'm just  
 23 trying to figure out how these consent decrees work  
 24 from a legal standpoint or to the degree you know.  
 25 **A. First of all, I'm not an attorney.**

133

1 Q. That's always a safe answer.  
 2 A. So you'll have to go with my understanding  
 3 of it.  
 4 Q. Sure.  
 5 A. But based on my understanding of it,  
 6 there's a consent decree that is agreed to among a  
 7 group of entities, and the entities aren't  
 8 necessarily parties to anything because they aren't  
 9 -- there's no ongoing rule that they're trying to  
 10 move forward, but the consent decree, I believe its  
 11 purpose is to force the EPA to take action within a  
 12 specific time frame on certain outstanding issues  
 13 that they failed to act on, and that consent decree  
 14 is lodged with the court, it's not final, and will  
 15 not be final until there's an opportunity for  
 16 public comment and a public notice period once it's  
 17 published in the Federal Register.  
 18 Q. Okay. I'd like to understand the modeling  
 19 issue a little bit better. From what I understand  
 20 from your testimony, it's the modeling that  
 21 triggers whether Big Stone II qualifies as a unit  
 22 that they be required to have this BART technology;  
 23 is that correct?  
 24 A. That is correct.  
 25 Q. So are you familiar with the dispute

134

1 between North Dakota and the EPA on modeling as --  
 2 with regards to actual observed results as opposed  
 3 to computer modeling?  
 4 A. I am somewhat familiar with that.  
 5 Q. Okay. Was this a point of dispute in  
 6 South Dakota with the South Dakota SIP, or is the  
 7 modeling that was accepted by the South Dakota  
 8 regulatory authority simply the computer models  
 9 that may or may not actually reflect reality of  
 10 what's going on on the ground?  
 11 A. If I may, I'd like to just explain the  
 12 differences between those two modelings.  
 13 Q. Sure.  
 14 A. The modeling that is currently under some  
 15 dispute in North Dakota is the modeling to  
 16 determine what the ambient air quality standards  
 17 are and how those model values might relate to  
 18 measured values at the monitoring sites that are  
 19 around the state.  
 20 Now, for purposes of the visibility  
 21 modeling, the visibility impact modeling for Big  
 22 Stone and all the other plants, that can only be  
 23 determined by modeling because you're looking at a  
 24 specific source's contribution to visibility  
 25 impairment at an individual Class I area. And so

135

1 there's no way to test that model unless you can  
 2 physically turn off all of the other sources for an  
 3 extended period of time to see whether or not that  
 4 source does indeed have that impact.  
 5 Q. Okay. That might help answer my next  
 6 question, which is, if Big Stone II was shut down  
 7 completely, would the human eye be able to detect  
 8 any difference at all in any of the Class I areas?  
 9 Let's say it's taken offline altogether.  
 10 A. The way that I would -- could answer that  
 11 is based on the modeling results, there would be a  
 12 perceptible difference.  
 13 Q. Based on the modeling results. Okay. But  
 14 is that in combination with all the other sources  
 15 of emissions that might exist or in and of itself?  
 16 A. That would be Big Stone's contribution to  
 17 whatever else might be impacting -- what other  
 18 sources might be impacting.  
 19 Q. Is that based on a certain number of hours  
 20 per year that they assume would -- there would be  
 21 an impact, or is that every day year-round?  
 22 A. Not necessarily every day year-round  
 23 simply because of the changes in wind direction,  
 24 meteorology and things of that nature, but it is --  
 25 it impacts -- the Big Stone emissions would impact

136

1 the visibility of these areas beyond the  
 2 requirements that would trigger BART. In other  
 3 words, there's a specific time frame that Big  
 4 Stone's contribution would contribute to visibility  
 5 impairment and Big Stone's emissions would trigger  
 6 the BART process based on its level of  
 7 contribution.  
 8 Q. Would there be a visible difference to the  
 9 human eye if SNCR was used as opposed to SCR? In  
 10 other words, if I was sitting there in Ely looking  
 11 out over the Boundary Waters, could I say, Well,  
 12 I'm glad they installed that SCR as opposed to the  
 13 SNCR. I can tell the difference?  
 14 A. I can't answer that question.  
 15 Q. With regard to the SO<sub>2</sub> and NO<sub>x</sub> portions of  
 16 regional haze, to the degree that either of those  
 17 two pollutants would cause a health effect, a  
 18 health problem, would those be covered by other EPA  
 19 rules? Is that --  
 20 A. They would be.  
 21 Q. Okay.  
 22 A. Typically SO<sub>2</sub> and NO<sub>x</sub> are considered  
 23 precursors to PM2.5.  
 24 Q. Okay.  
 25 A. And EPA is setting ambient air quality

137

1 standards for PM2.5, so to the extent that we're  
 2 making emissions reductions at Big Stone, it could  
 3 impact our continued compliance. Now, it doesn't  
 4 necessarily mean -- it doesn't mean that we're out  
 5 of compliance right now, but it just lowers those  
 6 emissions.  
 7 Q. When you say PM2.5, could you describe for  
 8 me what that is?  
 9 A. Particulate matter of 2.5 microns or less.  
 10 Q. And that is something different than what  
 11 we're dealing with in the context of regional haze?  
 12 A. Yes.  
 13 Q. That may cause a health effect as opposed  
 14 to just a visibility impact?  
 15 A. Only if the ambient air quality levels are  
 16 above the standards set to be protective of human  
 17 health by EPA.  
 18 COMMISSIONER CLARK: Okay. That's all I  
 19 have. Thanks.  
 20 JUDGE WAHL: Further questions from the  
 21 Commission? Commissioner Kalk.  
 22 **EXAMINATION**  
 23 **BY COMMISSIONER KALK:**  
 24 Q. Thank you for your testimony. Just a  
 25 couple things. You talked about the studies

138

1 involved leading up to the SIP. Are those anywhere  
 2 in any of these exhibits, the actual studies that  
 3 led to -- this is a study that then caused the  
 4 State of South Dakota to do things and you guys  
 5 eventually agreed to it? Where are those studies  
 6 at?  
 7 A. They aren't a part of this docket.  
 8 Q. Is it volumes and volumes or is it  
 9 something that could easily be given as a late  
 10 exhibit that we could look through?  
 11 A. They would be -- they would be available  
 12 as a late exhibit.  
 13 COMMISSIONER KALK: I think I'd like to  
 14 ask for that, Your Honor, providing -- if it's 40  
 15 volumes, I don't want 40 volumes. If there's like  
 16 an executive summary or something that we could --  
 17 it would be nice to have that as part of the  
 18 record.  
 19 JUDGE WAHL: Which -- Mr. Graumann, give  
 20 me a description of what you would propose to  
 21 provide pursuant to Commissioner Kalk's request.  
 22 THE WITNESS: What I would propose to  
 23 provide is the -- and I don't have the specific  
 24 titles of it, but I could provide it.  
 25 JUDGE WAHL: Just a general description.

139

1 THE WITNESS: Yeah, the general  
 2 description would be the findings of the ambient  
 3 air quality, the visibility impact modeling for the  
 4 regional haze, and then also the BART analysis,  
 5 BART study, those two studies.  
 6 Q. (COMMISSIONER KALK CONTINUING) And those  
 7 would include the methodologies in all those, I  
 8 would presume?  
 9 A. There should be general descriptions in  
 10 that information.  
 11 COMMISSIONER KALK: Okay.  
 12 JUDGE WAHL: Okay. That's visibility  
 13 impact modeling for regional haze and?  
 14 THE WITNESS: The BART analysis study.  
 15 JUDGE WAHL: Mr. Brown, this fits in under  
 16 your category 400, does it, or where?  
 17 MR. BROWN: In the 100 series, Your Honor.  
 18 JUDGE WAHL: Okay.  
 19 MR. BROWN: And it would be a joint  
 20 exhibit, Your Honor, if we offered this. We've  
 21 offered Exhibits, I think, through 115A, so this  
 22 would be Exhibit 116.  
 23 JUDGE WAHL: So it would be OTP/MDU 115C?  
 24 MR. BROWN: No. It could be 116, would be  
 25 the next exhibit. Then if we have multiple

140

1 documents, Your Honor, do you want them all under  
 2 that one number?  
 3 JUDGE WAHL: Yes, please.  
 4 MR. BROWN: So we'll do A, B and C, and so  
 5 forth?  
 6 JUDGE WAHL: For the record. Okay. Mr.  
 7 Brown, objection?  
 8 MR. BROWN: No objection, Your Honor.  
 9 JUDGE WAHL: Mr. Gruman?  
 10 MR. GRUMAN: No, Your Honor.  
 11 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 12 MS. JEFFCOAT-SACCO: No, Your Honor.  
 13 JUDGE WAHL: So for the record, visibility  
 14 impact modeling for regional haze and the BART  
 15 analysis study will be OTP/MDU Exhibit -- will be  
 16 Exhibit OTP/MDU 116. Anything further,  
 17 Commissioner?  
 18 Q. (COMMISSIONER KALK CONTINUING) Just you  
 19 testified to one of the questions about there  
 20 wasn't any, quote, lobbying effort put forward  
 21 particularly to stop this from being implemented.  
 22 The previous witness testified that this could  
 23 theoretically cause the whole company to have to be  
 24 leveraged. I'm just curious if you could expand on  
 25 that thought process, that knowing something coming

141

1 down the pike could theoretically have you leverage  
 2 the whole company to come in compliance, why wasn't  
 3 there more effort put in to adjusting the standards  
 4 to meet what they needed to be to keep the company  
 5 viable?  
 6 **A. What we would have to do under that**  
 7 **scenario, we would have to go back to EPA to get**  
 8 **them to change their standards for a rule that had**  
 9 **already been adopted essentially by the time this**  
 10 **process was being initiated and worked on five**  
 11 **years prior to where -- our particular work. And**  
 12 **other utilities were also having to comply with**  
 13 **this same rule, so it would be difficult for us as**  
 14 **a lone utility to convince EPA, at least in our**  
 15 **opinion, to change their rule based on our lone**  
 16 **circumstances.**  
 17 COMMISSIONER KALK: Okay. Thank you.  
 18 JUDGE WAHL: Commissioner Cramer.  
 19 **EXAMINATION**  
 20 **BY COMMISSIONER CRAMER:**  
 21 **Q.** Just one, I think, just to help clarify  
 22 some things for me. Could you give a brief  
 23 overview of the comparison between the utility MACT  
 24 rule and the cross-state air pollution rule, its  
 25 timelines and any synergies in compliance with the

142

1 two that might be gained?  
 2 **A. Well, first of all, with respect to this**  
 3 **particular proceeding, Big Stone isn't subject to**  
 4 **the cross-state air pollution control rule. South**  
 5 **Dakota is not included in those states that are**  
 6 **part of that rulemaking process.**  
 7 **The possible synergies, there are some**  
 8 **possible synergies to the extent that utilities**  
 9 **that choose to comply with the cross-state air**  
 10 **pollution control rule will add emission control**  
 11 **technologies. To reduce their emissions, they**  
 12 **might better enable them to meet some of the**  
 13 **requirements under the MACT rules, under the**  
 14 **maximum achievable control technology, for**  
 15 **hazardous air pollutants. For example, for those**  
 16 **utilities that happen to burn high-sulfur coal, if**  
 17 **they have to add a scrubber -- by adding a scrubber**  
 18 **would help -- could help reduce emissions of acid**  
 19 **gases that might be regulated under the MACT**  
 20 **process.**  
 21 **Where the CSAPR rule differs from what we**  
 22 **believe the MACT rule is, is the CSAPR rule doesn't**  
 23 **necessarily require individual unit-by-unit**  
 24 **compliance. You're able to go out, at least**  
 25 **theoretically, and buy allowances to cover any**

143

1 **emissions in excess of those that you have been**  
 2 **granted allowances for, much like the acid rain**  
 3 **provisions, for example, under the Clean Air Act.**  
 4 **The MACT requirements, to the largest**  
 5 **degree, are a unit-by-unit compliance requirement.**  
 6 **There isn't any opportunities for emission**  
 7 **averaging unless you might have some limited**  
 8 **opportunities between facilities at the same site**  
 9 **or between units at the same site. Does that help?**  
 10 COMMISSIONER CRAMER: That's perfect.  
 11 Yeah. Thank you very much. I have nothing  
 12 further.  
 13 JUDGE WAHL: Further questions from the  
 14 Commission? Followup, Mr. Brown?  
 15 **REDIRECT EXAMINATION**  
 16 **BY MR. BROWN:**  
 17 **Q.** Mr. Graumann, could I take you back to  
 18 Otter Tail/MDU Exhibit 111, please, which is the  
 19 state implementation plan?  
 20 **A. Okay.**  
 21 **Q.** And in the early part of that document,  
 22 it's on the fourth page, there's a list of tables  
 23 that appear to be part of this state implementation  
 24 plan, the iv at the bottom in the page designation.  
 25 **A. Okay.**

144

1 **Q.** I think you testified earlier that the  
 2 relevant part of the state implementation plan for  
 3 this proceeding is in Chapter 6; is that right?  
 4 **A. That is correct.**  
 5 **Q.** And I believe as this list of tables is  
 6 set up, the tables that correspond to Chapter 6 are  
 7 those that are listed Table 6 dash and then there's  
 8 a series of those that run 1 through 16; is that  
 9 correct?  
 10 **A. That is correct.**  
 11 **Q.** Could you take a moment, please, and see  
 12 if, in your opinion, any of those particular tables  
 13 would be responsive to any of the questions that  
 14 you've received from the Commissioners regarding  
 15 the state implementation plan?  
 16 **A. Two possible tables might be Table 6-12**  
 17 **and 6-14 that describe Big Stone's contribution to**  
 18 **visibility emissions impairment for each of the**  
 19 **control options as compared to the existing plant.**  
 20 **Q.** Could we first go to Table 6-12, and I  
 21 believe that's on page 93; is that correct?  
 22 **A. That's correct.**  
 23 **Q.** Could you take a moment and review that  
 24 and see if you want to supplement your earlier  
 25 testimony in any way?

145

1 **A. Well, I might -- with respect to Table**  
 2 **6-12, what this does is, from a modeling**  
 3 **perspective, it illustrates Big Stone's emissions**  
 4 **contribution to visibility impairment in each of**  
 5 **the identified Class I areas in deciviews.**  
 6 **Q.** Anything else with respect to Table 6-12?  
 7 **A. Only to the extent that EPA, again, a part**  
 8 **of their rules, classifies a deciview -- identifies**  
 9 **that a .5 deciview changes on the edge of visible**  
 10 **perception, but, again, that's based on EPA's**  
 11 **definition, if you will, with respect to its rule.**  
 12 **Whether or not each individual person could detect**  
 13 **a visibility change, I can't say.**  
 14 **Q.** Could we then turn to Table 6-14? I  
 15 believe that's on page 95; is that correct?  
 16 **A. Correct.**  
 17 **Q.** And what does this table represent?  
 18 **A. This table represents the deciview**  
 19 **visibility impairment contribution for each of the**  
 20 **combinations of control technologies that we had**  
 21 **included as a part of our BART process.**  
 22 **Q.** Is there anything that you take away from  
 23 Table 6-14 that you would offer to supplement your  
 24 earlier testimony?  
 25 **A. Well, only to the extent that under option**

146

1 **8, we note that all of the deciview visibility**  
 2 **impairments are all less than that .5 EPA**  
 3 **threshold. I might add to that, and I should**  
 4 **probably add to that for purposes of clarity, that**  
 5 **is also true for options 6, 7 and 8. Those options**  
 6 **also met the deciview improvement criteria, but for**  
 7 **purposes of the BART evaluation, South Dakota's**  
 8 **DENR cost-effectiveness test was -- for purposes of**  
 9 **their evaluation was \$900 per ton, and all of those**  
 10 **were less than \$900 per ton and, consequently, they**  
 11 **needed to be considered as a part of the BART**  
 12 **process and technologies, and they selected the**  
 13 **last technology because it offered the most**  
 14 **improvement, which is the technology that is being**  
 15 **considered as a part of the AQCS process.**  
 16 **MR. BROWN:** Your Honor, could I have just  
 17 one moment, please?  
 18 **JUDGE WAHL:** You may.  
 19 **Q.** (MR. BROWN CONTINUING) Mr. Graumann, you  
 20 were asked some questions earlier regarding the  
 21 case involving the North Dakota Department of  
 22 Health and the national ambient air quality  
 23 standards. Do you recall that testimony?  
 24 **A. I do.**  
 25 **Q.** And is the issue at stake in that

147

1 proceeding under a different federal regulatory  
 2 program than the regional haze requirements at  
 3 issue in this case?  
 4 **A. It is.**  
 5 **MR. BROWN:** I have nothing further, Your  
 6 Honor.  
 7 **JUDGE WAHL:** Mr. Gruman?  
 8 **MR. GRUMAN:** Just one, Your Honor.  
 9 **RECROSS-EXAMINATION**  
 10 **BY MR. GRUMAN:**  
 11 **Q.** Before we had discussed the North Dakota  
 12 Department of Health and their ongoing litigation  
 13 with the EPA in regards to BART technology for  
 14 lignite coal.  
 15 **A. Mm-hmm.**  
 16 **Q.** And it's my understanding that, of course,  
 17 the fight concerns whether SCR technology is  
 18 applicable for lignite. I'm just curious as to  
 19 your opinion. Do you believe that the North Dakota  
 20 Department of Health is correct in their  
 21 assertions?  
 22 **A. I do.**  
 23 **Q.** Could you please expand upon that?  
 24 **A. In my opinion, the technology hasn't been**  
 25 **demonstrated on lignite-fired units, and that would**

148

1 **be the reason that it wouldn't be a viable**  
 2 **consideration in the process.**  
 3 **MR. GRUMAN:** I have nothing further, Your  
 4 Honor.  
 5 **JUDGE WAHL:** Ms. Jeffcoat-Sacco?  
 6 **MS. JEFFCOAT-SACCO:** I have nothing.  
 7 Thank you.  
 8 **JUDGE WAHL:** Followup by the Commission.  
 9 Commissioner Clark.  
 10 **FURTHER EXAMINATION**  
 11 **BY COMMISSIONER CLARK:**  
 12 **Q.** If you could help me understand this Table  
 13 6-14, the modeling results that you were talking  
 14 about, and you had said that 6, 7 and 8 were all  
 15 beneath the threshold, is that right, that would be  
 16 acceptable?  
 17 **A. That is correct.**  
 18 **Q.** And so is -- 6 is the SNCR technology and  
 19 number 8 was what was ultimately chosen; is that  
 20 correct?  
 21 **A. That is correct.**  
 22 **Q.** Okay. Explain to me the values that are  
 23 in parentheses and what that means.  
 24 **A. The values that are in parentheses are the**  
 25 **numerical rounding of the values that we had**

149

1 presented in each of those columns. We did not  
 2 round our values. We pour them consistent with the  
 3 methodology and the rounding protocol that WRAP had  
 4 originally used as a part of their study for the  
 5 South Dakota DENR. And the DENR's position was  
 6 that since the standard of visibility improvement  
 7 was 0.5 deciviews, they felt it appropriate to  
 8 carry only the number of significant digits that's  
 9 representative of the standard.

10 Q. Okay. And then if you could go over with  
 11 me again the decision to -- for the State of South  
 12 Dakota to select SCR in its SIP and not SNCR if  
 13 they both met the standard, and if one is  
 14 significantly cheaper, why wouldn't you go with the  
 15 cheaper option that meets the standard as opposed  
 16 to the more expensive one?

17 A. It's my understanding that as a part of  
 18 the BART rule that's embodied in the 2005 EPA  
 19 requirements that were published, you need to look  
 20 at not only the achievement of the standard, but  
 21 what technology represents best available retrofit  
 22 technology. And simply meeting the standard does  
 23 not necessarily, at least in EPA's mind, establish  
 24 that best technology. What they did do is they  
 25 took a look at the costs and established a cost

150

1 evaluation and for the level of improvement that at  
 2 least the modeling showed, the additional costs for  
 3 the SCR were warranted.

4 Q. But as I also understand it relating to  
 5 the level at which the improvement is perceptible,  
 6 am I also reading it correctly -- the table  
 7 correctly to understand that the difference between  
 8 SCR and SNCR is not a visibly perceptible  
 9 difference?

10 A. I would have to --

11 Q. You may get -- in modeling you may get  
 12 somewhat better results by SCR so that qualifies as  
 13 the BART technology. As I understand it, we're  
 14 meeting a visibility standard for which the  
 15 difference between the two might not be visible?  
 16 Am I understanding it correctly?

17 A. In some cases that could be the case,  
 18 correct.

19 COMMISSIONER CLARK: Okay. Thanks.  
 20 JUDGE WAHL: Further questions from the  
 21 Commission? Followup, Mr. Brown?  
 22 MR. BROWN: Nothing further, Your Honor.  
 23 JUDGE WAHL: Mr. Gruman?  
 24 MR. GRUMAN: Nothing further, Your Honor.  
 25 JUDGE WAHL: Ms. Jeffcoat-Sacco?

151

1 MS. JEFFCOAT-SACCO: Nothing further.  
 2 JUDGE WAHL: Thank you very much, Mr.  
 3 Gruman.  
 4 We should, I think -- Mr. Brown, I would  
 5 prefer not to start your next witness. I would  
 6 rather recess early for lunch. I would take just  
 7 an hour for lunch, however, no more, so let's  
 8 resume at 12:45.  
 9 MR. BROWN: Thank you, Your Honor.  
 10 (Recessed at 11:45 a.m. to 12:46 p.m.)  
 11 JUDGE WAHL: All right. Mr. Brown, your  
 12 next witness, please.  
 13 MR. BROWN: Our next witness is Stacie  
 14 Hebert.  
 15 JUDGE WAHL: Ms. -- is it Hebert?  
 16 MS. HEBERT: Hebert.  
 17 JUDGE WAHL: Hebert. I'm sorry.  
 18 MS. HEBERT: That's okay.  
 19 JUDGE WAHL: Ms. Hebert, as you heard me  
 20 advise previous witnesses, your testimony is  
 21 required to be under oath and I'm required by law  
 22 to advise you regarding perjury before  
 23 administering the oath. Perjury is a false  
 24 statement of material fact which you do not believe  
 25 to be true. In North Dakota perjury is a Class C

152

1 felony, punishable by a fine up to \$5,000,  
 2 imprisonment for a period of up to five years, or  
 3 both.  
 4 (Witness sworn.)  
 5 JUDGE WAHL: Mr. Brown.  
 6 MR. BROWN: Thank you, Your Honor.  
 7 **STACIE HEBERT,**  
 8 being first duly sworn, was examined and testified  
 9 as follows:  
 10 **DIRECT EXAMINATION**  
 11 **BY MR. BROWN:**  
 12 Q. Good afternoon.  
 13 A. Good afternoon.  
 14 Q. Could you please state and spell your  
 15 first and last name for the record, please?  
 16 A. Yes. Stacie, S-t-a-c-i-e, Hebert,  
 17 H-e-b-e-r-t.  
 18 JUDGE WAHL: Oh, you don't spell it  
 19 correctly. That's the problem.  
 20 THE WITNESS: So I've been told.  
 21 JUDGE WAHL: I thought maybe that was my  
 22 fault.  
 23 MR. BROWN: I might have to object to  
 24 that, Your Honor.  
 25 JUDGE WAHL: I'd have to -- I'd have to

153

1 sustain your objection, actually.

2 **Q.** (MR. BROWN CONTINUING) And who is your

3 employer?

4 **A.** **Otter Tail Power Company.**

5 **Q.** And what are your responsibilities there?

6 **A.** **I'm the manager of supply services and I**

7 **am responsible for fuel and freight, which includes**

8 **preparing fuel budgets and short and long-term**

9 **delivered fuel forecasts that are used both for our**

10 **IRP as well as internal budgeting.**

11 **Q.** Can you explain how Otter Tail determined

12 the delivered cost of fuel to the Big Stone plant

13 in the Burns & Mac economic analysis for this case?

14 **A.** **Sure. The delivered fuel forecast is made**

15 **up of a fuel component, a freight component and**

16 **then we add in some other costs, such as railcar**

17 **leases, railcar maintenance, switching and storage**

18 **fees, sales tax. And so the fuel component that we**

19 **used was a Burns -- I'm sorry, Wood and Mackenzie**

20 **fuel forecast from 2009, December of 2009. The**

21 **freight forecast was also produced by Wood**

22 **Mackenzie in the summer of 2009. And the delivered**

23 **fuel forecast that we used for the AQCS analysis**

24 **was the same forecast that was used in our 2010**

25 **Minnesota IRP.**

154

1 **Q.** And can you explain how the actual

2 transportation costs for coal are set for the Big

3 Stone plant?

4 **A.** **The Big Stone plant is under a tariff with**

5 **the Burlington Northern so they set the tariff**

6 **rate.**

7 **Q.** And are long-term contracts available from

8 BNSF for the coal transport?

9 **A.** **We don't believe that we would be able to**

10 **secure a long-term rail contract from the BN at**

11 **this time.**

12 **Q.** And if long-term contracts are not

13 available, has that been taken into account in

14 Otter Tail's economic analysis for this case?

15 **A.** **To reflect the uncertainties related to**

16 **future fuel forecasts, including both the fuel and**

17 **the freight components, we looked --**

18 **Burns & McDonnell included plus or minus 20 percent**

19 **sensitivity.**

20 MR. BROWN: Your Honor, we'd like to offer

21 this witness for cross-examination.

22 JUDGE WAHL: Mr. Gruman.

23 MR. GRUMAN: Thank you, Your Honor. Good

24 afternoon.

25 THE WITNESS: Good afternoon.

155

**CROSS-EXAMINATION**

1 **BY MR. GRUMAN:**

2 **Q.** You'd indicated that long-term contracts

3 are not possible with BNSF in your opinion. Could

4 you please expand that, why not.

5 **A.** **Big Stone plant is a captive shipper to**

6 **the Burlington Northern Santa Fe. That means that**

7 **we have no other means of getting coal delivered --**

8 **no other economical means of having coal delivered**

9 **to the plant. It's not economical to truck it in.**

10 **We can't bring it in by barge. And BNSF is the**

11 **only rail that provides service to the Big Stone**

12 **plant, so because we are a captive shipper, we**

13 **don't feel like we have much leverage at all with**

14 **the railroad.**

15 **Q.** Going back to the Big Stone II advance

16 determination of prudence, I believe it was

17 indicated in the order and during that hearing that

18 you were essentially paying the highest possible

19 rates possible. Is that still the case?

20 **A.** **You know, when you say highest possible**

21 **rates, I think in that case what -- to me what that**

22 **meant was that had we been paying a much -- a rate**

23 **that was even slightly higher, we feel like we may**

24 **have been successful in our STB case versus the**

25 **BNSF being successful.**

156

1 **Since the -- the -- since our BNSF case,**

2 **the adjustments to our tariff have been made on an**

3 **annual basis and they've been made using a railroad**

4 **cost inflation index that is something that's**

5 **publicly available that we've been able to verify**

6 **when the adjustments have been made that they've**

7 **been following that index. And so because our rate**

8 **has been adjusted based on that index and**

9 **presumably the other components that would be**

10 **looked at in an STB case would have been increased**

11 **by those same amounts, we feel that it's -- while**

12 **we haven't done the calculation, we feel like**

13 **we're likely paying about that maximum rate.**

14 **Q.** Okay. In the Big Stone II hearing the

15 record indicated that 70 percent of the coal cost

16 was BNSF transportation cost. How does a risk of

17 BNSF price gouging compare to the risk of

18 transporting per se natural gas? Could you expand

19 upon that?

20 **A.** **Well, one of the pluses of being under a**

21 **tariff is that you have the ability to pursue rate**

22 **relief at the Surface Transportation Board. The**

23 **function -- one of the functions of the Surface**

24 **Transportation Board is that they can -- they are**

157

1 to ensure that rates to captive shippers are  
 2 reasonable.  
 3 So in a situation where we would have felt  
 4 that the BN was charging us an unfair rate, we  
 5 would have the recourse of pursuing relief at the  
 6 STB. You know, you wouldn't have that avenue when  
 7 you look at natural gas pricing.  
 8 Q. I see. How many days' notice is required  
 9 before a BNSF rate increase can go into effect?  
 10 A. I can't remember if it's a 10-day or a  
 11 30-day notice.  
 12 Q. Last, are you familiar with any utilities  
 13 in the country recently that have been able to  
 14 successfully challenge BNSF concerning price  
 15 gouging, concerning coal transportation?  
 16 A. Yes. Just in the last couple of weeks  
 17 Arizona Electric Power Cooperative was successful  
 18 in a challenge of the BNSF and the Union Pacific  
 19 Railroad before the STB, and I believe in that  
 20 decision they were -- they are to receive about  
 21 \$63 million as a result of that decision, and I  
 22 guess I think that serves as an example of a type  
 23 of relief that is available to captive shippers.  
 24 Q. Well, from -- as you can imagine from a  
 25 ratepayer's standpoint, if 70 percent of the fuel

158

1 costs are for transportation, it's -- that instance  
 2 is very intriguing. Is there somehow that the  
 3 companies could expand upon that as a precedent to  
 4 potentially lower your transportation costs?  
 5 A. To take a case before the STB is an  
 6 expensive venture and so you would want to be  
 7 certain that you have some sense that you had a  
 8 very strong case. And the last time that we did  
 9 challenge the rate before the STB, we came close to  
 10 winning, but we were not successful. You know, I  
 11 think that is something that's available to us as a  
 12 captive shipper. The owners have not been  
 13 discussing since our last case a need to go before  
 14 the STB.  
 15 As I mentioned, our annual increases have  
 16 been something that we can track and that we can  
 17 understand, and we have not been receiving  
 18 increases outside of those index adjustments. And  
 19 so it's something that I would say is available to  
 20 us, but it's not something that we're looking into  
 21 at this time.  
 22 Q. Would it be a correct statement to say  
 23 that at least it's something that you're  
 24 evaluating?  
 25 A. I wouldn't even say that we're evaluating

159

1 it at this time because of the -- the treatment  
 2 that we've been receiving in terms of our annual  
 3 adjustments from the BNSF.  
 4 MR. GRUMAN: Okay. Thank you. I have no  
 5 further questions.  
 6 JUDGE WAHL: Ms. Jeffcoat-Sacco.  
 7 MS. JEFFCOAT-SACCO: I have no questions.  
 8 JUDGE WAHL: Questions from the  
 9 Commission? Thank you very much, Ms. Hebert.  
 10 THE WITNESS: Thanks.  
 11 JUDGE WAHL: I guessed wrong about your  
 12 witness, Mr. Brown. We could have done that before  
 13 lunch.  
 14 MR. BROWN: That's right.  
 15 COMMISSIONER KALK: We'd have had  
 16 questions then. We're tired from lunch.  
 17 JUDGE WAHL: Your next witness, Mr. Brown.  
 18 MR. BROWN: Jeffrey Kopp, Your Honor.  
 19 JUDGE WAHL: Please be seated, Mr. Kopp.  
 20 As you heard me advise other witnesses, your  
 21 testimony is required to be under oath and I'm  
 22 required by law to advise you regarding perjury  
 23 before administering the oath. Perjury is a false  
 24 statement of material fact which you do not believe  
 25 to be true. In North Dakota perjury is a Class C

160

1 felony, punishable by a fine up to \$5,000,  
 2 imprisonment for a period of up to five years, or  
 3 both.  
 4 (Witness sworn.)  
 5 JUDGE WAHL: Mr. Brown.  
 6 JEFFREY KOPP,  
 7 being first duly sworn, was examined and testified  
 8 as follows:  
 9 DIRECT EXAMINATION  
 10 BY MR. BROWN:  
 11 Q. Good afternoon.  
 12 A. Good afternoon.  
 13 Q. Could you state your full name for the  
 14 record, please?  
 15 A. Yes. My name is Jeffrey Kopp, K-o-p-p.  
 16 Q. And who is your employer?  
 17 A. Burns & McDonnell Engineering.  
 18 Q. And what kind of professional services  
 19 does Burns & McDonnell provide?  
 20 A. Burns & McDonnell is a large engineering,  
 21 consulting, design and construction firm operating  
 22 in various markets, including energy transmission  
 23 and distribution, infrastructure and process and  
 24 industrial services and other resources -- or other  
 25 markets, including a business and technologies

161

1 services unit that I work in that acts as our  
 2 consulting arm for the company.  
 3 Q. And what's your current position there?  
 4 A. My current position is the manager of  
 5 project development within the energy consulting  
 6 department within the business and technology  
 7 services division.  
 8 Q. And can you briefly describe your  
 9 educational background?  
 10 A. Yes. I received a bachelor of science in  
 11 civil engineering from the Missouri University of  
 12 Science and Technology in 1999 and an MBA from the  
 13 University of Kansas in 2004. I'm a registered  
 14 professional engineer in the state of Missouri.  
 15 Q. And can you describe your prior work  
 16 experience before your current position?  
 17 A. Yes. I have a total of 11 years  
 18 experience and 10 of those are working in the power  
 19 industry, 11 years in engineering total.  
 20 Q. And doing what kind of work?  
 21 A. Mainly the consulting work within our  
 22 business and technology services group within the  
 23 project development group. Prior to being the  
 24 manager of that group, I was within that group.  
 25 And we provide services, mainly studies for

162

1 development of new power generation facilities,  
 2 economic analysis of alternatives and due diligence  
 3 reviews of existing facilities.  
 4 Q. Can you please explain your role in the --  
 5 in evaluating the proposed AQCS project?  
 6 A. Yes. I was the Burns & McDonnell project  
 7 manager for the pro forma economic analysis to  
 8 determine the levelized cost of the Big Stone with  
 9 AQCS compared to three alternatives for replacing  
 10 Big Stone if the AQCS were not installed and it had  
 11 to be replaced.  
 12 Q. And was that evaluation -- is that  
 13 contained in OTP-MDU Exhibit 115?  
 14 A. Yes. That's correct.  
 15 Q. Do you have a copy of that in front of you  
 16 now? I think it should be in one of those red  
 17 wells. You can look for 115.  
 18 A. Yes.  
 19 Q. Can you describe in general terms the type  
 20 of economic analysis that Burns & Mac did in this  
 21 case?  
 22 A. Yes. We did a levelized busbar cost  
 23 analysis where we looked at the cost of providing  
 24 energy, electric energy from each of the  
 25 alternatives considered, and we -- we calculated

163

1 those into a levelized busbar cost where we looked  
 2 at the 20-year planning period cost, those annual  
 3 costs, and those were calculated into a net present  
 4 value and from that we calculated an equivalent  
 5 annual annuity for each of those which would give  
 6 us a single number for each of the alternatives  
 7 that would be equal to that 20-year planning period  
 8 so that we could directly compare those -- each of  
 9 the four alternatives with a single number.  
 10 Q. And just so we can be clear on this, can  
 11 you describe what it means to say levelized cost?  
 12 A. Yes. When we look at the 20-year planning  
 13 period, levelizing those costs takes into account  
 14 escalation throughout that 20-year planning period  
 15 and also the time value of money to discount those  
 16 back to net present values and then calculate an  
 17 equivalent annual annuity that a client would be  
 18 indifferent whether or not they got that 20-year  
 19 stream or the levelized cost throughout that time  
 20 period. So it would be the equivalent of that  
 21 20-year stream of cash flows.  
 22 Q. And why was that methodology used in this  
 23 case?  
 24 A. The reason that we levelized the cost is  
 25 so that we have a single number for each of the

164

1 four alternatives that can be compared directly  
 2 rather than a 20-year stream of flows, so it's  
 3 easier to -- to compare those numbers directly to  
 4 each other, those four alternatives.  
 5 Q. And when you say four alternatives, you're  
 6 referring to the proposed project and three  
 7 alternatives to that project; is that right?  
 8 A. That's correct. We looked at Big Stone  
 9 with the AQ -- with the proposed AQCS as well as  
 10 Big Stone firing -- being retrofitted to fire  
 11 natural gas, a combined cycle plant to replace the  
 12 Big Stone plant or a combined cycle plant paired  
 13 with wind to replace the Big Stone plant.  
 14 Q. Can you describe the modeling assumptions  
 15 that were used to do your evaluation?  
 16 A. Yes. There were quite a few modeling  
 17 assumptions that went into our -- our economic  
 18 model and they came from various sources, so I'll  
 19 go through those based on where they -- what the  
 20 source of the assumption was.  
 21 So several of the modeling inputs came  
 22 directly from Otter Tail's IRP to ensure that our  
 23 results were consistent and comparable to Otter --  
 24 Otter Tail's IRP. And those modeling inputs  
 25 included O&M inflation, capital cost inflation,

165

1 interest rate, return on equity, discount rate, the  
 2 market price of wind power and the fuel cost  
 3 forecast.  
 4 Q. Mr. Kopp, if I can just interrupt for a  
 5 moment. You're -- what you're listing now is  
 6 contained in Exhibit 115; is that correct?  
 7 A. Yes. This is all contained within  
 8 Exhibit 115 starting at the bottom of the first  
 9 page.  
 10 Q. Okay. Were there any other modeling  
 11 assumptions that you used?  
 12 A. Yes. So those modeling assumptions all  
 13 came from the IRP. Then there were other modeling  
 14 assumptions that came directly from Otter Tail, and  
 15 that would include the costs for Big Stone with the  
 16 AQCS, so that would include the net plan output of  
 17 that retrofitted plant, the net plant heat rate,  
 18 the net plant capacity factor, the capital cost  
 19 which was developed by Sargent & Lundy, and the  
 20 annual O&M costs, both fixed and variable, which  
 21 also came from Sargent & Lundy.  
 22 And then if we looked at the alternative  
 23 of retrofitting the Big Stone plant with natural  
 24 gas, Otter Tail also provided us with the net plant  
 25 output, the net plant heat rate, net plant capacity

166

1 factor, the capital costs for converting it to burn  
 2 natural gas and the annual O&M costs, and again,  
 3 fixed and variable costs were included in that.  
 4 They also provided us with a  
 5 decommissioning cost for the Big Stone plant if one  
 6 of the combined cycle or the combined cycle plus  
 7 wind cases were to be included and were to be  
 8 constructed at the Big Stone plant, the costs for  
 9 decommissioning the existing coal plant prior to  
 10 that. As well as for all three of the natural  
 11 gas-fired alternatives, they provided a cost  
 12 estimate for the linear facilities, which would  
 13 include bringing natural gas to the plant to fire  
 14 the new alternatives.  
 15 Q. Presumably there were some judgment calls  
 16 that had to be made in identifying those  
 17 assumptions; is that correct?  
 18 A. Well, there's -- there's also some  
 19 assumptions that were developed by  
 20 Burns & McDonnell.  
 21 Q. Mm-hmm.  
 22 A. So, yeah, let me go through those real  
 23 quick and then we'll talk about how we determined  
 24 some of those. So for the combined cycle  
 25 alternative we looked at based on our recent

167

1 experience with combined cycle plants the net plant  
 2 output, the net plant heat rate, the net plant  
 3 capacity factor, capital cost, annual fixed O&M  
 4 costs and annual variable O&M costs.  
 5 For the combined cycle plus wind case we  
 6 used that same combined cycle set of assumptions,  
 7 but then paired it with a -- a wind resource. And  
 8 we looked at a capacity factor of wind of  
 9 40 percent to offset some of the dispatch of the  
 10 combined cycle cost, therefore, reducing the fuel  
 11 expenditures on the combined cycle. And we looked  
 12 at reducing the -- the value of -- or the cost of  
 13 wind to take into account the production tax  
 14 credit. So in that instance rather than  
 15 dispatching the combined cycle at 75 percent, we  
 16 dispatched the combined cycle at 35 percent and  
 17 paired that with 40 percent wind energy capacity --  
 18 or I'm sorry, wind energy purchases.  
 19 Q. Can you describe the results of your  
 20 evaluation?  
 21 A. Yeah. Well, let me back up to some of  
 22 those assumptions and how we developed a few of  
 23 those that Burns & McDonnell developed internally.  
 24 We, jointly with Otter Tail, made the decision to  
 25 make some conservative assumptions to ensure that

168

1 the -- that the analysis did not appear to be  
 2 biased in favor of the Big Stone plant. And to the  
 3 extent that we made some conservative assumptions,  
 4 we really gave the natural gas-fired alternatives a  
 5 lot of favorable treatment to -- to actually make  
 6 the analysis somewhat biased in the -- in favor of  
 7 a natural gas alternative.  
 8 And so starting with some of the  
 9 assumptions that we developed, the capital cost of  
 10 the combined cycle, we looked at our recent  
 11 experience with a 615-megawatt combined cycle plant  
 12 and we used that same dollar per kw, capital cost,  
 13 and applied it to a 475-megawatt combined cycle  
 14 resource to replace Big Stone. So that takes  
 15 advantages of some economies of scale for capital  
 16 as well as efficiency of the plant.  
 17 All the gas-fired alternatives were  
 18 assumed to be located at the Big Stone plant to  
 19 take advantage of the existing infrastructure  
 20 that's there. So that kept the capital cost down  
 21 on those resources as well.  
 22 The 40 percent wind capacity factor that  
 23 we estimated is on the high end of the range that  
 24 we would anticipate and is therefore highly  
 25 favorable to that alternative. The heat rate of

169

1 the combined cycle plant when paired with wind, we  
 2 did not penalize it for part load operations, for  
 3 cycling, starting up and shutting down, to follow  
 4 that wind. So it, again, got the most favorable  
 5 treatment assuming that it still had a very highly  
 6 efficient operation.  
 7 We assumed that the PTC was extended in  
 8 every case that we ran. We do not run any cases  
 9 with wind without the PTC.  
 10 And then, lastly, on the combined cycle  
 11 and wind combined resource case, we did not burden  
 12 that with any additional transmission, even though  
 13 there's a lot more capacity installed there and  
 14 additional transmission would be required to  
 15 support that alternative.  
 16 Q. Okay. Anything else on the assumptions?  
 17 A. No.  
 18 Q. Okay. Well, then could you describe the  
 19 results of the evaluation?  
 20 A. Yes. Starting on Table 2 within  
 21 attachment 115 here --  
 22 Q. So that's at page six?  
 23 A. Page six, Table 2 presents the base case  
 24 modeling results, so that's under all the base  
 25 assumptions that I just outlined we present there.

170

1 You can see the gray highlighted row, combined  
 2 levelized energy cost, presents that levelized  
 3 energy cost for each of the four alternatives we  
 4 evaluated. It --  
 5 Q. And the -- excuse me, Mr. Kopp, if I can  
 6 interrupt for a moment. So the alternatives are  
 7 shown across the top of that table; is that right?  
 8 A. That's correct. So the four alternatives  
 9 are shown in the four columns. And then we build  
 10 up the -- the cost -- the levelized busbar cost  
 11 based on fuel, O&M, depreciation, return, interest  
 12 and income taxes to get the levelized revenue  
 13 requirement.  
 14 And then in the -- the next line down, the  
 15 cost of wind energy, when we pair a combined cycle  
 16 with wind, we assume that -- that cost of wind  
 17 energy for the 40 percent wind that comes into that  
 18 case. And then the combined levelized energy cost  
 19 below that for the four alternatives presents the  
 20 levelized costs for each of those options.  
 21 And as you can see, the Big Stone with  
 22 AQCS is significantly less expensive than the other  
 23 three alternatives. It's approximately 42 percent  
 24 lower -- or the next -- the next lowest cost is  
 25 approximately 42 percent higher than Big Stone with

171

1 AQCS.  
 2 Q. And, again, just to confirm, when you're  
 3 making that 42 percent comparison, you're looking  
 4 at the combined levelized energy cost?  
 5 A. Correct. That's the combined levelized  
 6 energy cost.  
 7 Q. For the option shown in the far left-hand  
 8 column, Big Stone plus the AQCS compared to the  
 9 combined cycle plus wind?  
 10 A. Correct.  
 11 Q. Okay.  
 12 A. We also ran a couple of sensitivities  
 13 within that base case. The first one was a  
 14 stranded asset cost. We were asked to evaluate  
 15 what the impact of the stranded asset of Big Stone  
 16 if it were not able to operate in the future if we  
 17 went with one of the combined cycle or the combined  
 18 cycle plus wind alternatives. So we calculated  
 19 that cost data and included the total energy cost  
 20 including the stranded asset cost.  
 21 So that's presented in the next gray  
 22 highlighted line and that's the only place within  
 23 the study where we included a stranded asset cost.  
 24 And then, lastly, we looked at -- or  
 25 lastly within the base case, we looked at a high

172

1 environmental cost scenario where we looked at if  
 2 mercury control was required and if ash were to be  
 3 deemed hazardous material and had to be handled as  
 4 hazardous material, the cost data for the Big Stone  
 5 with AQCS, and that's shown that that adder was  
 6 included, and then the total energy cost is shown  
 7 directly below that in the bottom highlighted row.  
 8 Q. Did you perform any sensitivity analyses  
 9 beyond the base case?  
 10 A. We did. We looked at three main  
 11 sensitivity cases: Capital cost. And in that  
 12 evaluation we evaluated any -- from a potential  
 13 increase of 30 percent to a potential decrease of  
 14 30 percent in capital cost for all the alternatives  
 15 considered.  
 16 We looked at fuel cost --  
 17 Q. Excuse me, Mr. Kopp.  
 18 A. I'm sorry.  
 19 Q. Are the results of that analysis captured  
 20 in Figure 1 on page eight?  
 21 A. Yes. So those -- those results are shown  
 22 graphically on Figure 1.  
 23 Q. Can you just briefly describe how to read  
 24 that particular figure?  
 25 A. Yes. Each of the four alternatives is

173

1 presented in a different color line here, and  
 2 the -- the far left side of the graph shows the  
 3 minus 30 percent case. The far right side shows  
 4 the plus 30 percent case. And in the middle at the  
 5 zero percent would be the base case. So you can  
 6 see throughout this wide range of potential capital  
 7 costs evaluated within this sensitivity the Big  
 8 Stone with AQCS is significantly cheaper than any  
 9 of the other alternatives, even if the capital cost  
 10 of Big Stone were higher and the other alternatives  
 11 were lower.

12 Q. Okay. Did you do other sensitivity  
 13 analyses?

14 A. We did. Next we looked at the fuel cost  
 15 and we evaluated both coal and natural gas, the  
 16 potential for those to increase by 20 percent from  
 17 the base case forecast provided or decrease by  
 18 20 percent from the base case forecast provided.  
 19 And those are presented in Figure 2.

20 Q. And any other analyses, sensitivity  
 21 analyses?

22 A. Yes. Lastly, we included an analysis of  
 23 O&M costs. And, again, we looked at a range of O&M  
 24 costs increasing by 20 percent to decreasing by  
 25 20 percent for all the alternatives considered.

174

1 Q. So after it completed its analyses, what  
 2 conclusions did Burns & Mac make about the proposed  
 3 project?

4 A. That under the base case, the next best --  
 5 or the next lowest cost alternative was 42 percent  
 6 higher levelized busbar costs. Even with the high  
 7 environmental cost scenario adder, the Big Stone  
 8 with AQCS was still the cheapest alternative, and  
 9 the next lowest cost alternative would be  
 10 35 percent higher. And then for every case  
 11 considered within our sensitivity range, the Big  
 12 Stone with AQCS was the least cost alternative.

13 Q. You provided rebuttal testimony in this  
 14 case; is that correct?

15 A. That is correct.

16 Q. And in your rebuttal testimony I believe  
 17 you responded to some of the points that were made  
 18 by Mr. Hahn, the witness -- or the expert for the  
 19 advocacy staff; is that correct?

20 A. That's correct.

21 Q. Could you summarize that testimony,  
 22 please?

23 A. Yes. We -- we responded to several points  
 24 brought up by Mr. Hahn, the first of which was the  
 25 fuel forecast that we used was outdated. And we

175

1 specifically selected that fuel forecast to match  
 2 the Otter Tail IRP at the time that it was  
 3 evaluated, but we also ran those sensitivities to  
 4 account for the potential that fuel forecasts can  
 5 change over time. So that's why we ran the full  
 6 plus or minus 20 percent sensitivity on the fuel  
 7 forecast.

8 Since that -- that time -- and within that  
 9 range, Big Stone was the cheapest alternative plus  
 10 or minus 20 percent.

11 Since that time we were provided with an  
 12 update, a Wood Mackenzie natural gas forecast as  
 13 well as an updated Wood Mackenzie coal forecast,  
 14 both of which decreased from the original forecast,  
 15 and those forecasts were dated April of 2011. They  
 16 both decreased but both fell within the sensitivity  
 17 range evaluated within our analysis. Therefore,  
 18 those did not change our conclusion from our  
 19 initial study.

20 Next, we addressed the cost of wind power.  
 21 And Mr. Hahn brought up a couple points regarding  
 22 the cost of wind power. The first one was he  
 23 referenced the Bison 2 and 3 costs that have been  
 24 published for wind -- the cost of wind power. But  
 25 those costs are not really representative of the

176

1 market and mainly because the -- the Bison 2 and 3  
 2 are going to use the Siemens Westinghouse  
 3 SWT-3.0-101 direct drive wind turbines. Those will  
 4 be the first production class of those turbines  
 5 installed in the world.

6 Therefore, it's typical for manufacturers  
 7 to give a very aggressive pricing for the first  
 8 units installed. So that's not really  
 9 representative of the market.

10 Second, he referenced the Lawrence  
 11 Berkeley National Laboratory report that had some  
 12 wind PPA costs. Those wind PPA costs, when we  
 13 reviewed those, he quoted that LBNL had witnessed  
 14 PPA pricing for wind in the low to mid 40s in this  
 15 region of the country. However, those pricing --  
 16 all that pricing was quoted in 2011 dollars and the  
 17 report said that those values all escalated at  
 18 2 and a half percent from there.

19 So we looked at those values and we  
 20 escalated those through a 20-year term from -- we  
 21 escalated them up to 2016, escalated them for a  
 22 20-year term throughout that and then levelized  
 23 those prices. And if we used \$40 and levelized  
 24 that, we would be at a levelized cost of wind in  
 25 2016 dollars of \$60.98. Or if we started at \$44.02

177

1 in 2011, escalated that throughout the term and  
 2 levelized it, we'd get a levelized cost of wind of  
 3 \$67.11 in 2016 dollars, which is identical to the  
 4 value that Burns & McDonnell used that came from  
 5 Otter Tail's IRP.  
 6 So it would appear to me that the LBNL  
 7 values are much more consistent with the numbers  
 8 that were used in the Burns & McDonnell analysis  
 9 than -- than the values proposed by Mr. Hahn. And  
 10 Mr. Hahn proposed a value of \$42 a megawatt-hour  
 11 for wind energy.  
 12 Also along those lines on the cost of wind  
 13 power, Mr. Hahn stated that we had underestimated  
 14 the value of the PTC. There are two things that  
 15 come into play there. First is the value of the  
 16 PTC that we calculated or estimated was based on  
 17 our prior experience running economic pro forma  
 18 models with and without the PTC and our experience  
 19 seeing those. In 2009 dollars we estimated that at  
 20 approximately \$20 a megawatt-hour.  
 21 Mr. Hahn -- his critique was that we  
 22 needed to look at grossing that up to account for  
 23 tax rates. We agree that tax rates do have an  
 24 impact on that; however, it's a little bit more  
 25 complicated than that in that a lot of wind farms

178

1 may have other issues that they have to deal with  
 2 as far as monetizing that -- the full value of that  
 3 PTC, tax partner structures, things like that. And  
 4 in our experience it's been in 2009 dollars closer  
 5 to 20 by the time you take all that into -- into  
 6 effect.  
 7 So that -- so we believe our number is  
 8 more representative of the value of the PTC. But  
 9 then, secondly, we also believe that our value of  
 10 wind with the PTC was consistent with the LBNL  
 11 values. So really the only thing that that would  
 12 impact is if we added back in the value of the PTC  
 13 if it were taken away to get what the value of --  
 14 or what the cost of energy from a wind farm would  
 15 be without the PTC. And we didn't run any cases  
 16 without the PTC. Therefore, it's really immaterial  
 17 to the analysis that we ran.  
 18 Mr. Hahn also mentioned that we had  
 19 included stranded costs in our evaluation and that  
 20 we shouldn't have included those. Really, there  
 21 was only that single case that I pointed out where  
 22 we included the stranded cost. It was not included  
 23 in the base case and it was not included in any of  
 24 the sensitivities run in Figures 1 through 3.  
 25 And then, lastly, Mr. Hahn mentioned that

179

1 we should have considered MISO purchases and looked  
 2 at some other alternatives that included MISO  
 3 purchases. The alternatives selected were based on  
 4 replacing a baseload resource.  
 5 So Otter Tail's -- I'm sorry. Big Stone  
 6 is a baseload resource. We looked at the Big Stone  
 7 with AQCS and compared it to three alternatives for  
 8 replacing that baseload resource with another  
 9 baseload resource. We did not consider MISO market  
 10 purchases as a viable alternative baseload  
 11 resource, and we did not consider a simple cycle  
 12 combustion turbine as a viable alternative as a  
 13 baseload resource, either.  
 14 MR. BROWN: Your Honor, we offer this  
 15 witness for cross-examination.  
 16 JUDGE WAHL: Mr. Gruman.  
 17 MR. GRUMAN: Your Honor, may I have one  
 18 moment?  
 19 JUDGE WAHL: You may.  
 20 MR. GRUMAN: Your Honor, we have no  
 21 further questions.  
 22 JUDGE WAHL: Ms. Jeffcoat-Sacco.  
 23 **CROSS-EXAMINATION**  
 24 **BY MS. JEFFCOAT-SACCO:**  
 25 **Q.** Advisory staff -- we were wondering if any

180

1 sensitivity analysis had been run for like carbon  
 2 prices?  
 3 **A.** We did not run any carbon sensitivities  
 4 within this study.  
 5 **Q.** Okay. Was -- were they run, then, within  
 6 another study?  
 7 **A.** They were considered in the Minnesota  
 8 case.  
 9 **Q.** Okay. And not run here because?  
 10 **A.** We were directed by Otter Tail that carbon  
 11 was not to be considered within the -- the North  
 12 Dakota statutes, so that was my understanding was  
 13 that it was not -- it was not included in -- it  
 14 should not be considered in this hearing.  
 15 MS. JEFFCOAT-SACCO: Thank you.  
 16 JUDGE WAHL: Questions from the  
 17 Commission? Commissioner Kalk.  
 18 **EXAMINATION**  
 19 **BY COMMISSIONER KALK:**  
 20 **Q.** You sound like a pretty smart guy to ask a  
 21 lot of questions to, so I better be careful here.  
 22 The -- no, I'm serious, you obviously have  
 23 a lot of good experience, you know, in reading  
 24 through your bio, a wide variety of projects around  
 25 the country.

181

1 And I guess you talk about the costs --

2 you know, shoring them up at a certain time frame.

3 Based on your experience, if you'd run that

4 time out to 30 years, 40 years and down the road,

5 at what point would you guess that they would flip

6 to a different alternative based on your

7 experience? And what might that alternative be?

8 **A. I guess I don't quite understand the**

9 **question. You mean when it would flip from Big**

10 **Stone with AQCS to another resource?**

11 **Q.** To something else, yeah, based on your

12 experience. Because I -- maybe it never would, but

13 you've got a lot of experience in -- my experience

14 with time is that the time variable really flips

15 alternatives.

16 **A. Yeah. I mean I guess the way I would**

17 **answer that is that, you know, under the**

18 **assumptions that we included here, there's not a --**

19 **there's not necessarily a time where we're going to**

20 **see it flip. What would -- what would cause that**

21 **to flip would be potentially something that would**

22 **drive additional capital costs on the Big Stone**

23 **plant that may make it less economically**

24 **attractive.**

25 **Q.** New environmental rule or --

182

1 **A. Yeah. New environmental regulations or**

2 **drastic changes to the market that were outside of**

3 **the sensitivity ranges that we evaluated for,**

4 **things like fuel -- fuel costs.**

5 **Q.** Okay. And then next question is reading

6 through your bio, too, you've had a lot of

7 experience in decommissioning of coal plants.

8 **A. Yes.**

9 **Q.** When -- and throughout the -- throughout

10 the country, quite honestly.

11 When you go back and look at some of the

12 things you've done before, is there one thing that

13 really stands out as, okay, this is -- when this

14 happens, that means this plant is probably going to

15 be decommissioned, or is every one different?

16 **A. Well, every one's a little bit different,**

17 **but I mean there's some generalities, I guess, that**

18 **we've looked at recently, and that's typically**

19 **facilities similar to Big Stone based on the**

20 **economies of scale and the -- the energy costs**

21 **coming out of those resources, it's typically more**

22 **cost effective to retrofit those plants with the**

23 **air quality control system.**

24 **Some of the smaller plants, as Mark Rolfes**

25 **had mentioned earlier --**

183

1 **Q.** Hmm.

2 **A. -- it's typically those that we see being**

3 **slated for decommissioning where they're less**

4 **efficient and less competitive on the market, and a**

5 **large capital cost might push those over the edge**

6 **to no longer being competitive.**

7 **Q.** Okay. And then the last question is just

8 a -- in your experience, have you ever seen where

9 a -- this hearing is all about an advance

10 determination of prudence to where you can show us

11 studies somewhere that where -- by a company

12 getting advance determination of prudence actually

13 it's proved out to be lower cost to the consumer in

14 the end?

15 **A. I -- I really can't answer that question.**

16 **I don't have any experience either way on -- on an**

17 **advance determination of prudence.**

18 COMMISSIONER KALK: Okay. Thank you.

19 THE WITNESS: Sorry.

20 JUDGE WAHL: Further questions from the

21 Commission?

22 Follow-up, Mr. Brown?

23 MR. BROWN: Nothing further, Your Honor.

24 JUDGE WAHL: Mr. Gruman?

25 MR. GRUMAN: Nothing further.

184

1 JUDGE WAHL: Ms. Jeffcoat-Sacco?

2 MS. JEFFCOAT-SACCO: Nothing further.

3 Thank you.

4 JUDGE WAHL: Thank you very much,

5 Mr. Kopp.

6 THE WITNESS: Thank you.

7 JUDGE WAHL: Mr. Brown.

8 MR. BROWN: Your Honor, our next witness

9 is Mr. Ward Uggerud.

10 JUDGE WAHL: Mr. Uggerud, I know you've

11 done this probably more often than I have, but we

12 both have to do it, I guess. As you know, your

13 testimony is required to be under oath and I'm

14 required by law to advise you regarding perjury

15 before administering the oath. Perjury is a Class

16 C felony in North Dakota, punishable by a fine up

17 to \$5,000, imprisonment for a period of up to five

18 years, or both. Perjury is a false statement of a

19 material fact which you do not believe to be true.

20 (Witness sworn.)

21 JUDGE WAHL: Mr. Brown.

22 MR. BROWN: Thank you, Your Honor.

23 **WARD L. UGGERUD,**

24 being first duly sworn, was examined and testified

25 as follows:

185

1 **DIRECT EXAMINATION**

2 **BY MR. BROWN:**

3 **Q.** Could you state your full name for the

4 record?

5 **A.** **Ward Uggerud, U-g-g-e-r-u-d.**

6 **Q.** And you're employed at Otter Tail Power?

7 **A.** **Yes, I am.**

8 **Q.** Okay. And what's your position there?

9 **A.** **Senior vice president.**

10 **Q.** And what are your responsibilities in that

11 job?

12 **A.** **My responsibilities encompass the area of**

13 **power supply, our generation facilities, our**

14 **environmental services activities and our wholesale**

15 **power marketing activities.**

16 **Q.** And how long have you been at Otter Tail

17 Power?

18 **A.** **40 years.**

19 **Q.** Did you sponsor some of the exhibits in

20 this case?

21 **A.** **I did.**

22 **Q.** And does that include Exhibit -- Otter

23 Tail Exhibit 201, your prefiled rebuttal?

24 **A.** **Yes, it does.**

25 **Q.** And does it also include Exhibit 202,

186

1 Otter Tail's application for the ADP?

2 **A.** **Yes.**

3 **Q.** And also Exhibit 203, Otter Tail's 2011

4 North Dakota ten-year resource plan?

5 **A.** **Yes, it does.**

6 **Q.** And, finally, Exhibit No. 204, which was

7 Otter Tail's Minnesota IRP for 2011 to 2025?

8 **A.** **That is correct.**

9 **Q.** Thank you. Now, you probably heard some

10 of the questions that we've had earlier in the day

11 about why the companies are seeking an ADP. Could

12 you discuss that from the perspective of Otter

13 Tail?

14 **A.** **Surely. The air quality control system**

15 **will be the largest capital project that the**

16 **company has ever contemplated, and the implications**

17 **relative to the financial performance of the**

18 **company are so great that we made the determination**

19 **that it would not be advisable -- it would not be**

20 **the right thing for us to do to undertake that**

21 **entire investment and then come before the**

22 **commissions not only in North Dakota, but also in**

23 **South Dakota and Minnesota, seeking rate recovery**

24 **for those projects with the risk that one of the**

25 **regulatory commissions that is responsible for**

187

1 **determining -- determining the eventual levels of**

2 **rate recovery that we would be permitted -- to find**

3 **out that somebody would have taken a contrary view**

4 **as to whether we should have done the project at**

5 **all or not.**

6 **So it was imperative that we come before**

7 **the commissions seeking an advance determination as**

8 **to whether there is an agreement between us and the**

9 **regulatory commissions that this is the right thing**

10 **to seek to do on behalf of our ratepayers.**

11 **Q.** What would the -- Otter Tail's response be

12 if the ADP were denied?

13 **A.** **Well, it would be an indication that this**

14 **particular project is not one for which we could**

15 **reasonably expect to achieve rate recovery, so we**

16 **in all likelihood would have to come before this**

17 **Commission and the other commissions seeking a**

18 **similar indication of approval on an alternative**

19 **project. And it's our view that the alternative**

20 **project that we would then come before this**

21 **Commission seeking the same determination on would**

22 **be a higher-cost project in the range of, as**

23 **Mr. Kopp has testified, approximately 42 percent**

24 **higher.**

25 **Q.** And what in particular would it mean for

188

1 the Big Stone plant, at least as far as Otter Tail

2 was concerned?

3 **A.** **Well, it would -- it would mean probably a**

4 **range of things. First of all, if this Commission**

5 **were to determine that the air quality control**

6 **system was not prudent to undertake, it would**

7 **certainly mean that Otter Tail's investment**

8 **relative to its North Dakota load share would not**

9 **be permitted. So we would probably then be faced**

10 **with a scenario where we would -- if we wanted to**

11 **remain an owner of Big Stone, would probably have**

12 **to seek to dispose of our North Dakota share of the**

13 **unit to some other utility.**

14 **The ownership agreement that we have in**

15 **place would require as a first step that we offer**

16 **that share to the other owners on a right of first**

17 **refusal basis. Depending on the determination of**

18 **other commissions, if, for example, Minnesota were**

19 **to also deny the advance determination of prudence,**

20 **the possibility exists that Otter Tail would have**

21 **to exit the project completely, which would in no**

22 **way mean that the unit would disappear, but that**

23 **the ownership under a denial of an advance**

24 **determination of prudence would likely change, and**

25 **who -- the eventual owners, if any, would be**

189

1 **unknown at this time.**

2 **Q.** There have been questions today about how

3 the Big Stone plant fits within the generation

4 fleet of both companies.

5 **A. Right.**

6 **Q.** Could you describe at least briefly Otter

7 Tail's current fuel mix?

8 **A. Certainly, I can. You asked earlier, you**

9 **know, how long I have been employed by Otter Tail,**

10 **and the answer to that is 40 years. As a part of**

11 **the preparation for this case, I went and I took a**

12 **look at what was the resource mix when I started**

13 **with the company. And at that time fully**

14 **90 percent of the capacity resources that the**

15 **company had were baseload coal-fired resources.**

16 **As things have changed over time, it has**

17 **been increasingly difficult for utilities to build**

18 **baseload coal-fired resources primarily because of**

19 **the high capital costs and the long lead times to**

20 **get those projects accomplished. Quite simply,**

21 **it's easier to build projects that cost less and**

22 **can be done quicker than that cost more and take**

23 **longer to do.**

24 **So the change in our resource mix over**

25 **time has changed so that currently our resource mix**

190

1 **is on a capacity basis about 65 percent coal**

2 **instead of 90 percent, and I believe we have about**

3 **13 or 14 percent of our resource mix now is oil or**

4 **gas and about 20 percent on an installed capacity**

5 **basis is wind.**

6 **Otter Tail and all utilities are required**

7 **to submit long-term resource expansion plans to the**

8 **commissions that regulate us for their review, so**

9 **on a biannual basis we update our forward-looking**

10 **view as to what our resource mix will be, and our**

11 **current view, even under the assumption that we**

12 **will continue to operate all of our coal-fired**

13 **power plant resources, Big Stone, Coyote and Hoot**

14 **Lake, but just as our loads grow and the**

15 **contemplation that our -- our future resources will**

16 **more likely be gas additions than coal additions,**

17 **at the end of the 25-year planning period -- I'm**

18 **sorry, at the end of the 15-year planning period,**

19 **we would anticipate that our resource mix will have**

20 **changed just through the passage of time such that**

21 **on our installed capacity basis we would anticipate**

22 **that our resource mix would have changed to about**

23 **50 percent baseload coal-fired resources, about**

24 **30 percent gas and oil resources and about**

25 **20 percent renewable wind generation resources.**

191

1 **Q.** How does the AQCS fit into Otter Tail's

2 ten-year plan?

3 **A. Well, the -- the AQCS in all of the**

4 **studies that we have run shows that that is the**

5 **least-cost resource for us to pursue. And so as a**

6 **result, the ten-year plan that we have filed with**

7 **North Dakota includes as a part of the plan the**

8 **continuation of the Big Stone plant with the**

9 **environmental upgrades having been made and the**

10 **resource still available.**

11 **And, similarly, the integrated-resource**

12 **plan, the 15-year plan, that we have filed in**

13 **Minnesota also identifies the Big Stone plant with**

14 **the environmental upgrades as the least-cost**

15 **resource and it's shown as a continuing resource in**

16 **that plan as well.**

17 **So all of the plans that we have submitted**

18 **in all of our jurisdictions shows that the Big**

19 **Stone resource continues as a resource for the**

20 **company and available to our ratepayers.**

21 **Q.** In his testimony, Mr. Hahn had suggested

22 that the Commission might consider certain

23 conditions to attach to the ADP and one of those

24 was that the ADP should be effective only if EPA

25 approves the South Dakota SIP in the form as

192

1 currently proposed. Does Otter Tail have an

2 opinion about that recommendation?

3 **A. You know, generally as we've reviewed that**

4 **recommendation, it's one that would be acceptable**

5 **to us. But, again, I would probably put conditions**

6 **on the condition. And if the condition was that**

7 **the advance determination of prudence was subject**

8 **to the eventual EPA approval of the South Dakota**

9 **SIP, that would be acceptable. It would be quite**

10 **another matter if the Commission were not to act at**

11 **all until after the EPA had approved the SIP. That**

12 **would introduce a lot of complications with regard**

13 **to the ability to continue the project under the**

14 **assumptions that we've made now relative to cost**

15 **estimates and -- and the timing of the ability to**

16 **complete the work and things like that.**

17 **Q.** A second condition that had been proposed

18 by Mr. Hahn was to limit the coverage of the ADP to

19 the final actual cost at a rate of 10 percent above

20 the current cost estimate. Does the company have a

21 view about that proposal?

22 **A. Yes, we do. We've reviewed that and,**

23 **again, it would be a condition that we would be**

24 **willing to approve of subject to conditions, but**

25 **it's my understanding that Mr. Hahn's**

193

1 **recommendation also included that the company would**  
 2 **be eligible to recover amounts above that if we**  
 3 **could come and demonstrate before this Commission**  
 4 **that the costs in excess of 10 percent had been**  
 5 **reasonably incurred, and that would be acceptable.**  
 6 **Q.** And a third condition was that the company  
 7 should periodically report to the Commission  
 8 regarding the cost incurred and the status of the  
 9 EPA review. Does the company have a view on that  
 10 particular proposal?  
 11 **A.** Yeah. That -- we feel that that is also a  
 12 reasonable condition and, in fact, we had  
 13 anticipated that we would -- we would do that. We  
 14 have been before this Commission on other large  
 15 projects and have offered to include periodic  
 16 reporting as a part of other projects as well. We  
 17 would certainly do that for this one.  
 18 **Q.** Mr. Hahn also takes the position that the  
 19 proposed activated carbon injection system for  
 20 mercury control, so not part of the AQCS but the  
 21 mercury control, should not be included in the ADP  
 22 because the EPA rule on mercury control has not  
 23 been finalized. Do you have a view on that? Does  
 24 Otter Tail have a view on that, excuse me?  
 25 **A.** We do. Certainly if the EPA were never to

194

1 issue a final MACT rule and if mercury control were  
 2 never to be required, it would be understandable  
 3 that we would not expect that the Commission would  
 4 grant cost recovery for the mercury control system.  
 5 If on the other hand, as we expect to be the case,  
 6 that the EPA does issue a final MACT rule prior to  
 7 the construction and completion of the AQCS  
 8 project, that the -- the most reasonable time for  
 9 us to install that equipment would be as a part of  
 10 this project.  
 11 We had originally anticipated that there  
 12 would be a final MACT rule in place before this  
 13 hearing took place. We now believe that that has  
 14 been delayed but probably only by a month, and so  
 15 we would expect -- we fully expect to see a final  
 16 MACT rule yet this year. Even if it's not  
 17 something that we see by the end of this year, we  
 18 certainly think that it's more likely than not by  
 19 far that we would see a final MACT rule from the  
 20 EPA before this project is completed and therefore  
 21 it would be the reasonable thing for the companies  
 22 to do to include it while we're undertaking such a  
 23 major construction addition at the plant.  
 24 **Q.** And, finally, Mr. Hahn also suggested that  
 25 the company should have evaluated an alternative

195

1 based on MISO purchases. Can you explain why that  
 2 wasn't included in the company's analysis?  
 3 **A.** Well, I think that it was probably not  
 4 included in the company's analysis for the same  
 5 reason that Mr. Hahn in his own testimony indicated  
 6 that it would present a risk that, in my opinion,  
 7 he was stopping short of suggesting that as a  
 8 preferred alternative. Hypothetically, you can  
 9 make a case that there is a scenario out there  
 10 where market alternatives might be fairly  
 11 economically attractive, but they also come with  
 12 probably the most inherent risk in them because we  
 13 don't know what the -- what kinds of things might  
 14 impact future market prices.  
 15 And I can remember one of the last times  
 16 that Mr. Wahl and I sat across from each other  
 17 here, you know, I was out here trying to explain to  
 18 this Commission why we had cost overruns that were  
 19 resulting on, you know, a lot of calls to the  
 20 Public Service Commission's switchboard with regard  
 21 to complaints with regard to the fuel clause  
 22 adjustment for a project that Otter Tail had  
 23 wherein for a period of one month we had Big Stone  
 24 as a resource not available to us during the month  
 25 of December and market prices were high and

196

1 customers were complaining about fuel cost impacts,  
 2 and so we had a hearing on -- on that issue. And  
 3 it's happened before. It, I believe, will happen  
 4 again.  
 5 You know, customers -- you know, markets  
 6 are a volatile thing. We've seen it before. It  
 7 will happen again. And one of the things  
 8 utilities, and I believe this Commission as well,  
 9 are trying to do is to find reasonable ways to  
 10 protect customers from the what-if impacts, and  
 11 price volatility is not a pretty thing to get  
 12 caught up in. I mean there's a lot of blame to get  
 13 passed around when that happens, and so the  
 14 reasonable thing to do is to ward against it.  
 15 MR. BROWN: Your Honor, we're ready to  
 16 present this witness for cross-examination. For  
 17 the record, I just would like to note again that  
 18 this witness is offered only for the record for  
 19 Otter Tail.  
 20 JUDGE WAHL: Mr. Gruman.  
 21 MR. GRUMAN: Thank you, Your Honor.  
 22 **CROSS-EXAMINATION**  
 23 **BY MR. GRUMAN:**  
 24 **Q.** Mr. Uggerud, you were here this morning  
 25 and you were here for Mr. Rolfes' testimony and

197

1 cross-examination; is that correct?

2 **A. That's correct.**

3 **Q.** My question is of course there was

4 significant testimony concerning the Coyote plant,

5 and from a ratepayer's standpoint we're curious if

6 under the contingency that the Coyote plant were to

7 have a fuel source change from lignite to Powder

8 River Basin coal or, I guess, some other coal for

9 that matter, would the company be willing to first

10 come before this Commission and ask for an advance

11 determination on that matter?

12 **A. You know, I think that -- I'll answer the**

13 **question yes at the beginning.**

14 **Q.** Okay.

15 **A. I see no reason why we wouldn't do that.**

16 **The only comment that I would offer is that from my**

17 **perspective, at least -- and again, I'm not even**

18 **necessarily answering on behalf of my company, but**

19 **just me and the experience that I've had within my**

20 **company, there's a part of me that thinks that the**

21 **ADP statute was contemplated for the review of**

22 **large capital projects that took a significant lead**

23 **time. And so the only thing that surprises me**

24 **about the question is not so much whether we would**

25 **be willing to do that or not, as much as it is**

198

1 **whether or not that's the kind of project that**

2 **would have otherwise fit with my determination of**

3 **what an ADP statute was intended to cover.**

4 **But certainly the issue of -- of the**

5 **relationship between Otter Tail Power Company and**

6 **Montana-Dakota Utilities and the State of North**

7 **Dakota relative to the Coyote project is -- is not**

8 **something that we would be unwilling to pursue**

9 **decisions such that the -- the results and the**

10 **impacts on the retail customers that we serve are**

11 **impacted by decisions that are mutually acceptable**

12 **between us and the Commission.**

13 **So I -- I would offer that at least from**

14 **my personal opinion if there was -- if there was a**

15 **feeling that this Commission would think that that**

16 **would be an appropriate thing for us to do, I -- I**

17 **personally would not advise against doing that.**

18 **MR. GRUMAN:** Thank you. I have no further

19 **questions, Your Honor.**

20 **JUDGE WAHL:** Ms. Jeffcoat-Sacco.

21 **MS. JEFFCOAT-SACCO:** I have one or two.

22 **CROSS-EXAMINATION**

23 **BY MS. JEFFCOAT-SACCO:**

24 **Q.** What is the company's -- how would the

25 company describe the question for the Commission in

199

1 this case? What is your -- what is the factor or

2 the question that the Commission has to decide in

3 order to decide this case?

4 **A. Well, I think that the question is -- it's**

5 **a relatively simple one, and that is based on the**

6 **things that we know now and given that Otter Tail**

7 **and Montana-Dakota Utilities are going to have to**

8 **make a major decision to do something, we cannot**

9 **continue to run the Big Stone plant unless we add**

10 **environmental controls to achieve resolution of the**

11 **regional haze issue.**

12 **So given that as the backdrop, the**

13 **question is given what we know now and given the**

14 **fact that the company has to do something and these**

15 **are the conditions that we face in terms of the**

16 **cost of alternatives and the prices, what would you**

17 **rather have us pursuing? This or that?**

18 **And -- and we believe that the question**

19 **is -- is that simple. And we think that in this**

20 **case that based on the evidence that we have that**

21 **it's not necessarily even a close call, but it's**

22 **still something we wanted to have a mutual**

23 **determination on.**

24 **Q.** Can you fit that into the advance

25 determination of prudence law for me and tell me

200

1 what the question is the Commission needs to

2 decide?

3 **A. Well, is it reasonable for us to continue**

4 **to be pursuing this specific project based on the**

5 **evidence that we have put before you, and we think**

6 **that's what this case is all about.**

7 **Q.** And is there any relevance or meaning to

8 the concept of advanced determination of that?

