

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

Otter Tail Corporation :
Advance Determination of : Case No. PU-06-481
Prudence Application :

Montana-Dakota Utilities :
Co., a Division of MDU :
Resources Group, Inc., :
Advance Determination of : Case No. PU-06-482
Prudence Application :

TRANSCRIPT OF

HEARING

(VOLUME II)

Taken At
State Capitol
Bismarck, North Dakota
June 26, 27 & 28, 2007

BEFORE THE HON. AL WAHL
-- ADMINISTRATIVE LAW JUDGE --

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1 Q. Mr. Imsdahl, good morning.

2 A. Good morning.

3 Q. Sir, have you received a copy of the
4 complaint during the process of all these
5 pleadings -- the intervenors' complaint --
6 petition?

7 MR. KUNTZ: Objection.

8 MR. BREEN: Pardon me. Excuse me. I'll
9 restate that since I misstated it twice.

10 Q. (MR. BREEN CONTINUING) The intervenors,
11 sir, appeared in this matter by filing a petition
12 to intervene. Did you receive a copy of that
13 during the process?

14 A. I, personally, did not receive a copy of
15 it. I have read the testimony.

16 Q. Okay. As a convenience to you, all the
17 parties here have that, as does the Commission.
18 Would you like to just see a copy of it so I can
19 ask you several questions? It would make the
20 record more convenient.

21 JUDGE WAHL: It's your examination, Mr.
22 Breen.

23 MR. BREEN: Do the parties have any
24 disagreement with me marking it as an exhibit?

25 MR. KUNTZ: It's already in the record.

1 It's not evidence. It's not evidence.

2 JUDGE WAHL: Yeah, I don't think it's
3 necessary. It's part of the record --

4 MR. BREEN: Thank you.

5 JUDGE WAHL: -- Mr. Breen. Just show it
6 to him, if you wish.

7 Q. (MR. BREEN CONTINUING) Sir, I will be
8 very brief this morning. Let's look at paragraph 8
9 in this pleading, and it alleges that -- I'll read
10 part of paragraph 8 for the record -- that North
11 Dakota has enough wind energy to supply 36 percent
12 of the electricity to the lower 48 states without
13 emitting carbon. Do you agree or disagree with
14 that statement?

15 A. I have no background to verify the 36
16 percent.

17 Q. Do you agree that Dr. Joseph Romm is the
18 former acting assistant secretary to the Department
19 of Energy?

20 A. Yes.

21 Q. Okay. Do you agree that Dr. Joseph Romm
22 has a Ph.D. in physics from MIT?

23 A. Yes.

24 Q. Is that sufficient for you, sir, to accept
25 him as an authority on the issue, sir?

1 MR. KUNTZ: What issue?

2 THE WITNESS: I am not sure.

3 MR. BREEN: The one statement that I read
4 to him.

5 MR. KUNTZ: Is that his statement?

6 MR. BREEN: That's his statement.

7 MR. KUNTZ: He's not here. Is this some
8 way to get -- bring hearsay into the evidence
9 through some sort of cross-examination? I'm going
10 to object to the question.

11 MR. BREEN: I'm just asking him if he
12 disagrees with the line in the pleading. I'll
13 withdraw the last question.

14 THE WITNESS: I'm not sure. He may be a
15 Ph.D. in physics. I'm not sure what his background
16 is studying wind. I'm sorry.

17 MR. BREEN: I have no other questions,
18 sir.

19 JUDGE WAHL: Mr. Binek.

20 MR. BINEK: Thank you.

21 **CROSS-EXAMINATION**

22 **BY MR. BINEK:**

23 Q. Yeah, I believe in your summary yesterday
24 and in your rebuttal testimony you stated that you
25 agreed with the recommendations that were made by

1 Mr. Deason.

2 A. Yes, we do.

3 Q. Yesterday when Mr. Uggerud testified, when
4 he talked about off-system -- you know, the
5 potential for off-system sales, he stated that all
6 off-system margins that Otter Tail would realize
7 from Big Stone II will go back to customers. Will
8 MDU agree to do the same?

9 A. I don't see any reason why we should agree
10 to do that. We have a tariff in place presently
11 that handles our off-system sales.

12 Q. I realize you have a tariff right now.
13 The question is whether you would agree to --

14 MR. KUNTZ: I'm going to object to the
15 form of the question. This isn't a rate
16 proceeding. It's a prudency determination. How
17 the revenues are going to be treated from
18 off-system sales when the plant goes on line in
19 five years I think is beyond the scope of direct
20 and it's not relevant to the issues in this case.

21 JUDGE WAHL: I disagree. Relevancy is not
22 -- I think the relevancy is sufficient. Mr. Binek,
23 you may proceed.

24 MR. BINEK: Would you read back the
25 question, please?

1 (Pending question read as requested.)

2 THE WITNESS: The short answer is no.

3 MR. BINEK: I have no further questions.

4 JUDGE WAHL: Followup, Mr. Kuntz?

5 MR. KUNTZ: Do the Commissioners have --

6 JUDGE WAHL: Oh, I'm sorry. Questions
7 from the Commission.

8 **EXAMINATION**

9 **BY COMMISSIONER WEFALD:**

10 Q. Tell me what your answer no meant to that
11 last question from Mr. Binek.

12 A. We already have a tariff in effect that
13 shares our off-system sales, so I don't see it's
14 necessary.

15 Q. So what is your -- what was your
16 understanding what the question was?

17 A. Whether we would return a hundred percent
18 of the off-system sales from Big Stone II to the
19 customers, and we already have a tariff that shares
20 our off-system sales with our customers.

21 Q. Is that based on the fact that -- I have
22 to think about that a little bit. Thank you.

23 A. Besides, we're talking about 2013, 14, a
24 long ways away.

25 Q. Well, the Commission needs to determine

1 not only the prudence of this, but the
2 reasonableness of this, and so to me some of these
3 issues relate to reasonableness and so I think that
4 they pertain in a case like this.

5 A. The answer is we already share -- we
6 already have a tariff that does share that with our
7 customers.

8 Q. I have a question on page -- page 6 of
9 your testimony. It says, When the participating
10 companies continue to investigate options
11 surrounding the facility itself, the Big Stone II
12 participants will be called upon to financially
13 commit their intent to proceed with construction of
14 the generation unit in June of 2007. Have you
15 already made that intent since it's now the 27th of
16 June?

17 A. No, we have not. I thank you for bringing
18 that up. That should be a correction in my
19 testimony. That probably won't be made until
20 September of this year because we're going to wait
21 for your ruling on the prudence.

22 Q. All right. The other question I have is
23 on page 4 of your original testimony, lines 1 and
24 2, The interconnected system, commonly referred to
25 as the company's integrated system, consists of 366

1 megawatts of baseload coal generation from five
2 units and 110 megawatts of gas or gas- and oil-
3 fired combustion turbines for peaking requirements.
4 My understanding from the rest of the paragraph is
5 that this 476 megawatts of generation that you
6 refer to here is in -- serves North Dakota, South
7 Dakota and Montana.

8 A. That's correct.

9 Q. And then there's additional generation in
10 Wyoming that doesn't interconnect with the rest of
11 the system?

12 A. That's correct.

13 Q. And so the 19.33 percent of Big Stone II,
14 which is approximately 120 megawatts, that will
15 increase your capacity -- I think that's the right
16 word -- from 476 megawatts for North Dakota, South
17 Dakota and Montana to approximately 600 megawatts,
18 and so you'll be --

19 A. Yes.

20 Q. -- it's about one-fifth of your whole
21 system generation -- of your North Dakota, South
22 Dakota, Montana generation, about 20 percent?

23 A. Yes.

24 Q. Of the total generation of your system?

25 A. Right.

1 Q. And none of that -- none of this power
2 from the Big Stone Plant then will go to the -- go
3 to Wyoming customers?

4 A. No. No. Wyoming is in the western grid.
5 The east grid and the west grid are connected by a
6 couple of DC ties, quite limited capability through
7 those DC ties, about 200 megawatts at Miles City, I
8 believe it's roughly about 200 near Rapid City. We
9 do not -- those are owned by WAPA, Basin, I believe
10 Black Hills has an ownership of part of the one
11 down at Rapid City. We don't have any rights to
12 transmit across those DC ties, so, no. In fact, in
13 Wyoming we plan on building a -- or owning a
14 portion of a generating unit in Wyoming that will
15 probably be on line approximately 2010 or 11.

16 COMMISSIONER WEFALD: Thank you. At this
17 time that's all the questions I have.

18 JUDGE WAHL: Any further questions from
19 the Commission?

20 COMMISSIONER CLARK: I have just a couple.

21 JUDGE WAHL: Commissioner Clark.

22 **EXAMINATION**

23 **BY COMMISSIONER CLARK:**

24 Q. On the issue of this off-system sales, MDU
25 having 15 percent -- a 15 percent stake in the

1 sales of off-system power gives MDU an incentive to
2 market that power, doesn't it?

3 A. Absolutely.

4 Q. So would there be a concern -- could there
5 be a concern from the Commission standpoint if it
6 was 100 percent to the ratepayer, that MDU, itself,
7 wouldn't have an incentive to aggressively market
8 the power?

9 A. You could have that concern. I've seen it
10 in other utilities.

11 Q. The 66-megawatt baseload energy and
12 capacity from AVS contract that expired at the end
13 of October 2006, what type of lead time did MDU
14 have on knowing that that contract wouldn't be
15 renewed?

16 A. Twenty years. Well, renewed?

17 Q. Right.

18 A. We probably inquired at least -- I don't
19 have an exact date, but I know at least four or
20 five years prior to the expiration, and we kept it
21 up until -- until the end of the contract.

22 Q. Sure. Was wind studied as a viable option
23 for replacement of that particular --

24 A. That 66-megawatt?

25 Q. -- contract? Right.

1 A. We studied wind as a whole for our system.
2 I can't tell you that we studied an equivalent
3 amount of wind to make up 66 megawatts of capacity.

4 Q. Okay.

5 A. That would have been a tremendous amount
6 of wind.

7 Q. And then just to clarify a question from
8 yesterday. Your bachelor of science degree is
9 from?

10 A. North Dakota State. Thank you.

11 COMMISSIONER CLARK: On behalf of the
12 alumni association. That's all I have. Thanks.

13 JUDGE WAHL: Commissioner Cramer.

14 THE WITNESS: I'm not going to change my
15 answer on that.

16 **EXAMINATION**

17 **BY COMMISSIONER CRAMER:**

18 Q. Just to be very, very clear --
19 Commissioner Clark asked the exact question I was
20 going to ask about the 85-15 percent split, but
21 just to follow up on that, with regard to your
22 current tariff of revenue sharing or off-system
23 sales, profit sharing with ratepayers, would you
24 see that -- realizing this is well into the future,
25 but would you see that as an adequate and

1 appropriate relationship or tariff after Big Stone
2 II is on line?

3 A. I would, yes. I'd really like to tell you
4 it should be higher, but --

5 COMMISSIONER CRAMER: I guess I have
6 nothing else.

7 COMMISSIONER WEFALD: I have a couple
8 more.

9 JUDGE WAHL: Commissioner Wefald.

10 COMMISSIONER WEFALD: There's another
11 point I would like to clarify and this is in your
12 rebuttal testimony. No. It's in Andrea's so I'll
13 wait for Andrea. Thank you.

14 JUDGE WAHL: All right. Followup, Mr.
15 Kuntz?

16 MR. KUNTZ: None.

17 JUDGE WAHL: All right. Mr. Breen,
18 followup to the Commissioners' questions?

19 **RE-CROSS-EXAMINATION**

20 **BY MR. BREEN:**

21 Q. One question, sir, if I may. Are you
22 aware that North Dakota's wind resource is
23 significantly stronger than Iowa's?

24 A. I believe I've looked at a map and seen
25 that, yes.

1 MR. BREEN: Thank you.

2 JUDGE WAHL: Mr. Binek, followup?

3 MR. BINEK: No.

4 JUDGE WAHL: All right. Then I understand
5 we're going to proceed next with Mr. Rogelstad.

6 MR. GUERRERO: If that pleases the Court.

7 JUDGE WAHL: That would be fine. Thank
8 you very much, Mr. Imsdahl.

9 MR. GUERRERO: The applicants call Tim
10 Rogelstad.

11 JUDGE WAHL: Mr. Rogelstad, your testimony
12 is required to be under oath and I'm required by
13 law to advise you regarding perjury before
14 administering the oath. Perjury is a false
15 statement of material fact which you do not believe
16 to be true, in other words, generally speaking, a
17 lie. In North Dakota perjury is a Class C felony,
18 punishable by a fine up to \$5,000, imprisonment for
19 a period of up to five years, or both. Will you
20 raise your right hand, please.

21 (Witness sworn.)

22 JUDGE WAHL: Mr. Guerrero.

23 MR. GUERRERO: Thank you, Your Honor.

24 **TIMOTHY J. ROGELSTAD,**
25 being first duly sworn, was examined and testified

1 as follows:

2

DIRECT EXAMINATION

3

BY MR. GUERRERO:

4

Q. Please state your full name and your
5 business address.

6

A. Timothy J. Rogelstad. Last name is
7 R-o-g-e-l-s-t-a-d. Business address, 215 South
8 Cascade, Fergus Falls, Minnesota.

9

Q. By whom are you employed?

10

A. Otter Tail Power Company.

11

Q. In what capacity?

12

A. I'm the manager of delivery planning.

13

Q. And what does that entail?

14

A. Primarily three functions, transmission
15 planning, which is looking at the needed -- looking
16 at developing future plans for needed
17 infrastructure related to transmission facilities
18 necessary to reliably serve load. The second piece
19 is management of the transmission contracts that
20 Otter Tail has with its neighboring utilities and
21 administration of those contracts. And thirdly is
22 capital allocation, prioritization of the capital
23 spending for Otter Tail Power Company.

24

Q. And how long have you been with Otter

25

Tail?

1 A. I have been with Otter Tail for now 18
2 years.

3 MR. GUERRERO: Just as an aside, Mr.
4 Rogelstad's testimony and exhibits can be found in
5 tab 11 of the trial notebooks.

6 Q. (MR. GUERRERO CONTINUING) You say 18
7 years?

8 A. Yes.

9 Q. What is your educational background?

10 A. I have a bachelor of science degree in
11 electrical energy from North Dakota State
12 University.

13 Q. Okay. Mr. Rogelstad, did you prepare or
14 cause to be prepared direct testimony and rebuttal
15 testimony in this case?

16 A. Yes, I did.

17 Q. And do you have those in front of you?

18 A. I do have copies of those.

19 Q. Okay. And what's been marked as Otter
20 Tail -- or OTP/MDU Exhibit 312 is a copy of your
21 direct testimony?

22 A. I don't have the numbers on mine.

23 MR. GUERRERO: Oh, okay. Let the record
24 reflect that Mr. Rogelstad's direct testimony has
25 been premarked as OTP/MDU Exhibit 312, along with

1 exhibits, and his rebuttal testimony has been
2 marked as OTP/MDU Exhibit 318.

3 Q. (MR. GUERRERO CONTINUING) Mr. Rogelstad,
4 are you testifying here on behalf of both Otter
5 Tail and Montana-Dakota?

6 A. Yes, I am.

7 Q. And have you had a chance to review your
8 testimony?

9 A. I have.

10 Q. Are there any corrections or
11 clarifications that you'd like to make this
12 morning?

13 A. No, I don't.

14 Q. If I asked you the same questions that are
15 set forth in OTP/MDU Exhibit 312 and 318, would
16 your answers be the same?

17 A. Yes, they would.

18 Q. Do you have a short summary to provide the
19 Commission this morning?

20 A. I do.

21 Q. Could you go ahead and do that, please?

22 A. Sure.

23 MR. GUERRERO: While he's getting that
24 prepared, we would move OTP/MDU Exhibits 312
25 through 318, which is his direct testimony and

1 exhibits and rebuttal testimony.

2 JUDGE WAHL: Mr. Breen.

3 MR. BREEN: No objection.

4 JUDGE WAHL: Mr. Binek.

5 MR. BINEK: No objection.

6 JUDGE WAHL: Exhibits OTP/MDU-312 through
7 318, inclusive, are each received.

8 THE WITNESS: Okay. My testimony is
9 related to the transmission plan related to the Big
10 Stone II transmission facilities, and it starts out
11 with describing kind of the planning process and
12 some of the planning objectives that we as
13 transmission planners use as we develop
14 transmission plans for the system. That
15 incorporates planning for our load and load growth,
16 the formal requests of interconnection for new
17 generation, as well as looking at, you know, the
18 age of the system and at what point in time are we
19 going to be replacing that, and should we be
20 looking at upgrades as we do that, and then
21 certainly any regional and state policy goals that
22 are out there.

23 Specifically for the Big Stone project, we
24 kind of had a three-step process. Started out with
25 a transmission screening study where we looked at

1 11 different transmission alternatives, and we
2 narrowed that down using technical analysis and
3 economic analysis and we used those results to feed
4 into the formal processes that the Midwest ISO, the
5 Midwest Independent Transmission System Operator,
6 requires for interconnecting new generation and
7 also delivering new generation.

8 The plan that we developed for the Big
9 Stone project involves construction of two new
10 facilities, a line between Big Stone and Morris,
11 Minnesota, which is approximately a 50-mile line,
12 and that is -- with the majority of it we're
13 rebuilding an existing line or along an existing
14 corridor for a line that already exists between Big
15 Stone and Morris. The second line, we are
16 proposing to build a 345 kV between Big Stone and
17 Granite Falls. Again, that's about a 90-mile line.
18 And this has been demonstrated to be the least-cost
19 option for addressing the Big Stone outlet.

20 One of the things that we've done with the
21 Big Stone Plant is we've looked beyond what is
22 absolutely necessary to meet the minimum
23 interconnection and delivery service requirements
24 of the Midwest ISO. And as a result of that, we're
25 proposing to build the Granite Falls line at 345

1 kV, and initially that line we intend to operate at
2 230 kV, and at the time some other transmission
3 facilities in the region are constructed, we then
4 would reconnect the line and operate it at 345 kV.
5 This is consistent with what the Midwest ISO would
6 require. We found that through this project that
7 these Big Stone facilities will have a positive
8 impact on what is known as the North Dakota
9 transmission export -- North Dakota export
10 constraint, which is limited by transient stability
11 and we anticipate that this also provides
12 additional capacity for wind generation to connect
13 to the system.

14 This whole process, the plan that's been
15 developed for Big Stone, has been coordinated
16 highly with the Midwest ISO. They recommend the
17 plan that has been developed. It will become part
18 of their Midwest ISO transmission expansion plan,
19 or MTEP, and it's anticipated that this project
20 will become eligible for cost recovery under MISO's
21 tariff for regional cost allocation. And that
22 concludes my summary.

23 MR. GUERRERO: Thank you, Mr. Rogelstad.
24 He's available for examination.

25 JUDGE WAHL: Mr. Breen.

1 MR. BREEN: No examination.

2 JUDGE WAHL: Mr. Binek.

3 MR. BINEK: Thank you.

4 **CROSS-EXAMINATION**

5 **BY MR. BINEK:**

6 Q. I'd like to ask you about this Big Stone
7 to Granite Falls line. That would be built to 345,
8 but 230 is what is required for operation of the
9 Big Stone Plant; is that correct?

10 A. That is correct. The studies that were
11 done for MISO for the interconnection process and
12 the delivery service process were done assuming the
13 line was operating at 230 kV, and it was beyond the
14 studies that were specifically required for Big
15 Stone where we looked at, you know, does it make
16 sense to build the line for a larger capability in
17 the future as other transmission plans are
18 developed. And so in order to take advantage of
19 we're building a line in a corridor between an area
20 that has high-capacity generation resources -- or
21 potential for development of high-capacity
22 generation resources, we thought as long as we're
23 in that area building that line, we would build
24 that to become part of a much larger plan, and
25 those larger plans have been developed as part of a

1 lot of the regional planning that's been going on
2 throughout the last several years. Northwest
3 Exploratory Study, which was a study that's been
4 sponsored by the utilities in this region, as well
5 as the Midwest ISO identified two 345 kV lines that
6 originated initially in North Dakota, one we say is
7 the northern route, which would be from western
8 North Dakota into the Fargo area and then down into
9 the St. Cloud, Minnesota, area, and then the second
10 one, which is more of a southerly route, from the
11 more southern North Dakota, specifically Ellendale,
12 that actually would connect into Granite Falls, and
13 the portion between Big Stone and Granite Falls is
14 really part of that plan or part of that upgrade.

15 Q. And if I understand correctly, the
16 addition of this 115 kV would not in and of itself
17 create any additional transmission capabilities for
18 the transmission grid unless other transmission
19 additions or upgrades are made; is that correct?

20 A. Yes. I'd clarify, I think the 115 kV
21 should be 345 kV.

22 Q. Well, I realize. My math is wrong here.

23 A. I'm sorry.

24 Q. Going from 230 to 345.

25 A. Yes.

1 Q. I learned my math from Mike Diller.

2 MR. DILLER: And it's pretty good.

3 THE WITNESS: You know, when we initially
4 connect the line, if there are no other
5 transmission facilities built, we can't operate it
6 at 345. We would actually create reliability
7 problems. The line that we're planning at least
8 initially to connect to, which is the next step of
9 the development of the transmission system, is one
10 of the CapX or the capacity expansion of the
11 transmission system through the year 2020, which is
12 a coalition of utilities looking to build out
13 significant 345 kV facilities in the region.
14 There's a line that originates in Brookings, South
15 Dakota, that comes to Lyon County, which is south
16 of Granite Falls, and then they would actually
17 build a line. The CapX plan includes building a
18 line from Granite Falls to this Lyon County. And
19 so that's how they would connect up. So we can't
20 operate the line at 345 kV until that facility is
21 actually in service; otherwise, we would create
22 reliability problems. Because the line is going to
23 be built bigger, I wouldn't say -- I wouldn't rule
24 out completely that there's no additional
25 capability that's created, but it would be very

1 nominal if there was.

2 Q. (MR. BINEK CONTINUING) And what is the
3 cost of the additional upgrade to 345?

4 A. My testimony indicates it's in the range
5 of 25 to 30 million dollars, and that would include
6 generally larger structures, more insulators and
7 then substations and transformers associated with
8 that.

9 Q. In the testimony that we've heard
10 previously there was discussion about the Coyote
11 site and one of the problems with building a plant
12 at the Coyote site is transmission. Did you do a
13 study of what would be required for transmission
14 from the Coyote site?

15 A. From the transmission perspective, we've
16 not done the level of study that the MISO
17 interconnection process has done. When we were
18 asked to provide input into the alternatives of
19 looking at other sites for generation and what
20 would the associated transmission costs be
21 associated with them, we looked at some past
22 studies and did some, you know, kind of estimates
23 based on experience. The Lignite Vision 21 Study,
24 which, I think, was done in 2001, which is a
25 transmission study looking at adding 500 megawatts

1 of generation in the coal fields of North Dakota at
2 various different sites, we used that as part of
3 the basis for developing kind of an estimate and
4 the requirements of what would be required to move
5 500 megawatts and specifically from the Coyote
6 site.

7 Q. Did you determine a cost for the Coyote
8 transmission?

9 A. I believe -- I was not directly involved
10 in providing that information, but I believe there
11 was a study done by Burns & McDonnell that we
12 provided input. A member of my staff, Jason Wires,
13 provided the transmission assumptions as part of
14 that.

15 Q. How would the -- how would this 345 kV
16 upgrade be paid for? What would be the cost
17 allocations?

18 A. It would be the cost allocation through
19 the MISO process, is how it will ultimately get
20 assigned back to the utilities. I guess I would
21 start out with we are -- I wouldn't say that it's
22 been completely resolved with the Midwest ISO.
23 It's complicated in the fact that you start out
24 with, you know, trying to identify what's necessary
25 for Big Stone, and I guess it's been our position

1 that the -- that we could get by with just doing
2 the 230 kV plan for Big Stone only, and, therefore,
3 the increment that's needed beyond that is really
4 going to benefit more than just the Big Stone
5 generation. And, therefore, it would be -- we will
6 be asking the Midwest ISO to include that as part
7 of the RECB, which is the regional economic --

8 COMMISSIONER WEFALD: Expansion.

9 THE WITNESS: -- economic criteria
10 benefits. It's their tariff for cost allocation.
11 It's been subject of a lot of discussion over the
12 last two to three years. But we're anticipating
13 that that portion will be allocated partially
14 through a postage stamp because it qualifies for
15 345 kV under that tariff. If the facility is 345
16 kV, 20 percent of that cost is spread throughout
17 the MISO footprint on a postage stamp basis, and
18 then the remaining 80 percent is handled through
19 what they call the LODF, which is an engineering
20 calculation which allocates costs into different
21 pricing zones or the license plate pricing zone
22 within the Midwest ISO. So we would anticipate
23 again that 20 percent of the cost would go across
24 MISO footprint. The remaining 80 percent, a good
25 chunk of it will show up in the OTP pricing zone,

1 Xcel Energy, Alliant, MPC, and part of MDU's
2 pricing zone.

3 MR. BINEK: Thank you. I have nothing
4 further.

5 JUDGE WAHL: Questions from the
6 Commission. Commissioner Wefald.

7 **EXAMINATION**

8 **BY COMMISSIONER WEFALD:**

9 Q. Just to follow up on that a bit just so
10 that I understand that. The 230 kV line, how will
11 that portion be cost allocated?

12 A. That, again, will be allocated through the
13 MISO tariff and the RECB process. The portion that
14 I just described about the 345 increment is what
15 they call the reliability allocation.

16 Q. The 25 to 30 million dollars?

17 A. Yes. The remaining piece will be
18 allocated -- and this is for the interconnection.
19 I guess it's good to clarify that there's
20 interconnection --

21 Q. Different pieces there.

22 A. Interconnection facilities and delivery
23 service facilities. The intersection facilities
24 are handled under the RECB and through their
25 generation interconnection portion of that.

1 Q. Is that the one where you pay 50 percent?

2 A. Yes.

3 Q. And then I can't remember who pays the
4 other 50 percent.

5 A. The -- 50 percent is assigned directly to
6 the generator and then the other 50 percent is
7 again handled through that LODF calculation, or the
8 engineering calculation, and pushed into pricing
9 zones in the Midwest ISO.

10 Q. All right. And then the other -- the
11 question you have for MISO is whether the extra 25
12 to 30 million dollars extra for the 345 kV line,
13 whether that actually qualifies as a reliability
14 piece to be spread 20-80 or whether that would be
15 considered in another way where the -- what would
16 be the other option?

17 A. I think the other option is an option that
18 they're going to be releasing soon. I think it was
19 Mr. Clair Moeller gave a presentation at the MARC
20 meeting last week about the -- what they're calling
21 their open season proposal.

22 Q. I remember that.

23 A. I think -- I guess from my perspective, I
24 think that may be a possibility for the allocation
25 possibility of this.

1 Q. I thought that had to do -- the open zone
2 had not to do with pricing, but had to do with
3 moving through the queue.

4 A. It does. It's intended to help move
5 through the queue and eliminate the queueing
6 problems, but another portion of it is also the
7 cost allocation and how those costs get allocated.
8 But the details of that haven't been released or
9 anything. But one thing, MISO has been very
10 supportive of our plan, and I believe that if we
11 were going to just say we were only going to build
12 at 230, they would be probably demanding us to
13 build at 345.

14 Q. On the portion that you know will be
15 allocated 50 percent to the generator and 50
16 percent to the pricing zones, have you done a cost
17 allocation to determine how much of that then would
18 go to Otter Tail and MDU customers?

19 A. We have done that. One of the things that
20 gets complicated is this engineering -- the 50
21 percent that's directly assigned to the generator
22 is pretty easy to figure out, but this engineering
23 calculation that's done is dependent upon a lot of
24 different factors, including what transmission
25 facilities are in service at the time that this

1 project goes in, and depending upon which new
2 facilities are added to the system will change the
3 results of this engineering calculation that pushes
4 the cost into the pricing zones. The intent, I
5 think, of the project is that we will -- we want to
6 share in the costs proportionately to the
7 participation in the generation project. Costs
8 will be allocated through the MISO tariff, and so
9 forth, but in the end we want to be able to make
10 all parties of the project whole, so that one party
11 is not having to pay a disproportionate amount.

12 Q. The main people, where do you see the area
13 for -- you had mentioned that this could -- has the
14 ability to encourage wind development in the region
15 by adding this extra capacity to the line going
16 from 230 kV to 345 kV. Where do you see that
17 development could occur in our region?

18 A. Sure. I think there's --

19 Q. Most economically. I'm sure someone could
20 extend another line 200 miles to it, but where do
21 you --

22 A. Yeah. Well, certainly I think there's
23 locally, you know, adjacent to the facilities that
24 we're building. I mean, if you're right next to
25 the line, you know, it's going to be -- that's

1 probably going to be the -- certainly a likely
2 option. I think the part that it also provides is
3 more from a -- again, from more of a regional
4 perspective of once other facilities -- and the
5 other facilities I guess in my mind as a planner,
6 you know, we've got a commitment to build the other
7 line, the big -- the line from Brookings County
8 into the Twin Cities for which the Big Stone
9 facilities will connect to, that when we build from
10 Big Stone to the west, whether it be Ellendale or
11 some other point further west, then that's going to
12 enhance the ability to allow wind or any other
13 source of generation to connect to the system
14 further west of Big Stone, as well.

15 Q. But that isn't in the current plan for
16 either CapX or the Big Stone project to make any
17 extension to Ellendale?

18 A. At the -- I guess I would clarify it as
19 the CapX plan -- it's part of the CapX plan.

20 Q. The current. You know, there's stages 1,
21 2, 3, 4.

22 A. Yes.

23 Q. Stage 1 which is still being approved.

24 A. It's not part of stage 1.

25 Q. No.

1 A. But we would anticipate, you know, in the
2 next --

3 Q. Forty years.

4 A. Hopefully, it will be sooner than that,
5 but that -- again, I think a big driver when you
6 look at one of the other studies that we're
7 embarking on right now is with the Minnesota
8 renewable energy standard, we're anticipating that
9 there's going to be about 7,000 megawatts of
10 nameplate wind required to be built in order to
11 meet that. And we're in the process of developing
12 a scope for how we're going to do that study to
13 ensure that there's adequate transmission.

14 Q. But my question related to this project
15 and the stage 1 of CapX. Where do you see most
16 development of additional energy resources, and
17 your answer was right adjacent to the line that's
18 being put in which will go from in South Dakota
19 into Minnesota.

20 A. I would say that is the most likely place.

21 COMMISSIONER WEFALD: Thank you.

22 JUDGE WAHL: Any further questions from
23 the Commission? Commissioner Clark.

24 COMMISSIONER CLARK: Just a few.

25

EXAMINATION

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BY COMMISSIONER CLARK:

Q. Following up on Commissioner Wefald's question and maybe putting a little finer point on it. It's to hopefully answer a question that Ms. La Seur brought up in her opening comments. I don't think you heard them yesterday. But basically the point was that this transmission where it is may benefit others, but it doesn't benefit North Dakota, that she can see how it might benefit South Dakota wind developers who are in between North Dakota and Big Stone and, therefore, closer to the market. Is that true? Does this line help South Dakota wind projects to the disadvantage of North Dakota wind projects?

A. I guess from my perspective, I would say no. One thing about transmission, it is clearly regional, and, you know, all the -- you know, virtually any generator is going to depend on the transmission grid in a region, and I think it's even more so true in -- the location where we're actually putting Big Stone is right in the midpoint between where western North Dakota generation sits and the bigger load centers of the Twin Cities, Minneapolis-St. Paul, and where we're building the

1 transmission, where we're adding this generator
2 which has -- you know, the real benefit of the
3 generator is the voltage capability -- control
4 capability that it can provide or the reactive
5 power. It acts as a big boost in the center that
6 can lift up that transmission network in a sense,
7 and, therefore, even though physically the facility
8 is not located in North Dakota, it's going to
9 provide a benefit to the transmission system. As
10 part of one of the exhibits in my testimony, we did
11 an analysis of the transient stability impacts of
12 this Big Stone generation and transmission project,
13 and in that we clearly show that there is a
14 transient stability benefit. Now, just because
15 there's a transient stability benefit doesn't
16 necessarily mean you can connect new generation
17 without other upgrades, but historically transient
18 stability has been the limiter for adding new
19 generation in North Dakota. And the study that
20 we've included as part of this demonstrates that we
21 are increasing -- North Dakota export involves more
22 than just the State of North Dakota. It's
23 almost --

24 COMMISSIONER WEFALD: The region.

25 THE WITNESS: The entirety of Otter Tail

1 Power Company is within the North Dakota export
2 boundary for our service territory in Minnesota,
3 and similar -- so a portion -- we anticipate that
4 there's probably going to be in the technical terms
5 a 500 megawatt increase in North Dakota export
6 capability. Okay. But keep in mind that a portion
7 of that will be required to move a portion of the
8 Big Stone II unit to the nonNorth Dakota customers
9 in a sense. MDU, Otter Tail and GRE all have load
10 inside the North Dakota export boundary. GRE has
11 load outside of the export boundary, as well. And
12 so we're anticipating that we need 350 megawatts to
13 move outside of the North Dakota boundary, the Big
14 Stone II. So of the 500 created, 350 will be used
15 by Big Stone II. We anticipate that there would
16 likely be another 150 made available to whatever
17 generator can connect.

18 Q. (COMMISSIONER CLARK CONTINUING) Is it
19 more likely that that 150, though, is going to
20 locate where there's going to be less line losses,
21 meaning not North Dakota?

22 COMMISSIONER WEFALD: Which is basically a
23 political -- well, it may be a political. Go
24 ahead. Answer the question.

25 THE WITNESS: I mean, certainly, I think,

1 line losses would be a factor in determining that,
2 but, again, I would point to -- I mean, we are
3 seeing development. You know, in the case of Otter
4 Tail, our joint project with Minnkota up in Langdon
5 is an example that -- I mean, there are many
6 factors, I think, that go into determining where
7 you're going to site new generation, but --

8 Q. (COMMISSIONER CLARK CONTINUING) Although,
9 is that more -- is that project more contained
10 within the North Dakota export, behind the barrier,
11 as opposed to trying to cross into the other
12 market?

13 A. Well, it is. I mean, and that certainly
14 helps that situation. I think to the extent,
15 again, that there was a need to move additional
16 power across that, you know, again, with the Big
17 Stone project, that the potential is greater. And
18 again, depending upon the exact site, you can't --
19 you know, I couldn't sit up here and tell you with
20 exact certainty that -- guarantee that if we put a
21 generator in at Coyote, that we're going to get 150
22 with just what we propose with Big Stone; but
23 generally when you look at, again, what has
24 historically been the limiting condition, we're
25 showing an improvement that has a potential to

1 benefit North Dakota, as well as the other regions.

2 Q. Will you be able to provide some sort of
3 financial study that would detail the transmission
4 cost differences between Coyote and Big Stone II so
5 that could be compared in a quantitative fashion
6 for the Commission?

7 A. Yes, we can do that.

8 COMMISSIONER CLARK: Okay. Thank you.
9 That's all I have. Thanks.

10 JUDGE WAHL: Commissioner Cramer.

11 COMMISSIONER CRAMER: Thank you.

12 **EXAMINATION**

13 **BY COMMISSIONER CRAMER:**

14 Q. First of all, I want to pursue this
15 transient stability issue a little bit further.
16 There's a very good chance I don't understand
17 exactly what you're talking about, so I'll admit
18 that upfront. When you describe Big Stone II as
19 being in the middle -- and you're the second
20 witness I can think of, anyway, that has described
21 it as being in the middle of the western North
22 Dakota coal mines and the big -- the big power spot
23 purchasers and markets. But when you talk about it
24 like that, in my mind I think of it as some sort of
25 a highly dispatchable ramp up, ramp down sort of a

1 plant, and you don't mean that, do you, that
2 somehow when there's some other wind or some other
3 sources available that you can balance that by
4 ramping down Big Stone II?

5 A. No. I think my comment was more related
6 to the actual voltage control which is -- you know,
7 normally you think of megawatts as the power that's
8 necessary to keep the lights on and things like
9 that. There's another piece of it that --

10 Q. Engineers often giggle when they talk to
11 me.

12 A. Yes. So will this one. But it provides
13 -- it provides the -- you know, another necessary
14 piece of making the electrical system work, and
15 maintaining adequate voltage is a key to system
16 reliability. And when we talk about, you know,
17 having Big Stone located in kind of that center
18 between the -- you know, the large generation and
19 the large load through a relatively weak
20 transmission system, it's being able to produce
21 voltage support and be able to adjust for
22 disturbances on the system and put out this
23 reactive power which can raise the voltage or lower
24 the voltage depending. So when I talk about, it's
25 not moving the real power generation that's sold

1 and that's metered to customers. It's actually the
2 part that's necessary to operate the system, which
3 is kind of a different component of electricity.

