

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
SUPPLEMENTAL HEARING

(VOLUME II)

Taken At
State Capitol
Bismarck, North Dakota
April 28, 29 & 30, 2008

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

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3	332	Prefiled Thomas Crowley Exhibit		
4		Graphical illustration of the		
5		change in PRB spot coal prices		
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1 (The proceedings continued, commencing at
2 9:01 a.m., Tuesday, April 29, 2008, as follows:)

3 JUDGE WAHL: The record will show that it
4 is approximately 9:00 a.m., April 29, 2008,
5 continuing the supplemental hearings of the advance
6 determination of prudence applications for Otter
7 Tail Corporation and Montana-Dakota Utilities Co.
8 for their respective participation and ownership
9 interest in the Big Stone II Generating Plant,
10 Public Service Commission Case Nos. PU-06-481 and
11 PU-06-482, respectively.

12 Counsel, as a preliminary matter, and
13 specifically Mr. Guerrero and Mr. Kuntz, I have
14 Commissioner Wefald's request for a late-filed
15 exhibit, which would be identified as OTP -- well,
16 Mr. Kuntz, following your suggestion yesterday, I
17 suspect separate exhibits.

18 COMMISSIONER WEFALD: Separate is good.

19 JUDGE WAHL: Well, unless somebody can
20 give me a number, I'm suggesting OTP 351 and MDU --

21 MR. KUNTZ: 219.

22 JUDGE WAHL: -- 219. Thank you, Mr.
23 Kuntz. So MDU 219. 351, does that work for Otter
24 Tail?

25 MS. DANIELS: Yes.

1 JUDGE WAHL: So it's OTP 351, MDU 219, an
2 exhibit described as data for the demand-side
3 management programs implemented in North Dakota at
4 present and for the past 10 years, including the
5 annual number of kilowatt-hours saved in North
6 Dakota and the annual kilowatt-hours saved in North
7 Dakota for each of the past 10 years.

8 COMMISSIONER WEFALD: It should be
9 kilowatt and then kilowatt-hours. There's two
10 different.

11 JUDGE WAHL: All right. I'm sorry,
12 Commissioner. So it's the annual number of
13 kilowatt-hours saved in North Dakota and the annual
14 kilowatts --

15 COMMISSIONER WEFALD: Saved.

16 JUDGE WAHL: -- saved in North Dakota for
17 each of the past 10 years.

18 MS. DANIELS: Actually, Judge Wahl, it
19 would be 123 for Otter Tail, if it's just an Otter
20 Tail number.

21 JUDGE WAHL: All right. Thank you. So
22 the record will show it's Otter Tail Power's
23 late-filed Exhibit 123. Is that acceptable, Mr.
24 Guerrero?

25 MR. GUERRERO: It is.

1 JUDGE WAHL: And Mr. Kuntz?

2 MR. KUNTZ: Yes, I believe we've got that
3 down.

4 JUDGE WAHL: And, of course, Ms. La Seur
5 and Mr. Binek, you'll see that exhibit in due
6 course, and I'm not sure it's ever been done, but I
7 would expect if there's an objection, you would
8 promptly file the objections to the exhibit.

9 MR. GUERRERO: Seven days okay?

10 JUDGE WEFALD: That's good.

11 COMMISSIONER WEFALD: All right.

12 MR. KUNTZ: Seven days from today?

13 JUDGE WAHL: Yes. And, you know, if
14 there's a problem, obviously simply a filing with
15 the Commission to advise should be sufficient.

16 Anything further preliminarily, counsel?
17 Mr. Guerrero?

18 MR. GUERRERO: Nothing here, Your Honor.

19 JUDGE WAHL: Mr. Kuntz?

20 MR. KUNTZ: No, Your Honor. I understand
21 we've got a couple witnesses with some schedule
22 problems, and, with the Commission's indulgence,
23 Montana-Dakota is agreeable to taking those
24 witnesses out of order to accommodate those
25 schedules.

1 JUDGE WAHL: Of course. Ms. La Seur?

2 MS. LA SEUR: Nothing.

3 JUDGE WAHL: Mr. Binek?

4 MR. BINEK: Nothing.

5 JUDGE WAHL: All right. Mr. Guerrero,
6 when you're ready.

7 MR. GUERRERO: Thank you, Your Honor. The
8 applicants would call Mr. Thomas Crowley.

9 JUDGE WAHL: You may be seated, Mr.
10 Crowley. I recall your testimony from a -- not?
11 You have not previously testified?

12 THE WITNESS: No, sir.

13 JUDGE WAHL: I'm sorry. I'm mistaken.
14 Accordingly, Mr. Crowley, as you are no doubt
15 aware, your testimony is required to be under oath
16 and I'm required by law to advise you regarding
17 perjury before administering the oath. Perjury is
18 a false statement of material fact which you do not
19 believe to be true; in other words, generally
20 speaking, of course, a lie. In North Dakota
21 perjury is a Class C felony, punishable by a fine
22 up to \$5,000, imprisonment for a period of up to
23 five years, or both. Will you raise your right
24 hand, please.

25 **THOMAS CROWLEY,**

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

3 JUDGE WAHL: Mr. Guerrero.

4 MR. GUERRERO: Thank you, Your Honor.

5 **DIRECT EXAMINATION**

6 **BY MR. GUERRERO:**

7 Q. Please state your name for the record.

8 A. Thomas Crowley.

9 Q. And by whom are you employed?

10 A. I'm employed by L.E. Peabody & Associates,
11 an economic consulting firm.

12 Q. And what do you do for L.E. Peabody?

13 A. I'm an economist and I'm president of that
14 firm.

15 Q. And what are your primary responsibilities
16 as a consultant, an economist and president of the
17 firm?

18 A. My responsibilities are to oversee our
19 staff of approximately 30 individuals located in
20 two different offices, one in Alexandria, Virginia,
21 and one in Tucson, Arizona. I'm responsible for
22 the quality of the products that leave our office
23 and head up a number of assignments personally.
24 Our clients include electric utilities, who I'm
25 representing today. We work for railroads. We

1 work for manufacturing companies. We work for
2 generally companies that have transportation and/or
3 fuel supply problems. As a matter of fact, we did
4 a study for this Commission in 2005 advising on a
5 transportation issue related to the rates --
6 transportation rates charged for the movement of
7 grain.

8 Q. Thank you. Do you have a particular
9 expertise?

10 A. I'm an economist and for the last 30-plus
11 years have been dealing with transportation and
12 fuel supply issues.

13 Q. Thank you. Did you have occasion to
14 prepare or cause to be prepared, Mr. Crowley, some
15 prefiled testimony in this matter?

16 A. Yes, I did.

17 Q. Okay. And do you have that in front of
18 you?

19 A. I do.

20 Q. And could you identify those exhibits,
21 please?

22 A. Exhibit 328 is the prefiled testimony.

23 Exhibit 329 is a summary of the results of
24 the forecast of delivered Powder River Basin coal,
25 which includes both the price of the product and

1 the price to transport that product.

2 Exhibit No. 330 is a breakdown of the
3 transportation portion of the delivered cost of
4 fuel into the various component parts.

5 Exhibit 331 is a breakdown of the Powder
6 River Basin, Wyoming, coal price forecast on a base
7 case, a low case and a high case.

8 Exhibit No. 332 is a historical look at
9 spot prices of Powder River Basin coal for both an
10 8,800 Btu coal and 8,400 Btu coal.

11 Exhibit 333 is a comparison of the
12 delivered cost of -- cost forecast that I did
13 compared to the two that Otter Tail did, one in
14 2006 and one in 2007.

15 Exhibit 334 is a numeric comparison of
16 those same three forecasts.

17 Q. Thank you, Mr. Crowley. If I asked you
18 the same questions today that are set forth in your
19 testimonies that you just identified, would your
20 answers be the same?

21 A. Yes, they would.

22 Q. Do you have any corrections or additions,
23 subtractions?

24 A. I do not.

25 MR. GUERRERO: Okay. Your Honor, we would

1 offer OTP/MDU Exhibits 328, 329, 330, 331, 332,
2 333, 334 and 328A, which is his summary.

3 JUDGE WAHL: Ms. La Seur?

4 MS. LA SEUR: I have no questions for this
5 witness.

6 JUDGE WAHL: Mr. Binek?

7 MR. BINEK: No objection.

8 JUDGE WAHL: Exhibits 328 through 334,
9 inclusive, and 328A are each received.

10 Q. (MR. GUERRERO CONTINUING) Thank you.
11 Could you provide a brief summary of your
12 testimony, Mr. Crowley, to the Commission?

13 A. Certainly. I was requested to perform an
14 economic forecast of both the price of fuel and the
15 price to transport that fuel from the origin to the
16 Big Stone II plant. The sum of those two
17 components resulted in what I call the delivered
18 coal price forecast for the Big Stone II station.
19 The forecast covered the time period from 2012
20 through 2038.

21 The delivered cost of transportation is
22 broken into a number of component parts, including
23 the rail rate, itself, the fuel surcharge, which is
24 clearly a major factor today in evaluating
25 transportation, as well as the cost of acquiring

1 and maintaining railcars. On the coal price side
2 of the forecast, I did three different forecasts, a
3 base case, which is the case that we anticipate is
4 most likely to occur, and from the base case we did
5 a low-case forecast and a high-case forecast.