9 **A. Well, you know, the alternative would be**

10 **to spend the money and then come in and seek rate**

11 **recovery for the dollars that we had spent. So**

12 **that's the difference between advance determination**

13 **of prudence or reasonableness versus cost recovery**

14 **at the completion of a project.**

15 **But with the dollars involved being as**

16 **significant as they are, if there's a risk that a**

17 **regulatory commission would have rather that we'd**

18 **done something else and we don't have the benefit**

19 **of knowing that feeling from the Commission until**

20 **after the money is already spent, it becomes a -- a**

21 **bet-the-farm-type decision, and -- and in today's**

22 **times with -- with the -- all of the issues out**

23 **there surrounding utility- and energy-related**

24 **issues, that just would seem like a risky**

25 **proposition to us to wait until after we've spent**

201

1 **the money to get any feedback as to whether that**  
 2 **was the right thing to have done or not.**  
 3 **Q.** So you could probably live with a  
 4 decision -- positive decision on prudence at zero  
 5 dollars and the dollars could be figured out later;  
 6 is that kind of what I'm hearing?  
 7 **A. Well, in fact, I think that our testimony**  
 8 **has -- has indicated that, you know, we're**  
 9 **certainly thinking that all of the dollars that we**  
 10 **spend, you know, that's why -- that's why we would**  
 11 **agree to the periodic reporting. That's why, you**  
 12 **know, we certainly don't think that we've been**  
 13 **given a blank check.**  
 14 **You know, I'm proud of Mark Rolfes and the**  
 15 **work that he has done, and, you know, we certainly**  
 16 **intend to execute this project with the degree of**  
 17 **concern for the final rate impacts on our**  
 18 **customers, and -- and there is no way that we would**  
 19 **treat this as if we've been given a blank check to**  
 20 **spend \$489 million. And we fully support that**  
 21 **we'll come in and show that from -- from the**  
 22 **beginning to the end that we did the things that we**  
 23 **think were reasonable for us to do as a part of**  
 24 **what we do as a utility.**  
 25 **Q.** I just want to be sure we're on the same

202

1 page.  
 2 **A. I think we are.**  
 3 **Q.** I think we are. You just want to -- you  
 4 want to know -- you're using this statute in order  
 5 to know if the Commission thinks you're doing the  
 6 right thing or the wrong thing?  
 7 **A. Right.**  
 8 MS. JEFFCOAT-SACCO: Thank you.  
 9 JUDGE WAHL: Questions from the  
 10 Commission? Commissioner Clark.  
 11 COMMISSIONER CLARK: Thanks, Ward.  
 12 **EXAMINATION**  
 13 **BY COMMISSIONER CLARK:**  
 14 **Q.** Help walk me through something that has  
 15 been nagging at me since lunch.  
 16 COMMISSIONER CRAMER: He can't do anything  
 17 about the soup.  
 18 **Q.** (COMMISSIONER CLARK CONTINUING) Yeah. I  
 19 contemplated over my soup.  
 20 It's the -- it's the -- the way in which  
 21 Minnesota has split its ADP decision with regard to  
 22 the baghouse. Because it seems to me this might  
 23 put our Commission and our ratepayers in a very odd  
 24 position, and here's why I say that. As I  
 25 understand it, you wouldn't do the other parts of

203

1 the project without being able to do the baghouse,  
 2 that they're inseparable. In other words, from an  
 3 engineering standpoint, that which takes out the SO<sub>2</sub>  
 4 and the NO<sub>x</sub> requires you to revamp your baghouse.  
 5 So in effect has Minnesota really granted  
 6 you anything; right? Because they severed out a  
 7 part of the project which is inseverable from the  
 8 first two parts of the project?  
 9 **A. Right.**  
 10 **Q.** So do you have really any advance  
 11 determination of prudence at all in Minnesota?  
 12 **A. Well, we think we do. You know, we don't**  
 13 **have a final determination by the Minnesota**  
 14 **Commission. What we have in Minnesota is a**  
 15 **recommendation from the administrative law judge**  
 16 **and the position that the Department of Commerce**  
 17 **has taken in the case.**  
 18 **Q.** Right.  
 19 **A.** And if that was fully the basis on which a  
 20 decision were to be rendered today, I would say  
 21 that taken together what we have in Minnesota is a  
 22 determination of prudence.  
 23 **What the Department of Commerce has said**  
 24 **is that they think that the costs of the baghouse**  
 25 **should be fully recoverable, but that that portion**

204

1 **for which the advance determination of prudence has**  
 2 **been given does not cover the baghouse. What they**  
 3 **have said in their recommendation, that the**  
 4 **baghouse is the reasonable thing to do and the**  
 5 **company should seek recovery of that portion in**  
 6 **separate ratemaking processes. We think --**  
 7 **Q.** But doesn't -- if I can just stop you for  
 8 a second. But that -- doesn't that really, then,  
 9 tie the hands of the entire project to that same  
 10 theory? Where really you would need to be seeking  
 11 recovery for the whole project in a separate  
 12 project, not advance determination -- not in an  
 13 advance determination because you can't sever the  
 14 baghouse from the rest of it?  
 15 **A. Well, that's not our interpretation of the**  
 16 **combination of the two things in Minnesota. We**  
 17 **believe that our interpretation is that the**  
 18 **administrative law judge has said that the**  
 19 **remainder of the project is prudent and that the**  
 20 **baghouse -- the cost portion of that total project**  
 21 **would just be recovered through separate ratemaking**  
 22 **considerations.**  
 23 **One of the things that's interesting in**  
 24 **Minnesota is that the administrative law judge,**  
 25 **himself, has approached it kind of the same way you**

205

1 are and that is that, you know, it seems to the  
 2 administrative law judge that a case can be made  
 3 that the baghouse should be considered as a part of  
 4 the total project. And he's, in a -- kind of a  
 5 separate memorandum to his recommendation, raised  
 6 that issue as to whether or not the department's  
 7 position relative to the baghouse is the right one  
 8 or whether a different one should be taken.  
 9 You know, the issue of the AQCS is far  
 10 more important to Otter Tail than the relatively  
 11 small portion of baghouse or no baghouse. I mean  
 12 it's far more important to us to have a  
 13 determination on the -- the concept of installing  
 14 environmental upgrades on the plant. We don't want  
 15 to get caught up in a fight in Minnesota relative  
 16 to nitpicking on that baghouse issue or the  
 17 non-baghouse issue, particularly when the  
 18 Department of Commerce has said that they think  
 19 that the baghouse is reasonable to do and that it  
 20 should be recoverable in final rates.  
 21 Q. When -- when is the final decision  
 22 expected from the Minnesota Commission?  
 23 A. You know, we expect it in mid-to-late  
 24 December. It's -- it's not been set for an agenda  
 25 in front of the Commission yet, so which day that

206

1 will happen we're not sure. But if it's not in  
 2 mid-to-late December, we expect that the Commission  
 3 will hear it shortly after the year.  
 4 COMMISSIONER CLARK: Because I'd ask our  
 5 Judge is there an appropriate way to make sure that  
 6 decision can be incorporated into our record? Is  
 7 another agency's decision something we just take  
 8 administrative notice of or is that something that  
 9 knowing maybe it's coming up in the next few weeks,  
 10 it's allowed to be filed as a late-filed exhibit or  
 11 do we have to reopen the record again to -- to get  
 12 it in? I'm just trying to figure out what the  
 13 right way is so we can take that into  
 14 consideration.  
 15 JUDGE WAHL: I've got to think about that  
 16 a little bit, but I -- and I invite counsel's  
 17 comments.  
 18 MR. KUNTZ: Your Honor, I think at least  
 19 from Montana-Dakota we would -- we would stipulate  
 20 to providing a copy to the Commission for its  
 21 consideration in --  
 22 JUDGE WAHL: For what purpose? Is it  
 23 evidence or is it -- it's not precedential,  
 24 clearly, but is it evidence?  
 25 MR. KUNTZ: I don't think it's evidence of

207

1 a fact other than that's what the other Commission  
 2 did. It's evidence for what it is.  
 3 JUDGE WAHL: It's evidence of what they  
 4 did.  
 5 MR. KUNTZ: What they did.  
 6 JUDGE WAHL: But the -- but the findings  
 7 are not --  
 8 MR. KUNTZ: No. I mean you can't adopt  
 9 their finding of fact as your finding of fact --  
 10 JUDGE WAHL: Or accept the --  
 11 MR. KUNTZ: -- but I think it's evidence  
 12 of what their action was. And I think the other  
 13 thing that's probably important here, and I wasn't  
 14 involved in the Minnesota proceeding, but you've  
 15 got two different statutes, and I think you've got  
 16 to recognize the distinction between the statutes  
 17 and that might play into what -- how that affected  
 18 the final decision. But I think from  
 19 Montana-Dakota's standpoint, we would have no  
 20 problem submitting that decision as part of the  
 21 record in this case, understanding that it's not  
 22 a -- it's only a fact for that's what the  
 23 Commission decided.  
 24 JUDGE WAHL: Exactly. For that -- for  
 25 that purpose. I would agree with that. I'm sorry.

208

1 Mr. Bring, do you -- do you wish to comment?  
 2 MR. BRING: Your Honor, while I've not --  
 3 JUDGE WAHL: Will Otter Tail Power  
 4 stipulate to the decision as a late-filed exhibit,  
 5 I guess is the fundamental question.  
 6 MR. BRING: Yes, Your Honor. While I've  
 7 not done research on administrative notice, I  
 8 suspect that it would be capable of being  
 9 administratively noticed as evidence of what the  
 10 Minnesota Commission did, and Otter Tail would be  
 11 willing to stipulate to its entry into  
 12 administrative notice if that's the desire of the  
 13 Commission.  
 14 COMMISSIONER CLARK: I mean we've taken  
 15 notice of these in the past. It's just been that  
 16 it's been after the record was closed and it caused  
 17 us to have to go back and --  
 18 JUDGE WAHL: Right.  
 19 COMMISSIONER CLARK: -- renote things,  
 20 and I'm just trying to --  
 21 COMMISSIONER CRAMER: Avoid that.  
 22 COMMISSIONER CLARK: -- avoid that if --  
 23 unless we have to do it that way.  
 24 JUDGE WAHL: No. We can do it as a -- I  
 25 would agree it can be a late-filed exhibit. Let's

209

1 just make it part of the record. So, Mr. Brown, is  
 2 that going to be 117, then?  
 3 MR. BROWN: The next exhibit would be 117,  
 4 Your Honor.  
 5 JUDGE WAHL: All right. For the record,  
 6 when the exhibit -- or when the decision of the  
 7 Minnesota Commission is -- is available, it can be  
 8 filed as a late-filed exhibit, Exhibit No. MDU-OTP  
 9 116 [sic], I guess.  
 10 **Q.** (COMMISSIONER CLARK CONTINUING) Were  
 11 there other parties that were intervenors in that  
 12 case who held a different position than the DOC who  
 13 may be likely to appeal that decision?  
 14 **A.** With regard to the baghouse only?  
 15 **Q.** Well, with regard to the decision in  
 16 general with regard to the ADP.  
 17 **A.** Yes.  
 18 **Q.** Well -- and the reason I ask is -- the  
 19 reason I ask and the reason that I am interested in  
 20 having the Minnesota decision in our record -- at  
 21 least it's just a fact -- is because we've run into  
 22 this issue before in other cases, as you know,  
 23 where litigation and things going on in one state  
 24 can have a tremendous impact on others. And I  
 25 think it's something that we as a Commission need

210

1 to have our eyes wide open as we go into this so  
 2 that we're not exposing our ratepayers to  
 3 unnecessary risk because of regulatory and legal  
 4 and legislative uncertainties in another state.  
 5 **A.** And, Your Honor, if I might -- and this  
 6 might be slightly out of order, but perhaps not.  
 7 If I could go back to the baghouse a little bit and  
 8 I think that it's probably important to put that  
 9 into the context of how that whole issue arose and  
 10 evolved over time.  
 11 **What the South Dakota DENR and the State**  
 12 **Implementation Plan first did was set an emissions**  
 13 **limit for particulates, and what they concluded was**  
 14 **that the current baghouse provided for an emissions**  
 15 **limit for particulates that was consistent with the**  
 16 **requirements of the regional haze program. And**  
 17 **that was embodied in the State Implementation Plan**  
 18 **and the prescription for the emissions level of**  
 19 **reduction requirements.**  
 20 **As we got into doing the engineering,**  
 21 **then, to achieve the various emissions rates that**  
 22 **were specified in the state program, it wasn't**  
 23 **until then that we determined this issue that Mark**  
 24 **Rolfes had addressed earlier this morning with**  
 25 **regard to the increase in the negative pressures,**

211

1 **and just because of all of the additional equipment**  
 2 **that we've installed, we're going to have to**  
 3 **install newer, larger, induced draft fans, and we**  
 4 **would literally just suck the sides of the box that**  
 5 **the baghouse sits in just because of the increased**  
 6 **pressures.**  
 7 **And so when you take a look at, okay, the**  
 8 **baghouse is performing at a level that meets the**  
 9 **State Implementation Plan requirements, but the**  
 10 **cost of going in and drilling new foundations and**  
 11 **putting in new metal supports on a piece of**  
 12 **operating equipment while the plant is still**  
 13 **running, it would be prohibitively expensive to do**  
 14 **that on an operating piece of equipment, and it was**  
 15 **just cheaper to go in and build something new that**  
 16 **we can cut over during that proposed 2015 outage.**  
 17 **And so we get caught up in Minnesota in**  
 18 **terms of the semantics of the original State**  
 19 **Implementation Plan prescription in terms of an**  
 20 **emissions reduction standard, and I'm kind of**  
 21 **perplexed a little bit as to why Minnesota would be**  
 22 **taking the position that because the South Dakota**  
 23 **rule said this, that therefore we're not going to**  
 24 **allow the new baghouse to be considered as a part**  
 25 **of the project when from my perspective as an**

212

1 **engineer you just go in and you're going to do the**  
 2 **least-cost way of at the end of the day achieving**  
 3 **the results you need.**  
 4 **And so I think the whole issue has kind of**  
 5 **been blown out of proportion. I don't think either**  
 6 **the Department of Commerce or Otter Tail disagreed**  
 7 **that at the end of the day the least-cost thing to**  
 8 **do was to build a new one. We just get caught up**  
 9 **in the interpretation of that original South**  
 10 **Dakota --**  
 11 **Q.** Right. But that's -- that's actually, I  
 12 guess, part of the question for my concern and what  
 13 I'm trying to nail down here is that if Minnesota  
 14 is doing things that create uncertainty in the  
 15 process, to what degree should we be putting North  
 16 Dakota ratepayers on the hook until we really know  
 17 that they've finally signed off on this? Because  
 18 we have had a track record, and frankly with that  
 19 state in particular, of trying to block projects if  
 20 they have anything to do with coal.  
 21 **A.** But it's my understanding that what we  
 22 have in Minnesota right now is a record that would  
 23 support the environmental control upgrades and the  
 24 new baghouse. They're just separating out the  
 25 baghouse portion for a different rate recovery

213

1 **treatment and have given us an advance indication**  
 2 **that they believe it's the right thing to do.**  
 3 **Q.** Sure. And I'm just trying to nail down  
 4 what the -- when I'll have the final answer from  
 5 Minnesota.  
 6 Oh, and I don't know if you had an  
 7 opportunity to answer this yet or not. Could you  
 8 detail the other intervenors that have been active  
 9 in that particular case?  
 10 **A.** You know, it's the -- it's a coalition of  
 11 **intervenors and I'm not sure that I can get all of**  
 12 **them, but it's Minnesota Center For Environmental**  
 13 **Adequacy, the Izaak Walton League, the Sierra Club,**  
 14 **The Cure, Fresh Energy. There's a group of -- a**  
 15 **handful of them that got together and it's a**  
 16 **joint -- and they refer to themselves as the joint**  
 17 **intervenors.**  
 18 **Q.** And is it a general opposition to the --  
 19 **A. Yes.**  
 20 **Q.** -- the upgrade? They just prefer the  
 21 plant be shut down, period?  
 22 **A. They would.**  
 23 **Q.** And has there been an indication if  
 24 that -- if the ALJ decision -- if it's ultimately  
 25 adopted, if it will be appealed or can we assume

214

1 one way or another that it will?  
 2 **A. You know, I suppose -- I'm not sure that I**  
 3 **could answer as to whether it would be. I**  
 4 **certainly think there's a possibility. Those**  
 5 **people have appealed other things.**  
 6 COMMISSIONER CLARK: Okay. Fair enough.  
 7 Thanks. That's all I have.  
 8 JUDGE WAHL: Commissioner Cramer.  
 9 **EXAMINATION**  
 10 **BY COMMISSIONER CRAMER:**  
 11 **Q.** Couple things I just want clarification  
 12 on, Ward. Thanks for your testimony. First of  
 13 all, I want to be clear about this issue of -- if I  
 14 understood your answer to Mr. Gruman's question,  
 15 are you -- are you asking for an advance  
 16 determination of prudence on this -- to include  
 17 these mercury controls and the possibility or  
 18 likelihood of the MACT rule being passed but  
 19 wouldn't expect recovery of those costs if the MACT  
 20 rule isn't passed? In other words, how would we  
 21 deal with that if we were to give an advance  
 22 prudence but then renege on that part of it later  
 23 or -- or didn't I understand you correctly?  
 24 **A. Well, you know, I -- I apologize if my**  
 25 **answer was vague and confusing. We believe that**

215

1 **the likelihood of MACT is -- is so probable that we**  
 2 **think it would be an appropriate determination for**  
 3 **the Commission to say that the baghouse -- or that**  
 4 **the ACI portion, the mercury control, is reasonable**  
 5 **and prudent, but would be willing to live with the**  
 6 **condition that you might put on that it's subject**  
 7 **to a final MACT rule that would require it.**  
 8 **Q.** Okay.  
 9 **A.** And if there is no final MACT rule, then  
 10 we would have to make the determination whether  
 11 we -- we do it or not, but we think that it's  
 12 likely. And our recommendation would be that if  
 13 you want to put a condition on the -- the ACI  
 14 portion for mercury control that the prudence of  
 15 that is subject to a final MACT rule before the  
 16 project is complete. That's what I should have  
 17 said.  
 18 **Q.** That makes sense. Thanks.  
 19 Now, knowing, of course, you're the  
 20 historian in the room and this issue of -- that I  
 21 think Illona was getting at a little bit over the  
 22 distinction of advance prudence versus prudence  
 23 after the fact, I think you answered the question  
 24 fairly well, but one of my -- one of the things  
 25 that haunts me, and maybe you can help me given

216

1 your historical perspective, is prior to the Big  
 2 Stone II case why was there never a request for  
 3 advance prudence on previous investments, large  
 4 capital expenditures, fuel choices, you know, all  
 5 of those things if today it's so urgent -- it seems  
 6 to be almost critical?  
 7 **A. Well, you have to keep in mind that**  
 8 **there's a number of dynamics in play here. First**  
 9 **of all, Otter Tail has not engaged in a large**  
 10 **capital project since the installation of Coyote,**  
 11 **so there's never been an occasion for us to have a**  
 12 **project that we're sponsoring that would seek such**  
 13 **a determination.**  
 14 I can remember at the time that we  
 15 constructed Coyote and then the -- the standard for  
 16 regulatory recovery was used and useful, and we had  
 17 a significant proceeding before this Commission and  
 18 there was a determination made that -- that a block  
 19 of capacity associated with the Coyote project put  
 20 Otter Tail in a position of having excess capacity  
 21 and that, therefore, there was a portion of that  
 22 investment that was not used and useful at the  
 23 completion of the project. And I believe we had to  
 24 file a total of three rate cases in order to have  
 25 all of the investment in Coyote included in rates

217

1 and receiving cost recovery, and that represented a  
 2 hardship for our company.  
 3 As a result of that experience at that  
 4 time, Dennis Emmen, who was our senior vice  
 5 president of finance at the time -- and I can  
 6 remember discussions internal at our company  
 7 saying, you know, that was such a difficult thing  
 8 for synchronizing the expenditure of dollars and  
 9 the recovery of investment that we would never  
 10 undertake another large capital project without  
 11 having some mechanism to go and get an indication  
 12 beforehand, because this notion of potentially  
 13 spending that much money and then having  
 14 significant delays in being able to recover the  
 15 investment would be an untenable situation.  
 16 So while this may be the first time we're  
 17 before this Commission now seeking such an advanced  
 18 determination, it's certainly not the first time  
 19 that we've had discussions among our companies as  
 20 to what do we do for projects that have got such  
 21 large capital expenditures and that you spend  
 22 dollars over such a long period of time before you  
 23 have a project that's in service and producing  
 24 energy.  
 25 Q. That's fair enough. That's a good, what I

218

1 was looking for, historical perspective. Because  
 2 one of my -- you know, one of my concerns is it  
 3 almost seems like this trend or need for an ADP can  
 4 be paralyzing. On the one hand it's like either we  
 5 get it or we don't do anything or you go ahead and  
 6 you do things -- and companies have done both since  
 7 we've had the law -- and things that we might not  
 8 have approved of had we known in advance, and so  
 9 then it's hard to get on the right side, I guess,  
 10 of the Commission because probably because --  
 11 because determining something after the fact is so  
 12 much easier. But when we end up sharing in sort of  
 13 that management decision of what things to build,  
 14 it makes us a little uncomfortable. At the same  
 15 time, we get pretty owly if a bad decision is made.  
 16 So that's more of a statement perhaps for your  
 17 response than anything.  
 18 A. It's a fair statement. And there may be  
 19 that there's -- you know, as time passes and we --  
 20 we evolve relative to the way in which industry and  
 21 the regulatory community view some of these  
 22 projects. There may be better ways to deal with  
 23 such things, but certainly from our perspective,  
 24 you know, we don't want to spend the money only to  
 25 find out that somebody thinks we shouldn't have and

219

1 therefore --  
 2 Q. Yeah.  
 3 A. -- we've poured money down the drain. And  
 4 on the other hand, I can certainly appreciate the  
 5 dilemma that you people face, too, and it's the  
 6 same one that we face. You know, things change all  
 7 the time and viewing some of these things with  
 8 regard to an unknown future is a difficult thing to  
 9 do.  
 10 Q. And then -- yeah, I agree. Thank you.  
 11 And then, finally, we've never been able  
 12 to really nail down a way to determine the actual  
 13 savings of an advance prudence determination,  
 14 especially capital costs. I mean we hear it, it  
 15 seems reasonable, it sounds rational that, you  
 16 know, the markets were going to favor certainty  
 17 versus uncertainty; and yet no one's ever been able  
 18 to sit in that chair and say, Yes, the cost of  
 19 capital is this much less with this prudence. Is  
 20 that expecting too much?  
 21 A. Well, there are opinions out there as to  
 22 the degree of savings. I think Scott Hempling is  
 23 somebody that maybe you guys have run across in  
 24 some of your Commission proceedings. I think he's  
 25 actually authored some papers and has put some sort

220

1 of a financing savings associated with regulatory  
 2 certainty and it's not an inconsequential amount.  
 3 I think I've, you know, read in *Public*  
 4 *Utility Fortnightly* articles that talk about the  
 5 benefits of regulatory certainty with regard to  
 6 lowering financing costs. But I have seen various  
 7 things that people have hypothesized that show  
 8 savings that are -- that are worth achieving in  
 9 terms of regulatory certainty relative to the  
 10 financial world's view of the safety of investments  
 11 in a project.  
 12 COMMISSIONER CRAMER: Thank you. Nothing  
 13 else.  
 14 JUDGE WAHL: Further questions from the  
 15 Commission? Commissioner Kalk.  
 16 EXAMINATION  
 17 BY COMMISSIONER KALK:  
 18 Q. Thank you, Ward, for your testimony. And  
 19 you work for Otter Tail Power. It's been a couple  
 20 days, huh?  
 21 The -- you know, Kevin and Tony and the  
 22 folks always do a pretty good job -- real good job  
 23 of laying out most of the questions, and I'll try  
 24 to fill in a couple of the gaps. The one that I  
 25 guess I keep struggling with is the one that Kevin

221

1 talked about, Tony talked about is the whole deal  
 2 about if this Commission -- I'm going to speak for  
 3 myself, of course, only, but if we'd reject an ADP,  
 4 that doesn't mean that I don't -- wouldn't think  
 5 it's a good project down the road. And that's one  
 6 thing that I've heard a lot in the hearing today is  
 7 that -- people saying that if we don't approve an  
 8 ADP, that that's not -- doesn't mean down the road  
 9 that we'll -- that we'll think it's a good idea. I  
 10 think for me personally that's completely wrong.  
 11 And we'll just have to look at the facts of those  
 12 case -- cases as they come up. So I'll just throw  
 13 that out there.  
 14 The -- tell me this: If Big Stone II had  
 15 been built, would there have been any of this air  
 16 quality control system that would have not have  
 17 been included in that?  
 18 **A. Yes. Big Stone II as proposed would have**  
 19 **had a single-joint scrubber and so there would have**  
 20 **been a -- an economy of scale potentially**  
 21 **achievable with one large scrubber that would have**  
 22 **serviced both units. On the other hand, the Big**  
 23 **Stone II project did not have associated with it an**  
 24 **SCR.**  
 25 **Q. Okay.**

222

1 **A. So the subsequent regional haze review and**  
 2 **determinations would have exposed us on the unit**  
 3 **number one to an SCR in any event and the scrubber**  
 4 **would not have been free.**  
 5 **Q. Okay.**  
 6 **A. There would have been a need for unit one**  
 7 **to be scrubbed. It's just that rather than the**  
 8 **partners paying for the cost of a stand-alone**  
 9 **scrubber as we now propose, we would have been**  
 10 **responsible for paying our share of a joint**  
 11 **scrubber the size large enough to handle both**  
 12 **units.**  
 13 COMMISSIONER KALK: Okay. Thank you.  
 14 That's all I have.  
 15 JUDGE WAHL: All right. Commissioner  
 16 Clark.  
 17 **FURTHER EXAMINATION**  
 18 **BY COMMISSIONER CLARK:**  
 19 **Q. Are there similar proceedings to this**  
 20 **going on in South Dakota or do they not have an**  
 21 **advance principal-type procedure?**  
 22 **A. They don't. And in South Dakota -- you**  
 23 **have to keep in mind that because the unit is**  
 24 **located in South Dakota, the very need to do this**  
 25 **project is a function of administrative and**

223

1 **regulatory things that have been happening in South**  
 2 **Dakota, so that we view the situation in South**  
 3 **Dakota to be different.**  
 4 **South Dakota on the one hand can say these**  
 5 **are the things that you need to do at this unit and**  
 6 **then turn around and separately say, Oh, by the**  
 7 **way, we don't think you should have, because we're**  
 8 **just -- we're responding to what they're telling us**  
 9 **to do. But then separately there is also a rate**  
 10 **stability plan in South Dakota so that the**  
 11 **combination of what South Dakota has required by**  
 12 **virtue of the requirements of the State**  
 13 **Implementation Plan plus the regulatory treatment**  
 14 **of their rate stability plan gives us the same**  
 15 **degree of assurances in South Dakota that we seek**  
 16 **in North Dakota and Minnesota through a different**  
 17 **process of advance determination.**  
 18 **Q. So ultimately what cases will need to be**  
 19 **filed in front of the South Dakota PUC? Do they**  
 20 **have to -- are there any -- is there a certificate**  
 21 **of need that will be required or --**  
 22 **A. There's the --**  
 23 **Q. -- siting?**  
 24 **A. All the permitting associated with the**  
 25 **work that we're doing at the unit.**

224

1 **Q. Okay. So they'll have to do a siting**  
 2 **case; is that --**  
 3 **A. You know, I'd have to go back and rely on**  
 4 **Mark Rolfes and Terry Graumann for the exact litany**  
 5 **of permitting issues involved in Minnesota on this**  
 6 **matter, but there are certainly issues before the**  
 7 **Commission and the DENR relative to the specific**  
 8 **requirements of what we do in South Dakota to**  
 9 **implement the project.**  
 10 COMMISSIONER CLARK: Okay. Maybe  
 11 Mr. Rolfes can come up and testify or else if  
 12 there's a late-filed exhibit we could have just  
 13 detailing what permits will be required in that  
 14 state, that might be helpful as well or we can just  
 15 handle it today.  
 16 THE WITNESS: The biggest of them that I'm  
 17 aware of is the construction permit.  
 18 JUDGE WAHL: Further questions from the  
 19 Commission? I'll deal with that, Commissioner, in  
 20 a minute here.  
 21 COMMISSIONER CLARK: Thanks.  
 22 JUDGE WAHL: Further questions from the  
 23 Commission? Follow-up, Mr. Brown?  
 24 MR. BROWN: Your Honor, there would be  
 25 some issues I'd like to get into that pertain to

225

1 the Minnesota case. I was the counsel of record  
 2 for that. It might be easier if you would allow it  
 3 that I might just report on that. It's all  
 4 relating to procedural matters there, but it seems  
 5 to be of great interest to the Commission.  
 6 JUDGE WAHL: All right. Let's -- I wish  
 7 to confer with counsel anyway. I've had my eye on  
 8 a recess at the moment.  
 9 MR. BROWN: Okay.  
 10 JUDGE WAHL: So let's just -- can we  
 11 finish with Mr. Uggerud? Mr. Brown, any follow-up  
 12 specifically to -- for Mr. Uggerud?  
 13 MR. BROWN: No. If we were unable to get  
 14 it in through some sort of statement from counsel,  
 15 I might want to recall this witness to go further  
 16 with it, but I don't think it would be productive  
 17 to do it at this time.  
 18 JUDGE WAHL: All right. Let's talk about  
 19 that.  
 20 MR. BROWN: Okay.  
 21 JUDGE WAHL: Mr. Gruman, follow-up?  
 22 MR. GRUMAN: No, Your Honor.  
 23 JUDGE WAHL: Ms. Jeffcoat-Sacco,  
 24 follow-up?  
 25 MS. JEFFCOAT-SACCO: No. I had follow-up

226

1 on the topic of the order and the Minnesota law, so  
 2 we'll -- I'll do that when you get to that with the  
 3 other counsel.  
 4 JUDGE WAHL: Okay. Let's -- let's take a  
 5 recess. First, may I say again, please, to anyone  
 6 who is present, to any member of the public who is  
 7 present, if any there be, that if you wish to  
 8 address the Commission concerning either one of  
 9 these cases, I ask you, please, to talk with me  
 10 during the recess or at the close of the  
 11 proceedings today, assuming that we will continue  
 12 tomorrow. And the same with anyone who is  
 13 listening to the Internet stream, if you have in  
 14 mind to address the Commission concerning any of  
 15 these cases, please also arrange to talk with me to  
 16 arrange to do that.  
 17 And, finally, then, let me talk to -- let  
 18 me have a conference with counsel during the  
 19 recess. And we will be in recess until -- until  
 20 2:30, at least.  
 21 (Recessed at 2:21 p.m. to 2:40 p.m.)  
 22 JUDGE WAHL: All right. Mr. Brown, you  
 23 have some additional testimony to offer by  
 24 Mr. Uggerud, I believe. You may proceed.  
 25 MR. BROWN: That's right, Your Honor.

227

**REDIRECT EXAMINATION**

1  
 2 **BY MR. BROWN:**  
 3 **Q.** If we could return to the question of the  
 4 Minnesota commission's decision on Otter Tail's ADP  
 5 petition in that state, I believe you gave  
 6 testimony earlier that the earliest date that you  
 7 think the Commission may hear the case is  
 8 December 15; is that correct?  
 9 **A. That would be the earliest, yes.**  
 10 **Q.** And it could possibly be a later  
 11 Commission hearing date than that?  
 12 **A. Right.**  
 13 **Q.** Including into January?  
 14 **A. It could be.**  
 15 **Q.** And even if the hearing were held on  
 16 December 15, would you anticipate having a written  
 17 order on the 15th or shortly thereafter?  
 18 **A. I would not. I would anticipate an oral**  
 19 **decision, and then our experience has been that**  
 20 **there's a period of time, it might be as much as**  
 21 **three weeks, a month, before we have a written**  
 22 **order.**  
 23 MR. BROWN: Okay. Thank you. Nothing  
 24 further, Your Honor.  
 25 JUDGE WAHL: All right. Commissioner

228

1 Clark, does that address your question?  
 2 COMMISSIONER CLARK: On timing?  
 3 JUDGE WAHL: Yes.  
 4 COMMISSIONER CLARK: I believe so.  
 5 JUDGE WAHL: Any further questions from  
 6 the Commission?  
 7 Then, Mr. Gruman, anything further in this  
 8 respect?  
 9 MR. GRUMAN: No, Your Honor.  
 10 JUDGE WAHL: Ms. Jeffcoat-Sacco, anything  
 11 further with regard to the action of the Minnesota  
 12 Commission?  
 13 MS. JEFFCOAT-SACCO: Thank you. I only  
 14 wanted to mention on the record that in addition to  
 15 being evidence of what the Minnesota Commission  
 16 does in the case in that jurisdiction, that order  
 17 could have some legal relevance and I just want to  
 18 be sure the record was clear on that.  
 19 JUDGE WAHL: It is.  
 20 MS. JEFFCOAT-SACCO: Thank you.  
 21 JUDGE WAHL: I don't intend to exclude the  
 22 relevance of the order. I intend to define its use  
 23 as evidence.  
 24 MS. JEFFCOAT-SACCO: Thank you.  
 25 JUDGE WAHL: All right. Thank you very

229

1 much, Mr. Uggerud.  
 2 Next, Mr. Brown.  
 3 MR. BROWN: Your Honor, we would like to  
 4 call back to the stand Terry Graumann to address  
 5 the questions regarding what approvals are needed  
 6 in South Dakota for the project.  
 7 JUDGE WAHL: Mr. Graumann. Mr. Graumann,  
 8 you understand, of course, that your testimony  
 9 continues under oath and subject to penalties of  
 10 perjury?  
 11 MR. GRAUMANN: I do.  
 12 JUDGE WAHL: Mr. Brown.  
 13 **TERRY GRAUMANN,**  
 14 having been previously duly sworn, was examined and  
 15 testified further as follows:  
 16 **REDIRECT EXAMINATION**  
 17 **BY MR. BROWN:**  
 18 **Q.** Were you in the room earlier this  
 19 afternoon when the questions were asked about what  
 20 approvals were needed for the AQCS project to go  
 21 forward from the South Dakota state government?  
 22 **A. I was.**  
 23 **Q.** Okay. And would you be able to respond to  
 24 that question?  
 25 **A. I can.**

230

1 **Q.** Could you please do so?  
 2 **A. Under administrative rules of South**  
 3 **Dakota, Chapter 74:36:21:11, which I believe is our**  
 4 **Attachment 3, there's a requirement in there that**  
 5 **we obtain a construction permit from the South**  
 6 **Dakota Department of Environment and Natural**  
 7 **Resources for purposes of constructing the**  
 8 **facilities associated with the air quality control**  
 9 **system.**  
 10 **In addition to that, we have an obligation**  
 11 **under the South Dakota rules that regulate solid**  
 12 **waste, which I can't specifically cite right now,**  
 13 **that we'll need to go in and modify the solid waste**  
 14 **permit that we have for the Big Stone plant that**  
 15 **would incorporate the additional flue gas**  
 16 **desulfurization waste products going to the current**  
 17 **solid waste disposal site at the plant.**  
 18 **That permit application is currently out**  
 19 **for public comment. And I should mention the**  
 20 **construction permit is nearing the public notice**  
 21 **stage as well, so we're well along in the**  
 22 **permitting process. There are no permits that are**  
 23 **required from the South Dakota Public Utilities**  
 24 **Commission.**  
 25 **Q.** And you -- at the beginning of your last

231

1 response you referred to Attachment 3. Just for  
 2 clarification, is that the South Dakota Regional  
 3 Haze Administrative Rule that's been marked as  
 4 Exhibit 113 in this case?  
 5 **A. That is correct.**  
 6 MR. BROWN: Okay. I have nothing further,  
 7 Your Honor.  
 8 JUDGE WAHL: Mr. Gruman?  
 9 MR. GRUMAN: Nothing, Your Honor.  
 10 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 11 Ms. Jeffcoat-Sacco has no questions, I assume.  
 12 Questions from the Commission? Commissioner Clark.  
 13 COMMISSIONER CLARK: Just very briefly.  
 14 **FURTHER EXAMINATION**  
 15 **BY COMMISSIONER CLARK:**  
 16 **Q.** You had indicated that there are no  
 17 permits required from the South Dakota PUC. There  
 18 are no other proceedings that are pending before  
 19 the PUC, which wouldn't be classified as permit  
 20 proceedings, but might be other types of -- of  
 21 proceedings?  
 22 **A. I'm not familiar --**  
 23 **Q.** Regulatory approval as --  
 24 **A. Right.**  
 25 **Q.** -- opposed to a permitting process.

232

1 **A. I'm not familiar with the regulatory**  
 2 **proceedings.**  
 3 **Q.** Okay.  
 4 **A. My comment with respect to the South**  
 5 **Dakota PUC was with respect to the comment that had**  
 6 **been made with respect to siting permits and things**  
 7 **of that nature and that would fall under --**  
 8 COMMISSIONER CLARK: Okay. Thank you.  
 9 JUDGE WAHL: Further questions for the  
 10 Commission?  
 11 Follow-up, Mr. Brown?  
 12 MR. BROWN: Nothing further, Your Honor.  
 13 JUDGE WAHL: Follow-up, Mr. Gruman?  
 14 MR. GRUMAN: No, Your Honor.  
 15 JUDGE WAHL: Thank you. Thank you very  
 16 much.  
 17 Next witness, Mr. Brown.  
 18 MR. BROWN: Your Honor, we would like to  
 19 call Brian Draxten. He did not file any prefiled  
 20 testimony in this case, but he would be able to  
 21 address a number of the issues relating to the IRP  
 22 and generation issues.  
 23 JUDGE WAHL: You may proceed.  
 24 Mr. Draxten, as you heard me advise previous  
 25 witnesses, your testimony is required to be under

233

1 oath and I am required by law to advise you  
 2 regarding perjury before administering the oath.  
 3 Perjury is a false statement of material fact which  
 4 you do not believe to be true. In North Dakota  
 5 perjury is a Class C felony, punishable by a fine  
 6 up to \$5,000, imprisonment for a period of up to  
 7 five years, or both.  
 8 (Witness sworn.)  
 9 JUDGE WAHL: Mr. Brown.  
 10 **BRIAN DRAXTEN,**  
 11 being first duly sworn, was examined and testified  
 12 as follows:  
 13 **DIRECT EXAMINATION**  
 14 **BY MR. BROWN:**  
 15 **Q.** Good afternoon.  
 16 **A.** **Good afternoon.**  
 17 **Q.** Could you please state and spell your  
 18 first and last name for the record?  
 19 **A.** **Yes. My name is Brian, B-r-i-a-n,**  
 20 **Draxten, D-r-a-x-t-e-n.**  
 21 **Q.** And who is your current employer?  
 22 **A.** **I'm employed by Otter Tail Power Company.**  
 23 **Q.** And what is your job there?  
 24 **A.** **My position is manager of resource**  
 25 **planning, and in that position I'm responsible for**

234

1 **the preparation of our integrated resource plan,**  
 2 **the preparation of our load forecasts and to ensure**  
 3 **that we have enough capacity and energy either**  
 4 **owned or under contract to meet our customer needs**  
 5 **for electricity.**  
 6 **Q.** Okay. And for the record, can you confirm  
 7 when Otter Tail filed its most recent IRP in  
 8 Minnesota?  
 9 **A.** **Yes. It was filed on June 25 of 2010 and**  
 10 **updated on September 17 of 2010.**  
 11 **Q.** And can you confirm that that document has  
 12 been offered in the record as Otter Tail 204?  
 13 **A.** **Yes.**  
 14 **Q.** Okay. And were you involved in the -- in  
 15 the preparation of the most recent ten-year plan  
 16 for North Dakota submitted by Otter Tail?  
 17 **A.** **I was, yes.**  
 18 **Q.** And that was submitted on July 1?  
 19 **A.** **Yes.**  
 20 **Q.** And has that been marked in this case as  
 21 Otter Tail Exhibit 203?  
 22 **A.** **Yes.**  
 23 **Q.** Okay. Looking first at the IRP in  
 24 Minnesota, does -- does that document provide any  
 25 analysis of the proposed AQCS project?

235

1 **A.** **It does. Our way of modeling that, we**  
 2 **assumed that -- that Big Stone plant would be**  
 3 **retired at the end of 2015. We then put all of the**  
 4 **costs of the AQCS project into our model and**  
 5 **allowed the model to select it if it was part of**  
 6 **the least-cost option. We ran 22 separate**  
 7 **scenarios and in 21 of the 22 scenarios the Big**  
 8 **Stone AQCS project was selected as part of the**  
 9 **least cost way to meet our needs.**  
 10 **Q.** And what kind of modeling did you use in  
 11 that?  
 12 **A.** **We use a model called Strategist, which is**  
 13 **a capacity expansion modeling. You know, we've got**  
 14 **an incredible number of assumptions that go into it**  
 15 **and all our load forecasts, and it calculates the**  
 16 **cheapest way that our company can meet the needs of**  
 17 **our customers.**  
 18 **Q.** And can you describe the assumptions that  
 19 were made in that analysis regarding capital cost?  
 20 **A.** **Yes. We used -- in fact, if you can**  
 21 **recall, I said that we filed on June 25 and then**  
 22 **updated it September 17. We had used a number of**  
 23 **\$400 million for the Big Stone AQCS project. As we**  
 24 **got better information, we actually increased that**  
 25 **price up to 500 million. So in our 22 scenarios,**

236

1 **the capital costs that we used was \$500 million,**  
 2 **which was considerably higher than what we used**  
 3 **here, and it was still selected 21 out of 22 times.**  
 4 **Q.** In Otter Tail's IRP modeling did it take  
 5 into account the cost of potential carbon  
 6 regulation?  
 7 **A.** **It did. The IRP -- Andy, could you**  
 8 **refresh my memory as to the number of that so I --**  
 9 **the exhibit?**  
 10 **Q.** 204 is the exhibit.  
 11 **A.** **Okay. So Exhibit 204, on page 5-12**  
 12 **there's a graph that shows the various scenarios**  
 13 **that we used, and we had -- near the bottom there's**  
 14 **three that are called low externalities, medium**  
 15 **externalities and high externalities.**  
 16 **Q.** Mr. Draxten, if I could interrupt for a  
 17 moment, so those items on the left-hand side of  
 18 this chart are the 21 scenarios that you mentioned  
 19 just a moment ago?  
 20 **A.** **Correct. Do you want me to just wait a**  
 21 **minute so we can --**  
 22 **MR. BROWN:** Yeah. This was something that  
 23 wasn't in the notebook, Your Honor.  
 24 **JUDGE WAHL:** I'm aware of that.  
 25 **THE WITNESS:** So, again, page 5-12. So on

237

1 the left side of that graph are very short  
 2 descriptions of the 22 scenarios that we used in  
 3 our modeling. And if you look near the bottom,  
 4 you'll see three that say high externalities,  
 5 medium externalities, low externalities.  
 6 Now, those runs included not only CO<sub>2</sub>, but  
 7 SO<sub>2</sub> and NO<sub>x</sub> as well, but the low externality  
 8 included a zero cost for CO<sub>2</sub>, the medium used \$9 a  
 9 ton, which is the low end of the Minnesota range,  
 10 and the high externalities used \$34 a ton, which is  
 11 the high end of the prescribed number in Minnesota.  
 12 And you can see there that all three of  
 13 those plans were more expensive than our base case  
 14 at the bottom, but more importantly each of those  
 15 plans selected the Big Stone AQCS project as a part  
 16 of the resources that make it the least-cost plan.  
 17 MR. BROWN: Your Honor, we'd like to offer  
 18 this witness for cross-examination.  
 19 JUDGE WAHL: Mr. Gruman.  
 20 MR. GRUMAN: Thank you.  
 21 **CROSS-EXAMINATION**  
 22 **BY MR. GRUMAN:**  
 23 **Q.** Mr. Draxten, you were here for Mr. Rolfes'  
 24 testimony earlier today?  
 25 **A. Yes.**

238

1 **Q.** Okay. And so you're familiar with some of  
 2 my questions concerning load following, et cetera.  
 3 Just to reiterate, it's my understanding of what  
 4 Mr. Rolfes had testified to is that the capacity  
 5 factor has -- will decrease with Big Stone for  
 6 primarily two reasons: One is demand and then also  
 7 when wind comes online; do you remember that  
 8 testimony?  
 9 **A. I do.**  
 10 **Q.** And does that make sense? Do you agree  
 11 with that?  
 12 **A. Yes.**  
 13 **Q.** Okay. So our question is is that if  
 14 there's a capacity drag on coal as pursuant to  
 15 wind, is that accurately reflected -- reflected in  
 16 an integrated resource plan?  
 17 **A. I would say that it's accurate in that,**  
 18 **you know, we would -- we would calculate the**  
 19 **correct amount of energy coming from our coal**  
 20 **plants. However, I believe your question this**  
 21 **morning had to do with do we actually increase O&M**  
 22 **costs and things like that on our coal plants, and**  
 23 **the answer to that is no, we do not change the O&M**  
 24 **rate.**  
 25 **Q.** I mean another thing that comes to mind,

239

1 too, is of course you have Big Stone and of course  
 2 you've got those big transmission lines coming out  
 3 of Big Stone, and those costs associated with  
 4 that -- if the wind is coming online, those  
 5 transmission costs are -- or those transmission  
 6 lines aren't being used, I mean those type of --  
 7 that type of drag on the system, I mean, how is  
 8 that reflected in the integrated resource plan?  
 9 **A. I would say the transmission example that**  
 10 **you just cited is not modeled in our IRP.**  
 11 **Q.** Okay. Could you define for me the  
 12 terminology "levelized cost"?  
 13 **A. Well, very similar to what Mr. Kopp had**  
 14 **talked about earlier where you just -- you look at**  
 15 **the total capital cost and the O&M both, fixed and**  
 16 **variable costs, financing over the life of that**  
 17 **project, present-value them back to the present day**  
 18 **and use that same levelized charge over the entire**  
 19 **life of the project.**  
 20 **Q.** Now, using your own terminology, an  
 21 integrated resource plan essentially, quote,  
 22 unquote, uses many assumptions; is that correct?  
 23 **A. That's right.**  
 24 **Q.** So would you agree that some of the  
 25 assumptions are probably incorrect in regard to

240

1 determining for resource planning wind versus coal?  
 2 **A. I would say that since we filed our IRP,**  
 3 **since we did the original modeling, things have**  
 4 **changed. So would the assumptions be somewhat**  
 5 **different today than they were when we filed? Yes.**  
 6 **Q.** But in regards to wind, what we had just  
 7 discussed about some of those costs not being  
 8 reflected in an integrated resource plan.  
 9 **A. Again, the resource plan is a very high**  
 10 **level over a very long period of time and trying to**  
 11 **get, you know, very fine, like some of the things**  
 12 **you've just described, I may not characterize it as**  
 13 **incorrect. I just may characterize it that we**  
 14 **haven't gone to that level of detail.**  
 15 **Q.** Well, certainly if you use the terminology  
 16 in the aggregate, in and of itself it may be small,  
 17 but as more wind comes online, it can be a more  
 18 significant factor; correct?  
 19 **A. It could increase, yes.**  
 20 **Q.** Now, looking into the future, is that  
 21 something that you as a resource planner are taking  
 22 into account? As more wind comes online and there  
 23 are costs that are not associated, is there going  
 24 to be a reevaluation to the integrated resource  
 25 plan that you see in the future in this regard?

241

1 **A. It's definitely something that we're**  
 2 **considering and trying to decide how we will**  
 3 **incorporate those costs into future resource**  
 4 **planning models.**  
 5 **Q.** If you could explain to the Commission,  
 6 again, and for the record for that matter, is there  
 7 a mandate by the State of Minnesota as far as a  
 8 certain portion of your generation portfolio that  
 9 has to be wind?  
 10 **A. We have a -- it's an increasing**  
 11 **requirement, a renewable energy standard that says**  
 12 **ramping up levels of renewable energy -- not**  
 13 **necessarily wind, just renewables -- that we have**  
 14 **to be at 25 percent of our energy by 2025.**  
 15 **Q.** So by 2025 it has to be 25 percent?  
 16 **A. Correct.**  
 17 **Q.** But you're able to get to that point. As  
 18 of right now there is no mandate, but you just have  
 19 to have 25 percent by 2025?  
 20 **A. No, there -- it's stepping up.**  
 21 **Q.** Oh, okay.  
 22 **A. I don't know if I can just put my hands on**  
 23 **it, but I believe in 2012 we have to be at 11 or**  
 24 **12 percent. I'm not exactly sure, but it does**  
 25 **ramp-up to get to 25 percent by 2025.**

242

1 MR. GRUMAN: Could I have a moment, Your  
 2 Honor?  
 3 JUDGE WAHL: You may.  
 4 MR. GRUMAN: Thank you.  
 5 I have no further questions.  
 6 JUDGE WAHL: Questions from the  
 7 Commission? If not, thank you very much,  
 8 Mr. Draxten.  
 9 Mr. Brown.  
 10 MR. BROWN: Our next witness is Andrea  
 11 Stomberg, please, for Montana-Dakota Utilities.  
 12 JUDGE WAHL: Ms. Stomberg, I know you've  
 13 done this more often than I have, but as necessary,  
 14 as you know, your testimony is required to be under  
 15 oath and I'm required by law to advise you  
 16 regarding perjury before administering the oath.  
 17 Perjury is a false statement of material fact which  
 18 you do not believe to be true. In North Dakota  
 19 perjury is a Class C felony, punishable by a fine  
 20 up to \$5,000, imprisonment for a period of up to  
 21 five years, or both.  
 22 (Witness sworn.)  
 23 JUDGE WAHL: Mr. Brown.  
 24 MR. BROWN: Thank you, Your Honor.  
 25

243

1 **ANDREA L. STOMBERG,**  
 2 being first duly sworn, was examined and testified  
 3 as follows:  
 4 **DIRECT EXAMINATION**  
 5 **BY MR. BROWN:**  
 6 **Q.** Good afternoon. Could you state your full  
 7 name for the record?  
 8 **A. Yes. Andrea Stomberg.**  
 9 **Q.** And what is your current position at  
 10 Montana-Dakota?  
 11 **A. Vice president of electric supply.**  
 12 **Q.** Can you describe your responsibilities in  
 13 that position, please?  
 14 **A. Sure. I oversee the departments that do**  
 15 **power production, transmission, engineering and**  
 16 **planning, system operations and planning and**  
 17 **environmental.**  
 18 **Q.** And I believe you're the sponsor of two  
 19 witnesses -- two exhibits today, excuse me. The  
 20 first one is your rebuttal testimony that's been  
 21 marked as MDU-301; is that correct?  
 22 **A. Correct.**  
 23 **Q.** And the other one is the application from  
 24 Montana-Dakota for the ADP; is that correct?  
 25 **A. That's correct.**

244

1 **Q.** And that's been marked as Exhibit 302.  
 2 Could you please provide a summary of your rebuttal  
 3 testimony, please?  
 4 **A. Sure. And I would also as the first**  
 5 **Montana-Dakota witness here have some prefatory**  
 6 **comments about this filing and then, of course, the**  
 7 **summary of my rebuttal.**  
 8 **The Big Stone plant provides 25 percent of**  
 9 **Montana-Dakota's installed generating capacity.**  
 10 **The plant provides important fuel and geographic**  
 11 **diversity for our system and provides energy at a**  
 12 **stable cost to our customers as part of our**  
 13 **integrated electric supply.**  
 14 **The Big Stone plant, which became**  
 15 **operational in 1975, was permitted and constructed**  
 16 **with neither sulfur dioxide or nitrogen oxide**  
 17 **control equipment; although, there was a fuel**  
 18 **switch in 1995 which allowed the plant to reduce**  
 19 **its SO<sub>2</sub> emissions significantly. This plant is in**  
 20 **compliance with existing rules and regulations and**  
 21 **operates in compliance with its permit.**  
 22 **Regulations under the federal regional**  
 23 **haze regulations have been adopted by the State of**  
 24 **South Dakota under which the plant will be required**  
 25 **to install pollution control equipment. The plant**

245

1 owners have been involved in the selection of the  
 2 best control technology through a lengthy process  
 3 of analysis and have worked closely with the South  
 4 Dakota Department of Natural Resources, which is  
 5 the regulating agency. The time frame for  
 6 compliance is tight given the complexity of this  
 7 project.

8 At this same time the entire fossil  
 9 fuel-fired electric generation industry is under  
 10 pressure from the EPA to install upgrades and  
 11 improve air pollution control equipment often under  
 12 very aggressive timelines. The number of  
 13 regulatory initiatives that will drive plant  
 14 upgrades is expected to increase pressure on  
 15 engineering firms, equipment suppliers and craft  
 16 labor needed for design and installation.

17 While it is hard to quantify the impact of  
 18 this expected competition for equipment and labor,  
 19 it is an important consideration in the cost of the  
 20 entire project.

21 Clarity from this Commission of their  
 22 support for the project through the approval of  
 23 this request for an advance determination of  
 24 prudence, even if some of the regulatory and  
 25 scheduling considerations are pending

246

1 administrative process, is essential and will give  
 2 the owners the best opportunity to manage the costs  
 3 of the project and ensure that the plant is fully  
 4 compliant when required to be by the rules.

5 Clearly this project is very significant  
 6 to our customers. Our analysis suggests that the  
 7 expenditures to bring the plant into compliance  
 8 with these rules will be cost effective compared to  
 9 alternatives. Also Montana-Dakota believes that  
 10 these planned upgrades will allow the plant to be  
 11 in compliance with foreseen environmental  
 12 regulations and thus continue to serve our  
 13 customers for many years.

14 In my rebuttal testimony, I address the  
 15 conditions proposed by Mr. Richard Hahn who  
 16 testified on behalf of the PSC's advocacy staff.  
 17 Mr. Hahn proposed three conditions.

18 First, Mr. Hahn proposed an advance  
 19 determination of prudence be conditional upon EPA  
 20 approval of the South Dakota State Implementation  
 21 Plan. As explained in my rebuttal testimony,  
 22 Montana-Dakota does not object to this condition  
 23 provided it does not delay issuance of the advance  
 24 determination of prudence until after the EPA  
 25 approval is issued.

247

1 While we expect the approval to be issued  
 2 in the near future, Montana-Dakota is concerned  
 3 that any delay in issuance of the ADP could result  
 4 in a significant delay in the completion of the  
 5 AQCS project if the project owners perceive the  
 6 risk of nonrecovery of expenditures.

7 Second, Mr. Hahn proposed a prudence  
 8 determination of total project costs be limited to  
 9 585 million, which is 10 percent more than the  
 10 current estimated cost. Montana-Dakota does not  
 11 oppose this condition. The company understands  
 12 that an ADP is not a determination for ratemaking  
 13 purposes that all costs actually incurred are  
 14 reasonable.

15 We also understand that the ADP does not  
 16 establish either a cap or a floor for ratemaking  
 17 purposes. In other words, a project determined  
 18 prudent in this ADP proceeding would not  
 19 necessarily be held imprudent at a later cost  
 20 recovery case simply because its capital cost  
 21 exceeded the company's current best estimates of  
 22 the costs of the project. We recognize that the  
 23 burden will be on the company to justify the actual  
 24 expenditures.

25 Third, Mr. Hahn proposed the applicants

248

1 submit periodic cost reports to the Commission and  
 2 Montana-Dakota does not object to this condition.

3 Mr. Hahn also testified that the costs for  
 4 mercury controls should be excluded from the  
 5 prudence order at least until the promulgation of  
 6 the final utility MACT rule. Montana-Dakota does  
 7 not object to a condition that inclusion of mercury  
 8 controls is conditioned upon finalization of these  
 9 rules.

10 Thank you.

11 MR. BROWN: Thank you. And we offer this  
 12 witness for cross-examination.

13 JUDGE WAHL: Mr. Gruman.

14 MR. GRUMAN: Thank you.

15 **CROSS-EXAMINATION**

16 **BY MR. GRUMAN:**

17 **Q.** I just have one question in particular.  
 18 Kind of setting this up, concerning the ACI  
 19 technology and its implementation into the AQCS  
 20 project as anticipated, there seemed to be somewhat  
 21 of a contradiction. And in your rebuttal testimony  
 22 you indicated that, quote/unquote, there will be  
 23 efficiencies gained with the installation of  
 24 mercury controls concurrently with the AQCS that  
 25 will overall reduce costs of the mercury control

249

1 installation.

2 Later on in a discovery request, your

3 company responded -- it indicated that if installed

4 separately, you would not expect the cost to be

5 significantly different. So there seems to be

6 somewhat of a -- perhaps a difference here and I

7 was hoping you could just reconcile that for the

8 record.

9 **A. Sure. I think it was -- and maybe I**

10 **misheard you -- Otter Tail's testimony that**

11 **indicated they didn't think that later --**

12 **Q. Oh.**

13 **A. -- installation would be significantly**

14 **different. I said --**

15 **Q. Perhaps.**

16 **A. I said that I thought there would be some**

17 **efficiencies. And in both cases of those**

18 **statements, if I've read them correctly, those are**

19 **qualitative and not meant to be quantitative**

20 **analyses of any cost savings that would come from**

21 **doing the ACI installation approximately at the**

22 **same time the rest of the project was done. And I**

23 **would stand by that, because I do believe that**

24 **while difficult to quantify and maybe not huge,**

25 **when you have craft labor on hand, when you have**

250

1 **lay-down areas taking -- you know, outlined for**

2 **other parts of this project, you're going to have**

3 **some efficiencies by doing that project at the same**

4 **time rather than having to remobilize folks, find**

5 **craft labor, get an area set up for work for the**

6 **installation.**

7 **So I do believe while perhaps not**

8 **quantifiably or large, there will be efficiencies**

9 **gained in doing the project at the same time.**

10 **Q. So if I understand you correctly, the best**

11 **approach is concurrent with AQCS as far as**

12 **installation of the mercury controls; would that be**

13 **correct? That would be your most likely best-case**

14 **scenario?**

15 **A. Yeah, I would think so.**

16 **Q. Okay. Now, how about pre-AQCS? Would**

17 **that be the worst-case scenario?**

18 **A. Say again.**

19 **Q. If you were to install the mercury control**

20 **equipment, say, before the AQCS project.**

21 **A. Well, I don't know if it would be really**

22 **worst-case, but it would be, I think, more**

23 **expensive than if you did it in conjunction with**

24 **the other project.**

25 **Q. So now using those in relation, then, if**

251

1 rather than concurrent's best pre-AQCS is worse

2 than that situation, now let's talk about the type

3 of scenario whereby the ACI were to be installed.

4 If the AQCS were to be installed and then the ACI

5 afterwards, I mean how much of a differentiation

6 would that be as far as costs associated?

7 **A. Again, I certainly haven't tried to**

8 **quantify that. Again, the logical qualitative**

9 **conclusion is if you've got people on site doing**

10 **the same kind of work, you don't have to remobilize**

11 **them. So there will be at a minimum some**

12 **remobilization if it's not done at the same time as**

13 **another project.**

14 **Now, there may be other projects where you**

15 **have the same kind of labor in that's not the AQCS**

16 **where we could -- we could nudge it in. However,**

17 **as I think it's been stated here, we fully believe**

18 **that MACT will be coming along real soon here and**

19 **that the timing will be pretty well the same as**

20 **with the AQCS.**

21 **MR. GRUMAN: Very good. I have no further**

22 **questions.**

23 **JUDGE WAHL: Ms. Jeffcoat-Sacco.**

24

25

252

**CROSS-EXAMINATION**

1 **BY MS. JEFFCOAT-SACCO:**

2 **Q. You heard me ask Otter Tail about putting**

3 **in your own words what is the question the**

4 **Commission has to answer in order to decide this**

5 **case. Could you do that, please, for MDU?**

6 **A. Well, I'm glad I got the chance to think**

7 **about that, but I think the question is fairly**

8 **straightforward. It really, I think, is is the**

9 **upgrade of the Big Stone plant with the AQCS in the**

10 **best interests of our customers based on the known**

11 **information at this time versus plant abandonment**

12 **or closure.**

13 **Q. Would MDU proceed if there is either no**

14 **decision anytime soon from the Commission or a**

15 **negative decision anytime soon from the Commission?**

16 **Would MDU still proceed to do this upgrade in the**

17 **best interests of the customers?**

18 **A. I do not think Montana-Dakota would**

19 **undertake this large of an investment with any sort**

20 **of signal from this Commission that they didn't**

21 **think it was prudent.**

22 **Q. Because -- fill in. If it's the right**

23 **thing to do for your company and your customers,**

24 **you're under an obligation to do it, so you would**

25

253

1 not do it without the signal because?

2 **A. Because it would be a significant**

3 **detriment to our company if we were unable to**

4 **recover those costs. The risk is -- is huge. I**

5 **don't know that our board would approve it.**

6 MS. JEFFCOAT-SACCO: Okay. Thank you.

7 JUDGE WAHL: Questions from the

8 Commission.

9 COMMISSIONER KALK: I'll start.

10 JUDGE WAHL: Commissioner Kalk.

11 **EXAMINATION**

12 **BY COMMISSIONER KALK:**

13 **Q. So, Andrea, you heard me talking to Ward,**

14 **perhaps?**

15 **A. I tried to listen. Yes.**

16 **Q. So you don't buy when I say that if we**

17 **don't do this, it doesn't mean we won't approve it**

18 **down the road? You don't buy that statement?**

19 **A. Well, no, I think you -- I think we -- you**

20 **know, I mean not that I -- not that -- going back**

21 **and saying, Let's pretend that we would go ahead**

22 **with it and we would argue our best case, we**

23 **absolutely would argue the best case. However the**

24 **rule is on the books and this is a significant**

25 **capital expenditure. And I think our board would**

254

1 **be hard-pressed to understand why we'd proceed if**

2 **you -- you Commissioners, who are pretty smart and**

3 **understand this stuff said, Oh, we just don't think**

4 **this is nec -- we don't think this is necessarily**

5 **in the best interests of your customers.**

6 **Q. I guess that's where we part ways in some**

7 **of just the philosophical discussion that we will**

8 **probably continue to have about the law.**

9 But the -- walk me through again how many

10 megawatts of power do you get from Big Stone I?

11 **A. It's about 25 percent of our installed**

12 **baseload capacity, and we get about -- I think we**

13 **get about 25 percent of our energy from there. It**

14 **might be a little more than that, but about**

15 **25 percent of our energy comes from Big Stone.**

16 **Q. So what's that number again, roughly? Are**

17 **we talking --**

18 **A. Well, we have about 2.4 million**

19 **megawatt-hours at our retail sales, so about**

20 **25 percent of that.**

21 **Q. So the plant is 475 megawatts, give or**

22 **take. How much of that is yours?**

23 **A. Oh, a little over a hundred, 110, 104.**

24 **Just kind of depends on what your capacity is at**

25 **the moment.**

255

1 **Q. So as long as we're just talking --**

2 **A. 22.7 percent.**

3 **Q. Okay. So we're -- a whole different set**

4 **of thoughts just comes to mind. So we're saying**

5 **that a 16 percent cost increase justifies that**

6 **additional 22 megawatts? If we take that to the**

7 **highest -- to the strategic thought, I guess.**

8 **A. I'm not sure I understand your question.**

9 **Q. Because the cost of the project is**

10 **16 percent increase of rates to --**

11 **A. Correct.**

12 **Q. -- MDU customers.**

13 **A. Right.**

14 **Q. So in the one sense we're saying that the**

15 **best use of 16 percent of ratepayers' dollars comes**

16 **down to upgrading this facility to keep those**

17 **projects online -- or this project online?**

18 **A. I would say that is what our analysis has**

19 **indicated. Yes.**

20 **Q. So in the whole review, if we looked at**

21 **all those projects or things that could be done**

22 **with Big Stone II, where was the review that says,**

23 **Scrap everything down there, build something new in**

24 **North Dakota at a cost of whatever that number**

25 **turns out to be?**

256

1 **A. Well, in our -- in our IRP -- and it will**

2 **be addressed by Mr. Neigum -- we analyze the cost**

3 **of new coal, the cost of combined cycle, the cost**

4 **of simple-cycle CTs, new coal in an IGCC plant**

5 **because we think that's the only thing that could**

6 **be built against --**

7 **Q. I guess where I'm going with this --**

8 **A. -- against this upgrade.**

9 **Q. What I'm saying is that the --**

10 **A. Maybe I'm not tracking.**

11 **Q. No. No. You're -- I'm just throwing some**

12 **thoughts out there. You have an application in**

13 **front of the Commission for advance determination**

14 **of prudence on this project to do these things and**

15 **so we're asked to look at that based on the facts.**

16 **But that's a job -- I think the job of**

17 **Mr. MacFarlane and Mr. Goodin is to look at all**

18 **those things that could be -- all the different**

19 **arrays, and that's why I say just because this --**

20 **because I might not vote for an ADP doesn't mean**

21 **that it wouldn't be included down the road, doesn't**

22 **mean that something else might not come up. That's**

23 **the part, I think, that gets very challenging in**

24 **this case.**

25 **A. Mm-hmm.**

257

1 **Q.** I don't -- I don't know that I -- I don't  
 2 know. I think it's a stretch of the people making  
 3 the case today trying to say, Commission, if you  
 4 don't approve this ADP, this is dead. That's what  
 5 I think the tone that I'm seeing developed and I  
 6 don't think it's appropriate. So that's just my  
 7 thoughts. Do you have any thoughts back to that?  
 8 I mean is it --  
 9 **A.** Well, I guess I would say in all candor  
 10 that I do believe that we would have a -- an  
 11 extraordinarily hard push internally to justify  
 12 this if the Commission that is -- oversees  
 13 65 percent of our customers, if you will -- if you  
 14 understand what I'm saying there -- says they're  
 15 not sure that this is a prudent project. I guess I  
 16 can't say at this point in time we wouldn't  
 17 ultimately --  
 18 **Q.** Sure.  
 19 **A.** -- decide that we have to take that risk.  
 20 **Q.** So if you go back to the board and they  
 21 say no, then where does MDU go to?  
 22 **A.** Well, then we have to go in and look at  
 23 our alternatives and come back to you with a  
 24 project saying if you didn't feel that was prudent,  
 25 we need to look at other alternatives and we'd come

258

1 to you with those.  
 2 COMMISSIONER KALK: Sure. Thank you.  
 3 JUDGE WAHL: Further questions from the  
 4 Commission? Commissioner Cramer.  
 5 **EXAMINATION**  
 6 **BY COMMISSIONER CRAMER:**  
 7 **Q.** Which you're kind of doing right now  
 8 because you're going to offer up all of the  
 9 alternatives that you've studied and modeled --  
 10 **A.** Correct.  
 11 **Q.** -- and this came out low cost?  
 12 **A.** Mm-hmm.  
 13 COMMISSIONER CRAMER: Okay. I have  
 14 nothing further.  
 15 JUDGE WAHL: Commissioner Clark.  
 16 **EXAMINATION**  
 17 **BY COMMISSIONER CLARK:**  
 18 **Q.** I'm just sort of playing out scenarios,  
 19 playing the game that Commissioner Kalk was. I  
 20 mean one order could be written in such a way in  
 21 theory that didn't deem it imprudent, just said  
 22 we're declining to grant prudence. Now, the  
 23 position -- that would put the board in a difficult  
 24 position. I understand the MDU board would have to  
 25 make a call at that point.

259

1 But I suppose options B, C and D that MDU  
 2 would come back with may actually be deemed  
 3 imprudent, which would be a different decision  
 4 than --  
 5 **A.** Mm-hmm.  
 6 **Q.** I mean does that make any sense?  
 7 **A.** It would be a long, costly and convoluted  
 8 process, I think.  
 9 COMMISSIONER CLARK: Thanks. That's all I  
 10 have.  
 11 JUDGE WAHL: Further questions from the  
 12 Commission? Commissioner Cramer.  
 13 **FURTHER EXAMINATION**  
 14 **BY COMMISSIONER CRAMER:**  
 15 **Q.** Well, I'll just make a statement without  
 16 having the microphone on. I don't think we're  
 17 going to deem it crazy, but I mean if we're going  
 18 to carry out the scenarios; right? I mean we  
 19 don't -- I don't think we're going to sit here and  
 20 say, "This is a craziest idea I've ever heard."  
 21 **A.** I hope not.  
 22 COMMISSIONER CRAMER: No. Nothing  
 23 further.  
 24 JUDGE WAHL: Any further questions from  
 25 the Commission?

260

1 Follow-up, Mr. Brown?  
 2 MR. BROWN: No follow-up, Your Honor.  
 3 JUDGE WAHL: Mr. Gruman?  
 4 MR. GRUMAN: No, Your Honor.  
 5 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 6 MS. JEFFCOAT-SACCO: No. Thank you.  
 7 JUDGE WAHL: Thank you very much,  
 8 Ms. Stomberg.  
 9 THE WITNESS: Thank you.  
 10 JUDGE WAHL: Mr. Brown.  
 11 MR. BROWN: Your Honor, our final witness  
 12 is Darcy Neigum.  
 13 JUDGE WAHL: Mr. Neigum, as you have heard  
 14 me say countless times before, your testimony is  
 15 required to be under oath and I'm required by law  
 16 to advise you regarding perjury before  
 17 administering the oath. Perjury is a false  
 18 statement of material fact which you do not believe  
 19 to be true. In North Dakota perjury is a Class C  
 20 felony, punishable by a fine up to \$5,000,  
 21 imprisonment for a period of up to five years, or  
 22 both.  
 23 (Witness sworn.)  
 24 JUDGE WAHL: Mr. Brown.  
 25 MR. BROWN: Thank you.

261

1 **DARCY J. NEIGUM,**  
 2 being first duly sworn, was examined and testified  
 3 as follows:  
 4 **DIRECT EXAMINATION**  
 5 **BY MR. BROWN:**  
 6 **Q.** Good afternoon, Mr. Neigum.  
 7 **A.** Good afternoon.  
 8 **Q.** Could you please state your full name for  
 9 the record?  
 10 **A.** Yes. Darcy Neigum.  
 11 **Q.** And what is your position at  
 12 Montana-Dakota?  
 13 **A.** I'm the system operations and planning  
 14 manager for Montana-Dakota Utilities.  
 15 **Q.** Can you describe your general  
 16 responsibilities in that position?  
 17 **A.** Sure. I'm responsible for the day-to-day  
 18 operations of our company's electric control center  
 19 and also our system operations and planning group,  
 20 which is responsible for our resource planning  
 21 activities as well as load forecasts and also  
 22 transmission studies that we do.  
 23 **Q.** And I believe you're the sponsor of three  
 24 of the exhibits today; is that correct?  
 25 **A.** Yes.

262

1 **Q.** Those include your rebuttal testimony  
 2 that's been marked as O -- MDU, excuse me --  
 3 MDU-303?  
 4 **A.** Yes.  
 5 **Q.** And also MDU-304, which is the  
 6 Montana-Dakota Exhibit 4 to the application, the  
 7 assessment of pending environmental regulations to  
 8 the Big Stone plant?  
 9 **A.** Yes.  
 10 **Q.** Can you briefly describe what that  
 11 document entails for the record?  
 12 **A.** That assessment is just a summary of the  
 13 Big Stone resource itself, how it's been useful to  
 14 Montana-Dakota and also describes the process we  
 15 went through with our integrated resource plan that  
 16 we recently filed with this Commission and as far  
 17 as the results of that analysis.  
 18 **Q.** And the third exhibit, I believe, has been  
 19 marked as MDU-305; is that correct?  
 20 **A.** Yes.  
 21 **Q.** And that's a copy of the company's 2011  
 22 IRP?  
 23 **A.** Yes.  
 24 **Q.** Okay. Do you have a summary to offer of  
 25 your rebuttal testimony?

263

1 **A.** Yes, I do.  
 2 **Q.** Would you please proceed?  
 3 **A.** In Montana-Dakota's 2011 integrated  
 4 resource plan, we looked at available alternatives  
 5 to the Big Stone air quality control system  
 6 upgrades and developed the least-cost plan to meet  
 7 our company's future demand and energy  
 8 requirements.  
 9 The integrated resource plan modeling was  
 10 performed separately through the Burns & McDonnell  
 11 study work and looked at various scenarios  
 12 including high and low natural gas prices, high  
 13 capital costs for the Big Stone AQCS project and  
 14 also high capital costs scenario for combustion  
 15 turbines, as well as high and low customer growth  
 16 scenarios, demand response and energy efficiency  
 17 programs, carbon tax scenarios which looked at a  
 18 \$30 and \$50 per ton cost and we also looked at a  
 19 high environmental case. In all these scenarios  
 20 the Big Stone air quality control system upgrade  
 21 was selected as the least-cost resource.  
 22 Screening modeling that we did for a  
 23 request for proposal from 2010 showed that with a  
 24 retirement of the Big Stone plant in 2015, that the  
 25 levelized system rate and present value of revenue

264

1 requirements for modeling activities would go up by  
 2 6 percent for the next least-cost alternative which  
 3 selected a wind and gas combination as a  
 4 replacement for the Big Stone plant.  
 5 In my rebuttal testimony I discussed how  
 6 Montana-Dakota's 2011 integrated resource plan  
 7 modeling assumptions differed from those pointed  
 8 out by Mr. Hahn. Regarding the issue of stranded  
 9 costs, Montana-Dakota's modeling analysis in our  
 10 integrated resource plan assumed the existing Big  
 11 Stone plant would be retired in 2015 and a new  
 12 resource for the Big Stone plant with the air  
 13 quality control system project was available as a  
 14 new supply side option at the forecasted installed  
 15 cost with the future operation and maintenance and  
 16 fuel costs for the plant.  
 17 There were no dollars assigned with a 2015  
 18 retirement of the existing Big Stone plant. These  
 19 dollars were considered sunk costs in our modeling  
 20 analysis.  
 21 Regarding the MISO energy prices and  
 22 purchases, Montana-Dakota made up to 30 megawatts  
 23 of MISO energy purchases available as a supply side  
 24 energy resource in our integrated resource plan,  
 25 which represents the annual amount of energy that

265

1 the company historically purchases in the MISO  
 2 energy market.  
 3 Montana-Dakota did not model a replacement  
 4 alternative to the Big Stone plant that relied  
 5 heavily on market purchases because market  
 6 purchases are the most unreliable means of securing  
 7 future customer requirements. As a supply side  
 8 option, future market prices place the exposure of  
 9 fluctuations associated with energy prices on  
 10 customers.  
 11 Over the past three years, the Big Stone  
 12 plant has supplied 25 percent of Montana-Dakota's  
 13 customers' annual energy requirements, and relying  
 14 on market energy purchases to replace Big Stone  
 15 plant would likely increase our customers' exposure  
 16 to market fluctuations of over 30 percent.  
 17 To determine MISO energy prices,  
 18 Montana-Dakota's modeling used internally  
 19 forecasting energy prices based on historical  
 20 prices and also future market conditions that could  
 21 affect pricing. These internally developed  
 22 forecasts have been relatively accurate as compared  
 23 to actual market energy purchases in recent years.  
 24 Montana-Dakota's forecasted MISO energy  
 25 prices are higher than the energy prices forecasted

266

1 by Mr. Hahn who used an average market heat rate  
 2 and a Henry Hub gas forecast to develop his MISO  
 3 energy price forecast.  
 4 Montana-Dakota's MISO energy forecast more  
 5 accurately reflects the prices that  
 6 Montana-Dakota's likely to pay when we are a buyer  
 7 of energy from the market.  
 8 Regarding wind, Montana-Dakota modeled  
 9 supply side wind generation resources as either a  
 10 purchased power agreement or as a self-built option  
 11 at the pricing that Montana-Dakota received in our  
 12 2010 request for proposals or based on the  
 13 company's experience with installed cost of wind  
 14 generation projects.  
 15 The PPA pricing accounted for the value of  
 16 the federal production tax credits in its offered  
 17 energy price. The prices quoted by Mr. Hahn for  
 18 the Bison 2 and 3 wind projects seem low compared  
 19 to other wind projects in the area due at least in  
 20 part to Minnesota Power's assumption of a 35-year  
 21 life for those projects. Also, the wind prices for  
 22 Bison 2 and 3 are based on a levelized revenue  
 23 requirement and not an actual revenue requirement.  
 24 Q. Mr. Neigum, were you in the room this  
 25 morning when the questions were being asked about

267

1 load following?  
 2 A. Yes, I was.  
 3 Q. And could you explain from MDU's  
 4 perspective how you go about determining when to  
 5 have the coal plants backed down in favor of wind?  
 6 A. Our generation is all offered into the  
 7 MISO energy market, so on an economic basis MISO is  
 8 determining which generators based upon offered  
 9 prices that they will dispatch as far as for  
 10 reliability purposes and also economic purposes.  
 11 So if there are situations when our coal  
 12 plants are being backed down and we're purchasing  
 13 energy from the market, those are situations when  
 14 our customers are benefiting from lower-cost energy  
 15 that's available to them, rather than to  
 16 self-supply it from some other resource that may be  
 17 marginally higher.  
 18 So from a load following standpoint, we  
 19 don't make decisions based upon our generation  
 20 other than the fact for coal we basically will  
 21 offer them in at what our must run is or at the  
 22 minimum load for the coal, but beyond that the MISO  
 23 energy market determines what the dispatch levels  
 24 for those resources will be on an economic basis.  
 25 MR. BROWN: Thank you. We offer this

268

1 witness, Your Honor.  
 2 JUDGE WAHL: Mr. Gruman.  
 3 MR. GRUMAN: Just one moment, Your Honor.  
 4 Thank you.  
 5 **CROSS-EXAMINATION**  
 6 **BY MR. GRUMAN:**  
 7 Q. Mr. Neigum, of course, you were here for  
 8 my earlier questioning of Mr. Rolfes; is that  
 9 correct?  
 10 A. Yes.  
 11 Q. And also Mr. Draxten?  
 12 A. Yes, I was.  
 13 Q. So I understand that you somewhat touched  
 14 on this subject just prior here, but again I'd just  
 15 like to ask the same questions. And I'll reiterate  
 16 Mr. Rolfes had indicated that the capacity changes  
 17 in the Big Stone plant are due to demand and also  
 18 he included as wind is coming online. So our  
 19 question from advocacy staff is that when wind is  
 20 drawing down that capacity factor for coal, does  
 21 the integrated resource plan accurately reflect  
 22 those negative changes to coal as a result of wind?  
 23 A. I would say similar to what the actual  
 24 market does as far as dispatching generation on an  
 25 economic basis, the modeling will do the same

269

1 **thing. So as we're looking at our future resource**  
 2 **modeling, it's taking a look at the resources that**  
 3 **we have and as far as other supply resources that**  
 4 **it may pick and it goes along and it dispatches**  
 5 **them on a most-economic basis.**  
 6 **And so we're in a situation even when we**  
 7 **look at wind, if it happens to be backing coal**  
 8 **down, there's energy that's at a less expense in**  
 9 **the market than we could produce ourselves, so our**  
 10 **customers are receiving the benefits at those**  
 11 **times. And the modeling would do sort of a similar**  
 12 **reflection as far as it will dispatch on a**  
 13 **most-economic basis.**  
 14 **Q.** So it's your opinion that the -- the IRP  
 15 is correct in that regard, that there are no wrong  
 16 assumptions for lack of better words?  
 17 **A.** I can't think of any changes that we would  
 18 make in our modeling in our integrated resource  
 19 plan based upon the testimony that was given in  
 20 this case today.  
 21 MR. GRUMAN: Okay. Just one moment, Your  
 22 Honor.  
 23 **Q.** (MR. GRUMAN CONTINUING) Mr. Neigum, under  
 24 a situation where there is excessive cycling in the  
 25 coal plants, would that be reflected in the IRP

270

1 concerning wind?  
 2 **A.** We've not made any adjustments as far as  
 3 in our modeling assumptions or cost that deals with  
 4 the cycling of our facilities. When you look at  
 5 that, you know, there ends up being a short-term  
 6 effect and a long-term effect, and certainly the  
 7 short-term effect that is noted in the modeling  
 8 does deal with any differences in heat rates,  
 9 depending how the resources are modeled.  
 10 **And so we end up seeing that at least as**  
 11 **an effect today and that gets back on the economic**  
 12 **side. What's the most economic resource that's**  
 13 **being dispatched as far as to meet customer**  
 14 **requirements?**  
 15 **On the long-term side we haven't seen any**  
 16 **sort of history from our units that would show that**  
 17 **there's increased maintenance cost specific or**  
 18 **increased numbers of outages or equipment failures**  
 19 **that we could quantitatively assign a value to to**  
 20 **basically add into the model for turndown effects.**  
 21 **Q.** When you say you can't quantitatively  
 22 assign a value to, could you expand upon that? I  
 23 mean is it -- are we talking something that's so  
 24 infinitesimal that it doesn't have an overall  
 25 effect on your integrated resource plan or -- if

271

1 you could please elaborate.  
 2 **A.** And, you know, I think what I've heard  
 3 previously today in the discussion of is there a  
 4 cost or an effect as far as for cycling resources,  
 5 certainly there is likely to be an effect to that.  
 6 **One ends up being on the heat rate that we account**  
 7 **for in the cost of fuel. The other point ends up**  
 8 **being is there any additional maintenance cost.**  
 9 **One of the ways that occurs if you have**  
 10 **additional cycling, does it account for additional**  
 11 **outages, is there additional equipment failure or**  
 12 **is there other sorts of costs that are incurred**  
 13 **because of that turndown. And I think from the**  
 14 **history that we've seen based upon the wind at**  
 15 **least in the market in competing for generation to**  
 16 **get to market, we haven't seen an increase that**  
 17 **we'd quantifiably be able to see that says this is**  
 18 **a cost impact that that wind is causing on our**  
 19 **resources.**  
 20 MR. GRUMAN: Just one moment, Your Honor.  
 21 If I may continue, Your Honor.  
 22 **Q.** (MR. GRUMAN CONTINUING) This same  
 23 analysis, at least from what I'm understanding, is  
 24 that for the dispatch of energy you're looking at  
 25 just MDU in particular, not the MISO system as a

272

1 whole; correct?  
 2 **A.** From -- you're talking about when we do  
 3 our resource planning models?  
 4 **Q.** Correct. I mean I guess what I'm more  
 5 specifically getting at is whether or not --  
 6 whether from a pinpoint area, just like MDU or from  
 7 a MISO-wide area, whether or not the negative  
 8 effects of wind, if that's properly being -- or  
 9 properly part of the systemwide, and so from that  
 10 end of it we're just curious if you expand it from  
 11 MDU on to a MISO systemwide, are there negative  
 12 effects by wind as far as an overall capacity  
 13 factor on coal?  
 14 **A.** I guess from our side inside the modeling,  
 15 you know, the energy that we get from wind is about  
 16 10 percent -- actually it's about 7, 8 percent of  
 17 our energy that actually comes from wind resources  
 18 for our customers' requirements. So it ends up to  
 19 be at least a smaller portion as we end up doing  
 20 our modeling activities that we have.  
 21 **And so the only way that markets, you**  
 22 **know, work into that is at least the amount of**  
 23 **market energy at least that's, you know, available**  
 24 **in the model to basically select. I'm not aware of**  
 25 **any studies that have been done by others who have**

273

1 a higher, you know, requirement of wind energy that  
 2 they have and what effect that has on their  
 3 resources.  
 4 MR. GRUMAN: Okay. Nothing further, Your  
 5 Honor.  
 6 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 7 MS. JEFFCOAT-SACCO: No questions.  
 8 JUDGE WAHL: Questions from the  
 9 Commission? Commissioner Kalk.  
 10 **EXAMINATION**  
 11 **BY COMMISSIONER KALK:**  
 12 **Q.** Just a question. Refresh my memory,  
 13 Darcy. What -- what generation sources do you  
 14 share with Otter Tail other than Big Stone?  
 15 **A. Big Stone and Coyote.**  
 16 **Q.** Those are the only two; right?  
 17 **A. Correct.**  
 18 COMMISSIONER KALK: Okay. And -- okay.  
 19 That's it. Thank you.  
 20 JUDGE WAHL: Further questions?  
 21 Commissioner Cramer.  
 22 **EXAMINATION**  
 23 **BY COMMISSIONER CRAMER:**  
 24 **Q.** With regard to the -- the issue of -- of  
 25 any possible negative consequence of wind to the

274

1 rest of the fleet, I mean would it be fair to say  
 2 it might be a little early to even determine that  
 3 given wind's relative youth in the big scheme of  
 4 things and maybe ten years from now might there be  
 5 more data and experience and even anecdote to draw  
 6 some possible conclusions?  
 7 **A. I would say that's a possibility as far**  
 8 **as, you know, the short-term effects versus the**  
 9 **long-term effects, that there may be something down**  
 10 **the road that -- you know, that comes out or that**  
 11 **comes more to light.**  
 12 **Q.** And where I'm going with that is as has  
 13 been brought up earlier, the production tax credit  
 14 is, you know, due to expire at the end of next  
 15 year. Likelihood of its renewal, I would say, is,  
 16 you know, getting less likely probably for all the  
 17 reasons that have been stated earlier, not the  
 18 least of which is our budgetary concerns about our  
 19 country.  
 20 This is, you know, I guess a policy  
 21 statement/question, but perhaps a little time to  
 22 see how the investment to this point in this  
 23 emerging technology plays out might not be such a  
 24 bad idea. You don't have an opinion one way or the  
 25 other or just rather not offer one?