4 Q. That does help me. Thank you. Big Stone
5 II will be as efficiently powered up as possible at
6 all times, I would think.

7 Now, this is just more general. But in
8 general, you're familiar with the North Dakota
9 infrastructure -- transmission infrastructure and
10 you're familiar, I would think, with the number of
11 small to mid-sized wind projects that have been
12 developed over recent years, I think, to take
13 advantage of small pieces of capacity here and
14 there on the transmission grid. In your opinion,
15 do you see much more opportunity for 50 to 100
16 megawatt wind projects in North Dakota taking
17 advantage of existing or at least with minor
18 transmission investments?

19 A. I think there still are some. It's
20 probably, you know -- they're getting to be less
21 and less. But I think there are a few locations
22 where you could. I think a key is, you know, do
23 you have to move across the North Dakota export
24 boundary to deliver your power. That certainly is
25 a big factor. If you have to do that, that becomes

1 much more problematic.

2 COMMISSIONER CRAMER: I have nothing else.

3 COMMISSIONER WEFALD: I have one more
4 question.

5 JUDGE WAHL: Commissioner Wefald.

6 **FURTHER EXAMINATION**

7 **BY COMMISSIONER WEFALD:**

8 Q. Now, in North Dakota we know that it's
9 very important to think of regional benefits as we
10 look at projects like this, so I'm paraphrasing,
11 making sure you understand that's my concept. It
12 appears to me -- it could appear to me and to
13 others that you have upgraded from 230 kV to 345 kV
14 this line in order to offer an incentive to the
15 State of Minnesota to approve this line. What
16 incentives are Otter Tail and MDU prepared to offer
17 our Commission of similar scope and cost for us to
18 -- if you really are serious about us approving the
19 Big Stone Plant?

20 A. I'm probably not the right witness to ask
21 that question -- or to answer that question. But I
22 would -- again, I'll maybe try and go back to what
23 is, you know, a benefit to North Dakota again. You
24 know, I think the -- you know, while it looks like
25 this is a -- whether you want to call it a

1 political benefit, or whatever, by saying, well,
2 we'll build it bigger than what's necessary, I
3 think if you really asked the transmission planners
4 and you went to MISO and the people that are in the
5 backroom doing studies, they would say this thing
6 should be built that way regardless of what anybody
7 else is saying or trying to make it look better.
8 And that was really the initial reason for why we
9 said let's do this, because the Big Stone Plant --
10 the Big Stone studies were about a year ahead of
11 the CapX effort and -- but during the CapX effort
12 we realized that, you know, the long-term plan is
13 going to have at least two more lines, it's
14 probably going to be more, would be my belief, from
15 western North Dakota into the Minnesota area -- the
16 center of Minnesota. This corridor between Big
17 Stone and Granite Falls is a piece of that, and if
18 that -- you know, if we don't build that piece or
19 if we don't build it big enough or we build it just
20 big enough that it's only going to benefit Big
21 Stone, there's really not going to be -- that piece
22 between Big Stone and Granite Falls will have to be
23 built again somewhere else, and so --

24 Q. Could be built -- that 30 million could be
25 built in Ellendale. I mean, used to spend that

1 money there. I mean, you know --

2 A. But I think the key is that at that
3 point -- let's say that we just left it at 230, the
4 capability that we've created may mean that we
5 redirected the funds to building to Ellendale, I
6 don't think that we would create the overall system
7 capability that we are by building the Granite
8 Falls line today at where it's at. Certainly the
9 benefits to North Dakota are going to be much
10 greater once we get transmission built further west
11 because you ultimately need a point to connect to.
12 But, again, if we weren't doing the Big Stone
13 project, North Dakota is further from getting that
14 line -- those two lines from western North Dakota
15 to the center of Minnesota, the Twin Cities area.

16 **FURTHER EXAMINATION**

17 **BY COMMISSIONER CLARK:**

18 Q. Just so I understand the payment mechanism
19 again, and this may have been gone over once
20 before, but the increment -- the incremental cost
21 of going to the larger line, that 25, 30 million
22 dollars, is that allocated on the 20-80 split, or
23 is that considered different regional benefits so
24 that those costs are spread more regionally?

25 A. A good question. And I don't think -- I

1 mean, the final answer hasn't been determined yet.
2 You know, we will be advocating that it's a 20 --
3 or the 80-20 split.

4 Q. Why would that be appropriate if what I'm
5 hearing is that the incremental cost is for more of
6 a systemwide benefit as opposed to a local benefit?

7 A. Maybe I could have you repeat the
8 question.

9 Q. Well, as I understand it, the -- to bring
10 it to 230 is necessary to get Big Stone --

11 A. Yes.

12 Q. -- II up and running. Which is pretty
13 clearly a local benefit to the utilities right
14 here.

15 A. Mm-hmm.

16 Q. But that bumping it up to 345 sort of
17 moves beyond that, that it creates greater regional
18 benefit as opposed to specific benefit to those
19 local utilities. Why wouldn't it be appropriate to
20 have a cost allocation that spreads out those costs
21 amongst a greater pool because there's a greater
22 pool of potential beneficiaries?

23 A. And I guess it's our expectation that that
24 will happen. And, again, if we just talk about
25 that increment above what's needed for Big Stone,

1 the 25 to 30 million, you know, our position is
2 that, you know, currently under the MISO process
3 and their tariffs that that 25 to 30 million should
4 be spread 20 -- or 20 percent of that cost should
5 be spread MISOWide.

6 Q. Right.

7 A. And then the remaining 80 percent is the
8 engineering calculation into the pricing zones.

9 Q. Right. But what's the cost for the --
10 just to hook up Big Stone II? Isn't that an 80-20
11 split, as well?

12 A. Well, it starts out with a 50-50 split.

13 Q. Okay.

14 A. And then actually because it's not 345 kV
15 -- well, this gets into -- you know, a portion of
16 the facilities, like the Morris line, is only going
17 to be -- at this present time we're only proposing
18 230, that because there's a threshold level in the
19 MISO tariff of going to 345 to get the postage
20 stamp treatment, so a hundred percent of that gets
21 allocated through more of the locally -- through
22 that engineering calculation. I don't know if
23 that --

24 Q. No, that does help. Do you think 80 is
25 too high a percent to assign to local transmission

1 owners considering the regional benefit of this?
2 Granted, it's something beyond your control with
3 MISO --

4 A. Yeah.

5 Q. -- approved by FERC. I'll tell you my
6 bias says it is.

7 A. I would generally -- I would generally say
8 that, yeah, it probably could be a larger. I'm
9 probably more concerned about the fact that you've
10 got, you know, the benefit to, you know, southern
11 Indiana of this facility. I would struggle the
12 same way with the benefit in southern Indiana for
13 us, but, you know, how it gets into the local
14 pricing zones maybe there may be some more
15 inequities. But I think the challenge is that, you
16 know, if you look at historically when we built
17 transmission, you know, the parties that were going
18 to build it got together and said, okay, what's a
19 fair way of doing it, and we built a lot of big
20 transmission in our time, and, granted, there's a
21 fundamental shift in how we are using the system
22 today, but the whole question of cost allocation,
23 as you are well-aware --

24 COMMISSIONER WEFALD: It's very
25 interesting.

1 THE WITNESS: -- is very interesting and
2 complicated and no perfect answer.

3 COMMISSIONER CLARK: Thanks.

4 JUDGE WAHL: Any further questions from
5 the Commission? Mr. Guerrero.

6 MR. GUERRERO: Thank you.

7 **REDIRECT EXAMINATION**

8 **BY MR. GUERRERO:**

9 Q. Mr. Rogelstad, do you know what the single
10 largest bottleneck for additional wind development
11 is in this region?

12 A. The single largest bottleneck for
13 development of wind generation?

14 Q. Yeah, in your opinion.

15 A. Oh, transmission without a doubt.

16 Q. What do you mean by that?

17 A. That the existing transmission system
18 doesn't have the capability to add significant new
19 generation sources. Virtually any project that you
20 -- that comes on line that ultimately wants to have
21 firm delivery of their power to their load requires
22 a very complex study and we're finding that there
23 is very little room. Again, I won't say that
24 there's not a few small spots available, but to add
25 any significant size generator, transmission is

1 definitely limiting.

2 Q. Is that true for Minnesota?

3 A. Yes.

4 Q. Is it true for South Dakota?

5 A. Yes, it is.

6 Q. Is it true for North Dakota?

7 A. Yes.

8 Q. If this Commission were to say that the
9 increment above 230 on the Granite Falls line was
10 not prudent or reasonable, would that line get
11 built to 345 standards, in your opinion?

12 A. My opinion is that it probably would and
13 that the Midwest ISO would require us to build it
14 for that.

15 Q. If there was a question of whether or not
16 Otter Tail and Montana-Dakota were going to get
17 rate recovery of that increment, do you know
18 whether or not Otter Tail would commit to building
19 that line at 345?

20 A. We would -- I guess we would have to
21 reconsider as an investor in that, yes.

22 Q. And if you had to build it at 230, Big
23 Stone would be okay; correct?

24 A. Yes.

25 Q. Big Stone Unit II and Big Stone Unit I

1 would be okay?

2 A. Yes.

3 Q. But there wouldn't be any increment above
4 for any other developer?

5 A. Likely there wouldn't be.

6 Q. Now, the 30 million dollars built to
7 Ellendale, I think Commissioner Wefald asked you a
8 question of couldn't that 25 to 30 million dollars
9 be used to build. If you built to Ellendale, it's
10 not just 25 to 30 million dollars, is it?

11 A. I would have to go back and look, but I
12 would anticipate once you factor in substation
13 costs and the new line, that probably you'd need
14 more than that, yes.

15 Q. Well, is there a line from Ellendale to
16 Granite Falls at this point or from Ellendale to
17 Big Stone?

18 A. No, there is not.

19 Q. Okay. And so you're talking about
20 building a 345 line from Ellendale to Big Stone.
21 We're talking here about an increment above 230 to
22 345. So do you know how many miles it is from
23 Ellendale to Big Stone? Just guesstimate.

24 A. Oh, boy.

25 Q. Is it a hundred miles?

1 A. I would guess it's more than a hundred.
2 It's probably in the 150 -- 100 to 150 range,
3 probably. I really don't know.

4 Q. Is a rule of thumb to say a 345 line is
5 about \$500,000 a mile?

6 A. That's probably on the low end of the most
7 recent estimates that I've seen for like the Big
8 Stone facilities and the CapX facilities, but that
9 would be -- I mean, you could use that, but that
10 would be on the low end.

11 Q. Okay. Thanks. Now, there was a question
12 about -- from one of the Commissioners about a
13 study at Coyote -- or maybe it was from Mr. Binek,
14 I believe, actually. Was there an interconnection
15 request made at the Coyote Station?

16 A. No, not for a new unit at Coyote.

17 Q. There was an interconnection request made
18 for Big Stone Unit II; correct?

19 A. Yes.

20 Q. And under the FERC process, does that make
21 a difference for the transmission planners in what
22 kind of evaluations and studies are going to
23 happen?

24 A. Certainly the MISO process or the
25 interconnection requests that you're talking about

1 triggers a very extensive study that is ultimately
2 used to ensure that a new generator can be
3 connected to the system without causing reliability
4 problems, so it's very much -- a very extensive
5 study as opposed to a -- you know, like the Lignite
6 Vision 21 Study was more of a higher-level look
7 that made some more broad assumptions, that didn't
8 necessarily dive down into a lot of details as you
9 would in an interconnection type of study.

10 Q. You were asked some questions about
11 benefits to North Dakota of the increment above
12 230, and I asked you earlier about whether or not
13 if this Commission denies -- somehow decides that
14 it's imprudent to go from 230 to 345, there's a
15 question of whether or not that would move forward.
16 My question is, do you have an opinion on -- as a
17 regional -- from a regional perspective, I'm
18 curious of your opinion of how one particular state
19 would look at a transmission line that's intended
20 to build -- to be regional in benefits versus
21 another state looking at the same line and trying
22 to determine whether and how it benefits that state
23 versus another state looking at that line and then
24 trying to determine specifically how it benefits
25 that state. Do you have an opinion on that? Is

1 that a fair question? I'm not sure it's a very
2 good question.

3 A. I think if I -- maybe I can rephrase your
4 question. You know, how do you define the benefits
5 for each project within a region? And, again, you
6 know, if you look at the distribution system, it's
7 very local, it's very specific, very easy to say
8 that -- those facilities are benefiting these. I
9 think on a generator side you can say who's buying
10 the power and where is that going to get delivered
11 to, and so you can assign those benefits. But on
12 the transmission system is just a -- you know,
13 you're plugging the generator in and you're pulling
14 the load off over here and you're virtually using
15 the entire grid and it becomes very difficult to
16 assign the benefits. The grid, every load and
17 every generator is dependent upon that. A lot of
18 times we think of, well, let's just connect, you
19 know -- the system is perfect, it's always in
20 service, and we can look at the system that way,
21 and you would say, okay, these -- you can kind of
22 define the benefits. Okay. Now, you take a
23 facility out, a whole different set of areas will
24 be benefiting as a result of taking one line out,
25 and, therefore, that's why it gets very complicated

1 in a hurry to try and assign those benefits,
2 because when you look at the number of facilities
3 that make up this electrical grid, it's huge, and
4 we have to be able to withstand one to ten lines
5 being out, you know, hopefully not all in the same
6 area, of course -- we don't design the system that
7 way, but, I mean, facilities are taken out for
8 maintenance, they're forced out because of
9 tornadoes or windstorms. And so the system is
10 always changing as a result of that and those
11 benefits are moving around, and so it becomes very
12 difficult to really say who's benefiting more on a
13 particular facility.

14 Q. Thank you. In your opinion, moving from
15 230 to 345, spending the additional 25 to 30
16 million dollars increment, do you believe that's
17 prudent?

18 A. Absolutely, yes.

19 Q. Does MISO believe it's prudent?

20 A. Yes.

21 Q. Have they approved the plan?

22 A. It's not -- has not been approved by their
23 board of directors at this point, but -- in fact, I
24 was at a meeting a week ago today where they showed
25 the Big Stone plan to the rest of the MISO

1 stakeholders and the planning subcommittee and said
2 that this will become part of the Midwest ISO
3 transmission expansion plan once an interconnection
4 agreement is signed.

5 Q. And MISO's view is supposed to be
6 regional?

7 A. Yes.

8 Q. That's one of the reasons why we created
9 independent system operators?

10 A. Absolutely.

11 Q. And RTOs?

12 A. Yes.

13 Q. Now, you have an obligation, and I'm going
14 to remind you, to file sort of a financial study
15 whereas Commissioner Clark had asked to provide
16 some additional financial information about
17 transmission from Coyote to, say, the load center
18 versus the Big Stone transmission facility studies.
19 As you sit here today, can you give a guesstimate
20 or a ballpark as to the difference in cost? Let me
21 ask it this way. What is the overall cost? We had
22 a project cost summary identified yesterday.

23 MR. GUERRERO: Off the record. Back on
24 the record.

25 Q. (MR. GUERRERO CONTINUING) Mr. Rogelstad,

1 I'm showing you what's been premarked and admitted
2 into evidence as OTP/MDU Exhibit 321. Have you
3 seen that before?

4 A. I have.

5 Q. Okay. And there's some information on
6 there about the overall cost of the Big Stone
7 transmission facilities; correct?

8 A. Yes.

9 Q. And what is that number?

10 A. 238 million.

11 Q. And that includes both interconnection
12 facilities and facilities for transmission service
13 delivery?

14 A. That is correct.

15 Q. And as you sit here today, do you have a
16 ballpark estimate that you can provide to the
17 Commission about what you may think it would cost
18 to get transmission from Coyote to the load center
19 versus the 238 million dollars that's on that
20 project cost summary sheet?

21 A. Yes. I can give a -- part of it is that
22 there is another study MISO is doing right now that
23 I've seen a draft report of that has costs in it.
24 I think it's confidential. But I think, you know,
25 I can say that the Big Stone costs are less than

1 that. And, again, that particular one only looks
2 at interconnection facilities, and I would say that
3 it's substantially less, the Big Stone project, as
4 it relates to comparing the interconnection
5 facilities for Big Stone versus another project.
6 But we can provide the -- as requested, a more
7 detailed analysis.

8 Q. When do you think you'll be able to get
9 that more detailed analysis?

10 A. I would hope within a couple weeks, if not
11 a week, with the holiday. Hedge on that.

12 COMMISSIONER CLARK: Can I clarify the
13 point here just as long as we're on it?

14 JUDGE WAHL: Go ahead. Commissioner
15 Clark, for the record.

16 COMMISSIONER CLARK: So we get the
17 information that we need. What I'm specifically
18 interested in is -- and it's difficult because
19 there's so many moving parts here. If you built a
20 Coyote Station, it's not likely that you would have
21 the participation of -- I don't know -- Rochester
22 Public Utilities and some folks in Minnesota. What
23 I'm trying to isolate is -- are the costs for --
24 assuming a Coyote plant being built, what those
25 transmission costs would be to serve North Dakota

1 ratepayers. Assuming that -- you know, I'm not
2 concerned about what folks in Minnesota are going
3 to pay for their transmission. I'm trying to
4 figure out how much of these Big Stone II costs are
5 really costs to hook up other participants in this
6 consortium of utilities that are participating.
7 And I understand it's very theoretical, because you
8 don't know who exactly would be the participants
9 given a Coyote Station. You haven't done the more
10 detailed analysis on a Coyote Station. But from
11 sitting here as a commissioner, what our job is to
12 do is to try to say, okay, here are these other
13 alternatives for North Dakota ratepayers and we
14 want to make sure that this is the lowest cost for
15 North Dakota ratepayers, not that we're sort of
16 getting thrown in this bigger project that maybe
17 for this group of utilities works, but -- but as
18 individual utilities that serve our customers may
19 not be the lowest-cost option. Is that clear as
20 mud?

21 THE WITNESS: No. I think I understand
22 what you're looking for. I think one of the
23 complexities, I guess -- you know, again, I'll
24 maybe go back to the old days, and I know we're not
25 there anymore. But, again, you would look at

1 what's the cost, you know, to -- what's this
2 transmission cost for this particular site and
3 you'd maybe convert it to a dollars per kW, and,
4 therefore, you could then allocate, you know, if
5 Otter Tail is 20 percent, then 20 percent of those
6 costs, but that it was an equal evaluation in --
7 or, I mean, the allocation of the transmission
8 costs were equal. And I think maybe what you're
9 asking is because now we have a different way of
10 allocating transmission costs, is there a -- if you
11 build it in North Dakota versus South Dakota, does
12 it change the allocation of those costs? It's
13 not -- you're no longer just isolating the costs of
14 the project. Is that --

15 COMMISSIONER CLARK: Well, it is, and I'm
16 trying to get as much as I can in apples-to-apples
17 comparison for North Dakota ratepayers of the
18 transmission costs, Coyote option versus Big Stone
19 II option. And, you know, perhaps both for Otter
20 Tail and MDU -- I don't know if there's a
21 difference there, but it -- I mean, at least
22 thinking this through geographically, I can see how
23 the Big Stone II Plant is much more in the
24 footprint of Otter Tail than MDU, which is --
25 Coyote is much more in the footprint of MDU than

1 any of the Minnesota utilities, and in fact it's
2 very close to the footprint of Otter Tail.

3 THE WITNESS: Generally, I guess, what I
4 would think is, again, when you look at, you know,
5 the -- kind of the confusing factor of the MISO
6 cost allocation is this engineering calculation
7 that pushes costs into these pricing zones. And
8 generally, you know, when you hear MISO talk about
9 it, they'll say the costs stay -- are intended to
10 stay more local. And I think -- it would be my
11 opinion that, you know, Big Stone because it's, you
12 know, further away from North Dakota, actually the
13 transmission costs will be spread to other entities
14 outside of -- you know, outside of the Big Stone
15 project, but then outside of North Dakota more so
16 than if -- if you build the facility right in the
17 heart of North Dakota, the costs are going to be
18 assigned more to Otter Tail -- certainly more to
19 MDU than what the Big Stone costs -- Big Stone site
20 would be, and I'm guessing that there would be less
21 cost shifted outside of the participants in Big
22 Stone, and specifically with MDU.

23 An example would be some of the
24 preliminary stuff that we've seen from MISO, that
25 American Transmission Company gets assigned a piece

1 of the Big Stone outlet through that engineering
2 calculation. I'm not anticipating that that would
3 likely happen if a facility is in North Dakota.
4 Alliant West is another example. Again, as you
5 move the facility, you know, the benefits are going
6 to move with it, I guess -- or the cost allocation
7 is going to move with it. I don't know if that
8 makes any sense, but --

9 COMMISSIONER CLARK: It does. Okay.
10 Thanks.

11 JUDGE WAHL: Mr. Guerrero.

12 MR. GUERRERO: Thank you, Your Honor.

13 Q. (MR. GUERRERO CONTINUING) Just a couple
14 more questions. I believe you answered the
15 question, but I think it's important, I want to
16 clarify in terms of Commissioner Wefald's question
17 about a political benefit of moving from a 230 to a
18 345 and I want to get your answer on that again.
19 Was the decision to move from 230 to 345 a
20 political -- the result of a political decision by
21 the Big Stone Unit II co-owners and transmission
22 facilities to provide a carrot to Minnesota?

23 A. No. The original intent came from the
24 transmission planners saying we need to look at
25 building this bigger because it makes sense as part

1 of a regional plan. That was the original intent
2 of how that originated, it came from the planners.

3 COMMISSIONER CLARK: What about the final
4 decision?

5 THE WITNESS: The final decision?

6 COMMISSIONER CLARK: The original intent
7 is one thing. What sort of kicked it over the
8 line?

9 THE WITNESS: Well, I would certainly say
10 that's a factor, but I guess I'm probably not
11 necessarily the best person to answer that question
12 as I was not part of that.

13 Q. (MR. GUERRERO CONTINUING) And the
14 decision to provide -- the transmission decisions
15 are made by the transmission personnel; correct?

16 A. Yes, they have to be.

17 Q. And why is that, for the record?

18 A. The standards of conduct would -- again,
19 part of the Open Access Order 888 when that came
20 out required the separation of generation and
21 transmission. And, therefore, all decisions
22 related to make, you know, transmission reside in
23 the transmission function so that you can't use
24 that to benefit a generator unfairly.

25 Q. Just a couple more questions, Mr.

1 Rogelstad. Thank you. Has Otter Tail made
2 investment in North Dakota -- investment in
3 transmission in North Dakota recently?

4 A. Yes, we have.

5 Q. And what is that?

6 A. The most recent significant investment is
7 the Harvey-Glenboro 230 kV line.

8 Q. And what was the overall investment in
9 North Dakota -- or what was the overall investment
10 of the line?

11 A. Between -- I think between Xcel and Otter
12 Tail, it was 30 million dollars.

13 Q. Total?

14 A. Total, yes. We wish that we could build
15 those facilities for the same costs -- the Big
16 Stone facilities for those same costs, but costs
17 have significantly increased since that time.

18 Q. And you have plans -- or you, along with
19 other regional utilities, have plans to do more
20 transmission in North Dakota?

21 A. We certainly are looking at it. To say
22 that they're committed plans, you know, we haven't
23 filed any applications, but I do believe that that
24 will happen.

25 Q. Do you have an intent to do that?

1 A. I think we have an intent to the extent
2 that generators show up and can, you know, handle
3 the cost allocation of MISO and follow along the
4 rules, we'll build the transmission.

5 Q. And building transmission isn't
6 necessarily easy?

7 A. No.

8 Q. And you take it in baby steps, steps --
9 you take it as it comes?

10 A. We kind of take it as it comes. We wish
11 that we could go faster, there's no question, but
12 there are so many complications along the way that
13 it's not easy.

14 COMMISSIONER WEFALD: That Harvey-to-
15 Glenboro line went very quickly.

16 THE WITNESS: And it did. And I think
17 that is a real tribute to North Dakota and that,
18 you know, it really shows how projects should be
19 done, and, unfortunately, that doesn't work in all
20 locations. But I think going back to your question
21 on Harvey to Glenboro, that was a hundred-mile 230
22 kV facility in North Dakota, and the Big Stone
23 project is about 140 miles total when you add up
24 the Big Stone to Morris and Big Stone to Granite
25 Falls.

1 MR. GUERRERO: Thank you, Mr. Rogelstad.
2 No further questions.

3 JUDGE WAHL: Mr. Breen.

4 MS. LA SEUR: May I?

5 JUDGE WAHL: Miss La Seur.

6 CROSS-EXAMINATION

7 BY MS. LA SEUR:

8 Q. Just so I'm sure I understand what you're
9 saying here, it's your position that to get big
10 wind out of western North Dakota to market, we need
11 to build a 630 megawatt PRB coal plant in eastern
12 South Dakota?

13 A. I don't know -- I don't think my testimony
14 said that. I think what my testimony says is that
15 it provides benefit to the transmission system by
16 having generation that has the reactive capability
17 and the associated transmission will provide a
18 benefit to the transmission system for adding
19 additional generation.

20 MS. LA SEUR: Nothing further.

21 JUDGE WAHL: Mr. Binek?

22 MR. BINEK: I have no further questions.

23 JUDGE WAHL: All right. Thank you very
24 much, Mr. Rogelstad.

25 THE WITNESS: Thank you.

1 COMMISSIONER CLARK: May I ask something?

2 JUDGE WAHL: Of course.

3 **FURTHER EXAMINATION**

4 **BY COMMISSIONER CLARK:**

5 Q. Mr. Guerrero had asked about an
6 interconnection request had been made for Big Stone
7 II. Who makes the interconnection request to MISO?

8 A. I think in this particular case it was
9 actually Mark Rolfes on behalf of the Big Stone
10 coalition.

11 Q. Would it have made sense to make an
12 interconnection request for Coyote so that the
13 Commission could have a more --

14 A. I think the big thing is when you go to
15 the level of study -- you know, to an
16 interconnection study, you're spending hundreds of
17 thousands of dollars on transmission studies.

18 Q. Is that reasonable given a 1.4-billion-
19 dollar investment, though?

20 A. I guess from a -- I would comment from a
21 transmission perspective, that what I've seen other
22 people do is you do more of the screening level
23 study for the sites, and that's what was done.
24 Again, for developing the transmission plans for
25 Big Stone, we relied on the Lignite Vision 21 type

1 of screening study to provide input into that. I
2 think it also creates a problem -- I mean, from a
3 transmission perspective again, to have multiple
4 interconnection requests sitting in the queue at
5 the time for which only one project will go forward
6 is clogging the queue in a sense, as well. So from
7 a transmission perspective, I would prefer that a
8 generator do their feasibility study to determine
9 approximate costs and then you then enter the queue
10 and get your detailed analysis that finalizes it.

11 Q. And then just one final question. You had
12 mentioned this boost in the middle which helps
13 the system reliability --

14 COMMISSIONER CRAMER: Transient stability.

15 Q. (COMMISSIONER CLARK CONTINUING) --
16 transient stability.

17 COMMISSIONER CLARK: Thank you,
18 Commissioner Cramer.

19 COMMISSIONER CRAMER: Very good.

20 Q. (COMMISSIONER CLARK CONTINUING) Does that
21 transient stability, that boost in the middle,
22 exist whether or not the line is upgraded from 230
23 to 345?

24 A. I guess it's our intent -- I think there
25 is some -- actually, there is some benefit with 230

1 only, but I think we believe it will be better with
2 345.

3 Q. Why is that? I would think that -- I
4 mean, doesn't the boost come from the generator,
5 itself, as opposed to just the incremental excess?

6 A. Well, it actually comes from both. Again,
7 the more lines that you have, the stronger the
8 system is going to be, and so we're building, I use
9 the term, a stiffer system by building 345 as
10 opposed to 230. Therefore, the system can't swing
11 around as much. And, granted, you know, the
12 generator, itself, alone does -- that's the one
13 providing the reactive power, but the transmission
14 system -- what happens is -- well -- yeah, I'm
15 going to start giggling again.

16 COMMISSIONER CRAMER: You're not talking
17 to me.

18 THE WITNESS: What happens is there's
19 reactive -- these reactive losses on the system and
20 the Big Stone generator provides reactive power to
21 do that. The more transmission that you build
22 reduces those reactive losses so there's less need
23 for reactive power, and so by building it bigger,
24 it's going to have an effect of reducing those
25 reactive losses.

1 Q. (COMMISSIONER CLARK CONTINUING) But you
2 did testify, also, the system would be perfectly
3 safe, reliable at 230? I mean, Big Stone II would
4 work?

5 A. We've demonstrated that if there -- if we
6 factored in no other regional benefits or no other
7 needs, the 230 plan would work.

8 COMMISSIONER CLARK: Thank you.

9 JUDGE WAHL: Any further questions from
10 the Commission? Mr. Guerrero, followup?

11 MR. GUERRERO: No. Thank you.

12 JUDGE WAHL: Miss La Seur, anything?

13 MS. LA SEUR: No.

14 JUDGE WAHL: Mr. Binek?

15 MR. BINEK: No.

16 JUDGE WAHL: All right. Now, Mr.
17 Rogelstad, thank you very much.

18 THE WITNESS: Thank you.

19 MR. GUERRERO: If I may, Your Honor,
20 317 -- OTP/MDU 317 is marked as trade secret, and
21 so to the extent that that document is in the trial
22 books that we've provided the Commission and Your
23 Honor, that should be pulled and filed in a sealed
24 envelope.

25 COMMISSIONER WEFALD: What is it?

1 MR. GUERRERO: 317.

2 COMMISSIONER WEFALD: What is it under?
3 What tab?

4 MR. GUERRERO: Oh, tab 11.

5 JUDGE WAHL: All right. Back to you, Mr.
6 Kuntz, I believe.

7 MR. KUNTZ: Thank you, Your Honor. MDU
8 calls Andrea Stomberg.

9 (Discussion had off the record.)

10 JUDGE WAHL: Your witness, Mr. Kuntz, is?

11 MR. KUNTZ: Andrea Stomberg. Please state
12 your name and business address.

13 JUDGE WAHL: Just a minute. I need to --

14 MR. KUNTZ: Oh, I'm sorry.

15 JUDGE WAHL: I need to swear her. Ms.
16 Stomberg, you get the same treatment as everybody
17 else. As you have heard me advise previous
18 witnesses, your testimony is required to be under
19 oath and I'm required by law to advise you
20 regarding perjury before administering the oath.
21 Perjury is a false statement of material fact which
22 you do not believe to be true, in other words,
23 generally speaking, a lie. In North Dakota perjury
24 is a Class C felony, punishable by a fine up to
25 \$5,000, imprisonment for a period of up to five

1 years, or both. Will you raise your right hand,
2 please?

3 (Witness sworn.)

4 JUDGE WAHL: Mr. Kuntz.

5 **ANDREA STOMBERG,**

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

8 **DIRECT EXAMINATION**

9 **BY MR. KUNTZ:**

10 Q. Now can you state your name and business
11 address?

12 A. Now I can. My name is Andrea Stomberg.
13 My business address is 400 North Fourth Street in
14 Bismarck, North Dakota.

15 Q. Whom are you employed by?

16 A. Montana-Dakota Utilities Company.

17 Q. What's your position with Montana-Dakota?

18 A. Vice president of electric supply.

19 Q. Can you give the Commission your
20 educational and employment background?

21 A. I have a bachelor's degree in geology from
22 the University of Washington, a master's in soil
23 chemistry from Oregon State, and a business degree.
24 I worked for North American Coal for ten years
25 before I came over to Montana-Dakota Utilities,

1 where I worked in the environmental area for about
2 15 years till I assumed this position.

3 Q. And what are your responsibilities in your
4 current position?

5 A. I oversee power production transmission,
6 systems operations and communications.

7 Q. And have you caused to be filed prefiled
8 testimony in this proceeding, Ms. Stomberg?

9 A. I have.

10 Q. In front of you should be MDU Exhibit 203.
11 Is that a copy of your prefiled direct testimony?

12 A. Yes, it is.

13 Q. And do you have any corrections or
14 additions to make to that testimony?

15 A. I have one correction I would like to
16 make, and that is on page -- well, let me find it.
17 It's on page 3, lines 7 and 8. The sentence says,
18 "Montana-Dakota has also contracted for the output
19 of a 31.5 megawatt wind farm to be constructed in
20 South Dakota." That was true at the time this was
21 written, and since then the developer has failed to
22 produce and that is no longer a viable project.

23 Q. So is Montana-Dakota then engaged in any
24 wind projects at this point, either through a PPA
25 or ownership?

1 A. We are developing a 20 megawatt wind farm
2 in Montana, which I will discuss later.

3 MR. KUNTZ: We would move admission of MDU
4 Exhibit 203.

5 JUDGE WAHL: Mr. Breen.

6 MR. BREEN: No objection.

7 JUDGE WAHL: Mr. Binek.

8 MR. BINEK: No objection.

9 JUDGE WAHL: MDU Exhibit 203 is received.

10 Q. (MR. KUNTZ CONTINUING) Ms. Stomberg, can
11 you provide the Commission with a summary of your
12 testimony?

13 A. Certainly. Montana-Dakota, as you know,
14 has an obligation to serve our electric customers
15 with reliable and reasonably priced electricity,
16 and we've done this for over 75 years in this area.
17 We're in a situation where our forecasted loads
18 will soon exceed our generation capability.

19 Modeling conducted in support of our
20 integrated resource plan indicates Big Stone II is
21 financially the best alternative to meet the
22 growing electrical demand of our customers and has
23 other features that support our belief that
24 operationally this plant is also the best decision.

25 Approximately two-thirds of our load is in

1 our integrated system -- sorry -- in our integrated
2 system is in North Dakota. This is served by a
3 variety of sources, including owned capacity,
4 generation of coal and gas and gas and oil peaking.
5 We also contract capacity, we purchase energy in
6 the MISO market, and, as I mentioned, we are
7 developing a 20 megawatt wind farm with a 2008
8 on-line date. Importantly, we had a 66 megawatt
9 contract, as you've heard from other witnesses, for
10 baseload coal that expired in 2006, and that is the
11 main driver of our needs.

12 There was supposed to be some text
13 associated with this. Let me see if it's there.
14 I'm sorry. Apparently that did not get onto the
15 slides.

16 This is a graph of our load and capability
17 comparison. You can see our net generation is in
18 the blue, our peak load obligation forecast is
19 shown in the red, and you can see a deficit
20 starting -- well, actually it started when we lost
21 the contract in '06, but capacity contracts have
22 made up that deficit through 2012.

23 Our forecast that we prepare every year
24 indicates that our peak load obligation grows five
25 to six megawatts every year. And that is what's

1 driving that deficit that you see there on that
2 graph.

3 Montana-Dakota as part of our load
4 forecast and as part of our capabilities includes
5 about 19 megawatts of demand side management that
6 has reduced our forecast load, and that is also
7 reflected in these curves.

8 As we faced the loss of our contract with
9 Basin, we considered our supply options. We asked
10 numerable times, because we know every utility's
11 situation does change, whether or not Basin would
12 be willing to extend all or part of that capacity
13 to us. They were unwilling to do that. As you are
14 aware, and we will discuss, we were involved in
15 looking at a lignite plant at Gascoyne. We looked
16 at gas turbines. We were aware of activity at Big
17 Stone II, we considered that. We issued a request
18 for proposal for supply and, of course, the MISO
19 market, an energy market, was a possible supply for
20 energy. Duane Steen will further discuss
21 particularly the Gascoyne plant and the RFP, so
22 you'll get some more details from him later.

23 We also do capacity expansion modeling as
24 part of the integrated resource plan that we submit
25 routinely to the Commission. In 2003 the plan

1 selected gas turbines. We rejected that. Again,
2 that was a model. I'm sorry. That was a model
3 that selected gas turbines. Models, of course,
4 inform a decision. They do not make a decision.
5 We did not consider gas turbines an optimal choice
6 for our customers because of fuel pricing and
7 availability risk.

8 In 2006 we had a third party, who actually
9 will be speaking later, too, do some modeling,
10 selecting a coal baseload from a suite of
11 possibilities including lignite, IGCC, combined
12 cycled gas, simple cycle renewable, and DSM. This
13 modeling confirmed the selection of Big Stone II as
14 the least cost and the best resource for our
15 customers.