6 The results of the forecast were presented
7 on both a dollar-per-ton and dollar-per-million-Btu
8 bases. At 2012 levels we were forecasting a
9 delivered cost of \$29.67 a ton that would escalate
10 in 2025 to \$43.56 a ton, and at the end of the
11 forecast period in 2038 the price was estimated to
12 be \$56.36 a ton.

13 The last thing that I did in my testimony
14 was to compare the results of the forecasts that we
15 conducted to the forecasts that were previously
16 conducted by Otter Tail. We had very similar
17 results over the forecast period. There was a
18 slight divergence beginning in 2019 through the end
19 of the forecast model, but overall the results were
20 very, very close.

21 Q. Is that your --

22 A. Yes.

23 Q. Thank you. Just one quick question on
24 your summary there. You refer to "more
25 conservative." Could you define what you mean by

1 "more conservative"?

2 A. The forecasts that Otter Tail did resulted
3 in a higher number, so it worked against their
4 interest than my numbers, and, therefore, a number
5 that works against you when you present it would be
6 considered a conservative number.

7 MR. GUERRERO: Thank you. We tender Mr.
8 Crowley for examination.

9 JUDGE WAHL: Ms. La Seur.

10 **CROSS-EXAMINATION**

11 **BY MS. LA SEUR:**

12 Q. Something Mr. Crowley just said. I did
13 not expect to have questions for this witness, but
14 I want to ask about just one thing that was
15 mentioned in the summary. When you say that an
16 estimate works against the applicant, is it not in
17 the applicants' best interest to have the most
18 accurate possible price forecasts?

19 A. Yes.

20 Q. So in assuming a price forecast that
21 allows an applicant to prepare for a potential
22 worst-case scenario, how exactly is that working
23 against the applicant?

24 A. Well, it's working against the applicants
25 from the standpoint of what we feel the correct

1 answer is. When we developed our forecasts, we
2 developed it assuming, based on all of the
3 different inputs into our model, what the likely
4 scenario, the likely outcome would be, and when we
5 compare that result to what applicants produced,
6 they produced a higher trend line towards the end
7 of the model -- their model. From the perspective
8 of what we did, that would be a conservative
9 estimate of what the costs are, and that's why I
10 labeled it as a conservative estimate. It was
11 conservative versus what we developed.

12 Q. So a high estimate might work against the
13 specific alternative that the applicants have
14 already identified?

15 A. Yes.

16 Q. But it could also have the effect, could
17 it not, of allowing applicants to identify a more
18 prudent course?

19 A. I don't think the differences between our
20 numbers would rise to that level.

21 MS. LA SEUR: That's all I have.

22 JUDGE WAHL: Mr. Binek.

23 **CROSS-EXAMINATION**

24 **BY MR. BINEK:**

25 Q. Basically, if I'm understanding your

1 testimony, you -- your forecast is for lower prices
2 toward the end of this time period; is that
3 correct?

4 A. It's lower. They are lower than what
5 Otter Tail produced in their second forecast.

6 Q. Okay. But is the primary difference --
7 and maybe I read this wrong, but is it toward the
8 end of the time period that you were looking at
9 that there's more divergence --

10 A. Yes.

11 Q. -- between your forecast and Otter Tail's?

12 A. Yes. Beginning in 2019, there's a slight
13 divergence in one of Otter Tail's forecasts from
14 the forecasts that we developed.

15 Q. And do you know why that occurs? What are
16 they looking at differently than what you're
17 looking at?

18 A. In their forecast, when they got to 2019,
19 they developed a factor that they used on an annual
20 basis going forward from 2019 to the end of the
21 study period. It was a factor of a little over 4
22 percent and they used that year over year, and that
23 was based on information that they had from
24 previous years. By contrast, what we did is, we
25 let our model continue to evaluate the market in

1 each one of those years and estimate all of the
2 different components that would vary in purchasing
3 this product, and that created the difference,
4 affixed factor versus a varying series of
5 variables.

6 MR. BINEK: I have no further questions.

7 JUDGE WAHL: Questions from the
8 Commissioners?

9 COMMISSIONER WEFALD: I have no questions
10 for this witness.

11 JUDGE WAHL: Commissioner Clark.

12 EXAMINATION

13 BY COMMISSIONER CLARK:

14 Q. I do have a few, Mr. Crowley. Good
15 morning.

16 A. Good morning.

17 Q. Good to see you again. First, thank you
18 for your submitted testimony. This was a part of
19 the case that I probably had as much, if not more,
20 concern with than any other, was the delivered
21 price of fuel, especially coming out of the first
22 hearing specifically because it would appear
23 especially in the initial application it looked
24 like the tariffed rate was taken and then just sort
25 of a generic inflation factor was put onto it and

1 that was contrasted with testimony from the
2 Burlington Northern Santa Fe executive who seemed
3 almost giddy at the prospects of the difference
4 between the price of coal and natural gas, and
5 there was even some testimony in the record that
6 discussed potential 11 percent increases out of the
7 PRB, the fact that there had been, I think, \$600
8 million a year for each of the last two years
9 invested in upgrading PRB facilities that you would
10 expect at some point the railroad will recover
11 through rates and something didn't seem to match
12 up, so the questions that I have are trying to
13 shore up the questions that I had from that
14 original testimony.

15 Is there -- one of the concerns that I had
16 was with regard to simply taking the existing
17 tariff and then putting a factor on that,
18 especially coming out of litigation, because
19 intuitively I thought, well, maybe the BN lowballed
20 a little bit the tariffed rate knowing that it was
21 going to be subject to a challenge before the STB.
22 To what degree is that a legitimate concern that
23 the Commission should take into consideration, and
24 are we -- should we expect to see a higher tariffed
25 rate now that the litigation is basically done?

1 A. Well, it's very difficult to predict with
2 any degree of certainty what the BNSF is going to
3 do. I think you can take a fair amount of comfort
4 in the litigation. Even though Otter Tail did lose
5 the litigation, they won the litigation and they
6 lost the litigation. When I say that, they won the
7 litigation because they proved that this stand-
8 alone railroad that they built actually -- the
9 revenues generated actually were greater than the
10 stand-alone costs, which suggest relief, which
11 suggest that the tariffed rates were too high.
12 They lost on a cross-subsidy issue. And I don't
13 want to get very technical with you unless you
14 really want to. And the cross-subsidy issue that
15 they lost is now characterized in the industry as
16 the Otter Tail cross-subsidy issue because it was
17 never before even suggested that such a thing
18 existed. So, in my opinion, they lost on a
19 technicality.

20 And the reason I tell you this is that
21 Burlington knows that -- or BNSF knows that better
22 than anybody. They know how close they came to
23 losing it -- losing that case. Now, that's
24 important circling back to this tariff rate because
25 the tariff rate is right there on the cusp, and

1 they know if they stray too far from that rate,
2 they are going to be subject to another potential
3 action from Otter Tail if Otter Tail chooses to
4 pursue that. So they can't stray very far, in my
5 opinion, from where they are. I think they are
6 kind of boxed in to that level.

7 Now, what happens into the future, which
8 is the second part of your question. BNSF, like
9 every other monopolist, has an incentive to
10 maximize rates and revenues, and they always keep
11 their eye on that ball and they always want to do
12 that. I don't think that over the foreseeable
13 future that that's going to happen in this market,
14 and this market being the Otter Tail market, for
15 the reasons that I've just stated. I think they
16 are boxed into a corner and they're going to stay
17 at that level keeping an eye on fuel and keeping an
18 eye on just general inflation.

19 Q. To what degree do you see the investments
20 that they've had to make over the last few years in
21 the PRB facilities potentially impacting rates
22 above the baseline?

23 A. Well, the investment that they're making
24 in that facility, they're big numbers. You know,
25 when you're talking 600 million or a billion

1 dollars a year, you're talking about a lot of
2 money, but when you compare that to the amount of
3 product that's coming out of the Basin, on a unit
4 basis it's not a lot of investment. Easy for me to
5 say, it's not my \$500 million. But they're clearly
6 doing that because they see a future for this
7 product, they see growth in this product. I think
8 anybody that forecasts or knows anything about that
9 Basin would agree that there's growth coming. I
10 don't think this country is ready to turn its back
11 on coal. I think coal is still a coveted product,
12 it's going to generate electricity for a long time,
13 and BN is making this investment because it sees a
14 very handsome return coming from that investment,
15 and they're going to continue to make that
16 investment. And the Union Pacific Railroad, their
17 partner in the Basin, is making a similar amount of
18 investment, so they have a very rosy picture of the
19 future of coal and the future of Powder River Basin
20 in particular.

21 Q. CO2 regulation, you had mentioned in your
22 submitted testimony that you took that into
23 consideration. To what degree should the
24 Commission be concerned that to the degree that
25 there is carbon regulation of some kind, that it

1 then drives the entire market up and the railroad
2 is able to capture more?

3 A. Well, CO2 is the big unknown, and has been
4 for a while, and it's an unknown because no one can
5 seem to put their hands around what it means from
6 an economic perspective. It's going to have an
7 impact of some sort, and as much as I and my staff
8 have looked into this issue -- it's something that
9 we're asked about almost at every stop that we go
10 to -- we cannot figure out what it's going to be.
11 It's very much a political issue, as you might
12 imagine, and rhetoric is very high these days,
13 particularly in Washington, for obvious reasons,
14 but I think next year, as things settle in a little
15 bit, we'll get a better feel for what it means and
16 how to quantify it.