275

1 **A. I think that kind of depends on each**  
 2 **company as far as what their position is and what**  
 3 **their needs and requirements are. But certainly, I**  
 4 **think, you know, if the production tax credits are**  
 5 **not extended, that will certainly have kind of a**  
 6 **slight chilling effect at least on, you know, the**  
 7 **growth of wind industry for a while.**  
 8 COMMISSIONER CRAMER: All right. Nothing  
 9 else. Thank you. Very good.  
 10 JUDGE WAHL: Further questions from the  
 11 Commission?  
 12 Follow-up, Mr. Brown?  
 13 MR. BROWN: No follow-up, Your Honor.  
 14 JUDGE WAHL: Mr. Gruman?  
 15 MR. GRUMAN: No, Your Honor.  
 16 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 17 MS. JEFFCOAT-SACCO: No.  
 18 JUDGE WAHL: Thank you very much,  
 19 Mr. Neigum.  
 20 Mr. Brown, this concludes your  
 21 presentation?  
 22 MR. BROWN: That's correct, Your Honor.  
 23 JUDGE WAHL: Mr. Gruman, how long do you  
 24 anticipate Mr. Hahn's testimony to be?  
 25 MR. GRUMAN: I would say within -- from my

276

1 end of it at least, probably 15 minutes,  
 2 20 minutes. Shouldn't be too long. And then I  
 3 guess depending upon whatever cross there may be.  
 4 JUDGE WAHL: My question is I -- I did not  
 5 plan to extend this hearing beyond five o'clock. I  
 6 rather assumed, imprudently it appears, that we  
 7 would continue over to tomorrow morning. I'm  
 8 certainly willing to -- I'll work -- I'll go as  
 9 long as it takes to finish this hearing, but my --  
 10 but the point is we have people here who I don't  
 11 think have planned to anticipate going past five  
 12 o'clock. And I don't want to start Mr. Hahn's  
 13 testimony and not finish it, at least minimally the  
 14 direct, but in its present situation -- unless we  
 15 have a general consensus that we should continue  
 16 until we finish, then I would adjourn now until  
 17 tomorrow morning, but I would just as soon at the  
 18 same time finish.  
 19 So, Mr. Brown, what's your advice?  
 20 MR. BROWN: Your Honor, I can indicate  
 21 that I think I'll have limited questioning for this  
 22 witness and so I don't -- I don't think we would  
 23 prevent us from finishing certainly by five  
 24 o'clock.  
 25 JUDGE WAHL: All right. Have we got a

277

1 court reporter to a few minutes after five o'clock?  
 2 THE REPORTER: Depends on how fast  
 3 everybody goes.  
 4 JUDGE WAHL: Right. Commissioners, can  
 5 we -- should we finish the hearing?  
 6 COMMISSIONER CRAMER: That would be my  
 7 preference.  
 8 COMMISSIONER CLARK: Yep. Mine too.  
 9 JUDGE WAHL: You're outvoted anyway,  
 10 Commissioner Clark -- or, Commissioner Kalk, at  
 11 this point.  
 12 All right. Let's proceed.  
 13 MR. GRUMAN: Advocacy staff calls Richard  
 14 Hahn.  
 15 JUDGE WAHL: Mr. Hahn, as you have heard  
 16 me advise previous witnesses, your testimony is  
 17 required to be under oath and I'm required by law  
 18 to advise you regarding perjury before  
 19 administering the oath. Perjury is a false  
 20 statement of material fact which you do not believe  
 21 to be true. In North Dakota perjury is a Class C  
 22 felony, punishable by a fine up to \$5,000,  
 23 imprisonment for a period of up to five years, or  
 24 both.  
 25 (Witness sworn.)

278

1 JUDGE WAHL: Mr. Gruman.  
 2 MR. GRUMAN: Thank you.  
 3 **RICHARD S. HAHN,**  
 4 being first duly sworn, was examined and testified  
 5 as follows:  
 6 **DIRECT EXAMINATION**  
 7 **BY MR. GRUMAN:**  
 8 **Q.** Mr. Hahn, could you please state your name  
 9 for the record?  
 10 **A. Yes. First name Richard, middle initial**  
 11 **S., last name Hahn, H-a-h-n.**  
 12 **Q.** And what's the purpose of your presence  
 13 here today?  
 14 **A. La Capra Associates, the company I work**  
 15 **for, was retained by the advocacy staff to perform**  
 16 **a review of the application. I was assigned the --**  
 17 **to be the project manager by La Capra Associates**  
 18 **and I supervised all of the work necessary to -- to**  
 19 **perform our analysis and prepare my testimony, and**  
 20 **I'm here today to sponsor that testimony.**  
 21 **Q.** And just for the record, that testimony is  
 22 at ADV-401, which is in the record. That is the  
 23 public redacted version. There's also  
 24 redetected -- or unredacted version and that's  
 25 401-A.

279

1 Proceeding on, you had indicated that  
 2 you've prepared prefiled testimony. Could you  
 3 please summarize that prefiled testimony for us?  
 4 **A. Surely. Based on my review of the**  
 5 **company's application, I conclude that the AQCS is**  
 6 **the preferred option for compliance with South**  
 7 **Dakota's proposed implementation of the regional**  
 8 **haze rule. This project is the least-cost**  
 9 **acceptable option that I analyzed.**  
 10 **I do note that I -- I recommend that**  
 11 **approval of the granting of the ADP, if I could use**  
 12 **that acronym, would be subject to some recommended**  
 13 **conditions. One is the -- as has been noted by**  
 14 **other witnesses, one is the finalization of the --**  
 15 **the South Dakota SIP, its final approval by EPA.**  
 16 **I've also recommended that there be what I**  
 17 **would refer to as a soft cap on costs of**  
 18 **\$585 million where if the project did cost more**  
 19 **than that, the company would be obliged -- the**  
 20 **companies would be obliged to come in and explain**  
 21 **the basis for any amounts above that.**  
 22 **And also that I recommend certain**  
 23 **reporting requirements, progress reports be filed**  
 24 **by the companies.**  
 25 **Based on testimony that I heard previous**

280

1 **today by the witnesses for the applicants, it would**  
 2 **appear that those conditions are -- are largely**  
 3 **acceptable to the applicants.**  
 4 **I would note that my analysis showed a**  
 5 **much narrower gap between the AQCS and the**  
 6 **next-best alternative, much lower than what the**  
 7 **applicants had proposed.**  
 8 **I've heard the testimonies of Mr. Kopp and**  
 9 **Ms. Stomberg and Mr. Neigum. I won't go into the**  
 10 **details, but I guess I'll summarize by saying that**  
 11 **I -- I stand by the changes and assumptions that I**  
 12 **included in my direct testimony. But we -- despite**  
 13 **the fact that the gap is narrowed, I do reach the**  
 14 **conclusion that the AQCS is the preferred option**  
 15 **study.**  
 16 **Q.** Very good. Do you have anything else that  
 17 you'd like to discuss today? Is there anything you  
 18 would like to --  
 19 **A. Not at this time.**  
 20 MR. GRUMAN: Okay. Otherwise, as  
 21 indicated, all of Mr. Hahn's testimony has been  
 22 prefiled, and I'll just -- the State rests subject  
 23 to redirect and I'll open him up for  
 24 cross-examination -- or advocacy staff. Excuse me.  
 25 JUDGE WAHL: Mr. Brown.

281

1 **CROSS-EXAMINATION**

2 **BY MR. BROWN:**

3 **Q.** Good afternoon, Mr. Hahn.

4 **A. Good afternoon, Mr. Brown.**

5 **Q.** So I think you just testified and I think

6 you said the same thing in your rebuttal testimony

7 at page three that -- that you do find that the

8 proposed project is prudent and reasonable; is that

9 correct?

10 **A. Yes. But I think you said rebuttal**

11 **testimony. I did not --**

12 **Q.** I'm sorry. Excuse me.

13 **A. I did not have the opportunity to provide**

14 **rebuttal testimony. It's my direct testimony.**

15 **Q.** Pardon me. You're -- you're accurate

16 about that.

17 But in your prefiled testimony at page

18 three, I believe that you found that the proposed

19 project is prudent and reasonable; is that correct?

20 **A. Well, I found it to be the -- the**

21 **preferred option for compliance. Those are the**

22 **words that are stated on lines 12 through 14 of**

23 **page three.**

24 **Q.** Okay. And do you deem that to be prudent

25 and reasonable in terms of the ADP statute in North

282

1 Dakota?

2 **A. Subject to the conditions that I have**

3 **proposed, yes, sir.**

4 **Q.** Okay. And I think also at page 3 of your

5 prefiled testimony and again at page 19, I think

6 you found that the proposed AQCS was based on

7 reasonable emission technologies; is that correct?

8 **A. Yes, sir, as contained in the South Dakota**

9 **SIP. Yes, sir.**

10 **Q.** Okay. And by the South Dakota SIP, you're

11 referring to what I believe has been marked as

12 Otter Tail/MDU-111; is that correct? There's a

13 copy of it in one of those red wells there,

14 probably in the first one, if you'd like to take a

15 look at it.

16 **A. Yes.**

17 **Q.** And I believe also in your prefiled

18 testimony at page 20, you found that the estimated

19 costs for the proposed AQCS are comparable to other

20 projects, is that correct, other similar projects?

21 **A. I believe that's a fair characterization**

22 **of that testimony, Mr. Brown.**

23 **Q.** Okay. Mr. Hahn, one of the points you

24 also make is with regard to the price of wind and

25 you called attention to the Bison 2 and 3 projects.

283

1 Do you recall that testimony?

2 **A. Yes, sir.**

3 **Q.** Do you have any other specific projects to

4 call our attention to to support your contentions

5 regarding the likely future cost of wind?

6 **A. Give me a moment, Mr. Brown. Well, yes,**

7 **we do reference the -- on page 15 of my testimony**

8 **we reference an analysis done by the Lawrence**

9 **Berkeley National Labs.**

10 **Q.** But my question was whether or not there

11 were any other specific wind projects that you were

12 relying upon, not -- not the study from the

13 national lab, but any other specific projects like

14 Bison 2 and 3?

15 **A. I -- I don't recall any specific projects.**

16 **There were other capital cost estimates, but no**

17 **specific projects.**

18 **Q.** And when you provided your testimony

19 regarding the price of wind, did you consider the

20 cost of wind for recent projects -- wind projects

21 undertaken by Montana-Dakota?

22 **A. I think that was one of the price points**

23 **that was -- I vaguely recall some PPA data that we**

24 **had that was looked at by folks at La Capra that I**

25 **reviewed. Yes.**

284

1 **Q.** So could you be more specific in terms of

2 how you drew upon that to estimate the cost of

3 wind?

4 **A. Well, I think, you know, we looked at all**

5 **the available information. Clearly the Bison**

6 **projects seemed important to consider because they**

7 **were real projects, as you said. I think, you**

8 **know, there are other generic estimates of capital**

9 **costs that may be slightly different, but what we**

10 **tended to do -- what I tended to do was look at all**

11 **of this information and try to make the best**

12 **judgment that I could as to what capital costs for**

13 **wind would be, and that's reflected in my**

14 **testimony.**

15 **Q.** But you don't recall any specific projects

16 undertaken by MDU with regard to wind that you took

17 into account in your analysis?

18 **A. I don't -- as I said before, Mr. Brown, I**

19 **don't recall specific projects.**

20 **Q.** And how about any specific wind projects

21 undertaken by Otter Tail Power?

22 **A. My answer would be the same.**

23 **Q.** Okay. Mr. Hahn, I think you've been here

24 for everyone's testimony today; is that correct?

25 **A. Yes, sir.**

285

1 **Q.** Including Mr. Kopp's testimony. And he  
 2 testified at one point, and I believe it was in his  
 3 rebuttal testimony, that one of the things that  
 4 they did at Burns & Mac to check on the accuracy of  
 5 the fuel forecast was they took into account an  
 6 updated Wood Mackenzie coal and gas forecast from  
 7 April of 2011. Do you recall that testimony?  
 8 **A.** I recall Mr. Kopp saying that this  
 9 morning -- or today.  
 10 **Q.** And do you have any concern in terms of  
 11 reliance upon the Wood Mackenzie fuel forecast for  
 12 the evaluation in this case?  
 13 **A.** Well, I haven't reviewed that because the  
 14 company's analysis was based on the fuel prices  
 15 from their RFP. I believe Mr. Kopp testified to  
 16 that. What we did is we looked at more current  
 17 prices. In particular, natural gas prices have  
 18 come down, the projections -- the long-term  
 19 projections, the outlook for natural gas prices  
 20 have come down from those forecasts that were done  
 21 around 2009, which as my understanding is the  
 22 vintage of the forecast in the IRP. So we updated  
 23 the -- the natural gas price forecast shortly  
 24 before we did our analysis, which would have been  
 25 September -- September, October. Of 2011, I'm

286

1 sorry.  
 2 **Q.** And I think that testimony is similar to  
 3 Mr. Kopp's in that gas prices have come down since  
 4 2009. Mr. Kopp also testified that although the  
 5 prices for gas, as well as for coal, have come down  
 6 during that period, they fell within the 20 percent  
 7 sensitivity range that was used in the  
 8 Burns & McDonnell testimony. Do you recall his  
 9 testimony on that?  
 10 **A.** Yes. I believe he did say that.  
 11 **Q.** And do you have any reason to question  
 12 that conclusion based on any information that you  
 13 have about current gas prices?  
 14 **A.** Well, I -- I don't know if I would call it  
 15 a question or conclusion. But I guess if you're --  
 16 if you're in a state of the gas markets where  
 17 prices are falling because of the development of  
 18 shale gas, I mean that's a quantum effect on the  
 19 marketplace, and it's driven natural gas prices  
 20 to -- and not only current prices, but the outlook  
 21 for natural gas prices, to historic loads.  
 22 So I think given that there's been a --  
 23 what I'll call a quantum shift in the market, what  
 24 we wanted to do was take the current market  
 25 conditions as the base case and look at

287

1 sensitivities plus or minus 20 percent over sort of  
 2 the latest forecast.  
 3 So to the extent that in the IRP the  
 4 company took a 2009 forecast and did plus or minus  
 5 20 percent and my new base case based on very  
 6 current prices was still within that range, I would  
 7 still prefer to look at the current prices with a  
 8 sensitivity around it.  
 9 MR. BROWN: Thank you. I have nothing  
 10 further, Your Honor.  
 11 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 12 MS. JEFFCOAT-SACCO: I just have a  
 13 question about the conditions.  
 14 **EXAMINATION**  
 15 **BY MS. JEFFCOAT-SACCO:**  
 16 **Q.** I'm seeing it -- the condition on waiting  
 17 for the South Dakota SIP to be accepted slightly  
 18 different than the condition on the mercury -- the  
 19 dollars associated with the mercury emissions; is  
 20 that correct?  
 21 **A.** Yes. I'd be happy to explain that, if  
 22 you'd like.  
 23 **Q.** I don't need it. Maybe somebody else will  
 24 ask for it. But on the waiting for EPA to approve  
 25 the South Dakota SIP, were you envisioning a

288

1 condition precedent or a condition subsequent?  
 2 **A.** I'm not sure I understand the difference,  
 3 so maybe you could define those for me.  
 4 **Q.** Well, I think it's what you heard the  
 5 companies talk about, which is waiting to --  
 6 waiting for the condition to be met in order for  
 7 ADP to kick in versus allowing it to kick in  
 8 subject to being -- going away if the SIP is not  
 9 approved.  
 10 **A.** Well, I hadn't -- I hadn't thought of it  
 11 in those terms. I -- my rationale behind  
 12 suggesting that everybody wait until the final  
 13 approval of -- and the appeal period has run out is  
 14 that you'll now know exactly what you're building  
 15 to.  
 16 Before that plan's approved, we may think  
 17 we have a good idea what the EPA will or won't  
 18 approve, but until they actually sign on the dotted  
 19 line and publish the document, there is always a  
 20 chance that a change could be made. And my concern  
 21 is that during what hopefully will be a brief time  
 22 period, that a whole lot of money not be spent and  
 23 then find out, oh, wow, the SIP changed.  
 24 So my thought was to not necessarily cease  
 25 all project activities, but have some kind of a

289

1 **hiatus period where you would then wait for the**  
 2 **final blueprint that you're building to.**  
 3 **Q.** I understand. I'm glad you clarified  
 4 some. I did ask a couple of witnesses and I'm not  
 5 sure who now, but talking about the distinction  
 6 between saying, yes, it's a good idea or, yes, it's  
 7 prudence -- prudent versus -- it really doesn't  
 8 have to be associated with money. Now, I know in  
 9 your recommendation you did make your  
 10 recommendation up to a certain dollar figure and  
 11 then give or take the 10 percent, but in theory a  
 12 Commission can say something is prudent at this  
 13 stage of the project, which would be in advance of  
 14 the normal time, without associating it with any  
 15 money and a company can spend money whether or not  
 16 they have an early prudence determination by the  
 17 Commission; is that your understanding?  
 18 **A. Well, I believe your question was is that**  
 19 **theoretically -- is it theoretically possible that**  
 20 **a Commission could issue such a decision and, of**  
 21 **course, the answer is yes.**  
 22 **Q.** Yes.  
 23 **A. And so under what I believe your question**  
 24 **was to the other witnesses was acceptance that this**  
 25 **is a good project but at zero dollars; is that --**

290

1 **Q.** Or at silence on the dollars.  
 2 **A. Or at silence on the dollars.**  
 3 **Q.** I mean that's another possibility that,  
 4 you know, we don't have to get into in detail here,  
 5 but --  
 6 **A. Okay. And I think that -- that is a**  
 7 **possibility, but -- and -- but I'm not sure what**  
 8 **the company would do with that. We've heard the**  
 9 **companies say that they're going -- or the**  
 10 **applicants really say that they're going to rely on**  
 11 **the approval of the ADP to limit their sort of**  
 12 **financial exposure after the fact, and I don't**  
 13 **think that -- at zero dollars I'm not sure that**  
 14 **gives them the comfort that they want. I mean that**  
 15 **raises a whole bunch of issues. But to answer your**  
 16 **question as directly as I can, I -- it could**  
 17 **happen. It could be done, but I don't know what**  
 18 **would happen next.**  
 19 **Q.** And so -- and I don't mean to put words in  
 20 your mouth, but I want to be sure I understand.  
 21 That brings us full circle to why your condition  
 22 suggestion is really, I think, a condition  
 23 precedent that -- that the company not feel  
 24 authorized, even though they don't need our  
 25 authority, but not feel authorized to go spend any

291

1 of that money until that rule is finalized.  
 2 **A. That's correct.**  
 3 **Q.** Something is finalized.  
 4 **A. As I said earlier, my concern in devising**  
 5 **that condition is that a large sum of money gets**  
 6 **spent and then we realize, oops, we don't have the**  
 7 **right blueprints.**  
 8 MS. JEFFCOAT-SACCO: Okay. Thank you.  
 9 JUDGE WAHL: Questions by the Commission.  
 10 Commissioner Clark.  
 11 **EXAMINATION**  
 12 **BY COMMISSIONER CLARK:**  
 13 **Q.** I have some just sort of general  
 14 philosophy questions and bounce some ideas off you  
 15 to the degree you have -- feel comfortable just  
 16 kind of opining on a few things.  
 17 Have you had experience with advance  
 18 determination of prudence-type proceedings in other  
 19 jurisdictions before or is this kind of a new --  
 20 **A. No. No, it's not new. It goes by**  
 21 **different names. This is the first time I've heard**  
 22 **it called an advance determination of prudence.**  
 23 **But in other jurisdictions they require large**  
 24 **energy projects, either new ones or retrofits, to**  
 25 **have -- to obtain a certificate of public**

292

1 **convenience and necessity, or a CPCN, and in some**  
 2 **states the granting of that piece of paper**  
 3 **tantamount's to a determination of prudence that**  
 4 **this project at this price is a good idea and we're**  
 5 **not going to go back and challenge it.**  
 6 **Now, there are states that don't issue**  
 7 **them. So, you know, I think in -- I think**  
 8 **obviously it's a policy question for North Dakota**  
 9 **as to whether they do or they don't, but it's not**  
 10 **unheard of to either have it or not have it, but**  
 11 **both exist.**  
 12 **Q.** Sure. The -- and could you talk a little  
 13 bit about the potential benefits that accrue to  
 14 ratepayers through an advance determination of some  
 15 sort?  
 16 **A. Well, the impact on -- there is -- there's**  
 17 **an impact on ratepayers and an impact on the**  
 18 **company. Obviously the company, to the extent that**  
 19 **they get a piece of paper that says, gee, it's a**  
 20 **good idea to spend \$500 million on an upgrade to a**  
 21 **power plant built in 1975, they have some level of**  
 22 **comfort that they will ultimately recover those**  
 23 **costs, even if this is or isn't a ratemaking**  
 24 **proceeding.**  
 25 **The benefits to ratepayers should accrue**

293

1 later on because if all of the companies' projects  
 2 have been built subject to a granted ADP, the risk  
 3 premium that the company should obtain in their  
 4 authorized rate of return arguably should be lower.  
 5 **Q.** Would it be both on the cost of capital  
 6 side as well as what a future Commission would  
 7 determine with regard to its ROE?  
 8 **A.** Well, I think it would be appropriate.  
 9 When a -- my experience is when a Commission  
 10 determines in a rate case what the allowable ROE  
 11 would be, they have to take into effect many  
 12 factors, but one of them that's typically done is a  
 13 risk premium off a risk-free market investment.  
 14 And so to the extent that the company -- and I'll  
 15 just use an example -- let's say there was no ADP  
 16 and the company was still subject to, I believe  
 17 what Mr. Uggerud called, a used and useful standard  
 18 where you build it and we'll tell you after the  
 19 fact if it's the right thing or not --  
 20 **Q.** Right.  
 21 **A.** -- now clearly that's more risky than  
 22 receiving an ADP, so you might authorize a slightly  
 23 higher cost of capital with a higher risk premium  
 24 under the used and useful scenario than you would  
 25 under the ADP scenario.

294

1 **Q.** Are you familiar with any states that have  
 2 attempted to maybe through the rulemaking process  
 3 or through precedent actually assigned a value to  
 4 that so that company management would have a -- a  
 5 sense going into its decision on -- on how to  
 6 approach investments, whether it be seeking an  
 7 advance determination or simply doing it the old  
 8 way where companies make investments and later come  
 9 in, where a Commission says, Well, you can come in  
 10 for the advanced proceedings but understand that  
 11 this will be for ROE purposes treated in a certain  
 12 way whether it's in regard to basis points that are  
 13 knocked off of ROE or so on and so forth, so the  
 14 company has a sense for -- that there is actually a  
 15 tradeoff here and it's not a heads-I-win,  
 16 tails-you-lose scenario?  
 17 **A.** Well, unfortunately I know of no  
 18 hard-and-fast calculation that would give you the  
 19 answer that says the risk premium for a utility  
 20 that has an ADP option is a hundred basis points  
 21 below what the rest of the world gets.  
 22 **Q.** Right.  
 23 **A.** Where this typically comes into play is  
 24 there's a range of a risk premium, and a  
 25 Commission -- even if they agree on the range of

295

1 the risk premium to be added, you need to decide  
 2 where in the range you're going to be. And so if a  
 3 lot of the risk has been taken away from the  
 4 company, judgmentally they can be put in sort of a  
 5 lower position on the range, but I'm not aware of  
 6 any magic formula, unfortunately, that calculates  
 7 it for you.  
 8 **Q.** Okay.  
 9 **A.** I will say that, if I could add, if I  
 10 might, ROEs for -- allowed ROEs for utilities in  
 11 the northeast have dropped a lot since they exited  
 12 the generation business.  
 13 **Q.** Oh, sure. Yeah.  
 14 **A.** So clearly what -- what they call the  
 15 pipes and wires business, the delivery business  
 16 is --  
 17 **Q.** Less risky.  
 18 **A.** -- far less risky business. So you can  
 19 see that had these companies stayed in the  
 20 generation business under a used and useful  
 21 standard, which is what their ROE used to be set  
 22 on, that's come down. That's come down a lot, but  
 23 again, there's no magic formula, unfortunately.  
 24 **Q.** Sure. Thanks. You had discussed a bit of  
 25 your recommendation with regard to a contingency on

296

1 the South Dakota SIP being accepted and finalized  
 2 and you walked through your rationale for that,  
 3 which I thought made sense. In a similar vein,  
 4 does it make any sense to recognize other risks  
 5 that may exist in other states? And you were  
 6 probably here earlier when we talked about some of  
 7 the risks that may exist in Minnesota and  
 8 understanding that we have, as I mentioned, a bit  
 9 of a track record with that particular state, and  
 10 just from a public policy standpoint, coal has been  
 11 difficult as an issue in Minnesota. And I think  
 12 we've had the experience that we never know exactly  
 13 what's going to fly and what won't in that  
 14 particular state.  
 15 Applying the same rationale that you used  
 16 with regard to the SIP and ensuring that it really  
 17 is the final one and that you won't find yourself  
 18 in that situation that you had talked about where  
 19 you say, Oh, my gosh, it's changed and we've spent  
 20 all this money, but would it make sense to have  
 21 some sort of contingency on finalizing Minnesota's  
 22 acceptance of this plan so that we also don't have  
 23 a situation where utilities spend all kinds of  
 24 money and then they find out the rules have changed  
 25 there?

297

1 **A.** Well, I think you definitely should  
 2 consider that. I mean it's always difficult when  
 3 you have a utility with a regulated operation that  
 4 spans two jurisdictions, because some jurisdictions  
 5 may see eye to eye but they may not and they may  
 6 issue different orders. Now, what I've heard  
 7 earlier today is perhaps the Minnesota schedule is  
 8 ahead of this one, so you might get that order -- I  
 9 mean you clearly wouldn't want to grant an ADP and  
 10 then have Minnesota reject the AQCS. I mean to me  
 11 that would be sort of a bad outcome. So I guess I  
 12 would say yes, you should consider that.

13 COMMISSIONER CLARK: Okay. Thank you.  
 14 That's all I have.

15 JUDGE WAHL: Commissioner Cramer.  
 16 COMMISSIONER CRAMER: Just a couple.

**EXAMINATION**

**BY COMMISSIONER CRAMER:**

19 **Q.** In your testimony, both your prefiled  
 20 testimony and then in questioning, you seem to  
 21 qualify your agreement with the SCR technology with  
 22 the fact that you -- you always put it in the  
 23 context of the South Dakota SIP. You seem to  
 24 deliberately do that. Apart -- judging just for a  
 25 moment South Dakota's decision -- and you do state

298

1 that SCR is common for NO<sub>x</sub> -- dealing with NO<sub>x</sub>, but  
 2 do you believe it's necessary to meet the  
 3 minimum -- or to meet the standard of the EPA rule?  
 4 **A.** Well, unfortunately, the standard of the  
 5 rule has an interpretation associated with it, and  
 6 so I -- I mean I think the question is could you  
 7 get away with an SNCR and still comply --  
 8 **Q.** That's the question.  
 9 **A.** -- with -- with the rule. And the answer  
 10 is I think we look through -- I forget which of the  
 11 companies' witnesses, but it was Table 6-14, you  
 12 know, that kind of showed the data, but I mean the  
 13 reason why we decided that the SCR was the  
 14 preferred technology was the result of South  
 15 Dakota. Now, we may not like it, but the plant's  
 16 located there and I will say that the company  
 17 actually requested a different NO<sub>x</sub> control  
 18 technology. As I read the filing it appeared to me  
 19 that -- I keep saying the company -- I should say  
 20 the applicants. The applicants requested separated  
 21 overfire air as their preferred technology, which  
 22 has the lowest capital cost. And the -- the South  
 23 Dakota DENR looked at it and said, Gee, no, you  
 24 know, we're going to approve -- or require an SCR.  
 25 Now, that's still subject to EPA approval.

299

1 Even if the DENR had accepted the companies'  
 2 original proposal of an SOFA, it's possible the EPA  
 3 could have required an SCR anyway. But the fact  
 4 that the SIP has what I would consider to be the  
 5 technology that achieves the largest reduction in  
 6 NO<sub>x</sub> emissions and it's below the deemed threshold of  
 7 cost per ton of NO<sub>x</sub> reduced, we expected that that  
 8 would be the technology that would stick.

9 And so we looked at it from a viewpoint  
 10 of, you know, not necessarily whether we agreed  
 11 with it or not, but the fact is that South Dakota  
 12 to us appeared to have the right to make this  
 13 decision and the EPA has the right to come in and  
 14 approve it or not. I don't know if that answered  
 15 your question or not.

16 **Q.** Oh, I think it does, but I guess I would  
 17 maybe take one whack at it and say, well, then what  
 18 else could South Dakota agree to that the EPA would  
 19 find suitable that might cost even more yet and  
 20 is -- what's the threshold for us saying, wait a  
 21 minute, 65 percent of the, you know, buyers of this  
 22 electricity are our consumers and they're getting  
 23 none of the benefit and all the cost? You know,  
 24 what -- why should I as a North Dakota economic  
 25 regulator be punished because we're the reasonable

300

1 ones?  
 2 **A.** Well, sometimes -- there's a saying that  
 3 says, "Let no good deed go unpunished." And I  
 4 guess it's -- to me it's -- this reflects the  
 5 difficulty, really, in dealing with two  
 6 jurisdictions in that you can't control what's  
 7 reasonable or not in South Dakota. And my concern  
 8 would be that you looked at the South Dakota  
 9 decision on the SCR and said, Gee, I don't like  
 10 that. I'm not going to grant an ADP. Well, then I  
 11 think you might be denying, you know -- you may be  
 12 even incurring more costs on ratepayers because at  
 13 the cost of the SCR -- or including the cost of the  
 14 SCR in the AQCS, it's still slightly less expensive  
 15 than alternative A.

16 So I don't want to say it's -- I mean  
 17 maybe it is unfortunate and maybe there's not a lot  
 18 of control there, but I think you have to look at,  
 19 given the hand you're dealt, what's in the best  
 20 interests of the ratepayers of North Dakota? And  
 21 if rejecting the South Dakota decision and  
 22 therefore rejecting the ADP, if that's where you  
 23 come down, then okay, but it seems to me that if  
 24 you have to unfortunately swallow the SCR decision,  
 25 that still may be the better outcome for North

301

1 **Dakota ratepayers. I'm sorry. I don't -- I don't**  
 2 **have a good way to finesse this. I mean it --**  
 3 **Q.** Oh, no, you did very well. Thank you.  
 4 Just one other question. Are you familiar  
 5 with any sort of general studies relating to  
 6 possible negative consequences on legacy generation  
 7 with the, you know, onslaught of all this wind and  
 8 the -- through the load following of less  
 9 dispatchable generation like coal or is it too  
 10 early to determine that given, you know, again  
 11 wind's sort of youthfulness?  
 12 **A.** Well, no, I think the -- what I'll call  
 13 **the RTO operators, the MISOs, the PJMs, the ISO New**  
 14 **Englands, I think they are concerned -- I mean with**  
 15 **a small level of wind in your supply portfolio, you**  
 16 **know, maybe you have lower concerns. But as the**  
 17 **number gets bigger, I do think that the system**  
 18 **operators that have to keep the lights on are**  
 19 **concerned about what happens if we have too much of**  
 20 **our portfolio tied up in what's referred to as**  
 21 **intermittent resources.**  
 22 **And, you know, it may look good on paper**  
 23 **and it may look good in a production costing run,**  
 24 **but what provisions do you need to keep the lights**  
 25 **on if you're a system operator? So I think they're**

302

1 **very concerned about it. Companies such as the**  
 2 **RTOs are doing studies to see what happens, for**  
 3 **example, if the wind suddenly stops blowing. You**  
 4 **know, what does that do? As the generation fades**  
 5 **down, what does that do to the system? What kind**  
 6 **of operating reserves do you need to have and where**  
 7 **do you need to have them in order to be able to**  
 8 **ride out these system disturbances? Because wind**  
 9 **resources, you know, like it or not, are different**  
 10 **from conventional power plants so they have a**  
 11 **different impact on the system. So I don't think**  
 12 **it's premature to be thinking about that at all.**  
 13 COMMISSIONER CRAMER: Very good. I have  
 14 nothing further. Thank you.  
 15 JUDGE WAHL: Anything further from the  
 16 Commission? Commissioner Kalk?  
 17 COMMISSIONER KALK: No.  
 18 JUDGE WAHL: Follow-up, Mr. Brown?  
 19 MR. BROWN: Nothing further, Your Honor.  
 20 JUDGE WAHL: Mr. Gruman?  
 21 MR. GRUMAN: Nothing further.  
 22 JUDGE WAHL: I'm sorry. I should have  
 23 done it the other way around, Mr. Gruman,  
 24 Mr. Brown.  
 25 MR. GRUMAN: Nothing further, Your Honor.

303

1 JUDGE WAHL: Ms. Jeffcoat-Sacco?  
 2 MS. JEFFCOAT-SACCO: Nothing further.  
 3 JUDGE WAHL: All right. Rebuttal,  
 4 Mr. Brown? No, certainly not?  
 5 MR. BROWN: No, we have none, Your Honor.  
 6 JUDGE WAHL: Okay. Then any closing  
 7 statement, Mr. Brown?  
 8 MR. BROWN: Well, Your Honor, before we do  
 9 that, we have been able to do fast recovery for  
 10 what had been reserved for Exhibit 116.  
 11 JUDGE WAHL: Okay.  
 12 MR. BROWN: So these were the documents  
 13 that had been requested earlier today from the EPA.  
 14 We have three of them to offer now. And I don't  
 15 know what your pleasure would be, if you'd want to  
 16 call back a witness to authenticate them or if you  
 17 would want us simply to offer them now.  
 18 JUDGE WAHL: No. I -- they're received.  
 19 MR. BROWN: Okay.  
 20 JUDGE WAHL: They can be -- they can be  
 21 filed. Counsel, any objection to that? They're in  
 22 the record as a late-filed exhibit. Whether you  
 23 bring them in now or bring them in later, they're  
 24 here.  
 25 MR. BROWN: And, Your Honor, copies have

304

1 been made, so if you wanted me to distribute them,  
 2 if I could approach --  
 3 JUDGE WAHL: Sure.  
 4 MR. BROWN: -- I'd be happy to do that  
 5 now.  
 6 JUDGE WAHL: Indeed. All right. Then no  
 7 rebuttal. Anything -- closing statement,  
 8 Mr. Brown?  
 9 MR. BROWN: Your Honor, first of all, I'd  
 10 just like to thank the Commissioners and yourself  
 11 for your time and patience in hearing our case  
 12 today. We appreciate that very much. We think  
 13 that we've been able to present a strong case that  
 14 the project is a reasonable and prudent one, and we  
 15 ask that the Commission would exercise its  
 16 discretion and approve the request.  
 17 Thank you very much.  
 18 JUDGE WAHL: Mr. Gruman.  
 19 MR. GRUMAN: Advocacy staff just likewise  
 20 thanks the Commission for their time, and I want to  
 21 welcome the opportunity to provide -- I hope  
 22 provide a better record. As far as our ultimate  
 23 conclusions, I guess I'll reserve that for written  
 24 final argument.  
 25 JUDGE WAHL: Ms. Jeffcoat-Sacco?

305

1 MS. JEFFCOAT-SACCO: Nothing. But thanks  
 2 to everyone.  
 3 JUDGE WAHL: Closing statements from the  
 4 Commission. Commission Chairman, Tony Clark.  
 5 COMMISSIONER CLARK: Thanks to everyone  
 6 for a good hearing. There's a lot of information  
 7 here for the Commission to sort through. I suspect  
 8 over the next few weeks probably we'll go about  
 9 setting a work session, which is typically what we  
 10 do. To first have the first opportunity to discuss  
 11 the case amongst ourselves and our advisory staff.  
 12 I assume we'll probably wait for the --  
 13 the transcript to do that, so however long that  
 14 takes will probably be the -- our timeline for our  
 15 first opportunity to discuss it. But beyond that,  
 16 thanks again. It was a good hearing and I look  
 17 forward to having the opportunity to review the  
 18 record further.  
 19 JUDGE WAHL: Commissioner Cramer.  
 20 COMMISSIONER CRAMER: Thank you to  
 21 everyone for a good hearing and also appreciate the  
 22 efficiency -- while it looks like a lot of  
 23 information and it is a lot of information,  
 24 oftentimes in cases like these we will go over all  
 25 the same old information, and I appreciate the

306

1 efficiency with which you examined the witnesses  
 2 and avoided duplication where it wasn't necessary.  
 3 As you can tell, you know, we sort of grow  
 4 a little bit weary of the tail wagging the dog with  
 5 regard to other states, and so we probably dig a  
 6 little deeper into some of other states' policies  
 7 and its impact on our ratepayers a little more than  
 8 perhaps other commissions do, but it's a sincere  
 9 concern that we continue to have.  
 10 I would also say just for myself with  
 11 regard to this issue of advance prudence versus  
 12 later prudence and the ADP law itself and the --  
 13 the policy ramifications of all of that, we've been  
 14 on both sides of this issue as a Commission in the  
 15 short time that the law has been in place. And  
 16 while I might sometimes prefer to get the pay of a  
 17 board member as opposed to a commissioner in making  
 18 big investment decisions, I rather like the  
 19 relationship, quite honestly. I rather like  
 20 that -- that companies feel it important to come  
 21 before us prior to these investments.  
 22 And sometimes it -- sometimes I feel like  
 23 we're a little bit of the cop-out perhaps, but at  
 24 the same time these are important investments for  
 25 companies, for investors, as well as for

307

1 ratepayers, and I guess I prefer to have a look at  
 2 them beforehand rather than later, so just for what  
 3 it's worth.  
 4 Thank you.  
 5 JUDGE WAHL: Commissioner Kalk.  
 6 COMMISSIONER KALK: Just thank you for  
 7 your work today and, once again, thank you for  
 8 preparing this document. Like I said, it was one  
 9 of the better ones I've had a chance to go through,  
 10 so -- I think between the whole crowd here.  
 11 And the final thing, I just want to make  
 12 an administrative note that Bob Graveline -- this  
 13 may be his last official function before his  
 14 retirement here in a few days; is that correct,  
 15 Bob?  
 16 MR. GRAVELINE: Getting close.  
 17 COMMISSIONER KALK: Thank you for your  
 18 service.  
 19 JUDGE WAHL: Thank you, Commissioners,  
 20 and, counsel, thank you very much. Specifically  
 21 let me say, Mr. Gruman and Mr. Brown, I -- this is  
 22 a little bit different way of handling the exhibits  
 23 than we've done in the past, and as you recall from  
 24 the prehearing conference, I was a little  
 25 skeptical, but let me say that this worked very

308

1 well. Mr. Gruman, I recommend it for further  
 2 hearings. Mr. Brown, to the extent you're back for  
 3 further hearings, you should continue to do what  
 4 you've done. Nothing I like better than seeing a  
 5 notebook. Perfect. Thank you very much.  
 6 MS. JEFFCOAT-SACCO: Proposed findings.  
 7 JUDGE WAHL: Of course. Counsel know  
 8 you'll be filing proposed findings of fact,  
 9 conclusions of law and order for judgment. Okay.  
 10 MS. JEFFCOAT-SACCO: I mean when after the  
 11 transcript?  
 12 MR. GRUMAN: Could we, you know, maybe  
 13 just for efficiency's sake perhaps we could go  
 14 first and then we could just --  
 15 JUDGE WAHL: Let's -- yeah, counsel should  
 16 set that. You can work that out and come to an  
 17 agreement that -- that satisfies everyone,  
 18 including -- including Commission advisory counsel,  
 19 and -- that's right. Okay.  
 20 The -- this consolidated hearing in the  
 21 matter of Montana-Dakota Utilities Co. and Otter  
 22 Tail Power Company applications for advance  
 23 determination of prudence, Case Nos. PU-11-163 and  
 24 PU-11-165, is closed.  
 25 (Concluded at 4:17 p.m., the same day.)

CERTIFICATE OF COURT REPORTER

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I, Denise M. Andahl, a Registered Professional Reporter,  
DO HEREBY CERTIFY that I recorded in shorthand the foregoing proceedings had and made of record at the time and place hereinbefore indicated.

I DO HEREBY FURTHER CERTIFY that the foregoing typewritten pages (Pages 1 to 151) contain an accurate transcript of my shorthand notes then and there taken.

Dated at Bismarck, North Dakota, this 9th day of December, 2011.

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Denise M. Andahl  
Registered Professional Reporter

CERTIFICATE OF COURT REPORTER

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I, Stephanie A. Smith, a Registered Professional Reporter,  
DO HEREBY CERTIFY that I recorded in shorthand the foregoing proceedings had and made of record at the time and place hereinbefore indicated.

I DO HEREBY FURTHER CERTIFY that the foregoing typewritten pages (Pages 151 to 308) contain an accurate transcript of my shorthand notes then and there taken.

Dated at Bismarck, North Dakota, this 9th day of December, 2011.

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Stephanie A. Smith  
Registered Professional Reporter

<p style="text-align: center;"><b>\$</b></p> <p><b>\$20</b> [1] - 177:20  <b>\$260</b> [1] - 101:8  <b>\$30</b> [2] - 71:1, 263:18  <b>\$34</b> [2] - 94:5, 237:10  <b>\$37</b> [1] - 100:1  <b>\$40</b> [1] - 176:23  <b>\$400</b> [1] - 235:23  <b>\$42</b> [1] - 177:10  <b>\$44.02</b> [1] - 176:25  <b>\$489</b> [4] - 13:24, 39:10, 129:19, 201:20  <b>\$5,000</b> [9] - 26:3, 108:22, 152:1, 160:1, 184:17, 233:6, 242:20, 260:20, 277:22  <b>\$50</b> [1] - 263:18  <b>\$500</b> [2] - 236:1, 292:20  <b>\$585</b> [1] - 279:18  <b>\$60.98</b> [1] - 176:25  <b>\$63</b> [1] - 157:21  <b>\$67.11</b> [1] - 177:3  <b>\$900</b> [2] - 146:9, 146:10</p>	<p><b>109</b> [3] - 4:15, 7:4, 32:4  <b>109A</b> [2] - 7:5, 32:5  <b>11</b> [3] - 161:17, 161:19, 241:23  <b>11-million</b> [1] - 46:6  <b>110</b> [4] - 7:6, 112:11, 118:10, 254:23  <b>111</b> [6] - 7:8, 29:3, 104:14, 114:15, 116:17, 143:18  <b>112</b> [3] - 7:9, 29:7, 115:11  <b>113</b> [5] - 7:11, 29:10, 115:24, 117:13, 231:4  <b>114</b> [1] - 7:13  <b>115</b> [9] - 7:14, 24:11, 32:17, 43:25, 162:13, 162:17, 165:6, 165:8, 169:21  <b>115A</b> [6] - 7:16, 22:23, 24:12, 24:13, 32:17, 139:21  <b>115C</b> [1] - 139:23  <b>116</b> [6] - 7:18, 139:22, 139:24, 140:16, 209:9, 303:10  <b>117</b> [3] - 7:20, 209:2, 209:3  <b>119</b> [1] - 4:15  <b>11:45</b> [1] - 151:10  <b>12</b> [2] - 241:24, 281:22  <b>1200</b> [1] - 11:15  <b>12:45</b> [1] - 151:8  <b>12:46</b> [1] - 151:10  <b>13</b> [2] - 4:3, 190:3  <b>132</b> [1] - 4:16  <b>137</b> [1] - 4:16  <b>14</b> [3] - 60:25, 190:3, 281:22  <b>140</b> [2] - 7:19  <b>141</b> [1] - 4:17  <b>143</b> [1] - 4:17  <b>147</b> [1] - 4:18  <b>148</b> [1] - 4:19  <b>15</b> [8] - 52:23, 91:21, 92:3, 107:17, 227:8, 227:16, 276:1, 283:7  <b>15-year</b> [2] - 190:18, 191:12  <b>1500</b> [1] - 2:8  <b>151</b> [2] - 309:10, 310:10  <b>152</b> [1] - 4:21  <b>155</b> [1] - 4:21  <b>156</b> [1] - 125:23  <b>15th</b> [2] - 113:14, 227:17  <b>16</b> [8] - 52:25, 97:23, 124:14, 125:5, 144:8, 255:5, 255:10, 255:15  <b>160</b> [1] - 4:23  <b>17</b> [3] - 60:11, 234:10, 235:22  <b>179</b> [1] - 4:24  <b>180</b> [1] - 4:24  <b>185</b> [1] - 5:3  <b>19</b> [1] - 282:5  <b>1950</b> [1] - 107:4  <b>196</b> [1] - 5:3</p>	<p><b>1975</b> [3] - 64:13, 244:15, 292:21  <b>198</b> [1] - 5:4  <b>1982</b> [1] - 107:5  <b>1995</b> [5] - 48:18, 51:15, 52:15, 122:11, 244:18  <b>1999</b> [1] - 161:12  <b>1s</b> [5] - 8:17, 22:7, 53:23, 54:18, 58:16</p> <p style="text-align: center;"><b>2</b></p> <p><b>2</b> [11] - 61:1, 169:20, 169:23, 173:19, 175:23, 176:1, 176:18, 266:18, 266:22, 282:25, 283:14  <b>2.4</b> [1] - 254:18  <b>2.5</b> [1] - 137:9  <b>20</b> [29] - 6:14, 6:18, 7:13, 10:6, 17:9, 42:17, 48:17, 68:7, 91:21, 129:19, 154:18, 173:16, 173:18, 173:24, 173:25, 175:6, 175:10, 178:5, 190:4, 190:25, 276:2, 282:18, 286:6, 287:1, 287:5  <b>20-year</b> [9] - 163:2, 163:7, 163:12, 163:14, 163:18, 163:21, 164:2, 176:20, 176:22  <b>200</b> [1] - 20:22  <b>2000</b> [2] - 52:18, 52:23  <b>2004</b> [1] - 161:13  <b>2005</b> [3] - 112:5, 129:15, 149:18  <b>2007</b> [1] - 127:25  <b>2009</b> [10] - 53:25, 111:22, 153:20, 153:22, 177:19, 178:4, 285:21, 286:4, 287:4  <b>201</b> [3] - 7:22, 23:17, 185:23  <b>2010</b> [11] - 53:25, 58:17, 113:14, 116:22, 116:23, 120:5, 153:24, 234:9, 234:10, 263:23, 266:12  <b>2011</b> [20] - 1:18, 8:13, 9:3, 10:15, 11:4, 15:7, 116:24, 117:4, 175:15, 176:16, 177:1, 186:3, 186:7, 262:21, 263:3, 264:6, 285:7, 285:25, 309:14, 310:14  <b>2011-2025</b> [1] - 8:5  <b>2012</b> [6] - 15:25, 41:20, 72:13, 73:24, 118:8, 241:23  <b>2013</b> [2] - 41:23, 41:25  <b>2015</b> [14] - 13:24, 42:3, 42:5, 76:25, 77:2, 77:14, 77:18,</p>	<p>77:20, 77:25, 211:16, 235:3, 263:24, 264:11, 264:17  <b>2016</b> [5] - 42:5, 42:7, 176:21, 176:25, 177:3  <b>2017</b> [1] - 16:2  <b>202</b> [4] - 5:5, 7:23, 27:25, 185:25  <b>2025</b> [5] - 186:7, 241:14, 241:15, 241:19, 241:25  <b>203</b> [3] - 8:3, 186:3, 234:21  <b>203,000</b> [1] - 66:5  <b>204</b> [6] - 8:4, 23:18, 186:6, 234:12, 236:10, 236:11  <b>206</b> [1] - 7:21  <b>209</b> [1] - 7:21  <b>21</b> [5] - 4:4, 17:18, 235:7, 236:3, 236:18  <b>214</b> [1] - 5:5  <b>22</b> [24] - 6:10, 6:11, 6:12, 6:16, 6:19, 6:20, 6:22, 6:24, 7:3, 7:4, 7:5, 7:7, 7:8, 7:10, 7:12, 7:15, 7:17, 17:18, 235:6, 235:7, 235:25, 236:3, 237:2, 255:6  <b>22.7</b> [1] - 255:2  <b>220</b> [1] - 5:6  <b>222</b> [1] - 5:7  <b>227</b> [1] - 5:9  <b>23</b> [8] - 7:22, 7:24, 8:3, 8:5  <b>231</b> [1] - 5:9  <b>233</b> [1] - 5:11  <b>237</b> [1] - 5:12  <b>24</b> [32] - 6:10, 6:11, 6:12, 6:16, 6:19, 6:20, 6:22, 6:24, 7:3, 7:4, 7:5, 7:7, 7:8, 7:10, 7:12, 7:15, 7:17, 8:7, 8:8, 8:10, 8:12, 8:13, 8:15, 8:16, 8:18, 8:19, 70:7  <b>243</b> [1] - 5:14  <b>248</b> [1] - 5:14  <b>25</b> [20] - 8:15, 8:16, 8:18, 8:19, 14:23, 70:6, 107:17, 107:19, 234:9, 235:21, 241:14, 241:15, 241:19, 241:25, 244:8, 254:11, 254:13, 254:15, 254:20, 265:12  <b>25-year</b> [1] - 190:17  <b>250</b> [1] - 37:7  <b>252</b> [1] - 5:15  <b>253</b> [1] - 5:16  <b>258</b> [2] - 5:16, 5:17  <b>259</b> [1] - 5:18  <b>26</b> [1] - 4:8  <b>260-some</b> [1] - 101:5  <b>261</b> [1] - 5:20  <b>268</b> [1] - 5:20  <b>273</b> [2] - 5:21, 5:21</p>
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<p><b>278</b> [1] - 6:4  <b>281</b> [1] - 6:4  <b>287</b> [1] - 6:5  <b>29</b> [3] - 1:18, 9:3, 10:15  <b>291</b> [1] - 6:5  <b>297</b> [1] - 6:6  <b>29th</b> [1] - 118:8  <b>2:21</b> [1] - 226:21  <b>2:30</b> [1] - 226:20  <b>2:40</b> [1] - 226:21</p>	<p><b>42</b> [6] - 17:3, 170:23, 170:25, 171:3, 174:5, 187:23  <b>45</b> [1] - 4:8  <b>475</b> [6] - 82:13, 82:20, 82:25, 83:2, 83:4, 254:21  <b>475-megawatt</b> [1] - 168:13  <b>489</b> [3] - 90:8, 90:9, 97:21  <b>496</b> [1] - 2:21  <b>4:17</b> [1] - 308:25</p>	<p><b>75</b> [7] - 53:4, 54:5, 54:15, 55:20, 57:9, 57:13, 167:15  <b>78</b> [1] - 97:22</p>	<p><b>acceptance</b> [2] - 289:24, 296:22  <b>accepted</b> [8] - 71:9, 76:22, 77:12, 130:19, 134:7, 287:17, 296:1, 299:1  <b>accepts</b> [1] - 76:1  <b>access</b> [2] - 15:4, 15:16  <b>accommodate</b> [1] - 61:5  <b>accomplished</b> [2] - 67:2, 189:20  <b>accordance</b> [1] - 10:18  <b>according</b> [3] - 53:22, 58:15, 60:8  <b>account</b> [13] - 15:19, 88:13, 154:13, 163:13, 167:13, 175:4, 177:22, 236:5, 240:22, 271:6, 271:10, 284:17, 285:5  <b>accounted</b> [1] - 266:15  <b>accounts</b> [1] - 47:19  <b>accrue</b> [2] - 292:13, 292:25  <b>accuracy</b> [1] - 285:4  <b>accurate</b> [6] - 97:24, 238:17, 265:22, 281:15, 309:11, 310:11  <b>accurately</b> [3] - 238:15, 266:5, 268:21  <b>achievable</b> [7] - 39:19, 53:9, 55:22, 66:19, 66:20, 142:14, 221:21  <b>achieve</b> [3] - 187:15, 199:10, 210:21  <b>achieved</b> [2] - 53:23, 57:15  <b>achievement</b> [1] - 149:20  <b>achieves</b> [1] - 299:5  <b>achieving</b> [2] - 212:2, 220:8  <b>ACI</b> [6] - 215:4, 215:13, 248:18, 249:21, 251:3, 251:4  <b>acid</b> [2] - 142:18, 143:2  <b>acknowledged</b> [1] - 25:17  <b>acquire</b> [1] - 79:15  <b>acquisition</b> [1] - 74:21  <b>acronym</b> [1] - 279:12  <b>act</b> [2] - 133:13, 192:10  <b>Act</b> [8] - 14:7, 121:8, 121:9, 121:15, 122:5, 125:23, 125:25, 143:3  <b>acting</b> [1] - 26:22  <b>action</b> [6] - 13:21, 15:24, 125:22, 133:11, 207:12, 228:11  <b>activated</b> [2] - 90:12, 193:19  <b>active</b> [1] - 213:8  <b>activities</b> [8] - 120:8, 120:10, 185:14, 185:15, 261:21, 264:1, 272:20, 288:25  <b>activity</b> [3] - 76:6, 92:24, 92:25  <b>acts</b> [1] - 161:1</p>
<p style="text-align: center;"><b>3</b></p>	<p style="text-align: center;"><b>5</b></p>	<p style="text-align: center;"><b>8</b></p>	<p style="text-align: center;"><b>8</b></p>
<p><b>3</b> [13] - 58:25, 59:1, 60:17, 175:23, 176:1, 178:24, 230:4, 231:1, 266:18, 266:22, 282:4, 282:25, 283:14  <b>3,120,750</b> [1] - 53:3  <b>30</b> [14] - 17:8, 20:8, 70:15, 84:25, 96:25, 106:22, 172:13, 172:14, 173:3, 173:4, 181:4, 190:24, 264:22, 265:16  <b>30-day</b> [1] - 157:11  <b>300</b> [1] - 20:23  <b>301</b> [2] - 8:6, 24:2  <b>302</b> [3] - 8:8, 27:25, 244:1  <b>303</b> [1] - 8:9  <b>304</b> [2] - 8:11, 33:2  <b>305</b> [2] - 8:13, 24:2  <b>308</b> [1] - 310:10  <b>32</b> [1] - 107:5  <b>34</b> [1] - 94:4  <b>35</b> [3] - 73:10, 167:16, 174:10  <b>35-year</b> [1] - 266:20  <b>39</b> [1] - 14:21  <b>3D</b> [1] - 36:16</p>	<p><b>5</b> [7] - 21:5, 39:11, 90:10, 99:22, 127:1, 145:9, 146:2  <b>5-12</b> [2] - 236:11, 236:25  <b>50</b> [13] - 2:8, 59:25, 70:10, 81:25, 82:2, 82:25, 83:1, 83:4, 83:8, 107:17, 107:19, 190:23  <b>50-megawatt</b> [2] - 82:10, 82:17  <b>500</b> [1] - 235:25  <b>51</b> [1] - 129:16  <b>55402</b> [1] - 2:9  <b>5650</b> [1] - 2:15  <b>56538-0496</b> [1] - 2:22  <b>585</b> [1] - 247:9  <b>58505-0480</b> [2] - 3:5, 3:11  <b>58506-5650</b> [1] - 2:16</p>	<p><b>8</b> [11] - 21:5, 21:6, 36:9, 36:15, 36:16, 119:1, 146:1, 146:5, 148:14, 148:19, 272:16  <b>8,760</b> [1] - 82:20  <b>80s</b> [1] - 46:6  <b>82</b> [1] - 58:18  <b>83</b> [1] - 58:17  <b>84</b> [1] - 4:9  <b>8:30</b> [2] - 9:2, 10:14</p>	<p style="text-align: center;"><b>9</b></p>
<p style="text-align: center;"><b>4</b></p>	<p style="text-align: center;"><b>6</b></p>	<p style="text-align: center;"><b>9</b></p>	<p style="text-align: center;"><b>9</b></p>
<p><b>4</b> [2] - 21:3, 262:6  <b>40</b> [12] - 63:16, 63:22, 129:15, 138:14, 138:15, 167:9, 167:17, 168:22, 170:17, 181:4, 185:18, 189:10  <b>400</b> [2] - 20:24, 139:16  <b>401</b> [3] - 8:14, 22:2, 24:20  <b>401-A</b> [1] - 278:25  <b>401A</b> [4] - 8:16, 22:3, 22:5, 24:20  <b>402</b> [5] - 8:17, 22:5, 24:20, 25:6, 25:8  <b>403</b> [3] - 8:19, 22:7, 24:20  <b>408</b> [2] - 3:4, 3:11  <b>40s</b> [1] - 176:14  <b>414</b> [2] - 82:13, 83:3</p>	<p><b>6</b> [14] - 21:6, 74:1, 74:3, 74:18, 104:25, 115:3, 115:6, 144:3, 144:6, 144:7, 146:5, 148:14, 148:18, 264:2  <b>6-12</b> [4] - 144:16, 144:20, 145:2, 145:6  <b>6-14</b> [5] - 144:17, 145:14, 145:23, 148:13, 298:11  <b>6.3.5.1</b> [1] - 105:8  <b>600</b> [3] - 1:17, 3:4, 3:10  <b>615-megawatt</b> [1] - 168:11  <b>65</b> [3] - 190:1, 257:13, 299:21  <b>66</b> [2] - 53:24, 54:9  <b>68</b> [2] - 53:25, 54:9</p>	<p style="text-align: center;"><b>A</b></p> <p><b>a.m</b> [3] - 9:2, 10:15, 151:10  <b>abandonment</b> [1] - 252:12  <b>ability</b> [7] - 53:14, 57:20, 57:22, 132:22, 156:22, 192:13, 192:15  <b>able</b> [34] - 13:11, 13:13, 14:15, 15:2, 19:2, 27:9, 43:16, 57:14, 58:12, 65:14, 65:18, 67:8, 67:24, 67:25, 69:21, 71:18, 78:1, 135:7, 142:24, 154:9, 156:6, 157:13, 171:16, 203:1, 217:14, 219:11, 219:17, 229:23, 232:20, 241:17, 271:17, 302:7, 303:9, 304:13  <b>absolutely</b> [2] - 106:25, 253:23  <b>absorb</b> [1] - 101:8  <b>acceded</b> [1] - 92:19  <b>accept</b> [2] - 75:9, 207:10  <b>acceptable</b> [9] - 111:14, 131:10, 148:16, 192:4, 192:9, 193:5, 198:11, 279:9, 280:3</p>	<p style="text-align: center;"><b>A</b></p>

<p><b>actual</b> [12] - 38:13, 47:19, 82:4, 134:2, 138:2, 154:1, 192:19, 219:12, 247:23, 265:23, 266:23, 268:23</p> <p><b>add</b> [11] - 92:11, 94:7, 100:25, 142:10, 142:17, 146:3, 146:4, 153:16, 199:9, 270:20, 295:9</p> <p><b>add-on</b> [1] - 94:7</p> <p><b>added</b> [8] - 33:25, 35:23, 61:17, 97:17, 98:5, 131:6, 178:12, 295:1</p> <p><b>adder</b> [2] - 172:5, 174:7</p> <p><b>adding</b> [3] - 35:10, 131:15, 142:17</p> <p><b>addition</b> [9] - 11:7, 30:25, 55:25, 56:19, 57:19, 114:12, 194:23, 228:14, 230:10</p> <p><b>additional</b> [16] - 39:11, 100:1, 105:18, 115:21, 150:2, 169:12, 169:14, 181:22, 211:1, 226:23, 230:15, 255:6, 271:8, 271:10, 271:11</p> <p><b>additions</b> [2] - 190:16</p> <p><b>address</b> [20] - 12:6, 12:12, 12:21, 19:2, 19:23, 20:6, 33:12, 34:5, 34:8, 39:16, 49:12, 99:4, 99:18, 99:21, 226:8, 226:14, 228:1, 229:4, 232:21, 246:14</p> <p><b>addressed</b> [5] - 77:10, 94:18, 175:20, 210:24, 256:2</p> <p><b>addressing</b> [3] - 19:17, 20:2, 33:7</p> <p><b>adds</b> [1] - 46:17</p> <p><b>Adequacy</b> [1] - 213:13</p> <p><b>adhere</b> [1] - 42:9</p> <p><b>adjourn</b> [1] - 276:16</p> <p><b>adjusted</b> [1] - 156:9</p> <p><b>adjusting</b> [1] - 141:3</p> <p><b>adjustment</b> [1] - 195:22</p> <p><b>adjustments</b> [5] - 156:3, 156:7, 158:18, 159:3, 270:2</p> <p><b>administering</b> [9] - 25:25, 108:19, 151:23, 159:23, 184:15, 233:2, 242:16, 260:17, 277:19</p> <p><b>administration</b> [1] - 112:6</p> <p><b>ADMINISTRATIVE</b> [1] - 1:22</p> <p><b>administrative</b> [12] - 118:7, 203:15, 204:18, 204:24, 205:2, 206:8, 208:7, 208:12, 222:25, 230:2, 246:1, 307:12</p> <p><b>Administrative</b> [8] - 7:12, 9:5, 9:7, 29:10, 113:7, 115:24, 117:14, 231:3</p>	<p><b>administratively</b> [1] - 208:9</p> <p><b>admission</b> [7] - 22:16, 22:19, 22:22, 23:9, 23:19, 24:1, 24:23</p> <p><b>admit</b> [1] - 73:11</p> <p><b>admonish</b> [1] - 10:5</p> <p><b>adopt</b> [1] - 207:8</p> <p><b>adopted</b> [13] - 112:4, 113:11, 113:13, 115:17, 115:18, 119:24, 122:23, 122:24, 125:25, 129:15, 141:9, 213:25, 244:23</p> <p><b>adopting</b> [1] - 121:18</p> <p><b>adoption</b> [1] - 121:8</p> <p><b>ADP</b> [50] - 14:17, 15:12, 19:17, 20:3, 66:18, 72:8, 73:20, 80:23, 81:2, 81:3, 89:2, 89:3, 89:20, 93:11, 106:1, 186:1, 186:11, 187:12, 191:23, 191:24, 192:18, 193:21, 197:21, 198:3, 202:21, 209:16, 218:3, 221:3, 221:8, 227:4, 243:24, 247:3, 247:12, 247:15, 247:18, 256:20, 257:4, 279:11, 281:25, 288:7, 290:11, 293:2, 293:15, 293:22, 293:25, 294:20, 297:9, 300:10, 300:22, 306:12</p> <p><b>ads</b> [1] - 124:9</p> <p><b>ADV</b> [7] - 8:14, 8:16, 8:17, 8:19, 22:1, 22:7, 24:20</p> <p><b>ADV-401</b> [1] - 278:22</p> <p><b>Advance</b> [4] - 1:6, 1:8, 7:24, 8:8</p> <p><b>advance</b> [54] - 9:12, 10:21, 13:2, 69:13, 71:5, 71:19, 79:11, 81:6, 89:16, 100:16, 100:18, 101:17, 102:24, 103:1, 103:4, 103:16, 103:21, 103:22, 155:16, 183:9, 183:12, 183:17, 187:7, 188:19, 188:23, 192:7, 197:10, 199:24, 200:12, 203:10, 204:1, 204:12, 204:13, 213:1, 214:15, 214:21, 215:22, 216:3, 218:8, 219:13, 222:21, 223:17, 245:23, 246:18, 246:23, 256:13, 289:13, 291:17, 291:22, 292:14, 294:7, 306:11, 308:22</p> <p><b>advanced</b> [3] - 200:8, 217:17, 294:10</p> <p><b>advantage</b> [2] - 40:25, 168:19</p> <p><b>advantages</b> [1] - 168:15</p> <p><b>advice</b> [1] - 276:19</p>	<p><b>advisable</b> [1] - 186:19</p> <p><b>advise</b> [14] - 25:24, 108:18, 151:20, 151:22, 159:20, 159:22, 184:14, 198:17, 232:24, 233:1, 242:15, 260:16, 277:16, 277:18</p> <p><b>ADVISOR</b> [1] - 3:13</p> <p><b>advisory</b> [5] - 12:2, 24:7, 179:25, 305:11, 308:18</p> <p><b>ADVOCACY</b> [2] - 3:6, 6:2</p> <p><b>advocacy</b> [21] - 11:22, 11:23, 18:1, 19:18, 20:24, 21:20, 21:24, 22:8, 23:21, 24:4, 24:19, 25:4, 71:13, 112:16, 174:19, 246:16, 268:19, 277:13, 278:15, 280:24, 304:19</p> <p><b>advocates</b> [1] - 10:5</p> <p><b>aesthetic</b> [1] - 128:12</p> <p><b>affect</b> [11] - 49:13, 53:14, 56:12, 57:20, 62:20, 64:1, 76:2, 79:19, 122:1, 124:15, 265:21</p> <p><b>affected</b> [4] - 64:9, 129:4, 130:7, 207:17</p> <p><b>afternoon</b> [15] - 118:1, 152:12, 152:13, 154:24, 154:25, 160:11, 160:12, 229:19, 233:15, 233:16, 243:6, 261:6, 261:7, 281:3, 281:4</p> <p><b>afterwards</b> [1] - 251:5</p> <p><b>age</b> [1] - 101:11</p> <p><b>agencies</b> [1] - 127:2</p> <p><b>agency</b> [1] - 245:5</p> <p><b>agency's</b> [1] - 206:7</p> <p><b>agenda</b> [1] - 205:24</p> <p><b>agent</b> [3] - 14:9, 109:25, 110:17</p> <p><b>aggregate</b> [1] - 240:16</p> <p><b>aggressive</b> [2] - 176:7, 245:12</p> <p><b>aggressively</b> [1] - 41:4</p> <p><b>aging</b> [1] - 69:6</p> <p><b>ago</b> [3] - 86:20, 91:21, 236:19</p> <p><b>agree</b> [21] - 24:25, 50:2, 55:3, 61:8, 61:12, 61:14, 71:22, 82:8, 112:25, 113:1, 120:1, 177:23, 201:11, 207:25, 208:25, 219:10, 238:10, 239:24, 294:25, 299:18</p> <p><b>agreeable</b> [2] - 25:11, 25:13</p> <p><b>agreed</b> [6] - 18:2, 71:25, 128:9, 133:6, 138:5, 299:10</p> <p><b>agreement</b> [7] - 27:8, 67:3, 187:8, 188:14, 266:10, 297:21, 308:17</p> <p><b>ahead</b> [4] - 80:10, 218:5,</p>	<p>253:21, 297:8</p> <p><b>Air</b> [11] - 1:6, 1:8, 14:7, 121:8, 121:9, 121:14, 122:5, 125:23, 125:25, 127:19, 143:3</p> <p><b>air</b> [47] - 9:14, 10:23, 13:4, 13:5, 13:9, 13:15, 26:23, 29:25, 30:25, 34:10, 34:11, 34:18, 37:7, 37:8, 39:15, 39:23, 40:2, 40:19, 51:3, 66:21, 70:8, 89:25, 109:19, 111:11, 111:14, 119:25, 120:3, 120:9, 129:10, 134:16, 136:25, 137:15, 139:3, 141:24, 142:4, 142:9, 142:15, 146:22, 182:23, 186:14, 188:5, 221:15, 230:8, 245:11, 263:5, 263:20, 264:12, 298:21</p> <p><b>AL</b> [1] - 1:22</p> <p><b>Al</b> [1] - 9:4</p> <p><b>ALJ</b> [3] - 71:8, 72:2, 213:24</p> <p><b>Allen</b> [2] - 96:20</p> <p><b>allow</b> [5] - 71:10, 128:9, 211:24, 225:2, 246:10</p> <p><b>allowable</b> [1] - 293:10</p> <p><b>allowances</b> [3] - 93:23, 142:25, 143:2</p> <p><b>allowed</b> [4] - 206:10, 235:5, 244:18, 295:10</p> <p><b>allowing</b> [1] - 288:7</p> <p><b>allows</b> [1] - 40:14</p> <p><b>almost</b> [9] - 25:22, 46:24, 47:21, 54:6, 95:5, 96:9, 216:6, 218:3</p> <p><b>alone</b> [1] - 222:8</p> <p><b>altered</b> [1] - 120:17</p> <p><b>alternative</b> [26] - 15:20, 89:9, 101:19, 165:22, 166:25, 168:7, 168:25, 169:15, 174:5, 174:8, 174:9, 174:12, 175:9, 179:10, 179:12, 181:6, 181:7, 187:18, 187:19, 194:25, 195:8, 200:9, 264:2, 265:4, 280:6, 300:15</p> <p><b>alternatives</b> [45] - 16:11, 16:14, 16:25, 17:13, 31:22, 31:24, 43:4, 44:14, 90:23, 91:2, 162:2, 162:9, 162:25, 163:6, 163:9, 164:1, 164:4, 164:5, 164:7, 166:11, 166:14, 168:4, 168:17, 170:3, 170:6, 170:8, 170:19, 170:23, 171:18, 172:14, 172:25, 173:9, 173:10, 173:25, 179:2, 179:3, 179:7, 181:15, 195:10, 199:16, 246:9, 257:23, 257:25, 258:9,</p>
---	--	---	---