16 Again to reiterate, our integrated
17 resource planning indicates ownership of a 19
18 percent share of the planned Big Stone Plant as the
19 least-cost option, and this will allow us to
20 continue our reliable service to our customers.

21 Some of the reasons we believe that Big
22 Stone II is the best choice, again, natural gas
23 pricing is a concern. We don't want to look at
24 peaking plants to serve that need or gas baseload.
25 RFP responses, which will be discussed later, were

1 inadequate we felt. MISO energy pricing does not
2 provide capacity and is -- the pricing is variable
3 and uncertain.

4 The Gascoyne plant at the size that we
5 were looking at and that would fill our needs,
6 considerably more expensive than Big Stone II. We
7 again capture an economy of scale by being a
8 participant in Big Stone II. We have multiple
9 partners with a great deal of experience in
10 building and operating coal plants, and that gives
11 us comfort that this will be a well-run operated
12 plant.

13 And there are associated cost savings to
14 Big Stone I that we will capture with the
15 construction of Big Stone II. As we've heard, it's
16 a supercritical boiler, which is highly efficient,
17 commercially proven, and the back-end controls
18 yield low emissions and allow us to clean emissions
19 from Big Stone I at the same time.

20 We believe Big Stone II is the clear first
21 choice and this plant should be determined prudent
22 for our customers. That concludes my summary.

23 Q. Ms. Stomberg, I would like to touch on a
24 few things that have come up up to this point in
25 the hearing. Particularly, I would like to talk

1 about the site study. What was the status of the
2 site study that had been done by the Big Stone
3 participants at the time that Montana-Dakota became
4 involved in the project?

5 A. Well, the siting study which has been
6 discussed here in detail had been conducted prior
7 to our involvement in Big Stone II. I would -- I'm
8 not sure exactly what you mean by the status of
9 that. I could speak to that in that my thoughts as
10 we discussed this were that I believe the single
11 biggest impediment to any expansion at Coyote is
12 the as-yet unsettled air quality issues that are
13 pending before EPA and the State. At the time that
14 this project was looked at I think it would have
15 been impossible to site a power plant in the coal
16 regions of North Dakota because of concerns over
17 modeled exceedences of SO2 in the South Unit of the
18 park. I believe that issue is being settled, but
19 it is still unsettled, as I understand it, and I
20 don't know that today you could permit a plant at
21 that location because of air quality issues.
22 Water, transmission, other things notwithstanding,
23 I don't think it's possible.

24 Q. So even though Montana-Dakota wasn't
25 involved in an initial site study, you were

1 convinced that the Coyote site was not a viable
2 option at that point for Montana-Dakota in seeking
3 additional generation resources?

4 A. Absolutely. I don't think anyplace in the
5 coal field would have worked very well.

6 Q. What about -- there has been some
7 discussion about concern about rail.
8 Montana-Dakota was aware that the fuel for Big
9 Stone II would be delivered by rail; is that
10 correct?

11 A. Absolutely, yes.

12 Q. And was there a concern from Montana-
13 Dakota's standpoint in light of the delivery
14 problems in 2005, 2006 that have been spoken about
15 regarding Big Stone I, was that a concern in terms
16 of Montana-Dakota's participation in Big Stone II?

17 A. Well, it's certainly something that we're
18 quite aware of. We were -- we were involved in the
19 issues in '06 when we had to reduce our generation
20 at Big Stone because of coal delivery issues. But
21 I think we need to look back and think about the
22 history and that issue and some other issues
23 besides I would like to speak to. Big Stone I
24 received coal from Gascoyne for a number of years
25 and used two rail -- two trains basically. We had

1 the same number of railcars actually serving Big
2 Stone I after we moved our source to the Powder
3 River Basin. So we made a business decision to
4 kind of push the envelope. We weren't operating
5 with the optimal number of cars, I don't believe,
6 but we got by for many, many years with the
7 cooperation of the railroad and because there
8 weren't hiccups in the system. The system hiccuped
9 in '06, and although it was messy, the system
10 worked. We worked with you people, we worked with
11 the South Dakota commissions, we worked with our
12 senators, we work with BNSF. We got another rail
13 -- set of railcars. They gave us another
14 locomotive and we solved that problem. It was
15 messy, but the system worked. And it had worked
16 for many years.

17 And so, you know, I think we need to look
18 beyond that and say, okay, yeah, there was a hiccup
19 in the system. Our customers benefited for years
20 from not having this third train. Obviously the
21 time has come where the markets are at what they
22 are in the Powder River Basin, we need that
23 additional train. We've got it now. So I think
24 that our long-term coal supply at Big Stone should
25 be good.

1 The other thing that I think is very
2 important is that you can be captive to a rail line
3 or you can be captive to a mine, and when you have
4 a mine mouth plant, you have to burn what they give
5 you. And if the mine moves into an area of
6 suboptimal quality coal for your boiler -- for
7 instance, they move into an area of additional
8 sodium -- your customers are hurt because you have
9 difficulty burning that fuel, or you have a
10 hundred-year storm and your pit fills up with
11 water, you've got wet coal, you have coal-handling
12 problems, you're captive to what that mine can give
13 you.

14 If you've got rail, sure, you have issues
15 on being captive to a rail line, but one of the
16 nice things about having access to Powder River
17 Basin coal is that you can look at eight or ten
18 sources of different quality of coal for long-term
19 contracts that fit what your boiler can optimally
20 use, and that's what we do at Big Stone I and what
21 we will do at Big Stone II.

22 So there's downsides to mine mouth,
23 there's downsides to rail. At Montana-Dakota we
24 are actually fairly evenly split between having our
25 coal delivered by rail, by truck and mine mouth, we

1 have lignite and subbituminous. We think our risks
2 are pretty well covered by diversity. Long answer,
3 sorry, but I think it's an important point.

4 Q. Did you have any thoughts regarding the
5 transmission issue from Big Stone II that were
6 discussed by Mr. Rogelstad versus transmission
7 problems that would be encountered from a plant,
8 say, at Coyote site?

9 A. Well, we're kind of unique among the
10 partners in Big Stone II in that our load is in
11 North and South Dakota and Montana. We don't need
12 to have transmission going into Minnesota. So
13 we're just a little different and we approach that
14 transmission a little differently. However, there
15 are huge benefits to our customers from being part
16 of this larger plant in South Dakota, and part of
17 the offsetting part of that is the transmission is
18 a little more complicated than it might be if the
19 transmission were simply coming to serve North
20 Dakota load.

21 There was a lot of discussion and, believe
22 me, my transmission engineers giggle a lot when
23 they talk to me and I don't really want to get into
24 the weeds, but there's been a lot of discussion
25 about paying for the delta in the 230 to 345

1 upgrade, and we are -- we are evaluating the
2 economics of that and the benefit to our customers,
3 and there may be indeed benefits to our customers
4 from that upgrade route. We are still in the
5 process of evaluating the complex studies that are
6 generated by the transmission group in order to
7 make that decision.

8 Q. Even if a site were built, say, at Coyote,
9 though, just to serve Montana-Dakota's load in
10 North and South Dakota, Montana, there would still
11 be interconnection costs associated with that sort
12 of transmission into the MISO grid, would there
13 not?

14 A. Oh, absolutely. Interconnection and
15 delivery costs, yes.

16 Q. So even though the plantsite might be
17 closer, you still have some of the same
18 interconnection costs associated with that
19 plantsite?

20 A. Certainly.

21 MR. KUNTZ: That completes our direct
22 examination of Ms. Stomberg. We tender the witness
23 for cross-examination.

24 JUDGE WAHL: All right. This is almost
25 perfect timing, Mr. Kuntz. We'll be in recess

1 until approximately eleven o'clock.

2 (Recess taken at 9:46 a.m. to 11:00 a.m.)

3 JUDGE WAHL: All right. We are on the
4 record, resuming from the recess at 9:50. It is
5 approximately eleven o'clock. I understand,
6 counsel, we are proceeding with the testimony of
7 Mr. Schlissel out of order.

8 MR. BREEN: Agreed.

9 JUDGE WAHL: All right. You may proceed,
10 Mr. Breen or Ms. La Seur.

11 MR. BREEN: Ms. La Seur.

12 JUDGE WAHL: Ms. La Seur, when you're
13 ready.

14 COMMISSIONER WEFALD: We're not going to
15 do the cross-examination of Andrea?

16 JUDGE WAHL: No.

17 MR. BREEN: We are, but not now.

18 JUDGE WAHL: We're proceeding out of
19 order --

20 COMMISSIONER WEFALD: Okay.

21 JUDGE WAHL: -- pursuant to the
22 stipulation of counsel, I assume.

23 MR. BREEN: Yes.

24 JUDGE WAHL: Mr. Schlissel, am I
25 pronouncing your name correctly?

1 THE WITNESS: You're doing great for
2 somebody who's probably had it for the first time.

3 JUDGE WAHL: Close enough, in any event.
4 Mr. Schlissel, as you are probably well-aware, your
5 testimony is required to be under oath and in North
6 Dakota I'm required by law to advise you regarding
7 perjury before administering the oath. Perjury is
8 a false statement of material fact which you do not
9 believe to be true. That's lawyer talk for a lie.
10 In North Dakota perjury is a Class C felony,
11 punishable by a fine up to \$5,000, imprisonment for
12 a period of up to five years, or both. Will you
13 raise your right hand, please.

14 (Witness sworn.)

15 JUDGE WAHL: Miss La Seur.

16 MS. LA SEUR: Thank you, Judge.

17 **DAVID A. SCHLISSEL,**
18 being first duly sworn, was examined and testified
19 as follows:

20 **DIRECT EXAMINATION**

21 **BY MS. LA SEUR:**

22 Q. Mr. Schlissel, would you please state your
23 full name for the record?

24 A. David middle initial A., last name
25 Schlissel, S-c-h-l-i-s-s-e-l.

1 Q. And would you please state your
2 educational qualifications?

3 A. I have a bachelor of science degree in
4 aeronautical engineering from the Massachusetts
5 Institute of Technology. I have a master's of
6 science degree in the same subject from Stanford
7 University. I also have a juris doctorate from
8 Stanford University School of Law, and, finally, I
9 have studied nuclear power and project management
10 at MIT in a nondegreed program.

11 Q. And would you also then state your
12 professional qualifications relevant to today's
13 proceeding?

14 A. I've been an expert for 33 years on issues
15 related to the design, construction, operation of
16 power plants and electric systems.

17 Q. And who is your employer?

18 A. I'm a senior consultant at Synapse Energy
19 Economics in Cambridge, Massachusetts.

20 Q. Have you prepared prefiled direct
21 testimony in this docket?

22 A. I have.

23 Q. And did you prepare this testimony on your
24 own or with others?

25 A. The testimony was the result of the work

1 of eight individuals at Synapse. They're listed in
2 the testimony. I'm presenting the results of our
3 analyses. We've been involved in looking at the
4 Big Stone project since roughly September of 19 --
5 September of 2005.

6 Q. Do you have any errata that you would like
7 to bring to our attention today?

8 A. I did find one typo. It's on page 3, line
9 9, and the line should read, "operating performance
10 and fuel cost; and future restrictions on CO2."

11 Q. Any other errata?

12 A. That was the only one I found.

13 MS. LA SEUR: I'd like to then offer
14 Intervenors' Exhibits 1, 2, 3, 4 and 5, noting that
15 the direct testimony of David Schlissel includes
16 six attachments that were also prefiled.

17 JUDGE WAHL: Mr. Guerrero.

18 MR. KUNTZ: Your Honor --

19 JUDGE WAHL: Mr. Kuntz.

20 MR. KUNTZ: Now, I assume we're talking
21 about the redacted copy of Mr. Schlissel's
22 testimony reflecting the judge's order.

23 JUDGE WAHL: Yes.

24 MR. KUNTZ: And I would also reserve our
25 continued objection to the hearsay and speculation

1 that we've previously provided. With all due
2 respect to the ALJ's order, we disagree with the
3 ruling and preserve our objection, but without
4 arguing that again today.

5 JUDGE WAHL: Your -- the objection is
6 noted for the record.

7 MR. GUERRERO: One additional
8 clarification, Your Honor. Yesterday I mentioned
9 that we do have copies of the version as redacted
10 pursuant to your order, and I can pass that out.
11 It may be helpful for the Commission and parties to
12 have that in front of them as we go through the
13 testimony.

14 JUDGE WAHL: I really think it would be,
15 and it would be good to do that now.

16 MR. GUERRERO: And, of course, it remains
17 subject to Your Honor's check on the verification
18 that we've accurately marked it according to your
19 order, but we certainly attempted to do so. And
20 subject to Mr. Kuntz's remarks, I assume when Ms.
21 La Seur was offering the testimony, that was the
22 version she was attempting to offer.

23 MS. LA SEUR: That's right.

24 JUDGE WAHL: Yes.

25 MS. LA SEUR: And it is our understanding

1 that there is no confidential information, that the
2 agreement has been reached that these are not to be
3 considered confidential filings at this point.

4 JUDGE WAHL: That's also my recollection.
5 Maybe we should confirm that. Mr. Kuntz.

6 MR. KUNTZ: Montana-Dakota agrees.

7 JUDGE WAHL: Mr. Guerrero.

8 MR. GUERRERO: That's correct.

9 JUDGE WAHL: All right. Mr. -- I'm sorry.
10 I got in the habit. Ms. La Seur, when you're
11 ready.

12 Q. (MS. LA SEUR CONTINUING) And if we're all
13 ready with the paperwork, Mr. Schlissel, would you
14 please present your summary.

15 A. Okay. Good morning, Your Honors. My
16 overall conclusion is that the Commission should
17 reject the request by Otter Tail Power and
18 Montana-Dakota Utilities for advance determination
19 of prudence for their participation in Big Stone
20 II. This conclusion is based on a number of
21 findings. OTP and MDU have not adequately
22 considered the risks associated with building a new
23 coal-fired generating unit in their modeling and
24 economic analyses.

25 The most significant uncertainties and

1 risks associated with the proposed Big Stone II
2 project are the potential for further increases in
3 the project's capital cost; the potential for fuel
4 supply disruptions that could affect plant
5 operating performance and fuel costs, and future
6 restrictions on CO2 emissions.

7 In particular, it is vitally important for
8 OTP and MDU to justify their continuing
9 participation in Big Stone II in light of coming
10 federal regulation of greenhouse gas emissions. It
11 would be imprudent for each company to continue its
12 participation in the project without doing so.

13 Also, OTP and MDU have not shown that
14 their demand for electricity cannot be met more
15 cost effectively through alternatives, including
16 renewable energy resources, energy conservation and
17 load management measures than through Big Stone II.
18 And, finally, the economic and modeling analyses
19 prepared by OTP and MDU are biased in favor of Big
20 Stone II.

21 Both companies have failed to consider the
22 potential for further increases in the cost of Big
23 Stone II. The Big Stone II co-owners filed
24 testimony last fall in Minnesota. I believe it was
25 Mr. Rolfes and another witness that emphasized that

1 major power plant construction commodities have
2 increased 30 to 80 percent in the past two years,
3 that the labor escalation rate has doubled. Other
4 utilities have noted similar increases in key power
5 plant commodities and design and construction
6 resources.

7 For example, Duke Energy Carolinas
8 increased the estimated cost of its Cliffside
9 project by 47 percent in October of 2006. Duke's
10 testimony supporting the increase was that its
11 review of power plant capital costs showed that
12 those costs had increased by approximately 90 to
13 100 percent since 2002.

14 OTP and MDU have failed to consider the
15 potential for federal regulation of greenhouse gas
16 emissions. It is prudent to expect that a policy
17 to address climate change will be implemented in
18 the U.S. in the near future in a way that should be
19 of concern to coal-dependent utilities in the
20 Midwest. The way we like to say it is it's not a
21 matter of if, it's a matter of when.

22 If Big Stone II is built, it would emit
23 more than 4.7 million tons of CO2 into the
24 atmosphere each year for the next 60 years or so.
25 If Big Stone II is built, carbon regulation is not

1 an issue that can reasonably be dealt with in the
2 future once the timing and stringency of the
3 regulation is known. There are currently no known
4 commercial or economical methods for post-
5 combustion removal of carbon dioxide from
6 supercritical pulverized coal plants.

7 It is imprudent to ignore the risk of
8 future U.S. carbon regulations. However, OTP and
9 MDU have done so.

10 A number -- as you can see from page 31
11 and 32 of my testimony, a number of increasingly
12 stringent legislative proposals for mandatory
13 emissions reductions have been introduced in the
14 current U.S. Congress. Many of these proposals
15 have as their ultimate goal reductions in CO2
16 emissions by 2050 of 60 to 80 percent from current
17 levels.

18 OTP and MDU already are heavily dependent
19 upon coal-fired generation. It is not prudent in
20 this context to continue this heavy dependence.

21 The failure by OTP and MDU to accept that
22 there will be significant restrictions on future
23 greenhouse gas emissions and to reflect that
24 potential for those restrictions in their resource
25 planning is not prudent.

1 Specific flaws in OTP's modeling analyses.
2 OTP used an obsolete and outdated model in its
3 resource planning studies for Big Stone II. I
4 believe you already spoke to Mr. Morlock, but it's
5 an IRP-Manager model. OTP has acknowledged that
6 the model has significant limitations and, in fact,
7 is in the process of changing to another model.
8 OTP told us last fall that it was the only nation
9 -- only utility in the nation to continue to use
10 this model in recent years.

11 The model optimizes for lowest cost based
12 on a defined predictable future without assessment
13 of uncertainty or risk. OTP did not conduct any
14 sensitivity analyses based on variations in such
15 critical input assumptions as the cost of Big Stone
16 II, fuel costs or limitations in plant performance
17 due to fuel supply disruptions. OTP did not model
18 any greenhouse gas regulation costs.

19 OTP assumed a January 1, 2011, commercial
20 operation date for Big Stone II in its modeling
21 analyses. The plant is now not scheduled to start
22 commercial operations before late spring or summer
23 2012 at the earliest, and I understand there was
24 some discussion yesterday of possibly 2013.

25 As a result, it's my recommendation that

1 the North Dakota Commission not rely on the results
2 of OTP's modeling to find that the company's
3 participation in the Big Stone II project is
4 prudent.

5 Flaws in MDU's modeling analyses. Prior
6 to June 2006, or thereabouts, MDU had not prepared
7 an economic analysis that showed that Big Stone II
8 was the lowest-cost options for its ratepayers or
9 when it considered whether to participate in the
10 Big Stone II project.

11 The company told us in South Dakota and in
12 Minnesota that they would do something called
13 best-cost planning, which was not the same as
14 least-cost planning. MDU has told us that it
15 estimates that the addition of Big Stone II will
16 increase its residential customer rates by
17 approximately 20 percent.

18 The modeling done by MDU witness Heidell
19 in this proceeding is flawed. That modeling did
20 not consider any risks related to fuel prices, load
21 deviations, environmental regulations, MISO market
22 design, or a range of other factors. In
23 particular, it did not include in its modeling any
24 costs associated with mandated restrictions on
25 greenhouse gas emissions.

1 As part of work we did for the proceeding
2 in Minnesota, we reran MDU's Strategist model. The
3 results showed that the model picked zero megawatts
4 of Big Stone II if the capital cost was increased
5 by 10 percent or if the amount of cost-effective
6 DSM was increased.

7 The results of MDU's modeling show that
8 Big Stone II is marginal. The plant -- in the
9 scenario where there were no off-system sales, the
10 plant has fairly low capacity factors and it
11 appears to us that the potential for making
12 profitable off-system sales is one reason driving
13 MDU's participation in the project.

14 Mr. Rolfes presented two economic studies.
15 They both included bus bar comparisons among a
16 number of alternatives. To be honest, I was
17 surprised and shocked that the company is relying
18 on these studies. We presented a bus bar analysis
19 in South Dakota, and the response of the Big Stone
20 II co-owners, including MDU and OTP, is that
21 relying on a simple dollar-per-megawatt bus bar
22 cost comparison of dissimilar projects is
23 misleading and violates the most basic principles
24 of integrated resource planning. Yet now they want
25 you, Commissioners, to accept that their

1 participation in the Big Stone II project is
2 prudent based on the results of such comparison.

3 Mr. Uggerud in his prefiled testimony in
4 this proceeding in fact said that OTP decided to
5 participate in Big Stone II because of its low
6 busbar cost, but that's directly contrary to what
7 they said in South Dakota.

8 Neither of the two studies presented by
9 Mr. Rolfes compared Big Stone II to demand side
10 management and/or renewable alternatives in a
11 complete and unbiased manner. The first study, the
12 September 2005 generation alternatives study, did
13 not consider DSM at all. The same study assumed
14 that wind resources had no capacity value and,
15 therefore, required a hundred percent backup. This
16 is contrary to OTP's own assumption that credits
17 wind with an approximate 15 percent capacity value
18 in summer and 20 percent in the winter. The 2005
19 generation alternatives study also incorrectly
20 calculated the value of the wind production tax
21 credit, nor did it reflect the current estimated
22 cost of Big Stone II or any greenhouse gas emission
23 costs.

24 The second study, the Revised Analysis of
25 Baseload Generation Alternatives, also is flawed

1 and biased. It did not examine DSM or hydro at
2 all. It rejected wind as a baseload resource and
3 considered it only as a nonfirm resource. It
4 assumed no continuation of the federal wind
5 production tax credit. It did not reflect the
6 roughly 199-million-dollar capital cost that Black
7 & Veatch has estimated will result from the
8 short-term spending reduction plan that was adopted
9 by the co-owners in August 2006.

10 However, the CO2 cost break-even analysis
11 presented in this study shows that other options
12 other than Big Stone II, that is, would be more
13 economic than Big Stone II at CO2 costs that are
14 significantly lower than the costs that we believe
15 are reasonable. And that's it. Thank you.

16 Q. I have a few questions. Mr. Schlissel, is
17 it reasonable to expect that Big Stone II would be
18 grandfathered into any future carbon regulation?

19 A. No. Obviously the terms of the future
20 regulations are uncertain at this time because the
21 bills haven't -- bill hasn't been passed, and there
22 are a number of different proposals before
23 Congress. But the goal of the greenhouse gas
24 regulation proposals is to reduce emissions of CO2
25 in the atmosphere. As I mentioned during my

1 summary, this developing consensus that by the
2 middle of the century, 2050, CO2 emissions have to
3 be reduced by roughly 60 to 80 percent from current
4 levels. Grandfathering a new supercritical or
5 ultra supercritical pulverized coal plant would be
6 directly contrary to that.

7 More significantly, one of the
8 organizations comprised of utilities and leaders
9 from industry called the National Commission on
10 Energy Policy recently revised its proposals to
11 Congress, and one of them was specifically that the
12 only plants that would be grandfathered -- that
13 should be grandfathered from any regulations are
14 those plants that are actually going to do carbon
15 capturing sequestration when they're built. None
16 of this -- plants are called CCS ready, but that
17 just means that you can add the equipment sometime
18 down the road. It doesn't mean you can turn a
19 switch. The National Commission on Energy Policy's
20 view, and I think they're right, is that it should
21 be -- any grandfathering should be limited to
22 plants that can do it now.

23 Q. There have been several witnesses over the
24 last day and a half who have made reference to your
25 prefiled testimony and I would like to ask for your

1 response to some of those comments that were
2 directed at what you've filed with this Commission.

3 First, there was Mr. Uggerud's comment
4 that or his --

5 MR. GUERRERO: I would like to ask a
6 question, if I could, Your Honor. Are we doing
7 further direct testimony with Mr. Schlissel right
8 now or is this rebuttal testimony?

9 JUDGE WAHL: Oh, I think it's -- we're
10 following the practice that I think you have
11 followed previously, and that is tying up as part
12 of the direct the evidence that has been offered
13 previously, and I think that's helpful to the
14 Commissioners. Do you have a specific objection,
15 Mr. Guerrero?

16 MR. GUERRERO: My understanding what
17 we've -- at least what I've tried to do, Your
18 Honor, was to follow up with additional rebuttal
19 testimony, not with additional direct testimony.
20 This sounds like additional direct testimony to me,
21 so I would object, but --

22 JUDGE WAHL: The objection is overruled
23 for the record. I think it's more efficient and
24 more useful to the Commissioners to proceed in this
25 way.

1 MR. GUERRERO: Thank you.

2 MS. LA SEUR: Thank you, Your Honor.

3 Q. (MS. LA SEUR CONTINUING) I would like to
4 refer to Mr. Uggerud's testimony that OTP
5 calculated or modeled and applied carbon value of
6 \$10 per ton to every ton emitted and held other
7 costs constant and found that it was still cheaper
8 to do BS II. My question to you is, is this
9 description of OTP's modeling consistent with the
10 modeling you have done?

11 A. Well, we did not model OTP. We wanted to
12 model OTP in Minnesota, but we couldn't even get a
13 copy of the vendor manual for the IRP-Manager
14 because it's so out of date and it's not being
15 supported anymore.

16 In terms of what Mr. Uggerud is talking
17 about, I don't recall that OTP modeled any CO2
18 cost. They did do some modeling to -- in Minnesota
19 to reflect the Minnesota externality values. But
20 the Minnesota externality values for a power plant
21 located in South Dakota, the carbon cost is zero
22 dollars per ton. I'm not aware of any modeling
23 with \$10 -- a \$10 price.

24 Q. Then I'd like to ask you a question about
25 Mr. Greig's testimony. His language, and I'm

1 paraphrasing here, he said the cost of buying into
2 wind generation; in other words, purchasing it from
3 another party as opposed to building that wind farm
4 and owning it as a utility, that the costs are very
5 similar. And I would like your response to that.

6 A. Well, I think it would depend on the
7 project and the utility. I mean, I would guess
8 that buying the equipment is probably the same cost
9 whether it's a merchant or utility. The labor is
10 probably similar. It's probably financing is where
11 you find the difference, is that the utilities
12 find -- the utility may have a different capital
13 structure, you know, balance of equity and debt
14 than a merchant company would have. So I think
15 that the answer to the question would really be
16 utility and site specific.

17 We've done a number of evaluations where
18 utilities owning wind -- I'm sorry -- where if the
19 utility owned the wind, it would be less expensive
20 and in other cases buying from a merchant was less
21 expensive. It really is very site specific, but
22 should be considered. I mean, both alternatives
23 need to be considered in order to determine which
24 is the case with any specific project.

25 Q. We've also heard testimony from Mr. Rolfes

1 that there is no cost disadvantage to retrofit Big
2 Stone II for carbon capture rather than building it
3 in. Would you agree?

4 A. No. Basically the Big Stone II co-owners
5 have said -- and I don't know if I cite it in this
6 testimony, it's certainly in our Minnesota
7 testimony -- that there's currently no known
8 technology for economically removing CO2 and
9 sequestering it. We agree. So I don't -- we don't
10 know what technology is coming down the road that
11 will hopefully eventually be able to do that. So
12 it's not possible to say whether in fact it will be
13 less expensive now to do it than later.

14 The Massachusetts Institute of Technology
15 in March issued a big report on the future of coal.
16 It's available on the MIT website. And their
17 conclusion is that carbon capture and sequestration
18 will be somewhere in the range of \$30 per ton, and
19 I think that's 1996 dollars, for a new plant and
20 that you can't tell what it's going to cost to
21 retrofit, that it may be much higher because --
22 depends on the plant -- its plant design, and that
23 their expectation is not that you would basically
24 add a piece of equipment at the end of the chimney,
25 the scrubber or anywhere, that you would have to

1 modify plant components because CCS will be what's
2 called a parasitic load, it will drain off energy
3 and power from the plant, so you'll have to make a
4 number of modifications ultimately when you do it.
5 So I think that the prudent way to think of it is
6 that it will be an expensive resource or option at
7 some point down the line if you decide that doing
8 CCS is less expensive than paying the penalty of
9 CO2 -- buying CO2 allowances.

10 MS. LA SEUR: That's all I have. Thank
11 you.

12 JUDGE WAHL: Mr. Guerrero.

13 MR. GUERRERO: Thank you, Your Honor. We
14 have a few questions.

15 **CROSS-EXAMINATION**

16 **BY MR. GUERRERO:**

17 Q. Good morning, Mr. Schlissel. Good to see
18 you again.

19 A. Good morning. Yes.

20 Q. I'm going to start with some of the
21 questions that Ms. La Seur just asked you just to
22 clarify some of these. Let's start with carbon
23 capture and sequestration at Big Stone Unit II.
24 You said it's not possible to say whether it's more
25 cost-effective to try to do that now versus at a

1 later date; is that correct?

2 A. That's correct.

3 Q. And trying to install technology today
4 when we don't know what that technology actually is
5 in terms of cost-effective technology, it's really
6 not possible to commit to that right now; correct?

7 A. That's correct. What some power plant
8 builders are doing are trying to lay out space so
9 that, you know --

10 Q. Make it carbon-capture ready?

11 A. Yeah. I mean, they call it carbon-capture
12 ready, but it's really allowing some more space on
13 the site to put in the equipment that they don't
14 know and that they -- for which they don't have a
15 design today.

16 Q. Thank you. Just a couple of questions
17 with respect to owning versus purchasing wind. It
18 sounded to me like you actually agreed with Mr.
19 Greig's testimony, and I will summarize, that
20 depending on whether you -- whether an investor-
21 owned utility owns or purchases wind is utility
22 specific and site specific; correct?

23 A. Project specific, yes.

24 Q. And do you understand -- let me ask you
25 this. Do you know whether or not the federal

1 production tax credit is available to noninvestor-
2 owned utility companies?

3 A. I believe it is, yes.

4 Q. The utilities without -- that do not pay
5 income taxes?

6 A. I'm sorry. I thought you said to
7 nonutility.

8 Q. Noninvestor-owned utilities.

9 A. Oh. I don't believe it's for privately --
10 for publicly owned entities.

11 Q. Nor for G & T cooperatives?

12 A. That's correct. I thought you meant for
13 merchants.

14 Q. No. I'm sorry. With respect to the
15 externality values that Minnesota or the
16 environmental cost values that the Minnesota
17 Commission has adopted pursuant to a state law, and
18 you referenced the fact that for out-of-state
19 plants the value for carbon dioxide is zero. Do
20 you have a -- do you believe that the Minnesota
21 Commission's analysis is flawed with respect to
22 that number?

23 A. Yes, I think the number -- that there's a
24 value whether or not the plant is in South Dakota,
25 North Dakota or Minnesota.

1 Q. So you disagree with the Minnesota Public
2 Utilities Commission's determination with respect
3 to CO2; correct?

4 A. Yes. I would say they should use a
5 different value.

6 Q. Ms. La Seur asked you about
7 grandfathering. As you sit here today, do you
8 believe it's the -- either Otter Tail's or MDU's
9 intent to grandfather Big Stone Unit II under
10 future federal carbon regulation?

11 A. Well, they don't have the power to
12 grandfather it. I think what you meant was to seek
13 to have it grandfathered. And I don't know the
14 answer to that. They have to answer -- they have
15 to answer to that. I do know in fact that there
16 are a number of utilities around the country whose
17 goal is to build new coal -- new supercritical coal
18 plants before 2011, 2012 because it's their view
19 that those plants will be grandfathered and that
20 they will have a substantial economic advantage
21 when selling power into the market.

22 Q. And you don't know whether or not Otter
23 Tail or MDU have that same view?

24 A. That's correct. As I --

25 Q. And you're not asserting that they do

1 here; correct?

2 A. No. I don't know that they do. What I'm
3 -- what I am asserting, to use your word, is that
4 in the modeling that Mr. Heidell did for MDU, MDU's
5 capacity factors without off-system sales for Big
6 Stone II are -- I've got it in my testimony -- it's
7 in the range of the high 40s for a substantial
8 number of years. That suggests to me that MDU
9 wants to participate in the project in order to
10 make off-system sales, and clearly having your
11 plant grandfathered would be an advantage. So that
12 may be a factor that's influencing them, but I
13 don't have evidence it is. That's just evidence
14 that suggests to me it might be.

15 Q. Thank you, Mr. Schlissel. I'm going to
16 ask you a few questions about transmission. If you
17 could turn to page 2 of your testimony, I guess
18 there's just one direct testimony.

19 A. Okay.

20 Q. And the bottom of page 2 where you
21 indicate, lines 23 through 25 there, that the
22 project -- the Big Stone II project includes both
23 generating facility and transmission lines.

24 A. Correct.

25 Q. And as you sit here today, and through 80

1 pages of direct filed testimony, you're not
2 offering an opinion for or against the transmission
3 facilities proposed here; correct?

4 A. That's correct.

5 Q. And you're not proposing a transmission
6 alternative?

7 A. That's correct.

8 Q. And you didn't propose one before the
9 Minnesota Public Utilities Commission?

10 A. I didn't, and I don't believe our team
11 did, either.

12 Q. Nor the South Dakota Public Utilities
13 Commission?

14 A. That I'm certain of, yes.

15 Q. Could you turn to page 73 of your
16 testimony, Mr. Schlissel.

17 A. Okay.

18 Q. And at the top of that page you -- in what
19 is part of your critique of Mr. Greig's reports on
20 behalf of Burns & McDonnell, you reference the fact
21 that the study could have assumed that wind-gas
22 alternative included 800 megawatts of wind
23 resources, and in the next paragraph, at line 8,
24 could have assumed 1200 megawatts of wind. Do you
25 see that?

1 A. Yes.

2 Q. Do you recall Mr. Richard Gonzales's
3 testimony in the Minnesota proceeding before the
4 Public Utilities Commission there?

5 A. I vaguely recall that he testified on the
6 last day -- or on the Friday of the week of the
7 hearings, but by that time I was off the stand. I,
8 to tell you the truth, don't remember much.

9 Q. Sure. His testimony regarding
10 transmission cost for wind versus transmission cost
11 for baseload facilities, do you recall that at all?

12 A. No.

13 Q. You wouldn't then have a reason to
14 disagree that the transmission costs for baseload
15 facilities would be significantly less than
16 transmission facilities, all else being equal for
17 wind facilities -- stand-alone wind facilities?

18 A. I have to know the assumption.

19 Q. Well, let me take you through a couple of
20 examples and see if you can verify or corroborate
21 one way or the other.

22 Let's assume we need to get a million
23 megawatt-hours of energy from a wind farm with a 35
24 percent capacity factor.

25 A. Okay.

1 Q. Would you accept, subject to verification,
2 that we would need approximately 326 megawatts of
3 installed wind?

4 A. Okay.

5 Q. And to get the same million megawatt-hours
6 from a baseload facility with an 85 percent
7 capacity factor, we would need 134 megawatts of
8 installed capacity?

9 A. Okay.

10 Q. And assuming roughly the same distance for
11 transmission, we're going to need transmission to
12 handle all of the 326 megawatts; correct?

13 A. Mm-hmm.

14 Q. And that would --

15 JUDGE WAHL: I'm sorry. Your answer is
16 yes?

17 THE WITNESS: Yes. I'm sorry.

18 Q. (MR. GUERRERO CONTINUING) And that
19 roughly would equate to a difference of about 2.4
20 times the amount of cost for transmission for wind
21 versus for the baseload facility based on the
22 assumptions I used?

23 A. Sure, but that's only part of the
24 analysis.

25 Q. Correct. Your analysis doesn't address

1 this, though, does it?

2 A. That's correct. You asked me what I think
3 about his conclusion and --

4 Q. Well, let me ask you this, Mr. Schlissel.
5 Do you have any reason to disagree that, all else
6 being equal, the transmission cost for the same
7 installed capacity for wind versus baseload, you
8 would need about 2.4 times the amount of
9 transmission?

10 A. If you're limiting it to the construction
11 cost, yes. I was going to explain that in fact by
12 building the more -- the larger transmission for
13 the wind, you may in fact have enhanced your system
14 reliability and enhanced the system's ability to --
15 for economy's sales transactions, so that may
16 counterbalance some of the additional cost from the
17 wind. But, clearly, having a wind resource with a
18 lower capacity value means you have to build more
19 transmission.

20 Q. Thank you. And back to your page 73
21 testimony, when you say that the study could have
22 assumed 800 megawatts and 1200 megawatts of wind
23 resources, you didn't take into account anywhere in
24 your testimony that it's potentially more costly to
25 do the transmission for the wind; correct?