17 And our position is that from a coal
18 perspective, it's going to be a uniform impact, and
19 I don't believe it's going to be to such a
20 magnitude that it places coal at a disadvantage
21 versus other fuels. In other words, I don't think
22 it's going to take it anywhere near the price of
23 where natural gas is today or where natural gas is
24 projected to go, as an example. That seems to me
25 to be the comparison most folks make about fuels to

1 generate electricity, the comparison between coal
2 and gas. And while coal prices are up -- delivered
3 coal prices are up, delivered gas prices are up
4 more.

5 Q. And then just one final question. I had
6 read into the record at our previous hearing a
7 snippet from -- I can't remember the magazine, it
8 was either a utility sort of specific magazine or
9 Traffic World or something like that, but it
10 discussed the potential that coal out of the PRB
11 could be -- last year did see and could be seeing
12 double-digit rate increases, I think it talked
13 about 11 percent, and I asked that of the BN
14 witness, Mr. Brautovich. I said would you deny
15 that that's a likely scenario, and he said no. I
16 mean, he basically confirmed that that could be a
17 possibility. How do I reconcile that statement,
18 line of questioning with the Otter Tail case --
19 Otter Tail/MDU case?

20 A. I think there are some utilities in this
21 country that would be happy with 11 percent
22 increase. What they are seeing is as their
23 contracts expire --

24 Q. And Basin would be an example?

25 A. Basin is an example. That the next

1 generation of either contracts or tariffs
2 effectively doubles the price of the product, and
3 you're seeing that more and more. To that extent a
4 captive utility has an advantage. At least it has
5 a backstop, and the backstop is the Surface
6 Transportation Board. No matter what you think
7 about the Surface Transportation Board, they are
8 there and they are there to protect the captive
9 shipper, and there are guidelines in place that
10 have been in place now for -- since 1985, which is
11 coming on a long time, recently been modified.
12 They're continually being adjusted and
13 theoretically being made more user friendly.

14 COMMISSIONER WEFALD: Theoretically.

15 THE WITNESS: Theoretically. And they are
16 a backstop for the greedy monopolist, if you will.
17 So I would be more concerned if Otter Tail were a
18 competitive shipper today than if they were a
19 captive shipper. A captive shipper has at least
20 the STB backstop. A competitive shipper has the
21 marketplace, and the marketplace is ugly. Even for
22 competitive shippers it's very, very ugly.

23 Q. (COMMISSIONER CLARK CONTINUING) But
24 there's no question that Otter Tail is a captive
25 shipper?

1 A. There's no doubt that Otter Tail is a
2 captive shipper.

3 COMMISSIONER CLARK: Thank you. That's
4 all I have.

5 JUDGE WAHL: Commissioner Cramer.

6

EXAMINATION

7 | **BY COMMISSIONER CRAMER:**

8 Q. I just have one. If I was to accept your
9 counsel that I ought to find comfort in the fact
10 that Otter Tail almost won an STB case and,
11 therefore, BNSF will behave itself better and if
12 they don't, the STB is always there, which I'm not
13 quite prepared to accept, but, you know, you're the
14 second person to suggest that. How does your
15 forecast -- how do you forecast the fuel surcharge
16 issue, because there seems to be almost nobody
17 that's predicted what's happened to this point with
18 regard to, well, oil prices and, therefore, liquid
19 fuels, and no one seems to -- you know, they're
20 talking about \$200-a-barrel oil or more. How do
21 you take that into account and how do you forecast
22 for that?

23 A. Well, we're one of the people that didn't
24 forecast that properly, either, so I'll do a mea
25 culpa on that one. Fuel is always a wild card. I

1 think if you look at the cost of fuel, and if you
2 look at it and put it in perspective in a
3 transportation rate, let's assume that -- let's
4 assume that we have a transportation rate of \$15 a
5 ton, and let's assume that half of that rate is
6 cost. Okay. So \$7.50 or 50 percent is cost and 50
7 percent is profit. Now, what we're talking about
8 is a component of that \$7.50 going up. Now, what
9 component of that \$7.50 is fuel? In today's high
10 prices fuel would account for 30 to 35 percent of
11 that 7.50. So you're looking at a 2, 2.50 a ton as
12 fuel. So if you double -- and let's say fuel is at
13 a hundred dollars a barrel today. It's a little
14 higher, but for purposes of the example. If you
15 double the cost of fuel and it goes to \$200 a
16 barrel, that \$2.50 goes up to \$5, so you're adding
17 another 2.50 on to a \$15 rate to account for that
18 jump in fuel. Now, 2.50 is a lot of money, but
19 it's not astronomical by any stretch of the
20 imagination.

21 Q. And clearly if that happens, natural gas
22 prices will --

23 A. That seems to be the trend, yes. There
24 seems to be a link between those two fuels.

25 COMMISSIONER CRAMER: I have nothing

1 further. Thank you.

2 JUDGE WAHL: Anything further from the
3 Commission?

4 COMMISSIONER WEFALD: I have one question.

5 JUDGE WAHL: Commissioner Wefald.

6 EXAMINATION

7 BY COMMISSIONER WEFALD:

8 Q. And so this relates to -- go back to your
9 testimony on page 7, and it's my understanding now,
10 and you just need to confirm this, it says that as
11 Big Stone is captive -- this is line 6 -- is
12 captive to Burlington Northern Santa Fe, the only
13 pricing constraint on Burlington Northern Santa Fe
14 is the maximum rate guidelines promulgated by the
15 STB and the current tariff rates reflect this level
16 of maximum rate. So is Otter Tail presently paying
17 the maximum rate?

18 A. Yes, in my opinion, that would be correct.

19 Q. And so then you go on to say that they --
20 that BNSF had -- this is under 12, "Yes, Otter Tail
21 did lose its maximum rate challenge before the STB.
22 Since the issuance of its January 2006 decision,
23 the STB has altered its regulation of maximum
24 reasonable rail rates for moving coal, which would
25 affect the rate level BNSF could charge for the

1 shipment of coal from the PRB to Big Stone II." So
2 at present is still Otter Tail paying the top rate
3 that is in these -- in the tariff?

4 A. Yes.

5 Q. And before did they pay the top rate that
6 was in the tariff?

7 A. Yes.

8 Q. And so Burlington Northern Santa Fe was
9 actually successful in raising the top rate that
10 was in the tariff, is that correct, in that rate
11 case?

12 A. I'm not following that.

13 Q. Okay. When I said "before did," that
14 meant before the rate case.

15 A. Oh, before. I'm sorry.

16 Q. When I said before, was Otter Tail paying
17 the top rate in the maximum rate in the tariff?

18 A. Okay. I guess I'm confused by the timing.

19 Q. All right. Let's go back here to 6.

20 A. Yes.

21 Q. Line 6. "As Big Stone is captive to
22 Burlington Northern Santa Fe, the only pricing
23 constraint on Burlington Northern Santa Fe is the
24 maximum rate guidelines promulgated by the STB.
25 The current tariff rates reflect this level of

1 maximum rate." So my first question is, prior to
2 the rate case was Otter Tail paying the maximum
3 rate that was in the tariff?

4 A. Yes.

5 Q. All right. After the rate case is Otter
6 Tail paying the maximum rate that is in the tariff?

7 A. Yes.

8 Q. Was there a change in the maximum rate
9 during the rate case?

10 A. Only for inflation. There was not a --
11 there was not a markup for -- to express additional
12 market power or try to get additional profits. It
13 was just a tariff escalator, if you will, tariff
14 adjustment.

15 Q. Is that an every-year thing?

16 A. It can be every year, it can be every
17 quarter, depending on how the tariff -- I think in
18 this particular tariff they adjust it annually.
19 They fix the tariff and then once a year they'll
20 change it. I think Otter Tail just recently had a
21 change in their rate.

22 Q. So the maximum rate before and after the
23 rate case only increased by an inflation adder?

24 A. Yes.

25 COMMISSIONER WEFALD: Okay. All right.

1 Thank you.

2 THE WITNESS: And the fuel surcharge.

3 COMMISSIONER WEFALD: And a fuel
4 surcharge. All right. Thank you.

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

7 MR. GUERRERO: One moment. No further
8 questions.

9 JUDGE WAHL: Ms. La Seur?

10 **RECROSS-EXAMINATION**

11 **BY MS. LA SEUR:**

12 Q. Mr. Crowley, I'm curious about your
13 testimony that it should be a source of optimism
14 that a complainant can prove that tariff rates are
15 too high and still lose to the railroads before the
16 Surface Transport Board. Couldn't BNSF reasonably
17 interpret this result to mean that it has nothing
18 to fear from the STB even when all the facts are
19 against it and/or when OTP is the opposition?

20 A. Well, I would suggest BNSF is very
21 arrogant, but I don't think they're quite that
22 arrogant. The decision of the STB in the Otter
23 Tail case was a reasoned decision. They went
24 through component parts and issued a 300-page
25 decision. Burlington has to read that decision as

1 something that was very, very close to losing. If
2 their objective and if they -- and probably as they
3 talk behind closed doors, they say -- they would
4 probably say they were very lucky to win that case.
5 That's my mindset.

6 With that backdrop, I don't think that
7 they would risk doing something economically
8 foolish that's going to allow Otter Tail to go back
9 at them. I think what Otter Tail proved to BNSF is
10 that they're going to stand up for what they
11 believe is correct, and I think BNSF respects Otter
12 Tail and doesn't look at them as someone they can
13 run over with rate increases. So I think the
14 litigation had a lot of residual benefits to Otter
15 Tail that are going to be realized in the future.

