

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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Transcript of Consolidated Hearing
Emineth & Associates Court Reporters

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Transcript of Consolidated Hearing
Emineth & Associates Court Reporters

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

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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

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

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.

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

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

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

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,

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.

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

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

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

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

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.

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.

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,

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.

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

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

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?

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

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 SO₂, NO_x 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

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.

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

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.

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, SO₂, NO_x 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 SO₂, 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 SO₂ 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

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 SO₂.

6 For the NO_x, 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_x 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_x reacts and you
21 end up with N₂, 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

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

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

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

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

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

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.

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

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

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?

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

CROSS-EXAMINATION

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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

1 option for us.

2 Q. It's my understanding, though, in the -- I
3 believe in the South Dakota State Implementation
4 Plan that there is an indication of cost for both,
5 and, if I remember correctly, SNCR is around the
6 \$11-million range and SCR is around -- in the 80s.
7 Does that sound correct?

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

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

15 A. In very simple terms, an SNCR is you are
16 injecting the ammonia directly into the gas stream
17 without the presence of the catalyst. The SCR adds
18 the catalyst, like the catalytic converter under
19 your car, so you can get much greater NO_x removal in
20 the presence of the catalyst than you can without
21 that catalyst present.

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

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

1 that I tried to point out on the drawing.

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

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

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

8 A. That's correct.

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

12 A. That's correct.

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

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

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

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

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

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

20 Q. Could you please explain to the Commission
21 what NO_x controls do you currently have in place at
22 the Coyote plant?

23 A. Basically none.

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

1 now. And what's the future for NO_x 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?

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_x. 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

1 Dakota State Implementation Plan for the regional
2 haze rule indicated that SCR and separated overfire
3 air is NO_x 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

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

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.

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

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,

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.

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

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

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

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

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

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

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

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

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

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

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.

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

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

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

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

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.

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

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

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

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?

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

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.

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

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

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;

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,

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.

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EXAMINATION

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BY COMMISSIONER CLARK:

Q. Thank you. I do have some, in no particular order so these may be a little bit random.

Can you go over for me again the hybrid procurement approach and how that would differ from a traditional procurement approach?

A. Well, there are basically two traditional procurement approaches. One that's referred to as EPC, engineering procurement construction, where basically you would go to a company -- a large company usually for a project like this and say, I want you to engineer it, buy it and build it and give me the keys when it's done.

The other approach is what's sometimes referred to as multiple prime, where you go and you get a contractor to do every piece. I'll go and buy a generator and have that company install it. I'll go and buy a boiler and that company will install it and I'll buy a baghouse and that company will install it.

Those are kind of the two extremes. One is a turnkey, I hire Bechtel to do everything or I hire 30 contractors to do everything.

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

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

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

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?

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_x, which will be the separated
25 air system and the SCR and then the particulate or

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.

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.

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,

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 CO₂ costs --
16 reasonable CO₂ 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

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.

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EXAMINATION

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BY COMMISSIONER CRAMER:

Q. And thanks, Mark, for your testimony and for your endurance. Of course, that chair is almost -- we could almost name it after you. But we do appreciate your expertise.

And I might say as a statement, actually the issue that Commissioner Clark was pursuing a little bit with regard to the procurement process, I suspect that having the right talent on staff makes it a lot easier to go out and bid and purchase equipment yourself, as well, before bringing on a general contractor, and I just make that as a statement as I look at you, because as I listen to your testimony, I suspect that that had a fair bit to do with it.

But with that, I really don't have a lot more. I also appreciate -- you've renewed my confidence in mine-mouth generation, by the way. I appreciate that. I'm going to ask a question, I think, you may have answered earlier, but I'm going to ask it in a different way, not so much for the record, but my brain record.

With regard to the South Dakota SIP and its requirement for catalytic versus non-catalytic

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

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.

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

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,

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,

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

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

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.