1 A. I don't believe we did it in that -- in
2 our testimony regarding that study, which was a
3 year ago. Since then we've done modeling rather
4 than focusing on these busbar analyses. So I think
5 the answer to your question is, yes, in terms of
6 the busbar cost, but when we did the additional
7 modeling that we did in Minnesota for MDU and two
8 other of the co-owners, the fact that we were
9 increasing the amount of wind would have increased
10 the amount of transmission associated with the
11 wind. Each increment of wind had a transmission
12 cost as well as a capital cost.

13 Q. So you agree with my question then?

14 A. I think so.

15 Q. Okay. Let's go to -- we're going to skip
16 around a little bit, Mr. Schlissel -- page 10.

17 A. Okay.

18 Q. Let me get there. At the top of that page
19 you reference a Duke Energy witness, Judah Rose.
20 Do you know who Judah Rose is?

21 A. Yes. He works for a company called ICF.

22 Q. Okay. And he provided testimony in the
23 Duke matter; is that correct?

24 A. Yes.

25 Q. In the middle of the quote that you've got

1 in your testimony he says that, beginning at line
2 9, A key driving force -- let me see -- A key
3 driving force is a very large boom in U.S. demand
4 for coal power plants which in turn has resulted
5 from unexpectedly strong U.S. electricity demand
6 growth and high natural gas prices. Do you see
7 that?

8 A. Yes.

9 Q. And you believe those are both -- strike
10 that.

11 You agree that strong electricity demand
12 is a driver in coal-fired power production?

13 A. I think that's one of the factors that
14 utilities and others who want to build coal plants
15 cite.

16 Q. Well, do you believe it or not?

17 A. Do I believe it? I believe that in the
18 paradigm of demands increasing, we need to build a
19 central station to meet that demand, yes, that's a
20 factor. What I was -- my hesitancy was based on
21 the fact that I think -- as I -- when I was
22 cross-examined in Minnesota where we talked about
23 the need for -- or maybe it was South Dakota -- the
24 need for a new paradigm where rather than just
25 building central station generating facilities to

1 meet demand, you look to energy efficiency first
2 and try to reduce the amount of demand you have to
3 meet.

4 Q. Thank you. But it's in your testimony. I
5 mean, you're quoting from Judah Rose who says, a
6 key driver in U.S. demand for coal power plants is,
7 at least one, strong U.S. electricity demand
8 growth.

9 A. Right.

10 Q. You agree with that?

11 A. I agree Judah Rose says that and I agree
12 that that's probably in the minds of the people who
13 want to build new coal plants.

14 Q. Is it in your mind?

15 A. I'm not building a coal plant. I mean,
16 you're asking me do I believe there's a high demand
17 for electricity in the U.S.?

18 Q. Yes.

19 A. Yes.

20 Q. Thank you. And you believe that there are
21 high natural gas prices?

22 A. Natural gas prices are very volatile and
23 uncertain. For much of 2006 after the hurricanes
24 in 2005 through 2006, there was a belief that
25 long-term natural gas prices would remain high. I

1 think now long-term natural gas prices are probably
2 expected to be lower than they were expected to be
3 a year ago, but they're still uncertain.

4 Q. You said probably. You don't know that
5 for certain?

6 A. Well, if I knew what natural gas prices
7 were going to be, I'd either be a hedge fund
8 operator or I'd be in Las Vegas.

9 Q. Let's skip back to page 7. The question
10 on line 14 you talk about some risks associated
11 with alternatives to Big Stone Unit II. Do you see
12 that Q and A there?

13 A. Yes.

14 Q. And with respect to natural gas-fired
15 alternatives you talk about possible capital cost
16 escalation and fuel price uncertainty and
17 volatility, which is --

18 A. Yes.

19 Q. -- what you just testified. And then with
20 respect to renewable alternatives and conservation
21 you talk about, again, potential capital cost
22 escalation, contract uncertainty and customer
23 participation uncertainty. Correct?

24 A. Yes.

25 Q. Would PTC uncertainty be -- federal

1 production tax credit uncertainty be part of that?

2 A. Yes. I think there's less uncertainty now
3 than there has been in the past, but I think that
4 that would certainly be a measure.

5 Q. Thank you. And skip back to -- or up to
6 14 -- page 14. Again, you've got some other sort
7 of risk factors, project delays -- I'm looking at
8 page 14, line -- beginning at line 9 there through
9 12 -- line 12.

10 A. Yes.

11 Q. Project delays, changes in equipment lead
12 times, labor availability, et cetera.

13 A. Yes.

14 Q. And you would agree that those other
15 factors -- risk factors would apply also to natural
16 gas projects?

17 A. Yes. Probably less. They do apply, I
18 certainly agree to that. I would expect to a less
19 extent because generally natural gas projects have
20 shorter construction periods and require fewer
21 man-hours to build. But the general factors affect
22 them. I think it's just less of an impact.

23 Q. You haven't done any quantitative analysis
24 as to -- when you say a lesser impact?

25 A. No. The Judah Rose testimony that we

1 talked about previously where he mentioned that
2 coal plant costs had increased 90 to 100 percent
3 since 2002, I think he had something in the range
4 for natural gas plants of maybe 35 to 60 percent.

5 Q. Back on page 14, the end of line 11, you
6 say "or other market conditions." What are the
7 other market conditions you're referring to?

8 A. The fact that vendors want to be paid more
9 up front affects the cost because then you have to
10 borrow money -- you being the builder would have to
11 borrow money to pay earlier. So that would be one.
12 The construction contracts and the contracts for
13 the bidding of equipment are very complicated in
14 terms of who is assigned different risks, and I
15 meant there that it may be that more risk would be
16 shifted to the builder rather than to the --
17 sorry -- to the owner rather than the builder.

18 Q. So those are at least a couple of other
19 market --

20 A. Those are a couple of examples, yes.

21 Q. Have you ever been involved in the
22 negotiation of a large wind farm power purchase
23 agreement?

24 A. I haven't. Synapse has advised builders
25 on a number of wind farm projects, but I have not.

1 Q. Would it be safe to say that one of the
2 negotiation points is the assignment of risk?

3 A. Oh, I'm sure that's true, yes. I didn't
4 mean to imply that these were not risks that would
5 be -- I'm sorry. I did not mean to imply that
6 other alternatives would not also experience these
7 risks, perhaps to a lesser extent, but certainly
8 generally the same kinds of risks.

9 Q. And perhaps to a greater extent?

10 A. I don't know. We might be able to find a
11 couple that would be to a greater extent, but if
12 you look at what's happening in the construction
13 industry today, the demand for fossil -- coal power
14 plant equipment and commodities and design and
15 construction labor is the hot topic, worldwide
16 demand and domestic demand, so that that may spill
17 over into wind some. I would expect it would.

18 Q. Another hot topic would be the
19 availability of turbines; correct?

20 A. Sure, but from what I've seen, the
21 availability of turbines is expected to be relieved
22 sooner than the ability for heavy forgings for a
23 coal plant burner.

24 Q. One factor, and you mention, is delays
25 that could lead to higher project costs; correct?

1 A. Yes.

2 Q. And permits to a certain extent cause
3 delays, do they not?

4 A. I don't think -- I don't mean to tell you
5 what you're asking, but I don't think it's
6 really -- permits don't, but the dates when the
7 permits are issued.

8 Q. Thank you.

9 A. And the terms, perhaps, of the permits do.

10 Q. And to the extent that permits are, for
11 instance, appealed, potentially cause further
12 project delay; correct?

13 A. It certainly can.

14 Q. And organizations with your -- with whom
15 you're affiliated are currently appealing permits
16 in this project; correct?

17 A. I happen to be a member of the National
18 Sierra Club, but that has nothing to do with their
19 involvement in Big Stone II. That's about the only
20 organization I'm affiliated with. Some of my
21 clients may be, but I'm not aware.

22 Q. Well, your clients are Minnesota Center
23 for Environmental Advocacy?

24 A. Yes.

25 Q. The Izaak Walton League?

1 A. Right.

2 Q. Union of Concerned Scientists?

3 A. Yes.

4 Q. Those organizations are currently
5 appealing a permit in South Dakota; correct?

6 A. Correct. As is their democratic right to
7 do so.

8 Q. Thank you. Page 17, Mr. Schlissel --
9 actually, I'm sorry, page 15.

10 A. 15?

11 Q. Yeah. Beginning at line 17 there, you
12 reference a -- it's referenced throughout some of
13 this early part of your testimony -- a Black &
14 Veatch short-term spending plan or short-term plan.

15 A. Yes.

16 Q. And one of the things that you interpret
17 from that plan is that the owners somehow decided
18 to withhold spending major dollars until they
19 received all their permits. Is that a fair summary
20 of that part of the testimony?

21 A. Yes.

22 Q. And you're not here suggesting to this
23 Commission that it's imprudent for Otter Tail or
24 Montana-Dakota Utilities to wait until they have
25 their permits before they start spending big

1 capital on this project; correct?

2 A. I'm sorry. That it's imprudent to do so?

3 Q. Correct.

4 A. That's correct.

5 Q. It's prudent to wait?

6 A. Yes. I would suggest waiting.

7 Q. In your response to one of the questions
8 that Ms. La Seur asked you, I think you had
9 referenced that Otter Tail had not looked at hydro
10 purchases or did not consider hydropower in its
11 analysis of future resource needs. Did I get that
12 right?

13 A. I know -- you and I both know that Otter
14 Tail did look at purchasing from Manitoba Hydro. I
15 didn't say that. What you may be relating to is in
16 my summary -- let's see if I can go backwards
17 through it.

18 Q. By the way, do you have a hard copy of
19 that summary?

20 A. Sorry. I can e-mail it to you if you'd
21 like.

22 Q. No, no.

23 MS. LA SEUR: Todd, here.

24 THE WITNESS: Excuse me a minute. I have
25 to put on my glasses for that distance. I believe

1 I was referring to the two studies that Mr. Greig
2 did and that Mr. Rolfes presented. They don't
3 include hydro.

4 Q. (MR. GUERRERO CONTINUING) So you're not
5 alleging that Otter Tail has a more cost-effective
6 hydro alternative than Big Stone Unit II; correct?

7 A. When we looked in Minnesota -- and this is
8 part of the stricken testimony -- what we did in
9 Minnesota, because we could not rerun the company's
10 model, it would have taken months and months and
11 months.

12 Q. Let me interrupt. I apologize. We're
13 here in North Dakota and I'm just asking today
14 whether or not you're alleging that Otter Tail has
15 a more cost-effective hydro alternative than Big
16 Stone Unit II. Now, if you need to go to
17 Minnesota, please do so, but I'm asking in the
18 context of North Dakota.

19 A. The answer in North Dakota -- well, today,
20 I don't know today. I believe they've had -- in
21 the recent past have had such a cost-effective
22 option. I know that there were offers from
23 Manitoba Hydro that OTP modeled in some of its
24 filings to the Minnesota Commission, was a February
25 2006 filing answer to supplemental questions. What

1 I did in Minnesota was take OTP's -- the results of
2 OTP's plan with Big Stone and had a plan without
3 Big Stone that replaced Big Stone with hydro and
4 showed that if you include what we believe to be
5 reasonable CO2 costs, that the non-OTP plan was the
6 more economic -- I'm sorry -- the non-Big Stone II
7 plan was the more economic option and that in fact
8 did include hydro. But I don't know whether
9 today -- I'm not privy to the discussions between
10 OTP and Manitoba Hydro today.

11 Q. Thank you, but let me just see if I can
12 button this one up. As you sit here today, you're
13 not making an assertion to this Commission that you
14 believe that Otter Tail has a more cost-effective
15 hydro alternative than Big Stone Unit II? I
16 believe it's a yes or no question.

17 A. It's a really complicated yes or no. I
18 would have to say yes, but.

19 Q. Go ahead.

20 A. And the but would be what our evidence
21 showed in Minnesota and that I cite into my
22 testimony and that was stricken -- portions of it,
23 the numbers from it. Could they have a more
24 economic option? I can't answer that. Again, I'm
25 not privy to that. Is there the potential for one?

1 Yes, I believe there is the potential for a lower
2 cost plan if you consider CO2 costs, but I can't
3 definitively say that again because I don't know
4 what the discussions have been.

5 Q. Thank you, Mr. Schlissel. What resources
6 would be involved in that lower cost option from
7 Manitoba Hydro?

8 A. Hydropower.

9 Q. Which ones?

10 A. I believe some of them were the dams that
11 Manitoba Hydro were currently building or also that
12 were planning to build. My understanding is the
13 native tribes were not upset about the new dams
14 that were being considered.

15 Q. That's your understanding?

16 A. Yes, from my -- one of my clients in
17 Minnesota is involved with the tribes.

18 Q. Which client is that?

19 A. They used to be Wind on the Wires. Was it
20 M tripe E? I apologize for not knowing the name of
21 my own client.

22 Q. Wind on the Wires is Wind on the Wires
23 still.

24 A. Okay.

25 Q. Maybe it's Fresh Energy?

1 A. Yes.

2 Q. Has Fresh Energy -- do you know whether or
3 not they have been involved in advocating against
4 further hydropower in Manitoba in the past?

5 A. No. I just had a discussion with them
6 when I was in Minnesota for the hearings.

7 Q. Anyway, I had asked you about what
8 resources and you had talked about maybe some
9 future resources.

10 A. Maybe some DSM in --

11 Q. No. Hydro -- hydro resources.

12 A. I didn't realize. Well, the hydro would
13 be Manitoba.

14 Q. But as you sit here today, you can't
15 identify what resources from Manitoba Hydro would
16 be involved in a least-cost alternative or a
17 potential least-cost alternative for Otter Tail?

18 A. That's correct. I've not updated our
19 analysis for Minnesota.

20 Q. Go to page 68 of your testimony, Mr.
21 Schlissel.

22 JUDGE WAHL: Mr. Guerrero, I noticed you
23 seemed to be transitioning and maybe we could
24 continue the transition after lunch.

25 MR. GUERRERO: Whatever your pleasure is,

1 Your Honor.

2 JUDGE WAHL: Let's do that. Let's be in
3 recess until one o'clock -- one o'clock sharp,
4 please.

5 (Recess taken at 11:59 a.m. to 1:00 p.m.)

6 JUDGE WAHL: We're back on the record. We
7 have a suggestion by the Commission that the
8 parties' PowerPoint presentations be marked as
9 exhibits. I'm suggesting that the hard copies be
10 printed and filed as exhibits and that the
11 PowerPoint presentation for each witness be
12 associated with their direct testimony, which, as I
13 recall, was what was done in every case, every
14 instance?

15 MR. GUERRERO: With the exception of Mr.
16 Greig, I believe, who appeared by telephone.

17 JUDGE WAHL: That's right. Well, but we
18 did, nevertheless -- that's right, there was no
19 PowerPoint, so let's do it this way, counsel. Let
20 me ask that the PowerPoint presentations be -- a
21 hard copy be prepared and filed and that it be
22 numbered as an exhibit to correspond with the
23 direct testimony. For example, if the direct
24 testimony was Exhibit 110, the PowerPoint
25 presentation would be 110-A. The two will then go

1 together and be considered as another exhibit for
2 the direct testimony. And let me hear any
3 objections or suggestions, counsel. Mr. Kuntz.

4 MR. KUNTZ: No. We'll provide copies to
5 the reporter.

6 JUDGE WAHL: Mr. Guerrero.

7 MR. GUERRERO: The same.

8 JUDGE WAHL: Mr. Breen.

9 MR. BREEN: Agreed.

10 JUDGE WAHL: And, Mr. Binek, are you --

11 MR. BINEK: We don't have PowerPoint.

12 JUDGE WAHL: You're not going to have one.
13 Well, then that takes care of that.

14 All right. I think we're ready to
15 proceed. This is the afternoon of June 27, a
16 little past one o'clock. We continue with the
17 cross-examination of Mr. Schlissel. Mr. Schlissel,
18 you understand, obviously, that your testimony
19 continues under oath and subject to the penalties
20 of perjury?

21 THE WITNESS: Yes, sir.

22 JUDGE WAHL: Mr. Guerrero.

23 MR. GUERRERO: Thank you, Your Honor.

24 Q. (MR. GUERRERO CONTINUING) Good afternoon,
25 Mr. Schlissel. Right before break I was about

1 ready to move off of the hydro question and I just
2 want to follow up with a couple more questions
3 regarding Manitoba Hydro.

4 Do you recall in the proceeding before the
5 Minnesota Public Utilities Commission on December
6 15th of 2006 in which you were asked a question
7 about whether or not Otter Tail's potential
8 contract with Manitoba Hydro was subject to a
9 contingency on the -- subject to Otter Tail being
10 required to accept price risk after a certain date?

11 A. I honestly don't remember the question and
12 answer. If you have the answer in front of you,
13 why don't you show me and I'll accept I said it if
14 I did.

15 Q. Mr. Schlissel, I'm showing you what is a
16 transcript from the proceeding in front of the
17 Minnesota Public Utilities Commission. This is a
18 transcript dated December 15th of 2006. There's a
19 series of questions. I'm not intending to
20 introduce this as an exhibit into the hearing.
21 There's a series of questions with respect to a
22 Manitoba Hydro proposal and Otter Tail's
23 involvement with that. You were asked a series of
24 questions. Can I review that with you here?

25 A. Sure.

1 Q. Thank you, Mr. Schlissel. And you were
2 asked whether or not the long-term purchases from
3 Manitoba Hydro would be contingent on the
4 development of the Conawapa facility --
5 C-o-n-a-w-a-p-a facility -- and your answer was,
6 Generally I am, yes.

7 A. Yes, that was my answer.

8 Q. And the question, and I'll just ask you,
9 that's approximately a 12 -- 1,250 megawatt
10 facility?

11 A. At the time I didn't recall the size, and
12 I still don't.

13 Q. Okay. And you were asked whether or not
14 the purchaser, Otter Tail, would be contingent on
15 accepting a future price increase to reflect the
16 cost of the Conawapa facility, and your answer is,
17 Yes, I believe that's the cost increase, et cetera?

18 A. Yes, and Mr. Morlock talked about in his
19 December 8th rebuttal testimony that in 2021 the
20 price would increase.

21 Q. And the further question, Are you aware
22 that the project cost -- projected cost as we sit
23 here today at this facility in 2021 is 5 billion
24 dollars?

25 A. I wasn't, but I assume it's for the whole

1 1,250 megawatt facility.

2 Q. And a series of questions also over on
3 page 89 of the December 15th transcript, the
4 question, in order to have a long-term supply from
5 Manitoba Hydro, it would be necessary to build a
6 transmission line from northern Manitoba to
7 southern Manitoba that is currently projected to be
8 about 2,000 megawatts. Did I read -- do you know
9 about that? And your answer?

10 A. The answer is, I don't recall that. And
11 then you and I go into an exchange where I talk
12 about the fact that what I do know about Manitoba
13 transmission -- Manitoba Hydro transmission was
14 confidential.

15 Q. And just to clarify, these questions were
16 proposed by Mr. Glazer at the time.

17 A. I'm sorry. It was Mr. Glazer, not you. I
18 apologize.

19 Q. That's okay. And with respect to the
20 testimony at that time and with respect to the
21 transmission proposal, have you learned anything
22 more about the transmission proposal associated
23 with the Conawapa project?

24 A. No.

25 Q. Would you have any reason to disagree with

1 me that that is an approximately 500-mile, 500-
2 kilovolt DC transmission line?

3 A. I don't recall the exact size of it. I'll
4 accept it if that's what you represent it to be.

5 Q. And it's currently not licensed?

6 A. I don't believe it is licensed, that's
7 correct.

8 Q. And it's currently estimating cost in
9 excess of a billion dollars?

10 A. I don't know the cost.

11 Q. Can you turn to page 68 of your testimony,
12 Mr. Schlissel. Give me one second.

13 A. Page 68, did you say?

14 Q. Correct. And there on page 68 you have a
15 table 9 and on page 69 you have a table 10?

16 A. Yes.

17 Q. And as a result of the Court's order --
18 the judge's order, certain of your table has been
19 deleted; correct?

20 A. Yes.

21 Q. Could you explain what these tables intend
22 to show -- or intended to show?

23 A. Table 9 showed the amount of Big Stone II
24 that the Strategist model chose when we changed
25 input assumptions. The first line was MDU's

1 preferred plan, and that was the company's result
2 which we've replicated. The next line -- the next
3 two lines, which are now deleted, were our low and
4 high CO2 prices. The fourth line we increased the
5 wind availability, the amount of wind. The fifth
6 line we increased the amount of demand side
7 management. And the sixth line we increased the
8 cost of the Big Stone II Plant.

9 Q. And that's table 9?

10 A. That's table 9, that's correct.

11 Q. And what about table 10?

12 A. Table 10 were the capacity resources added
13 under the four scenarios -- four of the five
14 scenarios that are listed on table 9. The two
15 scenarios that are not included were the MDU
16 preferred plan because it selected 116 megawatts of
17 Big Stone II and then the increased wind
18 availability plan, which initially also selected
19 116 megawatts of Big Stone II, but if you look at
20 the answer on page 69, starting on line 5, it
21 explains why in the increased wind availability
22 case the model also selected all of Big Stone II.

23 Q. As you sit here today, Mr. Schlissel,
24 you're not recommending to this Commission that the
25 scenarios that you outline in tables 9 and 10 are

1 resource selection plans -- resource plans that
2 Montana-Dakota is supposed to follow; correct?

3 A. Correct. They're plans that the model
4 showed were more economic than plans with all of
5 Big Stone.

6 Q. And in the table 10 scenario, it's true
7 that the scenario based on assumptions that you've
8 used increased Montana-Dakota's reliance on natural
9 gas; correct?

10 A. There is a CT, yes. There is some natural
11 gas generation -- additional natural gas
12 generation.

13 Q. Additional, more than what was in
14 Montana-Dakota's resource plan?

15 A. That's correct.

16 Q. Did you have an opportunity to review Mr.
17 Heidell's rebuttal testimony?

18 A. I looked at it yesterday or the day
19 before.

20 Q. Okay.

21 A. I don't have it with me, though.

22 Q. You don't have it. Do you remember his
23 comments or testimony with respect to the increased
24 availability of wind resources?

25 A. No.

1 Q. Do you have any reason to disagree with
2 his analysis that he set forth in -- or his
3 comments that he set forth in his rebuttal
4 testimony that addresses this issue?

5 A. Well, do I have any reason to disagree
6 with the comments I don't remember? I can't answer
7 that one.

8 Q. That's fair enough. Let me show you -- I
9 have what's been premarked as MDU Exhibit 212.
10 It's not been introduced yet. It's Mr. James
11 Heidell's rebuttal testimony.

12 MR. GUERRERO: Counsel, do you have a copy
13 of this?

14 MS. LA SEUR: I have a copy of the
15 prepared.

16 MR. GUERRERO: Well, if you've got a copy
17 yourself, we'll share this one. I wanted to make
18 sure you have a copy.

19 MS. LA SEUR: Okay.

20 Q. (MR. GUERRERO CONTINUING) And the
21 question there as posed to Mr. Heidell, Does
22 increased availability of wind resources change the
23 results of the analysis and result in wind being
24 selected over Big Stone II? Do you see -- do you
25 want to take a look at his answer there?

1 A. The one from lines 8 to 19?

2 Q. Or from 10 to 19.

3 A. Okay.

4 MS. LA SEUR: I'm sorry. Which page?

5 MR. GUERRERO: This would be page 11,
6 beginning -- the question beginning at line 8, the
7 answer beginning at line 10.

8 THE WITNESS: No, I have no -- he, I
9 believe, accurately represents a part of what the
10 process that we went through, that in fact he did
11 call us and we did discuss with him at least twice,
12 and thanks to him, we did discover we initially had
13 made a mistake in the modeling. We corrected that
14 in the table 9 -- what is now table 9 in my current
15 testimony and the answer on page 69 from lines 5 to
16 20 was our -- is our understanding of why, even if
17 you increased the wind availability, the model
18 still picks all of Big Stone II because it was set
19 to pick all or none of Big Stone II. That when we
20 allowed it to choose between zero and 10 blocks of
21 the plant, it selected only 23 megawatts of Big
22 Stone II instead of the 116 megawatts. So Mr.
23 Heidell is definitely correct. I think I
24 mentioned -- I hope I didn't get him in trouble. I
25 mentioned on the stand in Minnesota that we

1 appreciated him coming to us rather than using it
2 to kind of challenge us.

3 Q. (MR. GUERRERO CONTINUING) And my
4 question, Mr. Schlissel, is, you don't have any
5 reason to disagree with his comments here in his
6 rebuttal testimony that we've just reviewed?

7 A. And I said as far as they go, yes, but
8 you've got to look at it in the context of what I
9 say on page 69 of my testimony.

10 Q. So you don't disagree with these comments?

11 A. I think I said that twice.

12 Q. Okay. Thank you. Would you turn to page
13 76 of your testimony, please.

14 A. Green or blue part?

15 Q. Well, just the whole page at this point.
16 I don't think there was anything there that was
17 deleted as a result of the motions.

18 A. Okay.

19 Q. And the question beginning at line 6, do
20 you believe that wind can be a baseload resource?
21 And your answer is yes.

22 A. Yes.

23 Q. Do you recall that question posed to you
24 before the Minnesota Public Utilities Commission on
25 December 15th of 2006?

1 A. No.

2 Q. Would you have any reason to disagree with
3 me if I told you that your answer was in opposite
4 to the answer that you've given here?

5 A. I may have been inarticulate. I would
6 have to see what the exact language is before I
7 agree that it's the opposite.

8 Q. Well, as I look for that, Mr. Schlissel,
9 let me ask you, your answer is yes, and then you go
10 on to say, Wind can be part of a portfolio of
11 resources that can provide needed capacity and
12 baseload energy.

13 A. Correct.

14 Q. So my question, I guess, is this: Is wind
15 as a stand-alone resource considered a baseload
16 facility?

17 A. Wind, itself?

18 Q. Correct.

19 A. I don't think that we would propose wind
20 on its own to be the only resource to be relied
21 upon for baseload purposes. But I think the answer
22 in Minnesota --

23 Q. I think you've answered the question.
24 Thank you. On page 76, Mr. Schlissel, you also
25 reference a Wind Integration Study -- a 2004 Wind

1 Integration Study.

2 A. Yes.

3 Q. Prepared for Xcel Energy. What do you
4 know about that study?

5 A. I've read it and reviewed it in
6 preparation of my testimony last November.

7 Q. Have you read it recently?

8 A. The same study, I don't think so. I've
9 read the more recent study, but I don't think I've
10 read the December 4 one.

11 Q. I'm not sure I caught that. Have you read
12 the most recent version of the Wind Integration
13 Study?

14 A. I have -- several months ago I read it.

15 Q. And this Q and A that's being developed
16 here, is this the same sort of Q and A that was
17 proposed in the Minnesota proceeding? Is this sort
18 of just a cut and paste? Is that what this is?

19 A. This -- yes.

20 Q. Do you know what the purpose of that Wind
21 Integration Study was?

22 A. To show how much wind could be integrated
23 into the system and what the costs and reliability
24 consequences would be.

25 Q. Is it true that that study concluded that

1 wind could supply up to 20 percent of Minnesota
2 retail energy sales only if sufficient investment
3 in transmission infrastructure were made?

4 A. I don't remember exactly the conclusion,
5 but that sounds like a general -- generally what I
6 would expect.

7 Q. And do you know whether or not the study
8 specifically included the Big Stone Unit II
9 transmission facilities in the study?

10 A. I can't say for certain. I think it may
11 have, but I don't remember. I haven't looked at it
12 in months.

13 Q. Do you know what capacity values that the
14 study assumed for wind?

15 A. The original study assumed or calculated
16 up to 27 percent. The more recent study, I think,
17 was more in the range of 14 to 17 percent.

18 Q. Would you have any reason to disagree if I
19 said it was closer to 5 to 20 percent?

20 A. No.

21 Q. And when we talk about capacity values,
22 we're not talking about capacity factors; correct?

23 A. Correct. Capacity value is how much
24 credit do you give for being able to be available
25 during your peak hours, and capacity factor is a

1 measure of operating performance compared to --
2 it's the output the plant actually does generate
3 during -- say, it's a year compared to what it
4 would generate if it operated a hundred percent of
5 the hours at a hundred percent power.

6 Q. Thank you. And do you know what -- how
7 much dispatchable capacity would have to be built
8 to replace the 630 megawatts proposed by the Big
9 Stone Unit II?

10 A. If it were all wind?

11 Q. Yes. Based on a 5 to 20 percent capacity
12 value.

13 A. Well, I mean, it's just a mathematics.
14 600 times --

15 Q. Let me cut it short. I'll help you out,
16 if I can. I didn't mean to interrupt. Would you
17 have any reason to disagree if I told you it was
18 3,000 to 12,000 megawatts of wind?

19 A. I think that's the correct math.

20 Q. And do you know whether or not Minnesota
21 or the region generally has a plan in place to
22 accommodate up to 12,000 megawatts of wind?

23 A. I don't know the exact level. I do know
24 that none of the clients I've represented have
25 proposed to replace all of Big Stone II with wind.

1 Q. Can you turn to page 79, Mr. Schlissel.

2 A. Okay.

3 Q. And on this page generally, and I heard it
4 in your opening statement summary, you're
5 criticizing the reliance by the project on the use
6 of levelized cost; is that a fair summary of this
7 testimony on page 79?

8 A. No. I think -- with all due respect, I
9 think you have it backwards.

10 Q. Well, I'll direct your attention to page
11 79, line 19, Consequently, I'm surprised that OTP
12 and Montana-Dakota have filed exhibits if they
13 truly did believe this about the limits of
14 levelized cost analyses.

15 A. Oh, I'm sorry. I thought you were meaning
16 the quote ahead of that. Yes, my position is I'm
17 surprised -- as I say, my position is, as I stated
18 there, lines 19 to 21.

19 Q. Thank you. And 22 through 25, sort of the
20 same sort of analysis?

21 A. Yes.

22 Q. As you sit here today before the Public
23 Service Commission, you're not suggesting, are you,
24 Mr. Schlissel, that the only analysis that Otter
25 Tail and Montana-Dakota Utilities have relied upon

1 to make an investment of approximately 1.4 billion
2 dollars is a levelized cost analysis? That's not
3 what you're suggesting, is it?

4 A. No. Well, the answer is yes. I don't
5 mean to be cute, but the answer is different for
6 the two quotes or sections of my testimony. With
7 regards to lines 19 to 21, no, I'm not saying that
8 that's the only analysis the co-owners have
9 presented.

10 Q. What about 22 through 25?

11 A. 22 through 25, I don't know what -- Mr.
12 Uggerud has to speak to that. He's the one who
13 makes -- who made the statement that I quote about
14 using -- relying on the plant's low busbar cost.

15 Q. And you've got a footnote at the end of
16 line 25, footnote 96, that refers to the direct
17 testimony of Ward Uggerud, and I have that in my
18 hand and I'll show it to you. This is OTP-101.
19 And I believe the basis for your testimony is that
20 statement by Mr. Uggerud in OTP-101; correct?

21 A. Correct. The paragraph says he determined
22 that they needed additional baseload through its
23 resource planning process, and then he has the
24 quote that I cite.

25 Q. Thank you. And this is under the

1 question, Please summarize your testimony?

2 A. Correct. That's where it is.

3 Q. And so the question I have again, Mr.
4 Schlissel, as you sit here today before the Public
5 Service Commission, you're not suggesting that the
6 only analysis that Mr. Uggerud relied upon in
7 participating in this project is a levelized cost
8 analysis; is that correct?

9 A. That's not my testimony. My testimony is,
10 I'm giving what the co-owners said mainly in South
11 Dakota about levelized -- the value of relying on
12 levelized analyses. I'm surprised that Mr. Uggerud
13 made this statement.

14 Q. Okay. But my question -- let's forget
15 about this stuff for now. My question is, you're
16 not suggesting to this Commission that the only
17 analysis that Otter Tail or Montana-Dakota have
18 relied upon in investing in this project is a
19 levelized cost analysis, are you?

20 A. Of course not. You and I this morning
21 discussed the modeling that OTP did. I talked
22 about modeling that OTP did in my opening summary.
23 I'm not trying to pretend or mislead anybody into
24 believing this is all they did, but I'm surprised
25 that Mr. Uggerud said this.

1 Q. Thank you. Let me ask you a hypothetical,
2 Mr. Schlissel. All else being equal, if this plant
3 were proposed to be located in North Dakota, would
4 your analysis be the same?

5 A. If this plant were located in North
6 Dakota? Yeah, I suppose it would be the same. The
7 numbers may change, transmission. My testimony is
8 not based on a siting issue. Although, again,
9 specific siting of the plant would affect the
10 relative costs.

11 Q. Thank you.

12 A. And it might not have met the South Dakota
13 statute if it were located in North Dakota.

14 Q. I'm going to ask you some questions
15 about -- and this, I think, is going to be my final
16 set of questions, Mr. Schlissel -- about the
17 generation alternatives and the need of
18 Montana-Dakota and Otter Tail. And as you sit here
19 today, you're not challenging the forecasts of
20 either Montana-Dakota or Otter Tail Power; correct?

21 A. That's correct.

22 Q. And you're not challenging the fact that
23 they need power and energy beginning in the year
24 2011; correct?

25 A. I don't know whether it's the year 2011,

1 10 or 12, but I'm not challenging their load
2 forecasts and their projections of need for power.

3 Q. And you didn't challenge that before the
4 Minnesota Public Utilities Commission, did you?

5 A. That's correct. We looked at it in South
6 Dakota, but then decided not to challenge it in
7 Minnesota.

8 Q. Can you go to page 4 of your testimony,
9 Mr. Schlissel -- actually, page 3. I'm sorry.

10 A. Okay.

11 Q. And one of the key criticisms, if I could
12 call it that, of your testimony at the line 18,
13 section 4 there, you state, OTP and Montana-Dakota
14 have not shown that their demand for electricity
15 cannot be met more cost effectively through
16 alternatives, including renewable energy resource,
17 energy conservation and load-management measures
18 than through the Big Stone II project. Did I read
19 that correctly?

20 A. Yes.

21 Q. Mr. Schlissel, you're not proposing any
22 alternatives to the Big Stone Unit II project, are
23 you?

24 (Cell phone rings.)

25 THE WITNESS: Somebody wants to correct

1 one of my answers. Must have listened over the
2 Internet. No, we've not proposed a plan -- an
3 alternative plan.

4 Q. (MR. GUERRERO CONTINUING) And you didn't
5 propose an alternative plan in Minnesota, either,
6 did you?

7 A. That's correct.

8 Q. And you didn't propose one in South
9 Dakota, either, did you?

10 A. That's correct. We gave a wind-gas mix as
11 an illustrative example, and that's what prompted
12 the co-owners to keep their scorn about bus -- the
13 use of busbar costs.

14 Q. So your analysis and testimony, as you sit
15 here today, you don't know whether or not Otter
16 Tail or Montana-Dakota could meet their needs more
17 effective using energy -- renewable energy
18 resource, energy conservation and load management
19 because you're not making that recommendation;
20 correct?

21 A. No, that's not correct. MDU -- let's use
22 MDU for an example. The MDU modeling you and I
23 discussed a few minutes ago showed that the
24 Strategist model did not if you increase the amount
25 of DSM -- DSM that we presented in Minnesota, as we

1 believe readily economically achievable, the model
2 didn't select Big Stone II.

3 Q. But I thought I also heard you say that
4 the model or the tables that we went through
5 briefly, you're not recommending that as a resource
6 plan for Montana-Dakota. In fact, I think that's
7 your answer on page 70 of your testimony.

8 A. That's correct. We're not presenting it
9 as a plan, but it certainly suggests that there are
10 lower cost alternatives than Big Stone II.

11 Q. But you don't know that because you
12 haven't looked at that; correct?

13 A. We haven't gone through to develop a plan,
14 but we have looked at it, and the results you and I
15 have discussed are what we have looked at.

16 Q. So you haven't proposed a plan, but it's
17 your testimony then -- let me see if I can get this
18 right. You haven't proposed a plan, but your
19 testimony is that Montana-Dakota and Otter Tail
20 both have lower cost options than Big Stone Unit
21 II?

22 A. No. I couldn't say that for Otter Tail
23 because the portions of my testimony that showed
24 that have been stricken because they dealt with CO2
25 costs. So I can't sit here saying that today. If

1 they were in, I certainly would feel comfortable
2 saying it.

3 With regards to Montana-Dakota, what I've
4 presented is that -- is what -- I don't want to
5 repeat myself again -- is that the model, itself,
6 picks -- does not pick Big Stone II when you allow
7 it to have more wind and to reflect a higher Big
8 Stone II capital cost.