16 Q. And, Mr. Crowley, do you base any of this
17 speculation on any evidence?

18 A. It's just based on my experience. I've
19 been doing this sort of thing, I've been dealing
20 with the Burlington Northern, I worked for the
21 Burlington Northern in prior years, I understand
22 how these people think. That's what I get hired to
23 do. Do I have hard evidence to give you to
24 demonstrate that fact? No, I do not. But my
25 experience suggests that what I was telling you is

1 dead-on correct.

2 Q. And you did acknowledge earlier in your
3 testimony having made a mistake on a similar
4 forecasting issue not too long ago?

5 A. I made a mistake on forecasting the price
6 of a barrel of diesel fuel, yes.

7 Q. Another question. If federal carbon
8 regulation fails to have any impact on the
9 consumption of coal, as I believe you're
10 testifying, which is the largest industrial source
11 of carbon dioxide, then what would be the point of
12 carbon regulation?

13 MR. GUERRERO: I guess I'm going to
14 object. I don't believe that's what he testified
15 to.

16 MS. LA SEUR: Well, perhaps the witness
17 could clarify his testimony as to what the --

18 JUDGE WAHL: It's a bit of a summary, but
19 the witness is well able to defend himself, I
20 think. Overruled.

21 THE WITNESS: I'm sorry. The question
22 again?

23 Q. (MS. LA SEUR CONTINUING) First to
24 summarize, is it your testimony that federal carbon
25 regulation is unlikely to have any significant

1 impact on consumption of coal for electrical
2 generation?

3 A. Yes, that would be my testimony.

4 Q. Okay. And if that is in fact the case,
5 then what would be the point of carbon regulation?

6 A. Well, carbon regulation is designed to
7 remove carbon from the air, and that's a good
8 thing. But don't confuse that with a fuel source
9 to generate electricity. We as a country cannot
10 ignore coal as a source of generation. Over 50
11 percent of the electricity generated in this
12 country, most of the baseload units are coal units.

13 Q. So in speculating that there won't be a
14 significant impact on consumption of coal, are you
15 assuming that capture-and-storage technologies will
16 be implemented around the same time as carbon
17 regulation?

18 A. I think my testimony was I'm not sure how
19 all that's going to play out. There's a lot of
20 different suggestions and offers floating around,
21 and it hasn't come to a final resolution and
22 probably won't for a while. I think a lot of
23 different folks are studying the issue and we'll
24 see how it plays out, but my point is that it's not
25 going to impact the amount of coal consumed in this

1 country.

2 Q. Well, I understand that's your testimony.
3 I'm just trying to get to the assumptions behind
4 it. If we're going to continue consuming about the
5 same amount of coal or the same rate of consumption
6 and we're going to remove greenhouse gas emissions
7 from the air at the same time, don't you have to be
8 assuming some kind of capture-and-storage
9 technology?

10 A. I'm sure there will be something. What
11 I'm telling you is I don't know what that is.

12 Q. Okay. And if you're assuming capture and
13 storage, have you incorporated the costs of that
14 technology being implemented into coal-fired
15 electrical generation facilities as part of your
16 coal demand forecast?

17 A. No.

18 MS. LA SEUR: Okay. Thank you. That's
19 all.

20 JUDGE WAHL: Mr. Binek?

21 MR. BINEK: I have no further questions.

22 JUDGE WAHL: Any followup from the
23 Commissioners? Mr. Guerrero?

24 COMMISSIONER WEFALD: I just have one.

25 JUDGE WAHL: Commissioner Wefald.

FURTHER EXAMINATION**BY COMMISSIONER WEFALD:**

Q. So on the total delivered coal forecast sheet on page 4, you're basically anticipating a 3 percent increase in the price of coal each year?

A. I don't --

Q. Well, the reason I'm asking that is because it says total delivered cost forecast.

A. Yes.

Q. All right. And the way I do math is I take -- it's from 2012 to 2038, so that's approximately 25 years?

A. Yes.

Q. All right. And then I see that the price is almost doubled -- almost doubled, all right, so then I know that to make a number double, you divide the number of years into the year 72 -- the percent -- to get the percent, you take the number of years and you divide that into the number 72 to get the doubling and you come up with then 3 percent.

A. The delivered cost?

Q. Yeah.

A. An average over time, yes, it would be in that neighborhood.

1 Q. 3 percent?

2 A. Yes.

3 Q. Very low. I mean, that's not a large
4 increase at all in the cost of anything, 3 percent
5 per year. You're okay with that?

6 A. I think inflation in our country has been
7 running at 2 percent, 2.1 percent. It's just this
8 last quarter I think as people are talking about
9 recessions, it's jumped up to about 4 percent.

10 Q. Isn't that because of the cost of energy
11 these days -- that people are anticipating the
12 higher costs of energy and fuels that we're going
13 to see greater inflation?

14 A. Yes, fuel, food, all of those things.

15 Q. And I would think that fuel would be an
16 impact on this. That's why I was wondering.

17 A. Yes.

18 Q. You're okay with that?

19 A. Yes. You have to take into account not
20 only the change in prices, but the changes in
21 productivity, as well. Over time what we see is
22 not only do prices go up, but costs moderate or
23 come down, and that's how you use the resources.
24 As the cost of fuel goes up, we're seeing that the
25 railroads are using it more efficiently, so from a

1 cost perspective it's not going up as fast as the
2 price of -- the cost of the gallon.

3 COMMISSIONER WEFALD: Okay. Thank you.

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

6 MR. GUERRERO: No, thank you.

7 JUDGE WAHL: Followup, Ms. La Seur? Mr.
8 Binek, followup?

9 MR. BINEK: No.

10 JUDGE WAHL: Thank you very much, Mr.
11 Crowley.

12 THE WITNESS: Thank you, sir.

13 JUDGE WAHL: Mr. Guerrero.

14 MR. GUERRERO: Your Honor, I think we're
15 going to take a witness out of order. I think Ms.
16 La Seur is going to call Mr. Schlissel. I was
17 wondering if we could take just a five-minute break
18 before that.

19 JUDGE WAHL: We may. We'll be in recess
20 until 9:50.

21 (Recess taken at 9:46 a.m. to 9:57 a.m.)

22 JUDGE WAHL: Let's be in order. Ms.
23 La Seur.

24 MS. LA SEUR: The intervenors call David
25 A. Schlissel.

1 JUDGE WAHL: Good morning, Mr. Schlissel.

2 THE WITNESS: Good morning.

3 JUDGE WAHL: I recall your testimony at
4 the previous hearings of this matter and have
5 personal knowledge, of course, that you have been
6 advised and informed regarding perjury, and you
7 understand, of course, that your testimony
8 continues under oath and subject to the penalties
9 of perjury?

10 THE WITNESS: Yes, sir.

11 JUDGE WAHL: Ms. La Seur.

12 MS. LA SEUR: The intervenors are
13 distributing Mr. Schlissel's summary statement.

14 COMMISSIONER CRAMER: Thank you.

15 COMMISSIONER WEFALD: Is this witness in
16 order or out of order?

17 JUDGE WAHL: Out of order.

18 COMMISSIONER WEFALD: Thank you.

19 MS. LA SEUR: And we would like to offer
20 Intervenors' Exhibits 10, 10A -- or sorry -- yeah,
21 this is I 10, I 10A, I 11, I 12, I 13, I 14, I 15
22 and I 16.

23 JUDGE WAHL: Is the summary included in
24 that?

25 MS. LA SEUR: The summary is I 10A.

1 JUDGE WAHL: I see it. I'm sorry. I
2 should read. I'm sorry. Mr. Guerrero.

3 MR. GUERRERO: What is his actual
4 supplemental direct testimony from April 9th? What
5 number is that?

6 MS. LA SEUR: The supplemental direct is
7 I 10.

8 MR. GUERRERO: And is that the testimony
9 that was corrected after our motion that's being
10 introduced into the record?

11 MS. LA SEUR: Yes, we're offering the
12 testimony subject to the portions stricken after
13 the applicants' motion.

14 MR. GUERRERO: Okay. And for the record,
15 we have included for purposes of convenience in the
16 books that were passed out earlier a copy of the
17 I 10 with the stricken material actually red-lined
18 out or blackened out of the testimony, and we would
19 ask that that be the official version of the
20 testimony following the judge's order. So subject
21 to that, we don't have any objection.

22 JUDGE WAHL: I don't think that's a
23 request. I mean, that's a fact --

24 MR. GUERRERO: Yeah.

25 JUDGE WAHL: -- Mr. Guerrero.

1 MR. GUERRERO: Just a clarification, I
2 guess.

3 JUDGE WAHL: All right. What has been
4 redacted from -- in the book? Is that the trade
5 secret material? There's two things -- there's two
6 things in the document which is Exhibit -- must be
7 10 I notice. Some is redacted and some is blacked
8 out. I take it the redacted is the trade secret
9 material.

10 MR. GUERRERO: That's correct.

11 JUDGE WAHL: Mr. Binek?

12 MR. BINEK: I have no objection.

13 JUDGE WAHL: Mr. Kuntz?

14 MR. KUNTZ: Your Honor, as you can see,
15 this is a four-page single-typed. I'm assuming it
16 really is a summary of his testimony, and on that
17 basis I would have no objection. To the extent
18 there's new material in here, of course, then we
19 may have a -- you know, we might raise an objection
20 later on, but at this point I have no objection.