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

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

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

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

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

TERRY GRAUMANN,

being first duly sworn, was examined and testified as follows:

JUDGE WAHL: Mr. Brown.

DIRECT EXAMINATION**BY MR. BROWN:**

Q. Good morning.

A. Good morning.

Q. Would you state your full name for the record?

A. Terry Graumann.

Q. And who is your employer?

A. I'm employed by Otter Tail Power Company.

Q. And what is your current position?

A. I'm the manager of environmental services.

Q. And can you describe your responsibilities in that position, please?

A. My responsibilities include the permitting in the areas of air quality, solid waste and water quality, including several other areas in the environmental area, including the permitting for the Big Stone plant.

Q. And you're testifying this morning on behalf of both companies since Otter Tail serves as the operating agent for the Big Stone plant; is

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

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

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?

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 SO₂, NO_x 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.

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

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?

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

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

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

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 SO₂ and particulate control technology.

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_x 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

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

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

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

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

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

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

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.

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

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

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?

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?

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.

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

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

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

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 SO₂ and NO_x 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 SO₂ and NO_x are considered
23 precursors to PM_{2.5}.

24 Q. Okay.

25 A. And EPA is setting ambient air quality

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

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.

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

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

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

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

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.

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?

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

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

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

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

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

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?

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

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

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.

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.

CROSS-EXAMINATION

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BY MR. GRUMAN:

Q. You'd indicated that long-term contracts are not possible with BNSF in your opinion. Could you please expand that, why not.

A. Big Stone plant is a captive shipper to the Burlington Northern Santa Fe. That means that we have no other means of getting coal delivered -- no other economical means of having coal delivered to the plant. It's not economical to truck it in. We can't bring it in by barge. And BNSF is the only rail that provides service to the Big Stone plant, so because we are a captive shipper, we don't feel like we have much leverage at all with the railroad.

Q. Going back to the Big Stone II advance determination of prudence, I believe it was indicated in the order and during that hearing that you were essentially paying the highest possible rates possible. Is that still the case?

A. You know, when you say highest possible rates, I think in that case what -- to me what that meant was that had we been paying a much -- a rate that was even slightly higher, we feel like we may have been successful in our STB case versus the

1 BNSF being successful.

2 Since the -- the -- since our BNSF case,
3 the adjustments to our tariff have been made on an
4 annual basis and they've been made using a railroad
5 cost inflation index that is something that's
6 publicly available that we've been able to verify
7 when the adjustments have been made that they've
8 been following that index. And so because our rate
9 has been adjusted based on that index and
10 presumably the other components that would be
11 looked at in an STB case would have been increased
12 by those same amounts, we feel that it's -- while
13 we haven't done the calculation, we feel like
14 we're likely paying about that maximum rate.

15 Q. Okay. In the Big Stone II hearing the
16 record indicated that 70 percent of the coal cost
17 was BNSF transportation cost. How does a risk of
18 BNSF price gouging compare to the risk of
19 transporting per se natural gas? Could you expand
20 upon that?

21 A. Well, one of the pluses of being under a
22 tariff is that you have the ability to pursue rate
23 relief at the Surface Transportation Board. The
24 function -- one of the functions of the Surface
25 Transportation Board is that they can -- they are

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

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

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

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

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

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

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

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,

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

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

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

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

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.

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

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

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

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.

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

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

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

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

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

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

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.

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 --

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 --

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.

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:

DIRECT EXAMINATION

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BY MR. BROWN:

Q. Could you state your full name for the record?

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

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

A. Yes, I am.

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

A. Senior vice president.

Q. And what are your responsibilities in that job?

A. My responsibilities encompass the area of power supply, our generation facilities, our environmental services activities and our wholesale power marketing activities.

Q. And how long have you been at Otter Tail Power?

A. 40 years.

Q. Did you sponsor some of the exhibits in this case?

A. I did.

Q. And does that include Exhibit -- Otter Tail Exhibit 201, your prefiled rebuttal?

A. Yes, it does.

Q. And does it also include Exhibit 202,

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

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

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

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

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.