<p>263:4  <b>altogether</b> [1] - 135:9  <b>ambient</b> [7] - 120:9, 129:10, 134:16, 136:25, 137:15, 139:2, 146:22  <b>ammonia</b> [3] - 34:19, 37:22, 46:16  <b>amount</b> [11] - 34:13, 55:8, 62:9, 64:14, 79:14, 79:16, 85:10, 220:2, 238:19, 264:25, 272:22  <b>amounts</b> [4] - 61:9, 156:12, 193:2, 279:21  <b>analyses</b> [8] - 17:7, 17:16, 172:8, 173:13, 173:20, 173:21, 174:1, 249:20  <b>Analysis</b> [2] - 7:15, 7:16  <b>analysis</b> [66] - 16:10, 16:15, 16:20, 17:1, 17:4, 17:11, 17:22, 19:13, 32:8, 32:14, 35:19, 43:3, 43:6, 43:19, 43:24, 44:18, 54:16, 58:8, 66:18, 68:8, 93:13, 99:24, 100:3, 119:23, 122:1, 122:19, 123:21, 124:3, 127:15, 129:2, 129:7, 139:4, 139:14, 140:15, 153:13, 153:23, 154:14, 162:2, 162:7, 162:20, 162:23, 168:1, 168:6, 172:19, 173:22, 175:17, 177:8, 178:17, 180:1, 195:2, 195:4, 234:25, 235:19, 245:3, 246:6, 255:18, 262:17, 264:9, 264:20, 271:23, 278:19, 280:4, 283:8, 284:17, 285:14, 285:24  <b>analyze</b> [3] - 45:21, 45:25, 256:2  <b>analyzed</b> [1] - 279:9  <b>AND</b> [1] - 2:11  <b>Andahl</b> [2] - 309:3, 309:17  <b>ANDREA</b> [2] - 5:13, 243:1  <b>Andrea</b> [5] - 8:7, 19:25, 242:10, 243:8, 253:13  <b>ANDREW</b> [1] - 2:6  <b>Andy</b> [2] - 11:11, 236:7  <b>anecdote</b> [1] - 274:5  <b>annual</b> [13] - 14:22, 156:4, 158:15, 159:2, 163:2, 163:5, 163:17, 165:20, 166:2, 167:3, 167:4, 264:25, 265:13  <b>annuity</b> [2] - 163:5, 163:17  <b>answer</b> [37] - 38:5, 47:5, 54:22, 56:11, 67:24, 67:25, 70:17, 70:21, 77:21, 100:22, 103:18, 104:3, 122:17, 128:19, 128:20,</p>	<p>130:9, 130:13, 133:1, 135:5, 135:10, 136:14, 181:17, 183:15, 189:10, 197:12, 213:4, 213:7, 214:3, 214:14, 214:25, 238:23, 252:5, 284:22, 289:21, 290:15, 294:19, 298:9  <b>answered</b> [5] - 95:21, 98:19, 103:20, 215:23, 299:14  <b>answering</b> [3] - 83:7, 93:21, 197:18  <b>Antelope</b> [1] - 33:17  <b>anticipate</b> [7] - 168:24, 190:19, 190:21, 227:16, 227:18, 275:24, 276:11  <b>anticipated</b> [4] - 29:6, 193:13, 194:11, 248:20  <b>Anticipated</b> [2] - 7:9, 115:12  <b>anticipation</b> [1] - 39:18  <b>anxiety</b> [1] - 129:18  <b>anytime</b> [2] - 252:15, 252:16  <b>anyway</b> [4] - 97:17, 225:7, 277:9, 299:3  <b>apart</b> [2] - 34:22, 297:24  <b>apiece</b> [1] - 59:15  <b>apologize</b> [2] - 70:17, 214:24  <b>appeal</b> [2] - 209:13, 288:13  <b>appealed</b> [2] - 213:25, 214:5  <b>appear</b> [6] - 22:19, 117:24, 143:23, 168:1, 177:6, 280:2  <b>appearance</b> [1] - 11:8  <b>appeared</b> [2] - 298:18, 299:12  <b>appearing</b> [3] - 11:16, 18:15, 19:4  <b>applicable</b> [1] - 147:18  <b>APPLICANT</b> [2] - 2:17, 2:23  <b>applicant</b> [1] - 11:16  <b>APPLICANTS</b> [1] - 2:10  <b>applicants</b> [9] - 11:11, 13:2, 247:25, 280:1, 280:3, 280:7, 290:10, 298:20  <b>APPLICANTS'</b> [1] - 4:6  <b>Application</b> [5] - 1:6, 1:8, 7:23, 8:4, 8:8  <b>application</b> [21] - 19:12, 20:11, 27:11, 27:16, 27:22, 39:6, 45:3, 53:1, 57:13, 61:1, 68:2, 71:5, 99:17, 102:19, 186:1, 230:18, 243:23, 256:12, 262:6, 278:16, 279:5  <b>applications</b> [5] - 9:11, 9:15, 10:20, 27:3, 308:22  <b>applied</b> [4] - 13:8, 15:7, 15:8, 168:13  <b>apply</b> [2] - 12:9, 116:4  <b>applying</b> [1] - 296:15</p>	<p><b>appointment</b> [1] - 9:6  <b>appreciate</b> [8] - 21:12, 95:6, 95:18, 95:20, 219:4, 304:12, 305:21, 305:25  <b>approach</b> [14] - 31:10, 31:13, 40:13, 84:7, 84:8, 84:16, 85:19, 86:7, 86:12, 86:16, 123:6, 250:11, 294:6, 304:2  <b>approached</b> [2] - 69:9, 204:25  <b>approaches</b> [1] - 84:10  <b>appropriate</b> [6] - 149:7, 198:16, 206:5, 215:2, 257:6, 293:8  <b>Approval</b> [1] - 8:5  <b>approval</b> [21] - 42:23, 92:25, 114:8, 114:9, 116:13, 116:18, 117:23, 118:7, 119:3, 187:18, 192:8, 231:23, 245:22, 246:20, 246:25, 247:1, 279:11, 279:15, 288:13, 290:11, 298:25  <b>approvals</b> [2] - 229:5, 229:20  <b>approve</b> [10] - 192:24, 221:7, 253:5, 253:17, 257:4, 287:24, 288:18, 298:24, 299:14, 304:16  <b>approved</b> [5] - 111:22, 192:11, 218:8, 288:9, 288:16  <b>approves</b> [1] - 191:25  <b>approving</b> [1] - 121:19  <b>April</b> [2] - 175:15, 285:7  <b>AQ</b> [1] - 164:9  <b>AQCS</b> [93] - 6:12, 6:19, 6:20, 6:21, 6:23, 7:3, 7:14, 7:16, 15:12, 16:4, 18:19, 21:18, 30:18, 31:4, 32:8, 32:12, 33:5, 33:7, 36:13, 37:24, 39:9, 39:22, 43:10, 51:21, 52:22, 53:9, 53:14, 57:13, 68:19, 76:22, 77:3, 77:12, 77:18, 78:22, 90:15, 91:5, 93:16, 99:20, 105:5, 110:4, 110:14, 112:21, 113:5, 121:1, 121:2, 124:25, 125:4, 146:15, 153:23, 162:5, 162:9, 162:10, 164:9, 165:16, 170:22, 171:1, 171:8, 172:5, 173:8, 174:8, 174:12, 179:7, 181:10, 191:1, 191:3, 193:20, 194:7, 205:9, 229:20, 234:25, 235:4, 235:8, 235:23, 237:15, 247:5, 248:19, 248:24, 250:11, 250:16, 250:20, 251:1, 251:4, 251:15,</p>	<p>251:20, 252:10, 263:13, 279:5, 280:5, 280:14, 282:6, 282:19, 297:10, 300:14  <b>area</b> [12] - 34:12, 37:22, 78:6, 87:24, 96:19, 109:21, 134:25, 185:12, 250:5, 266:19, 272:6, 272:7  <b>Area</b> [2] - 126:4  <b>areas</b> [23] - 109:19, 109:20, 111:9, 111:24, 125:17, 125:19, 125:21, 125:23, 126:2, 126:10, 126:12, 126:16, 126:25, 127:6, 127:11, 127:21, 135:8, 136:1, 145:5, 250:1  <b>arena</b> [1] - 76:15  <b>arguably</b> [1] - 293:4  <b>argue</b> [3] - 54:2, 253:22, 253:23  <b>argument</b> [2] - 100:23, 304:24  <b>arises</b> [1] - 51:17  <b>Arizona</b> [1] - 157:17  <b>arm</b> [1] - 161:2  <b>arose</b> [1] - 210:9  <b>arrange</b> [5] - 12:9, 12:14, 12:15, 226:15, 226:16  <b>arrangement</b> [1] - 88:5  <b>arrays</b> [1] - 256:19  <b>articles</b> [2] - 79:18, 220:4  <b>ash</b> [4] - 69:4, 69:6, 99:23, 172:2  <b>aside</b> [1] - 9:24  <b>assertions</b> [1] - 147:21  <b>assessing</b> [1] - 111:15  <b>Assessment</b> [5] - 6:13, 7:9, 7:18, 8:11, 115:12  <b>assessment</b> [6] - 28:17, 29:5, 32:20, 115:16, 262:7, 262:12  <b>asset</b> [4] - 171:14, 171:15, 171:20, 171:23  <b>assign</b> [2] - 270:19, 270:22  <b>assigned</b> [3] - 264:17, 278:16, 294:3  <b>assist</b> [1] - 12:22  <b>associated</b> [13] - 110:6, 216:19, 220:1, 221:23, 223:24, 230:8, 239:3, 240:23, 251:6, 265:9, 287:19, 289:8, 298:5  <b>Associates</b> [2] - 278:14, 278:17  <b>associating</b> [1] - 289:14  <b>assume</b> [8] - 83:22, 106:24, 132:12, 135:20, 170:16, 213:25, 231:11, 305:12  <b>assumed</b> [7] - 44:15, 102:11, 168:18, 169:7, 235:2,</p>
---	---	--	--

<p>264:10, 276:6  <b>assuming</b> [3] - 103:12, 169:5, 226:11  <b>assumption</b> [4] - 44:11, 164:20, 190:11, 266:20  <b>assumptions</b> [29] - 17:12, 44:6, 44:13, 93:25, 164:14, 164:17, 165:11, 165:12, 165:14, 166:17, 166:19, 167:6, 167:22, 167:25, 168:3, 168:9, 169:16, 169:25, 181:18, 192:14, 235:14, 235:18, 239:22, 239:25, 240:4, 264:7, 269:16, 270:3, 280:11  <b>assurances</b> [1] - 223:15  <b>astray</b> [1] - 75:21  <b>attach</b> [1] - 191:23  <b>attachment</b> [4] - 21:5, 21:6, 118:15, 169:21  <b>Attachment</b> [7] - 19:13, 21:3, 21:5, 21:6, 230:4, 231:1  <b>attachments</b> [2] - 21:3, 29:12  <b>attempted</b> [1] - 294:2  <b>attention</b> [3] - 36:11, 282:25, 283:4  <b>attorney</b> [1] - 132:25  <b>Attorneys</b> [1] - 2:7  <b>attractive</b> [2] - 181:24, 195:11  <b>attributes</b> [1] - 91:3  <b>August</b> [2] - 117:22, 127:25  <b>authenticate</b> [1] - 303:16  <b>authored</b> [1] - 219:25  <b>authority</b> [2] - 134:8, 290:25  <b>authorize</b> [1] - 293:22  <b>authorized</b> [3] - 290:24, 290:25, 293:4  <b>availability</b> [2] - 48:5, 62:24  <b>available</b> [34] - 12:20, 13:8, 19:20, 19:23, 56:22, 56:23, 78:13, 79:17, 88:1, 105:2, 111:20, 112:2, 119:18, 123:12, 129:3, 130:12, 138:11, 149:21, 154:7, 154:13, 156:6, 157:23, 158:11, 158:19, 191:10, 191:20, 195:24, 209:7, 263:4, 264:13, 264:23, 267:15, 272:23, 284:5  <b>avenue</b> [1] - 157:6  <b>Avenue</b> [3] - 1:17, 2:15, 11:16  <b>average</b> [6] - 55:20, 57:9, 58:18, 60:12, 68:12, 266:1  <b>averaged</b> [1] - 54:7  <b>averaging</b> [1] - 143:7  <b>avoid</b> [2] - 208:21, 208:22  <b>avoided</b> [1] - 306:2</p>	<p><b>aware</b> [22] - 21:17, 48:24, 65:9, 65:13, 65:17, 65:23, 66:14, 67:9, 91:19, 93:10, 120:4, 122:25, 125:11, 125:14, 130:12, 130:14, 131:16, 131:21, 224:17, 236:24, 272:24, 295:5</p>	<p>146:7, 146:11, 147:13, 149:18, 150:13  <b>BART-eligible</b> [1] - 113:24  <b>base</b> [13] - 169:23, 169:24, 171:13, 171:25, 172:9, 173:5, 173:17, 173:18, 174:4, 178:23, 237:13, 286:25, 287:5  <b>based</b> [49] - 49:7, 50:8, 50:13, 50:17, 56:16, 56:17, 56:18, 79:24, 83:14, 102:19, 106:20, 106:25, 117:20, 133:5, 135:11, 135:13, 135:19, 136:6, 141:15, 145:10, 156:9, 164:19, 166:25, 170:11, 177:16, 179:3, 181:3, 181:6, 181:11, 182:19, 195:1, 199:5, 199:20, 200:4, 252:11, 256:15, 265:19, 266:12, 266:22, 267:8, 267:19, 269:19, 271:14, 279:4, 279:25, 282:6, 285:14, 286:12, 287:5  <b>baseload</b> [12] - 58:4, 58:7, 179:4, 179:6, 179:8, 179:9, 179:10, 179:13, 189:15, 189:18, 190:23, 254:12  <b>basic</b> [1] - 38:5  <b>Basin</b> [6] - 48:19, 51:9, 51:20, 81:1, 122:12, 197:8  <b>basis</b> [19] - 56:17, 60:4, 119:7, 124:4, 156:4, 188:17, 190:1, 190:5, 190:9, 190:21, 203:19, 267:7, 267:24, 268:25, 269:5, 269:13, 279:21, 294:12, 294:20  <b>bay</b> [1] - 36:21  <b>bearings</b> [1] - 36:12  <b>became</b> [2] - 120:3, 244:14  <b>Bechtel</b> [1] - 84:24  <b>becomes</b> [3] - 82:21, 106:22, 200:20  <b>bed</b> [3] - 33:25, 34:1, 107:11  <b>BEFORE</b> [1] - 1:22  <b>beforehand</b> [2] - 217:12, 307:2  <b>began</b> [2] - 38:4, 110:24  <b>begin</b> [4] - 33:24, 34:2, 74:9, 79:6  <b>beginning</b> [5] - 41:23, 98:8, 197:13, 201:22, 230:25  <b>behalf</b> [9] - 11:16, 11:20, 11:23, 12:4, 18:15, 109:24, 187:10, 197:18, 246:16  <b>behind</b> [4] - 36:24, 127:23, 132:19, 288:11  <b>believes</b> [1] - 246:9</p>	<p><b>below</b> [6] - 37:11, 55:5, 170:19, 172:7, 294:21, 299:6  <b>beneath</b> [1] - 148:15  <b>benefit</b> [4] - 94:12, 101:15, 200:18, 299:23  <b>benefiting</b> [1] - 267:14  <b>benefits</b> [4] - 220:5, 269:10, 292:13, 292:25  <b>Berkeley</b> [2] - 176:11, 283:9  <b>best</b> [32] - 13:7, 38:6, 41:5, 45:15, 55:9, 55:10, 66:11, 85:4, 94:18, 100:22, 105:1, 107:7, 111:20, 112:2, 149:21, 149:24, 174:4, 245:2, 246:2, 247:21, 250:10, 250:13, 251:1, 252:11, 252:18, 253:22, 253:23, 254:5, 255:15, 280:6, 284:11, 300:19  <b>best-case</b> [1] - 250:13  <b>bet</b> [3] - 101:4, 101:10, 200:21  <b>bet-the-farm-type</b> [1] - 200:21  <b>better</b> [21] - 32:24, 67:24, 68:6, 71:23, 94:20, 98:3, 98:9, 98:12, 99:18, 101:14, 133:19, 142:12, 150:12, 180:21, 218:22, 235:24, 269:16, 300:25, 304:22, 307:9, 308:4  <b>between</b> [37] - 36:24, 45:19, 46:14, 47:14, 48:13, 48:25, 49:19, 51:6, 58:20, 73:21, 74:20, 77:22, 79:14, 80:20, 82:11, 83:9, 85:2, 87:3, 123:2, 123:20, 126:9, 127:8, 134:1, 134:12, 141:23, 143:8, 143:9, 150:7, 150:15, 187:8, 198:5, 198:12, 200:12, 207:16, 280:5, 289:6, 307:10  <b>beyond</b> [8] - 41:1, 121:16, 125:13, 136:1, 172:9, 267:22, 276:5, 305:15  <b>biannual</b> [1] - 190:9  <b>biased</b> [4] - 73:11, 73:16, 168:2, 168:6  <b>bid</b> [4] - 38:21, 60:3, 86:6, 95:11  <b>bidding</b> [3] - 41:2, 85:11, 85:14  <b>bids</b> [1] - 14:11  <b>big</b> [6] - 37:2, 38:9, 46:25, 239:2, 274:3, 306:18  <b>Big</b> [220] - 1:6, 1:8, 6:11, 7:18, 7:19, 8:12, 9:15, 10:24, 13:4, 13:10, 14:10,</p>
<p><b>B</b></p>		<p><b>bachelor</b> [1] - 161:10  <b>backdrop</b> [1] - 199:12  <b>backed</b> [3] - 58:7, 267:5, 267:12  <b>background</b> [1] - 161:9  <b>backing</b> [3] - 17:16, 88:10, 269:7  <b>backward</b> [1] - 54:7  <b>bad</b> [3] - 218:15, 274:24, 297:11  <b>bag</b> [1] - 69:22  <b>baghouse</b> [61] - 35:1, 35:2, 35:5, 35:6, 35:11, 35:13, 35:16, 35:20, 35:21, 35:24, 36:1, 37:12, 37:14, 37:15, 37:19, 38:7, 68:18, 69:14, 69:25, 70:3, 70:12, 70:13, 70:19, 70:24, 70:25, 71:11, 71:16, 71:21, 84:21, 88:23, 89:6, 89:8, 90:1, 104:9, 105:16, 105:21, 105:25, 202:22, 203:1, 203:4, 203:24, 204:2, 204:4, 204:14, 204:20, 205:3, 205:7, 205:11, 205:16, 205:17, 205:19, 209:14, 210:7, 210:14, 211:5, 211:8, 211:24, 212:24, 212:25, 215:3  <b>baghouses</b> [4] - 68:15, 68:17, 68:21, 68:24  <b>bags</b> [2] - 69:17, 69:22  <b>balance</b> [1] - 56:3  <b>balancing</b> [1] - 72:22  <b>ball</b> [1] - 58:8  <b>barge</b> [1] - 155:11  <b>BART</b> [46] - 7:18, 13:22, 18:9, 35:3, 39:16, 49:23, 51:3, 71:11, 89:6, 105:9, 105:21, 110:22, 111:1, 111:5, 111:6, 111:15, 111:19, 112:2, 112:3, 113:24, 115:6, 115:8, 116:5, 117:11, 119:23, 120:3, 120:4, 121:12, 122:15, 122:19, 123:21, 124:3, 127:4, 133:22, 136:2, 136:6, 139:4, 139:5, 139:14, 140:14, 145:21,</p>	

<p>14:19, 15:16, 16:16, 18:19, 20:3, 21:17, 25:10, 26:23, 28:3, 30:24, 35:1, 35:5, 36:7, 36:14, 37:6, 43:8, 45:18, 47:9, 47:15, 47:16, 47:24, 48:2, 48:16, 48:17, 49:8, 49:11, 50:12, 50:14, 50:17, 51:3, 51:6, 51:8, 51:11, 51:20, 52:2, 52:8, 52:11, 53:7, 53:14, 53:24, 55:19, 57:9, 58:6, 58:11, 58:21, 59:1, 59:4, 59:7, 59:13, 59:21, 59:24, 60:11, 60:20, 60:23, 61:2, 62:17, 63:1, 63:12, 63:19, 64:9, 64:13, 66:16, 68:16, 68:25, 69:12, 70:3, 76:24, 77:23, 78:8, 79:2, 81:24, 82:4, 82:6, 82:11, 82:12, 82:13, 82:15, 83:2, 83:10, 88:4, 88:6, 88:14, 88:16, 88:19, 91:3, 91:21, 96:10, 96:17, 96:19, 107:2, 107:9, 109:22, 109:25, 110:3, 110:8, 110:18, 110:22, 111:1, 111:4, 111:8, 111:16, 111:23, 112:20, 113:4, 113:22, 113:23, 115:1, 115:8, 115:22, 117:11, 122:8, 122:10, 122:19, 124:24, 125:8, 126:9, 126:15, 126:21, 126:23, 126:24, 133:21, 134:21, 135:6, 135:16, 135:25, 136:3, 136:5, 137:2, 142:3, 144:17, 145:3, 153:12, 154:2, 154:4, 155:6, 155:12, 155:16, 156:15, 162:8, 162:10, 164:8, 164:10, 164:12, 164:13, 165:15, 165:23, 166:5, 166:8, 168:2, 168:14, 168:18, 170:21, 170:25, 171:8, 171:15, 172:4, 173:7, 173:10, 174:7, 174:11, 175:9, 179:5, 179:6, 181:9, 181:22, 182:19, 188:1, 188:11, 189:3, 190:13, 191:8, 191:13, 191:18, 195:23, 199:9, 216:1, 221:14, 221:18, 221:22, 230:14, 235:2, 235:7, 235:23, 237:15, 238:5, 239:1, 239:3, 244:8, 244:14, 252:10, 254:10, 254:15, 255:22, 262:8, 262:13, 263:5, 263:13, 263:20, 263:24, 264:4, 264:10, 264:12, 264:18, 265:4, 265:11, 265:14,</p>	<p>268:17, 273:14, 273:15  <b>bigger</b> [4] - 42:13, 52:22, 83:10, 301:17  <b>biggest</b> [5] - 40:16, 42:18, 47:23, 48:9, 224:16  <b>bills</b> [1] - 94:8  <b>bio</b> [2] - 180:24, 182:6  <b>Bismarck</b> [7] - 1:18, 2:16, 3:5, 3:11, 10:17, 309:13, 310:13  <b>Bison</b> [7] - 175:23, 176:1, 266:18, 266:22, 282:25, 283:14, 284:5  <b>bit</b> [27] - 34:25, 48:6, 54:19, 57:24, 59:12, 84:4, 88:25, 95:9, 95:16, 98:2, 98:3, 98:15, 123:11, 131:1, 133:19, 177:24, 182:16, 206:16, 210:7, 211:21, 215:21, 292:13, 295:24, 296:8, 306:4, 306:23, 307:22  <b>blame</b> [1] - 196:12  <b>blank</b> [2] - 201:13, 201:19  <b>blessed</b> [1] - 132:20  <b>blessing</b> [1] - 132:12  <b>block</b> [2] - 212:19, 216:18  <b>blowing</b> [2] - 128:18, 302:3  <b>blown</b> [1] - 212:5  <b>blows</b> [1] - 61:20  <b>blueprint</b> [1] - 289:2  <b>blueprints</b> [1] - 291:7  <b>bluish</b> [1] - 37:10  <b>BN</b> [2] - 154:10, 157:4  <b>BNSF</b> [11] - 154:8, 155:4, 155:11, 156:1, 156:2, 156:17, 156:18, 157:9, 157:14, 157:18, 159:3  <b>Board</b> [3] - 113:13, 156:23, 156:25  <b>board</b> [6] - 253:5, 253:25, 257:20, 258:23, 258:24, 306:17  <b>Bob</b> [2] - 307:12, 307:15  <b>boiler</b> [17] - 31:25, 34:10, 34:17, 36:21, 36:24, 36:25, 37:5, 37:18, 45:5, 45:18, 47:20, 83:18, 84:20, 90:21, 90:22, 98:14  <b>books</b> [1] - 253:24  <b>border</b> [1] - 50:15  <b>bore</b> [1] - 74:12  <b>bottom</b> [7] - 37:11, 143:24, 165:8, 172:7, 236:13, 237:3, 237:14  <b>bought</b> [2] - 74:11, 74:14  <b>Boulevard</b> [3] - 1:17, 3:4, 3:10  <b>bounce</b> [2] - 97:20, 291:14  <b>Boundaries</b> [1] - 126:12</p>	<p><b>Boundary</b> [1] - 136:11  <b>Box</b> [2] - 2:15, 2:21  <b>box</b> [4] - 37:2, 37:9, 70:5, 211:4  <b>boxes</b> [1] - 46:25  <b>brain</b> [1] - 95:23  <b>breach</b> [2] - 75:5, 75:13  <b>break</b> [2] - 34:22, 74:3  <b>breakdown</b> [1] - 90:2  <b>Brian</b> [4] - 10:8, 19:21, 232:19, 233:19  <b>BRIAN</b> [4] - 2:4, 5:10, 233:10, 233:19  <b>brief</b> [3] - 21:16, 141:22, 288:21  <b>briefly</b> [17] - 18:11, 27:13, 29:20, 30:8, 30:21, 31:20, 33:15, 41:6, 43:6, 114:19, 114:21, 115:25, 161:8, 172:23, 189:6, 231:13, 262:10  <b>Bring</b> [2] - 11:18, 11:20  <b>bring</b> [6] - 18:22, 155:11, 208:1, 246:7, 303:23  <b>BRING</b> [4] - 2:20, 11:19, 208:2, 208:6  <b>bringing</b> [2] - 95:13, 166:13  <b>brings</b> [1] - 290:21  <b>broken</b> [1] - 30:11  <b>brought</b> [3] - 174:24, 175:21, 274:13  <b>Brown</b> [51] - 4:3, 4:11, 4:15, 4:17, 4:21, 4:23, 5:9, 5:11, 5:14, 5:20, 11:11, 25:17, 104:7, 108:4, 151:11, 152:5, 159:12, 159:17, 160:5, 183:22, 184:7, 184:21, 209:1, 224:23, 225:11, 226:22, 229:2, 229:12, 232:11, 232:17, 233:9, 242:9, 242:23, 260:1, 260:10, 260:24, 275:12, 275:20, 276:19, 280:25, 281:4, 282:22, 283:6, 284:18, 302:18, 302:24, 303:4, 303:7, 304:8, 307:21, 308:2  <b>BROWN</b> [97] - 2:6, 11:10, 12:25, 22:15, 23:13, 23:16, 23:25, 24:12, 24:16, 24:22, 25:3, 25:8, 25:18, 26:10, 26:12, 27:7, 27:15, 28:6, 28:10, 33:1, 33:4, 44:20, 51:23, 104:8, 104:12, 106:8, 108:5, 108:14, 109:6, 112:10, 112:13, 119:11, 129:25, 139:17, 139:19, 139:24, 140:4, 140:8, 143:16, 146:16, 146:19, 147:5, 150:22,</p>	<p>151:9, 151:13, 152:6, 152:11, 152:23, 153:2, 154:20, 159:14, 159:18, 160:10, 179:14, 183:23, 184:8, 184:22, 185:2, 196:15, 209:3, 224:24, 225:9, 225:13, 225:20, 226:25, 227:2, 227:23, 229:3, 229:17, 231:6, 232:12, 232:18, 233:14, 236:22, 237:17, 242:10, 242:24, 243:5, 248:11, 260:2, 260:11, 260:25, 261:5, 267:25, 275:13, 275:22, 276:20, 281:2, 287:9, 302:19, 303:5, 303:8, 303:12, 303:19, 303:25, 304:4, 304:9  <b>brown</b> [24] - 4:8, 5:3, 6:4, 11:9, 12:24, 22:10, 22:14, 23:9, 23:12, 24:21, 25:2, 26:9, 42:20, 43:14, 102:7, 104:3, 108:13, 109:4, 130:3, 139:15, 140:7, 143:14, 150:21, 151:4  <b>brownouts</b> [1] - 80:12  <b>bubbles</b> [2] - 40:23, 42:16  <b>budget</b> [1] - 72:22  <b>budgetary</b> [1] - 274:18  <b>budgeting</b> [1] - 153:10  <b>budgets</b> [1] - 153:8  <b>Buffalo</b> [7] - 61:25, 62:5, 62:6, 62:10, 62:12, 62:16, 62:20  <b>build</b> [17] - 16:17, 16:18, 35:20, 54:24, 56:18, 84:14, 85:18, 89:10, 100:20, 170:9, 189:17, 189:21, 211:15, 212:8, 218:13, 255:23, 293:18  <b>Building</b> [1] - 10:17  <b>building</b> [5] - 36:20, 36:25, 76:23, 288:14, 289:2  <b>built</b> [10] - 35:8, 47:17, 58:6, 68:25, 107:4, 221:15, 256:6, 266:10, 292:21, 293:2  <b>bulk</b> [1] - 41:19  <b>bunch</b> [1] - 290:15  <b>burden</b> [2] - 169:11, 247:23  <b>Burlington</b> [2] - 154:5, 155:7  <b>burn</b> [3] - 98:17, 142:16, 166:1  <b>burning</b> [3] - 59:23, 70:16, 91:20  <b>burns</b> [1] - 83:16  <b>Burns</b> [30] - 7:14, 7:16, 16:16, 17:4, 19:8, 19:11, 32:7, 32:13, 43:2, 43:19, 43:24, 44:6, 93:13, 112:1,</p>
--	--	---	--

<p>153:13, 153:19, 154:18, 160:17, 160:19, 160:20, 162:6, 162:20, 166:20, 167:23, 174:2, 177:4, 177:8, 263:10, 285:4, 286:8</p> <p><b>busbar</b> [4] - 162:22, 163:1, 170:10, 174:6</p> <p><b>Bush</b> [1] - 112:6</p> <p><b>business</b> [9] - 19:10, 160:25, 161:6, 161:22, 295:12, 295:15, 295:18, 295:20</p> <p><b>buy</b> [7] - 84:14, 84:19, 84:20, 84:21, 142:25, 253:16, 253:18</p> <p><b>buyer</b> [1] - 266:6</p> <p><b>buyer's</b> [4] - 40:9, 85:23, 86:17, 86:23</p> <p><b>buyers</b> [1] - 299:21</p> <p><b>buying</b> [2] - 65:25, 85:3</p> <p><b>BY</b> [49] - 26:12, 45:2, 84:2, 95:2, 97:7, 102:15, 104:12, 106:16, 109:6, 119:16, 132:6, 137:23, 141:20, 143:16, 147:10, 148:11, 152:11, 155:2, 160:10, 179:24, 180:19, 185:2, 196:23, 198:23, 202:13, 214:10, 220:17, 222:18, 227:2, 229:17, 231:15, 233:14, 237:22, 243:5, 248:16, 252:2, 253:12, 258:6, 258:17, 259:14, 261:5, 268:6, 273:11, 273:23, 278:7, 281:2, 287:15, 291:12, 297:18</p>	<p>56:12, 57:8, 58:12, 58:17, 58:18, 58:24, 59:2, 59:6, 59:10, 60:16, 62:20, 65:3, 65:7, 66:15, 79:17, 82:4, 82:18, 82:19, 82:23, 87:4, 87:8, 165:18, 165:25, 167:3, 167:8, 167:17, 168:22, 169:13, 189:14, 190:1, 190:4, 190:21, 216:19, 216:20, 234:3, 235:13, 238:4, 238:14, 244:9, 254:12, 254:24, 268:16, 268:20, 272:12</p> <p><b>capital</b> [42] - 15:4, 16:22, 17:7, 46:9, 91:23, 101:9, 164:25, 165:18, 166:1, 167:3, 168:9, 168:12, 168:15, 168:20, 172:11, 172:14, 173:6, 173:9, 181:22, 183:5, 186:15, 189:19, 197:22, 216:4, 216:10, 217:10, 217:21, 219:14, 219:19, 235:19, 236:1, 239:15, 247:20, 253:25, 263:13, 263:14, 283:16, 284:8, 284:12, 293:5, 293:23, 298:22</p> <p><b>Capitol</b> [2] - 1:17, 10:17</p> <p><b>Capra</b> [3] - 278:14, 278:17, 283:24</p> <p><b>captive</b> [5] - 155:6, 155:13, 157:1, 157:23, 158:12</p> <p><b>captured</b> [1] - 172:19</p> <p><b>car</b> [6] - 34:19, 46:19, 65:25, 66:6, 78:1, 99:12</p> <p><b>carbon</b> [12] - 90:12, 93:8, 93:12, 93:14, 93:18, 94:5, 180:1, 180:3, 180:10, 193:19, 236:5, 263:17</p> <p><b>career</b> [1] - 73:12</p> <p><b>careful</b> [1] - 180:21</p> <p><b>carry</b> [2] - 149:8, 259:18</p> <p><b>case</b> [89] - 11:5, 13:14, 21:12, 29:23, 37:5, 45:9, 85:21, 88:9, 93:15, 99:25, 100:18, 103:20, 112:8, 112:12, 146:21, 147:3, 150:17, 153:13, 154:14, 155:20, 155:22, 155:25, 156:2, 156:11, 158:5, 158:8, 158:13, 162:21, 163:23, 167:5, 169:8, 169:11, 169:23, 170:18, 171:13, 171:25, 172:9, 173:3, 173:4, 173:5, 173:17, 173:18, 174:4, 174:10, 174:14, 178:21, 178:23, 180:8, 185:20, 189:11, 194:5, 195:9, 199:1, 199:3, 199:20,</p>	<p>200:6, 203:17, 205:2, 207:21, 209:12, 213:9, 216:2, 221:12, 224:2, 225:1, 227:7, 228:16, 231:4, 232:20, 234:20, 237:13, 247:20, 250:13, 250:17, 250:22, 252:6, 253:22, 253:23, 256:24, 257:3, 263:19, 269:20, 285:12, 286:25, 287:5, 293:10, 304:11, 304:13, 305:11</p> <p><b>Case</b> [3] - 1:6, 1:8, 308:23</p> <p><b>cases</b> [16] - 12:7, 12:12, 12:13, 150:17, 166:7, 169:8, 172:11, 178:15, 209:22, 216:24, 221:12, 223:18, 226:9, 226:15, 249:17, 305:24</p> <p><b>Cases</b> [2] - 9:16, 10:25</p> <p><b>cash</b> [1] - 163:21</p> <p><b>catalyst</b> [8] - 34:20, 46:17, 46:18, 46:20, 46:21, 46:22, 46:25, 47:2</p> <p><b>catalytic</b> [5] - 34:16, 34:18, 46:18, 95:25</p> <p><b>category</b> [1] - 139:16</p> <p><b>caught</b> [4] - 196:12, 205:15, 211:17, 212:8</p> <p><b>caused</b> [6] - 40:23, 65:15, 65:16, 138:3, 208:16</p> <p><b>causes</b> [1] - 65:18</p> <p><b>causing</b> [4] - 58:20, 60:18, 64:23, 271:18</p> <p><b>caveat</b> [2] - 75:4, 99:22</p> <p><b>cease</b> [1] - 288:24</p> <p><b>Center</b> [3] - 69:9, 69:11, 213:12</p> <p><b>center</b> [1] - 261:18</p> <p><b>central</b> [1] - 103:19</p> <p><b>cents</b> [1] - 106:22</p> <p><b>Century</b> [1] - 11:15</p> <p><b>certain</b> [14] - 64:14, 85:24, 102:20, 123:9, 131:14, 133:12, 135:19, 158:7, 181:2, 191:22, 241:8, 279:22, 289:10, 294:11</p> <p><b>certainly</b> [34] - 58:11, 63:14, 66:23, 68:13, 70:14, 72:18, 73:16, 76:5, 76:8, 77:8, 101:10, 188:7, 189:8, 193:17, 193:25, 194:18, 198:4, 201:9, 201:12, 201:15, 214:4, 217:18, 218:23, 219:4, 224:6, 240:15, 251:7, 270:6, 271:5, 275:3, 275:5, 276:8, 276:23, 303:4</p> <p><b>certainty</b> [5] - 15:3, 219:16, 220:2, 220:5, 220:9</p>	<p><b>CERTIFICATE</b> [2] - 309:1, 310:1</p> <p><b>certificate</b> [2] - 223:20, 291:25</p> <p><b>CERTIFY</b> [4] - 309:5, 309:9, 310:5, 310:9</p> <p><b>cetera</b> [12] - 53:15, 53:18, 65:2, 73:5, 74:17, 75:5, 78:19, 82:16, 105:19, 130:8, 131:11, 238:2</p> <p><b>CFR</b> [1] - 129:15</p> <p><b>chair</b> [2] - 95:4, 219:18</p> <p><b>Chairman</b> [2] - 2:3, 305:4</p> <p><b>challenge</b> [7] - 90:18, 123:12, 124:6, 157:14, 157:18, 158:9, 292:5</p> <p><b>challenging</b> [1] - 256:23</p> <p><b>chance</b> [5] - 49:15, 72:23, 252:7, 288:20, 307:9</p> <p><b>change</b> [24] - 30:23, 65:2, 78:1, 80:20, 80:24, 81:5, 82:3, 86:21, 94:6, 99:12, 121:1, 122:5, 127:14, 141:8, 141:15, 145:13, 175:5, 175:18, 188:24, 189:24, 197:7, 219:6, 238:23, 288:20</p> <p><b>changed</b> [11] - 49:16, 61:16, 122:11, 189:16, 189:25, 190:20, 190:22, 240:4, 288:23, 296:19, 296:24</p> <p><b>changeover</b> [3] - 51:14, 51:18, 122:15</p> <p><b>changes</b> [15] - 45:5, 56:8, 61:23, 65:19, 75:11, 120:22, 120:24, 121:22, 135:23, 145:9, 182:2, 268:16, 268:22, 269:17, 280:11</p> <p><b>changing</b> [1] - 65:4</p> <p><b>Chapter</b> [9] - 113:7, 114:22, 115:2, 115:3, 115:4, 115:6, 144:3, 144:6, 230:3</p> <p><b>characteristics</b> [2] - 86:15, 129:24</p> <p><b>characterization</b> [1] - 282:21</p> <p><b>characterize</b> [2] - 240:12, 240:13</p> <p><b>charge</b> [2] - 19:21, 239:18</p> <p><b>charging</b> [1] - 157:4</p> <p><b>chart</b> [1] - 236:18</p> <p><b>cheaper</b> [7] - 60:15, 70:24, 89:10, 149:14, 149:15, 173:8, 211:15</p> <p><b>cheapest</b> [5] - 56:15, 60:4, 174:8, 175:9, 235:16</p> <p><b>check</b> [3] - 201:13, 201:19, 285:4</p> <p><b>chemical</b> [1] - 45:14</p> <p><b>chilling</b> [1] - 275:6</p>
<p><b>C</b></p>			
<p><b>calculate</b> [2] - 163:16, 238:18</p> <p><b>calculated</b> [7] - 38:10, 68:4, 162:25, 163:3, 163:4, 171:18, 177:16</p> <p><b>calculates</b> [2] - 235:15, 295:6</p> <p><b>calculation</b> [3] - 30:19, 156:13, 294:18</p> <p><b>Calculations</b> [2] - 6:22, 6:24</p> <p><b>cancellation</b> [1] - 75:14</p> <p><b>candor</b> [1] - 257:9</p> <p><b>cannot</b> [1] - 199:8</p> <p><b>cap</b> [2] - 247:16, 279:17</p> <p><b>capability</b> [1] - 91:2</p> <p><b>capable</b> [3] - 53:16, 53:19, 208:8</p> <p><b>capacity</b> [54] - 53:4, 53:8, 53:17, 53:20, 53:24, 54:5, 54:14, 54:21, 55:2, 55:19,</p>			

<p><b>choice</b> [2] - 88:2, 129:12  <b>choices</b> [1] - 216:4  <b>choose</b> [1] - 142:9  <b>chosen</b> [2] - 37:14, 148:19  <b>Chris</b> [1] - 11:24  <b>circle</b> [1] - 290:21  <b>Circuit</b> [1] - 121:17  <b>circulating</b> [1] - 33:25  <b>circumstance</b> [1] - 81:4  <b>circumstances</b> [4] - 122:16, 123:6, 131:17, 141:16  <b>cite</b> [1] - 230:12  <b>cited</b> [1] - 239:10  <b>City</b> [1] - 7:19  <b>city</b> [1] - 66:3  <b>civil</b> [1] - 161:11  <b>claim</b> [1] - 112:19  <b>clarification</b> [2] - 214:11, 231:2  <b>clarified</b> [1] - 289:3  <b>clarify</b> [3] - 106:18, 120:19, 141:21  <b>clarity</b> [2] - 146:4, 245:21  <b>Clark</b> [22] - 4:9, 4:16, 4:19, 5:5, 5:7, 5:9, 5:17, 6:5, 9:21, 83:24, 87:21, 95:8, 132:4, 148:9, 202:10, 222:16, 228:1, 231:12, 258:15, 277:10, 291:10, 305:4  <b>CLARK</b> [31] - 2:3, 9:22, 84:2, 94:21, 132:6, 137:18, 148:11, 150:19, 202:11, 202:13, 202:18, 206:4, 208:14, 208:19, 208:22, 209:10, 214:6, 222:18, 224:10, 224:21, 228:2, 228:4, 231:13, 231:15, 232:8, 258:17, 259:9, 277:8, 291:12, 297:13, 305:5  <b>class</b> [1] - 176:4  <b>Class</b> [29] - 26:2, 108:21, 111:9, 111:24, 120:21, 125:17, 125:19, 125:21, 125:23, 126:2, 126:9, 126:11, 126:25, 127:6, 127:10, 127:20, 127:21, 134:25, 135:8, 145:5, 151:25, 159:25, 184:15, 233:5, 242:19, 260:19, 277:21  <b>classified</b> [2] - 99:23, 231:19  <b>classifies</b> [1] - 145:8  <b>clause</b> [1] - 195:21  <b>Clean</b> [8] - 14:7, 121:8, 121:9, 121:14, 122:5, 125:22, 125:25, 143:3  <b>clear</b> [4] - 113:21, 163:10, 214:13, 228:18</p>	<p><b>clearly</b> [15] - 56:9, 64:25, 72:9, 77:13, 79:13, 80:23, 122:25, 127:12, 131:6, 206:24, 246:5, 284:5, 293:21, 295:14, 297:9  <b>cliché</b> [1] - 41:3  <b>client</b> [1] - 163:17  <b>clock</b> [2] - 88:8, 88:12  <b>close</b> [13] - 21:11, 37:5, 39:5, 53:16, 54:14, 55:11, 63:1, 94:2, 107:2, 158:9, 199:21, 226:10, 307:16  <b>closed</b> [3] - 132:19, 208:16, 308:24  <b>closely</b> [1] - 245:3  <b>closer</b> [1] - 178:4  <b>closing</b> [3] - 303:6, 304:7, 305:3  <b>closure</b> [1] - 252:13  <b>Club</b> [2] - 132:16, 213:13  <b>CO</b> [2] - 2:11, 2:18  <b>Co</b> [6] - 1:5, 8:13, 9:11, 10:20, 11:17, 308:21  <b>co</b> [2] - 14:10, 113:4  <b>co-owners</b> [2] - 14:10, 113:4  <b>CO2</b> [4] - 93:15, 93:16, 237:6, 237:8  <b>coal</b> [68] - 16:12, 31:25, 43:11, 48:18, 48:19, 50:22, 51:9, 51:19, 51:20, 54:25, 55:8, 56:13, 58:3, 58:10, 63:4, 63:5, 63:8, 67:19, 69:3, 69:4, 73:10, 73:11, 81:1, 91:6, 122:12, 123:4, 123:7, 128:17, 142:16, 147:14, 154:2, 154:8, 155:8, 155:9, 156:16, 157:15, 166:9, 173:15, 175:13, 182:7, 189:15, 189:18, 190:1, 190:12, 190:16, 190:23, 197:8, 212:20, 238:14, 238:19, 238:22, 240:1, 256:3, 256:4, 267:5, 267:11, 267:20, 267:22, 268:20, 268:22, 269:7, 269:25, 272:13, 285:6, 286:5, 296:10, 301:9  <b>Coal</b> [1] - 7:19  <b>coal-fired</b> [5] - 56:13, 189:15, 189:18, 190:12, 190:23  <b>Coal-Fired</b> [1] - 7:19  <b>coalition</b> [1] - 213:10  <b>coincide</b> [1] - 42:3  <b>colleague</b> [1] - 11:12  <b>collect</b> [1] - 69:4  <b>color</b> [2] - 37:10, 173:1  <b>column</b> [1] - 171:8  <b>columns</b> [2] - 149:1, 170:9</p>	<p><b>combination</b> [6] - 69:13, 120:2, 135:14, 204:16, 223:11, 264:3  <b>combinations</b> [1] - 145:20  <b>combine</b> [1] - 16:19  <b>combined</b> [35] - 16:18, 16:19, 17:5, 38:22, 43:12, 43:13, 91:7, 91:8, 164:11, 164:12, 166:6, 166:24, 167:1, 167:5, 167:6, 167:10, 167:11, 167:15, 167:16, 168:10, 168:11, 168:13, 169:1, 169:10, 169:11, 170:1, 170:15, 170:18, 171:4, 171:5, 171:9, 171:17, 256:3  <b>combustion</b> [5] - 34:11, 34:12, 96:10, 179:12, 263:14  <b>comfort</b> [2] - 290:14, 292:22  <b>comfortable</b> [1] - 291:15  <b>coming</b> [15] - 14:16, 34:3, 58:2, 68:12, 81:3, 87:8, 98:13, 140:25, 182:21, 206:9, 238:19, 239:2, 239:4, 251:18, 268:18  <b>commencing</b> [1] - 9:2  <b>commend</b> [1] - 100:6  <b>commensurate</b> [1] - 88:18  <b>comment</b> [7] - 68:20, 133:16, 197:16, 208:1, 230:19, 232:4, 232:5  <b>comments</b> [5] - 9:20, 117:5, 117:6, 206:17, 244:6  <b>Commerce</b> [11] - 71:14, 71:15, 72:1, 88:22, 89:13, 105:24, 106:5, 203:16, 203:23, 205:18, 212:6  <b>commercialization</b> [1] - 69:19  <b>commercializer</b> [1] - 69:11  <b>Commission</b> [124] - 3:3, 3:9, 7:21, 9:8, 9:16, 10:16, 10:25, 11:3, 12:6, 12:13, 12:21, 47:13, 48:20, 52:18, 66:17, 71:10, 75:23, 76:16, 81:6, 83:23, 86:9, 92:9, 92:13, 101:7, 102:7, 102:18, 102:22, 106:13, 108:4, 132:4, 137:21, 143:14, 148:8, 150:21, 159:9, 180:17, 183:21, 187:17, 187:21, 188:4, 191:22, 192:10, 193:3, 193:7, 193:14, 194:3, 195:18, 196:8, 197:10, 198:12, 198:15, 198:25, 199:2, 200:1, 200:19, 202:5, 202:10, 202:23, 203:14, 205:22, 205:25,</p>	<p>206:2, 206:20, 207:1, 207:23, 208:10, 208:13, 209:7, 209:25, 215:3, 216:17, 217:17, 218:10, 219:24, 220:15, 221:2, 224:7, 224:19, 224:23, 225:5, 226:8, 226:14, 227:7, 227:11, 228:6, 228:12, 228:15, 230:24, 231:12, 232:10, 241:5, 242:7, 245:21, 248:1, 252:5, 252:15, 252:16, 252:21, 253:8, 256:13, 257:3, 257:12, 258:4, 259:12, 259:25, 262:16, 273:9, 275:11, 289:12, 289:17, 289:20, 291:9, 293:6, 293:9, 294:9, 294:25, 302:16, 304:15, 304:20, 305:4, 305:7, 306:14, 308:18  <b>commission</b> [3] - 9:21, 200:17, 305:4  <b>COMMISSION</b> [3] - 1:3, 3:6, 3:13  <b>Commission's</b> [1] - 195:20  <b>commission's</b> [1] - 227:4  <b>COMMISSIONER</b> [81] - 2:3, 2:4, 2:4, 9:22, 10:3, 10:9, 84:2, 94:21, 94:24, 95:2, 97:2, 97:5, 97:7, 97:11, 97:13, 102:3, 106:16, 108:2, 132:6, 137:18, 137:23, 138:13, 139:6, 139:11, 140:18, 141:17, 141:20, 143:10, 148:11, 150:19, 159:15, 180:19, 183:18, 202:11, 202:13, 202:16, 202:18, 206:4, 208:14, 208:19, 208:21, 208:22, 209:10, 214:6, 214:10, 220:12, 220:17, 222:13, 222:18, 224:10, 224:21, 228:2, 228:4, 231:13, 231:15, 232:8, 253:9, 253:12, 258:2, 258:6, 258:13, 258:17, 259:9, 259:14, 259:22, 273:11, 273:18, 273:23, 275:8, 277:6, 277:8, 291:12, 297:13, 297:16, 297:18, 302:13, 302:17, 305:5, 305:20, 307:6, 307:17  <b>commissioner</b> [20] - 10:2, 10:8, 132:4, 180:17, 202:10, 214:8, 220:15, 222:15, 227:25, 231:12, 253:10, 258:4, 258:15, 259:12, 273:21, 291:10,</p>
---	---	--	--

<p>297:15, 305:19, 306:17, 307:5</p> <p><b>Commissioner</b> [38] - 4:9, 4:9, 4:10, 4:12, 4:16, 4:16, 4:17, 4:18, 4:24, 5:5, 5:5, 5:6, 5:6, 5:16, 5:16, 5:17, 5:17, 5:21, 5:21, 6:5, 6:6, 83:24, 94:23, 95:8, 97:4, 102:17, 106:14, 137:21, 138:21, 140:17, 141:18, 148:9, 224:19, 258:19, 273:9, 277:10, 302:16</p> <p><b>commissioners</b> [1] - 277:4</p> <p><b>COMMISSIONERS</b> [1] - 2:2</p> <p><b>Commissioners</b> [12] - 9:19, 10:13, 13:1, 20:17, 22:21, 27:2, 36:6, 46:13, 144:14, 254:2, 304:10, 307:19</p> <p><b>commissions</b> [8] - 186:22, 186:25, 187:7, 187:9, 187:17, 188:18, 190:8, 306:8</p> <p><b>common</b> [7] - 33:20, 48:7, 63:23, 64:16, 65:24, 69:1, 298:1</p> <p><b>communication</b> [1] - 123:23</p> <p><b>community</b> [1] - 218:21</p> <p><b>companies</b> [43] - 13:24, 14:19, 15:2, 15:14, 15:18, 16:10, 17:17, 18:2, 18:15, 19:5, 20:15, 21:21, 27:12, 27:17, 27:21, 39:1, 42:9, 52:3, 66:19, 73:19, 78:20, 87:8, 92:15, 101:25, 103:15, 103:23, 109:24, 129:3, 158:3, 186:11, 189:4, 194:21, 217:19, 218:6, 279:20, 279:24, 288:5, 290:9, 294:8, 295:19, 302:1, 306:20, 306:25</p> <p><b>companies'</b> [4] - 102:21, 293:1, 298:11, 299:1</p> <p><b>COMPANY</b> [2] - 2:11, 2:24</p> <p><b>company</b> [68] - 43:2, 67:12, 79:8, 81:2, 84:12, 84:13, 84:19, 84:20, 84:21, 87:6, 87:11, 87:17, 87:19, 87:25, 100:6, 101:4, 101:8, 101:10, 128:21, 131:8, 131:17, 140:23, 141:2, 141:4, 161:2, 183:11, 186:16, 186:18, 189:13, 189:15, 191:20, 192:20, 193:1, 193:6, 193:9, 194:25, 197:9, 197:18, 197:20, 198:25, 199:14, 204:5, 217:2, 217:6, 235:16, 247:11, 247:23, 249:3, 252:24, 253:3,</p>	<p>265:1, 275:2, 278:14, 279:19, 287:4, 289:15, 290:8, 290:23, 292:18, 293:3, 293:14, 293:16, 294:4, 294:14, 295:4, 298:16, 298:19</p> <p><b>Company</b> [16] - 1:7, 2:20, 9:12, 10:21, 11:20, 12:6, 19:15, 23:17, 26:19, 105:15, 105:19, 109:13, 153:4, 198:5, 233:22, 308:22</p> <p><b>company's</b> [10] - 195:2, 195:4, 198:24, 247:21, 261:18, 262:21, 263:7, 266:13, 279:5, 285:14</p> <p><b>comparable</b> [3] - 18:5, 164:23, 282:19</p> <p><b>comparative</b> [1] - 16:20</p> <p><b>compare</b> [3] - 156:18, 163:8, 164:3</p> <p><b>compared</b> [10] - 43:23, 60:11, 144:19, 162:9, 164:1, 171:8, 179:7, 246:8, 265:22, 266:18</p> <p><b>comparison</b> [3] - 68:10, 141:23, 171:3</p> <p><b>compete</b> [2] - 107:9, 107:12</p> <p><b>competing</b> [2] - 78:12, 271:15</p> <p><b>competition</b> [1] - 245:18</p> <p><b>competitive</b> [9] - 41:1, 52:12, 52:14, 85:3, 86:19, 101:13, 107:21, 183:4, 183:6</p> <p><b>competitiveness</b> [1] - 124:15</p> <p><b>compiled</b> [2] - 38:11, 39:5</p> <p><b>complaining</b> [1] - 196:1</p> <p><b>complaints</b> [2] - 73:4, 195:21</p> <p><b>complete</b> [9] - 17:1, 21:23, 24:15, 110:9, 112:4, 117:18, 124:3, 192:16, 215:16</p> <p><b>completed</b> [5] - 38:25, 41:20, 77:23, 174:1, 194:20</p> <p><b>completely</b> [3] - 135:7, 188:21, 221:10</p> <p><b>completion</b> [4] - 194:7, 200:14, 216:23, 247:4</p> <p><b>complex</b> [1] - 100:8</p> <p><b>complexity</b> [1] - 245:6</p> <p><b>compliance</b> [24] - 15:22, 42:12, 42:19, 98:21, 99:2, 105:18, 110:7, 111:2, 114:1, 116:6, 121:13, 137:3, 137:5, 141:2, 141:25, 142:24, 143:5, 244:20, 244:21, 245:6, 246:7, 246:11, 279:6, 281:21</p> <p><b>compliant</b> [1] - 246:4</p>	<p><b>complicated</b> [3] - 34:15, 102:1, 177:25</p> <p><b>complications</b> [1] - 192:12</p> <p><b>complied</b> [1] - 131:17</p> <p><b>comply</b> [8] - 13:6, 14:6, 18:8, 111:19, 131:8, 141:12, 142:9, 298:7</p> <p><b>complying</b> [1] - 13:17</p> <p><b>component</b> [4] - 103:19, 153:15, 153:18</p> <p><b>components</b> [4] - 33:5, 33:10, 154:17, 156:10</p> <p><b>compound</b> [1] - 47:4</p> <p><b>comprised</b> [2] - 22:2, 22:5</p> <p><b>comprises</b> [1] - 22:8</p> <p><b>compromise</b> [1] - 57:22</p> <p><b>computer</b> [3] - 36:17, 134:3, 134:8</p> <p><b>computer-generated</b> [1] - 36:17</p> <p><b>concentrated</b> [1] - 78:4</p> <p><b>concept</b> [2] - 200:8, 205:13</p> <p><b>conceptual</b> [4] - 29:24, 38:8, 41:10, 98:11</p> <p><b>concern</b> [7] - 201:17, 212:12, 285:10, 288:20, 291:4, 300:7, 306:9</p> <p><b>concerned</b> [7] - 80:5, 80:8, 188:2, 247:2, 301:14, 301:19, 302:1</p> <p><b>concerning</b> [12] - 12:13, 65:6, 73:23, 80:18, 157:14, 157:15, 197:4, 226:8, 226:14, 238:2, 248:18, 270:1</p> <p><b>concerns</b> [7] - 21:17, 72:22, 79:21, 147:17, 218:2, 274:18, 301:16</p> <p><b>conclude</b> [1] - 279:5</p> <p><b>concluded</b> [2] - 210:13, 308:25</p> <p><b>concludes</b> [1] - 275:20</p> <p><b>conclusion</b> [7] - 122:21, 122:22, 175:18, 251:9, 280:14, 286:12, 286:15</p> <p><b>conclusions</b> [5] - 71:8, 174:2, 274:6, 304:23, 308:9</p> <p><b>concrete</b> [1] - 65:10</p> <p><b>concurrent</b> [1] - 250:11</p> <p><b>concurrent's</b> [1] - 251:1</p> <p><b>concurrently</b> [1] - 248:24</p> <p><b>condition</b> [25] - 55:10, 72:22, 92:13, 103:8, 107:7, 192:6, 192:17, 192:23, 193:6, 193:12, 215:6, 215:13, 246:22, 247:11, 248:2, 248:7, 287:16, 287:18, 288:1, 288:6, 290:21, 290:22, 291:5</p>	<p><b>conditional</b> [3] - 73:20, 92:7, 246:19</p> <p><b>conditioned</b> [2] - 103:5, 248:8</p> <p><b>conditions</b> [19] - 19:17, 20:2, 44:18, 86:8, 103:9, 103:10, 103:12, 191:23, 192:5, 192:24, 199:15, 246:15, 246:17, 265:20, 279:13, 280:2, 282:2, 286:25, 287:13</p> <p><b>confer</b> [2] - 25:6, 225:7</p> <p><b>conference</b> [2] - 226:18, 307:24</p> <p><b>conferred</b> [1] - 22:17</p> <p><b>confidence</b> [1] - 95:19</p> <p><b>confirm</b> [4] - 104:21, 171:2, 234:6, 234:11</p> <p><b>confirmed</b> [1] - 118:1</p> <p><b>confusing</b> [2] - 34:25, 214:25</p> <p><b>Congress</b> [3] - 121:9, 122:4, 125:25</p> <p><b>congressional</b> [1] - 125:22</p> <p><b>conjunction</b> [1] - 250:23</p> <p><b>consensus</b> [1] - 276:15</p> <p><b>consent</b> [7] - 121:17, 132:7, 132:11, 132:23, 133:6, 133:10, 133:13</p> <p><b>consequence</b> [1] - 273:25</p> <p><b>consequences</b> [4] - 15:14, 42:8, 42:12, 301:6</p> <p><b>consequently</b> [1] - 146:10</p> <p><b>conservative</b> [4] - 17:12, 44:13, 167:25, 168:3</p> <p><b>consider</b> [12] - 16:10, 32:12, 67:18, 93:12, 179:9, 179:11, 191:22, 283:19, 284:6, 297:2, 297:12, 299:4</p> <p><b>considerably</b> [1] - 236:2</p> <p><b>consideration</b> [4] - 148:2, 206:14, 206:21, 245:19</p> <p><b>considerations</b> [2] - 204:22, 245:25</p> <p><b>considered</b> [24] - 11:5, 16:15, 31:24, 90:24, 91:12, 91:13, 91:14, 91:16, 93:6, 120:7, 136:22, 146:11, 146:15, 162:25, 172:15, 173:25, 174:11, 179:1, 180:7, 180:11, 180:14, 205:3, 211:24, 264:19</p> <p><b>considering</b> [2] - 93:6, 241:2</p> <p><b>considers</b> [2] - 93:15, 105:20</p> <p><b>consist</b> [1] - 20:10</p> <p><b>consisted</b> [1] - 27:17</p> <p><b>consistent</b> [5] - 149:2, 164:23, 177:7, 178:10, 210:15</p>
--	--	---	---

<p><b>consistently</b> [2] - 60:10, 60:20</p> <p><b>consists</b> [2] - 21:2, 105:13</p> <p><b>consolidated</b> [6] - 9:9, 9:10, 9:18, 10:19, 11:6, 308:20</p> <p><b>Consolidated</b> [1] - 11:2</p> <p><b>CONSOLIDATED</b> [1] - 1:12</p> <p><b>constitute</b> [1] - 117:10</p> <p><b>construct</b> [2] - 85:6, 88:24</p> <p><b>constructed</b> [3] - 166:8, 216:15, 244:15</p> <p><b>constructing</b> [1] - 230:7</p> <p><b>construction</b> [18] - 31:12, 38:23, 39:1, 41:24, 42:1, 74:4, 74:6, 74:17, 75:25, 84:11, 110:11, 160:21, 194:7, 194:23, 224:17, 230:5, 230:20</p> <p><b>consultant</b> [1] - 112:1</p> <p><b>consulting</b> [6] - 19:10, 29:23, 160:21, 161:2, 161:5, 161:21</p> <p><b>consumable</b> [1] - 45:24</p> <p><b>consumed</b> [1] - 90:19</p> <p><b>consumer</b> [1] - 183:13</p> <p><b>consumers</b> [1] - 299:22</p> <p><b>Cont'd</b> [1] - 3:1</p> <p><b>contain</b> [2] - 309:11, 310:11</p> <p><b>contained</b> [4] - 162:13, 165:6, 165:7, 282:8</p> <p><b>contains</b> [2] - 20:19, 105:5</p> <p><b>contemplated</b> [3] - 186:16, 197:21, 202:19</p> <p><b>contemplation</b> [1] - 190:15</p> <p><b>contentions</b> [1] - 283:4</p> <p><b>context</b> [4] - 120:12, 137:11, 210:9, 297:23</p> <p><b>contingency</b> [3] - 197:6, 295:25, 296:21</p> <p><b>contingent</b> [1] - 81:3</p> <p><b>continual</b> [1] - 105:21</p> <p><b>continuation</b> [1] - 191:8</p> <p><b>continue</b> [17] - 13:11, 44:12, 70:12, 74:23, 96:24, 190:12, 192:13, 199:9, 200:3, 226:11, 246:12, 254:8, 271:21, 276:7, 276:15, 306:9, 308:3</p> <p><b>Continued</b> [4] - 5:1, 6:1, 7:1, 8:1</p> <p><b>continued</b> [2] - 44:16, 137:3</p> <p><b>continues</b> [3] - 62:7, 191:19, 229:9</p> <p><b>CONTINUING</b> [18] - 27:15, 28:10, 33:4, 52:25, 60:25, 68:2, 81:22, 97:13, 112:13, 130:5, 139:6, 140:18, 146:19, 153:2, 202:18, 209:10, 269:23, 271:22</p> <p><b>continuing</b> [1] - 191:15</p>	<p><b>continuously</b> [1] - 83:15</p> <p><b>Contract</b> [1] - 7:3</p> <p><b>contract</b> [6] - 14:8, 31:4, 75:6, 85:9, 154:10, 234:4</p> <p><b>contracting</b> [3] - 31:10, 40:8, 40:24</p> <p><b>contractor</b> [9] - 14:12, 41:22, 84:18, 85:5, 85:7, 85:17, 86:6, 95:13</p> <p><b>contractors</b> [2] - 40:12, 84:25</p> <p><b>contracts</b> [11] - 41:15, 74:23, 74:24, 75:3, 75:7, 75:12, 75:25, 79:10, 154:7, 154:12, 155:3</p> <p><b>contradiction</b> [1] - 248:21</p> <p><b>contrary</b> [1] - 187:3</p> <p><b>contribute</b> [3] - 111:23, 126:24, 136:4</p> <p><b>contributed</b> [1] - 111:8</p> <p><b>contribution</b> [10] - 126:15, 126:23, 129:1, 134:24, 135:16, 136:4, 136:7, 144:17, 145:4, 145:19</p> <p><b>control</b> [66] - 9:14, 10:23, 13:4, 13:5, 13:9, 13:16, 26:23, 29:25, 30:25, 33:14, 33:20, 34:14, 34:25, 35:2, 35:23, 35:24, 39:10, 39:15, 39:18, 39:19, 39:22, 40:2, 70:9, 89:23, 90:9, 90:10, 90:11, 105:17, 115:1, 119:25, 120:3, 121:12, 129:11, 142:4, 142:10, 142:14, 144:19, 145:20, 172:2, 182:23, 186:14, 188:5, 193:20, 193:21, 193:22, 194:1, 194:4, 212:23, 215:4, 215:14, 221:16, 230:8, 244:17, 244:25, 245:2, 245:11, 248:25, 250:19, 261:18, 263:5, 263:20, 264:13, 298:17, 300:6, 300:18</p> <p><b>controlling</b> [1] - 35:3</p> <p><b>controls</b> [12] - 39:13, 39:14, 40:1, 48:21, 49:1, 199:10, 214:17, 248:4, 248:8, 248:24, 250:12</p> <p><b>convenience</b> [1] - 292:1</p> <p><b>conventional</b> [1] - 302:10</p> <p><b>conversation</b> [1] - 118:2</p> <p><b>Conversion</b> [2] - 7:4, 7:5</p> <p><b>conversion</b> [3] - 31:18, 91:13, 93:6</p> <p><b>converter</b> [2] - 34:19, 46:18</p> <p><b>converting</b> [1] - 166:1</p> <p><b>convince</b> [1] - 141:14</p> <p><b>convoluted</b> [1] - 259:7</p> <p><b>cooling</b> [3] - 48:2, 48:7</p>	<p><b>Cooperative</b> [1] - 157:17</p> <p><b>cop</b> [1] - 306:23</p> <p><b>cop-out</b> [1] - 306:23</p> <p><b>copies</b> [1] - 303:25</p> <p><b>copy</b> [5] - 118:10, 162:15, 206:20, 262:21, 282:13</p> <p><b>Copy</b> [1] - 7:20</p> <p><b>corollary</b> [1] - 79:14</p> <p><b>correct</b> [147] - 23:3, 25:7, 27:18, 27:19, 27:22, 27:23, 28:1, 28:5, 28:13, 28:15, 28:19, 28:20, 29:1, 29:2, 29:8, 29:11, 29:14, 29:15, 29:18, 29:19, 30:4, 30:7, 30:16, 30:17, 30:20, 31:3, 31:16, 31:19, 32:6, 32:18, 32:22, 36:7, 36:8, 43:4, 43:5, 43:25, 44:1, 45:7, 45:8, 46:7, 47:7, 47:8, 47:11, 47:12, 51:3, 51:4, 51:9, 51:10, 51:12, 51:13, 53:5, 53:6, 54:11, 57:10, 60:6, 61:6, 61:7, 62:17, 68:14, 72:2, 72:13, 72:14, 76:25, 77:1, 77:5, 77:6, 77:14, 77:15, 78:22, 78:23, 82:1, 98:1, 106:1, 106:2, 110:1, 110:2, 112:23, 114:13, 114:14, 114:17, 114:18, 116:15, 116:16, 118:14, 118:20, 128:12, 128:14, 133:23, 133:24, 144:4, 144:9, 144:10, 144:21, 144:22, 145:15, 145:16, 147:20, 148:17, 148:20, 148:21, 150:18, 158:22, 162:14, 164:8, 165:6, 166:17, 170:8, 171:5, 171:10, 174:14, 174:15, 174:19, 174:20, 186:8, 197:1, 197:2, 227:8, 231:5, 236:20, 238:19, 239:22, 240:18, 241:16, 243:21, 243:22, 243:24, 243:25, 250:13, 255:11, 258:10, 261:24, 262:19, 268:9, 269:15, 272:1, 272:4, 273:17, 275:22, 281:9, 281:19, 282:7, 282:12, 282:20, 284:24, 287:20, 291:2, 307:14</p> <p><b>correction</b> [1] - 74:15</p> <p><b>correctly</b> [9] - 46:5, 50:20, 150:6, 150:7, 150:16, 152:19, 214:23, 249:18, 250:10</p> <p><b>correspond</b> [1] - 144:6</p> <p><b>cost</b> [224] - 13:23, 14:1, 15:17, 16:5, 16:7, 16:22, 16:23, 17:3, 17:7, 17:8,</p>	<p>17:9, 17:15, 17:19, 17:24, 30:6, 30:10, 30:12, 30:19, 30:23, 31:5, 31:14, 32:3, 32:15, 35:20, 35:25, 37:24, 38:2, 38:13, 38:18, 38:20, 38:24, 38:25, 39:2, 39:3, 39:5, 39:7, 40:5, 41:2, 42:12, 42:13, 42:15, 42:17, 42:18, 43:19, 43:21, 45:19, 46:4, 46:13, 46:22, 50:7, 50:8, 50:24, 52:22, 53:21, 56:16, 56:20, 56:21, 56:22, 56:23, 57:3, 57:4, 59:11, 59:12, 60:9, 60:20, 60:22, 64:3, 64:6, 68:3, 69:16, 69:17, 70:19, 71:2, 71:18, 73:21, 89:9, 92:12, 93:17, 94:5, 96:3, 97:21, 99:25, 100:1, 105:18, 106:20, 107:25, 124:23, 125:7, 146:8, 149:25, 153:12, 156:5, 156:16, 156:17, 162:8, 162:22, 162:23, 163:1, 163:2, 163:11, 163:19, 163:24, 164:25, 165:2, 165:18, 166:5, 166:11, 167:3, 167:10, 167:12, 168:9, 168:12, 168:20, 170:2, 170:3, 170:10, 170:15, 170:16, 170:18, 170:24, 171:4, 171:6, 171:14, 171:19, 171:20, 171:23, 172:1, 172:4, 172:6, 172:11, 172:14, 172:16, 173:9, 173:14, 174:5, 174:7, 174:9, 174:12, 175:20, 175:22, 175:24, 176:24, 177:2, 177:12, 178:14, 178:22, 182:22, 183:5, 183:13, 187:22, 189:21, 189:22, 191:5, 191:14, 192:14, 192:19, 192:20, 193:8, 194:4, 195:18, 196:1, 199:16, 200:13, 204:20, 211:10, 212:2, 212:7, 217:1, 219:18, 222:8, 235:6, 235:9, 235:19, 236:5, 237:8, 237:16, 239:12, 239:15, 244:12, 245:19, 246:8, 247:10, 247:19, 247:20, 248:1, 249:4, 249:20, 255:5, 255:9, 255:24, 256:2, 256:3, 258:11, 263:6, 263:18, 263:21, 264:2, 264:15, 266:13, 267:14, 270:3, 270:17, 271:4, 271:7, 271:8, 271:18, 279:8, 279:18, 283:5, 283:16, 283:20,</p>
--	--	--	---

<p>284:2, 293:5, 293:23, 298:22, 299:7, 299:19, 299:23, 300:13 <b>Cost</b> [5] - 6:19, 6:20, 6:22, 6:24, 7:3 <b>cost-effective</b> [7] - 31:14, 35:20, 35:25, 50:24, 89:9, 96:3, 106:20 <b>cost-effectiveness</b> [2] - 50:7, 146:8 <b>cost-saving</b> [1] - 124:23 <b>costing</b> [1] - 301:23 <b>costly</b> [3] - 34:15, 42:25, 259:7 <b>costs</b> [82] - 18:4, 40:22, 45:23, 57:5, 74:4, 74:6, 75:14, 76:20, 89:23, 92:17, 93:15, 93:16, 93:18, 93:19, 101:16, 107:21, 107:23, 149:25, 150:2, 153:16, 154:2, 158:1, 158:4, 163:3, 163:13, 165:15, 165:20, 166:1, 166:2, 166:3, 166:8, 167:4, 170:20, 173:7, 173:23, 173:24, 174:6, 175:23, 175:25, 176:12, 178:19, 181:1, 181:22, 182:4, 182:20, 189:19, 193:4, 203:24, 214:19, 219:14, 220:6, 235:4, 236:1, 238:22, 239:3, 239:5, 239:16, 240:7, 240:23, 241:3, 246:2, 247:8, 247:13, 247:22, 248:3, 248:25, 251:6, 253:4, 263:13, 263:14, 264:9, 264:16, 264:19, 271:12, 279:17, 282:19, 284:9, 284:12, 292:23, 300:12 <b>Counsel</b> [4] - 2:14, 2:21, 3:3, 3:10 <b>counsel</b> [17] - 11:8, 22:17, 25:6, 25:11, 27:3, 81:14, 111:12, 225:1, 225:7, 225:14, 226:3, 226:18, 303:21, 307:20, 308:7, 308:15, 308:18 <b>counsel's</b> [1] - 206:16 <b>countless</b> [1] - 260:14 <b>country</b> [9] - 14:6, 18:6, 38:18, 96:13, 157:13, 176:15, 180:25, 182:10, 274:19 <b>couple</b> [13] - 9:24, 76:21, 97:20, 128:15, 137:25, 157:16, 171:12, 175:21, 214:11, 220:19, 220:24, 289:4, 297:16 <b>course</b> [33] - 12:17, 12:18,</p>	<p>21:2, 36:16, 42:18, 42:19, 52:1, 52:4, 71:4, 71:7, 71:9, 75:3, 76:22, 79:16, 92:25, 95:4, 103:8, 104:4, 122:7, 122:9, 128:11, 130:17, 147:16, 197:3, 215:19, 221:3, 229:8, 239:1, 244:6, 268:7, 289:21, 308:7 <b>COURT</b> [2] - 309:1, 310:1 <b>Court</b> [1] - 121:17 <b>court</b> [4] - 132:12, 132:20, 133:14, 277:1 <b>cover</b> [8] - 14:2, 15:19, 16:21, 79:10, 79:12, 142:25, 198:3, 204:2 <b>coverage</b> [1] - 192:18 <b>covered</b> [2] - 97:19, 136:18 <b>covers</b> [3] - 105:1, 115:6, 115:8 <b>Coyote</b> [45] - 25:10, 33:17, 47:7, 47:14, 47:17, 47:23, 48:4, 48:16, 48:22, 49:2, 49:10, 49:13, 51:7, 51:8, 52:2, 58:16, 58:20, 59:9, 60:1, 60:10, 60:14, 60:19, 60:22, 63:12, 80:18, 80:25, 81:25, 82:5, 82:7, 82:12, 82:13, 83:2, 83:16, 88:7, 88:16, 190:13, 197:4, 197:6, 198:7, 216:10, 216:15, 216:19, 216:25, 273:15 <b>coyote's</b> [1] - 58:24 <b>Coyote's</b> [3] - 59:6, 59:10 <b>CPCN</b> [1] - 292:1 <b>craft</b> [3] - 245:15, 249:25, 250:5 <b>CRAMER</b> [23] - 2:4, 10:3, 94:24, 95:2, 97:2, 97:11, 141:20, 143:10, 202:16, 208:21, 214:10, 220:12, 258:6, 258:13, 259:14, 259:22, 273:23, 275:8, 277:6, 297:16, 297:18, 302:13, 305:20 <b>Cramer</b> [16] - 4:9, 4:17, 5:5, 5:16, 5:18, 5:21, 6:6, 10:2, 94:23, 141:18, 214:8, 258:4, 259:12, 273:21, 297:15, 305:19 <b>craziest</b> [1] - 259:20 <b>crazy</b> [1] - 259:17 <b>create</b> [2] - 40:20, 212:14 <b>credibility</b> [1] - 97:17 <b>credit</b> [6] - 44:7, 44:12, 72:12, 73:15, 167:14, 274:13 <b>credits</b> [2] - 266:16, 275:4 <b>criteria</b> [1] - 146:6</p>	<p><b>critical</b> [1] - 216:6 <b>critique</b> [1] - 177:21 <b>cross</b> [15] - 40:18, 44:22, 91:11, 119:12, 141:24, 142:4, 142:9, 154:21, 179:15, 196:16, 197:1, 237:18, 248:12, 276:3, 280:24 <b>Cross</b> [12] - 4:8, 4:10, 4:15, 4:21, 4:24, 5:3, 5:4, 5:12, 5:14, 5:15, 5:20, 6:4 <b>CROSS</b> [12] - 45:1, 102:14, 119:15, 155:1, 179:23, 196:22, 198:22, 237:21, 248:15, 252:1, 268:5, 281:1 <b>Cross-examination</b> [12] - 4:8, 4:10, 4:15, 4:21, 4:24, 5:3, 5:4, 5:12, 5:14, 5:15, 5:20, 6:4 <b>cross-examination</b> [9] - 44:22, 119:12, 154:21, 179:15, 196:16, 197:1, 237:18, 248:12, 280:24 <b>CROSS-EXAMINATION</b> [12] - 45:1, 102:14, 119:15, 155:1, 179:23, 196:22, 198:22, 237:21, 248:15, 252:1, 268:5, 281:1 <b>cross-state</b> [3] - 141:24, 142:4, 142:9 <b>crowd</b> [1] - 307:10 <b>cruise</b> [5] - 59:5, 59:17, 59:19, 83:6 <b>crystal</b> [1] - 58:8 <b>CSAPR</b> [4] - 40:19, 58:3, 142:21, 142:22 <b>CTs</b> [1] - 256:4 <b>Cure</b> [1] - 213:14 <b>curiosity</b> [3] - 72:11, 80:22, 130:17 <b>curious</b> [4] - 140:24, 147:18, 197:5, 272:10 <b>current</b> [23] - 35:1, 40:25, 44:17, 109:14, 122:20, 161:3, 161:4, 161:16, 189:7, 190:11, 192:20, 210:14, 230:16, 233:21, 243:9, 247:10, 247:21, 285:16, 286:13, 286:20, 286:24, 287:6, 287:7 <b>curve</b> [1] - 55:14 <b>cushion</b> [1] - 125:9 <b>customer</b> [5] - 14:22, 234:4, 263:15, 265:7, 270:13 <b>customers</b> [23] - 15:15, 15:18, 41:5, 52:14, 101:15, 196:1, 196:5, 196:10, 198:10, 201:18, 235:17, 244:12, 246:6, 246:13,</p>	<p>252:11, 252:18, 252:24, 254:5, 255:12, 257:13, 265:10, 267:14, 269:10 <b>customers'</b> [3] - 265:13, 265:15, 272:18 <b>cut</b> [1] - 211:16 <b>cutoff</b> [1] - 49:14 <b>cycle</b> [32] - 16:18, 16:19, 17:5, 43:12, 43:13, 91:8, 91:9, 106:19, 164:11, 164:12, 166:6, 166:24, 167:1, 167:5, 167:6, 167:10, 167:11, 167:15, 167:16, 168:10, 168:11, 168:13, 169:1, 169:10, 170:15, 171:9, 171:17, 171:18, 179:11, 256:3, 256:4 <b>cycles</b> [1] - 64:5 <b>cycling</b> [5] - 169:3, 269:24, 270:4, 271:4, 271:10 <b>cyclone</b> [2] - 96:17, 96:22 <b>cyclone-fired</b> [1] - 96:17</p> <hr/> <p style="text-align: center;"><b>D</b></p> <hr/> <p><b>D-r-a-x-t-e-n</b> [1] - 233:20 <b>D.C</b> [1] - 121:17 <b>daily</b> [1] - 60:4 <b>DAKOTA</b> [3] - 1:2, 2:10, 2:17 <b>Dakota</b> [195] - 1:5, 1:18, 2:16, 3:5, 3:11, 7:8, 7:11, 7:19, 9:8, 9:11, 9:16, 10:16, 10:20, 10:24, 11:17, 12:5, 13:5, 13:6, 13:16, 13:21, 14:20, 14:22, 15:25, 18:6, 19:25, 26:2, 29:1, 29:9, 33:13, 33:18, 34:7, 39:16, 42:20, 46:3, 49:12, 49:19, 50:9, 50:11, 50:16, 51:1, 62:8, 69:8, 73:23, 75:9, 76:1, 88:20, 89:3, 89:6, 95:24, 96:7, 96:19, 97:25, 98:1, 104:15, 104:22, 108:21, 110:13, 110:19, 113:6, 113:7, 113:10, 113:12, 113:13, 113:25, 114:8, 114:9, 114:16, 114:23, 114:24, 115:24, 116:2, 116:7, 116:14, 116:18, 117:13, 117:19, 119:2, 119:22, 121:20, 122:18, 123:1, 123:5, 123:8, 123:13, 124:13, 126:7, 127:7, 127:9, 127:16, 128:8, 134:1, 134:6, 134:7, 134:15, 138:4, 142:5, 146:21, 147:11, 147:19, 149:5, 149:12, 151:25, 159:25,</p>
--	---	---	---