21 JUDGE WAHL: Well, I guess you would have
22 a motion to strike, Mr. Kuntz, in that case.

23 MR. KUNTZ: Yeah, but at this point,
24 without having read it --

25 JUDGE WAHL: Understood. Exhibits -- you

1 might keep track of me here, Ms. La Seur. Exhibits
2 10, 10A, 11, 12, 13, 14, 15 and 16 are each
3 received.

4 MS. LA SEUR: Thank you.

5 JUDGE WAHL: All right.

6 **DAVID A. SCHLISSEL,**
7 having been previously duly sworn, was examined and
8 testified as follows:

9 **DIRECT EXAMINATION**

10 **BY MS. LA SEUR:**

11 Q. Mr. Schlissel, do you have any corrections
12 or additions to your prefiled supplemental direct
13 testimony?

14 A. I have three typos to my supplemental
15 direct testimony, Exhibit I 10, I'd like to
16 correct. The first is on page 3, line 12. The
17 second to the last word on that line is a date
18 2008, it should be 2006, referring to the fact that
19 the Big Stone II applicants, including OTP and MDU,
20 have not prepared a new construction cost estimate
21 for the Big Stone II project since July of 2006.

22 The second typo is on page 17, line 14.
23 Again, the second to the last word on that line,
24 the word is "last," l-a-s-t, should be stricken and
25 the word -- or the year 2006 should be inserted

1 after December. So instead of the phrase being,
2 "Since last December," it should be "Since December
3 2006."

4 And then, finally, page 74, line 15.

5 COMMISSIONER WEFALD: What page, please?

6 THE WITNESS: 74, line 15. Again, the
7 next to the last word on the page -- I must have
8 something psychological about that. The next to
9 the last word on the line, the word is "flaw." It
10 should be "flawed," f-l-a-w-e-d. And those are the
11 typos.

12 MS. LA SEUR: And Mr. Schlissel has a
13 summary statement to present to the Commission.

14 JUDGE WAHL: You may proceed.

15 THE WITNESS: Thank you. In the past 18
16 months, more than 20 proposed coal-fired power
17 plants have been canceled, more than three dozen
18 more plants have been delayed and a number have
19 been rejected by state regulatory commissions or
20 boards like yours because of, at least in part, the
21 uncertainties and risks regarding future power
22 plant construction costs and the likelihood for
23 federal regulation of power plant greenhouse gas
24 emissions.

25 Developments since I last testified here

1 in June 2007 confirm the conclusion in my earlier
2 testimony that the potential for future increases
3 in the cost of building Big Stone II and the
4 likelihood of federal restrictions on CO2 emissions
5 are very significant uncertainties and risks to the
6 Big Stone II project. However, OTP and MDU still
7 have not adequately considered these uncertainties
8 and risks in their new analyses and testimony
9 before this Commission.

10 Coal plant construction costs have
11 increased dramatically in recent years as a result
12 of the domestic and international competition for
13 design and construction resources, manufacturing
14 capacity and commodities like steel, copper, piping
15 and concrete. Words like "skyrocketing," "soaring"
16 and "staggering" have been used to describe these
17 increases. It is imprudent to not allow that the
18 same factors that have led to these skyrocketing of
19 power plant construction costs in recent years will
20 continue to raise project costs during the five or
21 more years it would take to design and build Big
22 Stone II. However, OTP has prepared only a single
23 economic modeling scenario that considered only a
24 10 percent increase in the construction cost to Big
25 Stone II. MDU has not evaluated the economics of

1 the project assuming any additional increases in
2 the cost of Big Stone II.

3 This worldwide competition for power plant
4 design and construction resources come from --
5 comes from other plants in the U.S. and from other
6 countries, most significantly China and India. The
7 competition also comes from other industries.
8 Resources are needed to design and build LNG
9 terminals and oil refineries, for example. And
10 there is no evidence that this international and
11 domestic competition will diminish at any point in
12 the foreseeable future. The coming renaissance of
13 the nuclear industry also will compete for limited
14 power plant design and construction resources. In
15 this environment, the cancellation of even 20 or 40
16 power plants in the U.S. is very unlikely to
17 markedly reduce in the short term the upward
18 trajectories of power plant costs.

19 It would have been prudent for OTP and MDU
20 to prepare a new construction cost estimate and
21 schedule for the Big Stone II project at some point
22 since work on the project was suspended in
23 September 2006. The existing cost estimate will
24 soon be two years old. However, the companies made
25 a conscious decision not to prepare a new estimate

1 until after they have received the regulatory
2 approvals from this Commission and the Minnesota
3 PUC. Instead, even without presenting a
4 construction cost estimate for the project, both
5 companies want a blank check from this Commission
6 that will put all of the risk of higher plant
7 construction and operating costs on ratepayers.

8 Rather than to grant such a blank check, I
9 believe this Commission should follow the recent
10 example of another commission and reject the
11 proposed project because the existing cost estimate
12 is too old and out of date, or, at a minimum, the
13 Commission should cap the amount of the cost of
14 building Big Stone II that OTP and MDU can recover
15 in rates as prudent investments.

16 I would note in passing that although OTP
17 and MDU have not developed a new Big Stone II cost
18 estimate, the plant capital costs that they've used
19 in their new analyses -- and by those I mean those
20 in this proceeding -- reflects a new 2.5 percent
21 reduction in the cost of building the plant that is
22 based on unspecified and apparently unknown
23 factors. This illustrates a difference between
24 OTP, MDU and many other utilities, both public and
25 investor owned. Other companies have confronted

1 the threat of higher plant costs and canceled or
2 delayed their projects when costs and risks became
3 too high. In the same situation, OTP and MDU more
4 than optimistically assume that they will be able
5 to achieve additional, but currently unspecified
6 and unknown, cost savings in building their
7 proposed coal-fired power plant. However, OTP and
8 MDU want ratepayers, not the companies, to bear the
9 risk that they are wrong.

10 Both companies also want ratepayers to
11 bear all of the risks of CO2 costs. At various
12 times the companies have argued that there will be
13 no federal regulation of CO2 costs in the near
14 future or that any costs associated with federal
15 regulation of greenhouse gas emissions will be very
16 low or that each company will receive large numbers
17 of free CO2 emissions allowances under any federal
18 cap-and-trade scheme. If they truly believe any of
19 these claims, both companies should be willing to
20 bear the risks associated with CO2 costs; in other
21 words, to put their money where their mouth is, to
22 use a common idiom. But they are clearly unwilling
23 to do so.

24 OTP and MDU and their witnesses repeatedly
25 use natural gas in this case as a scare tactic to

1 frighten the Commission into finding their
2 involvement in Big Stone II is prudent. In doing
3 so, they ignore their already heavy dependence on
4 coal-fired generation, a dependence which
5 represents a real economic and financial threat
6 given the likelihood of federal regulation of
7 greenhouse gas emissions in the near future. For
8 example, MDU has testified that with Big Stone II,
9 it would increase its dependence on coal-fired
10 generation from 77 percent of its installed
11 capacity to 82 percent. OTP and MDU also ignore
12 that this region is much less dependent on natural
13 gas than on coal. As I explain in my testimony,
14 overdependence on natural gas may be a problem in
15 some regions of the U.S., the South, for example,
16 but not here.

17 However, I must be clear on one point. We
18 have never in any of the five regulatory
19 proceedings in which I've testified about Big Stone
20 II or in any of the ten pieces of testimony I've
21 now written advocated natural gas as the sole
22 alternative to Big Stone II. Instead, we have
23 argued that OTP and MDU should explore a portfolio
24 of alternatives that includes energy efficiency,
25 renewable resources like wind power and, to the

1 minimum extent possible -- necessary -- excuse
2 me -- the minimum extent necessary, gas-fired
3 generation. North Dakota has some of the best, if
4 not the best, wind resources in the nation. The
5 state's utilities should be taking all reasonable
6 steps to take advantage of these renewable,
7 noncarbon-emitting resources to the maximum extent
8 possible. Energy efficiency is another valuable
9 noncarbon-emitting resource that OTP and MDU should
10 exploit more completely before they lock their
11 ratepayers into paying for an expensive coal-fired
12 power plant for the next 60 years.

13 I use the following example when I've
14 talked to investors, which I've done a number of
15 times in recent months, assume you want to build a
16 new house. You go to the builder and he or she
17 says, Sure, I'll build you a fine house, but I
18 can't tell you what it will cost because of rising
19 labor and material costs. Then you go to the town
20 in which you want to build the house and you're
21 told, We can't tell you what the property taxes
22 will be. We know they will be higher, but we can't
23 tell you how high they will be. Finally, you go to
24 the bank and can only get a variable rate mortgage.
25 Would any prudent person risk their own money on

1 such a venture? I believe the answer is no. No
2 prudent person would risk their own money this way.
3 Yet OTP and MDU want you to approve risking their
4 ratepayers' money on such an uncertain project.

5 Based on my 34 years-plus of experience on
6 energy and utility issues, I believe that prudent
7 utilities confront, rather than deny, risks and
8 then consider those risks in their resource
9 planning processes, A, by considering ranges of
10 assumed values for the most important assumptions,
11 which would be here project construction costs, CO2
12 costs, coal costs, including rail transportation
13 costs, plant operating performance, costs of
14 alternatives, and the cost of natural gas; and, B,
15 by considering a wide range of non- and low-carbon
16 emitting alternatives in their studies.