9 MR. GUERRERO: Just one minute, Your
10 Honor. No further questions. Thank you.

11 JUDGE WAHL: Mr. Binek.

12 **CROSS-EXAMINATION**

13 **BY MR. BINEK:**

14 Q. Just a followup to that last question.
15 Sorry, I didn't have my mike on.

16 A. I heard it.

17 Q. You're not proposing anything specific,
18 but you said that when -- the model, itself, does
19 not pick Big Stone II when you include more wind
20 and input a higher Big Stone II capital cost. In
21 talking about wind -- and I think your testimony
22 basically is you can't use wind, itself, as a
23 baseload source of generation. So what else is
24 going to be used?

25 A. Is that the question?

1 Q. Yes.

2 A. Well, let's go back to the page -- was it
3 76? I forget the page that Mr. --

4 COMMISSIONER WEFALD: 69.

5 THE WITNESS: Thank you. -- Mr. Guerrero
6 and I were on, that in -- that you would use
7 portfolio management techniques to come up with a
8 portfolio of alternatives to Big Stone II, that it
9 might be -- what we allowed the model to select
10 among was increased wind -- was wind, there was, I
11 believe, a one-year Xcel contract, there were
12 additional combustion turbine capacity, and
13 additional DSM resources, and that the model chose
14 a least-cost plan of mix of those based on capital
15 cost, operating cost and fuel. Now, we didn't see
16 it our role in Minnesota or in this proceeding to
17 come up with the alternative resource plan for
18 either of these companies. I saw, based on my too
19 many years of experience now, looking at the
20 prudence determination was to -- the basis for a
21 prudence determination was reviewing the company's
22 planning, whether their involvement in the project
23 had adequately considered all of the risks
24 associated with the project, and on that basis I
25 think they did -- they are not prudent, that they

1 have not done modeling to reflect a range of risks.
2 There is not only one or two possible futures out
3 there. There's a range of possible futures and the
4 planning should reflect that.

5 Q. (MR. BINEK CONTINUING) And you agree no
6 matter what plan is selected, there's going to be
7 risks?

8 A. That's correct. And the goal is to select
9 plans that give you flexibility -- well, number
10 one, that minimize the risk and that give you
11 flexibility if things change going down the road.
12 Building a baseload coal plant gives you no
13 flexibility going down the road because once you've
14 built it, you've got it, you're going to have it
15 for 60 years, and then if you believe that there
16 are going to be no CO2 costs from the federal
17 government and in ten years large CO2 costs come
18 down the road, you're stuck and your ratepayers are
19 stuck paying them. So we at Synapse believe, and I
20 believe it based on my 30-some -- 33, 34 years of
21 experience is that in the uncertain times as we are
22 now, you need to have a portfolio approach, a range
23 of possible sources, self-build, power purchases
24 from the market, joint projects, maybe some gas,
25 coal if you can do CCS, increased spending on DSM,

1 wind, so that if the future -- well, not if -- when
2 the future doesn't look like we think it will
3 today, you can adapt.

4 Q. Both these companies do have a diverse mix
5 of generation at this point, don't they?

6 A. No. I think that they're both fairly
7 heavily dependent upon wind -- sorry -- coal and
8 certainly fossil fuels. I don't recall the exact
9 numbers for MDU, I don't know if I have it in this
10 testimony, but we've looked at it in South Dakota
11 and in Minnesota and I wouldn't say they're diverse
12 at all.

13 Q. Well, they have more than coal generation
14 is the point I was trying to make.

15 A. Sure.

16 Q. They're not relying totally on coal. They
17 have natural gas, they -- Otter Tail has wind, MDU,
18 according to the testimony, is in the process of
19 building some wind generation, so they're not
20 relying on coal. They're, granted, pretty heavily
21 dependent on coal.

22 A. And their steps to reduce that dependence
23 are admirable, the wind -- the points you
24 mentioned. It's just that Big Stone II is a -- a
25 pun -- is a big step back towards dependence, and

1 it's a plant that they will have in their resource
2 mix for 60 years.

3 Q. Do you think that it makes more sense for
4 MDU to have more reliance on natural gas at this
5 point than coal-fired generation?

6 A. I don't know the answer to that. What we
7 found in our investigations, mostly in Minnesota
8 that I've reviewed for here, is that MDU needs to
9 spend money and time on DSM and implementing DSM;
10 that when we reviewed MDU's programs, the three
11 programs they were including in their IRP for DSM,
12 one was to encourage electric heat and the other
13 two were load shaving rather than reduced energy
14 saving programs. That I agree with you completely
15 about the need for fuel diversity, but energy
16 efficiency is an excellent way to diversify your
17 fuel mix and reduce your dependence on fossil fuels
18 as are renewables technologies.

19 And your specific question about gas
20 versus coal, I think that you would want a -- you
21 would want a Strategist model with a reasonable
22 range of risk assumptions. You would have CO2
23 costs, you'd have natural gas prices, coal costs,
24 capital costs, and if you look at them across a
25 range of possible scenarios, then you see whether

1 depending on gas is better or worse than depending
2 on coal.

3 Q. In your testimony you contend that Otter
4 Tail and MDU's economic and modeling analysis are
5 biased in favor of Big Stone II; is that correct?

6 A. Yes.

7 Q. Is the absence of the projected CO2 cost
8 the primary factor that is included in your
9 analysis to support the position that you state?

10 A. I don't know whether the primary. It's
11 certainly a very large factor. There's no DSM.
12 There's no -- I'm sorry. You mean the total -- all
13 of the modeling studies or just the two, MR-1 and
14 MR-2?

15 Q. The modeling that you used to make your --

16 A. All of the studies, yes. The greenhouse
17 gas is the big issue for all of them and, also, not
18 modeling a range of power plant capital costs.

19 Q. And you're aware that in North Dakota we
20 have a state law that prohibits the Commission from
21 using or requiring the use or allowing electric
22 utilities to use environmental externality values
23 in planning, selection or acquisition of electric
24 resources?

25 A. I'm familiar with the statute.

1 MR. BINEK: I have no further questions.

2 JUDGE WAHL: Questions from the
3 Commission. Commissioner Wefald.

4 COMMISSIONER WEFALD: Yes.

5 **EXAMINATION**

6 **BY COMMISSIONER WEFALD:**

7 Q. I don't know if the Commission has an
8 option to say to one of these companies or to both,
9 we would allow -- instead of 120 megawatts of
10 electricity to be purchased from the Big Stone
11 Plant, that we would allow, let's say, 80 or 60 or
12 90, or whatever the number would be. So I don't
13 know if that's an option. But let's just explore
14 if it was an option. You said that you had some
15 concerns about MDU and the choices it's picked for
16 demand side management, and I have some questions
17 for Andrea when she comes up as a witness about
18 those same issues. I identified those same
19 programs in her testimony.

20 You said that there were -- that you
21 analyzed MDU's demand side management programs and
22 you implied that you would have a different answer
23 than MDU if you were looking at demand side
24 management programs with the cost of electricity at
25 the Big Stone Plant being, they told us yesterday,

1 6.9 cents per kilowatt-hour. Can you give us some
2 suggestions of the amount of and kinds of programs
3 that they can be looking at?

4 A. I'll try. I wish I could channel one of
5 my former colleagues, Tim Woolf, who actually did
6 the analysis, who is now on the Massachusetts
7 Utility Commission. He did the analysis and found
8 that the saving -- energy savings that MDU is
9 projecting out of its three programs was
10 significantly below what other companies had
11 achieved and what other companies were projecting
12 and which studies said were achievable.
13 Unfortunately, I don't -- I'm not the witness to go
14 much further than that.

15 Q. All right. Then I'll direct those
16 questions to Andrea Stomberg. If MDU has said that
17 it has 110 megawatts of gas in its portfolio, are
18 some -- are some utilities using natural gas that
19 they already have on their systems in -- say,
20 peaking plants, et cetera, do they use that as a
21 complement to wind generation that they add in
22 order to make it baseload?

23 A. Yes. We've seen --

24 Q. And how much?

25 A. I'm sorry.

1 Q. And how much -- if you had 110 megawatts
2 of gas peaking plants already on your system, how
3 much wind could you add then to that to make 110
4 megawatts of -- how would that work? How many
5 megawatts could you accomplish with 110 megawatts
6 of peaking plant? How many megawatts of wind would
7 you need to add in order to make that baseload?

8 A. That's the key question, and,
9 unfortunately, neither of these companies have
10 studied how much wind their systems can accommodate
11 while maintaining adequate levels of reliability
12 and without too large of a cost increase.

13 Q. Because they already have the gas peaking
14 plants already on their system that can act as
15 backup.

16 A. That's what we -- when the companies filed
17 rebuttal to us in South Dakota where we talked
18 about adding wind, and I think if you read what's
19 Exhibit MR-1, it talks about wind is not a
20 baseload, you need to have backup, and they do a
21 scenario and I think it's in Exhibit MR-2, where
22 there's a 500 megawatt gas plant to back up the
23 wind, nobody on any -- would ever build a power
24 plant just to be a backup.

25 Q. I know that.

1 A. Under the MISO rules, you probably
2 couldn't just have this gas plant sitting in your
3 backyard to run in case the wind didn't run. You
4 would have to run it. You would have to bid it.
5 So really what you have is the system backs up wind
6 just like the system backs up any generator. And
7 what you need to do is you need to do a study of
8 how much wind can a section of a system -- in a
9 large system incorporate, as I say, without having
10 adverse reliability and cost impacts. That's what
11 Xcel Energy and the Department of Commerce did in
12 Minnesota that Mr. Guerrero -- the studies that Mr.
13 Guerrero and I were discussing. In each of the
14 cases in which I have been involved with OTP and
15 MDU we've asked them, have you done any of those
16 studies, and they have not.

17 Q. But in your opinion -- you don't have any
18 expert information about, let's say, whether if you
19 took 50 megawatts of wind -- let's just put in a
20 number here -- and whether if 50 megawatts of wind
21 then could be firmed by 110 megawatts of peaking
22 plant and then come out with something that equates
23 to, let's say, 50 megawatts of baseload power?

24 A. I would love to be able to give you an
25 answer, but I can't.

1 Q. You can't?

2 A. I can't.

3 Q. It has to be run through?

4 A. You need to do a modeling analysis to be
5 able to really have a reliable number.

6 Q. All right. And so -- or, for example, if
7 you had a combination of demand side management of,
8 let's say, 20 megawatts even for MDU instead of
9 their 7 that they're predicting in the near future
10 and another 40 megawatts of wind that could be
11 backed up by peaking plants that could equal 60 or
12 something, I don't know --

13 A. Right. That's -- if I could be so
14 presumptuous, those are the kind of studies I would
15 hope that you folks would require the companies to
16 do. Those are the kinds of analyses that need to
17 be done to look at portfolios of resources and how
18 they mix and what are the lowest costs and what are
19 the lowest risks, and figuring out how much wind
20 your system can take is an important factor. You
21 know, we've done -- when we do analyses like this,
22 we try to analogize -- I mean, analogize to the
23 studies, you know, that Mr. Guerrero asked me about
24 from Minnesota, and there were studies from New
25 York State, and there's studies from several other

1 national -- large region studies. But really it's
2 hometown kind of work. It's figuring out how much
3 can MDU handle being that it's part of MAPP and
4 soon be part of MISO.

5 Q. All right. Thank you. And then I think
6 you said at the beginning of your testimony -- oh,
7 you had said no -- no coal plants now in existence
8 can separate and sequester CO2?

9 A. There's no technology for doing that from
10 pulverized coal.

11 Q. Okay. Well, I would ask about, what about
12 what's happening up here in Beulah? In North
13 Dakota we have a plant that is a coal gasification
14 plant and they sequester then from that gas-making
15 process.

16 A. And they send it up to Alberta.

17 Q. Right. So I'm just thinking that's from
18 pulverized coal they're making natural gas, then
19 they are separating it and they are sequestering
20 it. So I just wanted to -- why do you not include
21 that plant in your -- when you say there's no
22 plants that can do it now?

23 A. Because you're getting the sequestering
24 from the pre -- from the precombustion. My
25 understanding is you're turning the coal into gas.

1 Q. Yes.

2 A. And then you're burning the gas.

3 Q. That's right.

4 A. And you're getting the CO2.

5 Q. No, they're not burning the gas. They're
6 actually sending the gas out.

7 A. But you're getting the CO2 from the
8 conversion to the gas process.

9 Q. Yes.

10 A. At the pulverized coal plant, you need a
11 process to get the CO2 after you've burned the
12 coal, so it's a different stage in the process,
13 that there is no -- that's why my conclusion was
14 there's no technology for removing CO2 from a post-
15 combustion.

16 COMMISSIONER WEFALD: Okay. That's all
17 the questions I have at this time. Thank you.

18 JUDGE WAHL: Commissioner Clark.

19 **EXAMINATION**

20 **BY COMMISSIONER CLARK:**

21 Q. I do have a few and they're related to
22 similar questions along Commissioner Wefald's first
23 line of questioning, which is the Strategist model
24 that you ran, and I'm sort of intrigued by this,
25 but I'm not sure that I understand exactly the

1 changes or the inputs that you had to run to get to
2 the conclusion that you did, and some of it may be
3 because of the redacting, so if we're entering
4 areas that we can't do on record, I'll have to go
5 sign the confidentiality, so let me know if we're
6 getting too close.

7 JUDGE WAHL: If I can interject, it's --
8 my order does not exclude talking about the
9 process. It only excludes the use of numbers or
10 quantitative values.

11 COMMISSIONER WEFALD: Okay.

12 COMMISSIONER CLARK: Okay.

13 Q. (COMMISSIONER CLARK CONTINUING) So if you
14 could lead us through the assumptions that you made
15 when you ran the Strategist model, and we're
16 talking about on the MDU side --

17 A. That's correct.

18 Q. -- the page 66 through page 70 testimony
19 roughly -- just walk me through it so I understand
20 it.

21 A. MDU developed, I think through Mr.
22 Heidell's work, a database for the Strategist
23 model. We received the database, our first attempt
24 was to replicate the results that we had received
25 from MDU to make sure we knew how the model ran.

1 We then changed a number of inputs. And let's go
2 back to page 68, I think it is -- go further back.

3 Q. 67.

4 A. If you go back to 67, and see the bottom
5 -- the top of 67. We allowed it to select wind --
6 more wind, combustion turbines, Big Stone, combined
7 cycle units, lignite coal, IGCC, demand side
8 management, a baseload contract, and a one-year
9 contract with Xcel. I think that was the first
10 year.

11 Q. Okay. And this was allowed in different
12 size blocks?

13 A. In different size blocks and in different
14 years. That's why you have so much Big Stone. It
15 could select it in any one -- any one of a number
16 of years.

17 Q. Okay.

18 A. And that the model -- we specified the
19 price. You would specify the price of each of
20 these, the number of the blocks, whether there were
21 any limits on the number of blocks that it could
22 take. You could specify limits on the years in
23 which it was available. And then we ran -- as you
24 go further down that page, we ran five scenarios.
25 And the results were as they're presented on table

1 9. Now, the comments that Mr. Guerrero asked me
2 about before from Mr. Heidell's rebuttal testimony
3 were pre these numbers. In Minnesota there was an
4 earlier set of table 9 that had an error in it, and
5 that was the error that Mr. Heidell pointed out to
6 us that we corrected.

7 Q. So in light of Mr. Binek's question, which
8 was about modeling CO2 costs, which in North
9 Dakota, at least from a quantitative standpoint, is
10 prohibited, do those factors impact this Strategist
11 model that you ran here? Were some of the
12 assumptions that were brought into this model
13 because of those CO2 costs?

14 A. The answer is yes and no. In some
15 scenarios we modeled our CO2 costs. The two
16 scenarios that -- the second and third lines on
17 table 9 that are browned out reflect scenarios of
18 our low CO2 price and our mid CO2 price. By "our,"
19 I mean Synapse.

20 Q. That's the redacted?

21 A. Yes. And then other scenarios reflected
22 other changes. What we had intended to do when we
23 began was to start with five or six scenarios,
24 individual changes and then start putting them
25 together. For example, low Synapse CO2, more wind,

1 more wind, more DSM. And when we discovered that
2 just increasing the DSM eliminated Big Stone II,
3 and increasing the capital cost eliminated any Big
4 Stone II, we didn't think there was any need to
5 pursue further -- what do I want to say -- joint
6 scenarios where we changed several of the variables
7 at once.

8 Q. Okay.

9 A. But that's the kind of risk analysis I've
10 been talking about.

11 Q. On page 69, the question about the
12 Strategist model selecting only 23.2 megawatts at
13 Big Stone II --

14 A. Yes.

15 Q. -- is that exclusive of the CO2 question?

16 A. Yes.

17 Q. So regardless of CO2 --

18 A. Yes.

19 Q. -- it's still --

20 A. Yes. That's regardless of CO2.

21 Q. Just so I understand, is it your
22 understanding the reason that that happened was --
23 is it twofold or more? One, you allowed different
24 blocks to be picked as opposed to an all-or-nothing
25 selection?

1 A. Yes.

2 Q. And, two, is that interrelated to the
3 issue of accrediting the off-system sales? Or
4 explain how that factors into that.

5 A. No, the off-system sales was not related.
6 The Strategist model does some strange things.
7 What it does is, it will create -- I don't know --
8 a thousand -- several thousand different plans, and
9 it only takes -- I can't remember, I wish Mr.
10 Drunsic, who prefiled testimony, was sitting here
11 next to me -- or in place of me. He actually ran
12 the model. It only keeps some of those from the
13 first year. So, say, it makes 2,000 plans. It
14 only keeps the first thousand least expensive and
15 puts it into year two, then there are new resources
16 it optimizes for that year and it get another 2,000
17 plans but only keeps the cheapest thousand of those
18 and it goes on. So we discovered that if you take
19 -- you prohibit the Strategist model with all of
20 MDU's assumptions, if you don't allow it to take
21 any Big Stone II, it actually creates a plan that's
22 less expensive than the Big Stone II plan. But
23 because of the way that Strategist works in that it
24 -- it optimizes each year and it only keeps a
25 certain number of plans that it creates, because

1 eventually if you had 2,000 the first year and you
2 optimize for that, you may get four million the
3 second year and increasing -- I don't know if it
4 increases exponentially.

5 Q. And just so I'm clear, the discussion that
6 we're having now is specific to MDU, the IRP
7 planning process used by Otter Tail is not --

8 A. The Strategist model used by MDU is
9 current state-of-the-art modeling, far, far better
10 than either what MDU used before last -- the spring
11 of 2006 or that OTP has used to date that I know
12 of.

13 Q. Is the Strategist model sensitive to or
14 how does it factor in the risk associated with
15 price shocks from delivered price of coal to the
16 Big Stone Plant?

17 A. You would model different scenarios. I
18 think the way you would do it is, you would have a
19 -- the way we typically do it is you have a low
20 coal price, a mid coal price and a high coal price,
21 and then you could vary those and see -- that would
22 give you a sense of the risk of your plan to
23 increases in the price of coal.

24 COMMISSIONER CLARK: Okay. Thank you.
25 That's all I have.

1 JUDGE WAHL: Commissioner Cramer.

2 COMMISSIONER CRAMER: Thank you.

3 **EXAMINATION**

4 **BY COMMISSIONER CRAMER:**

5 Q. Several questions I was going to ask have
6 been and answered. I'll ask one about the
7 Strategist model, kind of a general question maybe
8 to wrap up that piece of it. If the Strategist
9 model, or any model, for that matter, demonstrates
10 that there's a better, lower cost plan than the one
11 MDU or Otter Tail is engaged in here, why wouldn't
12 they use it? And I know that's asking for you to
13 speculate, but why would they be here asking us for
14 prudence on BS II if there's a better, least
15 expensive model?

16 A. Well, there could be a couple of reasons.
17 On the one hand, I would not recommend, and I don't
18 think that they would just take the results of a
19 model and have it say, geez, it's \$500 cheaper,
20 let's go with that model, that run. Generally if
21 you do these analyses properly and you consider
22 risk, you're going to have a range of numbers and
23 you're going to have a range of risks to consider,
24 so you do have to have people putting their
25 judgment once they have the numbers on the table.

1 So we're not talking about taking judgment out of
2 the process. It's just you need to do the
3 analysis. As to if there were cheaper plans, I
4 mean, I don't want to speak for them and I don't
5 want to speculate what goes on in their heads, but
6 the electric utility industry has been heavily --
7 has a paradigm of load growths, we build central
8 station power plants to meet the increased load
9 growth. Whether we're in North Dakota, South
10 Carolina, Massachusetts or Arizona, generally
11 that's what a lot of the industry thinks, and that
12 may be their belief that, you know, with central
13 station, power plants are dispatchable, we can
14 control a system. You go out and you spend 20
15 million dollars on DSM, you don't know how much you
16 get back, you don't know whether people use it on
17 peak, you don't know when the wind blows, so life
18 becomes more complicated if you move away from
19 central station.

20 Q. Aren't those reasonable considerations?

21 A. Absolutely reasonable considerations, but
22 given the uncertainties in today's world and the
23 800-pound gorilla that we're facing with climate
24 change, it's inevitable.

25 Q. Then I'm going to -- I want to ask about

1 some of those uncertainties, because you've been
2 rather clear on the CO2 restrictions and the not
3 if, but when assumption. You have been critical of
4 the companies for not assuming an extension of the
5 production tax credit, so I assume you're assuming
6 there will be one. But then you said there are
7 currently no commercially viable post-combustion
8 technologies to capture and store carbon. Will
9 there be?

10 A. I hope so.

11 Q. Should the federal government invest a lot
12 in that technology to accelerate it?

13 A. Absolutely, and they are. And I mean, I
14 think MDU and OTP are funding money at some
15 university in North Dakota, and I think that's the
16 kind of funding you folks should absolutely support
17 as much as possible.

18 Q. But if we're to assume -- you're asking us
19 to assume that there's going to be CO2 restriction
20 public policy, there's going to be an extension of
21 the production tax credit. Shouldn't we also build
22 into the future assuming that there will be
23 commercially viable CO2 captured technology at some
24 point?

25 A. Absolutely. You absolutely could. But if

1 you do, you have to factor in the cost. You can't
2 just say that someday down the road you'll be able
3 to put a widget onto Big Stone II and capture the
4 CO2 and stick it in the ground for 300 years. You
5 have to factor in the cost. And the costs that
6 we're now seeing for estimates of what carbon
7 capture sequestration will be are on the order of
8 30 to \$50 per ton of CO2, which is above our high
9 -- I can't talk about numbers. I'm sorry.

10 Q. I know.

11 A. If I could. So I agree with you, that I
12 think it's reasonable if you're going to -- to
13 assume that there would be post-combustion CCS. I
14 have nothing wrong with that if you also allow a
15 fairly wide risk for -- range for what it's going
16 to cost to do that. You can't just -- I mean, in
17 Minnesota the co-owners put on testimony that said
18 a goal of the federal government is to have CCS
19 at -- is it 5 or \$15 a ton in the year 2015? Well,
20 that's great, it's a goal. Nobody credible thinks
21 it's a realistic target. It's a nice number, it
22 would be wonderful. So you need if you want to
23 include that 5 or \$10, whatever that number is, you
24 also have to allow for 30 to 50, and that's why
25 when doing these studies, you do a range of

1 studies.

2 Q. Although in our part of the world, that
3 was -- just shift a little bit and get further
4 west. Getting back to Commissioner Wefald's
5 illustration of the CO2 that's being piped up to
6 Alberta for -- or up to Canada for tertiary oil
7 recovery, now you have a commercially viable
8 product at the end of it. That's got to have some
9 value on the other side; right?

10 A. I couldn't agree more. We are involved in
11 a study looking at the potential for CCS on
12 intergranular -- sorry -- integrated gas --
13 integrated gas combined cycle plants, and what our
14 conclusion is, is that you should build a number of
15 them with CCS to test -- this concern about the
16 technology, even though your plant here shows it
17 works. Take the technology out for test runs in
18 East Texas and take the carbon to the CO2 and stick
19 it in -- insert it into the ground for oil
20 recovery -- enhanced oil recovery. So what you
21 have is you have an economic benefit from doing the
22 testing. So I agree completely. But every -- I
23 don't think there are going to be a lot of places
24 in the U.S. where you're going to be able to do
25 that, and, I don't know, I haven't seen any

1 evidence that you could do that from Big Stone.
2 But, again, if you do -- sorry for interrupting,
3 Commissioner.

4 Q. I understand.

5 A. But if you do, you've got to include the
6 costs -- include the benefits, you've got to
7 include the costs.

8 Q. I'm just going to ask one more question,
9 kind of a general question, because you've been
10 rather clear that you believe the companies have a
11 bias, and you've explained it here now more
12 recently as perhaps more of a culture than a bias,
13 might be a better word. I was going to ask you, do
14 you think Synapse has a bias? Do you have an
15 anti-coal bias?

16 A. No. We would love -- believe me, I would
17 love to testify that a coal plant was the most
18 economic option after the utility had done a
19 reasonable set of studies. My life on the witness
20 stand would be a lot easier. We haven't seen it
21 yet. No, I don't feel like we're anti-coal. We'd
22 love to see there be coal with CCS. It would make
23 thinking about the future a lot more optimistic.

24 COMMISSIONER CRAMER: Thank you. I have
25 nothing else.

1 JUDGE WAHL: Any further questions from
2 the Commission? Ms. La Seur, followup.

3 **REDIRECT EXAMINATION**

4 **BY MS. LA SEUR:**

5 Q. Well, Mr. Schlissel, you were asked about
6 the potential bias or associations of Synapse and
7 some other clients that you've worked with in
8 Minnesota. Would you mind telling us who some of
9 your other more representative clients are?

10 A. We work for environmental groups, such as
11 our clients in this case. We also work for state
12 regulatory commissions. Right now I'm doing work
13 -- I've done work recently for the Arizona
14 Corporation Commission, for regulatory commission
15 staff in a number of states. I've just completed a
16 big project for the U.S. Department of Justice. We
17 have a wide range of clients. We work for some
18 private businesses. I've done -- just did a
19 project for General Electric. So our clients are
20 not just group -- environmental groups who don't
21 like coal. We do work for some wind developers.
22 We're doing work on a project right now
23 collaborative of regulators and utilities in New
24 England, and we're doing modeling using a
25 Strategist model of determining avoided costs for

1 setting demand side management programs.

2 Q. Now, we know in North Dakota of all places
3 that it is possible to capture CO2. Are there
4 reliable costs associated with building that kind
5 of technology today?

6 MR. GUERRERO: Objection. I'm going to
7 object. I think he was asked the question earlier
8 that there are no cost-effective technologies to
9 capture CO2. I think that was pretty clear in his
10 testimony early on.

11 JUDGE WAHL: But the question is related
12 to the North Dakota process?

13 MS. LA SEUR: Right. I'm referring to
14 gasification as opposed to putting some post-
15 combustion control on a PC plant.

16 MR. GUERRERO: Thank you.

17 JUDGE WAHL: Overruled.

18 THE WITNESS: My understanding is that for
19 the gasification process, that there are workable
20 technologies. I don't know the costs associated
21 with those, but, again, it's a different type of
22 plant than Big Stone II. It's a plant where you
23 would gasify the coal first before you combusted it
24 to produce power.

25 Q. (MS. LA SEUR CONTINUING) But that is a

1 kind of plant that could be built today?

2 A. Sure. IGCC plants are being proposed
3 around the country.

4 Q. Are there any currently functioning?

5 A. Yes, there's several plants. Commercially
6 the main two are Tampa Electric has one down in
7 Tampa, Florida, and Duke Energy Indiana owns the
8 Wabash River Plant in -- I guess on the Wabash
9 River in Indiana. Neither of those does CCS, to my
10 knowledge. The Tampa plant is about to do CCS.

11 Q. So it's not really a comparison between
12 nothing being possible today and a technology
13 potentially developing down the road? It's a
14 choice between not paying a premium to build that
15 kind of captured technology today and hoping that
16 something cheaper will come up?

17 MR. GUERRERO: I'm going to object. It's
18 a leading question.

19 JUDGE WAHL: Sustained.

20 MS. LA SEUR: It's my witness.

21 MR. GUERRERO: Right. And it's a leading
22 question.

23 Q. (MS. LA SEUR CONTINUING) What would you
24 say is the -- what would you say is the price
25 differential between a PC plant and an IGCC plant

1 today in general terms?

2 A. I think generally the capital cost is
3 considered roughly 20 percent, something on that
4 order.

5 Q. And is there a difference in operating
6 costs?

7 A. There may be. I've not looked at it very
8 recently at all.

9 Q. As compared to other utilities whose
10 resource planning you've analyzed, what is your
11 opinion as to the quality and effectiveness of MDU
12 and OTP's energy conservation programs in this
13 state?

14 MR. GUERRERO: I'm going to object on the
15 relevance. The relevance of other utilities
16 throughout the country as compared to these
17 utilities, what is the relevance of that question?

18 JUDGE WAHL: Ms. La Seur.

19 MS. LA SEUR: We've heard testimony that
20 the Big Stone II option is more economic than
21 demand side management. We would like to offer
22 testimony about how well demand side management is
23 being handled in this state.

24 Q. The testimony does not say that Big Stone
25 Unit II is more cost-effective than demand side

1 management. I think it's pretty clear that the
2 testimony suggests that Big Stone II includes --

3 JUDGE WAHL: All right. The way to do
4 this is with argument. The objection is overruled.

5 Q. (MS. LA SEUR CONTINUING) Would you like
6 me to repeat the question?

7 A. No. I think I remember it. My
8 understanding is that OTP has fairly effective
9 energy efficiency programs in Minnesota, but it
10 does not implement those to any significant degree
11 outside Minnesota. And Minnesota, I guess, is
12 responsible for roughly half of its sales. One of
13 the things we found when we looked at the modeling
14 that OTP did for -- with regards to Big Stone was
15 that it assumes less energy efficiency than it
16 actually has been achieving.

17 With regards to MDU, it's my understanding
18 that they don't do a very aggressive job of
19 implementing DSM, but I have not looked at it in
20 great detail. My colleague, Tim Woolf, who I
21 mentioned before, is now Commissioner Woolf
22 for the Massachusetts Utility Commission, looked at
23 it in detail, and I remember working with him and
24 reviewing his testimony.

25 Q. Why would a utility claim to have achieved

1 less in demand side management than it actually
2 had?

3 A. I don't know. You would have to ask them
4 why they -- I don't think they claim less. I think
5 they assume less for the modeling. I don't know
6 the reason. All I know is that's what the results
7 appear to be.

8 Q. You were asked about the Minnesota PUC's
9 assignment of a zero cost to CO2 emitted in South
10 Dakota. Do you know if the State of Minnesota has
11 the authority to assign carbon costs to generation
12 outside its borders?

13 MR. GUERRERO: I'm going to object, calls
14 for a legal conclusion.

15 JUDGE WAHL: Overruled.

16 THE WITNESS: I believe the answer is yes,
17 that the utilities that operate within its
18 jurisdiction, that the Commission can require them
19 to consider costs, and those costs would be either
20 an externality cost or -- the costs we're talking
21 about are not environmental externality costs.
22 These are internalized costs paid for by the
23 utility and its ratepayers. That's very distinct
24 from externality costs. But I don't see any reason
25 why a regulatory commission couldn't require

1 companies to consider internalized costs or
2 externality costs when evaluating options absent a
3 statute such as the State of North Dakota has
4 deemed in its wisdom to pass.

5 Q. (MS. LA SEUR CONTINUING) What is the
6 difference between modeling generation alternatives
7 as you do and developing an integrated resource
8 plan?

9 A. The difference is in an integrated
10 resource plan you look at supply and demand side
11 options and you don't just model demand -- supply
12 side alternatives. That's it simply. You assume
13 that increased demand can be met through supply --
14 I'm sorry -- not only through supply, but through
15 also demand reduction methods, either capacity or
16 energy or both.

17 Q. And so why is it that Synapse isn't able
18 to offer specific proposals for alternatives?

19 A. We in Minnesota didn't have the time or
20 the resources to develop an alternative plan for
21 these companies.

22 Q. Is it correct -- for the record, we can
23 discuss this a little. Is it correct that
24 Strategist rejected BS II in multiple scenarios
25 that did not involve CO2 costs?

1 A. That's correct. That's what you see on
2 table 9.

3 Q. So even if this Commission can't use CO2
4 costs in its deliberations, they could still rely
5 on your analysis to reject this pre-prudence
6 application?

7 A. Yes.

8 Q. Has it been your experience that
9 regulation or regulators have been necessary in
10 other states to shift traditional utility operation
11 models toward more modern operational models?

12 MR. GUERRERO: I guess I'm going to
13 object. I don't understand the question, vague.

14 JUDGE WAHL: Overruled.

15 THE WITNESS: I don't know -- you know,
16 it's basically the chicken and the egg. I mean,
17 we've seen a lot of movement in recent years to
18 utilities doing sophisticated planning. IRP,
19 integrated resource planning, which was basically
20 ten years ago, people would hush about it in the --
21 at NARUC conferences. They would kind of whisper
22 to each other. It's back with a bombshell. Every
23 place that I'm aware of almost is doing integrated
24 resource planning. Even states that have
25 deregulated like those in the Northeast and the Mid

1 Atlantic are back into integrated resource planning
2 because they realize there has to be a planning
3 process.

4 As to your specific question, I don't -- I
5 mean, I really don't -- I know it's redirect, but I
6 don't know how to answer the question because some
7 states do it, push the utilities, other utilities
8 don't need to be pushed. It's really utility and
9 state specific. Go out to the West Coast, all up
10 and down the West Coast, and utilities are really
11 pushing sophisticated planning, including CO2
12 costs.

13 Q. (MS. LA SEUR CONTINUING) And has that
14 form of planning been successful in economic terms
15 for those states?

16 MR. GUERRERO: I'm going to object. It
17 calls for speculation.

18 JUDGE WAHL: Overruled.

19 MR. GUERRERO: Could they define what it
20 means in terms of success in economic terms?

21 JUDGE WAHL: You'll have a chance to
22 follow up, Mr. Guerrero.

23 MR. GUERRERO: Thank you.

24 THE WITNESS: I actually can't answer in
25 terms of economic sense. I can say that California

1 has significantly reduced the demand -- increases
2 in the demand for electricity through all of the
3 myriad of programs it's implementing.

4 MS. LA SEUR: Okay. I think I'll leave it
5 there. Thank you.

6 JUDGE WAHL: Mr. Binek.

7 **RECROSS-EXAMINATION**

8 **BY MR. BINEK:**

9 Q. Looking at your table 9 on page 68, in
10 running this model, when you have the increased
11 DSM, how does the model work? Do you plug in a
12 number of DSM into the model?

13 A. Mike Drunsic, whose testimony we filed and
14 everybody passed on, ran the model. Basically what
15 I did was -- a group of us said these are the
16 inputs we want to use, gave them to Mike, Mike put
17 them in the model, we produced results, we
18 discussed them. Unfortunately, he's the one for
19 the actual answer. I'll give you what I believe is
20 the fact.

21 We specified amounts of DSM and cost --
22 different costs of DSM. There would be some low
23 cost, then there would be blocks of higher cost and
24 then there would be a third set of blocks of
25 increased higher costs so that the model could

1 choose very -- a maximum amount of low cost,
2 additional mid cost and additional high cost DSM.

3 Q. Okay. And in running your model, you
4 allowed it to select these different blocks. How
5 in practice would this work? You've got a model
6 picking all kinds of different blocks of energy
7 that may or may not be available. How does the
8 utility use that? How does it put it together to
9 come up with a plan for providing the necessary
10 generation that it needs?

11 A. The same way a utility plans for power
12 plants that have forced outage rates. You're not
13 sure -- you can't be a hundred percent sure that
14 any power plant is going to be there on the peak,
15 so you have reserve margins, you have connections
16 to neighboring systems, you belong to ever larger
17 power pools or independent system operators, as
18 they're now called, so that if you need more power
19 than you have and can generate on your own system
20 or if you can buy power cheaper than you can
21 generate, you're able to do so.

22 Q. With the -- let's just go back to DSM.
23 When you're inputting DSM, you're basically making
24 a judgment that what MDU or Otter Tail projects for
25 their DSM that's achievable is wrong and that there

1 can be more DSM; is that basically correct?