<p>180:12, 184:16, 186:4, 186:22, 186:23, 188:8, 188:12, 191:7, 191:25, 192:8, 198:6, 198:7, 199:7, 206:19, 210:11, 211:22, 212:10, 212:16, 222:20, 222:22, 222:24, 223:2, 223:3, 223:4, 223:10, 223:11, 223:15, 223:16, 223:19, 224:8, 229:6, 229:21, 230:3, 230:6, 230:11, 230:23, 231:2, 231:17, 232:5, 233:4, 234:16, 242:11, 242:18, 243:10, 243:24, 244:5, 244:24, 245:4, 246:9, 246:20, 246:22, 247:2, 247:10, 248:2, 248:6, 252:19, 255:24, 260:19, 261:12, 261:14, 262:6, 262:14, 264:22, 265:3, 266:8, 266:11, 277:21, 279:15, 282:1, 282:8, 282:10, 283:21, 287:17, 287:25, 292:8, 296:1, 297:23, 298:15, 298:23, 299:11, 299:18, 299:24, 300:7, 300:8, 300:20, 300:21, 301:1, 308:21, 309:13, 310:13</p> <p><b>Dakota's</b> [15] - 8:3, 32:20, 146:7, 207:19, 244:9, 263:3, 264:6, 264:9, 265:12, 265:18, 265:24, 266:4, 266:6, 279:7, 297:25</p> <p><b>Dakotas</b> [1] - 61:10</p> <p><b>Dan</b> [1] - 11:15</p> <p><b>DANIEL</b> [1] - 2:13</p> <p><b>Darcy</b> [5] - 8:10, 20:4, 260:12, 261:10, 273:13</p> <p><b>DARCY</b> [2] - 5:19, 261:1</p> <p><b>dash</b> [1] - 144:7</p> <p><b>data</b> [6] - 128:1, 171:19, 172:4, 274:5, 283:23, 298:12</p> <p><b>database</b> [1] - 38:15</p> <p><b>date</b> [5] - 10:17, 42:22, 49:14, 227:6, 227:11</p> <p><b>Dated</b> [2] - 309:13, 310:13</p> <p><b>dated</b> [2] - 11:3, 175:15</p> <p><b>day-to-day</b> [2] - 56:17, 261:17</p> <p><b>days</b> [4] - 9:24, 97:14, 220:20, 307:14</p> <p><b>days'</b> [1] - 157:8</p> <p><b>dead</b> [1] - 257:4</p> <p><b>deadline</b> [2] - 13:17, 15:22</p> <p><b>deal</b> [8] - 91:10, 132:20, 178:1, 214:21, 218:22,</p>	<p>221:1, 224:19, 270:8</p> <p><b>dealing</b> [3] - 137:11, 298:1, 300:5</p> <p><b>deals</b> [2] - 67:10, 270:3</p> <p><b>dealt</b> [1] - 300:19</p> <p><b>December</b> [9] - 39:21, 153:20, 195:25, 205:24, 206:2, 227:8, 227:16, 309:14, 310:14</p> <p><b>decide</b> [8] - 101:24, 199:2, 199:3, 200:2, 241:2, 252:5, 257:19, 295:1</p> <p><b>decided</b> [3] - 124:5, 207:23, 298:13</p> <p><b>decision</b> [44] - 7:21, 52:23, 93:4, 102:19, 123:18, 123:20, 124:1, 124:6, 127:3, 149:11, 157:20, 157:21, 167:24, 199:8, 200:21, 201:4, 202:21, 203:20, 205:21, 206:6, 206:7, 207:18, 207:20, 208:4, 209:6, 209:13, 209:15, 209:20, 213:24, 218:13, 218:15, 227:4, 227:19, 252:15, 252:16, 259:3, 289:20, 294:5, 297:25, 299:13, 300:9, 300:21, 300:24</p> <p><b>decisionmaking</b> [3] - 93:9, 114:25, 123:22</p> <p><b>decisions</b> [5] - 103:22, 198:9, 198:11, 267:19, 306:18</p> <p><b>deciview</b> [5] - 145:8, 145:9, 145:18, 146:1, 146:6</p> <p><b>deciviews</b> [3] - 127:1, 145:5, 149:7</p> <p><b>declared</b> [1] - 101:3</p> <p><b>decline</b> [1] - 55:17</p> <p><b>declining</b> [1] - 258:22</p> <p><b>decommissioned</b> [1] - 182:15</p> <p><b>decommissioning</b> [4] - 166:5, 166:9, 182:7, 183:3</p> <p><b>decrease</b> [3] - 172:13, 173:17, 238:5</p> <p><b>decreased</b> [2] - 175:14, 175:16</p> <p><b>decreasing</b> [1] - 173:24</p> <p><b>decree</b> [5] - 121:17, 132:8, 133:6, 133:10, 133:13</p> <p><b>decrees</b> [1] - 132:23</p> <p><b>deed</b> [1] - 300:3</p> <p><b>deem</b> [3] - 258:21, 259:17, 281:24</p> <p><b>deemed</b> [4] - 121:12, 172:3, 259:2, 299:6</p> <p><b>deeper</b> [1] - 306:6</p> <p><b>define</b> [3] - 228:22, 239:11,</p>	<p>288:3</p> <p><b>defining</b> [1] - 98:3</p> <p><b>definitely</b> [4] - 61:12, 63:17, 241:1, 297:1</p> <p><b>definition</b> [1] - 145:11</p> <p><b>degree</b> [10] - 64:24, 93:5, 132:24, 136:16, 143:5, 201:16, 212:15, 219:22, 223:15, 291:15</p> <p><b>degrees</b> [1] - 56:5</p> <p><b>delay</b> [8] - 42:15, 42:16, 76:20, 92:10, 93:1, 246:23, 247:3, 247:4</p> <p><b>delayed</b> [1] - 194:14</p> <p><b>delays</b> [1] - 217:14</p> <p><b>deliberately</b> [1] - 297:24</p> <p><b>deliver</b> [1] - 31:11</p> <p><b>delivered</b> [6] - 153:9, 153:12, 153:14, 153:22, 155:8, 155:9</p> <p><b>delivery</b> [5] - 40:24, 48:17, 60:23, 86:10, 295:15</p> <p><b>demand</b> [15] - 40:20, 56:3, 56:5, 58:4, 64:8, 78:5, 78:24, 81:24, 82:11, 83:9, 86:22, 238:6, 263:7, 263:16, 268:17</p> <p><b>demands</b> [1] - 60:5</p> <p><b>demonstrate</b> [1] - 193:3</p> <p><b>demonstrated</b> [1] - 147:25</p> <p><b>denial</b> [2] - 92:14, 188:23</p> <p><b>denied</b> [6] - 15:12, 102:18, 102:22, 103:17, 103:21, 187:12</p> <p><b>Denise</b> [2] - 309:3, 309:17</p> <p><b>Dennis</b> [1] - 217:4</p> <p><b>DENR</b> [13] - 105:20, 123:5, 123:13, 124:2, 127:9, 128:8, 146:8, 149:5, 210:11, 224:7, 298:23, 299:1</p> <p><b>DENR's</b> [3] - 120:14, 131:15, 149:5</p> <p><b>deny</b> [1] - 188:19</p> <p><b>denying</b> [1] - 300:11</p> <p><b>department</b> [2] - 19:10, 161:6</p> <p><b>Department</b> [29] - 3:4, 3:11, 18:6, 48:25, 49:20, 49:22, 50:2, 50:9, 50:13, 69:10, 69:18, 71:14, 71:15, 72:1, 88:22, 89:13, 105:24, 106:4, 123:2, 123:7, 146:21, 147:12, 147:20, 203:16, 203:23, 205:18, 212:6, 230:6, 245:4</p> <p><b>department's</b> [1] - 205:6</p> <p><b>departments</b> [1] - 243:14</p> <p><b>dependent</b> [4] - 17:21, 61:19, 65:1, 86:3</p>	<p><b>depreciation</b> [1] - 170:11</p> <p><b>deriving</b> [1] - 68:9</p> <p><b>describe</b> [32] - 29:20, 30:8, 30:21, 31:7, 31:20, 32:23, 32:25, 33:5, 41:6, 43:6, 63:24, 86:14, 109:16, 114:19, 115:13, 115:25, 137:7, 144:17, 161:8, 161:15, 162:19, 163:11, 164:14, 167:19, 169:18, 172:23, 189:6, 198:25, 235:18, 243:12, 261:15, 262:10</p> <p><b>described</b> [1] - 240:12</p> <p><b>describes</b> [1] - 262:14</p> <p><b>description</b> [5] - 28:4, 36:6, 138:20, 138:25, 139:2</p> <p><b>Description</b> [4] - 6:9, 6:11, 7:2, 8:2</p> <p><b>descriptions</b> [2] - 139:9, 237:2</p> <p><b>deserved</b> [2] - 102:24, 126:1</p> <p><b>design</b> [13] - 29:25, 35:9, 37:6, 38:8, 38:10, 41:11, 63:20, 74:9, 74:14, 98:10, 98:11, 160:21, 245:16</p> <p><b>designated</b> [1] - 9:6</p> <p><b>designation</b> [2] - 102:24, 143:24</p> <p><b>designed</b> [6] - 63:5, 63:8, 63:10, 63:12, 70:5, 126:19</p> <p><b>designing</b> [1] - 53:13</p> <p><b>desire</b> [1] - 208:12</p> <p><b>despite</b> [1] - 280:12</p> <p><b>destroy</b> [1] - 34:22</p> <p><b>desulfurization</b> [1] - 230:16</p> <p><b>detail</b> [7] - 14:15, 43:7, 49:5, 87:10, 213:8, 240:14, 290:4</p> <p><b>detailed</b> [5] - 30:12, 38:20, 41:17, 74:9, 128:2</p> <p><b>detailing</b> [1] - 224:13</p> <p><b>details</b> [2] - 68:5, 280:10</p> <p><b>detect</b> [2] - 135:7, 145:12</p> <p><b>Determination</b> [4] - 1:6, 1:8, 7:24, 8:8</p> <p><b>determination</b> [69] - 9:13, 10:22, 13:3, 15:9, 49:23, 66:14, 66:17, 66:24, 71:6, 71:20, 81:6, 89:16, 100:16, 100:19, 101:18, 103:4, 103:16, 103:22, 110:7, 120:4, 120:15, 128:16, 128:25, 129:4, 155:17, 183:10, 183:12, 183:17, 186:18, 187:7, 187:21, 188:17, 188:19, 188:24, 192:7, 197:11, 198:2, 199:23, 199:25, 200:8, 200:12, 203:11, 203:13,</p>
---	--	---	--

<p>203:22, 204:1, 204:12, 204:13, 205:13, 214:16, 215:2, 215:10, 216:13, 216:18, 217:18, 219:13, 223:17, 245:23, 246:19, 246:24, 247:8, 247:12, 256:13, 289:16, 291:18, 291:22, 292:3, 292:14, 294:7, 308:23</p> <p><b>determinations</b> [1] - 222:2</p> <p><b>determine</b> [13] - 32:15, 125:18, 125:20, 126:20, 129:8, 134:16, 162:8, 188:5, 219:12, 265:17, 274:2, 293:7, 301:10</p> <p><b>determined</b> [9] - 11:5, 111:7, 126:14, 127:7, 134:23, 153:11, 166:23, 210:23, 247:17</p> <p><b>determines</b> [2] - 267:23, 293:10</p> <p><b>determining</b> [6] - 187:1, 218:11, 240:1, 267:4, 267:8</p> <p><b>detriment</b> [1] - 253:3</p> <p><b>Deuteronomy</b> [1] - 10:6</p> <p><b>develop</b> [3] - 111:13, 116:2, 266:2</p> <p><b>developed</b> [9] - 38:2, 165:19, 166:19, 167:22, 167:23, 168:9, 257:5, 263:6, 265:21</p> <p><b>development</b> [10] - 18:17, 19:9, 26:22, 110:7, 116:10, 116:11, 161:5, 161:23, 162:1, 286:17</p> <p><b>developments</b> [1] - 76:14</p> <p><b>device</b> [3] - 33:14, 34:14, 35:2</p> <p><b>devices</b> [1] - 35:23</p> <p><b>devising</b> [1] - 291:4</p> <p><b>differ</b> [1] - 84:7</p> <p><b>differed</b> [1] - 264:7</p> <p><b>difference</b> [17] - 47:23, 48:1, 60:19, 83:13, 83:18, 87:3, 88:14, 135:8, 135:12, 136:8, 136:13, 150:7, 150:9, 150:15, 200:12, 249:6, 288:2</p> <p><b>differences</b> [9] - 45:19, 47:19, 47:21, 48:9, 51:6, 88:13, 89:11, 134:12, 270:8</p> <p><b>different</b> [45] - 17:18, 36:13, 48:12, 48:15, 71:6, 76:14, 76:17, 82:15, 86:10, 86:11, 87:23, 88:1, 88:2, 89:4, 95:22, 98:2, 107:13, 122:21, 137:10, 147:1, 173:1, 181:6, 182:15,</p>	<p>182:16, 205:8, 207:15, 209:12, 212:25, 223:3, 223:16, 240:5, 249:5, 249:14, 255:3, 256:18, 259:3, 284:9, 287:18, 291:21, 297:6, 298:17, 302:9, 302:11, 307:22</p> <p><b>differential</b> [2] - 58:20, 82:11</p> <p><b>differentiation</b> [10] - 46:13, 51:7, 52:4, 55:22, 65:7, 66:25, 82:5, 82:18, 83:9, 251:5</p> <p><b>differs</b> [1] - 142:21</p> <p><b>difficult</b> [11] - 69:3, 69:6, 78:15, 141:13, 189:17, 217:7, 219:8, 249:24, 258:23, 296:11, 297:2</p> <p><b>difficulty</b> [1] - 300:5</p> <p><b>dig</b> [1] - 306:5</p> <p><b>digits</b> [1] - 149:8</p> <p><b>dilemma</b> [1] - 219:5</p> <p><b>diligence</b> [1] - 162:2</p> <p><b>dioxide</b> [2] - 33:12, 244:16</p> <p><b>direct</b> [5] - 62:22, 176:3, 276:14, 280:12, 281:14</p> <p><b>Direct</b> [9] - 4:8, 4:15, 4:21, 4:23, 5:3, 5:11, 5:14, 5:20, 6:4</p> <p><b>DIRECT</b> [9] - 26:11, 109:5, 152:10, 160:9, 185:1, 233:13, 243:4, 261:4, 278:6</p> <p><b>directed</b> [1] - 180:10</p> <p><b>direction</b> [3] - 61:22, 127:18, 135:23</p> <p><b>directions</b> [1] - 9:20</p> <p><b>directly</b> [11] - 36:24, 37:16, 43:23, 46:16, 163:8, 164:1, 164:3, 164:22, 165:14, 172:7, 290:16</p> <p><b>directs</b> [1] - 34:11</p> <p><b>disagreed</b> [1] - 212:6</p> <p><b>disagreement</b> [1] - 49:19</p> <p><b>disappear</b> [1] - 188:22</p> <p><b>disappointed</b> [1] - 123:20</p> <p><b>discharge</b> [2] - 48:3, 48:8</p> <p><b>disclaim</b> [1] - 72:18</p> <p><b>discount</b> [2] - 163:15, 165:1</p> <p><b>discovery</b> [2] - 22:7, 249:2</p> <p><b>discretion</b> [2] - 71:23, 304:16</p> <p><b>discuss</b> [7] - 14:15, 27:9, 44:5, 186:12, 280:17, 305:10, 305:15</p> <p><b>discussed</b> [7] - 64:7, 78:17, 80:12, 147:11, 240:7, 264:5, 295:24</p> <p><b>discussing</b> [2] - 125:16, 158:13</p> <p><b>discussion</b> [6] - 28:11, 87:1,</p>	<p>123:24, 129:21, 254:7, 271:3</p> <p><b>discussions</b> [8] - 72:10, 79:21, 80:15, 80:18, 80:19, 92:6, 217:6, 217:19</p> <p><b>dismissed</b> [1] - 91:16</p> <p><b>dispatch</b> [9] - 53:18, 54:12, 56:14, 87:12, 167:9, 267:9, 267:23, 269:12, 271:24</p> <p><b>dispatchable</b> [2] - 53:2, 301:9</p> <p><b>dispatched</b> [6] - 56:22, 57:2, 60:6, 62:23, 167:16, 270:13</p> <p><b>dispatches</b> [2] - 87:6, 269:4</p> <p><b>dispatching</b> [2] - 167:15, 268:24</p> <p><b>disposal</b> [1] - 230:17</p> <p><b>dispose</b> [1] - 188:12</p> <p><b>dispute</b> [3] - 133:25, 134:5, 134:15</p> <p><b>distinct</b> [1] - 21:19</p> <p><b>distinction</b> [3] - 207:16, 215:22, 289:5</p> <p><b>distinguish</b> [1] - 64:20</p> <p><b>distinguishing</b> [2] - 37:1, 96:16</p> <p><b>distribute</b> [1] - 304:1</p> <p><b>distributed</b> [1] - 27:2</p> <p><b>distribution</b> [1] - 160:23</p> <p><b>disturbances</b> [1] - 302:8</p> <p><b>diversity</b> [1] - 244:11</p> <p><b>Divide</b> [1] - 2:15</p> <p><b>division</b> [2] - 19:11, 161:7</p> <p><b>DO</b> [4] - 309:5, 309:9, 310:5, 310:9</p> <p><b>DOC</b> [2] - 92:20, 209:12</p> <p><b>docket</b> [1] - 138:7</p> <p><b>document</b> [39] - 27:1, 27:11, 28:16, 29:21, 30:3, 30:5, 30:8, 30:9, 30:18, 30:21, 30:22, 31:4, 31:7, 31:9, 31:17, 31:21, 32:7, 32:10, 32:16, 32:19, 32:23, 44:2, 100:7, 104:14, 104:19, 114:20, 114:21, 115:10, 115:14, 115:23, 115:25, 118:12, 118:19, 143:21, 234:11, 234:24, 262:11, 288:19, 307:8</p> <p><b>documents</b> [5] - 20:14, 22:6, 27:17, 140:1, 303:12</p> <p><b>dog</b> [1] - 306:4</p> <p><b>dollar</b> [2] - 168:12, 289:10</p> <p><b>dollars</b> [22] - 13:24, 73:3, 176:16, 176:25, 177:3, 177:19, 178:4, 200:11, 200:15, 201:5, 201:9, 217:8, 217:22, 255:15, 264:17, 264:19, 287:19,</p>	<p>289:25, 290:1, 290:2, 290:13</p> <p><b>done</b> [47] - 13:19, 17:12, 29:22, 38:7, 38:12, 38:13, 38:16, 39:15, 40:4, 41:10, 44:19, 73:12, 74:12, 84:15, 85:20, 90:11, 93:13, 96:12, 119:22, 124:4, 127:17, 127:19, 129:7, 156:13, 159:12, 182:12, 184:11, 187:4, 189:22, 200:18, 201:2, 201:15, 208:7, 218:6, 242:13, 249:22, 251:12, 255:21, 272:25, 283:8, 285:20, 290:17, 293:12, 302:23, 307:23, 308:4</p> <p><b>doors</b> [1] - 132:19</p> <p><b>Dorsey</b> [2] - 2:7, 11:12</p> <p><b>dotted</b> [1] - 288:18</p> <p><b>double</b> [1] - 35:12</p> <p><b>doubtful</b> [1] - 78:10</p> <p><b>down</b> [49] - 30:11, 56:7, 63:25, 64:5, 64:12, 64:21, 65:18, 65:20, 68:9, 74:3, 79:2, 88:11, 90:23, 91:22, 99:6, 107:6, 107:8, 135:6, 141:1, 168:20, 169:3, 170:14, 181:4, 212:13, 213:3, 213:21, 219:3, 219:12, 221:5, 221:8, 250:1, 253:18, 255:16, 255:23, 256:21, 267:5, 267:12, 268:20, 269:8, 274:9, 285:18, 285:20, 286:3, 286:5, 295:22, 300:23, 302:5</p> <p><b>draft</b> [3] - 117:23, 120:4, 211:3</p> <p><b>drag</b> [2] - 238:14, 239:7</p> <p><b>drain</b> [1] - 219:3</p> <p><b>drastic</b> [1] - 182:2</p> <p><b>draw</b> [1] - 274:5</p> <p><b>drawing</b> [3] - 37:13, 47:1, 268:20</p> <p><b>drawings</b> [1] - 48:11</p> <p><b>DRAXTEN</b> [2] - 5:10, 233:10</p> <p><b>Draxten</b> [11] - 19:21, 67:25, 124:21, 124:22, 232:19, 232:24, 233:20, 236:16, 237:23, 242:8, 268:11</p> <p><b>drew</b> [1] - 284:2</p> <p><b>drilling</b> [1] - 211:10</p> <p><b>drive</b> [6] - 42:15, 66:5, 99:11, 176:3, 181:22, 245:13</p> <p><b>driven</b> [1] - 286:19</p> <p><b>drivers</b> [1] - 60:18</p> <p><b>drives</b> [2] - 107:20, 107:23</p> <p><b>driving</b> [1] - 70:3</p> <p><b>dropped</b> [1] - 295:11</p>
--	--	---	---

<p><b>drops</b> [1] - 55:15  <b>drove</b> [1] - 69:24  <b>dry</b> [13] - 33:14, 33:16, 33:21, 33:22, 33:23, 33:24, 34:2, 34:3, 34:4, 70:22, 70:23, 92:2  <b>dryer</b> [1] - 71:1  <b>due</b> [7] - 77:4, 83:14, 104:4, 162:2, 266:19, 268:17, 274:14  <b>duly</b> [11] - 10:18, 26:7, 109:2, 152:8, 160:7, 184:24, 229:14, 233:11, 243:2, 261:2, 278:4  <b>duplication</b> [1] - 306:2  <b>during</b> [15] - 12:8, 12:14, 40:22, 58:17, 61:5, 90:25, 91:11, 112:6, 155:18, 195:24, 211:16, 226:10, 226:18, 286:6, 288:21  <b>dynamic</b> [1] - 73:6  <b>dynamics</b> [4] - 128:16, 129:23, 130:7, 216:8</p>	<p>101:12, 107:12, 107:15, 221:20  <b>edge</b> [2] - 145:9, 183:5  <b>educational</b> [1] - 161:9  <b>effect</b> [23] - 52:17, 75:17, 89:17, 93:2, 99:10, 125:9, 136:17, 137:13, 157:9, 178:6, 203:5, 270:6, 270:7, 270:11, 270:25, 271:4, 271:5, 273:2, 275:6, 286:18, 293:11  <b>effective</b> [10] - 31:14, 35:20, 35:25, 50:24, 89:9, 96:3, 106:20, 182:22, 191:24, 246:8  <b>effectiveness</b> [3] - 50:7, 123:3, 146:8  <b>effects</b> [6] - 63:25, 270:20, 272:8, 272:12, 274:8, 274:9  <b>efficiencies</b> [5] - 125:12, 248:23, 249:17, 250:3, 250:8  <b>efficiency</b> [6] - 90:22, 98:15, 168:16, 263:16, 305:22, 306:1  <b>efficiency's</b> [1] - 308:13  <b>efficient</b> [4] - 50:22, 82:7, 169:6, 183:4  <b>efficiently</b> [1] - 15:4  <b>effort</b> [3] - 65:15, 140:20, 141:3  <b>efforts</b> [2] - 69:20, 123:14  <b>eight</b> [2] - 85:13, 172:20  <b>either</b> [21] - 12:7, 12:11, 72:20, 76:4, 80:23, 115:18, 126:15, 130:14, 136:16, 179:13, 183:16, 212:5, 218:4, 226:8, 234:3, 247:16, 252:14, 266:9, 291:24, 292:10  <b>elaborate</b> [2] - 50:6, 271:1  <b>election</b> [1] - 121:25  <b>electric</b> [9] - 56:1, 60:5, 113:20, 113:24, 162:24, 243:11, 244:13, 245:9, 261:18  <b>Electric</b> [1] - 157:17  <b>electrical</b> [2] - 20:1, 56:2  <b>electricity</b> [5] - 55:12, 73:5, 79:20, 234:5, 299:22  <b>electrostatic</b> [1] - 68:25  <b>eligibility</b> [1] - 105:25  <b>eligible</b> [3] - 110:23, 113:24, 193:2  <b>Ely</b> [1] - 136:10  <b>email</b> [6] - 117:20, 118:20, 118:22, 118:25, 119:4  <b>emails</b> [2] - 118:25, 119:6  <b>embarking</b> [1] - 127:17</p>	<p><b>embedded</b> [3] - 121:7, 121:13, 121:14  <b>embodied</b> [2] - 149:18, 210:17  <b>emerging</b> [1] - 274:23  <b>emission</b> [4] - 113:19, 142:10, 143:6, 282:7  <b>emissions</b> [23] - 111:7, 111:16, 126:21, 126:24, 128:4, 135:15, 135:25, 136:5, 137:2, 137:6, 142:11, 142:18, 143:1, 144:18, 145:3, 210:12, 210:14, 210:18, 210:21, 211:20, 244:19, 287:19, 299:6  <b>Emmen</b> [1] - 217:4  <b>employed</b> [5] - 26:19, 109:13, 185:6, 189:9, 233:22  <b>employer</b> [5] - 26:18, 109:12, 153:3, 160:16, 233:21  <b>enable</b> [1] - 142:12  <b>encompass</b> [1] - 185:12  <b>end</b> [30] - 9:25, 15:25, 33:22, 34:21, 42:22, 54:23, 69:2, 91:4, 101:2, 101:6, 101:15, 118:15, 120:14, 168:23, 183:14, 190:17, 190:18, 194:17, 201:22, 212:2, 212:7, 218:12, 235:3, 237:9, 237:11, 270:10, 272:10, 272:19, 274:14, 276:1  <b>endeavor</b> [1] - 101:4  <b>ends</b> [5] - 72:13, 270:5, 271:6, 271:7, 272:18  <b>endurance</b> [1] - 95:4  <b>endure</b> [1] - 105:20  <b>energy</b> [69] - 14:22, 19:9, 53:2, 55:8, 55:13, 60:2, 61:6, 79:12, 79:13, 88:6, 105:18, 160:22, 161:5, 162:24, 167:17, 167:18, 170:2, 170:3, 170:15, 170:17, 170:18, 171:4, 171:6, 171:19, 172:6, 177:11, 178:14, 182:20, 200:23, 217:24, 234:3, 238:19, 241:11, 241:12, 241:14, 244:11, 254:13, 254:15, 263:7, 263:16, 264:21, 264:23, 264:24, 264:25, 265:2, 265:9, 265:13, 265:14, 265:17, 265:19, 265:23, 265:24, 265:25, 266:3, 266:4, 266:7, 266:17, 267:7, 267:13, 267:14, 267:23, 269:8, 271:24, 272:15,</p>	<p>272:17, 272:23, 273:1, 291:24  <b>Energy</b> [5] - 69:8, 69:10, 69:11, 69:18, 213:14  <b>energy-related</b> [1] - 200:23  <b>Enforcement</b> [1] - 120:11  <b>engaged</b> [1] - 216:9  <b>engineer</b> [6] - 19:8, 29:23, 84:14, 96:5, 161:14, 212:1  <b>engineer's</b> [1] - 74:10  <b>engineered</b> [1] - 39:18  <b>Engineering</b> [1] - 160:17  <b>engineering</b> [24] - 35:15, 35:19, 38:17, 39:25, 41:18, 57:18, 74:5, 74:8, 74:19, 74:25, 75:19, 75:24, 84:11, 85:10, 90:17, 97:14, 98:9, 160:20, 161:11, 161:19, 203:3, 210:20, 243:15, 245:15  <b>Englands</b> [1] - 301:14  <b>enjoyed</b> [1] - 58:16  <b>ensure</b> [10] - 13:25, 40:5, 41:2, 41:4, 45:6, 157:1, 164:22, 167:25, 234:2, 246:3  <b>ensuring</b> [1] - 296:16  <b>entails</b> [1] - 262:11  <b>enter</b> [2] - 41:16, 74:23  <b>entered</b> [1] - 121:16  <b>entering</b> [1] - 132:11  <b>entire</b> [8] - 46:24, 54:13, 54:14, 186:21, 204:9, 239:18, 245:8, 245:20  <b>entirely</b> [1] - 17:21  <b>entities</b> [2] - 133:7  <b>entitled</b> [1] - 27:3  <b>entity</b> [1] - 132:18  <b>entry</b> [1] - 208:11  <b>Environment</b> [3] - 18:7, 113:14, 230:6  <b>Environmental</b> [5] - 6:14, 7:10, 8:11, 115:13, 213:12  <b>environmental</b> [22] - 18:20, 28:19, 29:6, 32:20, 94:12, 109:15, 109:21, 110:6, 172:1, 174:7, 181:25, 182:1, 185:14, 191:9, 191:14, 199:10, 205:14, 212:23, 243:17, 246:11, 262:7, 263:19  <b>envisioning</b> [1] - 287:25  <b>EPA</b> [69] - 15:24, 42:23, 48:25, 49:20, 73:22, 75:8, 76:1, 80:6, 92:24, 93:3, 93:7, 94:16, 99:18, 111:14, 112:4, 114:8, 115:18, 116:1, 116:12, 116:18, 117:6, 117:18, 117:23, 118:3, 119:1, 119:8, 120:8,</p>
<b>E</b>			
<p><b>earliest</b> [2] - 227:6, 227:9  <b>early</b> [7] - 41:20, 42:5, 143:21, 151:6, 274:2, 289:16, 301:10  <b>easier</b> [6] - 95:11, 107:1, 164:3, 189:21, 218:12, 225:2  <b>easiest</b> [1] - 66:11  <b>easily</b> [4] - 42:17, 43:23, 76:7, 138:9  <b>East</b> [4] - 1:17, 2:15, 3:4, 3:10  <b>east</b> [1] - 96:22  <b>easy</b> [2] - 76:18, 100:9  <b>Economic</b> [2] - 7:15, 7:16  <b>economic</b> [28] - 16:20, 19:13, 32:8, 32:14, 43:3, 43:20, 44:17, 53:17, 54:16, 58:11, 72:21, 107:14, 153:13, 154:14, 162:2, 162:7, 162:20, 164:17, 177:17, 267:7, 267:10, 267:24, 268:25, 269:5, 269:13, 270:11, 270:12, 299:24  <b>economical</b> [4] - 55:5, 99:6, 155:9, 155:10  <b>economically</b> [2] - 181:23, 195:11  <b>economics</b> [2] - 65:16, 91:18  <b>economies</b> [2] - 168:15, 182:20  <b>economy</b> [6] - 40:11, 64:19,</p>			

<p>120:11, 121:9, 121:16, 122:24, 123:2, 124:9, 130:19, 132:9, 132:11, 132:19, 133:11, 134:1, 136:18, 136:25, 137:17, 141:7, 141:14, 145:7, 146:2, 147:13, 149:18, 191:24, 192:8, 192:11, 193:9, 193:22, 193:25, 194:6, 194:20, 245:10, 246:19, 246:24, 279:15, 287:24, 288:17, 298:3, 298:25, 299:2, 299:13, 299:18, 303:13 <b>EPA's</b> [5] - 13:20, 119:2, 120:10, 145:10, 149:23 <b>EPC</b> [4] - 84:11, 85:9, 85:25, 86:6 <b>equal</b> [1] - 163:7 <b>equates</b> [1] - 53:4 <b>equation</b> [2] - 61:18, 61:21 <b>equipment</b> [32] - 9:14, 10:23, 31:12, 34:8, 36:18, 36:19, 36:23, 38:19, 40:15, 40:21, 57:20, 78:9, 79:15, 79:25, 83:12, 85:3, 85:15, 95:12, 107:15, 129:11, 194:9, 211:1, 211:12, 211:14, 244:17, 244:25, 245:11, 245:15, 245:18, 250:20, 270:18, 271:11 <b>equity</b> [1] - 165:1 <b>equivalent</b> [4] - 33:11, 163:4, 163:17, 163:20 <b>erect</b> [2] - 42:1, 85:6 <b>erection</b> [4] - 14:12, 41:21, 85:7, 85:16 <b>errors</b> [1] - 128:3 <b>escalate</b> [1] - 40:22 <b>escalated</b> [5] - 176:17, 176:20, 176:21, 177:1 <b>escalation</b> [2] - 93:24, 163:14 <b>especially</b> [3] - 59:8, 72:5, 219:14 <b>essential</b> [1] - 246:1 <b>essentially</b> [28] - 50:19, 50:21, 60:6, 74:19, 75:5, 75:12, 75:23, 77:11, 78:18, 78:20, 113:18, 116:1, 116:10, 117:23, 119:23, 121:18, 123:1, 123:12, 123:15, 125:21, 126:14, 128:25, 130:6, 130:22, 131:20, 141:9, 155:19, 239:21 <b>establish</b> [6] - 87:16, 113:19, 114:1, 129:13, 149:23, 247:16 <b>established</b> [5] - 16:5, 116:4,</p>	<p>121:10, 125:24, 149:25 <b>establishes</b> [2] - 114:23, 121:18 <b>Estimate</b> [2] - 6:19, 6:20 <b>estimate</b> [13] - 30:6, 30:10, 30:13, 37:24, 38:2, 38:13, 38:21, 39:2, 39:3, 39:6, 166:12, 192:20, 284:2 <b>estimated</b> [8] - 13:23, 18:4, 39:7, 168:23, 177:16, 177:19, 247:10, 282:18 <b>estimates</b> [7] - 38:18, 38:25, 76:10, 192:15, 247:21, 283:16, 284:8 <b>et</b> [12] - 53:15, 53:18, 65:2, 73:5, 74:17, 75:5, 78:19, 82:16, 105:19, 130:8, 131:10, 238:2 <b>evaluate</b> [1] - 171:14 <b>evaluated</b> [10] - 32:12, 120:12, 170:4, 172:12, 173:7, 173:15, 175:3, 175:17, 182:3, 194:25 <b>evaluating</b> [3] - 158:24, 158:25, 162:5 <b>evaluation</b> [11] - 121:11, 146:7, 146:9, 150:1, 162:12, 164:15, 167:20, 169:19, 172:12, 178:19, 285:12 <b>event</b> [1] - 222:3 <b>eventual</b> [3] - 187:1, 188:25, 192:8 <b>eventually</b> [1] - 138:5 <b>evidence</b> [13] - 16:3, 16:6, 199:20, 200:5, 206:23, 206:24, 206:25, 207:2, 207:3, 207:11, 208:9, 228:15, 228:23 <b>evolve</b> [1] - 218:20 <b>evolved</b> [1] - 210:10 <b>exacerbate</b> [1] - 80:7 <b>exact</b> [2] - 50:16, 224:4 <b>exactly</b> [10] - 54:6, 57:15, 64:12, 70:18, 85:18, 92:12, 207:24, 241:24, 288:14, 296:12 <b>EXAMINATION</b> [49] - 26:11, 45:1, 84:1, 95:1, 97:6, 102:14, 104:11, 106:15, 109:5, 119:15, 132:5, 137:22, 141:19, 143:15, 147:9, 148:10, 152:10, 155:1, 160:9, 179:23, 180:18, 185:1, 196:22, 198:22, 202:12, 214:9, 220:16, 222:17, 227:1, 229:16, 231:14, 233:13, 237:21, 243:4, 248:15, 252:1, 253:11, 258:5,</p>	<p>258:16, 259:13, 261:4, 268:5, 273:10, 273:22, 278:6, 281:1, 287:14, 291:11, 297:17 <b>Examination</b> [33] - 4:8, 4:9, 4:9, 4:10, 4:12, 4:15, 4:16, 4:16, 4:17, 4:18, 4:21, 4:23, 4:24, 5:3, 5:5, 5:5, 5:6, 5:6, 5:9, 5:9, 5:11, 5:14, 5:16, 5:16, 5:17, 5:17, 5:20, 5:21, 5:21, 6:4, 6:5, 6:5, 6:6 <b>examination</b> [24] - 4:8, 4:10, 4:11, 4:15, 4:17, 4:18, 4:21, 4:24, 5:3, 5:4, 5:12, 5:14, 5:15, 5:20, 6:4, 44:22, 119:12, 154:21, 179:15, 196:16, 197:1, 237:18, 248:12, 280:24 <b>examined</b> [12] - 26:7, 32:2, 109:2, 152:8, 160:7, 184:24, 229:14, 233:11, 243:2, 261:2, 278:4, 306:1 <b>example</b> [9] - 65:24, 88:3, 142:15, 143:3, 157:22, 188:18, 239:9, 293:15, 302:3 <b>exceeded</b> [1] - 247:21 <b>except</b> [1] - 33:23 <b>exception</b> [1] - 17:20 <b>excess</b> [3] - 143:1, 193:4, 216:20 <b>excessive</b> [1] - 269:24 <b>exchange</b> [1] - 117:20 <b>exclude</b> [2] - 71:21, 228:21 <b>excluded</b> [2] - 71:16, 248:4 <b>excuse</b> [15] - 30:10, 96:18, 101:24, 102:8, 112:2, 115:5, 116:24, 126:6, 170:5, 172:17, 193:24, 243:19, 262:2, 280:24, 281:12 <b>execute</b> [1] - 201:16 <b>executive</b> [1] - 138:16 <b>exercise</b> [1] - 304:15 <b>exhaust</b> [2] - 33:19, 37:17 <b>exhibit</b> [19] - 20:19, 21:4, 22:20, 114:11, 138:10, 138:12, 139:20, 139:25, 206:10, 208:4, 208:25, 209:3, 209:6, 209:8, 224:12, 236:9, 236:10, 262:18, 303:22 <b>Exhibit</b> [46] - 21:4, 25:8, 27:25, 28:7, 28:14, 29:3, 29:7, 29:17, 30:3, 30:14, 31:1, 31:15, 32:4, 32:17, 36:3, 36:15, 43:25, 53:1, 61:1, 104:14, 112:11, 115:23, 116:17, 117:13,</p>	<p>118:9, 139:22, 140:15, 140:16, 143:18, 162:13, 165:6, 165:8, 185:22, 185:23, 185:25, 186:3, 186:6, 209:8, 231:4, 234:21, 236:11, 244:1, 262:6, 303:10 <b>exhibits</b> [29] - 18:12, 20:8, 20:9, 20:12, 20:17, 20:20, 20:21, 20:23, 22:1, 22:9, 22:16, 22:19, 23:9, 23:14, 23:16, 23:24, 24:2, 24:9, 24:15, 25:1, 25:4, 28:24, 114:12, 138:2, 185:19, 243:19, 261:24, 307:22 <b>Exhibits</b> [4] - 22:22, 23:17, 24:11, 139:21 <b>EXHIBITS</b> [1] - 6:8 <b>exist</b> [5] - 131:22, 135:15, 292:11, 296:5, 296:7 <b>existing</b> [23] - 16:7, 31:25, 34:1, 35:5, 35:13, 35:16, 35:21, 36:1, 36:19, 37:20, 43:17, 58:4, 58:7, 70:4, 70:12, 89:8, 144:19, 162:3, 166:9, 168:19, 244:20, 264:10, 264:18 <b>exists</b> [1] - 188:20 <b>exit</b> [2] - 34:17, 188:21 <b>exited</b> [1] - 295:11 <b>expand</b> [14] - 55:6, 56:11, 57:1, 61:13, 65:11, 67:8, 123:11, 140:24, 147:23, 155:5, 156:19, 158:3, 270:22, 272:10 <b>expansion</b> [2] - 190:7, 235:13 <b>expect</b> [16] - 12:16, 53:18, 60:14, 73:21, 78:3, 121:22, 187:15, 194:3, 194:5, 194:15, 205:23, 206:2, 214:19, 247:1, 249:4 <b>expectancy</b> [1] - 68:18 <b>expectation</b> [1] - 117:17 <b>expectations</b> [1] - 119:8 <b>expected</b> [8] - 15:24, 30:23, 53:2, 70:19, 205:22, 245:14, 245:18, 299:7 <b>expecting</b> [4] - 117:22, 118:5, 118:6, 219:20 <b>expeditiously</b> [8] - 13:19, 114:6, 130:20, 130:21, 131:4, 131:6, 131:12, 131:19 <b>expended</b> [2] - 123:14, 124:8 <b>expenditure</b> [3] - 72:7, 217:8, 253:25 <b>expenditures</b> [6] - 167:11, 216:4, 217:21, 246:7, 247:6, 247:24</p>
--	--	---	---

<p><b>expense</b> [3] - 60:9, 60:19, 269:8</p> <p><b>expensive</b> [19] - 15:21, 17:3, 55:1, 55:4, 55:16, 56:17, 56:19, 70:24, 78:3, 78:16, 96:4, 121:2, 149:16, 158:6, 170:22, 211:13, 237:13, 250:23, 300:14</p> <p><b>experience</b> [27] - 56:10, 96:5, 99:5, 161:16, 161:18, 167:1, 168:11, 177:17, 177:18, 178:4, 180:23, 181:3, 181:7, 181:12, 181:13, 182:7, 183:8, 183:16, 197:19, 217:3, 227:19, 266:13, 274:5, 291:17, 293:9, 296:12</p> <p><b>expert</b> [5] - 67:4, 67:21, 67:22, 111:11, 174:18</p> <p><b>expertise</b> [1] - 95:6</p> <p><b>expire</b> [1] - 274:14</p> <p><b>expired</b> [1] - 76:12</p> <p><b>explain</b> [40] - 17:11, 33:15, 39:12, 45:12, 46:12, 47:13, 48:14, 48:20, 49:3, 57:12, 57:15, 58:21, 59:18, 62:4, 66:4, 68:3, 68:6, 71:12, 76:4, 79:22, 110:21, 113:3, 118:22, 122:2, 125:18, 126:13, 126:16, 130:25, 132:7, 134:11, 148:22, 153:11, 154:1, 162:4, 195:1, 195:17, 241:5, 267:3, 279:20, 287:21</p> <p><b>explained</b> [1] - 246:21</p> <p><b>explains</b> [1] - 31:9</p> <p><b>explanation</b> [2] - 82:17, 131:2</p> <p><b>exploration</b> [1] - 74:12</p> <p><b>exposed</b> [1] - 222:2</p> <p><b>exposing</b> [1] - 210:2</p> <p><b>exposure</b> [3] - 265:8, 265:15, 290:12</p> <p><b>extend</b> [1] - 276:5</p> <p><b>extended</b> [7] - 72:16, 72:20, 72:24, 77:19, 135:3, 169:7, 275:5</p> <p><b>extent</b> [9] - 137:1, 142:8, 145:7, 145:25, 168:3, 287:3, 292:18, 293:14, 308:2</p> <p><b>externalities</b> [7] - 236:14, 236:15, 237:4, 237:5, 237:10</p> <p><b>externality</b> [1] - 237:7</p> <p><b>extra</b> [2] - 73:7, 126:1</p> <p><b>extraordinarily</b> [1] - 257:11</p> <p><b>extreme</b> [2] - 88:9, 88:13</p> <p><b>extremely</b> [2] - 42:25, 69:22</p> <p><b>extremes</b> [1] - 84:23</p>	<p><b>eye</b> [5] - 135:7, 136:9, 225:7, 297:5</p> <p><b>eyes</b> [1] - 210:1</p> <p style="text-align: center;"><b>F</b></p> <p><b>fabrication</b> [1] - 75:16</p> <p><b>face</b> [3] - 199:15, 219:5, 219:6</p> <p><b>faced</b> [3] - 69:7, 69:23, 188:9</p> <p><b>facilities</b> [12] - 67:20, 78:9, 116:5, 126:22, 143:8, 162:1, 162:3, 166:12, 182:19, 185:13, 230:8, 270:4</p> <p><b>facility</b> [3] - 16:8, 47:7, 255:16</p> <p><b>facing</b> [3] - 52:19, 52:23, 75:13</p> <p><b>fact</b> [30] - 26:1, 71:7, 81:14, 108:20, 151:24, 159:24, 184:19, 193:12, 199:14, 201:7, 207:1, 207:9, 207:22, 209:21, 215:23, 218:11, 233:3, 235:20, 242:17, 260:18, 267:20, 277:20, 280:13, 290:12, 293:19, 297:22, 299:3, 299:11, 308:8</p> <p><b>factor</b> [39] - 53:4, 53:8, 53:17, 53:20, 53:24, 54:5, 54:14, 55:2, 55:19, 56:13, 58:12, 58:17, 58:18, 58:24, 59:2, 59:7, 59:10, 59:17, 59:19, 60:16, 65:4, 65:7, 65:18, 82:18, 82:19, 82:23, 87:4, 87:9, 107:14, 165:18, 166:1, 167:3, 167:8, 168:22, 199:1, 238:5, 240:18, 268:20, 272:13</p> <p><b>factored</b> [1] - 93:8</p> <p><b>factors</b> [6] - 16:23, 66:6, 78:8, 100:25, 128:5, 293:12</p> <p><b>facts</b> [2] - 221:11, 256:15</p> <p><b>fades</b> [1] - 302:4</p> <p><b>failed</b> [1] - 133:13</p> <p><b>failing</b> [1] - 69:6</p> <p><b>failure</b> [1] - 271:11</p> <p><b>failures</b> [1] - 270:18</p> <p><b>fair</b> [6] - 95:16, 214:6, 217:25, 218:18, 274:1, 282:21</p> <p><b>fairly</b> [6] - 30:9, 38:3, 62:16, 195:10, 215:24, 252:8</p> <p><b>fall</b> [6] - 41:21, 56:4, 64:15, 78:4, 79:7, 232:7</p> <p><b>falling</b> [1] - 286:17</p> <p><b>falls</b> [2] - 49:9, 49:10</p>	<p><b>Falls</b> [1] - 2:22</p> <p><b>false</b> [9] - 25:25, 108:19, 151:23, 159:23, 184:18, 233:3, 242:17, 260:17, 277:19</p> <p><b>familiar</b> [13] - 54:17, 61:25, 67:12, 110:13, 126:17, 133:25, 134:4, 157:12, 231:22, 232:1, 238:1, 294:1, 301:4</p> <p><b>fans</b> [2] - 37:20, 211:3</p> <p><b>far</b> [33] - 21:24, 22:1, 57:4, 66:14, 74:16, 125:1, 129:1, 130:22, 131:13, 171:7, 173:2, 173:3, 178:2, 188:1, 194:19, 205:9, 205:12, 241:7, 250:11, 251:6, 262:16, 267:9, 268:24, 269:3, 269:12, 270:2, 270:13, 271:4, 272:12, 274:7, 275:2, 295:18, 304:22</p> <p><b>farm</b> [2] - 178:14, 200:21</p> <p><b>farms</b> [1] - 177:25</p> <p><b>fast</b> [3] - 277:2, 294:18, 303:9</p> <p><b>fault</b> [1] - 152:22</p> <p><b>favor</b> [7] - 17:13, 76:3, 76:5, 168:2, 168:6, 219:16, 267:5</p> <p><b>favorable</b> [3] - 168:5, 168:25, 169:4</p> <p><b>favored</b> [1] - 44:14</p> <p><b>Fe</b> [1] - 155:7</p> <p><b>feasibility</b> [2] - 32:3, 35:15</p> <p><b>feasible</b> [2] - 58:9, 92:4</p> <p><b>feature</b> [2] - 37:1, 40:16</p> <p><b>features</b> [4] - 98:5, 98:20, 98:25, 99:3</p> <p><b>federal</b> [8] - 29:6, 44:7, 73:3, 111:14, 131:3, 147:1, 244:22, 266:16</p> <p><b>Federal</b> [4] - 7:10, 115:12, 117:25, 133:17</p> <p><b>feedback</b> [1] - 201:1</p> <p><b>fees</b> [1] - 153:18</p> <p><b>feet</b> [1] - 37:8</p> <p><b>fell</b> [2] - 175:16, 286:6</p> <p><b>felony</b> [9] - 26:3, 108:22, 152:1, 160:1, 184:16, 233:5, 242:19, 260:20, 277:22</p> <p><b>felt</b> [6] - 32:11, 71:19, 120:13, 126:1, 149:7, 157:3</p> <p><b>FERC</b> [8] - 8:17, 22:7, 53:22, 54:17, 57:7, 58:15, 60:8, 87:4</p> <p><b>Fergus</b> [1] - 2:22</p> <p><b>few</b> [8] - 120:17, 164:16,</p>	<p>167:22, 206:9, 277:1, 291:16, 305:8, 307:14</p> <p><b>fight</b> [6] - 48:24, 71:24, 119:17, 123:1, 147:17, 205:15</p> <p><b>Figure</b> [3] - 172:20, 172:22, 173:19</p> <p><b>figure</b> [4] - 132:23, 172:24, 206:12, 289:10</p> <p><b>figured</b> [1] - 201:5</p> <p><b>Figures</b> [1] - 178:24</p> <p><b>file</b> [3] - 90:6, 216:24, 232:19</p> <p><b>filed</b> [24] - 7:20, 18:22, 53:22, 60:8, 123:21, 191:6, 191:12, 206:10, 208:4, 208:25, 209:8, 223:19, 224:12, 234:7, 234:9, 235:21, 240:2, 240:5, 262:16, 279:23, 303:21, 303:22</p> <p><b>filing</b> [3] - 244:6, 298:18, 308:8</p> <p><b>filings</b> [1] - 57:8</p> <p><b>fill</b> [2] - 220:24, 252:23</p> <p><b>final</b> [36] - 13:20, 15:24, 19:6, 34:24, 73:22, 81:23, 91:8, 93:4, 94:16, 118:7, 133:14, 133:15, 192:19, 194:1, 194:6, 194:12, 194:15, 194:19, 201:17, 203:13, 205:20, 205:21, 207:18, 213:4, 215:7, 215:9, 215:15, 248:6, 260:11, 279:15, 288:12, 289:2, 296:17, 304:24, 307:11</p> <p><b>finalization</b> [2] - 248:8, 279:14</p> <p><b>finalized</b> [6] - 39:20, 40:20, 193:23, 291:1, 291:3, 296:1</p> <p><b>finalizing</b> [1] - 296:21</p> <p><b>finally</b> [8] - 19:25, 24:1, 44:5, 186:6, 194:24, 212:17, 219:11, 226:17</p> <p><b>finance</b> [1] - 217:5</p> <p><b>Financial</b> [1] - 6:13</p> <p><b>financial</b> [8] - 28:18, 99:24, 101:13, 123:15, 125:1, 186:17, 220:10, 290:12</p> <p><b>financing</b> [5] - 101:12, 101:14, 220:1, 220:6, 239:16</p> <p><b>findings</b> [5] - 71:7, 139:2, 207:6, 308:6, 308:8</p> <p><b>fine</b> [10] - 26:3, 108:22, 152:1, 160:1, 184:16, 233:5, 240:11, 242:19, 260:20, 277:22</p> <p><b>fined</b> [2] - 130:23, 131:18</p> <p><b>fines</b> [1] - 131:10</p>
--	--	---	---

<p><b>finesse</b> [1] - 301:2  <b>finish</b> [6] - 225:11, 276:9, 276:13, 276:16, 276:18, 277:5  <b>finishing</b> [1] - 276:23  <b>finite</b> [2] - 79:13, 79:16  <b>fire</b> [2] - 164:10, 166:13  <b>fired</b> [11] - 56:13, 96:17, 147:25, 166:11, 168:4, 168:17, 189:15, 189:18, 190:12, 190:23, 245:9  <b>Fired</b> [1] - 7:19  <b>firing</b> [1] - 164:10  <b>firm</b> [4] - 11:11, 38:17, 86:2, 160:21  <b>firms</b> [1] - 245:15  <b>first</b> [69] - 14:14, 22:22, 25:19, 26:7, 28:25, 29:16, 34:9, 35:14, 38:3, 41:14, 47:16, 48:17, 53:13, 56:22, 68:20, 69:25, 99:1, 99:4, 103:14, 105:13, 109:2, 110:8, 110:22, 114:15, 118:11, 120:5, 126:17, 132:25, 142:2, 144:20, 152:8, 152:15, 160:7, 165:8, 171:13, 174:24, 175:22, 176:4, 176:7, 177:15, 184:24, 188:4, 188:15, 188:16, 197:9, 203:8, 210:12, 214:12, 216:8, 217:16, 217:18, 226:5, 233:11, 233:18, 234:23, 243:2, 243:20, 244:4, 246:18, 261:2, 278:4, 278:10, 282:14, 291:21, 304:9, 305:10, 305:15, 308:14  <b>fit</b> [5] - 54:12, 87:12, 191:1, 198:2, 199:24  <b>fits</b> [2] - 139:15, 189:3  <b>five</b> [29] - 10:6, 12:19, 13:20, 16:1, 21:2, 26:4, 42:22, 54:8, 96:18, 107:3, 108:23, 114:7, 130:20, 130:24, 131:6, 131:9, 131:18, 141:10, 152:2, 160:2, 184:17, 233:7, 242:21, 260:21, 276:5, 276:11, 276:23, 277:1, 277:23  <b>five-year</b> [2] - 131:9, 131:18  <b>fixed</b> [4] - 165:20, 166:3, 167:3, 239:15  <b>fleet</b> [3] - 20:4, 189:4, 274:1  <b>flexibility</b> [1] - 91:3  <b>flip</b> [4] - 181:5, 181:9, 181:20, 181:21  <b>flips</b> [1] - 181:14  <b>floor</b> [1] - 247:16  <b>flows</b> [2] - 163:21, 164:2</p>	<p><b>fluctuations</b> [2] - 265:9, 265:16  <b>flue</b> [3] - 34:1, 37:3, 230:15  <b>fluidized</b> [1] - 33:25  <b>fly</b> [1] - 296:13  <b>focused</b> [1] - 65:4  <b>folder</b> [1] - 36:4  <b>folks</b> [6] - 9:25, 123:23, 124:5, 220:22, 250:4, 283:24  <b>follow</b> [19] - 64:23, 100:9, 100:11, 102:4, 102:16, 169:3, 183:22, 224:23, 225:11, 225:21, 225:24, 225:25, 232:11, 232:13, 260:1, 260:2, 275:13, 302:18  <b>follow-up</b> [13] - 183:22, 224:23, 225:11, 225:21, 225:24, 225:25, 232:11, 232:13, 260:1, 260:2, 275:12, 275:13, 302:18  <b>followed</b> [2] - 29:9, 92:12  <b>following</b> [16] - 53:8, 55:21, 61:3, 61:4, 61:8, 63:4, 63:13, 64:14, 67:19, 103:3, 110:5, 156:8, 238:2, 267:1, 267:18, 301:8  <b>follows</b> [11] - 9:3, 26:8, 109:3, 152:9, 160:8, 184:25, 229:15, 233:12, 243:3, 261:3, 278:5  <b>followup</b> [8] - 102:7, 104:7, 106:9, 106:11, 106:13, 143:14, 148:8, 150:21  <b>FOR</b> [4] - 2:10, 2:17, 2:23, 3:6  <b>force</b> [1] - 133:11  <b>forecast</b> [24] - 153:14, 153:20, 153:21, 153:23, 153:24, 165:3, 173:17, 173:18, 174:25, 175:1, 175:7, 175:12, 175:13, 175:14, 266:2, 266:3, 266:4, 285:5, 285:6, 285:11, 285:22, 285:23, 287:2, 287:4  <b>forecasted</b> [3] - 264:14, 265:24, 265:25  <b>forecasting</b> [1] - 265:19  <b>forecasts</b> [9] - 153:9, 154:16, 175:4, 175:15, 234:2, 235:15, 261:21, 265:22, 285:20  <b>foregoing</b> [4] - 309:6, 309:10, 310:6, 310:10  <b>foreground</b> [1] - 37:21  <b>foreseen</b> [1] - 246:11  <b>forever</b> [2] - 99:11, 99:12  <b>forget</b> [1] - 298:10</p>	<p><b>form</b> [1] - 191:25  <b>Form</b> [8] - 8:17, 22:7, 53:23, 54:2, 54:18, 57:7, 58:15, 87:4  <b>forma</b> [5] - 32:8, 43:20, 68:8, 162:7, 177:17  <b>Forma</b> [2] - 7:15, 7:16  <b>formally</b> [1] - 76:1  <b>formation</b> [1] - 62:7  <b>formula</b> [2] - 295:6, 295:23  <b>forth</b> [3] - 106:6, 140:5, 294:13  <b>Fortnightly</b> [1] - 220:4  <b>forward</b> [12] - 9:23, 10:12, 15:13, 18:22, 54:6, 69:15, 98:24, 133:10, 140:20, 190:9, 229:21, 305:17  <b>forward-looking</b> [1] - 190:9  <b>fossil</b> [1] - 245:8  <b>foundations</b> [1] - 211:10  <b>four</b> [17] - 18:14, 19:14, 22:1, 32:13, 43:9, 43:18, 86:20, 96:18, 163:9, 164:1, 164:4, 164:5, 170:3, 170:8, 170:9, 170:19, 172:25  <b>fourth</b> [1] - 143:22  <b>fraction</b> [1] - 69:16  <b>frame</b> [10] - 39:21, 42:14, 49:8, 49:9, 49:10, 80:7, 133:12, 136:3, 181:2, 245:5  <b>framework</b> [1] - 121:10  <b>frankly</b> [1] - 212:18  <b>free</b> [4] - 87:19, 93:23, 222:4, 293:13  <b>freight</b> [4] - 153:7, 153:15, 153:21, 154:17  <b>frequently</b> [1] - 61:3  <b>Fresh</b> [1] - 213:14  <b>front</b> [12] - 20:18, 22:20, 27:1, 27:4, 35:11, 36:22, 52:18, 86:9, 162:15, 205:25, 223:19, 256:13  <b>fuel</b> [61] - 17:8, 19:1, 48:12, 48:15, 51:7, 52:5, 56:16, 56:20, 57:4, 57:6, 59:4, 59:12, 59:22, 60:9, 60:22, 70:17, 80:25, 81:5, 83:14, 83:16, 83:19, 94:6, 98:18, 122:10, 122:20, 153:7, 153:8, 153:9, 153:12, 153:14, 153:15, 153:18, 153:20, 153:23, 154:16, 157:25, 165:2, 167:10, 170:11, 172:16, 173:14, 174:25, 175:1, 175:4, 175:6, 182:4, 189:7, 195:21, 196:1, 197:7, 216:4, 244:10, 244:17, 245:9, 264:16, 271:7,</p>	<p>285:5, 285:11, 285:14  <b>fuel-fired</b> [1] - 245:9  <b>full</b> [18] - 21:22, 26:15, 55:11, 59:24, 63:11, 63:14, 64:16, 66:10, 88:7, 90:19, 109:9, 160:13, 175:5, 178:2, 185:3, 243:6, 261:8, 290:21  <b>fully</b> [8] - 67:8, 189:13, 194:15, 201:20, 203:19, 203:25, 246:3, 251:17  <b>function</b> [4] - 55:14, 156:24, 222:25, 307:13  <b>functionality</b> [1] - 43:16  <b>functions</b> [1] - 156:24  <b>fundamental</b> [1] - 208:5  <b>fundamentals</b> [1] - 129:22  <b>funded</b> [1] - 69:17  <b>funding</b> [1] - 75:4  <b>FURTHER</b> [7] - 106:15, 148:10, 222:17, 231:14, 259:13, 309:9, 310:9  <b>future</b> [21] - 49:1, 49:16, 49:17, 58:5, 154:16, 171:16, 190:15, 195:14, 219:8, 240:20, 240:25, 241:3, 247:2, 263:7, 264:15, 265:7, 265:8, 265:20, 269:1, 283:5, 293:6</p>
<b>G</b>			
<p><b>gained</b> [3] - 142:1, 248:23, 250:9  <b>game</b> [1] - 258:19  <b>gap</b> [2] - 280:5, 280:13  <b>gaps</b> [1] - 220:24  <b>gas</b> [46] - 16:17, 16:18, 31:17, 32:1, 34:1, 37:3, 43:10, 43:11, 46:16, 65:2, 87:22, 91:7, 91:13, 93:6, 93:20, 101:22, 156:19, 157:7, 164:11, 165:24, 166:2, 166:11, 166:13, 168:4, 168:7, 168:17, 173:15, 175:12, 190:4, 190:16, 190:24, 230:15, 263:12, 264:3, 266:2, 285:6, 285:17, 285:19, 285:23, 286:3, 286:5, 286:13, 286:16, 286:18, 286:19, 286:21  <b>Gas</b> [2] - 7:4, 7:5  <b>gas-fired</b> [3] - 166:11, 168:4, 168:17  <b>gases</b> [4] - 33:19, 37:17, 98:13, 142:19  <b>Gee</b> [2] - 298:23, 300:9</p>			

<p><b>gee</b> [1] - 292:19  <b>general</b> [12] - 2:14, 95:13, 138:25, 139:1, 139:9, 162:19, 209:16, 213:18, 261:15, 276:15, 291:13, 301:5  <b>General</b> [2] - 2:21, 3:10  <b>generalities</b> [1] - 182:17  <b>generalized</b> [1] - 70:20  <b>generally</b> [2] - 103:11, 192:3  <b>generated</b> [1] - 36:17  <b>generates</b> [1] - 82:24  <b>Generating</b> [2] - 9:15, 10:24  <b>generating</b> [4] - 83:1, 113:20, 113:24, 244:9  <b>generation</b> [28] - 18:17, 20:4, 26:21, 53:3, 59:20, 60:3, 67:20, 95:19, 125:13, 162:1, 185:13, 189:3, 190:25, 232:22, 241:8, 245:9, 266:9, 266:14, 267:6, 267:19, 268:24, 271:15, 273:13, 295:12, 295:20, 301:6, 301:9, 302:4  <b>generator</b> [4] - 36:21, 47:20, 83:13, 84:19  <b>generators</b> [1] - 267:8  <b>generic</b> [1] - 284:8  <b>geographic</b> [1] - 244:10  <b>geographically</b> [2] - 62:18, 63:1  <b>geological</b> [1] - 62:6  <b>given</b> [19] - 43:18, 60:12, 121:21, 138:9, 199:6, 199:12, 199:13, 201:13, 201:19, 204:2, 213:1, 215:25, 245:6, 269:19, 274:3, 286:22, 300:19, 301:10  <b>glad</b> [4] - 12:22, 136:12, 252:7, 289:3  <b>goal</b> [1] - 10:1  <b>Goodin</b> [1] - 256:17  <b>gosh</b> [1] - 296:19  <b>gotta</b> [1] - 73:11  <b>gouging</b> [2] - 156:18, 157:15  <b>government</b> [2] - 75:2, 229:21  <b>gradual</b> [1] - 55:16  <b>grant</b> [4] - 194:4, 258:22, 297:9, 300:10  <b>granted</b> [7] - 19:3, 92:8, 101:18, 101:20, 143:2, 203:5, 293:2  <b>granting</b> [2] - 279:11, 292:2  <b>graph</b> [3] - 173:2, 236:12, 237:1  <b>graphically</b> [1] - 172:22  <b>Graumann</b> [18] - 7:7, 18:19,</p>	<p>39:17, 49:4, 50:5, 94:19, 99:17, 108:15, 108:16, 109:11, 112:7, 138:19, 143:17, 146:19, 224:4, 229:4, 229:7  <b>GRAUMANN</b> [5] - 4:14, 5:8, 109:1, 229:11, 229:13  <b>Graveline</b> [1] - 307:12  <b>GRAVELINE</b> [1] - 307:16  <b>gray</b> [2] - 170:1, 171:21  <b>great</b> [5] - 20:10, 43:7, 49:5, 186:18, 225:5  <b>greater</b> [3] - 46:19, 61:23, 86:18  <b>greatly</b> [2] - 72:21, 76:20  <b>green</b> [2] - 36:19, 36:22  <b>gross</b> [1] - 52:7  <b>grossing</b> [1] - 177:22  <b>ground</b> [3] - 74:13, 97:19, 134:10  <b>group</b> [7] - 133:7, 161:22, 161:23, 161:24, 213:14, 261:19  <b>Group</b> [1] - 2:14  <b>groups</b> [1] - 132:18  <b>grow</b> [2] - 190:14, 306:3  <b>growth</b> [3] - 58:11, 263:15, 275:7  <b>Gruman</b> [48] - 4:4, 4:8, 4:18, 4:21, 5:3, 5:12, 5:20, 11:21, 11:22, 21:14, 22:24, 23:11, 23:20, 24:3, 24:18, 25:12, 44:23, 81:20, 87:2, 92:7, 92:23, 106:9, 108:6, 119:13, 140:9, 147:7, 150:23, 151:3, 154:22, 179:16, 183:24, 196:20, 225:21, 228:7, 231:8, 232:13, 237:19, 248:13, 260:3, 268:2, 275:14, 275:23, 278:1, 302:20, 302:23, 304:18, 307:21, 308:1  <b>GRUMAN</b> [74] - 3:2, 11:22, 21:15, 22:25, 23:3, 23:21, 24:4, 24:19, 25:7, 25:13, 44:24, 45:2, 51:25, 52:25, 60:24, 60:25, 68:1, 68:2, 81:10, 81:13, 81:16, 81:21, 81:22, 83:21, 106:10, 108:7, 119:14, 119:16, 130:4, 130:5, 131:23, 140:10, 147:8, 147:10, 148:3, 150:24, 154:23, 155:2, 159:4, 179:17, 179:20, 183:25, 196:21, 196:23, 198:18, 225:22, 228:9, 231:9, 232:14, 237:20, 237:22, 242:1, 242:4, 248:14, 248:16,</p>	<p>251:21, 260:4, 268:3, 268:6, 269:21, 269:23, 271:20, 271:22, 273:4, 275:15, 275:25, 277:13, 278:2, 278:7, 280:20, 302:21, 302:25, 304:19, 308:12  <b>gruman</b> [3] - 4:15, 5:14, 6:4  <b>gruman's</b> [1] - 103:3  <b>Gruman's</b> [1] - 214:14  <b>Guardians</b> [1] - 132:15  <b>guess</b> [44] - 51:17, 62:15, 64:7, 65:24, 73:18, 80:14, 100:5, 102:4, 106:17, 122:22, 124:17, 128:15, 130:11, 130:17, 131:1, 157:22, 181:1, 181:5, 181:8, 181:16, 182:17, 184:12, 197:8, 208:5, 209:9, 212:12, 218:9, 220:25, 254:6, 255:7, 256:7, 257:9, 257:15, 272:4, 272:14, 274:20, 276:3, 280:10, 286:15, 297:11, 299:16, 300:4, 304:23, 307:1  <b>guessed</b> [1] - 159:11  <b>guesses</b> [1] - 65:21  <b>guesstimation</b> [1] - 73:25  <b>guy</b> [3] - 73:9, 73:11, 180:20  <b>guys</b> [2] - 138:4, 219:23</p>	<p>223:4, 236:17, 249:25, 300:19  <b>handful</b> [1] - 213:15  <b>handle</b> [2] - 222:11, 224:15  <b>handled</b> [1] - 172:3  <b>handling</b> [1] - 307:22  <b>hands</b> [2] - 204:9, 241:22  <b>happy</b> [2] - 287:21, 304:4  <b>hard</b> [7] - 10:4, 100:11, 218:9, 245:17, 254:1, 257:11, 294:18  <b>hard-and-fast</b> [1] - 294:18  <b>hard-pressed</b> [1] - 254:1  <b>hardship</b> [1] - 217:2  <b>harmful</b> [1] - 128:13  <b>hate</b> [1] - 25:22  <b>haul</b> [6] - 52:10, 52:12, 91:19, 91:20, 91:24, 92:4  <b>haunts</b> [1] - 215:25  <b>hazardous</b> [5] - 39:23, 99:24, 142:15, 172:3, 172:4  <b>haze</b> [37] - 49:6, 49:7, 51:2, 94:17, 110:25, 111:3, 111:16, 116:3, 116:8, 116:9, 117:24, 120:17, 120:21, 120:22, 120:24, 121:7, 121:11, 121:19, 121:23, 128:11, 128:16, 128:17, 129:2, 129:22, 130:7, 132:10, 136:16, 137:11, 139:4, 139:13, 140:14, 147:2, 199:11, 210:16, 222:1, 244:23, 279:8  <b>Haze</b> [16] - 7:8, 7:11, 13:7, 13:17, 29:1, 29:10, 104:16, 113:6, 113:11, 113:12, 114:9, 114:23, 115:24, 117:14, 119:2, 231:3  <b>heads</b> [1] - 294:15  <b>heads-I-win</b> [1] - 294:15  <b>health</b> [4] - 136:17, 136:18, 137:13, 137:17  <b>Health</b> [11] - 48:25, 49:20, 49:23, 50:3, 50:9, 50:13, 123:2, 123:7, 146:22, 147:12, 147:20  <b>hear</b> [6] - 14:4, 15:10, 16:3, 206:3, 219:14, 227:7  <b>heard</b> [19] - 79:23, 100:17, 151:19, 159:20, 186:9, 221:6, 232:24, 252:3, 253:13, 259:20, 260:13, 271:2, 277:15, 279:25, 280:8, 288:4, 290:8, 291:21, 297:6  <b>HEARING</b> [1] - 1:12  <b>hearing</b> [32] - 9:9, 9:10, 9:19, 9:20, 9:23, 10:12, 10:15, 10:19, 11:3, 11:6, 12:8,</p>
<b>H</b>			
<p><b>H-a-h-n</b> [1] - 278:11  <b>H-e-b-e-r-t</b> [1] - 152:17  <b>Hahn</b> [42] - 8:15, 8:16, 11:23, 18:1, 18:2, 19:19, 21:8, 21:25, 103:10, 112:15, 112:25, 113:1, 174:18, 174:24, 175:21, 177:9, 177:10, 177:13, 177:21, 178:18, 178:25, 191:21, 192:18, 193:18, 194:24, 195:5, 246:15, 246:17, 246:18, 247:7, 247:25, 248:3, 264:8, 266:1, 266:17, 277:14, 277:15, 278:8, 278:11, 281:3, 282:23, 284:23  <b>HAHN</b> [2] - 6:3, 278:3  <b>Hahn's</b> [6] - 22:3, 112:19, 192:25, 275:24, 276:12, 280:21  <b>half</b> [1] - 176:18  <b>halfway</b> [1] - 85:2  <b>hand</b> [12] - 26:5, 91:17, 113:23, 171:7, 194:5, 218:4, 219:4, 221:22,</p>			

<p>12:18, 21:17, 155:18, 156:15, 180:14, 183:9, 194:13, 196:2, 201:6, 221:6, 227:11, 227:15, 276:5, 276:9, 277:5, 304:11, 305:6, 305:16, 305:21, 308:20</p> <p><b>Hearing</b> [1] - 11:2</p> <p><b>hearings</b> [4] - 74:9, 100:10, 308:2, 308:3</p> <p><b>Hearings</b> [1] - 9:7</p> <p><b>heat</b> [10] - 55:7, 55:12, 64:4, 165:17, 165:25, 167:2, 168:25, 266:1, 270:8, 271:6</p> <p><b>heater</b> [1] - 34:18</p> <p><b>heavily</b> [1] - 265:5</p> <p><b>Hebert</b> [8] - 18:23, 151:14, 151:15, 151:16, 151:17, 151:19, 152:16, 159:9</p> <p><b>HEBERT</b> [4] - 4:20, 151:16, 151:18, 152:7</p> <p><b>held</b> [3] - 209:12, 227:15, 247:19</p> <p><b>help</b> [13] - 21:22, 36:12, 124:24, 125:6, 125:8, 135:5, 141:21, 142:18, 143:9, 148:12, 202:14, 215:25</p> <p><b>helpful</b> [1] - 224:14</p> <p><b>Hempling</b> [1] - 219:22</p> <p><b>Henry</b> [1] - 266:2</p> <p><b>HEREBY</b> [4] - 309:5, 309:9, 310:5, 310:9</p> <p><b>herein</b> [1] - 9:1</p> <p><b>hereinbefore</b> [2] - 309:7, 310:7</p> <p><b>Heskett</b> [1] - 87:21</p> <p><b>hiatus</b> [2] - 76:19, 289:1</p> <p><b>high</b> [21] - 37:6, 38:9, 93:18, 102:2, 126:19, 142:16, 168:23, 171:25, 174:6, 189:19, 195:25, 236:15, 237:4, 237:10, 237:11, 240:9, 263:12, 263:14, 263:15, 263:19</p> <p><b>high-level</b> [1] - 126:19</p> <p><b>high-sulfur</b> [1] - 142:16</p> <p><b>higher</b> [25] - 15:17, 54:19, 59:1, 59:5, 59:7, 59:11, 59:22, 60:17, 83:3, 83:6, 155:24, 170:25, 173:10, 174:6, 174:10, 187:22, 187:24, 236:2, 265:25, 267:17, 273:1, 293:23</p> <p><b>higher-cost</b> [1] - 187:22</p> <p><b>highest</b> [3] - 155:19, 155:21, 255:7</p> <p><b>highlighted</b> [3] - 170:1, 171:22, 172:7</p>	<p><b>highly</b> [2] - 168:24, 169:5</p> <p><b>highway</b> [1] - 66:3</p> <p><b>himself</b> [1] - 204:25</p> <p><b>hindsight</b> [1] - 51:18</p> <p><b>hinge</b> [1] - 111:17</p> <p><b>hire</b> [2] - 84:24, 84:25</p> <p><b>hired</b> [1] - 38:1</p> <p><b>hiring</b> [1] - 85:5</p> <p><b>historian</b> [1] - 215:20</p> <p><b>historic</b> [1] - 286:21</p> <p><b>historical</b> [3] - 216:1, 218:1, 265:19</p> <p><b>historically</b> [1] - 265:1</p> <p><b>history</b> [3] - 121:21, 270:16, 271:14</p> <p><b>hmm</b> [9] - 53:12, 57:11, 122:13, 147:15, 166:21, 183:1, 256:25, 258:12, 259:5</p> <p><b>hold</b> [1] - 93:3</p> <p><b>holes</b> [1] - 74:12</p> <p><b>honestly</b> [2] - 182:10, 306:19</p> <p><b>Honor</b> [112] - 11:10, 11:19, 12:25, 18:10, 18:14, 18:21, 19:15, 20:16, 21:10, 21:15, 22:15, 22:25, 23:13, 23:25, 24:12, 24:16, 24:22, 25:3, 25:13, 25:18, 26:10, 27:7, 33:3, 44:20, 44:24, 51:23, 51:25, 60:24, 68:1, 81:11, 81:21, 97:5, 104:8, 106:8, 106:10, 108:5, 108:7, 108:9, 108:14, 119:12, 119:14, 130:4, 131:23, 131:24, 138:14, 139:17, 139:20, 140:1, 140:8, 140:10, 140:12, 146:16, 147:6, 147:8, 148:4, 150:22, 150:24, 151:9, 152:6, 152:24, 154:20, 154:23, 159:18, 179:14, 179:17, 179:20, 183:23, 184:8, 184:22, 196:15, 196:21, 198:19, 206:18, 208:2, 208:6, 209:4, 210:5, 224:24, 225:22, 226:25, 227:24, 228:9, 229:3, 231:7, 231:9, 232:12, 232:14, 232:18, 236:23, 237:17, 242:2, 242:24, 260:2, 260:4, 260:11, 268:1, 268:3, 269:22, 271:20, 271:21, 273:5, 275:13, 275:15, 275:22, 276:20, 287:10, 302:19, 302:25, 303:5, 303:8, 303:25, 304:9</p> <p><b>hook</b> [1] - 212:16</p> <p><b>Hoot</b> [2] - 87:22, 190:13</p> <p><b>hope</b> [2] - 259:21, 304:21</p>	<p><b>hopefully</b> [2] - 116:13, 288:21</p> <p><b>hoping</b> [1] - 249:7</p> <p><b>horizon</b> [1] - 115:17</p> <p><b>horse</b> [1] - 59:15</p> <p><b>hot</b> [1] - 59:24</p> <p><b>hour</b> [6] - 43:21, 55:9, 60:21, 151:7, 177:10, 177:20</p> <p><b>hours</b> [10] - 53:3, 59:8, 59:14, 82:20, 83:6, 97:10, 97:15, 135:19, 254:19</p> <p><b>house</b> [1] - 36:21</p> <p><b>housing</b> [1] - 35:7</p> <p><b>Hub</b> [1] - 266:2</p> <p><b>huge</b> [4] - 40:20, 86:22, 249:24, 253:4</p> <p><b>human</b> [3] - 135:7, 136:9, 137:16</p> <p><b>hundred</b> [5] - 63:16, 63:22, 82:21, 254:23, 294:20</p> <p><b>Hunton</b> [1] - 111:11</p> <p><b>hybrid</b> [5] - 14:8, 40:13, 84:6, 85:1, 85:19</p> <p><b>hypothesized</b> [1] - 220:7</p> <p><b>hypothetical</b> [1] - 65:21</p> <p><b>hypothetically</b> [5] - 75:22, 120:25, 122:7, 122:14, 195:8</p> <p style="text-align: center;"><b>I</b></p> <p><b>I-bet-the-company-type</b> [1] - 101:4</p> <p><b>i.e</b> [4] - 78:24, 81:4, 120:25, 126:11</p> <p><b>ID</b> [1] - 37:19</p> <p><b>idea</b> [9] - 56:14, 68:14, 221:9, 259:20, 274:24, 288:17, 289:6, 292:4, 292:20</p> <p><b>ideas</b> [1] - 291:14</p> <p><b>identical</b> [2] - 47:21, 177:3</p> <p><b>identified</b> [5] - 23:9, 104:15, 115:11, 118:12, 145:5</p> <p><b>identifies</b> [2] - 145:8, 191:13</p> <p><b>identify</b> [3] - 18:11, 27:20, 113:22</p> <p><b>identifying</b> [1] - 166:16</p> <p><b>IGCC</b> [1] - 256:4</p> <p><b>II</b> [9] - 133:21, 135:6, 155:16, 156:15, 216:2, 221:14, 221:18, 221:23, 255:22</p> <p><b>ILLONA</b> [1] - 3:9</p> <p><b>Illona</b> [2] - 12:1, 215:21</p> <p><b>illustrates</b> [1] - 145:3</p> <p><b>imagine</b> [1] - 157:24</p> <p><b>immaterial</b> [1] - 178:16</p> <p><b>immediately</b> [1] - 75:19</p> <p><b>impact</b> [23] - 125:6, 132:22,</p>	<p>134:21, 135:4, 135:21, 135:25, 137:3, 137:14, 139:3, 139:13, 140:14, 171:15, 177:24, 178:12, 195:14, 209:24, 245:17, 271:18, 292:16, 292:17, 302:11, 306:7</p> <p><b>impacted</b> [2] - 132:18, 198:11</p> <p><b>impacting</b> [2] - 135:17, 135:18</p> <p><b>impacts</b> [13] - 28:18, 67:19, 105:19, 111:17, 126:20, 127:20, 127:22, 128:6, 135:25, 196:1, 196:10, 198:10, 201:17</p> <p><b>Impacts</b> [1] - 6:14</p> <p><b>impairment</b> [8] - 111:9, 111:24, 126:25, 134:25, 136:5, 144:18, 145:4, 145:19</p> <p><b>impairments</b> [1] - 146:2</p> <p><b>imperative</b> [1] - 187:6</p> <p><b>implement</b> [2] - 116:7, 224:9</p> <p><b>Implementation</b> [13] - 46:3, 51:1, 75:10, 104:23, 104:25, 114:17, 119:3, 210:12, 210:17, 211:9, 211:19, 223:13, 246:20</p> <p><b>implementation</b> [18] - 41:7, 80:6, 92:11, 115:21, 116:9, 116:15, 119:18, 125:16, 130:18, 131:5, 131:13, 143:19, 143:23, 144:2, 144:15, 248:19, 279:7</p> <p><b>implemented</b> [6] - 50:4, 124:24, 125:4, 125:8, 130:24, 140:21</p> <p><b>implementing</b> [1] - 90:15</p> <p><b>implications</b> [1] - 186:16</p> <p><b>implode</b> [1] - 70:10</p> <p><b>important</b> [12] - 14:18, 15:1, 100:16, 205:10, 205:12, 207:13, 210:8, 244:10, 245:19, 284:6, 306:20, 306:24</p> <p><b>importantly</b> [1] - 237:14</p> <p><b>imposed</b> [1] - 115:22</p> <p><b>impressed</b> [1] - 97:11</p> <p><b>imprisonment</b> [9] - 26:4, 108:23, 152:2, 160:2, 184:17, 233:6, 242:20, 260:21, 277:23</p> <p><b>improve</b> [5] - 90:17, 98:14, 125:12, 125:13, 245:11</p> <p><b>improvement</b> [5] - 146:6, 146:14, 149:6, 150:1, 150:5</p> <p><b>improvements</b> [1] - 90:22</p> <p><b>imprudent</b> [3] - 247:19,</p>
--	--	---	---