17 OTP has not and cannot present such a
18 prudent risk analysis because it is still using a
19 slow and obsolete planning model that no other
20 utility in the country uses according to OTP,
21 itself. I remember Mr. Morlock explaining to us
22 back in 2006 that OTP's planning model would have
23 taken four to seven days just to make such a simple
24 change as moving the Big Stone II project's
25 commercial operation date by six months. Clearly,

1 competing -- completing the large number of model
2 runs needed to fully evaluate the risks of the Big
3 Stone II project was beyond the capability of OTP's
4 model. Also, OTP cannot show you how much of an
5 economic benefit Big Stone II would provide for its
6 ratepayers. Quite simply, its argument is that Big
7 Stone II is a prudent investment because IRP-
8 Manager model picked it as such. In my opinion,
9 this is imprudent.

10 To its credit, MDU has used a more
11 state-of-the-art model. However, it has not
12 conducted any sensitivity analyses reflecting
13 higher Big Stone II construction costs or CO2
14 costs. Moreover, MDU has so heavily burdened the
15 alternatives to Big Stone II in its new analyses
16 that it's really no surprise that in its new runs
17 the Strategist model picked Big Stone II. However,
18 as I discuss in my testimony, when we reran the
19 Strategist model for MDU last December in the
20 Minnesota certificate of need proceeding, we found
21 that Strategist did not pick any Big Stone II when
22 you made such minor changes as including an
23 extremely low CO2 price or to increase the
24 construction cost of Big Stone II by just 10
25 percent. MDU's response to our Minnesota testimony

1 was to again change the assumptions in its
2 Strategist modeling to even further burden the
3 alternatives to Big Stone II such as by assuming
4 that the federal wind production tax credit will no
5 longer be available after January 1, 2009. I would
6 note that the U.S. Senate by a vote of 88 to 8
7 already has passed a bill that would extend the PTC
8 through the end of 2009.

9 In conclusion, I have seen no evidence
10 that the currently increasing power plant
11 construction costs, the likelihood of federal
12 regulation of greenhouse gas emissions and the
13 cancellation and delay of proposed power plants are
14 normal parts of the power industry's building
15 cycle. The staggering construction cost increases
16 that are currently being experienced by proposed
17 projects are unprecedented for nonnuclear plants.
18 The threats posed by global climate change also are
19 unprecedented and will require decades of serious
20 and concerted actions to address. In this
21 environment, building and being locked into a new
22 coal-fired power plant that can be expected to
23 operate for another 60 years is not and cannot be a
24 prudent management decision unless rigorous
25 analyses fully reflecting all of the risks and

1 uncertainties and fairly considering the
2 alternatives have been considered. OTP and MDU
3 have failed to provide those rigorous analyses to
4 this Commission.

5 JUDGE WAHL: Ms. La Seur.

6 MS. LA SEUR: We offer this witness for
7 cross-examination.

8 JUDGE WAHL: Mr. Guerrero.

9 MR. GUERRERO: Thank you, Your Honor.

10	CROSS-EXAMINATION

11 BY MR. GUERRERO:

12 Q. Good morning, Mr. Schlissel.

13	A. Good morning.

14	Q. Good to see you.

15 | A. Yes, good to -- always good to see you.

16 Q. I'm going to start with some clarifying
17 questions that you've probably heard me ask before.

18	A. Okay.

19 Q. But it's been a while since we've been
20 back in front of this Commission.

21 It goes to the question of need with
22 respect to Montana-Dakota's need for resources and
23 Otter Tail's need for resources. You're not
24 challenging Otter Tail's forecast of need for
25 resources; that's correct?

1 A. That's correct.

2 Q. And you're not challenging
3 Montana-Dakota's need for resources; that's
4 correct?

5 A. That's correct. We're not challenging the
6 need to do something.

7 Q. And that's both with respect to their need
8 for energy?

9 A. Correct.

10 Q. And for capacity?

11 A. Correct. I mean, as you're aware, we've
12 disputed that they've shown a need for baseload
13 capacity, but we certainly believe they need to
14 take some action on peak.

15 Q. And you haven't challenged the need in
16 many of the last -- past several hearings to which
17 you referred to earlier; that's correct?

18 A. That's correct.

19 Q. You may have seen this, Mr. Schlissel, but
20 I'll just give it to you for your benefit. It's
21 just the notice of the Commission's hearing in this
22 case, and it's a public record and filed in this
23 docket, so it's something that the Commission is
24 certainly familiar with. This is the January 10th
25 notice of hearing of this Commission. Have you

1 seen this document before?

2 A. I believe I have, yes.

3 Q. Okay. And at the bottom there it
4 references issues to be considered in this matter
5 include?

6 A. Yes.

7 Q. First issue is whether the resource
8 addition is reasonable and prudent, second issue is
9 whether the applicants have need for additional
10 generating resources, and the third issue is what
11 alternatives exist for meeting additional
12 generation needs; correct?

13 A. That's what this says.

14 Q. And you're not challenging the need for
15 additional resources; correct?

16 A. We're not challenging the fact that they
17 need to do something. Demand-side resources are
18 resources, as well.

19 Q. Right.

20 A. So we're not challenging the need to do
21 something. We may be challenging in part the need
22 for new generating resources.

23 Q. If we could go to page 7 of your April 9th
24 testimony, Mr. Schlissel.

25 A. By the time this case is over, you're

1 going to be able to pronounce my name. Schlissel.

2 Q. Schlissel.

3 A. Close. It's close enough. I'm the only
4 one in the room to -- I know.

5 Q. I must not be picking that up because it
6 sounds like I'm pronouncing it correctly.

7 Down at the bottom of that page 7, Mr.
8 Schlissel, you -- essentially that's where you
9 provide your recommendation to the Commission;
10 correct?

11 A. Correct.

12 Q. And I'm recommending -- I'm quoting from
13 line 23, I'm recommending that OTP and MDU
14 investigate and implement portfolios of
15 alternatives. Do you see that?

16 A. Yes.

17 Q. And so your recommendation is that Otter
18 Tail simply investigate and implement additional --
19 Otter Tail and Montana-Dakota additional energy and
20 efficiency, more renewable resources, and, to a
21 limited extent necessary, natural gas; correct?

22 A. Most limited extent.

23 Q. Most limited extent necessary, the
24 addition of natural gas; correct?

25 A. Yes.

1 Q. What renewables are you referring to
2 there?

3 A. Generally wind.

4 Q. Anything else?

5 A. Well, biomass is a potential renewable
6 resource in this part of the country, but given the
7 wind regime, North Dakota being -- if not the best
8 in the country, it's one of the top three or four,
9 I would expect it would be wind.

10 Q. So all of it wind?

11 A. Excuse me?

12 Q. All of it wind primarily?

13 A. Maybe some biomass, too.

14 Q. And what percentage of biomass would
15 you --

16 A. I don't know. I have not looked at a
17 specific percentage.

18 Q. So you're not proposing any specific
19 biomass alternatives here?

20 A. That's correct.

21 Q. And you're not suggesting, Mr. Schlissel,
22 are you, that these applicants could meet their
23 resource needs solely using wind?

24 A. That's correct, I would not expect that
25 they could only meet them with wind. They may need

1 some peaking gas capacity that would be operated a
2 little bit.

3 Q. You referenced in your statement --
4 summary statement earlier that you attempted to
5 replicate or did replicate in the past
6 Montana-Dakota's Strategist integrated resource
7 planning modeling.

8 A. That's correct.

9 Q. And you have not replicated in any case
10 Otter Tail's resource planning; correct?

11 A. That's correct. You can't get the model.
12 There's no support for the model, so it's not
13 possible for anybody but I believe Mr. Morlock to
14 probably run the model, so that's true. We --

15 Q. You're not proposing --

16 A. Excuse me.

17 Q. I think you've answered my question.

18 A. Not fully.

19 Q. I believe so.

20 JUDGE WAHL: Let him proceed.

21 Q. (MR. GUERRERO CONTINUING) Sure. Go
22 ahead.

23 A. We attempted to get the database for OTP's
24 IRP-Manager and have it changed into a Strategist
25 database, but first it looked like it was a long --

1 it would take a long time to do that, and then we
2 were told by the company that handles Strategist
3 that they would not help us because they had spoken
4 to OTP and they considered OTP a client, so we had
5 no opportunity to do that.

6 Q. Thank you. And you're not proposing a
7 specific amount -- in your testimony here a
8 specific amount of additional wind that Otter Tail
9 should be pursuing; is that correct?

10 A. That's correct.

11 Q. Do you know how much wind Otter Tail has
12 currently planned between now and 2020?

13 A. I think it's several hundred megawatts,
14 but I don't recall a number exactly.

15 Q. You've suggested in your testimony, Mr.
16 Schlissel, that Montana-Dakota and Otter Tail have
17 shown biases in their modeling. Is that a fair
18 portrayal of your statements?

19 A. Yes.

20 Q. Are you suggesting that Otter Tail's
21 modeling -- or that Otter Tail is biased against
22 doing wind resources?

23 A. No. They're doing some wind.

24 Q. Some.

25 A. Some wind.

1 Q. You don't know how much, though?

2 A. Well, I don't recall exactly. As you can
3 tell, I've undergone surgery in the last three
4 weeks, my life's been topsy-turvy. I don't
5 remember all the Big Stone II numbers. I'm sorry.
6 If you give me a number, I'll accept it subject to
7 check.

8 Q. You don't have any reason to disagree with
9 Mr. Morlock's testimony in this case, but also in
10 past cases, that for planning purposes Otter Tail
11 has assumed compliance with the North Dakota
12 renewable energy objective?