2 A. You start with energy and then you
3 translate that into peak demand. Let me give an
4 example. Another way that you ensure you have
5 enough energy-generating capacity to meet your
6 needs is that -- and as we did in the modeling for
7 MDU, if you believe that you can save each year an
8 additional 1 percent of your energy sales in
9 commercial, industrial sector, you put in your
10 model you only assume half a percent, you be
11 conservative, so that if you're wrong and if all
12 the people that you believe will participate in the
13 program don't or if they don't implement it as
14 extensively as you do -- as you might hope they
15 would, you allow yourself some security.

16 Q. You talked a little bit about judgment
17 entering into this whole thing. You run your
18 model, then you have to look at those models and
19 use some judgment in deciding how you're going to
20 plan your system to meet your needs. Does -- in
21 looking at fuels, does -- is it appropriate for the
22 utility to look at things like the availability of
23 coal versus oil or natural gas, for instance, the
24 supply of it, the fact that it's -- that type of
25 fuel does not have to be imported? Are those all

1 factors --

2 A. Absolutely.

3 Q. -- that go into the --

4 A. Of course, they are. Of course, you look
5 at your cost and risk associated with relying on
6 natural gas, but you also look at your cost and
7 risk of relying on the shippers of the coal out of
8 the Powder River Basin. Are there going to be
9 train derailments like there were in May -- was it
10 May and September or May and November of 2005? Are
11 there going to be severe disruptions? I know that
12 some utilities -- I believe it was OTP was one of
13 them -- have sued the shippers because of concerns
14 over collusion to raise prices. Those are all
15 factors you consider in your fuel so that
16 there's -- everywhere you look there's uncertainty.
17 What I'm saying is a prudent utility studies and
18 evaluates the risks associated with that
19 uncertainty to the maximum extent possible, and
20 these companies have not.

21 MR. BINEK: I have nothing further.

22 JUDGE WAHL: We have a lot of new
23 information. Do the Commissioners have any further
24 questions?

25 MR. GUERRERO: Excuse me. I believe if

1 I'm not -- did we skip me on redirect --

2 COMMISSIONER WEFALD: We skipped Todd.

3 MR. GUERRERO: -- after Ms. La Seur?

4 JUDGE WAHL: Did I?

5 COMMISSIONER WEFALD: I thought you were
6 going around the room in that direction and would
7 get back to you.

8 JUDGE WAHL: No. I did, Mr. Guerrero.

9 MR. GUERRERO: Thank you.

10 JUDGE WAHL: Nothing personal, you
11 understand?

12 MR. GUERRERO: I don't take anything
13 personal. Thank you.

14 COMMISSIONER WEFALD: Can we have a five-
15 minute break, or do we want him to go through his
16 questions first before we get our five-minute
17 break?

18 JUDGE WAHL: We can recess for five
19 minutes.

20 COMMISSIONER WEFALD: Thank you.

21 (Recess taken at 2:28 p.m. to 2:38 p.m.)

22 JUDGE WAHL: We're back on the record.
23 Mr. Guerrero.

24 MR. GUERRERO: Thank you, Your Honor.

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RECROSS-EXAMINATION

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BY MR. GUERRERO:

Q. Mr. Schlissel, let's start with the Strategist model.

A. Okay.

Q. You did not write the model; correct?

A. That's correct. Mr. Drunsic did.

Q. Mr. Drunsic. How long has Synapse owned that model?

A. We don't own it. We license it for projects. We've used it on four or five projects now.

Q. When did you license it first?

A. I don't remember the first time. We had done it on a project before the modeling we did in Big Stone, but I don't remember what -- I think that was a Nova Scotia project.

Q. Is it true that -- I recall from Minnesota that you first licensed it in September of last year.

A. I don't recall. For Big Stone we did, but I believe we had used it before.

Q. But you're not certain?

A. That's correct. It's not something I would be concerned with.

1 Q. And since then you've said -- you just
2 said that you've used it a couple of times -- two,
3 three more times since you used it for Big Stone?

4 A. Yes. We've used it at several -- three,
5 four more times.

6 Q. Do you know how long Otter Tail Power
7 Company has been done resource -- integrated
8 resource planning?

9 A. I've seen their 2002 plan, but I assume
10 they did it before then.

11 Q. Would you disagree with me if I told you
12 that they had been doing it for more than 20 years?

13 A. No, no reason to disagree with that.

14 Q. Do you know how long Montana-Dakota
15 Utilities has been doing integrated resource
16 planning?

17 A. What it called its best cost planning, I
18 don't know.

19 Q. Would you have any reason to disagree if I
20 told you that this Commission ordered it as a
21 result of a 1987 matter?

22 A. Again, I wouldn't have any reason to
23 disagree with it.

24 Q. Let's talk a little bit about your comment
25 about some states seem to push integrated resource

1 planning, conservation, et cetera, more than
2 others, and I think you mentioned California in the
3 same context.

4 A. Yes.

5 Q. Could you tell the Commission what
6 percentage of mix of resources California utilities
7 mostly use?

8 A. The mix. I mean, they use natural gas,
9 they use hydro, they have a couple of nuclear power
10 plants, they buy some power that's generated from
11 coal, although they're going to stop -- from out of
12 state. They're going to stop doing that. I think
13 that's generally their mix. There's some
14 geothermal.

15 Q. How much coal do you think they have in
16 California?

17 A. In California?

18 Q. Mm-hmm. Yes.

19 A. I have no idea.

20 Q. How much coal do you think they use in
21 California as an overall percentage of the
22 resources?

23 A. I don't know. I know that they're
24 planning to phase it out, but I don't know exactly.

25 Q. If I told you it was approximately 5

1 percent, would you have any reason to disagree?

2 A. No.

3 Q. When you say "phase out," are you
4 referring to the new California Utility Commission
5 order that addresses long-term power purchase
6 contracts from coal?

7 A. From my general understanding of it, yes.

8 Q. Do you know whether or not there's any off
9 ramps with respect to that proposal?

10 A. I imagine there probably are, but I'm not
11 familiar with it in detail. I'm just generally
12 familiar with it.

13 Q. Well, when you say they're going to get
14 rid of it, they're not -- you don't really mean
15 they're going to get rid of power purchase
16 agreements for coal, do you?

17 A. My understanding -- I said my
18 understanding was they were going to phase out
19 their purchases of coal -- the purchase of power
20 from coal-fired generating units. It's just a
21 general understanding from reading the industry
22 literature. It's not from a review of the specific
23 proposals before the Commission or any Commission
24 orders.

25 Q. Thank you. Where do you think California

1 stands in terms of its residential retail
2 electricity rates versus North Dakota?

3 A. Probably higher. Probably more expensive.

4 Q. Do you know how much more expensive?

5 A. No. I've not done that analysis.

6 Q. Now, you said that Otter Tail has done a
7 pretty good job with energy efficiency and demand
8 side management. Would you believe that that's a
9 result of programs adopted by the State of
10 Minnesota, at least in part?

11 A. I'd have no reason to disagree with that.

12 Q. Well, do you think Minnesota has been a
13 state that's pushed their utilities?

14 A. Sure, but that doesn't mean a utility
15 can't do it in a state that doesn't push as hard.

16 Q. I understand that. That quite wasn't my
17 question.

18 A. I know.

19 Q. So the question is, do you believe
20 Minnesota is one of those states that pushed their
21 utilities?

22 A. I understand that they did -- they have.
23 It has been important to the Minnesota Commission,
24 yes.

25 Q. And you believe this Commission has pushed

1 Montana-Dakota Utilities?

2 A. I've not reviewed how much this Commission
3 has pushed. Seems to me from their comments today
4 that they're concerned about the issue.

5 Q. I think that's a fair statement. Do you
6 know whether -- so you don't have an opinion
7 whether or not the State of North Dakota has pushed
8 either Otter Tail or Montana-Dakota Utilities with
9 respect to integrated resource planning?

10 A. Well, if I used your assumption, which is
11 that Otter Tail did it because Minnesota pushed
12 them, then --

13 Q. Well, let me stop you right there, Mr.
14 Schlissel. I don't have an assumption in my
15 question, so if you could just try to answer the
16 question, that would be better.

17 A. You better rephrase it. I didn't
18 understand it then.

19 Q. The question is whether or not do you
20 believe the North Dakota Public Service Commission
21 has been one of the states that's pushed its
22 utilities on integrated resource planning? Do you
23 have a plan on that?

24 A. Minnesota, yes.

25 Q. I think I said North Dakota.

1 A. North Dakota, I said a couple answers ago
2 I don't know. I've not looked at it.

3 Q. Ms. La Seur asked you a question about the
4 distinction or the difference between modeling
5 generation alternatives versus an integrated
6 resource plan. Do you recall that question?

7 A. Yes.

8 Q. And you would agree that Mr. Greig's
9 analysis was more of a generation alternatives
10 analysis versus an integrated resource plan;
11 correct?

12 A. Yes.

13 Q. And you're not sitting here -- you're not
14 suggesting as you sit here today, Mr. Schlissel,
15 that Mr. Greig was submitting his report as an
16 integrated resource plan?

17 A. No. Mr. Greig would have to say what he
18 is supporting it as. I don't see any DSM in there,
19 so I think it's a limited analysis.

20 Q. She asked -- Ms. La Seur asked you some
21 questions about IGCC plans and you talked about at
22 least two, Tampa Electric and Duke Energy. How big
23 is the Tampa Electric facility?

24 A. I think Tampa -- I think they're both on
25 the order of 300 megawatts. The Tampa one may be a

1 little smaller. I have looked at it recently, but
2 I just can't remember the size, but they're not
3 five or six hundred megawatt plants.

4 Q. Do you know what their operating
5 characteristics have been?

6 A. I understand that for periods they had
7 poor operating performance because they relied on a
8 single gasifier and that there's thought to install
9 dual gasifiers so that would improve their
10 availability significantly.

11 Q. And who financed those facilities, at
12 least in part; do you know?

13 A. No.

14 Q. Would you agree with me that the federal
15 government financed those facilities in part?

16 A. That rings a bell, but, again, I don't
17 know.

18 Q. What about the Mesaba Energy Project in
19 Minnesota, do you know anything about that? That's
20 an IGCC project.

21 A. The only thing I know about Mesaba is that
22 some of the lawyers who were in the hearings with
23 you and me in Minnesota had been in the Mesaba case
24 because they talked about it.

25 Q. So you don't know who is financing, at

1 least in part, that facility, either?

2 A. No. I know the federal government is
3 financing IGCC facilities, that there are
4 incentives and guarantees, and is the EPACT 2005,
5 but I don't know about specific projects.

6 Q. Why do you think it is that the federal
7 government has to finance those facilities at least
8 in part? Do you have an opinion?

9 A. As to why they have to? Probably because
10 the desire to use domestic coal and also because of
11 the premium of the plants being more expensive than
12 your pulverized coal plants.

13 Q. And that it may be difficult to get
14 financing from the capital markets?

15 A. Oh, sure.

16 Q. Commissioner Wefald had asked you some
17 questions about natural gas backing up wind, wind
18 backing up natural gas. Do you recall those
19 questions?

20 A. Yes.

21 Q. You're not suggesting that the applicants
22 have suggested that the appropriate way is to build
23 wind and then back it up with natural gas, are you?

24 A. I don't know. Do you mean a specific
25 natural gas plant?

1 Q. Well, you're not -- in your reference to
2 Mr. Greig's analysis and then generally, we've had
3 this discussion in this hearing about wind and a
4 backup with natural gas to sort of replicate a
5 baseload facility. You're generally familiar with
6 that; correct?

7 A. Right. That's what I believe the
8 co-owners' position has been.

9 Q. Okay. And where do you think that
10 position has been stated?

11 A. The two studies that are presented as
12 Exhibits MR-1 and MR-2, the rebuttal testimony that
13 I think Mr. Greig filed, maybe Mr. Morlock, as
14 well, in South Dakota.

15 Q. So then you disagree with Mr. Greig's
16 analysis of his own study that what he was trying
17 to do was compare a baseload coal facility with a
18 baseload natural gas facility and then let the
19 natural gas facility back down as wind energy came
20 on so that essentially it would lower the fuel cost
21 of that facility? Do you disagree with his
22 characterization of that study?

23 A. I would have to compare his -- what you
24 say is his characterization of that study with the
25 materials from the rebuttal cases in South Dakota,

1 which represent -- which engage the issue as I just
2 explained it.

3 Q. I'll try to make this brief, Mr.
4 Schlissel. I'm showing you what has already been
5 introduced into evidence as OTP/MDU Exhibit 309 and
6 it's Mr. Greig's rebuttal testimony in this case,
7 and I'm looking at page 12. And the question is,
8 on line 14, First, the purpose of our analysis was
9 to compare the economics of baseload generation
10 alternatives. In the combined cycle generation
11 turbine plus wind-gas turbine, plus wind
12 alternative, the CCGT plant is the baseload
13 alternative being compared to the Big Stone II
14 project, not the wind energy purchase. Do you have
15 any reason to quarrel with that representation?

16 A. Yes. I don't have the documents with me,
17 but that's completely opposite to the way the issue
18 was engaged in South Dakota.

19 Q. Well, I'm not asking you about South
20 Dakota. I'm asking you about his report that's
21 filed here.

22 A. Well, he has to -- you're asking me to
23 explain what he means -- what he's presenting. How
24 am I supposed to say -- I can't say that he doesn't
25 believe that. I'm not trying to say I don't

1 believe that. All I'm saying is that the issue was
2 engaged as I've presented it in South Dakota, which
3 is that the combined cycle facility would back up
4 the wind.

5 Q. How many times have you reviewed that
6 report now since we have been in three states, Mr.
7 Schlissel?

8 A. I've reviewed -- I don't know. I don't
9 keep count. But I've reviewed the testimony -- the
10 rebuttal testimony again of Mr. Morlock and Mr.
11 Greig in South Dakota and, as you're aware, also in
12 Minnesota on many of these same issues.

13 Unfortunately, I don't carry it all around with me
14 so I can't pull it out here to show you, but it's
15 my recollection, and one I'll stand on, that the
16 issue was having a gas plant to back up the wind.

17 Q. You talked about shipper disruptions, I
18 believe, in response to Ms. La Seur -- I can't
19 recall -- and you specifically mentioned the 2005,
20 2006 disruptions at Big Stone Unit I. Do you know
21 how many disruptions they've had since the
22 commercial operation date of that facility?

23 A. I didn't mention Big Stone I at all. I
24 mentioned the supply disruptions coming out of --
25 for the coal coming out of the Powder River Basin.

1 I understand from some data responses in this case
2 that there were some disruptions at Big Stone I the
3 fall of 2006 when the coal pile went down. My
4 familiarity with the issue is through work I did in
5 Arkansas looking at supply disruptions and related
6 costs at Entergy Arkansas's power plants as a
7 result of derailings on the Powder River Basin
8 railroads.

9 Q. So do you know how many disruptions Big
10 Stone Unit I has had since its commercial operation
11 date?

12 A. Supply disruptions, no, I haven't looked
13 at it.

14 MR. GUERRERO: One moment, Your Honor. No
15 further questions. Thank you.

16 JUDGE WAHL: I'm acutely aware, of course,
17 of the time constraints, but, nevertheless, there's
18 even more new information here.

19 THE WITNESS: I'm ready to stay as long as
20 you need me.

21 JUDGE WAHL: So any further questions from
22 the Commissioners?

23 COMMISSIONER WEFALD: I have none at this
24 time.

25 JUDGE WAHL: Commissioner Clark.

FURTHER EXAMINATION

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BY COMMISSIONER CLARK:

Q. I just can't help a little more on this California thing, but you did bring it up as an example of a state doing sophisticated resource modeling and you had indicated that you thought North Dakota's rates -- retail rates were probably lower than California's. Do you have any reason not to believe that North Dakota's retail electric rates are in the bottom six or seven of all states in the country?

A. To tell you the truth, sir, I have no idea where they stand.

Q. Have you heard of -- have you been made aware of rolling blackouts in North Dakota at any time in the recent past?

A. No.

Q. A governor of the State of North Dakota being recalled over electric issues?

A. It probably would have made the Boston papers.

Q. Is it fair to say that North Dakota has probably done a lot right in the electricity market vis-a-vis California?

A. That's one way to look at it. Another way

1 to look at it is the problems haven't --

2 Q. Rates and service?

3 A. -- the problems haven't gotten around to
4 hitting yet, and that while you may have done an
5 excellent job to date, with the new -- you know,
6 I'm thinking of the Ronald Reagan campaign ad with
7 the bear in the woods. Well, the bear may be out
8 there in the woods that we need to protect against
9 now.

10 Q. California -- what appears on the flag of
11 the State of the California?

12 MR. BREEN: Objection.

13 COMMISSIONER CLARK: I'll withdraw the
14 question.

15 MS. LA SEUR: Objection.

16 THE WITNESS: I have to say I have been
17 cross-examined for 30-some-odd years and that's
18 probably the first time I'm absolutely speechless.

19 COMMISSIONER CLARK: I don't have any
20 other questions.

21 THE WITNESS: I hope I can look that up at
22 the airport. I don't want to sit on a plane the
23 whole way.

24 COMMISSIONER CLARK: If I know my state
25 flags right, I think it's a bear.

1 JUDGE WAHL: Any other questions from the
2 Commission?

3 COMMISSIONER CRAMER: No. Thanks.

4 JUDGE WAHL: Followup, Ms. La Seur?

5 MS. LA SEUR: No, sir.

6 JUDGE WAHL: Mr. Guerrero?

7 MR. GUERRERO: No. Thank you.

8 JUDGE WAHL: Mr. Binek?

9 MR. BINEK: No.

10 JUDGE WAHL: Ms. La Seur, before Mr.
11 Schlissel leaves, I don't think you have offered
12 the intervenors' exhibits. Am I mistaken about
13 that?

14 MS. LA SEUR: I believe I did.

15 JUDGE WAHL: Did we?

16 MS. DANIELS: Yes, we did.

17 JUDGE WAHL: I'm sorry then. I don't know
18 how I missed that. The other thing I was a little
19 concerned about was the question of foundation.
20 Did you not wish to offer the foundation I
21 suggested in my order for Mr. Schlissel's testimony
22 under Rule 703? Suit yourself, but when I drafted
23 my order, I thought that the questions of
24 speculation and hearsay might be addressed by
25 foundation in accordance with Rule 703. Do you

1 want to do that or not?

2 MS. LA SEUR: I would be happy to submit
3 that to the Commission within the week, if you
4 would --

5 JUDGE WAHL: No. I think all you need to
6 do is ask him whether the facts and data he relies
7 upon for his advice and opinions is of the type
8 relied upon by experts for their advice and
9 opinions for the consideration determination of
10 issues such as this. I think that's what's missing
11 here. Now, I don't want to tell you how -- I don't
12 tell you how to run your case, but it seemed to me
13 that when I reviewed Mr. Schlissel's direct
14 testimony, I didn't find that foundation and I
15 understand it isn't often routinely -- or routinely
16 offered, but, nevertheless, I had an objection as
17 to speculation and hearsay.

18 MS. LA SEUR: Thank you, Your Honor.

19 JUDGE WAHL: The only basis for that
20 speculation is the absence of that foundation, I
21 think. I don't doubt Mr. Kuntz may disagree with
22 that, but, I mean, that's his job. So what do you
23 want to do?

24 MS. LA SEUR: Can I go ahead and address
25 the witness on that point?

1 JUDGE WAHL: Please.

2 MS. LA SEUR: Thank you.

3 Q. (MS. LA SEUR CONTINUING) Mr. Schlissel,
4 are the facts and data in this particular case upon
5 which you base your opinion or inference those
6 perceived or made known to you at or before the
7 hearing and of a type reasonably relied upon by
8 experts in this particular field in forming
9 opinions or inferences upon the subject? Does that
10 about sum it up?

11 A. The answer is absolutely, yes.

12 MR. KUNTZ: Mr. Hearing Examiner, might I
13 ask a couple questions in support of my objection?

14 JUDGE WAHL: Sure.

15 MR. KUNTZ: Mr. Schlissel, you're trained
16 as an engineer; is that correct?

17 THE WITNESS: That was my -- some of my
18 education, yes.

19 MR. KUNTZ: And your opinions today, are
20 you offering those as an engineer?

21 THE WITNESS: No. I'm offering those as
22 someone who has 34 years of experience in the
23 utility industry and has worked on all of the
24 matters that you can read in Exhibit DAS-1 to my
25 testimony.

1 MR. KUNTZ: So you're not offering
2 opinions as an engineer today?

3 THE WITNESS: No. I'm offering opinions
4 of David Schlissel. David Schlissel, part of my
5 educational experience is engineering.

6 MR. KUNTZ: So David --

7 THE WITNESS: But, also, David Schlissel
8 is the person who has done the work I outlined, has
9 been accepted as an expert in state court -- courts
10 and regulatory commissions.

11 MR. KUNTZ: So are you an expert on
12 policy? Is that what you're an expert on?

13 THE WITNESS: No. I believe I'm an expert
14 and been accepted as an expert on utility planning,
15 on utility need for new capacity, power plant
16 operations and costs. Those are some of the
17 elements.

18 MR. KUNTZ: But isn't that an engineering
19 discipline?

20 THE WITNESS: No. It's combined
21 engineering, policy, economics. It's a wide range.

22 MR. KUNTZ: And so the discipline that
23 you're testifying on is this broad range of things
24 that includes engineering, economics and policy?

25 THE WITNESS: Generally, yes. It probably

1 includes other things, as well, but all of which
2 I've worked on in one stage or another of my
3 33-year career.

4 MR. KUNTZ: So experts of that nature
5 would rely upon statements out of the popular press
6 made by a president of Duke Energy to make their
7 planning decisions in what to build in North
8 Dakota?

9 THE WITNESS: No. People -- experts
10 testifying when looking at the issue of is the --
11 does the electric industry seriously consider there
12 is a potential for regulation of CO2 emissions,
13 would look at statements made by the heads of major
14 utilities in the nation. That would be one source.

15 MR. KUNTZ: Experts would or David
16 Schlissel would?

17 THE WITNESS: Experts would. I've seen
18 any number of other experts rely on very similar
19 statements.

20 MR. KUNTZ: That look upon what the other
21 utilities do in order to drive their decisions for
22 their utilities?

23 THE WITNESS: Correct. Utilities rely on
24 each other. Utilities belong to organizations to
25 learn about what other utilities do.

1 MR. KUNTZ: So you're here as an expert to
2 tell this Commission based upon your opinion about
3 what you're hearing from other utilities what these
4 utilities should be doing?

5 THE WITNESS: No, not at all. I'm here as
6 an expert saying this is what the industry outside
7 North Dakota is saying about CO2 regulation.

8 MR. KUNTZ: Then that becomes --

9 THE WITNESS: That is an important issue.

10 MR. KUNTZ: That becomes the basis for
11 your opinions on here?

12 THE WITNESS: Yes.

13 MR. KUNTZ: No further questions and I
14 renew my objection.

15 JUDGE WAHL: But your objection to what,
16 Mr. Kuntz? Mr. Schlissel is not a fact witness, is
17 he?

18 MR. KUNTZ: No. He's being portrayed as
19 an expert witness --

20 JUDGE WAHL: Right.

21 MR. KUNTZ: -- Your Honor, and I think if
22 you went to the Daubert analysis, frankly, I don't
23 think this person is an expert on anything that
24 he's offered opinions here.

25 JUDGE WAHL: But you haven't made that

1 objection before.

2 MR. KUNTZ: Well, but I'm saying what he's
3 relying upon -- he hasn't really identified an area
4 of expertise that he's an expert in. He's offering
5 basically policy, personal opinions that I don't
6 think are supported by anything other than hearsay
7 and things that he's reading in the popular press
8 and not supported by any scientific-type analysis
9 that would be required under a Daubert analysis.
10 And that's what I'm saying, what he's presented
11 here is hearsay --

12 JUDGE WAHL: Yes.

13 MR. KUNTZ: -- and speculation.

14 JUDGE WAHL: Yes.

15 MR. KUNTZ: -- for which the foundation
16 has not been adequately laid by what Ms. La Seur
17 has put forth. It's not my obligation to base the
18 foundation to meet an expert's Daubert analysis.

19 JUDGE WAHL: No, I agree. But -- Ms.
20 La Seur, do you wish to respond?

21 MS. LA SEUR: I believe we've offered
22 sufficient evidence of this man's expert
23 qualifications in this proceeding.

24 JUDGE WAHL: Mr. Kuntz, number one, and
25 I'm not being -- I'm really not being critical

1 because this all -- there was a lot of things
2 happening in a very short period of time here, but
3 your objection, I think, is untimely. Now, I may
4 be wrong about that, but, in any event, I think
5 based on the witness's education, training and
6 experience and certainly on the testimony that he's
7 offered based on what appears to be a longstanding
8 and wide-ranging experience, I think he qualifies
9 as an expert and the objection is overruled. And
10 to the extent, for the record, that your objection
11 relates back again to your objections to hearsay
12 and speculation in his testimony, that's also
13 overruled upon the foundation. Anything further
14 for the record?

15 MR. KUNTZ: No. I just was making my
16 record and preserving my objection because I don't
17 think the foundation is there.

18 JUDGE WAHL: Understood. Ms. La Seur,
19 anything further for the record?

20 MS. LA SEUR: No. I think we'll let him
21 get to the airport.

22 JUDGE WAHL: Yes.

23 THE WITNESS: Thank you. That was a nice
24 way to get sent off. Thank you all for having the
25 chance to speak to you.

1 COMMISSIONER WEFALD: Thank you.

2 JUDGE WAHL: You know, I want to be sure
3 there's no question that I just -- I'm usually
4 pretty careful about that. There's no question
5 that I --

6 MR. KUNTZ: Remember, that's when I
7 renewed my objection, was after she offered the
8 exhibits and then you accepted them, is my
9 recollection.

10 JUDGE WAHL: All right. All right. I
11 must have been distracted enough not to mark the
12 paper. Thank you. All right. Next, Mr. Kuntz,
13 we're back to you.

14 MR. KUNTZ: Cross of Ms. Stomberg.

15 JUDGE WAHL: Yes, please, Ms. Stomberg.
16 Ms. Stomberg, you understand, of course, obviously,
17 that your testimony remains under oath and subject
18 to penalties of perjury?

19 THE WITNESS: I do.

20 JUDGE WAHL: Mr. Breen.

21 MR. BREEN: We have no cross of Ms.
22 Stomberg.

23 JUDGE WAHL: Mr. Binek.

24 MR. BINEK: I have a few questions.
25 Sorry, forgot to turn the mike on.

1 **ANDREA STOMBERG,**

2 having been previously duly sworn, was examined and
3 testified as follows:

4 **CROSS-EXAMINATION**

5 **BY MR. BINEK:**

6 Q. In your testimony you talked about MDU's
7 involvement in the 500 megawatt Lignite Vision 1 --
8 Vision 21 plan at Gascoyne. Why was that project
9 abandoned, or is "abandoned" not the appropriate
10 word?

11 A. I'll be happy to address that. That is
12 also further addressed by Mr. Duane Steen, but I'll
13 certainly answer that. The 500 megawatt LV21 plan
14 is a lignite -- was a lignite plant located at
15 Gascoyne. 500 megawatts is a size of a plant that
16 gives you an economy of scale that makes it --
17 improves the economics of a plant. 500 megawatts
18 is our entire load. By ourselves we cannot -- it
19 would not be prudent at all to have all of our
20 generation coming from one plant.

21 So to achieve the economies of scale that
22 we would like to see for our customers, we went out
23 hoping that we could find partners for that 500
24 megawatt plant and that we could take a portion of
25 that plant that would be adequate for our needs and

1 then get partners, similar to what we have done
2 here at Big Stone. There are partners, too, to
3 share the load. Gascoyne is very remote from load
4 centers, and there's not a lot of transmission to
5 those load centers, and we were unable to find
6 partners to take up the additional megawatts in
7 that plant, and so we looked at several other
8 sizes, ultimately permitted a 175 in terms of air.

9 Q. Do you think there's any possibility that
10 a coal-fired plant could feasibly be constructed at
11 Gascoyne in the future --

12 A. Yes, I do.

13 Q. -- or is that pretty much a dead issue?

14 A. No. I do believe that that's a good
15 location for a coal-fired plant, yes.

16 Q. In your testimony on page 7 you make the
17 statement, Reliance on a strict least-cost resource
18 decision may not encompass renewable energy, may
19 not support the availability of low-cost energy to
20 attract new customers as a result of economic
21 development efforts, or encompass off-system sales
22 that benefit Montana-Dakota customers. Would you
23 please explain that statement?

24 A. Sure. That statement was made in
25 reference to the 2003 IRP modeling, which the

1 modeling, itself, selected gas turbines as a next
2 resource, as the least-cost resource for our
3 company. And, again, if you go strictly least cost
4 in terms of capital costs, you may not encompass
5 the type of -- let me back up here again a little
6 bit.

7 If you pick gas turbines to really fill
8 the niche that you need in the planning for your
9 resource as presented in the model, it would pick
10 that -- pick that resource, that gas turbine, and
11 that's very expensive energy. The capital costs
12 are low, but the energy is very expensive and
13 subject to the fluctuation of the gas pricing as
14 well as the availability of that resource. That is
15 not going to be an attractive energy type to supply
16 to a large industrial that wants to come in and
17 says, I need low-cost energy for a long period of
18 time. You can't do that with gas turbines. So
19 it's a least-cost resource, but it may not be the
20 best-cost resource to meet the needs that you hope
21 you'll see within your service territory.

22 Additionally, renewable energy is not
23 usually a least-cost resource. So if you have to
24 go with strictly least-cost resource planning,
25 you're likely to exclude wind, certainly going to

1 exclude solar, going to exclude a lot of these
2 other technologies that some people have interest
3 in our developing -- in us developing if you have
4 to be tied to strictly least-cost energy
5 selections.

6 Q. Thank you. I'm sure you heard the
7 exchange -- testimony regarding MDU's DSM efforts
8 and the theory that MDU isn't doing enough to
9 promote demand side management. What is your
10 response to those criticisms?

11 A. Well, the criticisms -- I did listen to
12 them. I think when you talk about the rate of
13 penetration of DSM in certain markets -- and I'm no
14 expert here and I will defer to Mr. Heidell on some
15 of this, but I'll give you some -- my answer --
16 that it's a lot easier to have a lot of DSM
17 penetration in a market where your prices are 15
18 cents than they are when they're 7 cents. There's
19 a lot more incentive for people to do DSM in an
20 expensive -- for instance, a California market. I
21 think that's why you see DSM penetration there much
22 deeper than you do here.

23 Secondly, we do have a -- what I think is
24 a fairly robust DSM program. We have shown in my
25 testimony that we're looking at close to 20

1 megawatts of DSM in the foreseeable future and we
2 will continue to grow that program. Montana-Dakota
3 also recently created a position for a person to do
4 nothing but DSM-type work, so I think we can show
5 that we are serious in advancing DSM where it makes
6 sense for our customers.

7 MR. BINEK: I have no further questions.

8 JUDGE WAHL: Questions by the Commission.
9 Commissioner Wefald.

10 **EXAMINATION**

11 **BY COMMISSIONER WEFALD:**

12 Q. Yes. Yesterday Otter Tail was commenting
13 about their demand side management activities and
14 they said that -- first, Mr. Uggerud said that they
15 have 699 megawatts of generation on their system,
16 and then they said that in Minnesota, which
17 encompasses about 50 percent of their customer
18 group, they've been able to implement -- or they
19 plan to implement 67 additional megawatts of demand
20 side management, and so I'm looking right now, even
21 -- I don't know what they already have presently on
22 their system, but I know at least he mentioned 67
23 megawatts, and so maybe that's what's going to be
24 the potential plus what currently is existing. I'm
25 not quite clear on that, but I do know he mentioned

1 67 megawatts. So right now they have -- let's say
2 it's approximately 10 percent of their generation,
3 they're anticipating to have in megawatts of demand
4 side management and that's from 50 percent of their
5 customers, of their load. All right?

6 A. Mm-hmm.

7 Q. And so I looked -- I'm looking at
8 Montana-Dakota Utilities, and you can perhaps help
9 me again because I don't have -- it's Mr. Imsdahl
10 this morning was talking to us about -- let's see,
11 it's under 3. He said that MDU has 476 megawatts
12 of generation, and I believe he said that 65
13 percent of the customers are in North Dakota.
14 Let's start with that question.

15 A. That's about correct.

16 Q. Is that correct?

17 A. That's about correct.

18 Q. So if someone has a calculator, let's take
19 476 times 65 percent, and what is the answer to
20 that question first?

21 A. Somebody.

22 UNIDENTIFIED PERSON: 309.

23 Q. (COMMISSIONER WEFALD CONTINUING) 309.

24 A. Maybe I wasn't following the question.

25 Q. 309. So if 67 megawatts -- if Otter Tail

1 can find 67 megawatts of demand side management
2 from 50 percent of 699 of -- you know, from half
3 their people on a system of 699 megawatts of
4 generation, then should MDU be able to find -- now
5 I've got to get this right -- an appropriate
6 percentage? Why risk the math.

7 A. An appropriate. Well, I guess first off,
8 I'd have to say I don't think we have identical
9 systems.

10 Q. Well, it is as far as generation --

11 A. Well --

12 Q. -- or customer profile?

13 A. In terms of customer profile. I mean, I
14 honestly don't know if you have more or less
15 commercial or industrial than we do or if we have
16 more retail. I think -- and, again, I am not a DSM
17 expert, but I don't think you can compare. I mean,
18 I'm not sure we have apples to apples here. We
19 have apples to oranges.

20 Q. Let's say you did. Let's say you did.
21 Let's say you did have a system that was similar in
22 load profile, et cetera.

23 A. Yeah.

24 Q. What has MDU done recently then to look
25 for resources that are -- for demand side

1 management that are under -- you just said we offer
2 power in North Dakota for your customers of
3 approximately 7 cents a kilowatt-hour?

4 A. Retail.

5 Q. Retail. All right. What would you say is
6 the generation cost and what are your distribution
7 and transmission costs to add up to that 7 cents?

8 A. Well, roughly -- I think I can say this,
9 roughly 3 cents in distribution, 1 cent in
10 transmission, and about 3 cents in power
11 generation.

12 Q. Okay. So we heard yesterday that the Big
13 Stone Plant would have generation costs of 6.9
14 cents, and if we use those same figures of 3 cents
15 for distribution and 1 cent for transmission, we
16 would be up to 11 cents.

17 A. Well --

18 Q. So what demand side resources has MDU
19 looked at that are under the cost of 6.9 cents for
20 generation plus, you know, however you figure,
21 because then you don't have to have the
22 distribution and transmission costs for demand side
23 management and so you're at 11 cents.

24 A. I think what I would really prefer to do,
25 because I'm not sure -- my rate people can tell me

1 if I'm wrong, but I think the calculation is not
2 quite that linear. And what I'd prefer to do, I
3 guess, is address your question, what have we
4 done -- and I hope that's going to answer your
5 question -- what have we done with regards to DSM
6 lately.

7 Q. No. I don't want that question, because I
8 can see in your testimony what you've done lately.

9 A. Okay.

10 Q. You have told us in your testimony that
11 you've considered -- and this is under Mr.
12 Heiney's -- is that his name?

13 COMMISSIONER CLARK: Heidell's.

14 THE WITNESS: Heidell's.

15 Q. (COMMISSIONER WEFALD CONTINUING) --
16 Heidell's testimony -- and where is that located
17 again in the exhibit book?

18 MS. DANIELS: 7. Tab 7.

19 Q. (COMMISSIONER WEFALD CONTINUING) Tab 7.
20 And you go back to his study that he did of
21 integrated resource plan, and it's on page 4.1, and
22 it says --

23 A. I don't have that in front of me.

24 Q. -- In addition to the generation options,
25 PA included three demand side management options as

1 contracts based upon extrapolation of data from
2 Montana-Dakota's 2005 integrated resource plan.
3 One was based upon Montana-Dakota's 2005 integrated
4 resource plan, so there was one that was in your
5 integrated resource plan and the other two were the
6 result of discussions with Montana-Dakota. The
7 three demand side options are 7.36 megawatts of
8 residential and commercial air conditioning peak
9 control measures available at a cost of 373 per
10 kilowatt and an additional 5 and 10 megawatts of
11 conservation available at 470/kilowatt and 560/
12 kilowatt, respectively. And these are summarized
13 in table 4.2.

14 A. Thank you.

15 Q. So that adds up to a total of 27 megawatts
16 over a periods of 20 years.

17 A. Okay.

18 Q. Because they're dated years available 2011
19 through 2025, and some are available 2009 to 2025.
20 So we don't know exactly if those are going to be
21 put in place any time before 2025. You've left
22 yourselves a lot of options.