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

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

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

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

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

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

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

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

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

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

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

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 SO₂
4 and the NO_x 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

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

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

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

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.

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

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

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,

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

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

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

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

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

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

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

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

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

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

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.

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

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.

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

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

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.

REDIRECT EXAMINATION

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BY MR. BROWN:

Q. If we could return to the question of the Minnesota commission's decision on Otter Tail's ADP petition in that state, I believe you gave testimony earlier that the earliest date that you think the Commission may hear the case is December 15; is that correct?

A. That would be the earliest, yes.

Q. And it could possibly be a later Commission hearing date than that?

A. Right.

Q. Including into January?

A. It could be.

Q. And even if the hearing were held on December 15, would you anticipate having a written order on the 15th or shortly thereafter?

A. I would not. I would anticipate an oral decision, and then our experience has been that there's a period of time, it might be as much as three weeks, a month, before we have a written order.

MR. BROWN: Okay. Thank you. Nothing further, Your Honor.

JUDGE WAHL: All right. Commissioner

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

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.

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

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.

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

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

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?

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,

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

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 CO₂, but
7 SO₂ and NO_x as well, but the low externality
8 included a zero cost for CO₂, 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.

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,

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

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?

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.

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

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 SO₂ 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

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

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.

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

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

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

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

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

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CROSS-EXAMINATION

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BY MS. JEFFCOAT-SACCO:

Q. You heard me ask Otter Tail about putting in your own words what is the question the Commission has to answer in order to decide this case. Could you do that, please, for MDU?

A. Well, I'm glad I got the chance to think about that, but I think the question is fairly straightforward. It really, I think, is is the upgrade of the Big Stone plant with the AQCS in the best interests of our customers based on the known information at this time versus plant abandonment or closure.

Q. Would MDU proceed if there is either no decision anytime soon from the Commission or a negative decision anytime soon from the Commission? Would MDU still proceed to do this upgrade in the best interests of the customers?

A. I do not think Montana-Dakota would undertake this large of an investment with any sort of signal from this Commission that they didn't think it was prudent.

Q. Because -- fill in. If it's the right thing to do for your company and your customers, you're under an obligation to do it, so you would

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

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.

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?

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.

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

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.

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.

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?

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

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

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

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

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

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

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

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

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

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

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

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?

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

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

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.)

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.

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

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.

CROSS-EXAMINATION

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BY MR. BROWN:

Q. Good afternoon, Mr. Hahn.

A. Good afternoon, Mr. Brown.

Q. So I think you just testified and I think you said the same thing in your rebuttal testimony at page three that -- that you do find that the proposed project is prudent and reasonable; is that correct?

A. Yes. But I think you said rebuttal testimony. I did not --

Q. I'm sorry. Excuse me.

A. I did not have the opportunity to provide rebuttal testimony. It's my direct testimony.

Q. Pardon me. You're -- you're accurate about that.

But in your prefiled testimony at page three, I believe that you found that the proposed project is prudent and reasonable; is that correct?

A. Well, I found it to be the -- the preferred option for compliance. Those are the words that are stated on lines 12 through 14 of page three.

Q. Okay. And do you deem that to be prudent and reasonable in terms of the ADP statute in North

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.

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.

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.

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

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

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

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

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 --

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

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

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

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.

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

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

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?

1 that SCR is common for NO_x -- dealing with NO_x, 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_x 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.

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_x emissions and it's below the deemed threshold of
7 cost per ton of NO_x 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

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

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

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.

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

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?

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

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

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

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.)

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CERTIFICATE OF COURT REPORTER

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.

Denise M. Andahl
Registered Professional Reporter

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CERTIFICATE OF COURT REPORTER

I, Stephanie A. Smith, a Registered Professional Reporter,

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Dated at Bismarck, North Dakota, this 9th day of December, 2011.

Stephanie A. Smith
Registered Professional Reporter

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