<p>258:21, 259:3  <b>imprudently</b> [1] - 276:6  <b>inaccurate</b> [1] - 128:7  <b>Inc</b> [1] - 2:14  <b>inches</b> [3] - 70:6, 70:7, 70:10  <b>include</b> [13] - 18:16, 49:24, 109:18, 139:7, 165:15, 165:16, 166:13, 185:22, 185:25, 193:15, 194:22, 214:16, 262:1  <b>included</b> [35] - 44:9, 99:25, 100:3, 113:18, 121:20, 131:12, 142:5, 145:21, 154:18, 164:25, 166:3, 166:7, 171:19, 171:23, 172:6, 173:22, 178:19, 178:20, 178:22, 178:23, 179:2, 180:13, 181:18, 193:1, 193:21, 195:2, 195:4, 216:25, 221:17, 237:6, 237:8, 256:21, 268:18, 280:12  <b>includes</b> [3] - 35:24, 153:7, 191:7  <b>including</b> [16] - 17:7, 109:20, 109:21, 120:10, 126:5, 132:15, 154:16, 160:22, 160:25, 171:20, 227:13, 263:12, 285:1, 300:13, 308:18  <b>inclusion</b> [1] - 248:7  <b>income</b> [1] - 170:12  <b>inconsequential</b> [1] - 220:2  <b>incorporate</b> [4] - 39:25, 73:7, 230:15, 241:3  <b>incorporated</b> [1] - 206:6  <b>incorrect</b> [3] - 54:10, 239:25, 240:13  <b>increase</b> [18] - 42:17, 46:23, 58:13, 64:5, 76:20, 94:13, 124:14, 157:9, 172:13, 173:16, 210:25, 238:21, 240:19, 245:14, 255:5, 255:10, 265:15, 271:16  <b>increased</b> [5] - 156:11, 211:5, 235:24, 270:17, 270:18  <b>increases</b> [2] - 158:15, 158:18  <b>increasing</b> [3] - 64:3, 173:24, 241:10  <b>increasingly</b> [1] - 189:17  <b>incredible</b> [1] - 235:14  <b>incurred</b> [4] - 193:5, 193:8, 247:13, 271:12  <b>incurring</b> [1] - 300:12  <b>indeed</b> [4] - 25:22, 111:23, 135:4, 304:6  <b>index</b> [4] - 156:5, 156:8, 156:9, 158:18</p>	<p><b>indicate</b> [7] - 15:23, 52:1, 53:2, 57:8, 57:13, 79:18, 276:20  <b>indicated</b> [30] - 22:10, 49:18, 50:25, 51:2, 51:5, 51:11, 51:15, 52:1, 57:7, 65:3, 81:24, 89:14, 122:10, 124:12, 125:3, 155:3, 155:18, 156:16, 195:5, 201:8, 231:16, 248:22, 249:3, 249:11, 255:19, 268:16, 279:1, 280:21, 309:8, 310:8  <b>indicates</b> [1] - 45:3  <b>indication</b> [8] - 42:16, 46:4, 92:15, 187:13, 187:18, 213:1, 213:23, 217:11  <b>indicative</b> [1] - 38:21  <b>indifferent</b> [1] - 163:18  <b>individual</b> [3] - 134:25, 142:23, 145:12  <b>induced</b> [2] - 128:17, 211:3  <b>industrial</b> [1] - 160:24  <b>industry</b> [4] - 161:19, 218:20, 245:9, 275:7  <b>infinitesimal</b> [1] - 270:24  <b>inflation</b> [3] - 156:5, 164:25  <b>Information</b> [1] - 8:19  <b>information</b> [13] - 25:9, 30:23, 128:2, 139:10, 235:24, 252:12, 284:5, 284:11, 286:12, 305:6, 305:23, 305:25  <b>infrastructure</b> [2] - 160:23, 168:19  <b>inherent</b> [1] - 195:12  <b>initial</b> [4] - 16:22, 116:21, 175:19, 278:10  <b>Initial</b> [2] - 8:14, 8:16  <b>initiated</b> [1] - 141:10  <b>Initiative</b> [1] - 120:11  <b>initiatives</b> [1] - 245:13  <b>inject</b> [1] - 34:19  <b>injecting</b> [1] - 46:16  <b>injection</b> [2] - 90:13, 193:19  <b>inputs</b> [3] - 128:2, 164:21, 164:24  <b>inseparable</b> [1] - 203:2  <b>inseverable</b> [1] - 203:7  <b>inside</b> [2] - 35:6, 272:14  <b>install</b> [12] - 84:19, 84:21, 84:22, 111:20, 112:21, 113:5, 129:10, 194:9, 211:3, 244:25, 245:10, 250:19  <b>installation</b> [9] - 13:3, 216:10, 245:16, 248:23, 249:1, 249:13, 249:21, 250:6, 250:12  <b>installed</b> [21] - 13:10, 34:10,</p>	<p>36:14, 69:12, 71:2, 105:16, 136:12, 162:10, 169:13, 176:5, 176:8, 190:4, 190:21, 211:2, 244:9, 249:3, 251:3, 251:4, 254:11, 264:14, 266:13  <b>installing</b> [1] - 205:13  <b>instance</b> [5] - 65:1, 74:4, 128:18, 158:1, 167:14  <b>instead</b> [3] - 63:15, 86:2, 190:2  <b>Integrated</b> [1] - 8:13  <b>integrated</b> [19] - 67:16, 67:17, 191:11, 234:1, 238:16, 239:8, 239:21, 240:8, 240:24, 244:13, 262:15, 263:3, 263:9, 264:6, 264:10, 264:24, 268:21, 269:18, 270:25  <b>integrated-resource</b> [1] - 191:11  <b>intend</b> [7] - 18:12, 18:13, 20:9, 77:24, 201:16, 228:21, 228:22  <b>intended</b> [1] - 198:3  <b>intending</b> [1] - 19:21  <b>intends</b> [2] - 21:25, 119:8  <b>intention</b> [2] - 27:10, 74:22  <b>interest</b> [8] - 12:11, 18:25, 19:23, 40:12, 86:19, 165:1, 170:11, 225:5  <b>interested</b> [1] - 209:19  <b>interesting</b> [1] - 204:23  <b>interests</b> [4] - 252:11, 252:18, 254:5, 300:20  <b>intermittent</b> [3] - 61:10, 61:19, 301:21  <b>internal</b> [2] - 153:10, 217:6  <b>internally</b> [5] - 80:13, 167:23, 257:11, 265:18, 265:21  <b>Internet</b> [2] - 12:10, 226:13  <b>interpret</b> [3] - 72:8, 89:7, 94:8  <b>interpretation</b> [4] - 204:15, 204:17, 212:9, 298:5  <b>interpreted</b> [1] - 89:12  <b>interpreting</b> [2] - 89:2, 89:5  <b>interrupt</b> [3] - 165:4, 170:6, 236:16  <b>intervenor</b> [4] - 209:11, 213:8, 213:11, 213:17  <b>intimately</b> [1] - 126:17  <b>intriguing</b> [2] - 59:16, 158:2  <b>introduce</b> [1] - 192:12  <b>investigated</b> [2] - 43:22, 44:11  <b>investment</b> [15] - 46:9, 88:18, 91:23, 101:6, 101:9, 186:21, 188:7, 216:22, 216:25, 217:9, 217:15,</p>	<p>252:20, 274:22, 293:13, 306:18  <b>investments</b> [8] - 9:14, 10:23, 216:3, 220:10, 294:6, 294:8, 306:21, 306:24  <b>investors</b> [1] - 306:25  <b>invite</b> [1] - 206:16  <b>involved</b> [8] - 29:14, 127:12, 138:1, 200:15, 207:14, 224:5, 234:14, 245:1  <b>involvement</b> [1] - 110:21  <b>involving</b> [1] - 146:21  <b>IRP</b> [26] - 17:16, 17:18, 19:24, 20:6, 20:14, 153:10, 153:25, 164:22, 164:24, 165:13, 175:2, 177:5, 186:7, 232:21, 234:7, 234:23, 236:4, 236:7, 239:10, 240:2, 256:1, 262:22, 269:14, 269:25, 285:22, 287:3  <b>Isle</b> [1] - 126:12  <b>ISO</b> [1] - 301:13  <b>issuance</b> [2] - 246:23, 247:3  <b>issue</b> [34] - 11:4, 42:13, 42:18, 65:13, 73:22, 80:4, 81:7, 95:8, 133:19, 146:25, 147:3, 194:1, 194:6, 196:2, 198:4, 199:11, 205:6, 205:9, 205:16, 205:17, 209:22, 210:9, 210:23, 212:4, 214:13, 215:20, 264:8, 273:24, 289:20, 292:6, 296:11, 297:6, 306:11, 306:14  <b>issued</b> [3] - 11:3, 246:25, 247:1  <b>issues</b> [16] - 19:1, 19:2, 19:24, 72:4, 99:19, 110:6, 133:12, 178:1, 200:22, 200:24, 224:5, 224:6, 224:25, 232:21, 232:22, 290:15  <b>items</b> [1] - 236:17  <b>itself</b> [7] - 10:7, 110:12, 113:21, 135:15, 240:16, 262:13, 306:12  <b>iv</b> [1] - 143:24  <b>Izaak</b> [1] - 213:13</p> <hr/> <p style="text-align: center;"><b>J</b></p> <hr/> <p><b>January</b> [3] - 116:21, 120:5, 227:13  <b>jargon</b> [1] - 33:15  <b>Jeff</b> [1] - 16:21  <b>jeffcoat</b> [2] - 4:10, 5:4  <b>JEFFCOAT</b> [43] - 3:9, 12:1,</p>
--	---	--	--

<p>23:5, 23:7, 23:10, 23:23, 24:7, 24:25, 25:15, 102:8, 102:10, 102:13, 102:15, 104:5, 106:12, 108:9, 132:1, 140:12, 148:6, 151:1, 159:7, 179:24, 180:15, 184:2, 198:21, 198:23, 202:8, 225:25, 228:13, 228:20, 228:24, 252:2, 253:6, 260:6, 273:7, 275:17, 287:12, 287:15, 291:8, 303:2, 305:1, 308:6, 308:10</p> <p><b>Jeffcoat</b> [33] - 4:24, 5:15, 6:5, 11:25, 12:2, 22:13, 23:4, 23:22, 24:6, 24:24, 25:14, 83:22, 106:11, 108:8, 131:25, 140:11, 148:5, 150:25, 159:6, 179:22, 184:1, 198:20, 225:23, 228:10, 231:10, 231:11, 251:23, 260:5, 273:6, 275:16, 287:11, 303:1, 304:25</p> <p><b>JEFFCOAT-SACCO</b> [43] - 3:9, 12:1, 23:5, 23:7, 23:10, 23:23, 24:7, 24:25, 25:15, 102:8, 102:10, 102:13, 102:15, 104:5, 106:12, 108:9, 132:1, 140:12, 148:6, 151:1, 159:7, 179:24, 180:15, 184:2, 198:21, 198:23, 202:8, 225:25, 228:13, 228:20, 228:24, 252:2, 253:6, 260:6, 273:7, 275:17, 287:12, 287:15, 291:8, 303:2, 305:1, 308:6, 308:10</p> <p><b>Jeffcoat-Sacco</b> [32] - 4:24, 6:5, 11:25, 12:2, 22:13, 23:4, 23:22, 24:6, 24:24, 25:14, 83:22, 106:11, 108:8, 131:25, 140:11, 148:5, 150:25, 159:6, 179:22, 184:1, 198:20, 225:23, 228:10, 231:10, 231:11, 251:23, 260:5, 273:6, 275:16, 287:11, 303:1, 304:25</p> <p><b>Jeffrey</b> [4] - 7:13, 19:7, 159:18, 160:15</p> <p><b>JEFFREY</b> [2] - 4:22, 160:6</p> <p><b>job</b> [8] - 70:4, 94:20, 185:11, 220:22, 233:23, 256:16</p> <p><b>join</b> [3] - 23:1, 23:6, 23:7</p> <p><b>joint</b> [8] - 18:16, 19:6, 20:20, 139:19, 213:16, 221:19, 222:10</p> <p><b>Joint</b> [2] - 28:7, 61:1</p>	<p><b>jointly</b> [4] - 19:4, 47:9, 54:4, 167:24</p> <p><b>Judge</b> [2] - 9:5, 206:5</p> <p><b>judge</b> [9] - 23:22, 27:2, 36:5, 102:8, 119:13, 203:15, 204:18, 204:24, 205:2</p> <p><b>JUDGE</b> [210] - 1:22, 9:4, 10:2, 10:8, 10:13, 11:14, 11:18, 11:21, 11:25, 12:3, 21:14, 22:12, 22:24, 23:1, 23:4, 23:6, 23:8, 23:11, 23:15, 23:20, 23:24, 24:3, 24:6, 24:9, 24:13, 24:18, 24:21, 24:24, 25:1, 25:12, 25:14, 25:16, 25:21, 26:9, 27:14, 44:23, 52:6, 81:12, 81:14, 81:17, 81:20, 83:22, 94:23, 97:4, 102:6, 102:9, 102:11, 104:3, 104:7, 106:9, 106:11, 106:13, 108:3, 108:6, 108:8, 108:10, 108:13, 108:16, 109:4, 130:2, 131:25, 132:3, 137:20, 138:19, 138:25, 139:12, 139:15, 139:18, 139:23, 140:3, 140:6, 140:9, 140:11, 140:13, 141:18, 143:13, 146:18, 147:7, 148:5, 148:8, 150:20, 150:23, 150:25, 151:2, 151:11, 151:15, 151:17, 151:19, 152:5, 152:18, 152:21, 152:25, 154:22, 159:6, 159:8, 159:11, 159:17, 159:19, 160:5, 179:16, 179:19, 179:22, 180:16, 183:20, 183:24, 184:1, 184:4, 184:7, 184:10, 184:21, 196:20, 198:20, 202:9, 206:15, 206:22, 207:3, 207:6, 207:10, 207:24, 208:3, 208:18, 208:24, 209:5, 214:8, 220:14, 222:15, 224:18, 224:22, 225:6, 225:10, 225:18, 225:21, 225:23, 226:4, 226:22, 227:25, 228:3, 228:5, 228:10, 228:19, 228:21, 228:25, 229:7, 229:12, 231:8, 231:10, 232:9, 232:13, 232:15, 232:23, 233:9, 236:24, 237:19, 242:3, 242:6, 242:12, 242:23, 248:13, 251:23, 253:7, 253:10, 258:3, 258:15, 259:11, 259:24, 260:3, 260:5, 260:7, 260:10, 260:13, 260:24, 268:2, 273:6, 273:8, 273:20,</p>	<p>275:10, 275:14, 275:16, 275:18, 275:23, 276:4, 276:25, 277:4, 277:9, 277:15, 278:1, 280:25, 287:11, 291:9, 297:15, 302:15, 302:18, 302:20, 302:22, 303:1, 303:3, 303:6, 303:11, 303:18, 303:20, 304:3, 304:6, 304:18, 304:25, 305:3, 305:19, 307:5, 307:19, 308:7, 308:15</p> <p><b>judging</b> [1] - 297:24</p> <p><b>judgment</b> [3] - 166:15, 284:12, 308:9</p> <p><b>judgmentally</b> [1] - 295:4</p> <p><b>July</b> [2] - 59:24, 234:18</p> <p><b>June</b> [2] - 234:9, 235:21</p> <p><b>jurisdiction</b> [1] - 228:16</p> <p><b>jurisdictions</b> [6] - 191:18, 291:19, 291:23, 297:4, 300:6</p> <p><b>justifies</b> [1] - 255:5</p> <p><b>justify</b> [3] - 50:10, 247:23, 257:11</p>	<p><b>kind</b> [28] - 18:5, 59:14, 59:16, 65:21, 75:24, 84:23, 97:9, 160:18, 161:20, 198:1, 201:6, 204:25, 205:4, 211:20, 212:4, 235:10, 248:18, 251:10, 251:15, 254:24, 258:7, 275:1, 275:5, 288:25, 291:16, 291:19, 298:12, 302:5</p> <p><b>kinds</b> [2] - 195:13, 296:23</p> <p><b>King</b> [2] - 96:20, 96:21</p> <p><b>knocked</b> [1] - 294:13</p> <p><b>knowing</b> [5] - 124:4, 140:25, 200:19, 206:9, 215:19</p> <p><b>knowledge</b> [1] - 123:4</p> <p><b>known</b> [2] - 218:8, 252:11</p> <p><b>Kopp</b> [2] - 7:13, 16:22, 17:11, 19:7, 21:9, 43:7, 67:10, 68:5, 159:18, 159:19, 160:15, 165:4, 170:5, 172:17, 184:5, 187:23, 239:13, 280:8, 285:8, 285:15, 286:4</p> <p><b>KOPP</b> [2] - 4:22, 160:6</p> <p><b>Kopp's</b> [2] - 285:1, 286:3</p> <p><b>Kuntz</b> [2] - 11:14, 11:15</p> <p><b>KUNTZ</b> [7] - 2:13, 11:15, 206:18, 206:25, 207:5, 207:8, 207:11</p> <p><b>kw</b> [1] - 168:12</p>
<b>K</b>			
<p><b>K-o-p-p</b> [1] - 160:15</p> <p><b>KALK</b> [27] - 2:4, 10:9, 97:5, 97:7, 97:13, 102:3, 106:16, 108:2, 137:23, 138:13, 139:6, 139:11, 140:18, 141:17, 159:15, 180:19, 183:18, 220:17, 222:13, 253:9, 253:12, 258:2, 273:11, 273:18, 302:17, 307:6, 307:17</p> <p><b>Kalk</b> [19] - 4:10, 4:12, 4:16, 4:24, 5:6, 5:16, 5:21, 10:8, 97:4, 106:14, 137:21, 180:17, 220:15, 253:10, 258:19, 273:9, 277:10, 302:16, 307:5</p> <p><b>Kalk's</b> [2] - 102:17, 138:21</p> <p><b>Kansas</b> [1] - 161:13</p> <p><b>keep</b> [9] - 75:1, 141:4, 216:7, 220:25, 222:23, 255:16, 298:19, 301:18, 301:24</p> <p><b>kept</b> [1] - 168:20</p> <p><b>Kevin</b> [4] - 10:2, 97:18, 220:21, 220:25</p> <p><b>KEVIN</b> [1] - 2:4</p> <p><b>key</b> [1] - 111:4</p> <p><b>keys</b> [1] - 84:15</p> <p><b>kick</b> [2] - 288:7</p> <p><b>kilowatt</b> [3] - 55:9, 106:21, 106:23</p> <p><b>kilowatt-hour</b> [1] - 55:9</p>			
<b>L</b>			
<p><b>lab</b> [2] - 97:14, 283:13</p> <p><b>labor</b> [6] - 78:13, 245:16, 245:18, 249:25, 250:5, 251:15</p> <p><b>Laboratory</b> [1] - 176:11</p> <p><b>Labs</b> [1] - 283:9</p> <p><b>lack</b> [3] - 73:3, 75:4, 269:16</p> <p><b>laid</b> [1] - 42:10</p> <p><b>lake</b> [1] - 48:3</p> <p><b>Lake</b> [2] - 87:22, 190:14</p> <p><b>Lakes</b> [1] - 126:6</p> <p><b>land</b> [1] - 111:15</p> <p><b>language</b> [3] - 130:20, 131:7, 131:13</p> <p><b>large</b> [26] - 14:18, 16:8, 22:5, 30:9, 37:8, 37:9, 43:12, 69:17, 84:12, 86:6, 101:8, 119:6, 160:20, 183:5, 193:14, 197:22, 216:3, 216:9, 217:10, 217:21, 221:21, 222:11, 250:8, 252:20, 291:5, 291:23</p> <p><b>largely</b> [1] - 280:2</p> <p><b>larger</b> [6] - 34:15, 88:15, 101:5, 107:9, 211:3</p> <p><b>largest</b> [6] - 14:19, 38:24,</p>			

<p>40:8, 143:4, 186:15, 299:5  <b>last</b> [25] - 32:19, 58:18, 58:24, 60:12, 63:20, 70:14, 70:15, 72:3, 92:3, 96:14, 100:5, 100:13, 118:19, 146:13, 152:15, 157:12, 157:16, 158:8, 158:13, 183:7, 195:15, 230:25, 233:18, 278:11, 307:13  <b>lastly</b> [5] - 169:10, 171:24, 171:25, 173:22, 178:25  <b>late</b> [12] - 41:20, 77:7, 138:9, 138:12, 205:23, 206:2, 206:10, 208:4, 208:25, 209:8, 224:12, 303:22  <b>Late</b> [1] - 7:20  <b>late-filed</b> [6] - 206:10, 208:4, 208:25, 209:8, 224:12, 303:22  <b>Late-filed</b> [1] - 7:20  <b>latest</b> [1] - 287:2  <b>latter</b> [1] - 103:7  <b>law</b> [25] - 11:11, 25:24, 71:6, 71:7, 71:8, 108:18, 121:1, 151:21, 159:22, 184:14, 199:25, 203:15, 204:18, 204:24, 205:2, 218:7, 226:1, 233:1, 242:15, 254:8, 260:15, 277:17, 306:12, 306:15, 308:9  <b>LAW</b> [1] - 1:22  <b>Law</b> [2] - 2:7, 9:5  <b>Lawrence</b> [2] - 176:10, 283:8  <b>lay</b> [1] - 250:1  <b>lay-down</b> [1] - 250:1  <b>laying</b> [1] - 220:23  <b>LBNL</b> [3] - 176:13, 177:6, 178:10  <b>LCA-3-1</b> [1] - 22:8  <b>lead</b> [4] - 14:25, 41:15, 189:19, 197:22  <b>leading</b> [2] - 96:14, 138:1  <b>League</b> [1] - 213:13  <b>leases</b> [1] - 153:17  <b>least</b> [44] - 17:24, 32:15, 47:10, 49:21, 57:3, 71:3, 93:17, 121:5, 141:14, 142:24, 149:23, 150:2, 158:23, 174:12, 188:1, 189:6, 191:5, 191:14, 197:17, 198:13, 206:18, 209:21, 212:2, 212:7, 226:20, 235:6, 235:9, 237:16, 248:5, 263:6, 263:21, 264:2, 266:19, 270:10, 271:15, 271:23, 272:19, 272:22, 272:23, 274:18, 275:6, 276:1, 276:13, 279:8  <b>least-cost</b> [13] - 17:24,</p>	<p>32:15, 93:17, 191:5, 191:14, 212:2, 212:7, 235:6, 237:16, 263:6, 263:21, 264:2, 279:8  <b>leave</b> [4] - 18:21, 19:3, 75:6, 75:12  <b>led</b> [2] - 128:5, 138:3  <b>left</b> [5] - 118:3, 171:7, 173:2, 236:17, 237:1  <b>left-hand</b> [2] - 171:7, 236:17  <b>legacy</b> [1] - 301:6  <b>legal</b> [4] - 66:24, 132:24, 210:3, 228:17  <b>legislative</b> [1] - 210:4  <b>legitimate</b> [1] - 129:9  <b>Leland</b> [1] - 49:9  <b>length</b> [1] - 101:1  <b>lengthy</b> [1] - 245:2  <b>less</b> [21] - 17:3, 46:9, 53:15, 55:2, 55:12, 98:17, 137:9, 146:2, 146:10, 170:22, 181:23, 183:3, 183:4, 189:21, 219:19, 269:8, 274:16, 295:17, 295:18, 300:14, 301:8  <b>level</b> [11] - 59:19, 126:19, 136:6, 150:1, 150:5, 210:18, 211:8, 240:10, 240:14, 292:21, 301:15  <b>levelized</b> [26] - 43:19, 68:3, 162:8, 162:22, 163:1, 163:11, 163:19, 163:24, 170:2, 170:10, 170:12, 170:18, 170:20, 171:4, 171:5, 174:6, 176:22, 176:23, 176:24, 177:2, 239:12, 239:18, 263:25, 266:22  <b>levelizing</b> [1] - 163:13  <b>levels</b> [4] - 137:15, 187:1, 241:12, 267:23  <b>leverage</b> [2] - 141:1, 155:14  <b>leveraged</b> [1] - 140:24  <b>Lewis</b> [1] - 87:21  <b>life</b> [17] - 16:9, 63:7, 64:1, 64:9, 64:17, 68:16, 68:18, 69:3, 69:22, 70:14, 98:23, 99:4, 106:19, 107:8, 239:16, 239:19, 266:21  <b>light</b> [2] - 67:13, 274:11  <b>lights</b> [2] - 301:18, 301:24  <b>lignite</b> [28] - 48:18, 49:23, 50:4, 50:21, 51:8, 51:12, 51:19, 52:9, 52:10, 52:11, 52:12, 52:13, 52:19, 69:4, 80:25, 91:11, 91:20, 96:3, 96:22, 122:11, 123:4, 123:7, 147:14, 147:18, 147:25, 197:7  <b>lignite-fired</b> [1] - 147:25</p>	<p><b>likelihood</b> [5] - 39:24, 187:16, 214:18, 215:1, 274:15  <b>likely</b> [16] - 58:9, 73:22, 79:9, 89:18, 156:14, 188:24, 190:16, 194:18, 209:13, 215:12, 250:13, 265:15, 266:6, 271:5, 274:16, 283:5  <b>likewise</b> [2] - 24:19, 304:19  <b>lime</b> [2] - 33:18, 33:24  <b>limestone</b> [1] - 37:22  <b>limit</b> [6] - 10:1, 25:9, 192:18, 210:13, 210:15, 290:11  <b>limitation</b> [1] - 25:16  <b>limited</b> [7] - 21:7, 41:17, 74:24, 79:16, 143:7, 247:8, 276:21  <b>limits</b> [1] - 113:19  <b>linchpin</b> [1] - 111:18  <b>line</b> [5] - 78:5, 170:14, 171:22, 173:1, 288:19  <b>linear</b> [1] - 166:12  <b>lines</b> [7] - 79:1, 121:3, 124:7, 177:12, 239:2, 239:6, 281:22  <b>list</b> [7] - 20:19, 21:4, 22:20, 30:5, 114:11, 143:22, 144:5  <b>listed</b> [2] - 20:14, 144:7  <b>listen</b> [2] - 95:15, 253:15  <b>listening</b> [2] - 12:10, 226:13  <b>listing</b> [1] - 165:5  <b>litany</b> [1] - 224:4  <b>literally</b> [1] - 211:4  <b>litigation</b> [3] - 80:21, 147:12, 209:23  <b>live</b> [3] - 55:24, 201:3, 215:5  <b>LLP</b> [1] - 2:7  <b>load</b> [41] - 53:8, 55:9, 55:11, 55:16, 55:21, 55:25, 56:3, 56:7, 56:25, 59:24, 61:3, 61:4, 61:8, 61:16, 62:25, 63:4, 63:11, 63:13, 63:14, 63:15, 64:14, 64:16, 64:24, 66:10, 67:19, 87:16, 88:10, 88:20, 90:19, 169:2, 188:8, 234:2, 235:15, 238:2, 261:21, 267:1, 267:18, 267:22, 301:8  <b>loads</b> [2] - 190:14, 286:21  <b>lobbying</b> [3] - 123:13, 123:19, 140:20  <b>located</b> [5] - 62:10, 119:5, 168:18, 222:24, 298:16  <b>location</b> [2] - 38:6, 47:23  <b>lodged</b> [2] - 121:16, 133:14  <b>logical</b> [1] - 251:8  <b>lone</b> [2] - 141:14, 141:15  <b>long-term</b> [11] - 101:2, 153:8,</p>	<p>154:7, 154:10, 154:12, 155:3, 190:7, 270:6, 270:15, 274:9, 285:18  <b>look</b> [44] - 9:23, 10:12, 16:22, 48:10, 58:22, 70:21, 95:14, 96:8, 120:6, 121:6, 125:11, 126:22, 128:1, 138:10, 149:19, 149:25, 157:7, 162:17, 163:12, 177:22, 182:11, 189:12, 211:7, 221:11, 237:3, 239:14, 256:15, 256:17, 257:22, 257:25, 269:2, 269:7, 270:4, 282:15, 284:10, 286:25, 287:7, 298:10, 300:18, 301:22, 301:23, 305:16, 307:1  <b>looked</b> [39] - 31:22, 35:15, 43:15, 65:12, 93:14, 99:18, 120:11, 154:17, 156:11, 162:23, 163:1, 164:8, 165:22, 166:25, 167:8, 167:11, 168:10, 171:24, 171:25, 172:1, 172:10, 172:16, 173:14, 173:23, 176:19, 179:1, 179:6, 182:18, 255:20, 263:4, 263:11, 263:17, 263:18, 283:24, 284:4, 285:16, 298:23, 299:9, 300:8  <b>looking</b> [28] - 15:8, 38:14, 42:4, 45:13, 51:21, 54:7, 58:23, 58:25, 78:20, 78:21, 79:11, 90:18, 91:23, 104:22, 107:2, 121:4, 126:8, 127:15, 134:23, 136:10, 158:20, 171:3, 190:9, 218:1, 234:23, 240:20, 269:1, 271:24  <b>looks</b> [2] - 126:23, 305:22  <b>lose</b> [3] - 15:16, 98:6, 294:16  <b>loss</b> [1] - 98:5  <b>lost</b> [1] - 90:14  <b>Lostwoods</b> [2] - 126:4  <b>lostwoods</b> [1] - 126:7  <b>love</b> [1] - 66:9  <b>low</b> [10] - 56:23, 176:14, 236:14, 237:5, 237:7, 237:9, 258:11, 263:12, 263:15, 266:18  <b>lower</b> [19] - 45:17, 55:15, 59:12, 60:10, 60:11, 61:6, 66:15, 83:17, 98:13, 125:6, 158:4, 170:24, 173:11, 183:13, 267:14, 280:6, 293:4, 295:5, 301:16  <b>lower-cost</b> [1] - 267:14  <b>lowering</b> [1] - 220:6  <b>lowers</b> [1] - 137:5  <b>lowest</b> [13] - 14:1, 16:5, 16:6,</p>
--	--	---	--

<p>17:3, 17:15, 17:19, 40:5, 41:2, 78:5, 170:24, 174:5, 174:9, 298:22</p> <p><b>lowest-cost</b> [4] - 16:5, 17:3, 17:15, 17:19</p> <p><b>lunch</b> [6] - 12:18, 151:6, 151:7, 159:13, 159:16, 202:15</p> <p><b>Lundy</b> [7] - 29:24, 38:1, 38:4, 38:25, 39:4, 165:19, 165:21</p> <p><b>Lundy's</b> [1] - 38:15</p>	<p><b>mandate</b> [2] - 241:7, 241:18</p> <p><b>manpower</b> [2] - 78:7, 78:13</p> <p><b>manufacturers</b> [1] - 176:6</p> <p><b>March</b> [6] - 15:25, 16:2, 73:24, 74:1, 74:20, 118:8</p> <p><b>Marentette</b> [1] - 11:13</p> <p><b>margin</b> [2] - 16:7, 17:15</p> <p><b>marginal</b> [2] - 58:10, 80:1</p> <p><b>marginally</b> [1] - 267:17</p> <p><b>Mark</b> [15] - 6:10, 11:20, 11:22, 14:2, 14:13, 15:11, 18:16, 25:20, 26:17, 95:3, 97:8, 182:24, 201:14, 210:23, 224:4</p>	<p>33:8, 105:9, 105:22, 113:20, 123:17, 128:24, 137:9, 192:10, 197:9, 197:11, 224:6, 241:6, 308:21</p> <p><b>matters</b> [1] - 225:4</p> <p><b>maximum</b> [7] - 35:9, 39:19, 70:6, 70:7, 82:4, 142:14, 156:14</p> <p><b>MBA</b> [1] - 161:12</p> <p><b>McDonnell</b> [21] - 7:14, 7:16, 16:16, 19:8, 32:7, 32:14, 43:3, 43:19, 44:6, 112:1, 154:18, 160:17, 160:19, 160:20, 162:6, 166:20, 167:23, 177:4, 177:8, 263:10, 286:8</p>	<p>256:20, 256:22, 257:8, 258:20, 259:6, 259:17, 259:18, 270:23, 272:4, 274:1, 286:18, 290:3, 290:14, 290:19, 297:2, 297:9, 297:10, 298:6, 298:12, 300:16, 301:2, 301:14, 308:10</p> <p><b>meaning</b> [1] - 200:7</p> <p><b>means</b> [9] - 38:14, 68:4, 148:23, 155:7, 155:8, 155:9, 163:11, 182:14, 265:6</p> <p><b>meant</b> [3] - 74:16, 155:23, 249:19</p> <p><b>measured</b> [1] - 134:18</p> <p><b>measures</b> [1] - 124:24</p> <p><b>mechanism</b> [1] - 217:11</p> <p><b>medium</b> [3] - 236:14, 237:5, 237:8</p> <p><b>meet</b> [11] - 43:16, 60:5, 141:4, 142:12, 234:4, 235:9, 235:16, 263:6, 270:13, 298:2, 298:3</p>
<b>M</b>			
<p><b>Mac</b> [8] - 17:4, 19:11, 43:24, 93:13, 153:13, 162:20, 174:2, 285:4</p> <p><b>MacFarlane</b> [1] - 256:17</p> <p><b>Mackenzie</b> [6] - 153:19, 153:22, 175:12, 175:13, 285:6, 285:11</p> <p><b>MACT</b> [27] - 39:19, 40:1, 40:17, 58:2, 76:13, 78:18, 79:24, 86:21, 141:23, 142:13, 142:19, 142:22, 143:4, 194:1, 194:6, 194:12, 194:16, 194:19, 214:18, 214:19, 215:1, 215:7, 215:9, 215:15, 248:6, 251:18</p> <p><b>magic</b> [2] - 295:6, 295:23</p> <p><b>main</b> [2] - 60:18, 172:10</p> <p><b>maintain</b> [3] - 30:24, 58:12, 99:14</p> <p><b>maintained</b> [2] - 45:7, 66:8</p> <p><b>Maintenance</b> [2] - 6:22, 6:24</p> <p><b>maintenance</b> [13] - 30:19, 45:23, 64:5, 77:2, 77:4, 77:9, 77:13, 77:17, 99:9, 153:17, 264:15, 270:17, 271:8</p> <p><b>major</b> [11] - 14:11, 33:5, 38:19, 39:1, 41:14, 42:3, 77:23, 77:24, 113:15, 194:23, 199:8</p> <p><b>majority</b> [1] - 20:10</p> <p><b>malfunction</b> [1] - 117:8</p> <p><b>manage</b> [1] - 246:2</p> <p><b>management</b> [2] - 218:13, 294:4</p> <p><b>manager</b> [16] - 18:17, 18:18, 18:20, 18:24, 19:8, 20:6, 26:21, 26:22, 109:15, 153:6, 161:4, 161:24, 162:7, 233:24, 261:14, 278:17</p> <p><b>managers</b> [1] - 111:15</p> <p><b>managing</b> [1] - 41:4</p>	<p><b>MARK</b> [2] - 2:20, 3:2</p> <p><b>mark</b> [2] - 4:7, 26:6</p> <p><b>marked</b> [24] - 21:4, 27:24, 28:7, 29:7, 29:10, 29:17, 30:3, 30:14, 31:1, 31:15, 32:4, 32:16, 33:2, 104:14, 112:11, 115:10, 120:25, 231:3, 234:20, 243:21, 244:1, 262:2, 262:19, 282:11</p> <p><b>market</b> [62] - 14:4, 17:21, 31:14, 40:10, 40:14, 40:17, 40:25, 41:21, 43:1, 57:25, 58:2, 60:2, 60:4, 79:9, 79:17, 85:8, 85:22, 85:23, 85:24, 86:1, 86:3, 86:4, 86:11, 86:13, 86:15, 86:16, 86:17, 86:23, 86:24, 88:5, 107:1, 108:1, 165:2, 176:1, 176:9, 179:9, 182:2, 183:4, 195:10, 195:14, 195:25, 265:2, 265:5, 265:8, 265:14, 265:16, 265:20, 265:23, 266:1, 266:7, 267:7, 267:13, 267:23, 268:24, 269:9, 271:15, 271:16, 272:23, 286:23, 286:24, 293:13</p> <p><b>marketing</b> [1] - 185:15</p> <p><b>marketplace</b> [3] - 107:23, 124:16, 286:19</p> <p><b>markets</b> [6] - 160:22, 160:25, 196:5, 219:16, 272:21, 286:16</p> <p><b>Marohl</b> [1] - 11:24</p> <p><b>match</b> [2] - 91:2, 175:1</p> <p><b>material</b> [19] - 21:1, 21:8, 26:1, 34:2, 42:2, 47:3, 74:24, 75:15, 90:3, 108:20, 151:24, 159:24, 172:3, 172:4, 184:19, 233:3, 242:17, 260:18, 277:20</p> <p><b>materially</b> [1] - 120:17</p> <p><b>materials</b> [6] - 27:4, 28:3, 28:17, 74:17, 74:21, 78:21</p> <p><b>matter</b> [15] - 21:21, 25:4,</p>	<p>57:8, 105:9, 105:22, 113:20, 123:17, 128:24, 137:9, 192:10, 197:9, 197:11, 224:6, 241:6, 308:21</p> <p><b>matters</b> [1] - 225:4</p> <p><b>maximum</b> [7] - 35:9, 39:19, 70:6, 70:7, 82:4, 142:14, 156:14</p> <p><b>MBA</b> [1] - 161:12</p> <p><b>McDonnell</b> [21] - 7:14, 7:16, 16:16, 19:8, 32:7, 32:14, 43:3, 43:19, 44:6, 112:1, 154:18, 160:17, 160:19, 160:20, 162:6, 166:20, 167:23, 177:4, 177:8, 263:10, 286:8</p> <p><b>MDU</b> [48] - 2:14, 8:6, 8:8, 8:9, 8:11, 8:13, 8:18, 10:12, 14:24, 17:22, 20:4, 20:7, 20:23, 22:7, 24:2, 27:25, 28:8, 33:2, 47:10, 54:11, 57:8, 60:8, 65:5, 80:24, 87:14, 87:21, 88:10, 97:22, 124:14, 125:6, 128:22, 130:15, 162:13, 209:8, 252:6, 252:14, 252:17, 255:12, 257:21, 258:24, 259:1, 262:2, 271:25, 272:6, 272:11, 284:16</p> <p><b>MDU's</b> [6] - 53:22, 54:3, 58:15, 72:18, 87:3, 267:3</p> <p><b>MDU'S</b> [1] - 54:20</p> <p><b>MDU-301</b> [1] - 243:21</p> <p><b>MDU-303</b> [1] - 262:3</p> <p><b>MDU-304</b> [1] - 262:5</p> <p><b>MDU-305</b> [1] - 262:19</p> <p><b>MDU-OTP</b> [1] - 209:8</p> <p><b>mean</b> [97] - 15:15, 16:1, 46:8, 46:12, 46:24, 55:14, 57:21, 58:8, 62:2, 62:23, 63:22, 63:24, 64:12, 64:20, 70:8, 72:19, 73:1, 73:11, 75:7, 76:10, 77:6, 80:8, 80:11, 82:19, 83:11, 83:14, 87:14, 91:19, 99:11, 100:25, 101:1, 103:7, 103:23, 106:22, 107:1, 111:1, 115:2, 120:20, 120:22, 123:13, 125:3, 126:13, 128:12, 129:5, 129:17, 130:6, 130:22, 131:3, 131:22, 132:17, 132:21, 137:4, 181:9, 181:16, 182:17, 187:25, 188:3, 188:7, 188:22, 196:12, 205:11, 207:8, 208:14, 219:14, 221:4, 221:8, 238:25, 239:6, 239:7, 251:5, 253:17, 253:20,</p>	<p>256:20, 256:22, 257:8, 258:20, 259:6, 259:17, 259:18, 270:23, 272:4, 274:1, 286:18, 290:3, 290:14, 290:19, 297:2, 297:9, 297:10, 298:6, 298:12, 300:16, 301:2, 301:14, 308:10</p> <p><b>meaning</b> [1] - 200:7</p> <p><b>means</b> [9] - 38:14, 68:4, 148:23, 155:7, 155:8, 155:9, 163:11, 182:14, 265:6</p> <p><b>meant</b> [3] - 74:16, 155:23, 249:19</p> <p><b>measured</b> [1] - 134:18</p> <p><b>measures</b> [1] - 124:24</p> <p><b>mechanism</b> [1] - 217:11</p> <p><b>medium</b> [3] - 236:14, 237:5, 237:8</p> <p><b>meet</b> [11] - 43:16, 60:5, 141:4, 142:12, 234:4, 235:9, 235:16, 263:6, 270:13, 298:2, 298:3</p> <p><b>meeting</b> [2] - 149:22, 150:14</p> <p><b>meets</b> [2] - 149:15, 211:8</p> <p><b>megawatt</b> [12] - 43:21, 53:3, 59:8, 59:14, 60:21, 83:6, 83:9, 107:17, 177:10, 177:20, 254:19</p> <p><b>megawatt-hour</b> [4] - 43:21, 60:21, 177:10, 177:20</p> <p><b>megawatt-hours</b> [6] - 53:3, 59:8, 59:14, 83:6, 254:19</p> <p><b>megawatts</b> [11] - 59:25, 62:12, 81:25, 90:19, 98:6, 107:18, 107:19, 254:10, 254:21, 255:6, 264:22</p> <p><b>member</b> [2] - 226:6, 306:17</p> <p><b>memorandum</b> [1] - 205:5</p> <p><b>memorandums</b> [1] - 65:21</p> <p><b>memory</b> [2] - 236:8, 273:12</p> <p><b>mention</b> [2] - 228:14, 230:19</p> <p><b>mentioned</b> [10] - 19:7, 56:10, 90:24, 115:15, 158:15, 178:18, 178:25, 182:25, 236:18, 296:8</p> <p><b>Mercury</b> [3] - 6:15, 6:17, 29:17</p> <p><b>mercury</b> [27] - 39:10, 39:13, 39:14, 39:17, 39:23, 40:1, 90:9, 90:10, 90:11, 99:21, 172:2, 193:20, 193:21, 193:22, 194:1, 194:4, 214:17, 215:4, 215:14, 248:4, 248:7, 248:24, 248:25, 250:12, 250:19, 287:18, 287:19</p> <p><b>message</b> [2] - 118:2, 118:3</p> <p><b>met</b> [3] - 146:6, 149:13,</p>

<p>288:6  <b>metal</b> [1] - 211:11  <b>meteorology</b> [1] - 135:24  <b>method</b> [5] - 40:8, 40:24, 86:11, 92:16  <b>methodologies</b> [1] - 139:7  <b>methodology</b> [2] - 149:3, 163:22  <b>Michigan</b> [1] - 126:13  <b>microns</b> [1] - 137:9  <b>microphone</b> [1] - 259:16  <b>mid</b> [3] - 176:14, 205:23, 206:2  <b>mid-to-late</b> [2] - 205:23, 206:2  <b>middle</b> [2] - 173:4, 278:10  <b>might</b> [51] - 15:21, 20:25, 86:10, 92:17, 95:7, 112:10, 114:10, 115:22, 134:17, 135:5, 135:15, 135:17, 135:18, 142:1, 142:12, 142:19, 143:7, 144:16, 145:1, 146:3, 150:15, 152:23, 181:7, 183:5, 191:22, 195:10, 195:13, 202:22, 207:17, 210:5, 210:6, 215:6, 218:7, 224:14, 225:2, 225:3, 225:15, 227:20, 231:20, 254:14, 256:20, 256:22, 274:2, 274:4, 274:23, 293:22, 295:10, 297:8, 299:19, 300:11, 306:16  <b>miles</b> [4] - 66:3, 66:5, 107:3  <b>million</b> [24] - 13:24, 39:10, 39:11, 71:1, 74:2, 74:3, 74:19, 90:10, 97:21, 97:22, 99:22, 101:5, 101:9, 129:19, 157:21, 201:20, 235:23, 235:25, 236:1, 247:9, 254:18, 279:18, 292:20  <b>Milton</b> [1] - 49:10  <b>mind</b> [8] - 106:18, 127:14, 149:23, 216:7, 222:23, 226:14, 238:25, 255:4  <b>mindings</b> [1] - 10:11  <b>mine</b> [6] - 48:16, 52:11, 60:23, 91:21, 95:19, 277:8  <b>mine-mouth</b> [4] - 48:16, 52:11, 60:23, 95:19  <b>Minerals</b> [1] - 113:13  <b>minimally</b> [1] - 276:13  <b>minimize</b> [1] - 79:7  <b>minimum</b> [8] - 63:15, 64:16, 87:13, 87:16, 87:18, 251:11, 267:22, 298:3  <b>Minneapolis</b> [1] - 2:9  <b>Minnesota</b> [67] - 2:9, 2:22, 7:20, 61:10, 62:1, 62:7,</p>	<p>71:5, 71:9, 71:13, 71:14, 71:20, 76:16, 88:22, 89:2, 92:20, 93:11, 93:12, 93:14, 94:1, 96:20, 105:24, 106:1, 106:4, 107:4, 153:25, 180:7, 186:7, 186:23, 188:18, 191:13, 202:21, 203:5, 203:11, 203:13, 203:14, 203:21, 204:16, 204:24, 205:15, 205:22, 207:14, 208:10, 209:7, 209:20, 211:17, 211:21, 212:13, 212:22, 213:5, 213:12, 223:16, 224:5, 225:1, 226:1, 227:4, 228:11, 228:15, 234:8, 234:24, 237:9, 237:11, 241:7, 266:20, 296:7, 296:11, 297:7, 297:10  <b>Minnesota's</b> [1] - 296:21  <b>minor</b> [1] - 83:19  <b>minus</b> [12] - 17:8, 17:9, 70:6, 70:9, 129:19, 154:18, 173:3, 175:6, 175:10, 287:1, 287:4  <b>minute</b> [3] - 224:20, 236:21, 299:21  <b>minutes</b> [5] - 12:17, 97:16, 276:1, 276:2, 277:1  <b>mischaracterizes</b> [1] - 130:1  <b>misheard</b> [1] - 249:10  <b>MISO</b> [23] - 56:2, 60:2, 60:13, 61:24, 62:23, 79:17, 179:1, 179:2, 179:9, 195:1, 264:21, 264:23, 265:1, 265:17, 265:24, 266:2, 266:4, 267:7, 267:22, 271:25, 272:7, 272:11  <b>MISO-wide</b> [1] - 272:7  <b>MISOs</b> [1] - 301:13  <b>Missouri</b> [4] - 48:6, 48:8, 161:11, 161:14  <b>mitigate</b> [3] - 123:15, 124:25, 125:9  <b>mix</b> [9] - 87:23, 189:7, 189:12, 189:24, 189:25, 190:3, 190:10, 190:19, 190:22  <b>model</b> [16] - 36:17, 67:17, 67:18, 106:22, 126:14, 128:2, 134:17, 135:1, 164:18, 235:4, 235:5, 235:12, 265:3, 270:20, 272:24  <b>modeled</b> [4] - 239:10, 258:9, 266:8, 270:9  <b>modeling</b> [63] - 110:9, 111:11, 111:13, 111:23, 125:18, 125:20, 126:10, 126:18, 126:19, 127:12,</p>	<p>127:17, 127:19, 127:20, 127:23, 128:9, 133:18, 133:20, 134:1, 134:3, 134:7, 134:14, 134:15, 134:21, 134:23, 135:11, 135:13, 139:3, 139:13, 140:14, 145:2, 148:13, 150:2, 150:11, 164:14, 164:16, 164:21, 164:24, 165:10, 165:12, 165:13, 169:24, 235:1, 235:10, 235:13, 236:4, 237:3, 240:3, 263:9, 263:22, 264:1, 264:7, 264:9, 264:19, 265:18, 268:25, 269:2, 269:11, 269:18, 270:3, 270:7, 272:14, 272:20  <b>Modeling</b> [1] - 7:18  <b>modelings</b> [1] - 134:12  <b>models</b> [4] - 134:8, 177:18, 241:4, 272:3  <b>modified</b> [1] - 89:8  <b>modify</b> [2] - 89:10, 230:13  <b>moment</b> [25] - 20:12, 36:10, 60:24, 68:1, 81:10, 118:9, 118:17, 130:4, 131:23, 144:11, 144:23, 146:17, 165:5, 170:6, 179:18, 225:8, 236:17, 236:19, 242:1, 254:25, 268:3, 269:21, 271:20, 283:6, 297:25  <b>monetizing</b> [1] - 178:2  <b>money</b> [16] - 108:1, 163:15, 200:10, 200:20, 201:1, 217:13, 218:24, 219:3, 288:22, 289:8, 289:15, 291:1, 291:5, 296:20, 296:24  <b>Monica</b> [1] - 118:25  <b>monitoring</b> [2] - 117:7, 134:18  <b>MONTANA</b> [2] - 2:10, 2:17  <b>Montana</b> [42] - 1:5, 9:11, 10:20, 11:17, 12:5, 14:20, 19:25, 32:19, 198:6, 199:7, 206:19, 207:19, 242:11, 243:10, 243:24, 244:5, 244:9, 246:9, 246:22, 247:2, 247:10, 248:2, 248:6, 252:19, 261:12, 261:14, 262:6, 262:14, 263:3, 264:6, 264:9, 264:22, 265:3, 265:12, 265:18, 265:24, 266:4, 266:6, 266:8, 266:11, 283:21, 308:21  <b>MONTANA-DAKOTA</b> [2] - 2:10, 2:17</p>	<p><b>Montana-Dakota</b> [31] - 1:5, 9:11, 10:20, 11:17, 12:5, 14:20, 19:25, 198:6, 199:7, 206:19, 242:11, 243:10, 243:24, 244:5, 246:9, 246:22, 247:2, 247:10, 248:2, 248:6, 252:19, 262:14, 264:22, 265:3, 266:8, 266:11, 283:21, 308:21  <b>Montana-Dakota's</b> [10] - 207:19, 244:9, 263:3, 264:6, 264:9, 265:12, 265:18, 265:24, 266:4, 266:6  <b>month</b> [5] - 76:19, 194:14, 195:23, 195:24, 227:21  <b>months</b> [9] - 76:6, 76:7, 76:9, 77:8, 77:9, 79:10, 79:11, 85:13, 92:11  <b>Morales</b> [1] - 119:1  <b>morning</b> [24] - 9:4, 9:22, 10:3, 10:6, 10:9, 11:10, 11:19, 13:1, 21:16, 26:13, 26:14, 31:23, 56:4, 63:11, 109:7, 109:8, 109:23, 196:24, 210:24, 238:21, 266:25, 276:7, 276:17, 285:9  <b>most</b> [20] - 21:22, 31:14, 47:19, 79:9, 79:23, 89:9, 103:11, 146:13, 169:4, 194:8, 195:12, 220:23, 234:7, 234:15, 250:13, 265:6, 269:5, 269:13, 270:12  <b>most-economic</b> [2] - 269:5, 269:13  <b>mouth</b> [6] - 48:16, 50:21, 52:11, 60:23, 95:19, 290:20  <b>move</b> [10] - 22:16, 22:21, 23:14, 23:18, 24:1, 28:24, 61:22, 78:14, 78:16, 133:10  <b>moving</b> [2] - 28:2, 106:24  <b>MR</b> [184] - 2:6, 2:13, 2:20, 3:2, 11:10, 11:15, 11:19, 11:22, 12:25, 21:15, 22:15, 22:25, 23:3, 23:13, 23:16, 23:21, 23:25, 24:4, 24:12, 24:16, 24:19, 24:22, 25:3, 25:7, 25:8, 25:13, 25:18, 26:10, 26:12, 27:7, 27:15, 28:6, 28:10, 33:1, 33:4, 44:20, 44:24, 45:2, 51:23, 51:25, 52:25, 60:24, 60:25, 68:1, 68:2, 81:10, 81:13, 81:16, 81:21, 81:22, 83:21,</p>
---	---	--	--

<p>104:8, 104:12, 106:8, 106:10, 108:5, 108:7, 108:14, 109:6, 112:10, 112:13, 119:11, 119:14, 119:16, 129:25, 130:4, 130:5, 131:23, 139:17, 139:19, 139:24, 140:4, 140:8, 140:10, 143:16, 146:16, 146:19, 147:5, 147:8, 147:10, 148:3, 150:22, 150:24, 151:9, 151:13, 152:6, 152:11, 152:23, 153:2, 154:20, 154:23, 155:2, 159:4, 159:14, 159:18, 160:10, 179:14, 179:17, 179:20, 183:23, 183:25, 184:8, 184:22, 185:2, 196:15, 196:21, 196:23, 198:18, 206:18, 206:25, 207:5, 207:8, 207:11, 208:2, 208:6, 209:3, 224:24, 225:9, 225:13, 225:20, 225:22, 226:25, 227:2, 227:23, 228:9, 229:3, 229:11, 229:17, 231:6, 231:9, 232:12, 232:14, 232:18, 233:14, 236:22, 237:17, 237:20, 237:22, 242:1, 242:4, 242:10, 242:24, 243:5, 248:11, 248:14, 248:16, 251:21, 260:2, 260:4, 260:11, 260:25, 261:5, 267:25, 268:3, 268:6, 269:21, 269:23, 271:20, 271:22, 273:4, 275:13, 275:15, 275:22, 275:25, 276:20, 277:13, 278:2, 278:7, 280:20, 281:2, 287:9, 302:19, 302:21, 302:25, 303:5, 303:8, 303:12, 303:19, 303:25, 304:4, 304:9, 304:19, 307:16, 308:12</p> <p><b>MS</b> [45] - 3:9, 12:1, 23:5, 23:7, 23:10, 23:23, 24:7, 24:25, 25:15, 102:8, 102:10, 102:13, 102:15, 104:5, 106:12, 108:9, 132:1, 140:12, 148:6, 151:1, 151:16, 151:18, 159:7, 179:24, 180:15, 184:2, 198:21, 198:23, 202:8, 225:25, 228:13, 228:20, 228:24, 252:2, 253:6, 260:6, 273:7, 275:17, 287:12, 287:15, 291:8, 303:2, 305:1, 308:6, 308:10</p> <p><b>multiple</b> [2] - 84:17, 139:25</p>	<p><b>must</b> [3] - 13:19, 114:6, 267:21</p> <p><b>mutual</b> [1] - 199:22</p> <p><b>mutually</b> [1] - 198:11</p> <p style="text-align: center;"><b>N</b></p> <p><b>N2</b> [1] - 34:21</p> <p><b>nagging</b> [1] - 202:15</p> <p><b>nail</b> [3] - 212:13, 213:3, 219:12</p> <p><b>name</b> [14] - 26:15, 95:5, 109:9, 152:15, 160:13, 160:15, 185:3, 233:18, 233:19, 243:7, 261:8, 278:8, 278:10, 278:11</p> <p><b>names</b> [1] - 291:21</p> <p><b>narrowed</b> [1] - 280:13</p> <p><b>narrower</b> [1] - 280:5</p> <p><b>national</b> [2] - 146:22, 283:13</p> <p><b>National</b> [2] - 176:11, 283:9</p> <p><b>natural</b> [24] - 16:17, 31:17, 32:1, 43:10, 65:2, 91:7, 93:20, 156:19, 157:7, 164:11, 165:23, 166:2, 166:10, 166:13, 168:4, 168:7, 173:15, 175:12, 263:12, 285:17, 285:19, 285:23, 286:19, 286:21</p> <p><b>Natural</b> [5] - 7:4, 7:5, 18:7, 230:6, 245:4</p> <p><b>nature</b> [3] - 59:4, 135:24, 232:7</p> <p><b>natures</b> [1] - 92:8</p> <p><b>ND-LCA-3-1</b> [1] - 8:19</p> <p><b>NDSU</b> [1] - 97:15</p> <p><b>near</b> [3] - 236:13, 237:3, 247:2</p> <p><b>nearing</b> [1] - 230:20</p> <p><b>nec</b> [1] - 254:4</p> <p><b>necessarily</b> [17] - 10:1, 61:22, 71:22, 110:25, 133:8, 135:22, 137:4, 142:23, 149:23, 181:19, 197:18, 199:21, 241:13, 247:19, 254:4, 288:24, 299:10</p> <p><b>necessary</b> [14] - 13:6, 15:6, 35:3, 45:6, 61:4, 73:15, 74:8, 74:13, 77:4, 96:6, 242:13, 278:18, 298:2, 306:2</p> <p><b>necessity</b> [1] - 292:1</p> <p><b>need</b> [27] - 61:23, 75:11, 79:7, 89:8, 96:25, 100:21, 107:14, 131:1, 149:19, 158:13, 204:10, 209:25, 212:3, 218:3, 222:6, 222:24, 223:5, 223:18,</p>	<p>223:21, 230:13, 257:25, 287:23, 290:24, 295:1, 301:24, 302:6, 302:7</p> <p><b>needed</b> [10] - 32:11, 60:5, 111:19, 116:2, 141:4, 146:11, 177:22, 229:5, 229:20, 245:16</p> <p><b>needs</b> [7] - 61:6, 121:11, 200:1, 234:4, 235:9, 235:16, 275:3</p> <p><b>negative</b> [10] - 35:12, 67:19, 124:25, 210:25, 252:16, 268:22, 272:7, 272:11, 273:25, 301:6</p> <p><b>negatives</b> [1] - 63:6</p> <p><b>negotiating</b> [3] - 41:14, 132:13, 132:14</p> <p><b>negotiation</b> [1] - 127:8</p> <p><b>NEIGUM</b> [2] - 5:19, 261:1</p> <p><b>Neigum</b> [13] - 8:10, 20:5, 32:24, 256:2, 260:12, 260:13, 261:6, 261:10, 266:24, 268:7, 269:23, 275:19, 280:9</p> <p><b>net</b> [12] - 53:2, 163:3, 163:16, 165:16, 165:17, 165:18, 165:24, 165:25, 167:1, 167:2</p> <p><b>never</b> [10] - 122:15, 130:23, 181:12, 193:25, 194:2, 216:2, 216:11, 217:9, 219:11, 296:12</p> <p><b>nevertheless</b> [1] - 21:21</p> <p><b>new</b> [36] - 16:12, 16:17, 16:18, 17:5, 35:20, 35:24, 36:23, 36:25, 37:15, 40:23, 68:18, 70:19, 70:25, 71:11, 89:10, 90:1, 120:10, 162:1, 166:14, 181:25, 182:1, 211:10, 211:11, 211:15, 211:24, 212:8, 212:24, 255:23, 256:3, 256:4, 264:11, 264:14, 287:5, 291:19, 291:20, 291:24</p> <p><b>New</b> [1] - 301:13</p> <p><b>newer</b> [2] - 92:1, 211:3</p> <p><b>next</b> [46] - 9:24, 17:3, 28:16, 30:5, 30:18, 31:4, 31:17, 32:7, 46:11, 75:20, 93:7, 96:25, 98:7, 107:2, 108:13, 108:15, 118:8, 120:17, 121:25, 135:5, 139:25, 151:5, 151:12, 151:13, 159:17, 170:14, 170:24, 171:21, 173:14, 174:4, 174:5, 174:9, 175:20, 182:5, 184:8, 206:9, 209:3, 229:2, 232:17, 242:10, 264:2, 274:14, 280:6, 290:18, 305:8</p>	<p><b>next-best</b> [1] - 280:6</p> <p><b>nexus</b> [1] - 126:9</p> <p><b>nice</b> [3] - 56:4, 100:14, 138:17</p> <p><b>night</b> [2] - 61:6, 63:12</p> <p><b>nitpicking</b> [1] - 205:16</p> <p><b>nitric</b> [1] - 34:8</p> <p><b>nitrogen</b> [3] - 34:21, 34:22, 244:16</p> <p><b>non</b> [2] - 95:25, 205:17</p> <p><b>non-baghouse</b> [1] - 205:17</p> <p><b>non-catalytic</b> [1] - 95:25</p> <p><b>none</b> [5] - 48:23, 96:10, 125:10, 299:23, 303:5</p> <p><b>nonpublic</b> [1] - 22:3</p> <p><b>nonrecovery</b> [1] - 247:6</p> <p><b>nontechnical</b> [1] - 117:5</p> <p><b>normal</b> [2] - 58:10, 289:14</p> <p><b>normally</b> [1] - 70:9</p> <p><b>NORTH</b> [1] - 1:2</p> <p><b>North</b> [58] - 1:18, 2:16, 3:5, 3:11, 8:3, 9:8, 9:16, 10:16, 10:24, 14:22, 26:2, 33:18, 49:12, 49:19, 50:9, 50:11, 62:8, 69:8, 88:20, 89:3, 96:19, 97:25, 98:1, 108:21, 123:1, 123:8, 124:13, 126:7, 134:1, 134:15, 146:21, 147:11, 147:19, 151:25, 159:25, 180:11, 184:16, 186:4, 186:22, 188:8, 188:12, 191:7, 198:6, 212:15, 223:16, 233:4, 234:16, 242:18, 255:24, 260:19, 277:21, 281:25, 292:8, 299:24, 300:20, 300:25, 309:13, 310:13</p> <p><b>northeast</b> [1] - 295:11</p> <p><b>Northern</b> [2] - 154:5, 155:7</p> <p><b>Northwestern</b> [3] - 88:4, 88:15, 88:16</p> <p><b>northwestern</b> [1] - 88:17</p> <p><b>Nos</b> [1] - 308:23</p> <p><b>note</b> [11] - 18:2, 20:25, 28:6, 33:2, 75:2, 112:10, 146:1, 196:17, 279:10, 280:4, 307:12</p> <p><b>notebook</b> [3] - 20:17, 236:23, 308:5</p> <p><b>notebooks</b> [1] - 36:5</p> <p><b>noted</b> [2] - 270:7, 279:13</p> <p><b>notes</b> [2] - 309:12, 310:12</p> <p><b>nothing</b> [32] - 43:16, 74:11, 87:18, 97:2, 108:5, 143:11, 147:5, 148:3, 148:6, 150:22, 150:24, 151:1, 183:23, 183:25, 184:2, 220:12, 227:23, 231:6, 231:9, 232:12, 258:14,</p>
--	--	---	---

<p>259:22, 273:4, 275:8, 287:9, 302:14, 302:19, 302:21, 302:25, 303:2, 305:1, 308:4 <b>Notice</b> [1] - 11:2 <b>notice</b> [11] - 20:20, 41:17, 74:24, 133:16, 157:8, 157:11, 206:8, 208:7, 208:12, 208:15, 230:20 <b>noticed</b> [2] - 10:18, 208:9 <b>noting</b> [1] - 124:9 <b>notion</b> [1] - 217:12 <b>notwithstanding</b> [2] - 77:3, 121:24 <b>November</b> [3] - 1:18, 9:3, 10:15 <b>NOX</b> [2] - 6:15, 6:17 <b>NOx</b> [22] - 29:16, 33:8, 34:6, 34:13, 34:20, 46:19, 48:21, 49:1, 50:8, 51:3, 89:24, 113:19, 120:3, 136:15, 136:22, 203:4, 237:7, 298:1, 298:17, 299:6, 299:7 <b>nuclear</b> [1] - 16:12 <b>nudge</b> [1] - 251:16 <b>number</b> [57] - 17:12, 22:6, 39:3, 40:6, 43:21, 44:13, 45:5, 50:10, 50:11, 52:2, 53:10, 54:3, 54:15, 56:9, 62:2, 63:3, 65:1, 66:2, 66:6, 68:9, 68:12, 68:17, 68:21, 68:24, 72:10, 78:17, 78:19, 79:18, 80:17, 82:20, 82:21, 83:5, 85:6, 90:18, 93:24, 104:10, 106:24, 128:3, 135:19, 140:2, 148:19, 149:8, 163:6, 163:9, 163:25, 178:7, 216:8, 222:3, 232:21, 235:14, 235:22, 236:8, 237:11, 245:12, 254:16, 255:24, 301:17 <b>numbers</b> [5] - 98:2, 106:21, 164:3, 177:7, 270:18 <b>numerical</b> [1] - 148:25</p>	<p>151:23, 159:21, 159:23, 184:13, 184:15, 229:9, 233:1, 233:2, 242:15, 242:16, 260:15, 260:17, 277:17, 277:19 <b>object</b> [5] - 51:23, 152:23, 246:22, 248:2, 248:7 <b>objection</b> [7] - 22:25, 23:5, 129:25, 140:7, 140:8, 153:1, 303:21 <b>obligated</b> [2] - 42:21, 112:3 <b>obligation</b> [2] - 230:10, 252:25 <b>obliged</b> [2] - 279:19, 279:20 <b>observed</b> [2] - 128:17, 134:2 <b>obtain</b> [5] - 15:2, 15:4, 230:5, 291:25, 293:3 <b>obvious</b> [1] - 48:1 <b>obviously</b> [12] - 14:17, 14:25, 48:24, 62:16, 80:17, 116:14, 123:19, 125:11, 125:15, 180:22, 292:8, 292:18 <b>occasion</b> [1] - 216:11 <b>occasions</b> [1] - 78:18 <b>occur</b> [3] - 77:3, 77:18, 121:11 <b>occurred</b> [2] - 122:15, 126:11 <b>occurs</b> [2] - 61:9, 271:9 <b>October</b> [1] - 285:25 <b>odd</b> [1] - 202:23 <b>OF</b> [4] - 1:2, 1:11, 309:1, 310:1 <b>Off'd</b> [3] - 6:9, 7:2, 8:2 <b>offer</b> [23] - 18:13, 18:25, 20:9, 24:15, 27:10, 44:21, 119:11, 145:23, 154:20, 179:14, 188:15, 197:16, 198:13, 226:23, 237:17, 248:11, 258:8, 262:24, 267:21, 267:25, 274:25, 303:14, 303:17 <b>offered</b> [11] - 19:18, 127:13, 139:20, 139:21, 146:13, 193:15, 196:18, 234:12, 266:16, 267:6, 267:8 <b>offers</b> [1] - 24:20 <b>Office</b> [1] - 9:6 <b>officer</b> [1] - 9:9 <b>official</b> [1] - 307:13 <b>offline</b> [1] - 135:9 <b>offset</b> [2] - 90:20, 167:9 <b>often</b> [4] - 60:14, 184:11, 242:13, 245:11 <b>oftentimes</b> [1] - 305:24 <b>oil</b> [2] - 190:3, 190:24 <b>old</b> [3] - 89:10, 294:7, 305:25 <b>older</b> [2] - 58:3, 80:1 <b>Olds</b> [1] - 49:9</p>	<p><b>once</b> [11] - 38:7, 38:12, 40:19, 75:15, 85:17, 91:13, 98:19, 108:4, 130:19, 133:16, 307:7 <b>one</b> [144] - 14:14, 14:18, 17:20, 19:15, 25:3, 25:4, 28:25, 29:16, 31:24, 33:9, 34:15, 34:25, 35:14, 38:14, 39:1, 40:7, 42:16, 42:19, 44:8, 44:15, 51:5, 57:17, 60:24, 61:15, 64:13, 64:24, 66:1, 68:1, 69:20, 69:25, 70:4, 70:23, 72:4, 78:8, 81:22, 84:10, 84:23, 85:7, 86:16, 91:6, 91:8, 91:19, 94:15, 96:14, 96:23, 98:8, 99:4, 99:23, 100:6, 100:15, 101:1, 102:22, 103:14, 104:8, 106:17, 112:18, 114:15, 115:23, 118:25, 123:9, 124:17, 126:3, 129:3, 130:4, 130:12, 130:14, 130:16, 131:23, 140:2, 140:19, 141:21, 146:17, 147:8, 149:13, 149:16, 156:21, 156:24, 162:16, 166:5, 171:13, 171:17, 175:22, 179:17, 182:12, 182:15, 186:24, 187:14, 191:23, 192:4, 193:17, 195:15, 195:23, 196:7, 198:21, 199:5, 204:23, 205:7, 205:8, 209:23, 212:8, 214:1, 215:24, 218:2, 218:4, 219:6, 220:24, 220:25, 221:5, 221:21, 222:3, 222:6, 223:4, 226:8, 238:6, 243:20, 243:23, 248:17, 255:14, 258:20, 268:3, 269:21, 271:6, 271:9, 271:20, 274:24, 274:25, 279:13, 279:14, 282:13, 282:14, 282:23, 283:22, 285:2, 285:3, 293:12, 296:17, 297:8, 299:17, 301:4, 304:14, 307:8 <b>one's</b> [2] - 182:16, 219:17 <b>one-year</b> [1] - 42:16 <b>ones</b> [5] - 96:15, 99:20, 291:24, 300:1, 307:9 <b>ongoing</b> [4] - 45:22, 115:19, 133:9, 147:12 <b>online</b> [8] - 61:11, 238:7, 239:4, 240:17, 240:22, 255:17, 268:18 <b>onslaught</b> [1] - 301:7 <b>oops</b> [1] - 291:6 <b>open</b> [3] - 81:2, 210:1, 280:23</p>	<p><b>opening</b> [4] - 21:11, 22:13, 43:14, 90:25 <b>Opening</b> [2] - 4:3, 4:4 <b>operate</b> [9] - 13:12, 30:24, 37:4, 42:7, 52:3, 63:17, 96:25, 171:16, 190:12 <b>operated</b> [2] - 16:8, 110:23 <b>operates</b> [3] - 47:6, 93:11, 244:21 <b>Operating</b> [2] - 6:21, 6:23 <b>operating</b> [15] - 14:9, 30:18, 35:8, 42:24, 52:9, 70:1, 105:16, 107:5, 109:25, 110:17, 110:24, 160:21, 211:12, 211:14, 302:6 <b>Operation</b> [1] - 6:14 <b>operation</b> [7] - 45:23, 63:19, 63:23, 99:10, 169:6, 264:15, 297:3 <b>operational</b> [2] - 28:18, 244:15 <b>operations</b> [6] - 20:5, 169:2, 243:16, 261:13, 261:18, 261:19 <b>operator</b> [4] - 56:2, 64:11, 66:9, 301:25 <b>operators</b> [3] - 64:21, 301:13, 301:18 <b>opining</b> [1] - 291:16 <b>opinion</b> [29] - 52:16, 52:17, 58:19, 64:2, 72:6, 72:15, 72:17, 72:18, 72:24, 72:25, 73:8, 73:16, 73:17, 89:11, 94:14, 120:16, 123:4, 127:2, 128:24, 141:15, 144:12, 147:19, 147:24, 155:4, 192:2, 195:6, 198:14, 269:14, 274:24 <b>opinions</b> [2] - 80:2, 219:21 <b>opportunities</b> [3] - 125:12, 143:6, 143:8 <b>opportunity</b> [10] - 21:22, 81:15, 133:15, 213:7, 246:2, 281:13, 304:21, 305:10, 305:15, 305:17 <b>oppose</b> [3] - 71:25, 89:14, 247:11 <b>opposed</b> [10] - 56:5, 88:22, 89:16, 134:2, 136:9, 136:12, 137:13, 149:15, 231:25, 306:17 <b>opposite</b> [1] - 89:18 <b>opposition</b> [1] - 213:18 <b>option</b> [24] - 16:5, 17:4, 17:15, 17:20, 17:24, 18:3, 32:3, 32:15, 45:22, 46:1, 93:17, 101:23, 145:25, 149:15, 171:7, 235:6, 264:14, 265:8, 266:10, 279:6, 279:9, 280:14,</p>
<b>O</b>			
<p><b>O&amp;M</b> [15] - 16:22, 17:9, 56:21, 60:9, 164:25, 165:20, 166:2, 167:3, 167:4, 170:11, 173:23, 238:21, 238:23, 239:15 <b>o'clock</b> [7] - 10:15, 12:19, 56:4, 276:5, 276:12, 276:24, 277:1 <b>oath</b> [19] - 25:23, 25:25, 108:17, 108:19, 151:21,</p>			