23 A. Okay. So, again, would you please restate
24 your question to me?

25 Q. My question is, what demand side options

1 are available to MDU -- have you looked at the
2 options that are available for your customers --
3 demand side management options that are available
4 up to the cost of generation that would be
5 available from the Big Stone Plant?

6 A. From Big Stone. Okay. I don't think I
7 can answer that question.

8 Q. Could you file that as a late-filed
9 exhibit then with the Commission? Can you file the
10 same information Otter Tail said they would file
11 yesterday with us?

12 A. I believe so. I don't know why we
13 couldn't do that. We do look at a broad suite of
14 DSM programs, and if it's as simple as looking at
15 the economics of those against the projected costs
16 on Big Stone, I believe we can do that.

17 Q. Okay. I believe this is what we asked for
18 yesterday, and then you tell me if I've got it
19 wrong. Okay. Yesterday I requested that Mr.
20 Morlock provided a late-filed exhibit listing Big
21 Stone II and other supply side options as well as
22 demand side management and other demand side
23 options. Those options would be listed in the
24 order of implementation thereby reflecting the
25 relative cost of those options. And can MDU

1 provide a similar late-filed exhibit?

2 A. Sure. Certainly.

3 Q. Now I would be happy to hear what you have
4 been doing as far as trying to find demand side
5 management options.

6 A. Well -- and, again, I think what our
7 program said are planned for the next several years
8 are pretty well laid out in our testimony and also
9 are further fleshed out in the IRP, which will be
10 filed on July 1st with your -- with you, and I'm
11 sure you're looking forward to that.

12 Q. I am.

13 A. And certainly Energy Star -- looking at
14 actual demand reduction, Energy Star programs,
15 refrigerators and freezers, refrigerator roundup,
16 which is an incentive to have people clear their
17 old refrigerators, their beer fridges basically,
18 out of their garages and reduce those
19 inefficient -- relatively less-efficient
20 appliances, residential and commercial air
21 conditioner cycling and high-efficiency air
22 conditioners, high-efficiency motors and, of
23 course, our demand response rates are all programs
24 we are looking at implementing or expanding between
25 '07 and '09.

1 Q. What is the one air conditioning cycling?
2 Does that just mean people -- describe that to me,
3 what that is.

4 A. The air conditioning cycling, I don't --
5 as I understand it, you have a thermostat that
6 allows the utility to control that air
7 conditioning.

8 Q. So you'll be turning it off and on as you
9 hit peaks?

10 A. Correct.

11 Q. Do you have that in place in any of the
12 states at the present time?

13 A. No. It is a project under development.

14 Q. So when do you anticipate having that in
15 place in North Dakota?

16 A. I believe -- you know, I don't know. I
17 don't know what the dates are for that program.
18 Like I said, these are intended to be implemented
19 between '07 and '09. And it's also a matter, of
20 course, of having customers willing to have those
21 thermostats in their homes.

22 COMMISSIONER WEFALD: I understand. Okay.
23 I think that's all. Thank you.

24 JUDGE WAHL: Any further questions from
25 the Commission? Commissioner Clark.

1 was a 20 megawatt project that the developer did
2 not develop. We had a 31 megawatt project in South
3 Dakota that the developer also defaulted on. I
4 think that our record stands for -- on its own with
5 regard to having attempted to develop wind projects
6 in North Dakota. The Montana project is in
7 response to the renewable portfolio standard in
8 Montana, and we are going to be developing that
9 ourselves in part -- well, part because the
10 economics indicate that that is the cheapest way to
11 develop that, but, also, because we're pretty sure
12 it will get done if we're going to develop it
13 ourselves. We are certainly going to be responsive
14 to the North Dakota renewable portfolio standard --
15 excuse me -- objective and will be looking at what
16 is economic for our customers in the State of North
17 Dakota to develop in North Dakota.

18 Q. Is the Montana site the most economical
19 site to pick in the entire footprint?

20 A. I couldn't answer that.

21 Q. Should I direct questions about some of
22 the Gascoyne economies of scale, things like that,
23 to Mr. Steen?

24 A. That would probably be the most
25 appropriate witness, yes.

1 Q. And the Strategist questions to Mr.
2 Heidell?

3 A. Yes, please.

4 Q. I have a few questions about the coal
5 supply problems, which I think you referred to as a
6 hiccup, although others on the record, I think,
7 refer to it in a little stronger terms,
8 catastrophic, severe, serious. Is MDU a member of
9 the EEI, Edison Electric Institute?

10 A. Yes, we are.

11 Q. The reason I ask is because -- and the
12 reason that I'm going to have the following
13 question is related to some testimony that EEI
14 provided in that Senate committee hearing that I
15 had discussed yesterday from Thursday, May 25th,
16 2006, and it related to the cost that ratepayers --
17 the cost that ratepayers were incurring due to the
18 hiccup. Now, this is EEI testimony delivered by
19 David Wilks of Xcel Energy. States, However,
20 utilities have seen a marked deterioration in rail
21 service in recent years particularly from coal
22 deliveries from the PRB. Moving on later in the
23 testimony, The shortfall in rail coal deliveries
24 has had many far-reaching consequences over the
25 past year. Numerous utilities were forced to

1 invoke coal conservation programs under which they
2 burned natural gas to replace coal-fired generation
3 or purchased additional power, much of it from
4 gas-fired plants in the wholesale markets, often at
5 dramatically higher prices than the cost of their
6 own coal-fired resources. Later on, In order to
7 replace an estimated 20 million-ton shortfall in
8 PRB coal deliveries in 2006, electric generators
9 may be forced to use approximately 340 billion
10 cubic feet of natural gas, costing at least 2
11 billion dollars more than coal that will not be
12 delivered this year. The additional use of natural
13 gas to generate electricity in place of coal comes
14 at a particular inopportune time as the price of
15 natural gas across the country remains at near
16 record levels, causing additional pain not just for
17 electricity consumers, but also those using natural
18 gas as feedstock for manufacturing products or home
19 heating fuel. Restriction in the supply of PRB
20 coal has also likely contributed to a doubling of
21 the coal spot market price, increasing those prices
22 from roughly \$7 per ton to more than \$14 per ton in
23 2005.

24 This is my background. How much have MDU
25 customers paid through the fuel clause adjustment

1 in extra charges thanks to the Burlington Northern
2 Santa Fe's inability to meet its coal hauling
3 obligations?

4 A. In 2006?

5 Q. Related -- related to the -- what you
6 described as a hiccup.

7 A. Fair question, and I do not have that
8 number at my fingertips right now. However, I
9 think we can probably put some brackets around that
10 and get that to you.

11 COMMISSIONER CLARK: Can that be provided
12 from Otter Tail, as well?

13 MR. GUERRERO: We will certainly attempt
14 to.

15 Q. (COMMISSIONER CLARK CONTINUING) Okay.
16 And the reason I ask and the reason that it's
17 important and the reason I bring it up, it's easy
18 to describe something as insignificant or minimize
19 it when the utility company is not the entity that
20 has to pay it. EEI, who both of these companies
21 belong to, estimated 2 billion dollars in costs
22 being passed on to consumers. Consumers might not
23 call that a hiccup. Consumers might not diminish
24 the importance and the impact of having one single
25 coal supplier over a single line, so that's why I

1 bring it up and that's why I think it's so
2 important in this case.

3 Are you aware of the -- what is the net
4 cost of electricity right now Coyote versus Big
5 Stone?

6 A. Versus Big Stone I?

7 Q. Yes.

8 A. Oh, boy. I believe I have that in some
9 papers on my -- that I didn't bring up here with
10 me.

11 MR. KUNTZ: Do you want it -- these
12 papers?

13 THE WITNESS: Just the top.

14 COMMISSIONER CLARK: That would be great
15 if that could be.

16 THE WITNESS: I thought they were in here.
17 Sir, you know, I have a lot of -- there are a lot
18 of numbers out there and I have a lot of numbers in
19 my head and I'm always very leery of pulling
20 numbers out of my head. And I'm afraid I don't --
21 I thought they were on this and I don't think I
22 have them here. They may --

23 COMMISSIONER CLARK: Well --

24 THE WITNESS: I'm sorry. You know, I
25 really should have those.

1 MR. KUNTZ: Can we provide that in a
2 late-filed exhibit?

3 COMMISSIONER CLARK: Yeah, if that could
4 be provided. And one of the things, I think, that
5 would be helpful for me in that breakdown is if it
6 could be -- if emphasis could be paid to the impact
7 of the different construction times of those two
8 plants. I'm interested in when you take into
9 consideration current fuel costs and current
10 production costs what -- how do those two plants
11 equate as far as a net cost of energy to North
12 Dakota consumers, understanding that they're
13 constructed different times during different --

14 MR. KUNTZ: You're looking more from a --

15 THE WITNESS: Capital?

16 MR. KUNTZ: -- cost of electricity from a
17 fuel cost basis efficiency versus capital costs
18 or --

19 COMMISSIONER CLARK: Sort of overall.
20 Overall versus -- I think you would have to break
21 down capital costs.

22 MR. GUERRERO: Depreciation.

23 COMMISSIONER CLARK: Depreciation of each,
24 fuel costs, just so we get a sense for how those
25 two units --

1 MR. GUERRERO: Mr. Commissioner, if I
2 could, I think -- certainly Otter Tail will try to
3 help provide that information, as well, along with
4 Ms. Stomberg, but it may be possible to have Mr.
5 Rolfes or Mr. Uggerud take a stab at that question
6 and then also follow up to the extent that that may
7 be helpful.

8 THE WITNESS: Are you basically looking
9 for the equivalent busbar costs of Coyote and Big
10 Stone versus Big Stone II?

11 COMMISSIONER CLARK: I would have thought
12 so, but after our last discussion about busbar
13 costs, now I don't know what to think about those.
14 But, you know, that would be helpful in the mix,
15 too.

16 THE WITNESS: Oh, okay. So it's not just
17 energy costs that you're interested in? You're
18 looking at basically all-in costs, including
19 capital costs, depreciation, financing?

20 COMMISSIONER CLARK: I want what will give
21 me -- I don't know the right way to say
22 specifically what I want, but I want what will give
23 me the best apples-to-apples comparison of how much
24 the electricity coming from these two plants costs
25 for North Dakota consumers.

1 THE WITNESS: For North Dakota consumers?

2 COMMISSIONER CLARK: So I can compare it.

3 Yes.

4 THE WITNESS: Somebody got that all down?

5 I've got some notes here. Okay.

6 Q. (COMMISSIONER CLARK CONTINUING) Then just
7 a couple more questions on the supply problems.
8 You had stated that -- I can't remember your exact
9 words, but you had some level of confidence that
10 this was being addressed by the BNSF. Have you --
11 outside of the testimony, which consists of two
12 paragraphs from Mr. Brautovich, have you, yourself,
13 reviewed the detailed spending plans, projections,
14 logistics, those sorts of things, that the BNSF is
15 going to be putting into that particular line?

16 A. I have not reviewed the details, no.

17 Q. Have you reviewed a -- this is according
18 to his testimony -- a report from a company called
19 CANAC, C-A-N-A-C, a firm specializing in railroad
20 capacity planning, which is currently completing an
21 analysis of the BNSF system?

22 A. No, I have not personally reviewed that,
23 no.

24 Q. So is the basis of your statement simply a
25 faith in BNSF that they'll do what they said they

1 will do?

2 A. Well, to a certain extent my statement was
3 based on talking to our manager of our power plants
4 who has ongoing discussions with BNSF and the
5 reports that he's giving me -- admittedly, that's
6 thirdhand -- or secondhand -- that we do get
7 cooperation from the BNSF and that we have had a
8 return to adequate train cycle times and adequate
9 stockpiles at our plants to keep us operational,
10 which is basically the way our plants operated for
11 many, many years before the increasing problems in
12 the PRB Basin, that I believe that Burlington
13 Northern addressed quite nicely saying that they're
14 in business to keep us in business and they're
15 addressing it by a fairly aggressive building of
16 trackage in that area.

17 Q. Although most of the years of that service
18 would have been prior to the huge run-up in demand
19 for PRB coal, wouldn't it?

20 A. Absolutely.

21 Q. I mean, we are in a new world.

22 A. No, I agree. And I also think that the
23 markets tend over time to work, perhaps messily, to
24 balance that, the demand and supply, not that it's
25 not without its problems, its hiccups, its delays,

1 its issues.

2 COMMISSIONER CLARK: That's all I've got.
3 Thank you.

4 JUDGE WAHL: Commissioner Cramer.

5 COMMISSIONER CRAMER: Thank you.

6 **EXAMINATION**

7 **BY COMMISSIONER CRAMER:**

8 Q. I have a few and I'm -- it's always hard
9 to be the last person because I don't want to be
10 redundant. But going back to Commissioner Clark's
11 first question, realizing you don't know the
12 benefits or why the 20 megawatt or if the 20
13 megawatt wind project in Montana was the least
14 expensive. Thinking back to the previous project,
15 the 31-and-a-half megawatt wind project in South
16 Dakota that was defaulted on by the developer, do
17 you recall what the benefits were to building that
18 project or entering into that agreement as opposed
19 to a North Dakota wind project?

20 A. Well, that was a project that was
21 actually -- came under the old PURPA regulations
22 where -- I'm trying to figure -- to remember what
23 those exactly were, but basically a qualifying
24 facility could force their energy on your system at
25 your avoided cost, and, of course, that can be a

1 pretty contentious situation to try to pick through
2 to determine what that avoided cost was, and we
3 worked with this developer and signed -- ultimately
4 signed a contract which we thought was reasonable
5 without actually going through the agony of the
6 hearings which we would have had to in South
7 Dakota. It was not a project that we would
8 necessarily have chosen, but not having a choice,
9 we made the best of what we thought was a bad lot.

10 Q. With the new incentive, the new -- I
11 should back up, I guess. That wouldn't be relevant
12 to you because you've always had the opportunity to
13 take advantage of the investment tax credit in
14 North Dakota.

15 Let's go on to the delivery problems with
16 PRB coal, see if I can come up with a couple new
17 questions that I jotted down. Setting aside
18 deliverability issues there or the reliability of
19 delivery, assuming them, do you have any concerns
20 from a rate standpoint once you become further
21 captive to BNSF, given its history? I cited
22 several cases yesterday and the person from BNSF
23 disputed some of those, but I have since looked at
24 the STB website and the STB, at least in our part
25 of the country, has not recently, anyway, found in

1 favor of a utility in this region in a rate
2 dispute. Do you have any concerns about
3 accelerated rates once you become further captive
4 to this one railroad?

5 A. I think that is an unknown that is of some
6 concern, yes. We don't know what the rate is going
7 to be. We have not negotiated that with the BNSF.

8 Q. The lack of knowing that, I have to, once
9 again, say, is a major factor in my considering
10 prudence. Not knowing creates discomfort, which is
11 a problem for me in determination prudence. You
12 did state earlier, though, that just as Big Stone
13 II is captive to one railroad, a mine mouth plant
14 is captive to one mine company. Commissioner Clark
15 asked you to eventually provide information, I
16 guess, that would substantiate what it's cost MDU
17 customers in North Dakota to be captive to the
18 hiccup. Do you have any data that would verify how
19 much MDU customers in North Dakota have had to pay
20 due to the captivity to a North Dakota lignite mine
21 as a result of some of the things that you talked
22 about, moving to less-quality coal, more sodium,
23 water in the pit, and those types of things?

24 A. No, I don't have that quantified, and I
25 think it would be difficult to closely quantify it,

1 but there are undoubtedly costs and I can certainly
2 attempt to put some bookends around that.

3 Q. I want to -- well, I'll ask this more
4 general question. You've talked about, I think, in
5 your original testimony and in your summary that
6 multiple partners was a benefit. I think all --
7 everybody has testified that multiple partners in
8 Big Stone II has been a benefit. Are there some
9 disadvantages that you've noticed to having
10 multiple partners, especially with such multiple
11 corporate cultures?

12 A. Well, it's been interesting. We have
13 interesting meetings. One of the things that has
14 pleased me greatly, however, is that this group,
15 the Big Stone II group, works together
16 extraordinarily well. One of the things that we --
17 one of our bylines is that we will assume good
18 intentions, and that's hard sometimes, but that has
19 been a guiding light and I think -- I won't speak
20 for the whole group, but I will say from Montana-
21 Dakota, we work together as a group of dedicated
22 professionals who want to see this project go
23 because we believe it is in the best interests of
24 our customers -- co-op customers, municipal
25 customers, IOU customers.

1 Q. Fair enough. Then just a couple more. I
2 do want to ask a question specifically about
3 Gascoyne because you did reference in your
4 testimony that it was about 30 percent more
5 expensive in your analysis.

6 A. Mm-hmm.

7 Q. And realizing that 500 megawatts is the
8 scale that makes it feasible, if at all feasible,
9 and that that's your whole load and you couldn't
10 find partners, did you consider -- did you consider
11 off-system sales and the opportunity for that and
12 how that might make it more feasible?

13 A. Of 500 megawatts?

14 Q. Yes.

15 A. We did not consider selling four-fifths of
16 this plant on the market.

17 Q. Then let me ask this. Is there -- are you
18 familiar that Westmoreland is looking at Gascoyne
19 as a possibility for -- as an independent property?
20 They're trying to -- and are you familiar with
21 their offer to Xcel Energy for 375 megawatts,
22 including another 380 of wind that would be part of
23 that, and went to the Minnesota PUC for permission
24 for that?

25 A. I'm as familiar as in the popular press.

1 I don't know a great deal about that.

2 Q. Does that seem to you, given your
3 knowledge of Gascoyne from MDU's analysis, as a
4 plausible possible alternative to this -- to Big
5 Stone II as a -- realizing an independent power
6 producer, would there have been any opportunity to
7 partner with an independent power producer in
8 Gascoyne that would have been as good or better
9 than Big Stone?

10 A. For us or for the entire group?

11 Q. For you.

12 A. For us?

13 Q. Taking a part of it. Was that ever part
14 of the mix?

15 A. That is something we certainly discussed.
16 It's hard to -- it's hard to imagine that an IPP
17 could run a plant for our customers as well as we
18 could, and so turning over the control of a plant
19 for a significant amount of megawatts to someone
20 who I don't think would necessarily have our
21 customers' best interests in mind would be very,
22 very difficult for us to do.

23 Q. Going back to Gascoyne, thinking about the
24 fuel source, realizing that Gascoyne would be a
25 mine mouth plant far from load, obviously there

1 would be transmission issues, but close to
2 obviously lignite, it also occurs to me that it's
3 considerably closer to Powder River Basin coal.
4 Was there ever consideration to the possibility of
5 a plant that would not be captive either to one
6 type of coal or one company or one fuel source?

7 A. Frankly, that's one of the real advantages
8 of that site.

9 Q. But not enough of an advantage that --

10 A. There are serious issues with that site.
11 There's no water down there, and that's a huge
12 issue. There are air quality issues in North
13 Dakota that drive the type of technology you need
14 to use for that type -- for that location that
15 change the economics. There's -- it's a site with
16 its own issues.

17 COMMISSIONER CRAMER: I think everything
18 else has been answered. Thank you.

19 JUDGE WAHL: Commissioner Wefald.

20 COMMISSIONER WEFALD: Yes.

21 **FURTHER EXAMINATION**

22 **BY COMMISSIONER WEFALD:**

23 Q. On page 8 of your testimony you talk about
24 your demand side management programs and you
25 discuss the ones that are available for residential

1 and commercial customers. Does commercial
2 customers include industrial customers in these
3 three programs?

4 A. Frankly, I can't answer that question. I
5 don't know that for sure -- I don't know where
6 exactly that split is in this modeling. Mr.
7 Heidell may know that or we can get that to you
8 with his discussion.

9 Q. The reason I asked was because you have
10 the one in May, a program promoting high-efficiency
11 residential air conditioning, and that was started
12 in May of 2006?

13 A. Right.

14 Q. And then you have the promotion of
15 commercial lighting retrofits was started in
16 November 2006.

17 A. Correct.

18 Q. So that's one I'm not sure whether that
19 includes industrial loads or whether there's a
20 breakoff there.

21 A. No, I believe that that lighting retrofit
22 would have been available to commercial and
23 industrial facilities.

24 Q. And then the other one that has to do with
25 the introduction of an air conditioning cycling

1 program for commercial -- residential and
2 commercial customers, does that include industrial
3 customers?

4 A. I do not know what the sizes of air
5 conditioning involved in that is and whether that
6 was applicable to an industrial type of location.
7 We don't have much of an industrial load. We have
8 some.

9 Q. I'm thinking of like -- isn't Tesoro in
10 your service territory?

11 A. Oh, yes.

12 Q. And isn't Bobcat?

13 A. And we do have some, there's no question,
14 and, frankly, I can't answer that, but I certainly
15 could find out for you.

16 Q. Okay. And so just to clarify, on my list
17 I wanted to include not just residential, but for
18 commercial and industrial, as well.

19 A. Okay.

20 COMMISSIONER WEFALD: Thank you.

21 JUDGE WAHL: Commissioner Clark.

22 **FURTHER EXAMINATION**

23 **BY COMMISSIONER CLARK:**

24 Q. Just quickly to follow up on Commissioner
25 Cramer's question about PRB coal being burned at

1 mine mouth Gascoyne. Would that same analysis
2 apply to mine mouth operations generally in North
3 Dakota, that that is an advantage -- a fuel
4 diversity advantage that's more likely to be found
5 at mine mouth lignite operations where it's more
6 likely that PRB could be shipped in to replace
7 lignite as opposed to lignite being transported
8 somewhere else to replace PRB?

9 A. I think that's clear, but --

10 Q. Some utilities in fact do that in North
11 Dakota, don't they, where they import PRB?

12 A. Oh, yeah, and we use at our plants because
13 sometimes we can't burn the lignite without the PRB
14 to enrich the fuel. But if you don't have rail in,
15 the chances of you building a facility with rail to
16 the PRB into the lignite field is slim.

17 COMMISSIONER CLARK: Okay. Thanks.
18 That's it.

19 JUDGE WAHL: Any further questions from
20 the Commission? Why don't we take a brief recess
21 before we finish up today.

22 (Recess taken to 3:46 p.m. to 3:57 p.m.)

23 JUDGE WAHL: All right. We're back on the
24 record. Mr. Kuntz.

25 MR. KUNTZ: Thank you.

REDIRECT EXAMINATION

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BY MR. KUNTZ:

Q. A couple areas, Ms. Stomberg. You testified in response to some questions by Commissioner Cramer that you also share concerns about, you know, coal price escalation going forward for Big Stone II. How would you as a project participant anticipate trying to resolve those concerns?

A. Well, you resolve concerns like that in negotiations with your supplier as part of your contract discussions. We've had some informal discussions with BNSF, specifically about potential contracts in the future and tariff rates, but until we really have a project and we can say we're going to haul this many tons of coal from this location to Big Stone, it's hard to really start having serious negotiations with regard to rail rates.

Q. And you also in response to a question regarding -- I believe it was Commissioner Wefald about DSM mentioned the fact that MDU and Otter Tail may well have different customer profiles that may not make a one-on-one DSM comparison appropriate. Have you since had a chance to consider as to an example of such a customer

1 profile difference?

2 A. Yes. I was able to step out and talk to
3 some folks, and I appreciated the break. That was
4 quite opportune for me. Montana-Dakota up until a
5 handful of years ago was a winter-peaking utility.
6 Otter Tail is still a winter-peaking utility.
7 That's definitely an apples and oranges utility
8 right there. One of the things that Otter Tail
9 apparently -- and please don't ask me details on
10 this -- is apparently able to do is with electric
11 heat an interruption of electric heat and swinging
12 electric heat customers to propane or wood or other
13 alternate fuels. We don't have that flexibility
14 with -- first of all, we don't have a lot of
15 electric heat, but, secondly, we don't have that
16 flexibility at our summer peak with air
17 conditioning load. There's not really anything
18 else to fall to other than to tell people to go to
19 the mall, which is not what we do. So that's one
20 of the reasons it's going to be very difficult to
21 compare DSM on our system with a winter-peaking
22 system up in this area.

23 COMMISSIONER WEFALD: Thank you.

24 MR. KUNTZ: I have no further questions.

25 JUDGE WAHL: Mr. Breen.

1 MR. BREEN: No questions.

2 JUDGE WAHL: Mr. Binek.

3 MR. BREEN: Excuse me a minute, please.

4 MS. LA SEUR: Sorry. I do have a few.

5 **CROSS-EXAMINATION**

6 **BY MS. LA SEUR:**

7 Q. Ms. Stomberg, are you familiar with
8 utility programs that invest directly in energy
9 efficiency and pay for it through rate recovery
10 rather than relying on consumer choices?

11 A. I'm aware that there are programs like
12 that out there, yes.

13 Q. Has MDU investigated any programs like
14 that for the North Dakota market?

15 A. I am not the -- I am not the DSM guru and
16 I cannot answer that question. We have looked at a
17 broad range of DSM programs, but I don't know the
18 particulars of those -- all of them.

19 Q. Are there DSM measures that specifically
20 target peak consumption hours?

21 A. Are there DSM -- do we have them?

22 Q. I'm asking, to your knowledge, do they
23 exist?

24 A. Oh, certainly, and actually we do have --
25 we do have some programs like that.

1 Q. And are they feasible in North Dakota?

2 A. Absolutely.

3 Q. Are they implemented in North Dakota?

4 A. We have some, yes.

5 Q. And let's see. Does -- as a general
6 rule -- I don't think anyone would argue that DSM
7 is -- has a one-to-one correlation with generation,
8 but as a general rule, does reducing demand enable
9 you to build smaller or fewer power plants?

10 A. Well, we are a small utility and we have a
11 demographic that's largely residential. I can't
12 imagine that we could -- I don't know, but to get
13 enough DSM to really impact the size of a power
14 plant, I can't imagine. Further, you know, you
15 build power plants, I mean -- I don't think Kermit
16 is still here, but when you build power plants, you
17 don't tweak them five megawatts or ten megawatts
18 here and there. I mean, you can obviously. This
19 is a 630 megawatt plant nominal. For us to have
20 enough DSM to make a huge difference in the size of
21 a power plant that we needed would be extraordinary
22 for us, I believe.

23 Q. So the 67 megawatt number that's been
24 thrown around as a goal in Minnesota, I believe, by
25 OTP, is that kind of demand avoidance possible in

1 North Dakota?

2 A. Well, as I just explained, electric heat
3 is, I think, somewhat easier to get a DSM-type
4 program going with than an air conditioner on our
5 summer peak. I'm not sure I've answered your
6 question. Would you repeat it?

7 Q. I suppose it's more about the amount
8 rather than specific programs. Is a 67 megawatt
9 DSM demand reduction or new demand avoidance
10 possible in MDU's North Dakota market?

11 A. Well, I suppose at some cost it could be.
12 I don't know if it's practical.

13 MS. LA SEUR: Thank you.

14 JUDGE WAHL: Mr. Binek?

15 **RECROSS-EXAMINATION**

16 **BY MR. BINEK:**

17 Q. Yes, I have one DSM question, even though
18 you're not the DSM person.

19 A. I'll do my best.

20 Q. Would you agree that the objective of DSM
21 should be to reduce generating capacity needed; in
22 other words, the size of the generator rather than
23 necessarily conserve energy, because running of the
24 existing generation as much as possible would
25 result in more energy to spread costs over and

1 thereby lower rates?

2 A. Well, that's -- you know, that's certainly
3 legitimate what you just said in terms of keeping
4 your generators running. Again, maybe in theory,
5 but as a practical matter on our system, I don't
6 think you'd see a difference.

7 MR. BINEK: No further questions.

8 JUDGE WAHL: Any further questions by the
9 Commission?

10 COMMISSIONER CLARK: No.

11 COMMISSIONER WEFALD: No.

12 JUDGE WAHL: Thank you very much, Ms.
13 Stomberg.

14 MR. KUNTZ: MDU calls James Heidell.

15 JUDGE WAHL: Mr. Heidell, as you have
16 heard me advise previous witnesses, 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 other words, generally speaking, a
22 lie. In North Dakota perjury is a Class C felony,
23 punishable by a fine up to \$5,000, a period of
24 imprisonment of up to five years, or both. Will
25 you raise your right hand, please.

1 (Witness sworn.)

2 JUDGE WAHL: Mr. Kuntz.

3 **JAMES A. HEIDELL,**

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

6 **DIRECT EXAMINATION**

7 **BY MR. KUNTZ:**

8 Q. Please state your name and business
9 address.

10 A. I have to pull out my card since we moved.
11 My name is James A. Heidell. I work with PA
12 Consulting. My business address is 1700 Lincoln
13 Street, Suite 4600, Denver, Colorado, 80203.

14 Q. What's your position with PA Consulting?

15 A. I am a managing consultant.

16 Q. And what business is PA Consulting engaged
17 in?

18 A. PA Consulting is a global management
19 consulting firm. I work in the energy practice
20 that specializes in the analysis of electric and
21 gas markets.

22 Q. What type of consulting services do you
23 provide your clients?

24 A. I work for a variety of clients. For
25 retail utilities I work in a variety of regulatory

1 affairs, including rates and rate design, I work on
2 resource planning, advising utilities on wholesale
3 market prices and strategies. In the wholesale
4 sector I develop market energy forecasts, I advise
5 independent power producers on M & A activity, and
6 I work for debtors and creditors in bankruptcies of
7 energy companies.

8 Q. Could you describe for the Commission your
9 educational background as well as your work
10 experience?

11 A. Certainly. My educational background is I
12 have a bachelor of science in civil engineering
13 from Tufts University, I have a master's in
14 engineering economic systems from Stanford
15 University, which is essentially operation and
16 research and modeling. I have an MBA specializing
17 in finance from the University of Washington, and I
18 am a chartered financial analyst, a CFA.

19 Q. And your work experience?

20 A. My work experience, I have been in the
21 energy industry for over 25 years, starting in
22 consulting, working in demand side management, in
23 conservation studies. I spent approximately a
24 decade working at Puget Sound Energy, an integrated
25 natural gas and electric utility, in Washington

1 State. My duties there included managing their
2 federal and state regulatory processes and also the
3 director of their financial planning and budgeting.
4 In the last seven years I've been at PA Consulting
5 where I have been involved in the activities that I
6 previously described in terms of working for retail
7 utilities, independent power producers.

8 Q. Did you cause to be prepared prefiled
9 direct and prefiled rebuttal testimony on behalf of
10 Montana-Dakota Utilities in this proceeding?

11 A. Yes, I did.

12 Q. In front of you are what's been marked as
13 Exhibits MDU-209, 210, 211 and 212. Do you see
14 those documents?

15 A. Yes, I do.

16 Q. And are those the documents that I have
17 just referenced, your prefiled direct and rebuttal,
18 along with the supporting exhibits?

19 A. That is correct.

20 Q. Do you have any corrections or changes to
21 be made to those documents?

22 A. The reason I'm pausing, I have a minor
23 change to make in MDU-211, which is not
24 significant, but as long as it's not trade secret,
25 I would like to make that correction.

1 Q. Okay. I believe 211 is a trade secret
2 document. Is it information that --

3 A. It's in table -- well, what I wanted to
4 change was, and it's minor, it's in table 3.4 and
5 it's a number that's not a trade secret.

6 Q. Okay. Then you go ahead and make the
7 correction.

8 A. So this is in table 3.4. The bottom line
9 says Montana wind under capacity megawatts, it says
10 39020. That should have said 10 to -- 10-30 -- 10
11 to 30 megawatts.

12 COMMISSIONER WEFALD: What page is that
13 on?

14 THE WITNESS: I'm sorry. That is on page
15 3-2.

16 COMMISSIONER CRAMER: 10-30, you said?

17 THE WITNESS: That is correct, sir.

18 COMMISSIONER WEFALD: Haven't we turned
19 that in, that information?

20 COMMISSIONER CRAMER: I haven't.

21 MR. KUNTZ: Pardon?

22 COMMISSIONER WEFALD: Is 3-2 supposed to
23 be trade secret information?

24 MR. KUNTZ: Yeah. We'll have to collect
25 it when we're --

1 MS. DANIELS: I think the redacted is in
2 the books.

3 COMMISSIONER WEFALD: Okay. Thank you.

4 MR. KUNTZ: Then you can keep that.

5 Q. (MR. KUNTZ CONTINUING) If I were to ask
6 you the same questions that appear in Exhibits
7 MDU-209 and MDU-212, would your answers be the
8 same?

9 A. Yes, they would.

10 MR. KUNTZ: I would offer Exhibits
11 MDU-209, 210, 211 and 212.

12 JUDGE WAHL: Mr. Breen.

13 MR. BREEN: No objection.

14 JUDGE WAHL: Mr. Binek.

15 MR. BINEK: No objection.

16 JUDGE WAHL: Exhibits MDU-209 through 212,
17 inclusive, are each received.

18 Q. (MR. KUNTZ CONTINUING) Could you provide
19 us with a summary of your testimony, Mr. Heidell?

20 A. Yes, I will provide a brief summary. I
21 want to start out with just describing the scope of
22 the services that I provide for Montana-Dakota
23 Utilities. I was engaged to provide an independent
24 analysis of their -- to do a resource expansion
25 plan.

1 The purpose of the resource expansion plan
2 is to identify the least-cost solution to meet the
3 energy and capacity requirements of the utility's
4 retail load. This study did not consider all the
5 other factors that Ms. Stomberg and others have
6 referred to as goes into the decisionmaking
7 process.

8 I put together this analysis from a
9 variety of inputs, as is typically done, as I
10 typically do in those studies. Those inputs
11 include discussions with the client, Montana-
12 Dakota, PA Consulting assumptions and, also,
13 reviewing some of the materials from the joint
14 project sponsors.

15 I want to emphasize that this is an
16 independent analysis as prepared on behalf of
17 Montana-Dakota. The assumptions were not jointly
18 developed with Otter Tail or other project
19 participants, and the results of this study are in
20 the Exhibit No. 211 that was just admitted.

21 In terms of at a high level, the results
22 of the analysis, the model selected Big Stone II.
23 I want to emphasize that's part of an overall plan
24 of considering a number of resources. It includes
25 demand side management options that we identified.

1 In addition to, there are demand side management
2 already in the load forecast, so we started with
3 assumptions that ongoing programs related to Energy
4 Star and other conservations were already in there.
5 In addition to the conservation that we started
6 with, additional DSM was selected, as well as we
7 have two wind projects in there, one of which has
8 been -- we've noted has since been canceled, but it
9 is in the model, and we have a gas-fired turbine,
10 so we have a mix of resources that were selected in
11 this optimization process.

12 Then just quickly to address some of the
13 key items of the elements of my rebuttal. There's
14 been a bit of discussion about the costs of the Big
15 Stone Power Plant and whether -- what the model
16 represents. As I indicated, this was an
17 independent analysis. It turns out that we started
18 with the same 2006 costs that everybody -- that the
19 project participants started with. We used a
20 2-and-a-half percent inflation factor because, as I
21 can explain later, the models basically all start
22 in 2006, then the model selects when resources come
23 in. The result is, though, that in 2011 or 2012
24 the costs that the model assumed is consistent with
25 the current cost estimates for the Big Stone Plant.

1 The gas forecast -- we've had a fair
2 amount of discussion about the variability and the
3 volatility of the gas forecast. The gas forecast
4 today looks a little bit lower than -- I mean,
5 looks a little low compared to our current
6 long-term gas forecast, as well as the cost of wind
7 turbines have not come down yet, not that we
8 anticipated they would be.

9 But the result is that if you had higher
10 gas prices or higher wind costs, the options, there
11 would be less likely -- the model would be less
12 likely to select those resources and more likely to
13 select them, so the model's analysis is
14 conservative in that sense.

15 I want to briefly address the issue of
16 off-system sales. When I modeled the Big Stone
17 Plant, I purposely limited it to only serve the
18 Montana-Dakota retail load -- integrated retail
19 load. So it specifically excluded any potential
20 for off-system sales. I wanted to identify whether
21 Big Stone made sense to serve retail load. That is
22 why the capacity factors are lower than what the
23 other applicants have. We do expect as part of
24 serving the market, that would have a capacity
25 factor consistent with what the other project

1 participants are estimating that would result in
2 off-system sales and a benefit to the
3 Montana-Dakota customers.

4 And I still think there's a little bit of
5 confusion, so I want to emphatically say that we
6 did not limit wind by -- we did not limit the --
7 putting wind in the model. I mean, the model can
8 select as much wind as was economically viable, and
9 we tested that in multiple ways. And that
10 concludes my summary.