13 A. I believe -- I recall it with regards to
14 Minnesota, but I'll accept it.

15 Q. Okay. So you'll accept it for purposes of
16 his planning purposes that he's assumed compliance
17 with the renewable energy objective in the state?

18 A. Sure. Yes.

19 Q. And also in Minnesota? North Dakota is at
20 10 percent renewable energy objective?

21 A. Again, I don't recall the exact number.
22 If that's what it is, I'll accept it subject to
23 check.

24 Q. Are you familiar with the renewable energy
25 objective at all?

1 A. Yes, I recall reviewing it.

2 Q. And in Minnesota it's 25 percent by 2025;
3 correct?

4 A. Yes.

5 Q. Do you know what percentage of load Otter
6 Tail has in North Dakota and Minnesota?

7 A. Again, I'm embarrassed, I can't recall a
8 number. I know we've discussed it in several
9 cases, but I don't recall exact breakdown of their
10 load in the different states.

11 Q. If I told you it's about 92 percent, would
12 that be --

13 A. 92 percent.

14 COMMISSIONER WEFALD: Where?

15 Q. (MR. GUERRERO CONTINUING) North Dakota
16 and Minnesota as Otter Tail's retail load
17 constitute.

18 A. Together?

19 Q. Together.

20 A. I believe that's the number, yes.

21 Q. And so when you are suggesting to this
22 Commission that Otter Tail should implement more
23 wind, it's more than the 25 percent in Minnesota
24 and more than the 10 percent in North Dakota?

25 A. Well, yes, it may be more economic in fact

1 to do more than the renewable requirements, but,
2 too, there's a matter of when the wind is added and
3 whether it's economic to add it sooner rather than
4 later, so we might agree on the 25 percent, for
5 example, but it may be that adding it earlier
6 changes the relative economics of Big Stone II, so
7 it's not only just reaching a target by a certain
8 year, it's when the wind is added.

9 Q. So are you assuming that Otter Tail will
10 find no problems whatsoever in meeting those
11 compliance targets? So -- you had said that we
12 could agree with Otter Tail that it may be that we
13 would get past 25 percent or past the 10 percent?
14 Do you understand my question?

15 A. Not at all.

16 Q. It wasn't a very good question. Do you
17 have any doubt as you sit here today, Mr.
18 Schlissel, that Otter Tail will have any problem
19 reaching the 25 percent renewable energy mandate in
20 Minnesota?

21 A. My expectation -- I don't have any
22 doubt -- it's hard because we're speculating, but I
23 think that given the wind possibilities in South
24 Dakota and North Dakota, that it should be fairly
25 easy for them to come up with that amount of wind.

1 There will be adjustments in running the system.
2 There will be wind integration costs, of course.
3 But I think that the wind potential is there when
4 you look at the estimates of thousands of megawatts
5 of wind in both states.

6 Q. Let me ask you a few questions about the
7 production tax credit. You're familiar with the
8 production tax credit; correct?

9 A. Yes.

10 Q. It would be fair to say that the federal
11 production tax credit is the primary economic
12 driver in wind development today?

13 A. I don't know whether the primary, but it
14 is a primary.

15 Q. What would be potentially more primary
16 than the federal production tax credit in your
17 mind?

18 A. Well, a CO2 tax or cap-and-trade regime
19 which applied CO2 cost to power plants like Big
20 Stone II.

21 Q. But currently.

22 A. Okay. I'm sorry. When we talk about
23 currently, you're talking about a prediction of
24 costs in the future, so that's how I interpreted
25 your use of the word "currently."

1 Q. Do you provide advice, Mr. Schlissel, to
2 clients outside the electric power industry?

3 A. Synapse has, yes.

4 Q. Do you?

5 A. No.

6 Q. Do you know whether Synapse has ever been
7 involved in situations where they're advising
8 clients who rely on federal or state subsidies for
9 purposes of the economics of their project?

10 A. I recall that Synapse does do that. I'm
11 not familiar with the work beyond you asked me a
12 question about in Minnesota.

13 Q. Mm-hmm. So you're generally not aware
14 what Synapse --

15 A. It's not part of my field of practice.

16 Q. Well, let me ask you this just as a
17 general question then, Mr. Schlissel. Would it --
18 given the significance of the federal production
19 tax credit when you're evaluating resources, is it
20 not prudent to both consider the extension and
21 nonextension of that credit, notwithstanding the
22 likelihood of its --

23 A. Sure. I think it's prudent to look at
24 both scenarios where it is in existence and
25 scenarios where it isn't. I think it becomes a

1 little dicey when you've got a witness talking
2 about it not being in existence after 2009 or 2010
3 when his own client is assuming it's in existence
4 through 2013. That, I think, is inconsistency
5 within a case presentation.

6 Q. In any of your scenarios, Mr. Schlissel,
7 did you assume the nonextension of the federal
8 production tax credit?

9 A. No. I assumed that it would be in effect,
10 as OTP does, through 2013.

11 Q. And you've certainly criticized, if that's
12 a fair term, the biases inherent in the models and
13 analysis of these applicants. Would it be fair to
14 say that an analysis that only looks at the
15 extension of the federal production tax credit
16 would also be considered a bias?

17 A. No, no. We were assuming -- you're
18 talking about Mr. Greig's levelized analysis.

19 Q. No, I'm not.

20 A. You're not?

21 Q. I'm simply just asking a general question.

22 A. It sounded to me like you were asking
23 about that.

24 Q. No.

25 A. And I was going to explain the reason why

1 in that scenario I assumed the continuation of the
2 PTC.

3 Q. No. I'm just simply asking you, did -- in
4 any of your analysis did you assume the
5 nonextension of the PTC?

6 A. I don't recall in all of our modeling
7 analyses. In each of the -- other than our
8 response to Mr. Greig, we made the same assumption
9 as to the existence or nonexistence of the wind PTC
10 as each utility did. And by each utility I'll mean
11 MDU, AMRES, CMPA, so whatever they assumed, we
12 assumed. And with regards to Mr. Greig, I'm
13 willing to explain why I did what I did.

14 Q. I think you prefaced the question and said
15 you don't recall.

16 A. I did as I spoke.

17 Q. Okay. So in any scenario in your
18 analysis, did you assume the nonextension of the
19 PTC?

20 A. And that I don't recall because we did
21 exactly what the companies did in the modeling
22 analyses. Some of them may have assumed it, some
23 may have not. But in those cases we attempted to
24 change as little as possible.

25 Q. Let's talk a little bit about

1 conservation, Mr. Schlissel. You mentioned
2 renewables, and you're not suggesting to this
3 Commission that these utilities should be able to
4 fill their resource needs on renewables alone;
5 that's correct?

6 A. That's correct.

7 Q. And you're not suggesting to this
8 Commission that these utilities can fill their
9 resource needs on conservation alone; correct?

10 A. That's correct.

11 Q. And so facilities will need to be built;
12 correct?

13 A. Yes, or purchased.

14 Q. Are you familiar with what Otter Tail's --
15 Mr. Morlock's testimony most recently showed as
16 part of his updated resource planning analysis, how
17 much coal he has identified in his analysis?

18 A. I don't know -- the rebuttal testimony or
19 the original testimony?

20 Q. The original testimony.

21 A. I don't recall a number. I don't recall
22 that he mentioned that in the testimony. If he
23 did, I just don't remember.

24 Q. Sure. 170 megawatts of coal?

25 A. Of new coal?

1 Q. Subject to check.

2 A. Oh, yes, at Big Stone.

3 Q. Yes.

4 A. Yes. I didn't know whether you meant
5 existing and new.

6 Q. And so you're not suggesting, are you,
7 that if Otter Tail's identified a need for up to
8 170 megawatts of new coal facilities represented in
9 baseload need, that they're going to conserve their
10 way out of that?

11 A. No, not in the short term. It takes a
12 while to ramp up and to achieve energy efficiency
13 savings.

14 Q. You did not in this case rerun the
15 Montana-Dakota Strategist model; is that correct?

16 A. That is correct.

17 Q. And the reason you did that is because you
18 don't have the license from the Strategist software
19 vendor anymore; correct?

20 A. Well, no, not exactly. The reason why was
21 the time was so short, we didn't have time. There
22 would not have been time to get the new database
23 and to rerun the model before we had to file
24 testimony on April 9th. And for that reason we did
25 not purchase the license. We always could have

1 purchased the license from the vendor.

2 Q. So Montana-Dakota's testimony was filed on
3 March 9th. Your testimony was filed 30 days later.
4 You're saying you didn't have enough time to do any
5 of that?

6 A. We asked for discovery on probably --
7 perhaps on or about March 9th. Part of the
8 discovery was for the data -- the input and output
9 data bases in what is it, the dot FAV format, which
10 is the format you need to run it. We did not
11 receive those files for weeks. I'm not being
12 critical. I know you answered within the time that
13 you were allowed to answer. But given -- we knew
14 that it was not -- we were not going to get these
15 files soon enough, we did not -- we would have had
16 no time to rerun the model. It takes several weeks
17 to a month or more to be able to rerun the model
18 and to be sure of your results.

19 Q. Do you have a license for Strategist
20 software anymore -- Synapse?

21 A. No. We purchase it on a per-project
22 basis. It's no need to pay the money if we're not
23 going to use it for several months.