<p>281:21, 294:20  <b>options</b> [17] - 16:12, 16:14, 32:11, 32:13, 43:8, 43:9, 43:18, 44:8, 44:9, 44:10, 87:20, 88:1, 144:19, 146:5, 170:20, 259:1  <b>oral</b> [1] - 227:18  <b>order</b> [24] - 14:12, 18:8, 71:8, 75:23, 84:4, 122:5, 129:8, 155:18, 199:3, 202:4, 210:6, 216:24, 226:1, 227:17, 227:22, 228:16, 228:22, 248:5, 252:5, 258:20, 288:6, 297:8, 302:7, 308:9  <b>ordered</b> [1] - 75:16  <b>orders</b> [1] - 297:6  <b>organizing</b> [1] - 27:11  <b>original</b> [6] - 35:7, 175:14, 211:18, 212:9, 240:3, 299:2  <b>originally</b> [3] - 127:7, 149:4, 194:11  <b>Ortonville</b> [2] - 107:4, 107:17  <b>otherwise</b> [4] - 77:4, 131:18, 198:2, 280:20  <b>OTP</b> [11] - 7:22, 7:23, 8:3, 8:4, 47:6, 47:10, 65:6, 80:24, 125:6, 162:13, 209:8  <b>OTP's</b> [3] - 8:3, 8:4, 54:17  <b>OTP-MDU</b> [1] - 162:13  <b>OTP/MDU</b> [30] - 6:10, 6:11, 6:12, 6:13, 6:15, 6:17, 6:19, 6:20, 6:21, 6:23, 7:3, 7:4, 7:5, 7:6, 7:8, 7:9, 7:11, 7:13, 7:14, 7:16, 7:18, 7:20, 20:21, 24:11, 53:1, 61:2, 114:15, 139:23, 140:15, 140:16  <b>OTTER</b> [2] - 2:11, 2:23  <b>Otter</b> [100] - 1:7, 2:20, 7:23, 9:12, 10:11, 10:21, 11:20, 12:5, 14:9, 14:21, 14:23, 17:17, 18:18, 19:15, 19:22, 19:24, 20:22, 22:22, 23:17, 26:19, 27:24, 28:8, 71:17, 72:19, 73:17, 87:4, 87:15, 87:22, 88:10, 92:19, 93:10, 97:23, 101:5, 105:15, 105:19, 107:3, 109:13, 109:24, 110:17, 111:10, 111:25, 119:20, 124:13, 127:8, 130:15, 143:18, 153:4, 153:11, 154:14, 164:22, 164:23, 164:24, 165:14, 165:24, 167:24, 175:2, 177:5, 179:5, 180:10, 185:6, 185:16, 185:22, 186:1, 186:3,</p>	<p>186:7, 186:12, 187:11, 188:1, 188:7, 188:20, 189:6, 189:9, 190:6, 191:1, 192:1, 193:24, 195:22, 196:19, 198:5, 199:6, 205:10, 208:3, 208:10, 212:6, 216:9, 216:20, 220:19, 227:4, 233:22, 234:7, 234:12, 234:16, 234:21, 236:4, 249:10, 252:3, 273:14, 282:12, 284:21, 308:21  <b>ourselves</b> [2] - 269:9, 305:11  <b>outage</b> [8] - 42:2, 42:4, 76:25, 77:24, 77:25, 79:12, 98:7, 211:16  <b>outages</b> [4] - 77:23, 78:2, 270:18, 271:11  <b>outcome</b> [2] - 297:11, 300:25  <b>outdated</b> [1] - 174:25  <b>outlet</b> [1] - 88:8  <b>outlined</b> [2] - 169:25, 250:1  <b>outlook</b> [2] - 285:19, 286:20  <b>outperforms</b> [1] - 60:20  <b>output</b> [4] - 55:11, 165:16, 165:25, 167:2  <b>outs</b> [1] - 126:18  <b>outside</b> [4] - 111:12, 132:18, 158:18, 182:2  <b>outstanding</b> [1] - 133:12  <b>outvoted</b> [1] - 277:9  <b>overall</b> [5] - 53:23, 114:22, 248:25, 270:24, 272:12  <b>overfire</b> [4] - 34:9, 51:2, 120:3, 298:21  <b>overhaul</b> [1] - 99:12  <b>overruled</b> [2] - 52:6, 130:3  <b>overruns</b> [1] - 195:18  <b>oversee</b> [1] - 243:14  <b>oversees</b> [1] - 257:12  <b>oversimplification</b> [1] - 52:8  <b>oversimplified</b> [1] - 68:10  <b>overview</b> [1] - 141:23  <b>owly</b> [1] - 218:15  <b>own</b> [5] - 48:3, 128:9, 195:5, 239:20, 252:4  <b>owned</b> [3] - 47:10, 54:4, 234:4  <b>owner</b> [2] - 54:12, 188:11  <b>owners</b> [11] - 14:10, 40:4, 69:6, 112:20, 113:4, 158:12, 188:16, 188:25, 245:1, 246:2, 247:5  <b>ownership</b> [2] - 188:14, 188:23  <b>oxide</b> [1] - 244:16  <b>oxides</b> [2] - 34:8, 34:22</p>	<p style="text-align: center;"><b>P</b></p> <p><b>p.m</b> [4] - 151:10, 226:21, 308:25  <b>P.O</b> [2] - 2:15, 2:21  <b>Pacific</b> [1] - 157:18  <b>pack</b> [2] - 80:10, 96:14  <b>page</b> [30] - 36:9, 36:10, 36:15, 36:16, 52:25, 60:25, 72:4, 104:18, 105:1, 105:7, 106:6, 118:19, 143:22, 143:24, 144:21, 145:15, 165:9, 169:22, 169:23, 172:20, 202:1, 236:11, 236:25, 281:7, 281:17, 281:23, 282:4, 282:5, 282:18, 283:7  <b>Page</b> [1] - 4:2  <b>pages</b> [2] - 309:10, 310:10  <b>Pages</b> [2] - 309:10, 310:10  <b>paid</b> [1] - 75:17  <b>pair</b> [1] - 170:15  <b>paired</b> [6] - 43:13, 91:9, 164:12, 167:7, 167:17, 169:1  <b>Pam</b> [1] - 11:12  <b>paper</b> [3] - 292:2, 292:19, 301:22  <b>papers</b> [1] - 219:25  <b>paragraph</b> [3] - 105:13, 106:6, 113:8  <b>parallel</b> [1] - 85:16  <b>paralyzing</b> [1] - 218:4  <b>parameters</b> [4] - 38:10, 67:4, 128:5, 129:14  <b>pardon</b> [1] - 281:15  <b>parentheses</b> [2] - 148:23, 148:24  <b>part</b> [58] - 13:18, 34:24, 36:22, 46:22, 47:10, 57:3, 71:24, 72:7, 80:9, 80:15, 93:13, 98:22, 99:17, 103:2, 103:5, 103:20, 105:4, 116:2, 119:7, 119:21, 125:22, 129:14, 129:15, 138:7, 138:17, 142:6, 143:21, 143:23, 144:2, 145:7, 145:21, 146:11, 146:15, 149:4, 149:17, 169:2, 189:10, 191:7, 193:16, 193:20, 194:9, 197:20, 201:23, 203:7, 205:3, 207:20, 209:1, 211:24, 212:12, 214:22, 235:5, 235:8, 237:15, 244:12, 254:6, 256:23, 266:20, 272:9  <b>Part</b> [1] - 129:15  <b>participate</b> [2] - 60:3, 110:18</p>	<p><b>participated</b> [1] - 119:20  <b>participating</b> [1] - 88:17  <b>particular</b> [33] - 13:9, 15:13, 37:4, 37:12, 37:13, 45:15, 55:1, 56:12, 62:15, 62:19, 64:7, 64:9, 65:5, 84:4, 85:20, 113:9, 120:6, 126:10, 128:7, 141:11, 142:3, 144:12, 172:24, 187:14, 187:25, 193:10, 212:19, 213:9, 248:17, 271:25, 285:17, 296:9, 296:14  <b>particularly</b> [3] - 113:8, 140:21, 205:17  <b>particulate</b> [10] - 33:8, 34:24, 35:24, 89:25, 105:9, 105:17, 105:22, 113:20, 119:25, 137:9  <b>particulates</b> [4] - 35:3, 69:21, 210:13, 210:15  <b>parties</b> [4] - 132:13, 132:15, 133:8, 209:11  <b>partner</b> [1] - 178:3  <b>partners</b> [1] - 222:8  <b>Partnership</b> [1] - 127:19  <b>parts</b> [8] - 14:1, 14:11, 20:12, 36:13, 67:12, 202:25, 203:8, 250:2  <b>party</b> [2] - 88:4, 132:16  <b>passage</b> [1] - 190:20  <b>passed</b> [3] - 196:13, 214:18, 214:20  <b>passes</b> [1] - 218:19  <b>past</b> [9] - 40:21, 42:16, 54:8, 61:11, 61:15, 208:15, 265:11, 276:11, 307:23  <b>patience</b> [1] - 304:11  <b>pay</b> [3] - 54:23, 266:6, 306:16  <b>paying</b> [6] - 52:15, 155:19, 155:23, 156:14, 222:8, 222:10  <b>pays</b> [1] - 54:21  <b>peak</b> [5] - 59:9, 61:5, 81:24, 82:11, 83:9  <b>penalize</b> [1] - 169:2  <b>penalties</b> [3] - 75:17, 75:21, 229:9  <b>pending</b> [6] - 28:18, 32:20, 99:18, 231:18, 245:25, 262:7  <b>Pending</b> [2] - 6:14, 8:11  <b>people</b> [12] - 65:12, 68:11, 79:11, 85:25, 101:14, 214:5, 219:5, 220:7, 221:7, 251:9, 257:2, 276:10  <b>per</b> [13] - 35:3, 43:21, 60:20, 93:18, 106:21, 106:23, 135:20, 146:9, 146:10, 156:19, 168:12, 263:18,</p>
---	---	--	---

<p>299:7  <b>perceive</b> [1] - 247:5  <b>percent</b> [106] - 14:21, 14:23, 17:3, 17:8, 17:9, 17:10, 42:17, 53:4, 53:17, 53:19, 53:24, 53:25, 54:5, 54:9, 54:10, 54:15, 55:2, 55:20, 55:21, 57:9, 57:10, 57:14, 58:17, 58:18, 58:25, 59:1, 59:5, 60:11, 60:17, 63:16, 63:17, 63:22, 82:21, 82:25, 83:1, 83:4, 97:23, 124:15, 125:5, 127:1, 129:20, 154:18, 156:16, 157:25, 167:9, 167:15, 167:16, 167:17, 168:22, 170:17, 170:23, 170:25, 171:3, 172:13, 172:14, 173:3, 173:4, 173:5, 173:16, 173:18, 173:24, 173:25, 174:5, 174:10, 175:6, 175:10, 176:18, 187:23, 189:14, 190:1, 190:2, 190:3, 190:4, 190:23, 190:24, 190:25, 192:19, 193:4, 241:14, 241:15, 241:19, 241:24, 241:25, 244:8, 247:9, 254:11, 254:13, 254:15, 254:20, 255:2, 255:5, 255:10, 255:15, 257:13, 264:2, 265:12, 265:16, 272:16, 286:6, 287:1, 287:5, 289:11, 299:21  <b>percentage</b> [2] - 65:19, 82:23  <b>perceptible</b> [3] - 135:12, 150:5, 150:8  <b>perception</b> [2] - 102:21, 145:10  <b>perchance</b> [1] - 47:2  <b>perfect</b> [3] - 77:11, 143:10, 308:5  <b>perform</b> [3] - 172:8, 278:15, 278:19  <b>performance</b> [2] - 55:17, 186:17  <b>performed</b> [2] - 66:18, 263:10  <b>performing</b> [1] - 211:8  <b>perhaps</b> [14] - 73:6, 79:19, 124:20, 210:6, 218:16, 249:6, 249:15, 250:7, 253:14, 274:21, 297:7, 306:8, 306:23, 308:13  <b>period</b> [34] - 16:2, 26:4, 43:22, 68:7, 68:13, 108:23, 111:12, 131:9, 131:18, 133:16, 135:3, 152:2, 160:2, 163:2, 163:7,</p>	<p>163:13, 163:14, 163:20, 184:17, 190:17, 190:18, 195:23, 213:21, 217:22, 227:20, 233:6, 240:10, 242:20, 260:21, 277:23, 286:6, 288:13, 288:22, 289:1  <b>periodic</b> [3] - 193:15, 201:11, 248:1  <b>periodically</b> [1] - 193:7  <b>periods</b> [2] - 61:5, 117:8  <b>perjury</b> [28] - 25:24, 25:25, 26:2, 108:18, 108:19, 108:21, 151:22, 151:23, 151:25, 159:22, 159:23, 159:25, 184:14, 184:15, 184:18, 229:10, 233:2, 233:3, 233:5, 242:16, 242:17, 242:19, 260:16, 260:17, 260:19, 277:18, 277:19, 277:21  <b>permit</b> [8] - 92:14, 224:17, 230:5, 230:14, 230:18, 230:20, 231:19, 244:21  <b>permits</b> [5] - 92:8, 224:13, 230:22, 231:17, 232:6  <b>permitted</b> [5] - 49:8, 49:13, 187:2, 188:9, 244:15  <b>permitting</b> [7] - 109:18, 109:21, 110:10, 223:24, 224:5, 230:22, 231:25  <b>perplexed</b> [1] - 211:21  <b>person</b> [1] - 145:12  <b>personal</b> [1] - 198:14  <b>personally</b> [4] - 72:19, 73:14, 198:17, 221:10  <b>persons</b> [1] - 12:4  <b>perspective</b> [10] - 77:12, 126:19, 145:3, 186:12, 197:17, 211:25, 216:1, 218:1, 218:23, 267:4  <b>pertain</b> [3] - 28:25, 117:9, 224:25  <b>pertained</b> [1] - 112:19  <b>pertaining</b> [3] - 19:1, 19:24, 25:9  <b>pertains</b> [4] - 13:21, 25:5, 104:9, 110:14  <b>petition</b> [1] - 227:5  <b>phased</b> [1] - 93:22  <b>philosophical</b> [1] - 254:7  <b>philosophy</b> [1] - 291:14  <b>physically</b> [3] - 107:7, 107:24, 135:2  <b>pick</b> [4] - 87:20, 88:3, 98:7, 269:4  <b>piece</b> [6] - 57:24, 84:18, 211:11, 211:14, 292:2, 292:19  <b>pieces</b> [5] - 34:7, 38:19,</p>	<p>57:17, 58:14, 86:2  <b>pike</b> [1] - 141:1  <b>pin</b> [1] - 65:18  <b>pinpoint</b> [1] - 272:6  <b>pipeline</b> [2] - 99:20, 100:2  <b>pipes</b> [1] - 295:15  <b>PJMs</b> [1] - 301:13  <b>place</b> [19] - 10:18, 22:18, 42:24, 48:21, 55:15, 57:16, 73:13, 78:8, 78:19, 98:20, 112:5, 171:22, 188:15, 194:12, 194:13, 265:8, 306:15, 309:7, 310:7  <b>placed</b> [2] - 34:17, 89:24  <b>placing</b> [1] - 67:16  <b>Plan</b> [16] - 8:3, 8:5, 8:13, 46:4, 51:1, 75:10, 104:23, 105:1, 114:17, 119:3, 210:12, 210:17, 211:9, 211:19, 223:13, 246:21  <b>plan</b> [41] - 67:16, 67:17, 116:15, 119:18, 125:16, 130:18, 143:19, 143:24, 144:2, 144:15, 165:16, 186:4, 191:2, 191:6, 191:7, 191:12, 191:16, 223:10, 223:14, 234:1, 234:15, 237:16, 238:16, 239:8, 239:21, 240:8, 240:9, 240:25, 262:15, 263:4, 263:6, 263:9, 264:6, 264:10, 264:24, 268:21, 269:19, 270:25, 276:5, 296:22  <b>plan's</b> [1] - 288:16  <b>planned</b> [5] - 39:18, 42:3, 76:25, 246:10, 276:11  <b>planner</b> [3] - 73:9, 124:20, 240:21  <b>planning</b> [22] - 19:22, 20:5, 67:18, 68:7, 74:5, 77:12, 127:16, 163:2, 163:7, 163:12, 163:14, 190:17, 190:18, 233:25, 240:1, 241:4, 243:16, 261:13, 261:19, 261:20, 272:3  <b>plans</b> [4] - 190:7, 191:17, 237:13, 237:15  <b>Plant</b> [4] - 7:19, 9:15, 10:24, 36:14  <b>plant</b> [170] - 8:12, 13:5, 13:9, 13:10, 13:11, 14:10, 14:19, 15:16, 16:17, 16:18, 20:4, 30:1, 30:10, 37:16, 40:4, 47:14, 47:15, 48:3, 48:16, 48:22, 51:6, 51:7, 52:2, 52:10, 53:16, 53:19, 54:4, 54:7, 54:13, 55:7, 55:10, 56:13, 56:18, 58:16, 58:23, 58:25, 59:20, 60:10, 60:23,</p>	<p>63:4, 63:5, 63:6, 63:8, 64:1, 64:9, 64:17, 64:23, 66:7, 66:16, 68:16, 69:9, 69:23, 69:24, 79:2, 80:18, 80:25, 83:10, 87:8, 87:15, 87:16, 91:4, 96:20, 98:21, 98:24, 98:25, 99:2, 99:5, 99:11, 106:19, 107:3, 107:6, 107:17, 109:22, 109:25, 110:18, 111:8, 111:16, 111:18, 112:20, 113:4, 113:22, 113:23, 117:11, 122:8, 124:24, 125:8, 125:12, 126:9, 126:16, 126:21, 126:23, 126:24, 128:4, 128:17, 144:19, 153:12, 154:3, 154:4, 155:6, 155:10, 155:13, 164:11, 164:12, 164:13, 165:17, 165:18, 165:23, 165:24, 165:25, 166:5, 166:8, 166:9, 166:13, 167:1, 167:2, 168:2, 168:11, 168:16, 168:18, 169:1, 181:23, 182:14, 188:1, 189:3, 190:13, 191:8, 191:13, 194:23, 197:4, 197:6, 199:9, 205:14, 211:12, 213:21, 230:14, 230:17, 235:2, 244:8, 244:10, 244:14, 244:18, 244:19, 244:24, 244:25, 245:13, 246:3, 246:7, 246:10, 252:10, 252:12, 254:21, 256:4, 262:8, 263:24, 264:4, 264:11, 264:12, 264:16, 264:18, 265:4, 265:12, 265:15, 268:17, 292:21  <b>plant's</b> [2] - 54:14, 298:15  <b>plant-induced</b> [1] - 128:17  <b>plants</b> [33] - 14:5, 25:10, 48:10, 48:13, 49:7, 49:12, 49:24, 50:4, 50:11, 50:22, 55:1, 59:23, 83:10, 96:9, 99:5, 107:9, 107:11, 107:15, 107:16, 107:18, 113:20, 123:8, 134:22, 167:1, 182:7, 182:22, 182:24, 238:20, 238:22, 267:5, 267:12, 269:25, 302:10  <b>play</b> [4] - 177:15, 207:17, 216:8, 294:23  <b>playing</b> [3] - 107:16, 258:18, 258:19  <b>plays</b> [1] - 274:23  <b>pleasure</b> [1] - 303:15  <b>plug</b> [1] - 83:17</p>
---	--	---	---

<p><b>plus</b> [16] - 17:7, 17:8, 17:9, 129:19, 154:18, 166:6, 167:5, 171:8, 171:9, 171:18, 173:4, 175:6, 175:9, 223:13, 287:1, 287:4</p> <p><b>pluses</b> [1] - 156:21</p> <p><b>PM2.5</b> [3] - 136:23, 137:1, 137:7</p> <p><b>point</b> [21] - 21:10, 41:11, 47:1, 52:19, 75:20, 93:19, 94:2, 112:24, 112:25, 113:2, 132:21, 134:5, 181:5, 241:17, 257:16, 258:25, 271:7, 274:22, 276:10, 277:11, 285:2</p> <p><b>pointed</b> [3] - 97:18, 178:21, 264:7</p> <p><b>points</b> [9] - 112:15, 112:18, 174:17, 174:23, 175:21, 282:23, 283:22, 294:12, 294:20</p> <p><b>policies</b> [1] - 306:6</p> <p><b>policy</b> [4] - 274:20, 292:8, 296:10, 306:13</p> <p><b>political</b> [2] - 96:12, 121:25</p> <p><b>pollutant</b> [1] - 128:13</p> <p><b>pollutants</b> [4] - 33:8, 39:23, 136:17, 142:15</p> <p><b>pollution</b> [7] - 35:22, 40:19, 141:24, 142:4, 142:10, 244:25, 245:11</p> <p><b>pond</b> [1] - 48:2</p> <p><b>poor</b> [1] - 64:19</p> <p><b>poorer</b> [1] - 83:16</p> <p><b>portfolio</b> [3] - 241:8, 301:15, 301:20</p> <p><b>portion</b> [12] - 38:24, 114:22, 203:25, 204:5, 204:20, 205:11, 212:25, 215:4, 215:14, 216:21, 241:8, 272:19</p> <p><b>portions</b> [1] - 136:15</p> <p><b>posed</b> [1] - 117:21</p> <p><b>position</b> [37] - 26:20, 71:15, 71:17, 71:23, 72:3, 73:2, 86:5, 89:21, 96:12, 103:16, 105:25, 106:3, 109:14, 109:17, 128:20, 149:5, 161:3, 161:4, 161:16, 185:8, 193:18, 202:24, 203:16, 205:7, 209:12, 211:22, 216:20, 233:24, 233:25, 243:9, 243:13, 258:23, 258:24, 261:11, 261:16, 275:2, 295:5</p> <p><b>positive</b> [1] - 201:4</p> <p><b>possibility</b> [7] - 21:20, 188:20, 214:4, 214:17, 274:7, 290:3, 290:7</p>	<p><b>possible</b> [17] - 13:19, 41:25, 49:17, 67:6, 78:14, 142:7, 142:8, 144:16, 155:4, 155:19, 155:20, 155:21, 273:25, 274:6, 289:19, 299:2, 301:6</p> <p><b>possibly</b> [1] - 227:10</p> <p><b>post</b> [2] - 53:9, 57:13</p> <p><b>post-AQCS</b> [2] - 53:9, 57:13</p> <p><b>potential</b> [11] - 78:10, 93:7, 98:5, 99:23, 172:12, 172:13, 173:6, 173:16, 175:4, 236:5, 292:13</p> <p><b>potentiality</b> [1] - 80:11</p> <p><b>potentially</b> [7] - 79:19, 92:3, 129:19, 158:4, 181:21, 217:12, 221:20</p> <p><b>pour</b> [1] - 149:2</p> <p><b>poured</b> [1] - 219:3</p> <p><b>Powder</b> [7] - 48:19, 51:8, 51:19, 81:1, 96:2, 122:11, 197:7</p> <p><b>power</b> [21] - 43:1, 66:7, 79:3, 79:4, 90:14, 98:5, 161:18, 162:1, 165:2, 175:20, 175:22, 175:24, 177:13, 185:13, 185:15, 190:13, 243:15, 254:10, 266:10, 292:21, 302:10</p> <p><b>Power</b> [25] - 1:7, 2:20, 7:19, 9:12, 10:21, 11:20, 12:5, 18:18, 23:17, 26:19, 105:15, 105:19, 109:13, 124:14, 127:8, 153:4, 157:17, 185:6, 185:17, 198:5, 208:3, 220:19, 233:22, 284:21, 308:22</p> <p><b>POWER</b> [2] - 2:11, 2:23</p> <p><b>Power's</b> [1] - 266:20</p> <p><b>powered</b> [1] - 51:12</p> <p><b>powers</b> [2] - 119:17, 123:12</p> <p><b>PPA</b> [5] - 176:12, 176:14, 266:15, 283:23</p> <p><b>practicable</b> [1] - 114:7</p> <p><b>practical</b> [9] - 21:23, 42:21, 70:11, 130:20, 130:21, 131:5, 131:7, 131:12, 131:19</p> <p><b>pre</b> [2] - 250:16, 251:1</p> <p><b>pre-AQCS</b> [2] - 250:16, 251:1</p> <p><b>precedent</b> [4] - 158:3, 288:1, 290:23, 294:3</p> <p><b>precedential</b> [1] - 206:23</p> <p><b>precipitator</b> [4] - 35:7, 69:1, 69:2, 69:14</p> <p><b>preclude</b> [1] - 75:24</p> <p><b>precursors</b> [1] - 136:23</p> <p><b>predicate</b> [1] - 66:17</p> <p><b>predicated</b> [2] - 57:4, 73:2</p> <p><b>preface</b> [1] - 96:8</p>	<p><b>prefacing</b> [1] - 90:16</p> <p><b>prefatory</b> [1] - 244:5</p> <p><b>prefer</b> [5] - 151:5, 213:20, 287:7, 306:16, 307:1</p> <p><b>preference</b> [1] - 277:7</p> <p><b>preferred</b> [7] - 18:3, 195:8, 279:6, 280:14, 281:21, 298:14, 298:21</p> <p><b>Prefiled</b> [6] - 6:10, 7:6, 7:13, 7:22, 8:6, 8:9</p> <p><b>prefiled</b> [12] - 18:23, 20:13, 22:3, 185:23, 232:19, 279:2, 279:3, 280:22, 281:17, 282:5, 282:17, 297:19</p> <p><b>prefixed</b> [1] - 20:21</p> <p><b>prehearing</b> [1] - 307:24</p> <p><b>premature</b> [1] - 302:12</p> <p><b>premium</b> [7] - 52:15, 293:3, 293:13, 293:23, 294:19, 294:24, 295:1</p> <p><b>preparation</b> [5] - 29:14, 189:11, 234:1, 234:2, 234:15</p> <p><b>prepare</b> [1] - 278:19</p> <p><b>prepared</b> [7] - 20:6, 20:19, 24:22, 25:19, 41:16, 116:14, 279:2</p> <p><b>preparing</b> [3] - 37:24, 153:8, 307:8</p> <p><b>prescribed</b> [1] - 237:11</p> <p><b>prescription</b> [2] - 210:18, 211:19</p> <p><b>prescriptive</b> [1] - 113:18</p> <p><b>presence</b> [4] - 34:20, 46:17, 46:20, 278:12</p> <p><b>present</b> [19] - 12:3, 13:13, 21:12, 30:22, 34:23, 46:21, 67:7, 163:3, 163:16, 169:25, 195:6, 196:16, 226:6, 226:7, 239:17, 263:25, 276:14, 304:13</p> <p><b>PRESENT</b> [1] - 2:2</p> <p><b>present-value</b> [1] - 239:17</p> <p><b>presentation</b> [1] - 275:21</p> <p><b>presented</b> [4] - 149:1, 171:21, 173:1, 173:19</p> <p><b>presenting</b> [1] - 30:13</p> <p><b>presents</b> [3] - 169:23, 170:2, 170:19</p> <p><b>president</b> [5] - 19:16, 20:1, 185:9, 217:5, 243:11</p> <p><b>President</b> [1] - 9:21</p> <p><b>pressed</b> [1] - 254:1</p> <p><b>pressure</b> [5] - 35:9, 35:12, 35:22, 245:10, 245:14</p> <p><b>pressures</b> [2] - 210:25, 211:6</p> <p><b>presumably</b> [2] - 156:10, 166:15</p> <p><b>presume</b> [1] - 139:8</p>	<p><b>pretend</b> [1] - 253:21</p> <p><b>pretty</b> [9] - 54:22, 100:7, 102:2, 180:20, 196:11, 218:15, 220:22, 251:19, 254:2</p> <p><b>prevent</b> [1] - 276:23</p> <p><b>previous</b> [6] - 140:22, 151:20, 216:3, 232:24, 277:16, 279:25</p> <p><b>previously</b> [3] - 115:15, 229:14, 271:3</p> <p><b>price</b> [17] - 76:14, 76:17, 80:20, 86:2, 106:20, 156:18, 157:14, 165:2, 196:11, 235:25, 266:3, 266:17, 282:24, 283:19, 283:22, 285:23, 292:4</p> <p><b>prices</b> [33] - 38:21, 65:2, 176:23, 180:2, 195:14, 195:25, 199:16, 263:12, 264:21, 265:8, 265:9, 265:17, 265:19, 265:20, 265:25, 266:5, 266:17, 266:21, 267:9, 285:14, 285:17, 285:19, 286:3, 286:5, 286:13, 286:17, 286:19, 286:20, 286:21, 287:6, 287:7</p> <p><b>pricing</b> [8] - 157:7, 176:7, 176:14, 176:15, 176:16, 265:21, 266:11, 266:15</p> <p><b>primarily</b> [5] - 57:6, 83:19, 110:5, 189:18, 238:6</p> <p><b>primary</b> [1] - 34:12</p> <p><b>prime</b> [1] - 84:17</p> <p><b>principal</b> [1] - 222:21</p> <p><b>principal-type</b> [1] - 222:21</p> <p><b>principals</b> [1] - 80:24</p> <p><b>principles</b> [2] - 89:15, 92:18</p> <p><b>pro</b> [5] - 32:8, 43:20, 68:8, 162:7, 177:17</p> <p><b>Pro</b> [2] - 7:14, 7:16</p> <p><b>probable</b> [1] - 215:1</p> <p><b>problem</b> [8] - 80:3, 80:4, 80:7, 93:21, 103:13, 136:18, 152:19, 207:20</p> <p><b>procedural</b> [1] - 225:4</p> <p><b>procedure</b> [1] - 222:21</p> <p><b>proceed</b> [21] - 12:24, 13:15, 14:13, 15:3, 15:9, 22:14, 27:9, 41:17, 52:6, 74:25, 92:15, 103:24, 118:6, 119:9, 226:24, 232:23, 252:14, 252:17, 254:1, 263:2, 277:12</p> <p><b>proceeded</b> [2] - 112:1, 121:9</p> <p><b>proceeding</b> [10] - 9:18, 120:8, 142:3, 144:3, 147:1, 207:14, 216:17, 247:18, 279:1, 292:24</p>
---	--	--	--

<p><b>proceedings</b> [12] - 9:1, 219:24, 222:19, 226:11, 231:18, 231:20, 231:21, 232:2, 291:18, 294:10, 309:6, 310:6</p> <p><b>process</b> [45] - 38:3, 41:2, 41:14, 76:18, 85:3, 85:12, 86:19, 93:9, 95:9, 110:14, 110:19, 111:2, 111:3, 111:5, 114:25, 116:3, 116:5, 119:21, 126:16, 126:18, 127:6, 129:14, 132:8, 132:11, 136:6, 140:25, 141:10, 142:6, 142:20, 145:21, 146:12, 146:15, 148:2, 160:23, 212:15, 223:17, 230:22, 231:25, 245:2, 246:1, 259:8, 262:14, 294:2</p> <p><b>processes</b> [3] - 89:20, 115:20, 204:6</p> <p><b>procure</b> [2] - 31:11, 31:12</p> <p><b>procurement</b> [10] - 41:18, 41:19, 74:7, 74:16, 75:25, 84:7, 84:8, 84:10, 84:11, 95:9</p> <p><b>procurements</b> [2] - 76:11, 85:7</p> <p><b>procuring</b> [1] - 40:15</p> <p><b>produce</b> [7] - 39:5, 55:9, 57:22, 59:20, 59:23, 83:15, 269:9</p> <p><b>produced</b> [2] - 34:13, 153:21</p> <p><b>produces</b> [1] - 55:12</p> <p><b>producing</b> [5] - 59:7, 59:13, 59:25, 81:25, 217:23</p> <p><b>product</b> [5] - 33:22, 33:24, 34:2, 34:3</p> <p><b>production</b> [12] - 44:12, 60:9, 60:19, 72:12, 73:14, 167:13, 176:4, 243:15, 266:16, 274:13, 275:4, 301:23</p> <p><b>productive</b> [1] - 225:16</p> <p><b>products</b> [1] - 230:16</p> <p><b>professional</b> [2] - 160:18, 161:14</p> <p><b>Professional</b> [4] - 309:4, 309:18, 310:4, 310:18</p> <p><b>program</b> [3] - 147:2, 210:16, 210:22</p> <p><b>programs</b> [1] - 263:17</p> <p><b>progress</b> [2] - 116:3, 279:23</p> <p><b>progresses</b> [1] - 31:23</p> <p><b>prohibitively</b> [1] - 211:13</p> <p><b>Project</b> [3] - 6:11, 6:19, 6:20</p> <p><b>project</b> [156] - 13:23, 14:18, 15:1, 15:6, 15:10, 16:24, 17:2, 17:14, 17:19, 17:23, 18:3, 18:4, 18:18, 18:19,</p>	<p>19:9, 21:18, 26:22, 26:24, 28:3, 28:12, 30:1, 30:6, 30:11, 31:11, 32:12, 33:7, 35:23, 36:7, 38:22, 39:3, 39:8, 39:15, 40:3, 40:24, 41:4, 41:8, 43:3, 43:10, 45:22, 51:21, 57:18, 62:1, 66:21, 68:19, 73:21, 74:1, 74:2, 75:1, 77:4, 77:18, 80:15, 84:13, 86:6, 86:10, 88:18, 99:21, 101:1, 101:2, 110:4, 110:9, 110:12, 110:15, 112:21, 121:2, 125:1, 125:4, 161:5, 161:23, 162:5, 162:6, 164:6, 164:7, 174:3, 186:15, 187:4, 187:14, 187:19, 187:20, 187:22, 188:21, 192:13, 194:8, 194:10, 194:20, 195:22, 198:1, 198:7, 200:4, 200:14, 201:16, 203:1, 203:7, 203:8, 204:9, 204:11, 204:12, 204:19, 204:20, 205:4, 211:25, 215:16, 216:10, 216:12, 216:19, 216:23, 217:10, 217:23, 220:11, 221:5, 221:23, 222:25, 224:9, 229:6, 229:20, 234:25, 235:4, 235:8, 235:23, 237:15, 239:17, 239:19, 245:7, 245:20, 245:22, 246:3, 246:5, 247:5, 247:8, 247:17, 247:22, 248:20, 249:22, 250:2, 250:3, 250:9, 250:20, 250:24, 251:13, 255:9, 255:17, 256:14, 257:15, 257:24, 263:13, 264:13, 278:17, 279:8, 279:18, 281:8, 281:19, 288:25, 289:13, 289:25, 292:4, 304:14</p> <p><b>projection</b> [1] - 54:6</p> <p><b>projections</b> [2] - 285:18, 285:19</p> <p><b>projects</b> [41] - 18:5, 38:15, 38:17, 40:10, 43:23, 62:2, 67:17, 180:24, 186:24, 189:20, 189:21, 193:15, 193:16, 197:22, 212:19, 217:20, 218:22, 251:14, 255:17, 255:21, 266:14, 266:18, 266:19, 266:21, 282:20, 282:25, 283:3, 283:11, 283:13, 283:15, 283:17, 283:20, 284:6, 284:7, 284:15, 284:19, 284:20, 291:24, 293:1</p> <p><b>prompted</b> [1] - 102:13</p>	<p><b>promulgation</b> [1] - 248:5</p> <p><b>proper</b> [3] - 45:6, 99:9, 99:10</p> <p><b>properly</b> [2] - 272:8, 272:9</p> <p><b>proportion</b> [1] - 212:5</p> <p><b>proposal</b> [5] - 13:25, 192:21, 193:10, 263:23, 299:2</p> <p><b>proposals</b> [1] - 266:12</p> <p><b>propose</b> [5] - 19:3, 117:23, 138:20, 138:22, 222:9</p> <p><b>proposed</b> [54] - 16:24, 17:2, 17:13, 17:19, 17:23, 18:3, 18:4, 19:17, 20:2, 28:11, 29:25, 33:7, 33:11, 34:5, 35:23, 36:17, 37:16, 37:24, 39:8, 40:17, 43:9, 68:18, 70:8, 71:7, 80:6, 116:25, 119:23, 119:24, 162:5, 164:6, 164:9, 174:2, 177:9, 177:10, 192:1, 192:17, 193:19, 211:16, 221:18, 234:25, 246:15, 246:17, 246:18, 247:7, 247:25, 279:7, 280:7, 281:8, 281:18, 282:3, 282:6, 282:19, 308:6, 308:8</p> <p><b>proposing</b> [2] - 34:6, 70:13</p> <p><b>proposition</b> [1] - 200:25</p> <p><b>protect</b> [1] - 196:10</p> <p><b>protection</b> [3] - 44:7, 92:16, 126:1</p> <p><b>protective</b> [1] - 137:16</p> <p><b>protocol</b> [4] - 111:13, 112:4, 112:5, 149:3</p> <p><b>prototype</b> [1] - 69:12</p> <p><b>proud</b> [1] - 201:14</p> <p><b>proved</b> [1] - 183:13</p> <p><b>proven</b> [1] - 70:15</p> <p><b>provide</b> [13] - 17:25, 21:22, 22:18, 138:21, 138:23, 138:24, 160:19, 161:25, 234:24, 244:2, 281:13, 304:21, 304:22</p> <p><b>provided</b> [16] - 17:17, 20:16, 28:4, 36:3, 36:5, 43:25, 165:24, 166:4, 166:11, 173:17, 173:18, 174:13, 175:11, 210:14, 246:23, 283:18</p> <p><b>provides</b> [5] - 13:18, 155:12, 244:8, 244:10, 244:11</p> <p><b>providing</b> [3] - 138:14, 162:23, 206:20</p> <p><b>provisions</b> [2] - 143:3, 301:24</p> <p><b>proximate</b> [1] - 62:17</p> <p><b>prudence</b> [52] - 9:13, 10:22, 13:3, 52:5, 71:6, 71:20, 81:6, 100:16, 100:18, 100:19, 101:18, 102:25, 103:1, 103:17, 103:20,</p>	<p>103:22, 155:17, 183:10, 183:12, 183:17, 188:19, 188:24, 192:7, 199:25, 200:13, 201:4, 203:11, 203:22, 204:1, 214:16, 214:22, 215:14, 215:22, 216:3, 219:13, 219:19, 245:24, 246:19, 246:24, 247:7, 248:5, 256:14, 258:22, 289:7, 289:16, 291:18, 291:22, 292:3, 306:11, 306:12, 308:23</p> <p><b>Prudence</b> [4] - 1:6, 1:8, 7:24, 8:8</p> <p><b>prudence-type</b> [1] - 291:18</p> <p><b>prudent</b> [23] - 11:7, 13:15, 21:18, 72:6, 100:17, 101:3, 101:21, 101:23, 102:20, 102:23, 188:6, 204:19, 215:5, 247:18, 252:22, 257:15, 257:24, 281:8, 281:19, 281:24, 289:7, 289:12, 304:14</p> <p><b>PSC's</b> [1] - 246:16</p> <p><b>PTC</b> [13] - 44:14, 44:18, 169:7, 169:9, 177:14, 177:16, 177:18, 178:3, 178:8, 178:10, 178:12, 178:15, 178:16</p> <p><b>PU-11-163</b> [4] - 1:6, 9:17, 10:25, 308:23</p> <p><b>PU-11-165</b> [4] - 1:8, 9:17, 11:1, 308:24</p> <p><b>public</b> [10] - 22:2, 124:8, 133:16, 226:6, 230:19, 230:20, 278:23, 291:25, 296:10</p> <p><b>Public</b> [9] - 3:3, 3:9, 9:8, 9:16, 10:16, 10:24, 195:20, 220:3, 230:23</p> <p><b>PUBLIC</b> [3] - 1:3, 3:6, 3:12</p> <p><b>publicly</b> [1] - 156:6</p> <p><b>publish</b> [1] - 288:19</p> <p><b>published</b> [3] - 133:17, 149:19, 175:24</p> <p><b>PUC</b> [4] - 223:19, 231:17, 231:19, 232:5</p> <p><b>pull</b> [1] - 36:2</p> <p><b>punishable</b> [9] - 26:3, 108:22, 152:1, 160:1, 184:16, 233:5, 242:19, 260:20, 277:22</p> <p><b>punished</b> [1] - 299:25</p> <p><b>punt</b> [1] - 101:23</p> <p><b>purchase</b> [3] - 71:2, 79:12, 95:12</p> <p><b>purchased</b> [3] - 79:4, 79:13, 266:10</p> <p><b>purchases</b> [13] - 17:21, 167:18, 179:1, 179:3,</p>
---	--	---	---

<p>179:10, 195:1, 264:22, 264:23, 265:1, 265:5, 265:6, 265:14, 265:23</p> <p><b>purchasing</b> [1] - 267:12</p> <p><b>purpose</b> [6] - 39:12, 39:22, 133:11, 206:22, 207:25, 278:12</p> <p><b>purposes</b> [13] - 67:18, 121:13, 126:3, 134:20, 146:4, 146:7, 146:8, 230:7, 247:13, 247:17, 267:10, 294:11</p> <p><b>pursuant</b> [6] - 9:5, 10:18, 24:14, 113:5, 138:21, 238:14</p> <p><b>pursue</b> [4] - 124:5, 156:22, 191:5, 198:8</p> <p><b>pursued</b> [1] - 32:3</p> <p><b>pursuing</b> [5] - 14:8, 95:8, 157:5, 199:17, 200:4</p> <p><b>push</b> [2] - 183:5, 257:11</p> <p><b>put</b> [36] - 33:24, 35:6, 50:20, 57:19, 66:9, 69:24, 70:25, 79:25, 93:2, 93:3, 96:15, 96:23, 96:25, 98:20, 98:25, 99:3, 107:10, 107:14, 107:19, 112:5, 140:20, 141:3, 192:5, 200:5, 202:23, 210:8, 215:6, 215:13, 216:19, 219:25, 235:3, 241:22, 258:23, 290:19, 295:4, 297:22</p> <p><b>putting</b> [7] - 43:11, 52:20, 100:6, 100:9, 211:11, 212:15, 252:3</p>	<p>270:21</p> <p><b>quantum</b> [2] - 286:18, 286:23</p> <p><b>questioning</b> [4] - 103:4, 268:8, 276:21, 297:20</p> <p><b>questions</b> [62] - 38:5, 53:10, 66:1, 72:10, 76:21, 83:21, 83:23, 98:23, 102:6, 108:3, 128:15, 130:6, 130:9, 130:13, 131:24, 132:1, 132:3, 137:20, 140:19, 143:13, 144:13, 146:20, 150:20, 159:5, 159:7, 159:8, 159:16, 179:21, 180:16, 180:21, 183:20, 186:10, 189:2, 198:19, 202:9, 220:14, 220:23, 224:18, 224:22, 228:5, 229:5, 229:19, 231:11, 231:12, 232:9, 238:2, 242:5, 242:6, 251:22, 253:7, 258:3, 259:11, 259:24, 266:25, 268:15, 273:7, 273:8, 273:20, 275:10, 291:9, 291:14</p> <p><b>quick</b> [2] - 68:24, 166:23</p> <p><b>quicker</b> [1] - 189:22</p> <p><b>quickly</b> [6] - 27:9, 27:20, 41:8, 86:23, 91:1, 97:9</p> <p><b>quite</b> [9] - 30:12, 40:11, 125:2, 164:16, 181:8, 182:10, 189:20, 192:9, 306:19</p> <p><b>quote</b> [2] - 140:20, 239:21</p> <p><b>quote/unquote</b> [2] - 94:11, 248:22</p> <p><b>quoted</b> [3] - 176:13, 176:16, 266:17</p>	<p><b>ran</b> [7] - 53:7, 169:8, 171:12, 175:3, 175:5, 178:17, 235:6</p> <p><b>random</b> [1] - 84:5</p> <p><b>range</b> [23] - 17:7, 45:16, 46:6, 63:17, 93:14, 94:1, 94:3, 168:23, 173:6, 173:23, 174:11, 175:9, 175:17, 187:22, 188:4, 237:9, 286:7, 287:6, 294:24, 294:25, 295:2, 295:5</p> <p><b>ranges</b> [2] - 45:4, 182:3</p> <p><b>rate</b> [35] - 55:7, 55:13, 64:4, 93:23, 94:12, 154:6, 155:23, 156:8, 156:14, 156:22, 157:4, 157:9, 158:9, 165:1, 165:17, 165:25, 167:2, 168:25, 186:23, 187:2, 187:15, 192:19, 200:10, 201:17, 212:25, 216:24, 223:9, 223:14, 238:24, 263:25, 266:1, 271:6, 293:4, 293:10</p> <p><b>ratemaking</b> [8] - 89:15, 89:20, 92:18, 204:6, 204:21, 247:12, 247:16, 292:23</p> <p><b>ratepayer</b> [2] - 92:16, 94:8</p> <p><b>ratepayer's</b> [4] - 80:22, 129:18, 157:25, 197:5</p> <p><b>ratepayers</b> [20] - 54:23, 97:22, 97:23, 123:16, 124:13, 125:5, 132:21, 187:10, 191:20, 202:23, 210:2, 212:16, 292:14, 292:17, 292:25, 300:12, 300:20, 301:1, 306:7, 307:1</p> <p><b>ratepayers'</b> [1] - 255:15</p> <p><b>rates</b> [13] - 19:1, 124:13, 125:4, 155:20, 155:22, 157:1, 177:23, 205:20, 210:21, 216:25, 255:10, 270:8</p> <p><b>rather</b> [16] - 51:22, 92:16, 151:6, 164:2, 167:14, 199:17, 200:17, 222:7, 250:4, 251:1, 267:15, 274:25, 276:6, 306:18, 306:19, 307:2</p> <p><b>rating</b> [8] - 57:14, 59:5, 59:19, 62:21, 66:15, 82:12, 83:6, 83:17</p> <p><b>ratings</b> [1] - 82:15</p> <p><b>rational</b> [1] - 219:15</p> <p><b>rationale</b> [7] - 87:1, 114:24, 120:6, 131:14, 288:11, 296:2, 296:15</p>	<p><b>reach</b> [2] - 122:21, 280:13</p> <p><b>reached</b> [3] - 27:8, 65:9, 93:3</p> <p><b>reaching</b> [1] - 69:2</p> <p><b>reaction</b> [3] - 45:13, 45:14, 102:21</p> <p><b>reacts</b> [1] - 34:20</p> <p><b>read</b> [7] - 10:5, 42:20, 105:12, 172:23, 220:3, 249:18, 298:18</p> <p><b>readily</b> [1] - 15:4</p> <p><b>reading</b> [5] - 72:2, 97:20, 150:6, 180:23, 182:5</p> <p><b>ready</b> [4] - 15:22, 21:11, 42:7, 196:15</p> <p><b>real</b> [6] - 55:24, 66:12, 166:22, 220:22, 251:18, 284:7</p> <p><b>reality</b> [3] - 15:6, 56:6, 134:9</p> <p><b>realize</b> [1] - 291:6</p> <p><b>really</b> [40] - 14:1, 52:4, 64:23, 68:10, 68:23, 70:2, 85:2, 91:4, 95:17, 99:20, 100:25, 103:21, 113:23, 122:17, 122:22, 126:8, 128:19, 130:5, 168:4, 175:25, 176:8, 178:11, 178:16, 178:20, 181:14, 182:13, 183:15, 203:5, 203:10, 204:8, 204:10, 212:16, 219:12, 250:21, 252:9, 289:7, 290:10, 290:22, 296:16, 300:5</p> <p><b>reason</b> [18] - 14:16, 44:16, 59:10, 77:6, 80:9, 91:15, 92:9, 96:23, 129:10, 148:1, 163:24, 195:5, 197:15, 209:18, 209:19, 286:11, 298:13</p> <p><b>reasonable</b> [29] - 13:15, 14:1, 16:4, 18:8, 40:5, 46:8, 93:16, 103:12, 103:13, 157:2, 193:12, 194:8, 194:21, 196:9, 196:14, 200:3, 201:23, 204:4, 205:19, 215:4, 219:15, 247:14, 281:8, 281:19, 281:25, 282:7, 299:25, 300:7, 304:14</p> <p><b>Reasonableness</b> [1] - 6:12</p> <p><b>reasonableness</b> [2] - 28:11, 200:13</p> <p><b>reasonably</b> [2] - 187:15, 193:5</p> <p><b>reasons</b> [2] - 238:6, 274:17</p> <p><b>Rebuttal</b> [6] - 6:10, 7:6, 7:13, 7:22, 8:6, 8:9</p> <p><b>rebuttal</b> [22] - 112:7, 112:14, 114:12, 118:13, 174:13, 174:16, 185:23, 243:20, 244:2, 244:7, 246:14,</p>
<p><b>Q</b></p>	<p><b>R</b></p>		
<p><b>qualified</b> [1] - 130:8</p> <p><b>qualifies</b> [2] - 133:21, 150:12</p> <p><b>qualify</b> [1] - 297:21</p> <p><b>qualitative</b> [2] - 249:19, 251:8</p> <p><b>quality</b> [32] - 9:14, 10:23, 13:4, 13:5, 13:9, 13:16, 26:23, 29:25, 30:25, 39:15, 40:2, 66:21, 70:9, 109:19, 109:20, 111:11, 115:1, 120:9, 129:10, 134:16, 136:25, 137:15, 139:3, 146:22, 182:23, 186:14, 188:5, 221:16, 230:8, 263:5, 263:20, 264:13</p> <p><b>quantifiably</b> [2] - 250:8, 271:17</p> <p><b>quantify</b> [3] - 245:17, 249:24, 251:8</p> <p><b>quantitative</b> [1] - 249:19</p> <p><b>quantitatively</b> [2] - 270:19,</p>	<p><b>radar</b> [1] - 100:4</p> <p><b>rail</b> [11] - 19:1, 48:17, 52:10, 52:12, 60:23, 91:18, 91:20, 91:24, 92:4, 154:10, 155:12</p> <p><b>railcar</b> [2] - 153:16, 153:17</p> <p><b>Railroad</b> [1] - 157:19</p> <p><b>railroad</b> [2] - 155:15, 156:4</p> <p><b>rain</b> [1] - 143:2</p> <p><b>Rainbow</b> [1] - 126:6</p> <p><b>raise</b> [1] - 26:5</p> <p><b>raised</b> [1] - 205:5</p> <p><b>raises</b> [2] - 107:25, 290:15</p> <p><b>ramifications</b> [4] - 123:15, 124:25, 125:1, 306:13</p> <p><b>ramp</b> [3] - 56:7, 241:25</p> <p><b>ramp-up</b> [1] - 241:25</p> <p><b>ramping</b> [3] - 63:25, 241:12</p>		

<p>246:21, 248:21, 262:1, 262:25, 264:5, 281:6, 281:10, 281:14, 285:3, 303:3, 304:7</p> <p><b>Rec'd</b> [3] - 6:9, 7:2, 8:2</p> <p><b>receipt</b> [1] - 24:10</p> <p><b>receive</b> [2] - 73:19, 157:20</p> <p><b>received</b> [8] - 23:24, 24:9, 24:14, 25:2, 144:14, 161:10, 266:11, 303:18</p> <p><b>receiving</b> [5] - 158:17, 159:2, 217:1, 269:10, 293:22</p> <p><b>recent</b> [6] - 166:25, 168:10, 234:7, 234:15, 265:23, 283:20</p> <p><b>recently</b> [4] - 117:15, 157:13, 182:18, 262:16</p> <p><b>recess</b> [13] - 12:8, 12:14, 12:17, 12:18, 12:19, 81:15, 81:17, 151:6, 225:8, 226:5, 226:10, 226:19</p> <p><b>Recess</b> [1] - 81:19</p> <p><b>recessed</b> [2] - 151:10, 226:21</p> <p><b>reclaimed</b> [1] - 91:22</p> <p><b>reclassification</b> [1] - 127:10</p> <p><b>recognize</b> [4] - 36:20, 207:16, 247:22, 296:4</p> <p><b>recommend</b> [3] - 279:10, 279:22, 308:1</p> <p><b>recommendation</b> [12] - 105:9, 120:1, 192:2, 192:4, 193:1, 203:15, 204:3, 205:5, 215:12, 289:9, 289:10, 295:25</p> <p><b>recommended</b> [2] - 279:12, 279:16</p> <p><b>reconcile</b> [2] - 71:12, 249:7</p> <p><b>record</b> [58] - 9:2, 10:14, 11:9, 20:9, 20:25, 21:23, 22:12, 24:10, 24:20, 25:17, 26:16, 27:21, 28:6, 33:1, 95:23, 104:21, 105:12, 109:10, 112:11, 138:18, 140:6, 140:13, 152:15, 156:16, 160:14, 185:4, 196:17, 196:18, 206:6, 206:11, 207:21, 208:16, 209:1, 209:5, 209:20, 212:18, 212:22, 225:1, 228:14, 228:18, 233:18, 234:6, 234:12, 241:6, 243:7, 249:8, 261:9, 262:11, 278:9, 278:21, 278:22, 296:9, 303:22, 304:22, 305:18, 309:7, 310:7</p> <p><b>recorded</b> [2] - 309:5, 310:5</p> <p><b>recordkeeping</b> [1] - 117:7</p> <p><b>recourse</b> [1] - 157:5</p> <p><b>recover</b> [5] - 71:18, 193:2,</p>	<p>217:14, 253:4, 292:22</p> <p><b>recoverable</b> [2] - 203:25, 205:20</p> <p><b>recovered</b> [2] - 89:19, 204:21</p> <p><b>recovery</b> [15] - 186:23, 187:2, 187:15, 194:4, 200:11, 200:13, 204:5, 204:11, 212:25, 214:19, 216:16, 217:1, 217:9, 247:20, 303:9</p> <p><b>RECROSS</b> [1] - 147:9</p> <p><b>Recross</b> [1] - 4:18</p> <p><b>RECROSS-EXAMINATION</b> [1] - 147:9</p> <p><b>Recross-examination</b> [1] - 4:18</p> <p><b>red</b> [2] - 162:16, 282:13</p> <p><b>redacted</b> [1] - 278:23</p> <p><b>redetected</b> [1] - 278:24</p> <p><b>Redirect</b> [3] - 4:11, 4:17, 5:9</p> <p><b>redirect</b> [1] - 280:23</p> <p><b>REDIRECT</b> [4] - 104:11, 143:15, 227:1, 229:16</p> <p><b>reduce</b> [6] - 34:13, 63:6, 142:11, 142:18, 244:18, 248:25</p> <p><b>reduced</b> [3] - 72:21, 101:16, 299:7</p> <p><b>reducing</b> [2] - 167:10, 167:12</p> <p><b>Reduction</b> [3] - 6:16, 6:17, 29:17</p> <p><b>reduction</b> [6] - 34:16, 96:1, 120:20, 210:19, 211:20, 299:5</p> <p><b>reductions</b> [1] - 137:2</p> <p><b>Redwell</b> [1] - 118:11</p> <p><b>reevaluation</b> [1] - 240:24</p> <p><b>refer</b> [7] - 36:9, 37:16, 104:13, 105:7, 118:9, 213:16, 279:17</p> <p><b>reference</b> [4] - 27:12, 36:18, 283:7, 283:8</p> <p><b>referenced</b> [2] - 175:23, 176:10</p> <p><b>referred</b> [9] - 33:21, 34:4, 34:9, 40:18, 84:10, 84:17, 114:16, 231:1, 301:20</p> <p><b>referring</b> [3] - 44:3, 164:6, 282:11</p> <p><b>reflect</b> [4] - 117:14, 134:9, 154:15, 268:21</p> <p><b>reflected</b> [6] - 238:15, 239:8, 240:8, 269:25, 284:13</p> <p><b>reflection</b> [1] - 269:12</p> <p><b>reflects</b> [2] - 266:5, 300:4</p> <p><b>refresh</b> [2] - 236:8, 273:12</p> <p><b>refusal</b> [1] - 188:17</p> <p><b>regard</b> [42] - 49:2, 54:18, 65:6, 65:22, 73:8, 79:21,</p>	<p>94:16, 94:17, 95:9, 95:24, 119:19, 123:14, 124:10, 127:9, 127:13, 129:5, 132:8, 132:10, 136:15, 192:12, 195:20, 195:21, 202:21, 209:14, 209:15, 209:16, 210:25, 219:8, 220:5, 228:11, 239:25, 240:25, 269:15, 273:24, 282:24, 284:16, 293:7, 294:12, 295:25, 296:16, 306:5, 306:11</p> <p><b>regarding</b> [23] - 12:6, 25:24, 44:7, 92:7, 108:18, 144:14, 146:20, 151:22, 159:22, 175:21, 184:14, 193:8, 229:5, 233:2, 235:19, 242:16, 260:16, 264:8, 264:21, 266:8, 277:18, 283:5, 283:19</p> <p><b>regards</b> [5] - 74:4, 123:3, 134:2, 147:13, 240:6</p> <p><b>region</b> [1] - 176:15</p> <p><b>Region</b> [1] - 119:1</p> <p><b>Regional</b> [18] - 7:8, 7:11, 13:7, 13:17, 29:1, 29:9, 104:16, 113:6, 113:10, 113:12, 114:8, 114:9, 114:23, 115:24, 117:13, 119:2, 127:18, 231:2</p> <p><b>regional</b> [36] - 49:6, 49:7, 51:1, 94:17, 110:25, 111:3, 111:16, 116:3, 116:8, 116:9, 117:24, 120:16, 120:20, 120:22, 120:24, 121:7, 121:11, 121:19, 121:23, 128:11, 128:16, 129:2, 129:22, 130:7, 132:10, 136:16, 137:11, 139:4, 139:13, 140:14, 147:2, 199:11, 210:16, 222:1, 244:22, 279:7</p> <p><b>Register</b> [2] - 117:25, 133:17</p> <p><b>registered</b> [1] - 161:13</p> <p><b>Registered</b> [4] - 309:3, 309:18, 310:3, 310:18</p> <p><b>regs</b> [1] - 94:16</p> <p><b>regulate</b> [2] - 190:8, 230:11</p> <p><b>regulated</b> [6] - 110:24, 111:1, 111:5, 126:2, 142:19, 297:3</p> <p><b>regulating</b> [1] - 245:5</p> <p><b>regulation</b> [3] - 34:7, 40:23, 236:6</p> <p><b>regulations</b> [18] - 28:19, 28:25, 29:7, 32:21, 39:25, 40:18, 58:3, 99:19, 120:23, 120:24, 129:12, 129:13, 182:1, 244:20, 244:22, 244:23, 246:12, 262:7</p>	<p><b>Regulations</b> [4] - 6:14, 7:10, 8:11, 115:13</p> <p><b>regulator</b> [1] - 299:25</p> <p><b>regulatory</b> [24] - 15:3, 110:14, 110:19, 120:7, 121:21, 127:2, 129:9, 134:8, 147:1, 186:25, 187:9, 200:17, 210:3, 216:16, 218:21, 220:1, 220:5, 220:9, 223:1, 223:13, 231:23, 232:1, 245:13, 245:24</p> <p><b>reinforced</b> [1] - 35:17</p> <p><b>reiterate</b> [4] - 83:8, 130:11, 238:3, 268:15</p> <p><b>reiterating</b> [1] - 73:18</p> <p><b>reject</b> [2] - 221:3, 297:10</p> <p><b>rejecting</b> [2] - 300:21, 300:22</p> <p><b>relate</b> [5] - 79:24, 106:5, 107:1, 115:20, 134:17</p> <p><b>related</b> [3] - 83:20, 154:15, 200:23</p> <p><b>relating</b> [4] - 150:4, 225:4, 232:21, 301:5</p> <p><b>relation</b> [1] - 250:25</p> <p><b>relationship</b> [2] - 198:5, 306:19</p> <p><b>relative</b> [10] - 186:17, 188:8, 192:14, 198:7, 205:7, 205:15, 218:20, 220:9, 224:7, 274:3</p> <p><b>relatively</b> [3] - 199:5, 205:10, 265:22</p> <p><b>relevance</b> [5] - 51:24, 66:21, 200:7, 228:17, 228:22</p> <p><b>relevancy</b> [1] - 66:23</p> <p><b>relevant</b> [1] - 144:2</p> <p><b>reliability</b> [1] - 267:10</p> <p><b>reliable</b> [1] - 53:15</p> <p><b>reliance</b> [1] - 285:11</p> <p><b>relied</b> [1] - 265:4</p> <p><b>relief</b> [3] - 156:23, 157:5, 157:23</p> <p><b>relook</b> [1] - 76:17</p> <p><b>rely</b> [3] - 127:22, 224:3, 290:10</p> <p><b>relying</b> [3] - 129:11, 265:13, 283:12</p> <p><b>remain</b> [1] - 188:11</p> <p><b>remainder</b> [2] - 42:5, 204:19</p> <p><b>remaining</b> [1] - 16:9</p> <p><b>remains</b> [1] - 21:19</p> <p><b>remarks</b> [1] - 90:16</p> <p><b>remember</b> [15] - 46:5, 52:8, 52:21, 54:4, 59:3, 77:22, 81:23, 87:3, 96:17, 127:21, 157:10, 195:15, 216:14, 217:6, 238:7</p> <p><b>remind</b> [1] - 9:25</p> <p><b>remobilization</b> [1] - 251:12</p>
--	---	--	---

<p><b>remobilize</b> [2] - 250:4, 251:10  <b>removal</b> [2] - 31:25, 46:19  <b>remove</b> [2] - 50:8, 69:21  <b>removing</b> [1] - 91:6  <b>rendered</b> [1] - 203:20  <b>renege</b> [1] - 214:22  <b>renewable</b> [3] - 190:25, 241:11, 241:12  <b>renewables</b> [1] - 241:13  <b>renewal</b> [1] - 274:15  <b>renewed</b> [1] - 95:18  <b>renotece</b> [1] - 208:19  <b>reopen</b> [1] - 206:11  <b>repaired</b> [1] - 35:18  <b>replace</b> [5] - 35:13, 164:11, 164:13, 168:14, 265:14  <b>replaced</b> [1] - 162:11  <b>replacement</b> [3] - 43:1, 264:4, 265:3  <b>replacing</b> [6] - 32:1, 43:12, 91:6, 162:9, 179:4, 179:8  <b>report</b> [6] - 72:3, 72:4, 176:11, 176:17, 193:7, 225:3  <b>Report</b> [1] - 7:18  <b>Reporter</b> [4] - 309:4, 309:18, 310:4, 310:18  <b>reporter</b> [1] - 277:1  <b>REPORTER</b> [3] - 277:2, 309:1, 310:1  <b>reporting</b> [4] - 117:7, 193:16, 201:11, 279:23  <b>reports</b> [2] - 248:1, 279:23  <b>repower</b> [1] - 16:16  <b>repowering</b> [1] - 43:10  <b>represent</b> [1] - 145:17  <b>representative</b> [4] - 149:9, 175:25, 176:9, 178:8  <b>represented</b> [1] - 217:1  <b>represents</b> [4] - 118:23, 145:18, 149:21, 264:25  <b>Request</b> [1] - 8:19  <b>request</b> [9] - 9:7, 22:8, 138:21, 216:2, 245:23, 249:2, 263:23, 266:12, 304:16  <b>requested</b> [3] - 298:17, 298:20, 303:13  <b>requesting</b> [1] - 14:17  <b>require</b> [5] - 142:23, 188:15, 215:7, 291:23, 298:24  <b>required</b> [37] - 25:23, 25:24, 50:17, 57:21, 89:5, 108:17, 112:21, 113:5, 133:22, 151:21, 157:8, 159:21, 159:22, 169:14, 172:2, 184:13, 184:14, 190:6, 194:2, 223:11, 223:21, 224:13, 230:23, 231:17,</p>	<p>232:25, 233:1, 242:14, 242:15, 244:24, 246:4, 260:15, 277:17, 299:3  <b>requirement</b> [17] - 13:18, 13:22, 14:7, 14:22, 14:24, 95:25, 96:6, 106:5, 107:25, 111:20, 143:5, 170:13, 230:4, 241:11, 266:23, 273:1  <b>requirements</b> [40] - 14:7, 18:9, 33:13, 35:4, 35:22, 39:16, 49:6, 105:5, 111:6, 111:19, 113:15, 113:17, 113:18, 115:7, 115:8, 115:22, 116:4, 116:6, 117:8, 121:6, 121:22, 127:4, 136:2, 142:13, 143:4, 147:2, 149:19, 210:16, 210:19, 211:9, 223:12, 224:8, 263:8, 264:1, 265:7, 265:13, 270:14, 272:18, 275:3, 279:23  <b>requires</b> [5] - 13:7, 34:7, 94:1, 114:5, 203:4  <b>Research</b> [2] - 69:9, 69:11  <b>research</b> [1] - 208:7  <b>reserve</b> [1] - 304:23  <b>reserved</b> [2] - 20:24, 303:10  <b>reserves</b> [1] - 302:6  <b>resides</b> [1] - 46:25  <b>resolution</b> [1] - 199:10  <b>Resource</b> [2] - 8:5, 8:13  <b>resource</b> [66] - 11:6, 14:20, 15:20, 19:22, 56:15, 60:15, 67:16, 67:17, 73:9, 124:20, 167:7, 168:14, 169:11, 179:4, 179:6, 179:8, 179:9, 179:11, 179:13, 181:10, 186:4, 189:12, 189:24, 189:25, 190:3, 190:7, 190:10, 190:19, 190:22, 191:5, 191:10, 191:11, 191:15, 191:19, 195:24, 233:24, 234:1, 238:16, 239:8, 239:21, 240:1, 240:8, 240:9, 240:21, 240:24, 241:3, 261:20, 262:13, 262:15, 263:4, 263:9, 263:21, 264:6, 264:10, 264:12, 264:24, 267:16, 268:21, 269:1, 269:18, 270:12, 270:25, 272:3  <b>Resources</b> [4] - 2:14, 18:7, 230:7, 245:4  <b>resources</b> [33] - 56:1, 56:6, 56:24, 61:10, 61:19, 78:7, 78:13, 87:20, 88:1, 124:8, 160:24, 168:21, 182:21,</p>	<p>189:14, 189:15, 189:18, 190:13, 190:15, 190:23, 190:24, 190:25, 237:16, 266:9, 267:24, 269:2, 269:3, 270:9, 271:4, 271:19, 272:17, 273:3, 301:21, 302:9  <b>respect</b> [18] - 110:8, 114:25, 115:19, 116:5, 117:6, 119:25, 120:8, 123:18, 123:23, 128:4, 142:2, 145:1, 145:6, 145:11, 228:8, 232:4, 232:5, 232:6  <b>respective</b> [2] - 9:13, 10:22  <b>respectively</b> [3] - 9:17, 11:1, 53:25  <b>respond</b> [3] - 61:23, 112:14, 229:23  <b>responded</b> [5] - 102:18, 112:18, 174:17, 174:23, 249:3  <b>responding</b> [1] - 223:8  <b>Response</b> [1] - 8:19  <b>response</b> [10] - 17:25, 86:18, 117:5, 117:21, 118:3, 119:5, 187:11, 218:17, 231:1, 263:16  <b>responsibilities</b> [7] - 109:16, 109:18, 153:5, 185:10, 185:12, 243:12, 261:16  <b>responsibility</b> [1] - 37:25  <b>responsible</b> [8] - 19:12, 37:23, 153:7, 186:25, 222:10, 233:25, 261:17, 261:20  <b>responsive</b> [1] - 144:13  <b>rest</b> [5] - 96:13, 204:14, 249:22, 274:1, 294:21  <b>rests</b> [1] - 280:22  <b>result</b> [9] - 15:17, 65:10, 111:25, 157:21, 191:6, 217:3, 247:3, 268:22, 298:14  <b>resulted</b> [1] - 127:10  <b>resulting</b> [1] - 195:19  <b>results</b> [15] - 127:24, 134:2, 135:11, 135:13, 148:13, 150:12, 164:23, 167:19, 169:19, 169:24, 172:19, 172:21, 198:9, 212:3, 262:17  <b>resume</b> [1] - 151:8  <b>retail</b> [2] - 198:10, 254:19  <b>retained</b> [2] - 43:2, 278:15  <b>retire</b> [1] - 80:2  <b>retired</b> [3] - 58:4, 235:3, 264:11  <b>retirement</b> [4] - 58:9, 263:24, 264:18, 307:14  <b>retrofit</b> [6] - 13:8, 105:2,</p>	<p>111:20, 112:2, 149:21, 182:22  <b>retrofits</b> [1] - 291:24  <b>retrofitted</b> [3] - 35:6, 164:10, 165:17  <b>retrofitting</b> [1] - 165:23  <b>return</b> [4] - 165:1, 170:11, 227:3, 293:4  <b>returning</b> [1] - 58:10  <b>reuse</b> [2] - 35:25, 38:6  <b>reusing</b> [1] - 35:16  <b>revamp</b> [1] - 203:4  <b>revenue</b> [4] - 170:12, 263:25, 266:22, 266:23  <b>review</b> [15] - 13:20, 116:12, 117:18, 119:9, 120:10, 144:23, 190:8, 193:9, 197:21, 222:1, 255:20, 255:22, 278:16, 279:4, 305:17  <b>reviewed</b> [5] - 176:13, 192:3, 192:22, 283:25, 285:13  <b>reviewing</b> [1] - 43:8  <b>reviews</b> [1] - 162:3  <b>Revised</b> [1] - 7:13  <b>revised</b> [2] - 117:1, 117:4  <b>revisions</b> [2] - 117:9, 117:15  <b>RFP</b> [1] - 285:15  <b>RICHARD</b> [2] - 6:3, 278:3  <b>Richard</b> [10] - 8:14, 8:16, 11:23, 18:1, 19:19, 21:25, 22:2, 246:15, 277:13, 278:10  <b>ride</b> [1] - 302:8  <b>Ridge</b> [7] - 61:25, 62:5, 62:6, 62:10, 62:13, 62:16, 62:20  <b>risk</b> [18] - 156:17, 156:18, 186:24, 195:6, 195:12, 200:16, 210:3, 247:6, 253:4, 257:19, 293:2, 293:13, 293:23, 294:19, 294:24, 295:1, 295:3  <b>risk-free</b> [1] - 293:13  <b>risks</b> [2] - 296:4, 296:7  <b>risky</b> [4] - 200:24, 293:21, 295:17, 295:18  <b>River</b> [9] - 48:6, 48:8, 48:19, 51:8, 51:20, 81:1, 96:2, 122:11, 197:8  <b>road</b> [6] - 181:4, 221:5, 221:8, 253:18, 256:21, 274:10  <b>robust</b> [1] - 79:20  <b>ROE</b> [5] - 293:7, 293:10, 294:11, 294:13, 295:21  <b>ROEs</b> [2] - 295:10  <b>role</b> [3] - 20:3, 110:3, 162:4  <b>ROLFES</b> [2] - 4:7, 26:6  <b>Rolfes</b> [28] - 6:10, 14:3, 14:13, 15:11, 18:16, 25:20,</p>
--	---	---	--

<p>25:21, 26:17, 26:25, 27:13, 27:15, 28:8, 33:4, 36:2, 43:2, 44:5, 104:13, 105:23, 108:11, 115:15, 182:24, 201:14, 210:24, 224:4, 224:11, 238:4, 268:8, 268:16</p> <p><b>Rolfes'</b> [3] - 122:9, 196:25, 237:23</p> <p><b>room</b> [5] - 10:16, 21:2, 215:20, 229:18, 266:24</p> <p><b>roughly</b> [10] - 12:17, 14:21, 39:11, 41:9, 41:25, 59:5, 71:1, 74:1, 90:19, 254:16</p> <p><b>round</b> [3] - 135:21, 135:22, 149:2</p> <p><b>rounding</b> [2] - 148:25, 149:3</p> <p><b>routine</b> [1] - 77:16</p> <p><b>row</b> [2] - 170:1, 172:7</p> <p><b>Royale</b> [1] - 126:12</p> <p><b>RTO</b> [1] - 301:13</p> <p><b>RTOs</b> [1] - 302:2</p> <p><b>rule</b> [50] - 10:19, 51:2, 76:13, 78:18, 111:2, 113:9, 113:16, 113:17, 113:21, 114:1, 114:5, 116:1, 116:8, 116:10, 131:3, 133:9, 141:8, 141:13, 141:15, 141:24, 142:4, 142:10, 142:21, 142:22, 145:11, 149:18, 181:25, 193:22, 194:1, 194:6, 194:12, 194:16, 194:19, 211:23, 214:18, 214:20, 215:7, 215:9, 215:15, 248:6, 253:24, 279:8, 291:1, 298:3, 298:5, 298:9</p> <p><b>Rule</b> [6] - 13:7, 13:17, 113:6, 113:11, 113:12, 231:3</p> <p><b>rulemaking</b> [5] - 115:20, 116:3, 119:20, 142:6, 294:2</p> <p><b>rulemakings</b> [1] - 121:10</p> <p><b>Rules</b> [5] - 7:12, 29:10, 113:7, 115:25, 117:14</p> <p><b>rules</b> [23] - 39:20, 40:19, 42:20, 49:11, 79:24, 80:6, 86:21, 110:25, 115:17, 115:21, 121:14, 121:23, 132:9, 136:19, 142:13, 145:8, 230:2, 230:11, 244:20, 246:4, 246:8, 248:9, 296:24</p> <p><b>ruling</b> [1] - 73:22</p> <p><b>run</b> [41] - 16:2, 53:14, 53:16, 55:1, 55:5, 56:19, 58:20, 60:9, 60:14, 63:5, 66:10, 77:25, 82:16, 83:15, 83:16, 86:22, 87:14, 87:15, 87:24, 89:22, 90:23, 99:10, 99:14,</p>	<p>106:21, 107:24, 144:8, 169:8, 178:15, 178:24, 180:1, 180:3, 180:5, 180:9, 181:3, 191:4, 199:9, 209:21, 219:23, 267:21, 288:13, 301:23</p> <p><b>run-up</b> [1] - 86:22</p> <p><b>running</b> [6] - 53:19, 70:6, 70:16, 107:19, 177:17, 211:13</p> <p><b>runs</b> [2] - 83:14, 237:6</p>	<p><b>scenario</b> [12] - 141:7, 172:1, 174:7, 188:10, 195:9, 250:14, 250:17, 251:3, 263:14, 293:24, 293:25, 294:16</p> <p><b>scenarios</b> [14] - 17:18, 17:23, 235:7, 235:25, 236:12, 236:18, 237:2, 258:18, 259:18, 263:11, 263:16, 263:17, 263:19</p> <p><b>scenes</b> [1] - 127:24</p> <p><b>schedule</b> [14] - 15:10, 41:7, 42:9, 74:22, 75:1, 114:2, 118:1, 118:4, 118:5, 119:2, 121:18, 124:1, 297:7</p> <p><b>scheduled</b> [1] - 79:7</p> <p><b>scheduling</b> [1] - 245:25</p> <p><b>schematic</b> [1] - 36:10</p> <p><b>scheme</b> [1] - 274:3</p> <p><b>Science</b> [1] - 161:12</p> <p><b>science</b> [2] - 64:25, 161:10</p> <p><b>scientific</b> [1] - 129:21</p> <p><b>Scott</b> [1] - 219:22</p> <p><b>SCR</b> [46] - 34:16, 35:10, 36:25, 37:1, 37:7, 38:6, 38:9, 45:3, 45:16, 45:20, 46:6, 46:10, 46:17, 46:23, 49:24, 50:3, 50:12, 50:17, 50:21, 51:2, 51:22, 80:20, 89:25, 96:3, 96:6, 96:21, 97:1, 123:3, 136:9, 136:12, 147:17, 149:12, 150:3, 150:8, 150:12, 221:24, 222:3, 297:21, 298:1, 298:13, 298:24, 299:3, 300:9, 300:13, 300:14, 300:24</p> <p><b>Scrap</b> [1] - 255:23</p> <p><b>screen</b> [1] - 100:4</p> <p><b>screening</b> [4] - 38:4, 38:7, 41:10, 263:22</p> <p><b>SCRs</b> [3] - 96:11, 96:15, 96:23</p> <p><b>scrubbed</b> [1] - 222:7</p> <p><b>scrubber</b> [25] - 33:12, 33:15, 33:16, 33:23, 34:4, 35:11, 37:12, 37:13, 37:15, 37:19, 47:24, 47:25, 52:20, 52:21, 70:21, 70:24, 89:23, 142:17, 221:19, 221:21, 222:3, 222:9, 222:11</p> <p><b>se</b> [1] - 156:19</p> <p><b>seated</b> [2] - 25:21, 159:19</p> <p><b>second</b> [14] - 34:14, 36:4, 42:19, 61:18, 70:2, 99:1, 99:15, 103:2, 115:10, 119:4, 176:10, 192:17, 204:8, 247:7</p> <p><b>secondly</b> [1] - 178:9</p> <p><b>secret</b> [16] - 6:18, 6:20, 6:24,</p>	<p>7:5, 7:17, 8:16, 21:1, 21:7, 21:8, 30:2, 30:15, 31:2, 32:5, 32:17, 90:3, 90:6</p> <p><b>Section</b> [2] - 104:25, 105:8</p> <p><b>secure</b> [1] - 154:10</p> <p><b>securing</b> [1] - 265:6</p> <p><b>see</b> [27] - 54:12, 66:21, 70:9, 73:13, 94:1, 105:9, 135:3, 144:11, 144:24, 157:8, 170:1, 170:21, 173:6, 181:20, 183:2, 194:15, 194:17, 194:19, 197:15, 237:4, 237:12, 240:25, 271:17, 272:22, 295:19, 297:5, 302:2</p> <p><b>seeing</b> [6] - 107:13, 177:19, 257:5, 270:10, 287:16, 308:4</p> <p><b>seek</b> [7] - 13:2, 187:10, 188:12, 200:10, 204:5, 216:12, 223:15</p> <p><b>seeking</b> [8] - 186:11, 186:23, 187:7, 187:17, 187:21, 204:10, 217:17, 294:6</p> <p><b>seem</b> [7] - 16:12, 54:1, 71:24, 200:24, 266:18, 297:20, 297:23</p> <p><b>sees</b> [1] - 87:12</p> <p><b>segue</b> [1] - 46:11</p> <p><b>select</b> [3] - 149:12, 235:5, 272:24</p> <p><b>selected</b> [10] - 18:7, 41:22, 146:12, 175:1, 179:3, 235:8, 236:3, 237:15, 263:21, 264:3</p> <p><b>selection</b> [3] - 117:10, 123:24, 245:1</p> <p><b>selective</b> [1] - 34:16</p> <p><b>self</b> [2] - 266:10, 267:16</p> <p><b>self-built</b> [1] - 266:10</p> <p><b>self-supply</b> [1] - 267:16</p> <p><b>seller's</b> [3] - 85:24, 86:4, 86:23</p> <p><b>semantics</b> [1] - 211:18</p> <p><b>semi</b> [4] - 33:14, 33:16, 33:21, 70:23</p> <p><b>semi-dry</b> [4] - 33:14, 33:16, 33:21, 70:23</p> <p><b>senior</b> [3] - 19:16, 185:9, 217:4</p> <p><b>sense</b> [12] - 16:23, 85:20, 158:7, 215:18, 238:10, 255:14, 259:6, 294:5, 294:14, 296:3, 296:4, 296:20</p> <p><b>sensitive</b> [1] - 76:10</p> <p><b>sensitivities</b> [6] - 44:10, 171:12, 175:3, 178:24, 180:3, 287:1</p> <p><b>sensitivity</b> [14] - 17:6,</p>
<b>S</b>			
<p><b>rounding</b> [2] - 148:25, 149:3</p> <p><b>routine</b> [1] - 77:16</p> <p><b>row</b> [2] - 170:1, 172:7</p> <p><b>Royale</b> [1] - 126:12</p> <p><b>RTO</b> [1] - 301:13</p> <p><b>RTOs</b> [1] - 302:2</p> <p><b>rule</b> [50] - 10:19, 51:2, 76:13, 78:18, 111:2, 113:9, 113:16, 113:17, 113:21, 114:1, 114:5, 116:1, 116:8, 116:10, 131:3, 133:9, 141:8, 141:13, 141:15, 141:24, 142:4, 142:10, 142:21, 142:22, 145:11, 149:18, 181:25, 193:22, 194:1, 194:6, 194:12, 194:16, 194:19, 211:23, 214:18, 214:20, 215:7, 215:9, 215:15, 248:6, 253:24, 279:8, 291:1, 298:3, 298:5, 298:9</p> <p><b>Rule</b> [6] - 13:7, 13:17, 113:6, 113:11, 113:12, 231:3</p> <p><b>rulemaking</b> [5] - 115:20, 116:3, 119:20, 142:6, 294:2</p> <p><b>rulemakings</b> [1] - 121:10</p> <p><b>Rules</b> [5] - 7:12, 29:10, 113:7, 115:25, 117:14</p> <p><b>rules</b> [23] - 39:20, 40:19, 42:20, 49:11, 79:24, 80:6, 86:21, 110:25, 115:17, 115:21, 121:14, 121:23, 132:9, 136:19, 142:13, 145:8, 230:2, 230:11, 244:20, 246:4, 246:8, 248:9, 296:24</p> <p><b>ruling</b> [1] - 73:22</p> <p><b>run</b> [41] - 16:2, 53:14, 53:16, 55:1, 55:5, 56:19, 58:20, 60:9, 60:14, 63:5, 66:10, 77:25, 82:16, 83:15, 83:16, 86:22, 87:14, 87:15, 87:24, 89:22, 90:23, 99:10, 99:14,</p>	<p><b>S02</b> [2] - 6:15, 6:17</p> <p><b>SACCO</b> [43] - 3:9, 12:1, 23:5, 23:7, 23:10, 23:23, 24:7, 24:25, 25:15, 102:8, 102:10, 102:13, 102:15, 104:5, 106:12, 108:9, 132:1, 140:12, 148:6, 151:1, 159:7, 179:24, 180:15, 184:2, 198:21, 198:23, 202:8, 225:25, 228:13, 228:20, 228:24, 252:2, 253:6, 260:6, 273:7, 275:17, 287:12, 287:15, 291:8, 303:2, 305:1, 308:6, 308:10</p> <p><b>Sacco</b> [35] - 4:11, 4:24, 5:4, 5:15, 6:5, 11:25, 12:2, 22:13, 23:4, 23:22, 24:6, 24:24, 25:14, 83:22, 106:11, 108:8, 131:25, 140:11, 148:5, 150:25, 159:6, 179:22, 184:1, 198:20, 225:23, 228:10, 231:10, 231:11, 251:23, 260:5, 273:6, 275:16, 287:11, 303:1, 304:25</p> <p><b>safe</b> [1] - 133:1</p> <p><b>safety</b> [1] - 220:10</p> <p><b>sake</b> [1] - 308:13</p> <p><b>sales</b> [2] - 153:18, 254:19</p> <p><b>Santa</b> [1] - 155:7</p> <p><b>Sargent</b> [8] - 29:24, 38:1, 38:4, 38:15, 38:24, 39:4, 165:19, 165:21</p> <p><b>sat</b> [1] - 195:16</p> <p><b>satisfies</b> [1] - 308:17</p> <p><b>saving</b> [1] - 124:23</p> <p><b>savings</b> [6] - 125:7, 219:13, 219:22, 220:1, 220:8, 249:20</p> <p><b>saw</b> [4] - 86:20, 93:15, 120:5, 124:2</p> <p><b>scale</b> [6] - 15:1, 107:12, 107:16, 168:15, 182:20, 221:20</p>	<p><b>scenario</b> [12] - 141:7, 172:1, 174:7, 188:10, 195:9, 250:14, 250:17, 251:3, 263:14, 293:24, 293:25, 294:16</p> <p><b>scenarios</b> [14] - 17:18, 17:23, 235:7, 235:25, 236:12, 236:18, 237:2, 258:18, 259:18, 263:11, 263:16, 263:17, 263:19</p> <p><b>scenes</b> [1] - 127:24</p> <p><b>schedule</b> [14] - 15:10, 41:7, 42:9, 74:22, 75:1, 114:2, 118:1, 118:4, 118:5, 119:2, 121:18, 124:1, 297:7</p> <p><b>scheduled</b> [1] - 79:7</p> <p><b>scheduling</b> [1] - 245:25</p> <p><b>schematic</b> [1] - 36:10</p> <p><b>scheme</b> [1] - 274:3</p> <p><b>Science</b> [1] - 161:12</p> <p><b>science</b> [2] - 64:25, 161:10</p> <p><b>scientific</b> [1] - 129:21</p> <p><b>Scott</b> [1] - 219:22</p> <p><b>SCR</b> [46] - 34:16, 35:10, 36:25, 37:1, 37:7, 38:6, 38:9, 45:3, 45:16, 45:20, 46:6, 46:10, 46:17, 46:23, 49:24, 50:3, 50:12, 50:17, 50:21, 51:2, 51:22, 80:20, 89:25, 96:3, 96:6, 96:21, 97:1, 123:3, 136:9, 136:12, 147:17, 149:12, 150:3, 150:8, 150:12, 221:24, 222:3, 297:21, 298:1, 298:13, 298:24, 299:3, 300:9, 300:13, 300:14, 300:24</p> <p><b>Scrap</b> [1] - 255:23</p> <p><b>screen</b> [1] - 100:4</p> <p><b>screening</b> [4] - 38:4, 38:7, 41:10, 263:22</p> <p><b>SCRs</b> [3] - 96:11, 96:15, 96:23</p> <p><b>scrubbed</b> [1] - 222:7</p> <p><b>scrubber</b> [25] - 33:12, 33:15, 33:16, 33:23, 34:4, 35:11, 37:12, 37:13, 37:15, 37:19, 47:24, 47:25, 52:20, 52:21, 70:21, 70:24, 89:23, 142:17, 221:19, 221:21, 222:3, 222:9, 222:11</p> <p><b>se</b> [1] - 156:19</p> <p><b>seated</b> [2] - 25:21, 159:19</p> <p><b>second</b> [14] - 34:14, 36:4, 42:19, 61:18, 70:2, 99:1, 99:15, 103:2, 115:10, 119:4, 176:10, 192:17, 204:8, 247:7</p> <p><b>secondly</b> [1] - 178:9</p> <p><b>secret</b> [16] - 6:18, 6:20, 6:24,</p>	<p>7:5, 7:17, 8:16, 21:1, 21:7, 21:8, 30:2, 30:15, 31:2, 32:5, 32:17, 90:3, 90:6</p> <p><b>Section</b> [2] - 104:25, 105:8</p> <p><b>secure</b> [1] - 154:10</p> <p><b>securing</b> [1] - 265:6</p> <p><b>see</b> [27] - 54:12, 66:21, 70:9, 73:13, 94:1, 105:9, 135:3, 144:11, 144:24, 157:8, 170:1, 170:21, 173:6, 181:20, 183:2, 194:15, 194:17, 194:19, 197:15, 237:4, 237:12, 240:25, 271:17, 272:22, 295:19, 297:5, 302:2</p> <p><b>seeing</b> [6] - 107:13, 177:19, 257:5, 270:10, 287:16, 308:4</p> <p><b>seek</b> [7] - 13:2, 187:10, 188:12, 200:10, 204:5, 216:12, 223:15</p> <p><b>seeking</b> [8] - 186:11, 186:23, 187:7, 187:17, 187:21, 204:10, 217:17, 294:6</p> <p><b>seem</b> [7] - 16:12, 54:1, 71:24, 200:24, 266:18, 297:20, 297:23</p> <p><b>sees</b> [1] - 87:12</p> <p><b>segue</b> [1] - 46:11</p> <p><b>select</b> [3] - 149:12, 235:5, 272:24</p> <p><b>selected</b> [10] - 18:7, 41:22, 146:12, 175:1, 179:3, 235:8, 236:3, 237:15, 263:21, 264:3</p> <p><b>selection</b> [3] - 117:10, 123:24, 245:1</p> <p><b>selective</b> [1] - 34:16</p> <p><b>self</b> [2] - 266:10, 267:16</p> <p><b>self-built</b> [1] - 266:10</p> <p><b>self-supply</b> [1] - 267:16</p> <p><b>seller's</b> [3] - 85:24, 86:4, 86:23</p> <p><b>semantics</b> [1] - 211:18</p> <p><b>semi</b> [4] - 33:14, 33:16, 33:21, 70:23</p> <p><b>semi-dry</b> [4] - 33:14, 33:16, 33:21, 70:23</p> <p><b>senior</b> [3] - 19:16, 185:9, 217:4</p> <p><b>sense</b> [12] - 16:23, 85:20, 158:7, 215:18, 238:10, 255:14, 259:6, 294:5, 294:14, 296:3, 296:4, 296:20</p> <p><b>sensitive</b> [1] - 76:10</p> <p><b>sensitivities</b> [6] - 44:10, 171:12, 175:3, 178:24, 180:3, 287:1</p> <p><b>sensitivity</b> [14] - 17:6,</p>