11 Q. Mr. Heidell, there's been considerable
12 discussion this afternoon regarding table 9 and
13 table 10 in Mr. Schlissel's testimony. Are you
14 familiar with those?

15 A. I am.

16 Q. Do you have them in front you?

17 A. No, I do not.

18 Q. Let me show them to you. And you were
19 here for Mr. Schlissel's testimony; is that
20 correct?

21 A. That is correct.

22 Q. And did you hear Mr. Schlissel's testimony
23 to the effect that he and his associates made some
24 assumption changes in the modeling that you did to
25 determine if there would be different results in

1 your modeling?

2 A. That's correct.

3 Q. And, supposedly, tables 9 and 10 are a
4 reflection of the results that his group obtained
5 after they made changes in the assumptions used in
6 your modeling; is that correct?

7 A. That is correct.

8 Q. You've had an opportunity to review the
9 results of Mr. Schlissel's remodeling, if you will,
10 of the Strategist?

11 A. Yes. To be specific, I've reviewed the
12 results, but I have not been -- I am not sure that
13 I have these specific input files. I haven't
14 reviewed all the inputs.

15 Q. And do you have any comments in terms of
16 the appropriateness or the reasonableness of the
17 results reached on tables 9 and 10 in Mr.
18 Schlissel's testimony?

19 A. Well, I want to comment on two -- first of
20 all, as I say in my rebuttal testimony, is it
21 possible to have Strategist runs that don't pick
22 Big Stone? Yes, of course. It depends on the
23 assumptions that -- it's a model, it's dependent
24 upon the assumptions.

25 Looking at the first scenario that doesn't

1 select -- in table 9 where Big Stone is not
2 selected is the increased DSM. We looked at -- in
3 discussing the inputs for the DSM when we started
4 this modeling process, we talked with
5 Montana-Dakota, we looked at their conservation
6 programs, we talked about what was already in the
7 load forecast so that some conservation is in the
8 load forecast and doesn't have to be selected by
9 the model. We went over those assumptions and we
10 also, in myself talking to other people in PA who
11 specialize in these studies and looking at the
12 region to determine that we thought they were
13 reasonable, we made an assessment that the
14 assumptions were reasonable based at a high level
15 of not doing a detailed review of the Montana-
16 Dakota system, but of the understanding of the
17 nature of the service territory, their relatively
18 rural nature, the relatively low income of a number
19 of the customers, the mix of residential/
20 commercial. At a high level we thought they were
21 reasonable. We did not do a detailed study. So,
22 therefore, I disagree that the amount of
23 conservation at the price that's available that was
24 assumed in the Synapse study is necessarily viable
25 for Montana-Dakota.

1 Q. But theoretically you can put DSM levels
2 in at prices that you choose to get a result that
3 would select something other than Big Stone II?

4 A. Well, absolutely. I mean, mathematically
5 this is a model, and if you put in enough
6 conservation that has a levelized cost below \$65 a
7 megawatt-hour, then conservation is going to be
8 selected. So the real question is the input, is
9 how much conservation is available on what time
10 frame to displace the need for new generation.

11 Q. What about on table 9, changing the
12 assumption regarding the increase in Big Stone II
13 capital cost?

14 A. As has been discussed fairly extensively
15 on the record, there's a lot of cost pressures in
16 the industry. I did not run this scenario just
17 increasing Big Stone by 10 percent. I have run the
18 scenario of increasing all the -- did run the
19 scenario of increasing all the resources by 10
20 percent and that does not change the selection of
21 Big Stone. And I would comment that in dealing
22 with independent power producers and M & A
23 activity, that the cost pressures related to
24 building new combined cycle plants are as real as
25 they are for coal plants.

1 Q. Do you have any other comments or
2 criticisms regarding the work that Mr. Schlissel
3 did with respect to your Strategist modeling?

4 A. No. It's an issue of assumptions, not of
5 -- it's really just an issue of the viability of
6 their assumptions.

7 Q. So do you stand by the work that you did,
8 Mr. Heidell, for Montana-Dakota in that the Big
9 Stone II option appeared to be the least-cost
10 option of those that were modeled?

11 A. Yes.

12 MR. KUNTZ: We have no further questions,
13 would tender Mr. Heidell for cross-examination.

14 JUDGE WAHL: Mr. Breen.

15 **CROSS-EXAMINATION**

16 **BY MR. BREEN:**

17 Q. Sir, on the models you've -- you've used
18 the Strategist model; is that correct?

19 A. That is correct.

20 Q. And did you use different coal prices,
21 high and low, medium coal prices, in that model
22 over the time period needed by Big Stone II?

23 A. No. In the scenario that we ran we used
24 one coal price forecast and one gas price forecast.

25 MR. BREEN: Thank you.

1 JUDGE WAHL: Are you finished, Mr. Breen?

2 MR. BREEN: I won't make a Daubert
3 objection.

4 JUDGE WAHL: Mr. Binek.

5 MR. BINEK: Yes. Thank you.

6 **CROSS-EXAMINATION**

7 **BY MR. BINEK:**

8 Q. In the -- again, referring to the table 9
9 from Mr. Schlissel's testimony, when he ran or put
10 in the different inputs into the model, I'm
11 assuming from what you stated in your testimony the
12 only capital cost that he increased was the Big
13 Stone II Plant. Were there no other capital cost
14 increases modeled by him?

15 A. That is my understanding based upon the
16 work they presented in Minnesota.

17 Q. I looked at your direct testimony and I
18 was kind of intrigued by the information I pulled
19 off of your Exhibit JAH-2 concerning comparisons of
20 Big Stone I and Coyote. Those are essentially
21 identical generating facilities; isn't that
22 correct?

23 A. I believe that there are some slight
24 variations in the heat rate.

25 Q. But basically they're the same type of

1 plant?

2 A. Right.

3 Q. And were built about the same time; is
4 that correct, also?

5 A. Actually, I do not know. I believe that's
6 correct, but I do not know the in-service dates for
7 both plants.

8 Q. Looking at table A-1, which is a unit
9 operations forecast, on page A-2 is the forecast
10 for Big Stone I and on page A-3 is the forecast for
11 Coyote. And looking at that I note that the
12 capacity factor for Big Stone I ranges from about
13 79 to 83 for the years 2006 through 2025, excluding
14 the year 2006. I'm assuming that's because of the
15 coal delivery problems, that that figure seemed to
16 be an anomaly. That one was only 69. So I looked
17 at the other 19 years, and the average I came up
18 with was just under 81 percent for Big Stone I, and
19 looking at A-3, the capacity factor for Coyote was
20 slightly above 87 percent. Do you basically agree
21 with that -- with my calculations?

22 A. I'm not as quick as you, but I believe
23 that's generally correct.

24 Q. And looking at the fuel forecast -- fuel
25 cost forecast also for Big Stone I and Coyote over

1 the same time period, according to my calculations,
2 the fuel costs for Big Stone I are approximately 20
3 percent higher than Coyote. Would you also agree
4 with that?

5 A. I agree with that. I just want to point
6 out that the calculation of the fuel cost is, of
7 course, the hours of operation times. So with a
8 higher capacity factor, you would expect a higher
9 fuel cost, and that would not compare unit cost,
10 but I agree with you.

11 Q. Okay. But the higher capacity factor is
12 Coyote and yet Coyote has lower fuel cost; correct?

13 A. That is correct.

14 Q. Looking at the average variable cost per
15 megawatt-hour over that same time period, according
16 to my calculations, the cost per megawatt-hour for
17 Big Stone I is approximately 12 percent higher than
18 Coyote. Would you agree that those figures are
19 approximately correct?

20 A. Yes.

21 Q. Looking at those things, it appears that
22 Coyote is the more efficient plant, and I'm
23 wondering if you would have any opinion as to why
24 -- what would cause that.

25 A. Yeah, I'll try to briefly answer that.

1 The Strategist model is not a very sophisticated --
2 relatively speaking sophisticated dispatch model, I
3 mean, in terms of saying, well, here is my -- here
4 is a load in an hour. What is the cheapest set of
5 resources to meet that load in each hour?

6 Montana-Dakota runs other models that are better at
7 determining that least-cost dispatch in a hour than
8 the Strategist model.

9 Strategist is really geared towards
10 selecting new resources. My experience in these
11 models is that small differences -- there could be
12 something in terms of minimum downtime or another
13 constraint in the model that can cause the plant to
14 operate a little bit -- you know, two plants, very
15 similar plants, operate very differently, and that
16 doesn't -- I see that you're concerned. That
17 doesn't concern me in that I don't think that this
18 model is the place to determine which of the two
19 plants is really the lowest all-in cost for
20 Montana-Dakota customers.

21 Q. I realize we had testimony previously
22 about other factors that entered into the selection
23 of Big Stone II, but this really caught my eye, and
24 I realize it's forecasts, but forecasts must be
25 based on data based on a historical basis, I would

1 assume.

2 A. I agree with you. As I said, this is not
3 the best model going forward for determining the
4 operations of the plant. What this would be an
5 important -- I mean, in terms of what the model is
6 trying to do conceptually is where this calculation
7 would matter is to the extent that whether one of
8 these plants would back down and be operated less
9 as a result of, let's say, Big Stone II coming on
10 line. It's really the relative cost of these
11 plants compared to Big Stone that would be critical
12 in the analysis.

13 Q. Mr. Deason in his testimony stated that
14 the price of natural gas can be the single most
15 important factor in justifying the relatively high
16 capital cost of a plant like Big Stone II and he
17 noted that your forecast is consistently lower than
18 Burns & McDonnell concerning the price of natural
19 gas and that the difference is greater than 20
20 percent at many years, and his -- his
21 recommendation was that Otter Tail and MDU need to
22 explain the differences and determine the potential
23 impacts on the revised busbar costs results. Can
24 you provide that explanation and the potential
25 impacts?

1 A. I don't know that I can explain the
2 differences with what Burns & McDonnell assumed. I
3 can explain to you how I came up with my prices, if
4 that's okay, and then I can explain the impacts.

5 Q. Okay.

6 A. We used an average of three long-term gas
7 forecasts provided by independent -- the Energy
8 Information Agency and two private agencies. We
9 also have a PA gas forecast which is similar, but
10 we did not use in this case. All three forecasts
11 are fundamental, are developed as fundamental
12 forecasts of the gas market. Essentially it's --
13 the cost of gas is based upon supply and demand and
14 assumptions about what it costs to extract gas. I
15 believe that since this forecast was done a year
16 ago, DRI, EIA, all three of the agencies that have
17 done these fundamental forecasts, have all updated
18 their fundamental forecast. The result is that in
19 the near term, the prices aren't that different.
20 In the long term the new forecasts are about a
21 dollar higher. The result is that if gas prices
22 are higher, then Big Stone II would look relatively
23 more economic compared to natural gas resource.

24 MR. BINEK: Can I just have a moment,
25 please?

1 JUDGE WAHL: You may.

2 Q. (MR. BINEK CONTINUING) Another
3 inconsistency, as Mr. Deason pointed out, were the
4 capacity factors on wind. Would you explain those,
5 please?

6 A. Certainly. Just to clarify, since I
7 believe Mr. Schlissel also spoke about this, we
8 want to talk about, I guess, two different things.
9 One is the -- talk about the accredited capacity
10 and also essentially what is the ratio of the --
11 you know, the total production to the plant
12 capacity. Starting with the -- really both of
13 these have a common -- my analysis has a common
14 root, and that is that this forecast is based upon
15 the South Dakota wind project that Ms. Stomberg had
16 talked about previously. In the process of looking
17 at that project, there was a lot of question about
18 what would be its accredited capacity and what
19 would be the energy production. So based upon some
20 data about the power curves of the turbine, as well
21 as wind speeds, estimates were made of the -- both
22 the accredited capacity -- accredited capacity and
23 the capacity factor. Both of these may -- appeared
24 even at the time to -- I think, to Montana-Dakota
25 and to myself perhaps a little bit high compared to

1 other projects, but it was an analytic calculation
2 and that's what we used. The result of it is that
3 I think that it's conservative in the sense that it
4 provides a higher value to wind than what might be
5 realized in other -- potentially in other locations
6 or even potentially at that site in South Dakota.
7 The result would be that, yes, it's possible that
8 the accredited capacity may be lower as well as the
9 capacity factor of the unit. Both of those would
10 tend to make wind less economic in the analysis
11 rather than more economic compared to the
12 alternatives.

13 MR. BINEK: I have no further questions.

14 JUDGE WAHL: Questions by the Commission?

15 COMMISSIONER WEFALD: Yes.

16 JUDGE WAHL: Commissioner Wefald.

17 **EXAMINATION**

18 **BY COMMISSIONER WEFALD:**

19 Q. In your results -- I'm looking at page
20 5-4 -- it says, This plan also assumes that in
21 addition to the -- it's talking about Big Stone,
22 the optimal plan, it talks about what's involved
23 with the optimal plan in selecting Big Stone in
24 2012, additional gas-fired combustion turbines in
25 2015, and additional demand side management and

1 wind resources. Then I'm going to skip a sentence.
2 This plan also assumes that in addition to the
3 South Dakota wind project, MDU also acquires 30
4 megawatts of wind to serve Montana load, and you
5 have both of those marked for 2008, so you're
6 assuming in your plan there would be 60 megawatts
7 of wind purchased by MDU by 2008; is that correct?
8 That's what it shows on your chart.

9 A. Actually, I was having a hard time finding
10 the page.

11 Q. 5-4. It's under 5, results of your model.
12 I was interested in that because Commissioner Clark
13 earlier asked a question about 60 megawatts of wind
14 and MDU had said something about, oh, no, not with
15 the size of our load, and so -- but I thought your
16 results were very interesting here on this page 5.

17 A. Sorry.

18 Q. Am I wrong in what it shows?

19 A. I was tripping up a little bit over that
20 one correction I made where the Montana wind starts
21 at 20 and goes to 30 megawatts, so it actually
22 wasn't -- the full 30 megawatts wasn't implemented
23 in 2008. That's why I was a little bit tripped up.
24 You started with 20 megawatts of Montana wind.
25 Actually, we were closer to 50 megawatts in 2008

1 and going up to 60.

2 Q. But 50 megawatts in 2008 is what you think
3 certainly can be accommodated and should be a part
4 of their plan, from this? Isn't that what you said
5 here?

6 A. Yes. I want to clarify. One of the --
7 that wind was put in here. The model did not
8 select this as a least-cost resource. This was put
9 into the model based upon the contract prices.

10 Q. Mm-hmm.

11 A. So just that distinction that it wasn't
12 selected as a least-cost resource was in there,
13 but, yeah, the 50 to 60 megawatts, and in, you
14 know, discussions with Montana-Dakota, we had
15 talked about the number that was referenced
16 earlier, that about 20 percent is generally where
17 people are thinking, you know, including Xcel,
18 where you start having issues if there's more wind
19 on your system.

20 Q. All right. Thank you. Then also back on
21 page -- under model results under table A-1, unit
22 operations forecast, I'm not sure if I'm reading
23 this correctly so I need your help. Look at Big
24 Stone I under table A-1. The capacity factor for
25 Big Stone I is 69 percent -- 69 and 79 and 78. Do

1 you see those numbers across the top of the chart?

2 A. Yes. Starting in 2006, yes.

3 Q. Yep. Has Big Stone I, 69, 79, 78. Now,
4 I'm assuming that that -- I'm thinking about
5 yesterday they talked about a capacity factor of 88
6 percent for the Big Stone II plant. Is that the
7 same number that I'm looking at here, or is this
8 something different?

9 A. It's a little different of an animal
10 because this is only dispatching the plant to meet
11 Montana-Dakota load, and in reality Big Stone I, as
12 well as Big Stone II, you would be less likely to
13 ramp the plant down and more likely trying to
14 operate it at peak capacity and sell the excess in
15 the market in off-system sales. I mean, it's
16 economic for customers and it's the better way to
17 operate the power plant.

18 Q. So explain that one more time to me.

19 A. This model is only looking at the load of
20 Montana-Dakota's integrated system.

21 Q. Like if it was by itself using this power
22 plant?

23 A. If all -- if the power plants -- if the
24 power plants only operated to serve
25 Montana-Dakota's load.

1 Q. And they were the only customer?

2 A. Right. So, therefore, there are hours
3 where there is excess -- there's more generation
4 capacity than there is load, so what the model is
5 doing is backing down the generation plants to only
6 serve the load. And in reality the company would
7 not do that.

8 Q. Okay. So that perhaps answers my question
9 then why Big Stone II -- when you get over to Big
10 Stone II on page A-12, it shows a capacity factor
11 of 53 and 54 and 55 and 56, which is much lower
12 than what you even anticipate for Big Stone I.
13 What's the reason?

14 A. You are right, it is the same reason.
15 It's because in the early years there's essentially
16 not enough off-peak load on the Montana-Dakota
17 system to run the plant.

18 Q. Yeah, but look what happens as you go
19 farther into the future. It shows -- the numbers
20 go down instead of going up. And does that make
21 sense then? Because it shows that it goes from 53,
22 55, 55 and then goes down to 38 capacity factor in
23 2025. What is that telling us?

24 A. It --

25 Q. You don't need it as much in 2025?

1 A. Well, I mean, you start to have wind and
2 other resources.

3 Q. Like gas peaking plant?

4 A. And the gas peaking plant coming on the
5 system. Although, I would say it's sort of an
6 anomaly of the model in that it's always going to
7 be -- you know, under virtually any forecast, it's
8 going to be cheaper -- once the coal plant has been
9 built, it's going to be cheaper to run the coal
10 plant than to run any gas plant.

11 Q. But why does your model show this then?
12 Why doesn't it reflect that?

13 A. I attribute it to the fact that there are
14 some shortcoming -- this is not the best -- this
15 model is not the best algorithms for determining
16 long-term plant dispatch. It's really a model
17 that's designed to optimize between doing a program
18 to optimize a bunch -- across a whole bunch of
19 resources to determine what's the least-cost, and
20 it's not the other type of model that I referred to
21 that in every hour looks at the load and figures
22 out what the cheapest plants are to dispatch.

23 Q. How about then their recommendation -- and
24 you show it as they're adding additional combustion
25 turbines in 2014 and 2021. Were those added for

1 like 50 megawatts peaking, or what are they -- are
2 they peaking plants or are those baseload gas
3 plants or what? Add combustion turbines in 2014
4 and 2021. No one has talked too much about this
5 additional capacity that's being planned also in
6 addition to Big Stone II. Another gas peaking
7 plant?

8 A. You're correct, they are -- they are
9 peaking plants. The model had the choice in most
10 of these years to choose between the demand side
11 management options, peaking plants, like gas-fired
12 peaking plants, now they're called gas-fired
13 midmerit plants, combined cycle, gas turbines, and
14 baseload plants of coal resources. And the
15 mathematical optimization says that the cheapest
16 way to serve the load -- the cheapest mix of
17 resources is to add those peaking resources.

18 Q. Okay. Then I have just one more question.
19 So demand side management didn't match up in those
20 cases. It was -- your recommendation was the gas
21 peaking plants rather than demand side management
22 in 2014.

23 A. Yeah, demand side management does come in,
24 as well. The model ends in fact selecting both
25 demand side management and peaking resources. So

1 what the model is saying is that there's
2 insufficient demand side -- one way to view it is
3 that there's insufficient demand side management
4 price available at a cost cheaper than a combustion
5 turbine.

6 Q. Okay. And then using what gas price?

7 A. Using a gas price, I guess, was criticized
8 as being a little low, but I think I have it in the
9 -- on page 4-2 under fuel -- I'm sorry -- this is
10 in Exhibit MDU-211, page 4-2, table 4-3, has the
11 natural gas forecast that was used.

12 Q. Okay. Thank you. And then in table 4-2,
13 DSM options, you show option 1, 2 and 3 and you
14 show 2006 capital cost per kilowatt-hour. Is that
15 how I would read that?

16 A. That is correct.

17 Q. It shows 373, 470 and 560. What is the
18 capital cost per kilowatt-hour of the Big Stone II
19 plant?

20 A. Just to be consistent, the capital cost
21 per kW, not per kW hour.

22 Q. Okay. Per kW. Excuse me if I said that
23 wrong. What is the capital --

24 A. I believe we are starting with
25 approximately a \$2,100 a --

1 Q. \$2,100. So why did we stop then on demand
2 side management options at \$560 as being the
3 optimal price for demand side management?

4 A. Well, that's a very good question. In
5 building a coal plant, you're not -- essentially
6 you're not paying \$2,100 a kW because you want
7 capacity. That would be very expensive capacity.
8 You're paying \$2,100 a kW for the tradeoff of being
9 able to produce energy, you know, at 30, \$35 a
10 megawatt-hour as a variable cost. So you're
11 spending a lot of capital upfront to get relatively
12 low-cost energy on an operating basis. These
13 demand side management measures will let you shift
14 -- for example, you talked the air conditioning
15 cycling program. It will allow you to shift demand
16 off the peak and maybe shave the peak for 2 or 3
17 percent of the hours, but you cannot exercise --
18 turn someone's air conditioner off all summer so
19 you don't get that much energy out of it. So if
20 you're trying to -- so this tradeoff of about 560
21 is if you start looking at the price of the
22 combustion turbine, you know, there you get into
23 the -- you would be cheaper to build a combustion
24 turbine.

25 Q. What's the cost per right now -- the

1 capital cost of a combustion turbine? You're the
2 one who puts capital costs here under demand side
3 management options, that's why --

4 A. Sure.

5 Q. I mean, what's the capital cost of a
6 combustion turbine?

7 A. Well, in order to make sure I'm
8 consistent, I am going to refer to the table in the
9 testimony, and that would be on Exhibit MDU-211,
10 page 4-1, table 4-1 has a combustion turbine of
11 \$916 a kW.

12 COMMISSIONER WEFALD: 916. Okay. Thank
13 you very much.

14 JUDGE WAHL: Any further questions from
15 the Commission? Commissioner Clark.

16 COMMISSIONER CLARK: I do have some.
17 Thanks.

18 **EXAMINATION**

19 **BY COMMISSIONER CLARK:**

20 Q. On the table 4.2, which is the fuel
21 forecast, I see that the scenarios that you ran --
22 am I reading this right -- the scenarios that you
23 ran, these were the cost increases that you plugged
24 into the model when you ran it, those were provided
25 by Montana-Dakota; is that correct?

1 A. I'm sorry. Are you referring to table
2 4-3?

3 Q. 4.2.

4 MR. KUNTZ: Page 4.2 or table 4.2?

5 COMMISSIONER CLARK: Oh, I'm sorry. Well,
6 it's 4-2, is the page number it looks like to me,
7 and table 4.2, as well. Resource options, fuel.

8 COMMISSIONER CRAMER: That's right.

9 COMMISSIONER CLARK: I think it's MDU-211.

10 MR. KUNTZ: My table on page 4-2 is
11 labeled table 4-3: Fuel forecast. Is that the one
12 you're looking at?

13 COMMISSIONER CRAMER: The problem is that
14 the paragraph is 4.2, I think, and the table is
15 4-3.

16 COMMISSIONER WEFALD: It's right here.

17 COMMISSIONER CLARK: Oh, yeah, table 4-3.
18 I'm sorry. Yeah. Paragraph 4.2, table 4-3.

19 THE WITNESS: I'm sorry, Commissioner.

20 COMMISSIONER CLARK: Page 4-2.

21 COMMISSIONER CRAMER: I don't know why
22 that would be confusing.

23 Q. (COMMISSIONER CLARK CONTINUING) So these
24 are the cost increase assumptions from 2006-2025?

25 A. That's correct.

1 Q. That were plugged into the model. I
2 haven't calculated the increase, but what
3 percentage increase were you calculating per year
4 for the Big Stone II generating steam turbine coal?

5 A. Actually the --

6 Q. Or what was provided to you by
7 Montana-Dakota as an increase?

8 A. This was actually -- this was the forecast
9 that was provided as opposed to providing an
10 inflation factor, and so, as you can see here, you
11 know, in general the -- it's about a 2 to
12 2-and-a-half percent annual increase, so pretty
13 much inflation.

14 Q. Sure. And that 2 to 2 and a half percent
15 was the same value given to the LV21 coal; is that
16 correct?

17 A. Roughly. They're different sources.

18 Q. Is that reasonable considering we had the
19 BNSF witness yesterday tell us that his
20 transportation costs, which we heard were 60
21 percent of the cost of fuel, went up 11 percent
22 last year? When I asked, well, will you rule out
23 double-digit increases in the future, he said he
24 wouldn't. Is it reasonable to assume 2-and-a-half
25 percent growth when on the record we've got

1 testimony that it's going to be far in excess of
2 that, and that's just the transportation cost, not
3 including the cost of the commodity, itself, in a
4 region where demand is increasing?

5 A. Those are questions that I -- valid
6 questions that I struggle with with many clients.
7 Here are some thoughts behind it. The
8 transportation costs have gone up significantly,
9 and the question is, you know, will they continue
10 to go up at the same rate or will they start to,
11 you know, ease off? They could go up more. On the
12 coal forecast, itself, when we do a long-term coal
13 forecast, we continue to believe that there is a
14 more than adequate -- you know, over the next 20,
15 30, 40 years, more than adequate supply of PRB coal
16 and that there will be competition in the -- to
17 provide coal to the utilities and that there
18 probably will also be some efficiency improvements
19 in coal mining. That is sort of the fundamental
20 forecast -- some of the fundamental drivers of our
21 long-term forecast. Whether that turns out to be
22 true or not, I don't know.

23 Q. Competition for the commodity, itself, but
24 not competition for the transportation of the
25 commodity to the plant?

1 A. You may have to rely on regulation to
2 keep, you know, the cost of delivery down to the
3 cost of service --

4 Q. That's what worries me.

5 COMMISSIONER CRAMER: Now you feel better.

6 THE WITNESS: -- as opposed to what the
7 market will bear.

8 Q. (COMMISSIONER CLARK CONTINUING) And on
9 that point he also indicated he didn't feel they
10 were yet capturing the full increment between coal
11 and natural gas, which is not particularly
12 comforting in light of the fact a lot of these
13 contracts are coming up.

14 A. That's why we regulate monopolies.

15 Q. In theory. The wind production tax
16 credit, in the assumptions that have been run it
17 seems pretty uniform that that is excluded, and I'm
18 curious, is that fair to continually exclude the
19 PTC? It's an assumption we're making, but the fact
20 is it has been continued year after year, it would
21 appear to me, and I think most folks, Congress is
22 semi-serious about continuing the push towards wind
23 energy. There are a lot of other assumptions that
24 are built in here that tip towards the Big Stone
25 Plant like low fuel cost. Is it fair to tip that

1 one more often than not in favor of, assuming that
2 the production tax credit will continue?

3 A. It's certainly, you know, an assumption,
4 you know, that can be tested. I guess I'm a little
5 concerned about the characterization of did we
6 imply that we didn't tip this towards wind? I
7 mean, as indicated by Mr. Deason, I mean, we
8 started with a wind cost of \$1,500 a kW and, again,
9 taking an optimistic view that more -- that wind
10 production -- that the turbine plants would be
11 built in the United States that will -- we will
12 exit the situation where demand vastly exceeds
13 supply and the prices are going up and then
14 assuming a long-term cost of turbines dropping down
15 to about \$1,200 a kW as a result of technological
16 innovations in production facilities, and that,
17 coupled with a fairly high capacity factor and
18 accredited -- you know, in an accredited capacity,
19 I think that wind is -- there's -- overall there's
20 a fairly optimistic set of assumptions regarding
21 wind, so I would just urge you not just to look at
22 the production tax credit in itself and, therefore,
23 assume that the analysis might be slanted away from
24 wind.

25 Q. Did you run some analyses with the PTC

1 included? I think the Burns & McDonnell did. I
2 recall even in those it didn't quite pencil out
3 with regard to vis-a-vis coal.

4 A. We did not run the -- I did not run
5 that -- or my team did not run that analysis. I
6 can tell you that if you're looking at wind in 2011
7 or 2012 and you're looking at least-cost expansion
8 in doing work for other clients, that if wind is at
9 \$1,200 a kW, you don't need a production tax
10 credit. Wind will -- I mean, in my calculation the
11 production tax credit adds on a levelized -- you
12 know, ten years production tax credit over 20
13 years, assuming the inflation on production tax
14 credit, comes out to about \$50 a kW, so -- in terms
15 of the cost of the turbine, so if you really
16 thought that the turbine was going to cost \$2,000,
17 giving it another \$50 a kW in value is not going to
18 change the -- isn't going to change anything in my
19 model. That was my reality check.

20 Q. And then, finally, I just want to close
21 the loop on this. Mr. Schlissel's testimony on the
22 model that he ran that showed one particular model
23 selecting only 23.2 megawatts of power that would
24 be needed by Montana-Dakota, could you, again, just
25 explain to me why you don't think that's a valid

1 comparison? Why do you see it as flawed with
2 regard to the inputs that he put in to get to that,
3 or is it just a function that he -- that you were
4 forcing all-or-nothing-type rules on it?

5 A. Well, again, I'll start with the
6 characterization of forcing and go from there. The
7 purpose of the model is to select between a set of
8 viable alternatives, and we have wind, peaking, et
9 cetera. I raised the question with Montana-Dakota,
10 well, is it viable to have a -- to only buy a 10-
11 megawatt -- you know, do these 10-megawatt or
12 11-megawatt slices, and based upon that discussion
13 with Montana-Dakota, it was, well, that's not an
14 option. I mean, this isn't the perfect world where
15 you can get exactly what you want and avoid -- I
16 think it was referred to earlier today as lumpy
17 investments. Sometimes you have to take a little
18 more capacity than you immediately need. I mean,
19 that's been the nature of utility investments for a
20 long term.

21 Q. So do you characterize this as taking more
22 investment than they really need?

23 A. Well, I'll start by saying that I did not
24 model his scenario, but assuming that it's as he
25 characterized and that the only change in the model

1 was saying that you could get Big Stone in smaller
2 increments, then that would appear to be what the
3 conclusion of the model is from looking only at
4 optimization and not the other factors.

5 Q. In theory, if there was another buyer out
6 there that -- you know, we're talking about
7 percentage of a plant here, so if someone said,
8 boy, you know, we would be willing to up our
9 percentage, we would like to get in on this deal,
10 it looks like a good deal, would that make sense
11 for Montana-Dakota to sell off an interest in that?

12 A. One is that there are other factors
13 besides just the optimization. I think the other
14 thing, while I don't have a definitive answer, is
15 something certainly that you have to think about,
16 is at some point when does the owner's committee
17 become too big and unwieldy that you can't, you
18 know, effectively operate a power plant? I don't
19 have a numerical answer for you, but it's certainly
20 a consideration, and we certainly know from people
21 buying and selling power plants that the value of
22 control in power plants, people ascribe significant
23 value to having control as opposed to having a 5 or
24 10 percent offtake agreement from a power plant.
25 That's just what the market says. I can't tell you

1 why.

2 COMMISSIONER CLARK: Thank you.

3 JUDGE WAHL: Commissioner Cramer.

4 COMMISSIONER CRAMER: I have nothing.

5 JUDGE WAHL: Mr. Kuntz.

6 **REDIRECT EXAMINATION**

7 **BY MR. KUNTZ:**

8 Q. I just want to touch on a couple areas,
9 Mr. Heidell. If we turn to table 4.3 regarding the
10 fuel forecasts, and Commissioner Clark pointed out
11 the fact that the coal price could well escalate
12 above the escalation factor that you used; correct?

13 A. That is correct.

14 Q. Did I understand your testimony correctly
15 that there are natural gas forecasts that are
16 already predicting that the numbers that you used
17 going out into later years may be as much as a
18 dollar too low?

19 A. Yes, and specifically I noticed -- I
20 indicated if that the same sources that were used
21 to develop this forecast were updated today, would
22 have those higher values.

23 Q. So vis-a-vis these generation sources, you
24 would have to consider that, yes, coal may well
25 escalate faster than what you're showing, but

1 natural gas could well, too, and that's going to
2 reflect the value between those two different fuel
3 sources?

4 A. That is correct.

5 Q. Are you familiar with studies or
6 information that's been provided indicating that a
7 dollar per MMBtu swing in gas prices would result
8 in a comparable increase if you had a comparable
9 gas-fired plant of approximately \$30 million
10 increase to consumers for each \$1 million increase
11 in gas price? Are you familiar with that? One
12 dollar per MMBtu.

13 A. I'm just trying to think through that.

14 MR. BREEN: Objection, leading.

15 JUDGE WAHL: Overruled.

16 THE WITNESS: I'm not familiar with that.
17 I can think through that, you know, increasing gas
18 prices by a -- you know, a dollar given the
19 conversion price of gas can well -- you know, can
20 well do that.

21 Q. (MR. KUNTZ CONTINUING) And then
22 Commissioner Clark asked you a question about in
23 light of the fact that the company didn't
24 necessarily have the ability to go out and buy
25 plants in 10-megawatt increments, is it possible

1 the company would be overinvesting in Big Stone II.
2 You're not saying the company doesn't have a need
3 for 120 megawatts out in 2011, 2012, 2013, in that
4 time frame, are you -- or, I mean, the model isn't
5 saying that?

6 A. No. The -- what the -- and I was relying
7 on Mr. Schlissel's testimony. What the model was
8 saying was that there is the need, but potentially
9 there is a different mix of resources that would
10 meet that need.

11 Q. So for that increment between, say, 25 and
12 120, you might look at a different generation
13 source rather than Big Stone II for that increment
14 in an ideal world where you could buy plants in
15 little 10-megawatt increments?

16 A. I believe his analysis indicated that you
17 would have to go out and buy a gas plant -- that
18 the model would indicate that you would have to go
19 out and buy or secure -- you would secure gas
20 plants to make up that difference.

21 Q. Then you would have to look at offsetting
22 things in terms of, for example, the effect of
23 off-system sales, which weren't even modeled by you
24 or Mr. Schlissel's adjustment to your model; isn't
25 that correct?

1 A. That is correct.

2 Q. So if you went to another generation
3 source, you would lose that particular opportunity
4 in all likelihood to make those off-system sales,
5 depending upon what generation source you selected
6 as the alternative to Big Stone II?

7 A. I am highly confident that if you went to
8 a peaker, you would lose the opportunity for
9 off-system sales.

10 MR. KUNTZ: That's all the questions I
11 have.

12 JUDGE WAHL: Mr. Breen? Mr. Binek?

13 MR. BINEK: I have none.

14 JUDGE WAHL: Anything further from the
15 Commission?

16 COMMISSIONER WEFALD: I do.

17 JUDGE WAHL: Commissioner Wefald.

18 **FURTHER EXAMINATION**

19 **BY COMMISSIONER WEFALD:**

20 Q. Off-system sales -- if off-system sales
21 are an important component to buying this then, why
22 wouldn't MDU -- I mean, the present situation we
23 have with off-system sales does not give the
24 customer a hundred percent of the benefit of those,
25 so doesn't it become very expensive to build a

1 plant for off-system sales when the customer is not
2 getting -- asking them to pay the full price of the
3 plant for many years, but not getting the full
4 hundred percent profit from the off-system sales?

5 A. I understand your concern, but I don't
6 draw that conclusion, because I specifically did
7 the model excluding off-system sales, so what I
8 want to identify is what is the best way to serve
9 the customers assuming no off-system sales.

10 Q. But you were just discussing off-system
11 sales, the big benefit with Mr. Kuntz.

12 A. Oh, I'm sorry. What we were saying is
13 that if you assume off-system sales, and let's just
14 say we assume the current arrangement of 85 percent
15 going to customers, there would be a benefit to
16 Montana-Dakota customers from the coal plant that
17 there would not be from a peaking plant, but that
18 benefit has not been included in my analysis.

19 COMMISSIONER WEFALD: Thank you.

20 JUDGE WAHL: Anything further from the
21 Commission? Any followup, Mr. Kuntz?

22 MR. KUNTZ: No.

23 JUDGE WAHL: Mr. Breen?

24 MR. BREEN: None.

25 JUDGE WAHL: Mr. Binek?

1 MR. BINEK: No.

2 JUDGE WAHL: All right. Counsel --

3 MR. KUNTZ: We would ask Mr. Heidell be
4 excused.

5 JUDGE WAHL: Oh, of course. I'm sorry.
6 Thank you, Mr. Heidell.

7 (Discussion had off the record.)

8 JUDGE WAHL: In any event, eight o'clock
9 tomorrow morning. We'll be in recess until then.

10 (Recessed at 5:08 p.m., June 27, 2007.)

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