<p>154:19, 172:8, 172:11, 173:7, 173:12, 173:20, 174:11, 175:6, 175:16, 180:1, 182:3, 286:7, 287:8</p> <p><b>sentences</b> [1] - 105:14</p> <p><b>sentiment</b> [1] - 124:8</p> <p><b>separate</b> [5] - 204:6, 204:11, 204:21, 205:5, 235:6</p> <p><b>separated</b> [5] - 34:9, 51:2, 89:24, 120:2, 298:20</p> <p><b>separately</b> [4] - 223:6, 223:9, 249:4, 263:10</p> <p><b>separating</b> [1] - 212:24</p> <p><b>September</b> [8] - 11:4, 111:22, 113:14, 117:4, 234:10, 235:22, 285:25</p> <p><b>series</b> [9] - 20:22, 20:23, 20:24, 27:17, 29:12, 118:24, 139:17, 144:8</p> <p><b>serious</b> [3] - 15:14, 80:3, 180:22</p> <p><b>serve</b> [3] - 9:8, 198:10, 246:12</p> <p><b>served</b> [1] - 91:21</p> <p><b>serves</b> [2] - 109:24, 157:22</p> <p><b>service</b> [4] - 98:17, 155:12, 217:23, 307:18</p> <p><b>Service</b> [7] - 3:3, 3:9, 9:8, 9:16, 10:16, 10:25, 195:20</p> <p><b>SERVICE</b> [3] - 1:3, 3:6, 3:12</p> <p><b>serviced</b> [1] - 221:22</p> <p><b>services</b> [12] - 18:20, 18:24, 19:11, 109:15, 153:6, 160:18, 160:24, 161:1, 161:7, 161:22, 161:25, 185:14</p> <p><b>session</b> [1] - 305:9</p> <p><b>set</b> [16] - 9:24, 47:16, 77:17, 106:5, 125:22, 137:16, 144:6, 154:2, 154:5, 167:6, 205:24, 210:12, 250:5, 255:3, 295:21, 308:16</p> <p><b>setting</b> [3] - 136:25, 248:18, 305:9</p> <p><b>sever</b> [1] - 204:13</p> <p><b>several</b> [7] - 22:6, 61:11, 63:20, 109:20, 126:5, 164:21, 174:23</p> <p><b>severed</b> [1] - 203:6</p> <p><b>shakedown</b> [1] - 42:6</p> <p><b>shale</b> [1] - 286:18</p> <p><b>share</b> [11] - 69:17, 87:13, 88:8, 88:15, 88:16, 101:5, 188:8, 188:12, 188:16, 222:10, 273:14</p> <p><b>shareholders</b> [1] - 123:16</p> <p><b>sharing</b> [1] - 218:12</p> <p><b>shed</b> [1] - 67:13</p> <p><b>shift</b> [3] - 121:25, 122:4, 286:23</p>	<p><b>shipper</b> [3] - 155:6, 155:13, 158:12</p> <p><b>shippers</b> [2] - 157:1, 157:23</p> <p><b>shoring</b> [1] - 181:2</p> <p><b>short</b> [10] - 35:18, 69:23, 88:11, 153:8, 195:7, 237:1, 270:5, 270:7, 274:8, 306:15</p> <p><b>short-term</b> [3] - 270:5, 270:7, 274:8</p> <p><b>shortfall</b> [1] - 79:5</p> <p><b>shorthand</b> [4] - 309:6, 309:11, 310:6, 310:11</p> <p><b>shortly</b> [3] - 206:3, 227:17, 285:23</p> <p><b>show</b> [7] - 13:14, 16:4, 17:2, 183:10, 201:21, 220:7, 270:16</p> <p><b>showed</b> [8] - 35:19, 127:20, 127:22, 128:6, 150:2, 263:23, 280:4, 298:12</p> <p><b>shown</b> [7] - 170:7, 170:9, 171:7, 172:5, 172:6, 172:21, 191:15</p> <p><b>shows</b> [6] - 37:13, 173:2, 173:3, 191:4, 191:18, 236:12</p> <p><b>shudder</b> [1] - 68:12</p> <p><b>shut</b> [5] - 79:2, 91:22, 99:5, 135:6, 213:21</p> <p><b>shutdown</b> [1] - 117:8</p> <p><b>shutting</b> [1] - 169:3</p> <p><b>sic</b> [1] - 209:9</p> <p><b>side</b> [18] - 50:15, 58:14, 59:13, 80:16, 98:12, 173:2, 173:3, 218:9, 236:17, 237:1, 264:14, 264:23, 265:7, 266:9, 270:12, 270:15, 272:14, 293:6</p> <p><b>sides</b> [2] - 211:4, 306:14</p> <p><b>Siemens</b> [1] - 176:2</p> <p><b>Sierra</b> [2] - 132:15, 213:13</p> <p><b>sign</b> [1] - 288:18</p> <p><b>signal</b> [3] - 102:20, 252:21, 253:1</p> <p><b>signature</b> [1] - 118:8</p> <p><b>signed</b> [1] - 212:17</p> <p><b>significant</b> [15] - 16:8, 121:24, 122:3, 122:4, 149:8, 197:4, 197:22, 200:16, 216:17, 217:14, 240:18, 246:5, 247:4, 253:2, 253:24</p> <p><b>significantly</b> [6] - 149:14, 170:22, 173:8, 244:19, 249:5, 249:13</p> <p><b>silence</b> [2] - 290:1, 290:2</p> <p><b>similar</b> [19] - 33:23, 34:18, 40:21, 45:24, 47:20, 48:10, 89:4, 93:11, 122:21, 123:5,</p>	<p>182:19, 187:18, 222:19, 239:13, 268:23, 269:11, 282:20, 286:2, 296:3</p> <p><b>similarities</b> [2] - 47:14, 52:3</p> <p><b>similarly</b> [2] - 17:22, 191:11</p> <p><b>simple</b> [11] - 46:15, 54:22, 56:15, 77:21, 91:6, 91:18, 103:23, 179:11, 199:5, 199:19, 256:4</p> <p><b>simple-cycle</b> [1] - 256:4</p> <p><b>simplify</b> [1] - 49:22</p> <p><b>simply</b> [8] - 94:7, 134:8, 135:23, 149:22, 189:20, 247:20, 294:7, 303:17</p> <p><b>sincere</b> [1] - 306:8</p> <p><b>single</b> [12] - 14:12, 14:20, 38:24, 40:9, 43:21, 68:9, 85:5, 163:6, 163:9, 163:25, 178:21, 221:19</p> <p><b>single-joint</b> [1] - 221:19</p> <p><b>SIP</b> [39] - 7:8, 13:21, 15:25, 29:1, 39:16, 42:23, 73:23, 76:2, 89:6, 95:24, 104:16, 105:4, 110:14, 110:19, 114:9, 114:23, 116:11, 116:18, 116:25, 117:19, 117:24, 119:9, 134:6, 138:1, 149:12, 191:25, 192:9, 192:11, 279:15, 282:9, 282:10, 287:17, 287:25, 288:8, 288:23, 296:1, 296:16, 297:23, 299:4</p> <p><b>SIPS</b> [1] - 121:19</p> <p><b>sit</b> [5] - 37:3, 37:16, 98:24, 219:18, 259:19</p> <p><b>site</b> [5] - 15:16, 143:8, 143:9, 230:17, 251:9</p> <p><b>sites</b> [1] - 134:18</p> <p><b>siting</b> [3] - 223:23, 224:1, 232:6</p> <p><b>sits</b> [2] - 70:5, 211:5</p> <p><b>sitting</b> [2] - 50:15, 136:10</p> <p><b>situation</b> [10] - 50:3, 157:3, 217:15, 223:2, 251:2, 269:6, 269:24, 276:14, 296:18, 296:23</p> <p><b>situations</b> [2] - 267:11, 267:13</p> <p><b>six</b> [7] - 47:17, 47:18, 47:22, 76:9, 77:8, 169:22, 169:23</p> <p><b>Sixth</b> [1] - 2:8</p> <p><b>size</b> [3] - 107:8, 107:19, 222:11</p> <p><b>skeptical</b> [1] - 307:25</p> <p><b>slated</b> [1] - 183:3</p> <p><b>slight</b> [1] - 275:6</p> <p><b>slightly</b> [6] - 155:24, 210:6, 284:9, 287:17, 293:22, 300:14</p>	<p><b>slot</b> [1] - 78:11</p> <p><b>slurried</b> [1] - 33:19</p> <p><b>small</b> [4] - 56:21, 205:11, 240:16, 301:15</p> <p><b>smaller</b> [5] - 83:5, 107:11, 107:15, 182:24, 272:19</p> <p><b>smart</b> [2] - 180:20, 254:2</p> <p><b>Smith</b> [2] - 310:3, 310:17</p> <p><b>SNCR</b> [16] - 45:9, 45:20, 45:21, 46:5, 46:9, 46:15, 46:23, 51:21, 80:20, 120:2, 136:9, 136:13, 148:18, 149:12, 150:8, 298:7</p> <p><b>SO2</b> [12] - 29:16, 33:8, 33:12, 33:20, 34:5, 113:19, 119:25, 136:15, 136:22, 203:3, 237:7, 244:19</p> <p><b>SOFA</b> [1] - 299:2</p> <p><b>soft</b> [1] - 279:17</p> <p><b>solely</b> [1] - 73:2</p> <p><b>solicit</b> [1] - 14:11</p> <p><b>solid</b> [5] - 74:11, 109:19, 230:11, 230:13, 230:17</p> <p><b>someone</b> [4] - 18:22, 66:4, 67:23, 100:14</p> <p><b>sometime</b> [1] - 12:14</p> <p><b>sometimes</b> [6] - 71:23, 84:16, 300:2, 306:16, 306:22</p> <p><b>somewhat</b> [8] - 45:23, 134:4, 150:12, 168:6, 240:4, 248:20, 249:6, 268:13</p> <p><b>somewhere</b> [2] - 91:23, 183:11</p> <p><b>soon</b> [8] - 40:17, 41:16, 41:24, 42:21, 251:18, 252:15, 252:16, 276:17</p> <p><b>sooner</b> [3] - 14:4, 40:14, 85:8</p> <p><b>sorry</b> [14] - 21:6, 23:12, 151:17, 153:19, 167:18, 172:18, 179:5, 183:19, 190:18, 207:25, 281:12, 286:1, 301:1, 302:22</p> <p><b>sort</b> [18] - 218:12, 219:25, 225:14, 252:20, 258:18, 269:11, 270:16, 287:1, 290:11, 291:13, 292:15, 295:4, 296:21, 297:11, 301:5, 301:11, 305:7, 306:3</p> <p><b>sorts</b> [1] - 271:12</p> <p><b>sound</b> [3] - 46:7, 53:5, 180:20</p> <p><b>sounds</b> [3] - 41:3, 46:8, 219:15</p> <p><b>soup</b> [2] - 202:17, 202:19</p> <p><b>source</b> [11] - 48:12, 52:5, 80:25, 81:5, 110:23, 120:10, 121:6, 122:10, 135:4, 164:20, 197:7</p>
---	---	---	---

<p><b>source's</b> [1] - 134:24  <b>sources</b> [7] - 94:7, 127:3, 135:2, 135:14, 135:18, 164:18, 273:13  <b>South</b> [111] - 2:8, 7:8, 7:11, 7:19, 13:5, 13:6, 13:16, 13:21, 15:25, 18:6, 29:1, 29:9, 33:13, 34:7, 39:16, 42:20, 46:3, 50:16, 50:25, 62:8, 73:23, 75:9, 76:1, 89:6, 95:24, 96:7, 104:15, 104:22, 110:13, 110:18, 113:6, 113:7, 113:10, 113:12, 113:13, 113:25, 114:8, 114:9, 114:16, 114:22, 114:24, 115:24, 116:2, 116:7, 116:14, 116:18, 117:13, 117:19, 119:2, 119:22, 121:20, 122:18, 123:5, 123:13, 127:7, 127:9, 127:16, 128:8, 134:6, 134:7, 138:4, 142:4, 146:7, 149:5, 149:11, 186:23, 191:25, 192:8, 210:11, 211:22, 212:9, 222:20, 222:22, 222:24, 223:1, 223:2, 223:4, 223:10, 223:11, 223:15, 223:19, 224:8, 229:6, 229:21, 230:2, 230:5, 230:11, 230:23, 231:2, 231:17, 232:4, 244:24, 245:3, 246:20, 279:6, 279:15, 282:8, 282:10, 287:17, 287:25, 296:1, 297:23, 297:25, 298:14, 298:22, 299:11, 299:18, 300:7, 300:8, 300:21  <b>south</b> [1] - 37:17  <b>spans</b> [1] - 297:4  <b>specific</b> [20] - 123:19, 125:14, 126:21, 129:7, 133:12, 134:24, 136:3, 138:23, 200:4, 224:7, 270:17, 283:3, 283:11, 283:13, 283:15, 283:17, 284:1, 284:15, 284:19, 284:20  <b>specifically</b> [15] - 62:19, 65:8, 66:15, 75:22, 93:7, 105:8, 113:22, 125:10, 129:4, 131:16, 175:1, 225:12, 230:12, 272:5, 307:20  <b>specified</b> [3] - 11:4, 45:4, 210:22  <b>speculating</b> [1] - 58:1  <b>speculation</b> [1] - 79:25  <b>speculative</b> [2] - 57:25,</p>	<p>58:14  <b>speed</b> [1] - 130:8  <b>spell</b> [3] - 152:14, 152:18, 233:17  <b>spend</b> [10] - 58:1, 200:10, 201:10, 201:20, 217:21, 218:24, 289:15, 290:25, 292:20, 296:23  <b>spending</b> [2] - 129:19, 217:13  <b>spent</b> [7] - 74:1, 200:11, 200:20, 200:25, 288:22, 291:6, 296:19  <b>spite</b> [1] - 17:14  <b>split</b> [1] - 202:21  <b>spoken</b> [1] - 63:4  <b>sponsor</b> [5] - 114:13, 185:19, 243:18, 261:23, 278:20  <b>sponsoring</b> [3] - 28:9, 28:21, 216:12  <b>spray</b> [1] - 71:1  <b>sprayed</b> [1] - 33:19  <b>spreadsheet</b> [1] - 25:5  <b>Spreadsheets</b> [1] - 8:17  <b>spreadsheets</b> [1] - 22:6  <b>spring</b> [5] - 41:25, 42:3, 64:15, 78:4, 79:7  <b>stability</b> [2] - 223:10, 223:14  <b>stable</b> [1] - 244:12  <b>STACIE</b> [3] - 4:20, 152:7, 152:16  <b>Stacie</b> [3] - 18:23, 151:13, 152:16  <b>stack</b> [4] - 16:24, 36:25, 37:20, 128:4  <b>staff</b> [22] - 11:22, 11:23, 12:2, 21:20, 21:24, 23:21, 24:4, 24:8, 24:19, 25:4, 71:13, 95:10, 112:16, 174:19, 179:25, 246:16, 268:19, 277:13, 278:15, 280:24, 304:19, 305:11  <b>Staff</b> [1] - 3:3  <b>STAFF</b> [2] - 3:7, 6:2  <b>staff's</b> [3] - 18:1, 19:18, 22:9  <b>stage</b> [3] - 47:16, 230:21, 289:13  <b>stake</b> [1] - 146:25  <b>stakeholders</b> [1] - 73:4  <b>stakes</b> [1] - 102:1  <b>stand</b> [4] - 222:8, 229:4, 249:23, 280:11  <b>stand-alone</b> [1] - 222:8  <b>standard</b> [15] - 75:3, 149:6, 149:9, 149:13, 149:15, 149:20, 149:22, 150:14, 211:20, 216:15, 241:11, 293:17, 295:21, 298:3, 298:4</p>	<p><b>standards</b> [7] - 120:9, 134:16, 137:1, 137:16, 141:3, 141:8, 146:23  <b>standpoint</b> [10] - 67:1, 80:22, 129:18, 132:24, 157:25, 197:5, 203:3, 207:19, 267:18, 296:10  <b>stands</b> [1] - 182:13  <b>start</b> [12] - 33:21, 41:24, 63:10, 74:25, 76:18, 82:22, 86:2, 93:22, 103:7, 151:5, 253:9, 276:12  <b>started</b> [4] - 41:18, 75:16, 176:25, 189:12  <b>starting</b> [4] - 165:8, 168:8, 169:3, 169:20  <b>starts</b> [2] - 62:7, 105:1  <b>startup</b> [1] - 42:5  <b>STATE</b> [1] - 1:2  <b>state</b> [39] - 11:8, 24:10, 26:15, 29:6, 40:19, 77:2, 109:9, 113:25, 116:15, 119:17, 125:15, 130:18, 134:19, 141:24, 142:4, 142:9, 143:19, 143:23, 144:2, 144:15, 152:14, 160:13, 161:14, 185:3, 209:23, 210:4, 210:22, 212:19, 224:14, 227:5, 229:21, 233:17, 243:6, 261:8, 278:8, 286:16, 296:9, 296:14, 297:25  <b>State</b> [22] - 1:17, 7:10, 46:3, 51:1, 75:9, 104:22, 104:25, 114:16, 115:12, 119:3, 138:4, 149:11, 198:6, 210:11, 210:17, 211:9, 211:18, 223:12, 241:7, 244:23, 246:20, 280:22  <b>statement</b> [24] - 4:3, 4:4, 22:14, 26:1, 43:15, 90:25, 95:7, 95:14, 108:20, 151:24, 158:22, 159:24, 184:18, 218:16, 218:18, 225:14, 233:3, 242:17, 253:18, 259:15, 260:18, 277:20, 303:7, 304:7  <b>statement/question</b> [1] - 274:21  <b>statements</b> [4] - 21:11, 50:18, 249:18, 305:3  <b>States</b> [1] - 125:24  <b>states</b> [8] - 115:19, 121:19, 142:5, 292:2, 292:6, 294:1, 296:5, 306:5  <b>states'</b> [1] - 306:6  <b>station</b> [1] - 98:17  <b>Station</b> [4] - 33:17, 58:16, 81:25  <b>status</b> [1] - 193:8</p>	<p><b>statute</b> [14] - 10:19, 71:20, 72:8, 89:2, 89:3, 89:11, 103:1, 103:21, 106:1, 131:15, 197:21, 198:3, 202:4, 281:25  <b>statutes</b> [3] - 180:12, 207:15, 207:16  <b>statutory</b> [1] - 88:24  <b>stay</b> [1] - 80:9  <b>stayed</b> [2] - 52:13, 295:19  <b>STB</b> [7] - 155:25, 156:11, 157:6, 157:19, 158:5, 158:9, 158:14  <b>steady</b> [1] - 66:10  <b>steel</b> [1] - 74:11  <b>step</b> [4] - 38:23, 55:14, 69:15, 188:15  <b>Stephanie</b> [2] - 310:3, 310:17  <b>stepping</b> [1] - 241:20  <b>steps</b> [2] - 40:6, 93:7  <b>stick</b> [1] - 299:8  <b>still</b> [20] - 17:14, 57:14, 64:14, 96:4, 107:18, 155:20, 169:5, 174:8, 191:10, 199:22, 211:12, 236:3, 252:17, 287:6, 287:7, 293:16, 298:7, 298:25, 300:14, 300:25  <b>stipulate</b> [5] - 24:23, 33:13, 206:19, 208:4, 208:11  <b>stipulates</b> [2] - 23:21, 24:4  <b>stipulation</b> [5] - 22:18, 23:2, 23:8, 24:14, 25:9  <b>STOMBERG</b> [2] - 5:13, 243:1  <b>Stomberg</b> [7] - 8:7, 20:1, 242:11, 242:12, 243:8, 260:8, 280:9  <b>Stone</b> [211] - 1:6, 1:8, 6:11, 7:18, 7:19, 8:12, 9:15, 10:24, 13:4, 13:11, 14:10, 14:19, 15:17, 16:17, 18:19, 20:3, 21:18, 25:10, 26:23, 28:3, 30:24, 35:1, 35:5, 36:7, 36:14, 37:6, 43:9, 45:18, 47:9, 47:15, 47:16, 47:24, 48:2, 48:16, 49:9, 49:11, 50:12, 50:14, 50:17, 51:3, 51:6, 51:8, 51:11, 51:20, 52:2, 52:8, 52:11, 53:7, 53:14, 53:24, 55:19, 57:9, 58:6, 58:11, 58:21, 59:7, 59:13, 59:24, 60:11, 60:20, 60:23, 61:2, 62:17, 63:1, 63:12, 63:19, 64:10, 64:13, 66:16, 68:17, 68:25, 69:12, 70:3, 76:24, 77:23, 78:8, 79:2, 81:24, 82:4, 82:6, 82:11, 82:13, 82:15, 83:2, 83:10, 88:4, 88:6,</p>
---	---	--	--

<p>88:14, 88:16, 88:19, 91:3, 91:21, 96:11, 96:17, 96:19, 107:2, 107:10, 109:22, 109:25, 110:3, 110:8, 110:18, 110:22, 111:1, 111:4, 111:8, 111:16, 111:23, 112:20, 113:4, 113:22, 113:23, 115:1, 115:9, 115:22, 117:11, 122:8, 122:10, 122:19, 124:24, 125:8, 126:9, 126:15, 126:21, 126:23, 126:24, 133:21, 134:22, 135:6, 135:25, 137:2, 142:3, 153:12, 154:3, 154:4, 155:6, 155:12, 155:16, 156:15, 162:8, 162:10, 164:8, 164:10, 164:12, 164:13, 165:15, 165:23, 166:5, 166:8, 168:2, 168:14, 168:18, 170:21, 170:25, 171:8, 171:15, 172:4, 173:8, 173:10, 174:7, 174:12, 175:9, 179:5, 179:6, 181:10, 181:22, 182:19, 188:1, 188:11, 189:3, 190:13, 191:8, 191:13, 191:19, 195:23, 199:9, 216:2, 221:14, 221:18, 221:23, 230:14, 235:2, 235:8, 235:23, 237:15, 238:5, 239:1, 239:3, 244:8, 244:14, 252:10, 254:10, 254:15, 255:22, 262:8, 262:13, 263:5, 263:13, 263:20, 263:24, 264:4, 264:11, 264:12, 264:18, 265:4, 265:11, 265:14, 268:17, 273:14, 273:15</p> <p><b>stone</b> [1] - 77:17</p> <p><b>Stone's</b> [9] - 48:17, 59:1, 59:5, 59:21, 135:16, 136:4, 136:5, 144:17, 145:3</p> <p><b>stop</b> [5] - 42:24, 75:19, 87:11, 140:21, 204:7</p> <p><b>stopped</b> [1] - 107:5</p> <p><b>stopping</b> [1] - 195:7</p> <p><b>stops</b> [1] - 302:3</p> <p><b>storage</b> [2] - 37:22, 153:17</p> <p><b>store</b> [1] - 10:11</p> <p><b>story</b> [1] - 35:18</p> <p><b>straightforward</b> [1] - 252:9</p> <p><b>stranded</b> [7] - 171:14, 171:15, 171:20, 171:23, 178:19, 178:22, 264:8</p> <p><b>strategic</b> [1] - 255:7</p> <p><b>Strategist</b> [1] - 235:12</p> <p><b>strategy</b> [2] - 14:9, 31:5</p> <p><b>Strategy</b> [1] - 7:3</p>	<p><b>stream</b> [9] - 12:11, 34:1, 37:3, 46:16, 48:4, 163:19, 163:21, 164:2, 226:13</p> <p><b>street</b> [3] - 76:13, 85:15, 85:17</p> <p><b>Street</b> [1] - 2:8</p> <p><b>stretch</b> [1] - 257:2</p> <p><b>strike</b> [1] - 132:20</p> <p><b>strikes</b> [1] - 69:5</p> <p><b>strong</b> [2] - 158:8, 304:13</p> <p><b>strongly</b> [1] - 128:18</p> <p><b>struck</b> [1] - 97:9</p> <p><b>structurally</b> [1] - 35:17</p> <p><b>structure</b> [1] - 37:8</p> <p><b>structures</b> [1] - 178:3</p> <p><b>struggling</b> [1] - 220:25</p> <p><b>studied</b> [2] - 92:3, 258:9</p> <p><b>studies</b> [11] - 137:25, 138:2, 138:5, 139:5, 161:25, 183:11, 191:4, 261:22, 272:25, 301:5, 302:2</p> <p><b>study</b> [22] - 31:18, 32:2, 38:4, 38:7, 41:10, 65:5, 65:9, 67:4, 112:3, 123:22, 138:3, 139:5, 139:14, 140:15, 149:4, 171:23, 175:19, 180:4, 180:6, 263:11, 280:15, 283:12</p> <p><b>Study</b> [5] - 6:16, 6:17, 7:4, 7:5, 29:17</p> <p><b>stuff</b> [3] - 100:12, 107:20, 254:3</p> <p><b>subbituminous</b> [3] - 48:19, 69:3, 96:2</p> <p><b>subject</b> [18] - 49:7, 49:22, 111:6, 127:4, 142:3, 192:7, 192:24, 215:6, 215:15, 229:9, 268:14, 279:12, 280:22, 282:2, 288:8, 293:2, 293:16, 298:25</p> <p><b>submit</b> [3] - 75:23, 190:7, 248:1</p> <p><b>submittal</b> [1] - 116:21</p> <p><b>submitted</b> [7] - 27:16, 27:21, 116:12, 116:18, 191:17, 234:16, 234:18</p> <p><b>submitting</b> [1] - 207:20</p> <p><b>subsequent</b> [3] - 121:8, 222:1, 288:1</p> <p><b>subsequently</b> [1] - 117:25</p> <p><b>substantial</b> [2] - 16:7, 17:15</p> <p><b>substantiation</b> [1] - 127:13</p> <p><b>succeeded</b> [1] - 69:14</p> <p><b>successful</b> [6] - 69:20, 120:13, 155:25, 156:1, 157:17, 158:10</p> <p><b>successfully</b> [4] - 63:18, 65:14, 91:20, 157:14</p> <p><b>suck</b> [1] - 211:4</p> <p><b>suddenly</b> [1] - 302:3</p>	<p><b>sued</b> [1] - 132:19</p> <p><b>sufficient</b> [1] - 56:25</p> <p><b>suggested</b> [3] - 103:10, 191:21, 194:24</p> <p><b>suggesting</b> [2] - 195:7, 288:12</p> <p><b>suggestion</b> [1] - 290:22</p> <p><b>suggests</b> [1] - 246:6</p> <p><b>suitable</b> [1] - 299:19</p> <p><b>Suite</b> [1] - 2:8</p> <p><b>suites</b> [1] - 32:24</p> <p><b>sulfur</b> [3] - 33:12, 142:16, 244:16</p> <p><b>sum</b> [1] - 291:5</p> <p><b>summarize</b> [3] - 174:21, 279:3, 280:10</p> <p><b>summary</b> [7] - 47:15, 49:21, 138:16, 244:2, 244:7, 262:12, 262:24</p> <p><b>summation</b> [1] - 29:22</p> <p><b>summer</b> [3] - 41:20, 56:6, 153:22</p> <p><b>sunk</b> [1] - 264:19</p> <p><b>supervised</b> [1] - 278:18</p> <p><b>supplement</b> [2] - 144:24, 145:23</p> <p><b>supplied</b> [3] - 21:1, 112:7, 265:12</p> <p><b>suppliers</b> [1] - 245:15</p> <p><b>supplies</b> [1] - 14:21</p> <p><b>supply</b> [15] - 18:24, 20:1, 41:15, 56:8, 153:6, 185:13, 243:11, 244:13, 264:14, 264:23, 265:7, 266:9, 267:16, 269:3, 301:15</p> <p><b>support</b> [9] - 21:20, 41:18, 87:25, 92:10, 169:15, 201:20, 212:23, 245:22, 283:4</p> <p><b>supported</b> [1] - 120:14</p> <p><b>supporting</b> [3] - 27:4, 28:2, 28:17</p> <p><b>supports</b> [1] - 211:11</p> <p><b>suppose</b> [2] - 214:2, 259:1</p> <p><b>supposed</b> [1] - 39:20</p> <p><b>surely</b> [2] - 186:14, 279:4</p> <p><b>Surface</b> [2] - 156:23, 156:24</p> <p><b>surprises</b> [1] - 197:23</p> <p><b>surrounding</b> [1] - 200:23</p> <p><b>suspect</b> [4] - 95:10, 95:15, 208:8, 305:7</p> <p><b>suspend</b> [2] - 76:6, 92:25</p> <p><b>suspended</b> [1] - 92:24</p> <p><b>sustain</b> [1] - 153:1</p> <p><b>swallow</b> [1] - 300:24</p> <p><b>sway</b> [1] - 124:8</p> <p><b>switch</b> [4] - 86:23, 91:12, 106:23, 244:18</p> <p><b>switchboard</b> [1] - 195:20</p>	<p><b>switching</b> [2] - 91:12, 153:17</p> <p><b>sworn</b> [17] - 26:7, 109:2, 152:4, 152:8, 160:4, 160:7, 184:20, 184:24, 229:14, 233:8, 233:11, 242:22, 243:2, 260:23, 261:2, 277:25, 278:4</p> <p><b>SWT-3.0-101</b> [1] - 176:3</p> <p><b>synchronizing</b> [1] - 217:8</p> <p><b>synergies</b> [3] - 141:25, 142:7, 142:8</p> <p><b>system</b> [45] - 13:4, 13:6, 13:10, 13:16, 20:5, 26:23, 29:25, 30:25, 33:18, 34:10, 39:9, 39:22, 40:2, 56:3, 61:24, 62:23, 62:25, 70:9, 73:5, 79:20, 89:25, 115:1, 182:23, 186:14, 188:6, 193:19, 194:4, 221:16, 230:9, 239:7, 243:16, 244:11, 261:13, 261:19, 263:5, 263:20, 263:25, 264:13, 271:25, 301:17, 301:25, 302:5, 302:8, 302:11</p> <p><b>systems</b> [4] - 30:11, 34:8, 89:23, 96:1</p> <p><b>systemwide</b> [2] - 272:9, 272:11</p> <hr/> <p style="text-align: center;"><b>T</b></p> <hr/> <p><b>Table</b> [11] - 144:7, 144:16, 144:20, 145:1, 145:6, 145:14, 145:23, 148:12, 169:20, 169:23, 298:11</p> <p><b>table</b> [4] - 145:17, 145:18, 150:6, 170:7</p> <p><b>tables</b> [5] - 143:22, 144:5, 144:6, 144:12, 144:16</p> <p><b>Tail</b> [77] - 1:7, 2:20, 7:23, 9:12, 10:11, 10:21, 11:20, 12:5, 14:9, 14:21, 14:23, 18:18, 19:15, 19:22, 19:24, 20:22, 23:17, 26:19, 27:24, 28:8, 71:17, 87:15, 87:22, 88:10, 92:19, 93:10, 97:23, 101:5, 105:15, 105:19, 107:3, 109:13, 109:24, 110:17, 111:10, 111:25, 119:20, 124:14, 127:8, 130:15, 153:4, 153:11, 165:14, 165:24, 167:24, 175:2, 180:10, 185:6, 185:16, 185:23, 186:13, 188:1, 188:20, 189:9, 190:6, 192:1, 193:24, 195:22, 196:19, 198:5, 199:6, 205:10, 208:3, 208:10, 212:6, 216:9,</p>
--	--	---	---

<p>216:20, 220:19, 233:22, 234:7, 234:12, 234:16, 234:21, 252:3, 273:14, 284:21, 308:22</p> <p><b>TAIL</b> [2] - 2:11, 2:23</p> <p><b>tail</b> [1] - 306:4</p> <p><b>Tail's</b> [19] - 17:18, 72:19, 73:17, 87:5, 154:14, 164:22, 164:24, 177:5, 179:5, 186:1, 186:3, 186:7, 187:11, 188:7, 189:7, 191:1, 227:4, 236:4, 249:10</p> <p><b>Tail/MDU</b> [2] - 22:22, 143:18</p> <p><b>Tail/MDU-111</b> [1] - 282:12</p> <p><b>tails</b> [1] - 294:16</p> <p><b>tails-you-lose</b> [1] - 294:16</p> <p><b>talent</b> [1] - 95:10</p> <p><b>talks</b> [2] - 68:3, 131:5</p> <p><b>taller</b> [1] - 36:20</p> <p><b>tantamount's</b> [1] - 292:3</p> <p><b>targeting</b> [1] - 42:2</p> <p><b>tariff</b> [4] - 154:4, 154:5, 156:3, 156:22</p> <p><b>tax</b> [13] - 44:7, 44:12, 72:12, 73:14, 153:18, 167:13, 177:23, 178:3, 263:17, 266:16, 274:13, 275:4</p> <p><b>taxes</b> [1] - 170:12</p> <p><b>technical</b> [3] - 66:24, 66:25, 127:15</p> <p><b>technically</b> [5] - 53:9, 55:22, 67:5, 68:14, 82:6</p> <p><b>technologies</b> [9] - 18:8, 92:1, 117:10, 121:12, 142:11, 145:20, 146:12, 160:25, 282:7</p> <p><b>technology</b> [47] - 13:8, 19:11, 39:20, 45:9, 45:20, 49:24, 50:21, 51:21, 51:22, 69:1, 69:10, 69:13, 70:15, 70:22, 79:15, 80:20, 96:10, 105:2, 105:17, 111:21, 112:3, 119:25, 123:3, 123:24, 133:22, 142:14, 146:13, 146:14, 147:13, 147:17, 147:24, 148:18, 149:21, 149:22, 149:24, 150:13, 161:6, 161:22, 245:2, 248:19, 274:23, 297:21, 298:14, 298:18, 298:21, 299:5, 299:8</p> <p><b>Technology</b> [1] - 161:12</p> <p><b>temperature</b> [6] - 37:4, 45:4, 45:15, 45:16, 45:17, 98:13</p> <p><b>temperatures</b> [1] - 45:6</p> <p><b>temporary</b> [1] - 9:5</p> <p><b>ten</b> [6] - 85:13, 186:4, 191:2, 191:6, 234:15, 274:4</p> <p><b>Ten</b> [1] - 8:3</p>	<p><b>ten-year</b> [4] - 186:4, 191:2, 191:6, 234:15</p> <p><b>tended</b> [2] - 284:10</p> <p><b>term</b> [19] - 50:23, 55:7, 101:2, 153:8, 154:7, 154:10, 154:12, 155:3, 176:20, 176:22, 177:1, 190:7, 270:5, 270:6, 270:7, 270:15, 274:8, 274:9, 285:18</p> <p><b>terminology</b> [3] - 239:12, 239:20, 240:15</p> <p><b>terms</b> [18] - 20:8, 36:12, 46:15, 56:15, 68:10, 106:3, 120:20, 124:1, 159:2, 162:19, 199:15, 211:18, 211:19, 220:9, 281:25, 284:1, 285:10, 288:11</p> <p><b>TERRY</b> [4] - 4:14, 5:8, 109:1, 229:13</p> <p><b>Terry</b> [6] - 7:7, 18:19, 108:15, 109:11, 224:4, 229:4</p> <p><b>test</b> [4] - 50:6, 50:7, 135:1, 146:8</p> <p><b>tested</b> [1] - 17:5</p> <p><b>testified</b> [24] - 26:7, 55:18, 66:13, 82:14, 109:2, 140:19, 140:22, 144:1, 152:8, 160:7, 184:24, 187:23, 229:15, 233:11, 238:4, 243:2, 246:16, 248:3, 261:2, 278:4, 281:5, 285:2, 285:15, 286:4</p> <p><b>testify</b> [2] - 12:4, 224:11</p> <p><b>testifying</b> [1] - 109:23</p> <p><b>testimonies</b> [1] - 280:8</p> <p><b>Testimony</b> [6] - 6:10, 7:6, 7:13, 7:22, 8:6, 8:9</p> <p><b>testimony</b> [103] - 8:14, 8:16, 14:2, 15:20, 15:23, 16:21, 17:2, 17:25, 18:23, 20:13, 21:8, 22:3, 22:4, 25:23, 73:19, 81:24, 95:3, 95:15, 97:8, 97:21, 103:9, 105:23, 108:16, 112:8, 112:14, 112:16, 112:24, 114:12, 118:13, 118:16, 119:7, 122:9, 124:12, 130:1, 133:20, 137:24, 144:25, 145:24, 146:23, 151:20, 159:21, 174:13, 174:16, 174:21, 184:13, 191:21, 195:5, 196:25, 197:4, 201:7, 214:12, 220:18, 226:23, 227:6, 229:8, 232:20, 232:25, 237:24, 238:8, 242:14, 243:20, 244:3, 246:14, 246:21, 248:21, 249:10, 260:14, 262:1, 262:25, 264:5,</p>	<p>269:19, 275:24, 276:13, 277:16, 278:19, 278:20, 278:21, 279:2, 279:3, 279:25, 280:12, 280:21, 281:6, 281:11, 281:14, 281:17, 282:5, 282:18, 282:22, 283:1, 283:7, 283:18, 284:14, 284:24, 285:1, 285:3, 285:7, 286:2, 286:8, 286:9, 297:19, 297:20</p> <p><b>testing</b> [2] - 42:6, 117:6</p> <p><b>THE</b> [18] - 2:10, 2:17, 2:23, 3:6, 52:7, 108:12, 138:22, 139:1, 139:14, 152:20, 154:25, 159:10, 183:19, 184:6, 224:16, 236:25, 260:9, 277:2</p> <p><b>themselves</b> [3] - 94:17, 132:13, 213:16</p> <p><b>theoretically</b> [7] - 82:24, 83:1, 140:23, 141:1, 142:25, 289:19</p> <p><b>theory</b> [3] - 204:10, 258:21, 289:11</p> <p><b>thereafter</b> [1] - 227:17</p> <p><b>thereby</b> [1] - 121:1</p> <p><b>therefore</b> [13] - 82:6, 105:17, 121:3, 167:10, 168:24, 175:17, 176:6, 178:16, 194:20, 211:23, 216:21, 219:1, 300:22</p> <p><b>they've</b> [6] - 38:16, 50:18, 127:3, 156:4, 156:7, 212:17</p> <p><b>thinking</b> [3] - 97:14, 201:9, 302:12</p> <p><b>thinks</b> [3] - 197:20, 202:5, 218:25</p> <p><b>third</b> [5] - 19:4, 88:4, 193:6, 247:25, 262:18</p> <p><b>thorough</b> [1] - 10:12</p> <p><b>thoughts</b> [7] - 49:2, 66:16, 67:11, 255:4, 256:12, 257:7</p> <p><b>three</b> [33] - 14:10, 16:14, 28:24, 33:8, 76:6, 76:7, 76:19, 77:8, 86:20, 91:5, 96:19, 103:15, 105:13, 114:11, 126:11, 162:9, 164:6, 166:10, 170:23, 172:10, 179:7, 216:24, 227:21, 236:14, 237:4, 237:12, 246:17, 261:23, 265:11, 281:7, 281:18, 281:23, 303:14</p> <p><b>three-month</b> [1] - 76:19</p> <p><b>threshold</b> [4] - 146:3, 148:15, 299:6, 299:20</p> <p><b>thresholds</b> [2] - 63:21, 64:1</p>	<p><b>throughout</b> [7] - 163:14, 163:19, 173:6, 176:22, 177:1, 182:9</p> <p><b>throw</b> [1] - 221:12</p> <p><b>throwing</b> [1] - 256:11</p> <p><b>tie</b> [5] - 42:2, 62:22, 77:14, 77:19, 204:9</p> <p><b>tie-in</b> [1] - 42:2</p> <p><b>tied</b> [3] - 65:7, 65:20, 301:20</p> <p><b>tight</b> [2] - 80:6, 245:6</p> <p><b>time-sensitive</b> [1] - 76:10</p> <p><b>timeline</b> [1] - 305:14</p> <p><b>timelines</b> [2] - 141:25, 245:12</p> <p><b>timing</b> [4] - 39:24, 192:15, 228:2, 251:19</p> <p><b>tip</b> [1] - 93:20</p> <p><b>tippling</b> [1] - 94:2</p> <p><b>tired</b> [1] - 159:16</p> <p><b>tires</b> [2] - 78:1, 99:12</p> <p><b>title</b> [1] - 26:21</p> <p><b>titled</b> [1] - 105:8</p> <p><b>titles</b> [1] - 138:24</p> <p><b>to-me</b> [1] - 118:24</p> <p><b>today</b> [47] - 13:14, 14:14, 14:16, 16:4, 18:12, 19:20, 21:13, 41:13, 49:12, 52:5, 52:20, 63:3, 66:12, 67:8, 70:1, 70:7, 72:11, 80:18, 86:8, 98:24, 107:13, 117:24, 118:6, 189:2, 203:20, 216:5, 221:6, 224:15, 226:11, 237:24, 240:5, 243:19, 257:3, 261:24, 269:20, 270:11, 271:3, 278:13, 278:20, 280:1, 280:17, 284:24, 285:9, 297:7, 303:13, 304:12, 307:7</p> <p><b>today's</b> [3] - 21:17, 31:14, 200:21</p> <p><b>together</b> [5] - 57:19, 100:7, 100:10, 203:21, 213:15</p> <p><b>tomorrow</b> [3] - 226:12, 276:7, 276:17</p> <p><b>ton</b> [9] - 50:8, 93:19, 100:1, 146:9, 146:10, 237:9, 237:10, 263:18, 299:7</p> <p><b>tone</b> [1] - 257:5</p> <p><b>Tony</b> [5] - 9:21, 97:18, 220:21, 221:1, 305:4</p> <p><b>TONY</b> [1] - 2:3</p> <p><b>took</b> [15] - 38:20, 44:12, 71:15, 71:16, 88:6, 88:12, 120:6, 128:1, 149:25, 189:11, 194:13, 197:22, 284:16, 285:5, 287:4</p> <p><b>toothless</b> [1] - 130:22</p> <p><b>top</b> [4] - 37:7, 105:17, 119:5, 170:7</p>
---	--	--	---

<p><b>topic</b> [1] - 226:1  <b>tore</b> [1] - 107:8  <b>torn</b> [1] - 107:6  <b>total</b> [15] - 58:23, 58:25, 74:1, 74:2, 90:8, 97:21, 161:17, 161:19, 171:19, 172:6, 204:20, 205:4, 216:24, 239:15, 247:8  <b>touched</b> [2] - 40:7, 268:13  <b>tough</b> [1] - 64:20  <b>toward</b> [1] - 67:15  <b>towards</b> [4] - 62:8, 66:15, 93:20, 129:21  <b>tower</b> [1] - 48:7  <b>track</b> [4] - 123:25, 158:16, 212:18, 296:9  <b>tracking</b> [1] - 256:10  <b>trade</b> [16] - 6:17, 6:20, 6:24, 7:5, 7:17, 8:16, 21:1, 21:7, 21:8, 30:2, 30:15, 31:2, 32:5, 32:17, 90:2, 90:6  <b>tradeoff</b> [4] - 70:23, 98:16, 98:18, 294:15  <b>traditional</b> [5] - 84:8, 84:9, 89:15, 89:19, 92:18  <b>train</b> [1] - 99:19  <b>transcript</b> [4] - 305:13, 308:11, 309:11, 310:11  <b>TRANSCRIPT</b> [1] - 1:11  <b>transmission</b> [9] - 160:22, 169:12, 169:14, 239:2, 239:5, 239:9, 243:15, 261:22  <b>transpired</b> [2] - 47:18, 47:22  <b>transport</b> [1] - 154:8  <b>transportation</b> [5] - 154:2, 156:17, 157:15, 158:1, 158:4  <b>Transportation</b> [2] - 156:23, 156:25  <b>transporting</b> [1] - 156:19  <b>treat</b> [1] - 201:19  <b>treated</b> [1] - 294:11  <b>treatment</b> [5] - 159:1, 168:5, 169:5, 213:1, 223:13  <b>tremendous</b> [2] - 85:10, 209:24  <b>tremendously</b> [1] - 40:22  <b>trend</b> [1] - 218:3  <b>tried</b> [5] - 47:1, 91:1, 115:20, 251:7, 253:15  <b>trigger</b> [2] - 136:2, 136:5  <b>triggers</b> [1] - 133:21  <b>truck</b> [1] - 155:10  <b>true</b> [11] - 26:2, 82:3, 108:21, 146:5, 151:25, 159:25, 184:19, 233:4, 242:18, 260:19, 277:21  <b>try</b> [5] - 35:20, 123:14, 124:8, 220:23, 284:11</p>	<p><b>trying</b> [17] - 40:25, 49:12, 69:12, 79:14, 80:9, 132:23, 133:9, 195:17, 196:9, 206:12, 208:20, 212:13, 212:19, 213:3, 240:10, 241:2, 257:3  <b>Tuesday</b> [1] - 9:2  <b>tuning</b> [1] - 42:6  <b>turbine</b> [4] - 36:21, 47:20, 83:13, 179:12  <b>turbines</b> [5] - 62:9, 87:22, 176:3, 176:4, 263:15  <b>turn</b> [9] - 37:18, 76:8, 76:19, 101:4, 118:16, 135:2, 145:14, 223:6  <b>turndown</b> [2] - 270:20, 271:13  <b>turning</b> [1] - 68:15  <b>turnkey</b> [1] - 84:24  <b>turns</b> [1] - 255:25  <b>turquoise</b> [1] - 37:10  <b>turquoise-bluish</b> [1] - 37:10  <b>two</b> [48] - 13:18, 14:1, 20:12, 34:7, 38:14, 41:9, 41:12, 42:1, 42:11, 46:14, 48:13, 55:23, 56:3, 57:17, 58:14, 61:20, 64:8, 69:4, 69:5, 76:8, 76:20, 78:8, 83:10, 84:9, 84:23, 86:9, 98:23, 100:5, 100:25, 103:5, 111:13, 134:12, 136:17, 139:5, 142:1, 144:16, 150:15, 177:14, 198:21, 203:8, 204:16, 207:15, 238:6, 243:18, 243:19, 273:16, 297:4, 300:5  <b>two-part</b> [2] - 13:18, 103:5  <b>two-year</b> [1] - 42:1  <b>tying</b> [1] - 66:14  <b>type</b> [23] - 14:6, 33:16, 47:4, 48:2, 53:7, 63:13, 66:14, 70:17, 75:6, 101:4, 110:6, 117:5, 125:7, 127:13, 129:23, 157:22, 162:19, 200:21, 222:21, 239:6, 239:7, 251:2, 291:18  <b>types</b> [5] - 40:10, 40:21, 74:8, 120:9, 231:20  <b>typewritten</b> [2] - 309:10, 310:10  <b>typical</b> [1] - 176:6  <b>typically</b> [8] - 85:19, 136:22, 182:18, 182:21, 183:2, 293:12, 294:23, 305:9</p>	<p><b>Uggerud</b> [14] - 7:22, 19:16, 67:11, 81:9, 104:2, 184:9, 184:10, 185:5, 196:24, 225:11, 225:12, 226:24, 229:1, 293:17  <b>ultimate</b> [2] - 125:9, 304:22  <b>ultimately</b> [12] - 54:21, 76:22, 110:10, 111:18, 116:12, 122:23, 127:9, 148:19, 213:24, 223:18, 257:17, 292:22  <b>Umm</b> [1] - 104:2  <b>unable</b> [3] - 42:9, 225:13, 253:3  <b>uncertainties</b> [2] - 154:15, 210:4  <b>uncertainty</b> [4] - 15:18, 40:11, 212:14, 219:17  <b>uncomfortable</b> [1] - 218:14  <b>uncompetitive</b> [1] - 91:25  <b>under</b> [53] - 13:16, 17:23, 25:23, 46:18, 81:3, 105:25, 108:17, 112:4, 122:16, 122:20, 123:6, 127:18, 134:14, 139:15, 140:1, 141:6, 142:13, 142:19, 143:3, 145:25, 147:1, 151:21, 154:4, 156:21, 159:21, 169:24, 174:4, 181:17, 184:13, 188:23, 190:11, 192:13, 197:6, 229:9, 230:2, 230:11, 232:7, 232:25, 234:4, 242:14, 244:22, 244:24, 245:9, 245:11, 252:25, 260:15, 269:23, 277:17, 289:23, 293:24, 293:25, 295:20  <b>underestimated</b> [1] - 177:13  <b>underlying</b> [1] - 121:21  <b>understandable</b> [1] - 194:2  <b>understood</b> [2] - 93:1, 214:14  <b>undertake</b> [4] - 186:20, 188:6, 217:10, 252:20  <b>undertaken</b> [3] - 283:21, 284:16, 284:21  <b>undertaking</b> [1] - 194:22  <b>unexpected</b> [1] - 75:8  <b>unfair</b> [1] - 157:4  <b>unfortunate</b> [1] - 300:17  <b>unfortunately</b> [6] - 69:19, 294:17, 295:6, 295:23, 298:4, 300:24  <b>unheard</b> [1] - 292:10  <b>Union</b> [1] - 157:18  <b>unique</b> [1] - 69:9  <b>unit</b> [44] - 19:9, 30:24, 34:16, 35:1, 35:2, 35:7, 35:10, 37:6, 42:4, 42:6, 42:23,</p>	<p>43:12, 43:17, 52:21, 54:12, 55:11, 55:12, 57:22, 64:12, 66:9, 69:12, 70:14, 82:24, 83:14, 87:12, 90:14, 90:20, 96:17, 107:23, 113:24, 133:21, 142:23, 143:5, 161:1, 188:13, 188:22, 222:2, 222:6, 222:23, 223:5, 223:25  <b>unit-by-unit</b> [2] - 142:23, 143:5  <b>United</b> [1] - 125:24  <b>units</b> [24] - 52:11, 58:3, 58:5, 58:7, 58:10, 60:3, 60:4, 63:10, 63:17, 70:16, 77:22, 78:6, 78:12, 79:25, 80:1, 87:23, 120:21, 143:9, 147:25, 176:8, 221:22, 222:12, 270:16  <b>University</b> [3] - 69:8, 161:11, 161:13  <b>unknown</b> [2] - 189:1, 219:8  <b>unless</b> [5] - 135:1, 143:7, 199:9, 208:23, 276:14  <b>unnecessary</b> [2] - 121:2, 210:3  <b>unpunished</b> [1] - 300:3  <b>unquote</b> [1] - 239:22  <b>unredacted</b> [2] - 22:4, 278:24  <b>unreliable</b> [1] - 265:6  <b>untenable</b> [1] - 217:15  <b>unused</b> [1] - 54:21  <b>unwilling</b> [1] - 198:8  <b>up</b> [112] - 13:25, 16:24, 17:16, 26:3, 26:4, 29:24, 30:12, 32:2, 32:13, 33:22, 34:21, 38:8, 39:4, 39:14, 40:13, 42:15, 43:9, 43:20, 55:13, 56:7, 58:5, 62:7, 63:10, 63:11, 63:25, 64:5, 64:12, 64:22, 68:12, 79:4, 86:22, 91:1, 91:5, 94:5, 98:7, 100:15, 102:4, 102:16, 104:10, 105:5, 107:21, 107:23, 108:22, 108:23, 125:5, 138:1, 144:6, 152:1, 152:2, 153:15, 160:1, 160:2, 167:21, 169:3, 170:10, 174:24, 175:21, 176:21, 177:22, 181:2, 183:22, 184:16, 184:17, 196:12, 205:15, 206:9, 211:17, 212:8, 218:12, 221:12, 224:11, 224:23, 225:11, 225:21, 225:24, 225:25, 232:11, 232:13, 233:6, 235:25, 241:12, 241:20, 241:25, 242:20, 248:18,</p>
<p><b>U</b></p>			
<p><b>U-g-g-e-r-u-d</b> [1] - 185:5  <b>UGGERUD</b> [2] - 5:2, 184:23</p>			

<p>250:5, 256:22, 258:8, 260:1, 260:2, 260:20, 260:21, 264:1, 264:22, 270:5, 270:10, 271:6, 271:7, 272:18, 272:19, 274:13, 275:12, 275:13, 277:22, 277:23, 280:23, 289:10, 301:20, 302:18 <b>update</b> [3] - 119:1, 175:12, 190:9 <b>updated</b> [5] - 175:13, 234:10, 235:22, 285:6, 285:22 <b>upfront</b> [1] - 85:11 <b>upgrade</b> [7] - 35:21, 213:20, 252:10, 252:17, 256:8, 263:20, 292:20 <b>upgrades</b> [9] - 114:6, 191:9, 191:14, 205:14, 212:23, 245:10, 245:14, 246:10, 263:6 <b>upgrading</b> [1] - 255:16 <b>urgent</b> [1] - 216:5 <b>useful</b> [6] - 216:16, 216:22, 262:13, 293:17, 293:24, 295:20 <b>uses</b> [1] - 239:22 <b>UTILITIES</b> [2] - 2:11, 2:18 <b>Utilities</b> [11] - 1:5, 9:11, 10:20, 11:17, 12:5, 198:6, 199:7, 230:23, 242:11, 261:14, 308:21 <b>utilities</b> [12] - 67:10, 96:9, 132:21, 141:12, 142:8, 142:16, 157:12, 189:17, 190:6, 196:8, 295:10, 296:23 <b>Utility</b> [1] - 220:4 <b>utility</b> [13] - 39:19, 56:2, 94:6, 99:9, 113:24, 141:14, 141:23, 188:13, 200:23, 201:24, 248:6, 294:19, 297:3</p>	<p>134:17, 134:18, 148:22, 148:24, 148:25, 149:2, 163:16, 176:17, 176:19, 177:7, 177:9, 178:11 <b>van</b> [1] - 66:5 <b>vanadium</b> [1] - 47:4 <b>vanadium-type</b> [1] - 47:4 <b>vapor</b> [1] - 34:21 <b>variable</b> [12] - 56:16, 56:21, 57:5, 59:11, 61:16, 61:18, 65:19, 165:20, 166:3, 167:4, 181:14, 239:16 <b>variables</b> [3] - 61:21, 64:8, 65:1 <b>varies</b> [1] - 55:25 <b>variety</b> [2] - 17:6, 180:24 <b>various</b> [6] - 160:22, 164:18, 210:21, 220:6, 236:12, 263:11 <b>vary</b> [1] - 56:1 <b>vast</b> [2] - 61:9, 62:9 <b>vehicle</b> [2] - 66:1, 66:2 <b>vein</b> [1] - 296:3 <b>vendor</b> [2] - 37:13, 37:14 <b>vendors</b> [4] - 15:5, 38:21, 40:12, 86:18 <b>venture</b> [1] - 158:6 <b>verify</b> [1] - 156:6 <b>versa</b> [1] - 70:25 <b>verses</b> [1] - 10:6 <b>version</b> [9] - 22:2, 22:4, 30:2, 30:15, 31:2, 32:5, 32:17, 278:23, 278:24 <b>versus</b> [16] - 46:23, 70:22, 74:5, 80:1, 82:24, 95:25, 155:25, 200:13, 215:22, 219:17, 240:1, 252:12, 274:8, 288:7, 289:7, 306:11 <b>vessels</b> [1] - 37:19 <b>viable</b> [5] - 16:13, 141:5, 148:1, 179:10, 179:12 <b>vice</b> [6] - 19:16, 20:1, 70:24, 185:9, 217:4, 243:11 <b>view</b> [12] - 96:6, 187:3, 187:19, 190:10, 190:11, 192:21, 193:9, 193:23, 193:24, 218:21, 220:10, 223:2 <b>viewing</b> [1] - 219:7 <b>viewpoint</b> [1] - 299:9 <b>vintage</b> [1] - 285:22 <b>virtually</b> [1] - 56:20 <b>virtue</b> [1] - 223:12 <b>visibility</b> [23] - 111:2, 111:8, 111:24, 126:2, 126:20, 126:25, 128:6, 134:20, 134:21, 134:24, 136:1, 136:4, 137:14, 139:3, 139:12, 140:13, 144:18,</p>	<p>145:4, 145:13, 145:19, 146:1, 149:6, 150:14 <b>visible</b> [3] - 136:8, 145:9, 150:15 <b>visibly</b> [1] - 150:8 <b>voicemail</b> [1] - 118:2 <b>volatile</b> [1] - 196:6 <b>volatility</b> [1] - 196:11 <b>voltage</b> [1] - 87:24 <b>volume</b> [1] - 22:5 <b>volumes</b> [4] - 138:8, 138:15 <b>vote</b> [1] - 256:20 <b>Voyageurs</b> [1] - 126:13</p>	<p>227:25, 228:3, 228:5, 228:10, 228:19, 228:21, 228:25, 229:7, 229:12, 231:8, 231:10, 232:9, 232:13, 232:15, 232:23, 233:9, 236:24, 237:19, 242:3, 242:6, 242:12, 242:23, 248:13, 251:23, 253:7, 253:10, 258:3, 258:15, 259:11, 259:24, 260:3, 260:5, 260:7, 260:10, 260:13, 260:24, 268:2, 273:6, 273:8, 273:20, 275:10, 275:14, 275:16, 275:18, 275:23, 276:4, 276:25, 277:4, 277:9, 277:15, 278:1, 280:25, 287:11, 291:9, 297:15, 302:15, 302:18, 302:20, 302:22, 303:1, 303:3, 303:6, 303:11, 303:18, 303:20, 304:3, 304:6, 304:18, 304:25, 305:3, 305:19, 307:5, 307:19, 308:7, 308:15 <b>wait</b> [8] - 77:7, 77:8, 200:25, 236:20, 288:12, 289:1, 299:20, 305:12 <b>waiting</b> [4] - 287:16, 287:24, 288:5, 288:6 <b>walk</b> [7] - 75:15, 75:18, 86:25, 87:6, 92:20, 202:14, 254:9 <b>walked</b> [1] - 296:2 <b>Walton</b> [1] - 213:13 <b>WAPA</b> [2] - 88:5, 88:11 <b>ward</b> [1] - 196:14 <b>Ward</b> [8] - 7:22, 19:16, 184:9, 185:5, 202:11, 214:12, 220:18, 253:13 <b>WARD</b> [2] - 5:2, 184:23 <b>warranted</b> [1] - 150:3 <b>waste</b> [6] - 99:24, 109:19, 230:12, 230:13, 230:16, 230:17 <b>water</b> [6] - 33:25, 34:21, 48:4, 48:5, 88:12, 109:19 <b>Water</b> [1] - 126:12 <b>Waters</b> [1] - 136:11 <b>ways</b> [4] - 196:9, 218:22, 254:6, 271:9 <b>weary</b> [1] - 306:4 <b>weather</b> [2] - 61:17, 65:16 <b>week</b> [3] - 77:7, 97:16 <b>weeks</b> [4] - 157:16, 206:9, 227:21, 305:8 <b>welcome</b> [4] - 9:23, 10:4, 21:21, 304:21 <b>well-done</b> [1] - 124:4 <b>well-operated</b> [1] - 16:8</p>
<b>W</b>			
<p><b>V</b></p> <p><b>vacuum</b> [1] - 35:9 <b>vague</b> [1] - 214:25 <b>vaguely</b> [1] - 283:23 <b>Valley</b> [1] - 33:17 <b>valor</b> [1] - 71:24 <b>valuable</b> [1] - 15:16 <b>value</b> [19] - 41:5, 163:4, 163:15, 167:12, 177:4, 177:10, 177:14, 177:15, 178:2, 178:8, 178:9, 178:12, 178:13, 239:17, 263:25, 266:15, 270:19, 270:22, 294:3 <b>values</b> [14] - 54:10, 55:23,</p>	<p>145:4, 145:13, 145:19, 146:1, 149:6, 150:14 <b>visible</b> [3] - 136:8, 145:9, 150:15 <b>visibly</b> [1] - 150:8 <b>voicemail</b> [1] - 118:2 <b>volatile</b> [1] - 196:6 <b>volatility</b> [1] - 196:11 <b>voltage</b> [1] - 87:24 <b>volume</b> [1] - 22:5 <b>volumes</b> [4] - 138:8, 138:15 <b>vote</b> [1] - 256:20 <b>Voyageurs</b> [1] - 126:13</p>	<p><b>wagging</b> [1] - 306:4 <b>Wahl</b> [2] - 9:4, 195:16 <b>WAHL</b> [212] - 1:22, 9:4, 10:2, 10:8, 10:13, 11:14, 11:18, 11:21, 11:25, 12:3, 21:14, 22:12, 22:24, 23:1, 23:4, 23:6, 23:8, 23:11, 23:15, 23:20, 23:22, 23:24, 24:3, 24:6, 24:9, 24:13, 24:18, 24:21, 24:24, 25:1, 25:12, 25:14, 25:16, 25:21, 26:9, 27:14, 44:23, 52:6, 81:12, 81:14, 81:17, 81:20, 83:22, 94:23, 97:4, 102:6, 102:9, 102:11, 104:3, 104:7, 106:9, 106:11, 106:13, 108:3, 108:6, 108:8, 108:10, 108:13, 108:16, 109:4, 119:13, 130:2, 131:25, 132:3, 137:20, 138:19, 138:25, 139:12, 139:15, 139:18, 139:23, 140:3, 140:6, 140:9, 140:11, 140:13, 141:18, 143:13, 146:18, 147:7, 148:5, 148:8, 150:20, 150:23, 150:25, 151:2, 151:11, 151:15, 151:17, 151:19, 152:5, 152:18, 152:21, 152:25, 154:22, 159:6, 159:8, 159:11, 159:17, 159:19, 160:5, 179:16, 179:19, 179:22, 180:16, 183:20, 183:24, 184:1, 184:4, 184:7, 184:10, 184:21, 196:20, 198:20, 202:9, 206:15, 206:22, 207:3, 207:6, 207:10, 207:24, 208:3, 208:18, 208:24, 209:5, 214:8, 220:14, 222:15, 224:18, 224:22, 225:6, 225:10, 225:18, 225:21, 225:23, 226:4, 226:22,</p>	<p><b>wagging</b> [1] - 306:4 <b>Wahl</b> [2] - 9:4, 195:16 <b>WAHL</b> [212] - 1:22, 9:4, 10:2, 10:8, 10:13, 11:14, 11:18, 11:21, 11:25, 12:3, 21:14, 22:12, 22:24, 23:1, 23:4, 23:6, 23:8, 23:11, 23:15, 23:20, 23:22, 23:24, 24:3, 24:6, 24:9, 24:13, 24:18, 24:21, 24:24, 25:1, 25:12, 25:14, 25:16, 25:21, 26:9, 27:14, 44:23, 52:6, 81:12, 81:14, 81:17, 81:20, 83:22, 94:23, 97:4, 102:6, 102:9, 102:11, 104:3, 104:7, 106:9, 106:11, 106:13, 108:3, 108:6, 108:8, 108:10, 108:13, 108:16, 109:4, 119:13, 130:2, 131:25, 132:3, 137:20, 138:19, 138:25, 139:12, 139:15, 139:18, 139:23, 140:3, 140:6, 140:9, 140:11, 140:13, 141:18, 143:13, 146:18, 147:7, 148:5, 148:8, 150:20, 150:23, 150:25, 151:2, 151:11, 151:15, 151:17, 151:19, 152:5, 152:18, 152:21, 152:25, 154:22, 159:6, 159:8, 159:11, 159:17, 159:19, 160:5, 179:16, 179:19, 179:22, 180:16, 183:20, 183:24, 184:1, 184:4, 184:7, 184:10, 184:21, 196:20, 198:20, 202:9, 206:15, 206:22, 207:3, 207:6, 207:10, 207:24, 208:3, 208:18, 208:24, 209:5, 214:8, 220:14, 222:15, 224:18, 224:22, 225:6, 225:10, 225:18, 225:21, 225:23, 226:4, 226:22,</p>

<p><b>wells</b> [2] - 162:17, 282:13  <b>West</b> [1] - 11:15  <b>Western</b> [1] - 127:18  <b>Westinghouse</b> [1] - 176:2  <b>wet</b> [2] - 33:21, 34:2  <b>whack</b> [1] - 299:17  <b>what-if</b> [1] - 196:10  <b>whatnot</b> [1] - 82:15  <b>whereby</b> [3] - 60:19, 131:17, 251:3  <b>wherein</b> [1] - 195:23  <b>Whitney</b> [2] - 2:7, 11:12  <b>whole</b> [18] - 61:24, 62:24, 62:25, 68:13, 80:21, 85:11, 140:23, 141:2, 204:11, 210:9, 212:4, 221:1, 255:3, 255:20, 272:1, 288:22, 290:15, 307:10  <b>wholesale</b> [1] - 185:14  <b>wide</b> [5] - 17:6, 173:6, 180:24, 210:1, 272:7  <b>WildEarth</b> [1] - 132:15  <b>Wildlife</b> [1] - 126:4  <b>Williams</b> [1] - 111:11  <b>willing</b> [6] - 192:24, 197:9, 197:25, 208:11, 215:5, 276:8  <b>win</b> [1] - 294:15  <b>wind</b> [116] - 16:19, 17:5, 43:13, 44:9, 44:10, 55:25, 56:11, 56:12, 56:20, 56:21, 56:23, 57:2, 58:6, 61:20, 62:9, 62:24, 64:8, 64:9, 64:14, 64:18, 65:4, 65:8, 65:15, 66:15, 67:16, 67:19, 72:10, 72:12, 73:7, 73:13, 91:9, 128:18, 130:8, 135:23, 164:13, 165:2, 166:7, 167:5, 167:7, 167:8, 167:13, 167:17, 167:18, 168:22, 169:1, 169:4, 169:9, 169:11, 170:15, 170:16, 170:17, 171:9, 171:18, 175:20, 175:22, 175:24, 176:3, 176:12, 176:14, 176:24, 177:2, 177:11, 177:12, 177:25, 178:10, 178:14, 190:5, 190:25, 238:7, 238:15, 239:4, 240:1, 240:6, 240:17, 240:22, 241:9, 241:13, 264:3, 266:8, 266:9, 266:13, 266:18, 266:19, 266:21, 267:5, 268:18, 268:19, 268:22, 269:7, 270:1, 271:14, 271:18, 272:8, 272:12, 272:15, 272:17, 273:1, 273:25, 275:7, 282:24, 283:5, 283:11, 283:19,</p>	<p>283:20, 284:3, 284:13, 284:16, 284:20, 301:7, 301:15, 302:3, 302:8  <b>wind's</b> [2] - 274:3, 301:11  <b>window</b> [1] - 42:1  <b>winning</b> [1] - 158:10  <b>wires</b> [1] - 295:15  <b>Wisconsin</b> [2] - 126:3, 126:7  <b>wish</b> [4] - 12:12, 208:1, 225:6, 226:7  <b>wishes</b> [1] - 12:21  <b>withstand</b> [2] - 35:10, 35:21  <b>witness</b> [48] - 14:14, 18:1, 19:4, 19:6, 19:7, 19:15, 19:19, 25:19, 28:9, 28:21, 44:21, 67:7, 94:18, 103:18, 104:1, 108:13, 108:15, 119:11, 130:2, 140:22, 151:5, 151:12, 151:13, 152:4, 154:21, 159:12, 159:17, 160:4, 174:18, 179:15, 184:8, 184:20, 196:16, 196:18, 225:15, 232:17, 233:8, 237:18, 242:10, 242:22, 244:5, 248:12, 260:11, 260:23, 268:1, 276:22, 277:25, 303:16  <b>WITNESS</b> [14] - 6:2, 52:7, 108:12, 138:22, 139:1, 139:14, 152:20, 154:25, 159:10, 183:19, 184:6, 224:16, 236:25, 260:9  <b>witness's</b> [1] - 130:1  <b>witnessed</b> [1] - 176:13  <b>WITNESSES</b> [1] - 4:6  <b>witnesses</b> [19] - 14:3, 14:14, 18:11, 18:14, 18:16, 19:14, 20:13, 21:24, 151:20, 159:20, 232:25, 243:19, 277:16, 279:14, 280:1, 289:4, 289:24, 298:11, 306:1  <b>wondering</b> [2] - 131:11, 179:25  <b>Wood</b> [6] - 153:19, 153:21, 175:12, 175:13, 285:6, 285:11  <b>wording</b> [1] - 71:19  <b>words</b> [10] - 50:20, 136:3, 136:10, 203:2, 214:20, 247:17, 252:4, 269:16, 281:22, 290:19  <b>works</b> [5] - 41:9, 45:4, 60:13, 125:18, 129:23  <b>world</b> [6] - 55:24, 63:10, 66:12, 77:11, 176:5, 294:21  <b>world's</b> [1] - 220:10  <b>worn</b> [1] - 99:7</p>	<p><b>worry</b> [1] - 53:20  <b>worse</b> [1] - 251:1  <b>worst</b> [3] - 99:25, 250:17, 250:22  <b>worst-case</b> [3] - 99:25, 250:17, 250:22  <b>worth</b> [4] - 71:24, 72:24, 220:8, 307:3  <b>wow</b> [1] - 288:23  <b>WRAP</b> [2] - 127:19, 149:3  <b>wreck</b> [1] - 99:19  <b>written</b> [6] - 18:23, 75:7, 227:16, 227:21, 258:20, 304:23</p>
<b>Y</b>		
<p><b>Year</b> [1] - 8:3  <b>year</b> [26] - 15:8, 42:1, 42:16, 59:14, 75:20, 76:9, 76:19, 78:9, 82:20, 97:10, 97:15, 117:22, 118:8, 131:9, 131:18, 135:20, 135:21, 135:22, 186:4, 191:2, 191:6, 194:16, 194:17, 206:3, 234:15, 274:15  <b>year-round</b> [2] - 135:21, 135:22  <b>years</b> [57] - 13:20, 16:1, 26:4, 41:9, 41:12, 42:22, 47:17, 47:18, 47:22, 48:17, 52:23, 54:8, 56:9, 58:19, 58:24, 60:12, 61:11, 63:20, 68:7, 70:15, 73:10, 76:8, 76:20, 86:9, 86:20, 88:4, 91:21, 92:3, 96:25, 98:24, 107:5, 107:6, 108:23, 111:13, 114:7, 120:18, 130:21, 130:24, 131:6, 141:11, 152:2, 160:2, 161:17, 161:19, 181:4, 184:18, 185:18, 189:10, 233:7, 242:21, 246:13, 260:21, 265:11, 265:23, 274:4, 277:23  <b>yesterday</b> [1] - 118:1  <b>young</b> [1] - 49:10  <b>yourself</b> [3] - 95:12, 296:17, 304:10  <b>youth</b> [1] - 274:3  <b>youthfulness</b> [1] - 301:11</p>		
<b>Z</b>		
<p><b>zero</b> [8] - 48:3, 56:22, 63:15, 173:5, 201:4, 237:8, 289:25, 290:13</p>		