24 Q. So you're not conducting resource planning
25 on a regular basis?

1 A. Yes, we are. We use different models.
2 Right now we're involved with a couple of cases
3 with AEGIS where our clients actually are learning
4 the model with our assistance. We use -- I forget
5 what the company is called now because they've
6 merged so many times. It may be Global Energy
7 Decisions, may be their model, they use Multi SIM
8 or Market SIM. The model name has changed more
9 frequently than the models changed.

10 Q. There are different models to do this?

11 A. Yes. And we use different models
12 depending on what models the companies in the cases
13 in which we're involved use or the state uses.

14 Q. Could you turn to page 77, Mr. Schlissel,
15 of your testimony, please --

16 A. Yes.

17 Q. -- April 9th testimony. And, sir, that's
18 the alternative resource scenario that you ran not
19 in this case, but in the Minnesota case; is that
20 correct?

21 A. That's correct.

22 Q. And some of that has now been redacted as
23 a result of the motion, but there are two columns
24 that remain. Do you see some columns for DSM?

25 A. Yes.

1 Q. Can you explain what those are?

2 A. DSM programs, demand-side management
3 programs.

4 Q. Whose are they?

5 A. My recollection is those were the programs
6 that the company was using.

7 Q. And in your remodeling of their model,
8 it's essentially the same conservation in the
9 Montana-Dakota model; correct?

10 A. I believe that's true, yes.

11 Q. So your remodeling didn't produce more
12 DSM; correct?

13 A. No, we didn't assume additional DSM.
14 Again, as you're aware, there was a very short time
15 frame in the Minnesota certificate of need docket.
16 I think between the time the companies filed and
17 the time we filed there was a period of five weeks
18 and we could not change everything we thought
19 should be changed.

20 COMMISSIONER WEFALD: Excuse me. What
21 page is that on?

22 MR. GUERRERO: Page 77.

23 JUDGE WAHL: 77.

24 COMMISSIONER WEFALD: Thank you.

25 Q. (MR. GUERRERO CONTINUING) So, again, time

1 was working against you then?

2 A. On -- I wouldn't say working against us.
3 It just limited our ability. I mean, as you know,
4 as well as I, I mean, there were five Big Stone II
5 co-owners in Minnesota. With five weeks to do
6 analyses and file testimony, we had to focus on
7 what we felt we could achieve that would be
8 supportable. And with regards to the modeling
9 analyses, what we attempt to do is to look at what
10 we think are probably the most significant changes
11 and to try to change what the applicants do the
12 smallest amount. And the DSM was not something we
13 could get to in the time frame.

14 Q. And you're not working on this case by
15 yourself; that's correct?

16 A. That's correct. At that time there was --
17 there was six or seven of us working on the case.

18 Q. Let's talk about some alternative
19 resources. You indicated earlier that biomass
20 really isn't in play here; is that correct?

21 A. I think there is a potential for biomass
22 in the region, but I've not studied how extensive
23 of a potential there is.

24 Q. What about hydro, hydroelectric power?

25 A. Well, when we started the case, there was

1 a potential for hydro from Manitoba, but according
2 to OTP, that became unavailable. I know that one
3 of the Wisconsin utilities has just signed a
4 contract with Manitoba Hydro for extensive hydro
5 capacity starting, I think, in 2016 or 18 or
6 something like that.

7 Q. We talked about the hydro opportunity last
8 time -- last summer. Do you recall that? The
9 opportunity that you just referred to, is it the
10 Manitoba Hydro opportunity that Otter Tail was
11 discussing?

12 A. Yes. And at some point during 2007 Otter
13 Tail indicated that it was no longer available.

14 Q. And is it your position that Otter Tail
15 just sort of missed the opportunity?

16 A. No. I don't know how aggressively they
17 pursued it because of Big Stone II, but it's in the
18 past now, I understand from Otter Tail.

19 Q. Are you familiar with the fact that that
20 was -- what they were discussing with Manitoba
21 Hydro was the Conawapa, C-o-n-a-w-a-p-a, facility?
22 Do you recall that at all?

23 A. No. I thought there were two of them, one
24 in the short term -- one facility in the short
25 term, one in the long term, that both had Native

1 American names.

2 Q. The Conawapa facility was a 1,250-megawatt
3 project?

4 A. Yes.

5 Q. \$5 billion?

6 A. Something like that.

7 Q. About 2021 in-service date?

8 A. I think something like that.

9 Q. Had a 500-mile transmission line
10 associated with it proposed?

11 A. I know it had a transmission line, but I
12 don't recall that Otter Tail modeled hydro as only
13 being available in 2021. My recollection is that
14 Mr. Morlock's IRP-Manager modeling showed it in --
15 hydro from Manitoba in service well before 2021.
16 But, again, that's like a year and a half old.

17 Q. Other than the Manitoba Hydro discussion,
18 any other hydro that we're potentially talking
19 about here?

20 A. No, not that I know of.

21 Q. What about nuclear power? Are you
22 recommending that nuclear power is a potential
23 alternative for these applicants?

24 A. It's an alternative that should be
25 examined. I think there's serious risks with

1 nuclear power, and I don't mean nuclear risks,
2 financial risks. The cost of nuclear power plants
3 are going up perhaps even faster -- the estimated
4 costs are going up perhaps even faster than the
5 estimated costs of coal plants.

6 Q. So you're not suggesting, are you, Mr.
7 Schlissel, seriously that for Otter Tail and
8 Montana-Dakota that nuclear power is currently an
9 option for them in the planning horizon?

10 A. Again, I think it's something they should
11 study, but I would think that it would not be a
12 realistic option, that maybe they could be part of
13 a consortium that could build a nuclear power plant
14 by the year 2020 -- the early 2020s. It's likely
15 to be very expensive.

16 JUDGE WAHL: Mr. Guerrero, let me
17 interrupt you momentarily.

18 MR. GUERRERO: Sure.

19 (Discussion had off the record.)

20 JUDGE WAHL: Mr. Guerrero, you may
21 proceed.

22 Q. (MR. GUERRERO CONTINUING) Mr. Schlissel,
23 you've made some presentations recently with
24 respect to nuclear power, have you not?

25 A. Yes, to investors, rating agencies, I've

1 been invited to present -- make presentations to
2 them.

3 Q. And generally you've warned about the
4 risks associated with --

5 A. Yes, absolutely. I think investors should
6 know the full risks of any investment they make.

7 Q. So renewables alone isn't going to do it.
8 Conservation alone is not going to do it. Hydro is
9 not an option; is that correct?

10 A. Well, I don't know whether it's an option
11 now. I don't have direct communication with
12 Manitoba Hydro. As I indicated in a previous
13 answer, a Wisconsin utility -- was it WPL, I think,
14 just signed a long-term contract for hydro. Hydro
15 is certainly an option. There are positives and
16 negatives of hydro, though.

17 Q. And you haven't identified a hydro option?

18 A. That's correct.

19 Q. Nuclear, I think you said, is not a
20 realistic option?

21 A. It's unlikely to be a realistic option.

22 Q. And biomass, you haven't identified any
23 option?

24 A. That's correct.

25 Q. Let's talk about coal as an option. Mr.

1 Schlissel, could you go to page 60 of your
2 testimony, please?

3 A. 60. Okay.

4 Q. I'm going to direct your attention to line
5 9 of page 60, where in an answer to a question you
6 say, "No. I have seen estimates that carbon
7 capture and sequestration technology may be proven
8 and commercially viable from as early as 2015 to
9 2030 or later, if, indeed, it is ever proven to be
10 technically and commercially viable." Did I read
11 that correctly?

12 A. Yes.

13 Q. Drop back to page 57, Mr. Schlissel.

14 A. Okay.

15 Q. And in the middle of that page you're
16 referring to some Dominion Virginia Power
17 testimony; is that correct?

18 A. Yes.

19 Q. Carbon capture -- on line 16 it begins,
20 "carbon capture technology is not commercially
21 viable or available at the present time." Did I
22 read that correctly?

23 A. You did.

24 Q. Toward the end there on line 19, "As a
25 result, it is not currently feasible to construct a

1 power plant with technology that can capture and
2 store carbon emissions."

3 A. That's correct.

4 Q. So I take it from the testimony on page 57
5 and on page 60, you agree that carbon capture and
6 sequestration is not currently economic?

7 A. For a pulverized coal plant, which we're
8 discussing here, it's different from an IGCC plant;
9 but I would agree for a pulverized coal plant, yes.

10 Q. So any new pulverized coal plant built
11 today, Mr. Schlissel, it's going to be built
12 without carbon capture and sequestration; would
13 that be a fair statement?

14 A. Yes. Some of them allow space to put in
15 unknown -- currently unknown equipment, but I think
16 that's about as good as you can get.

17 Q. Capture carbon-ready?

18 A. Yes. Well, it's called carbon capture-
19 ready, but really what it is is more space.

20 Q. So, true then, any new pulverized plant
21 between now and when CCS becomes commercially
22 viable, they're going to be built without CCS, or
23 carbon capture sequestration; correct?

24 A. Yes.

25 Q. And because there's no CCS, those plants

1 will be subject to future greenhouse gas
2 regulation; correct?

3 A. Correct.

4 Q. Go to page 4 of your testimony, Mr. --

5 A. 4 or 40?

6 Q. 4.

7 A. Okay.

8 Q. Line -- beginning at line 17, "The
9 Commission should not be panicked into granting an
10 advance determination of prudence for an uneconomic
11 coal-fired power plant." Did I read that
12 correctly?

13 A. I'm sorry. I was on page 3. I apologize.

14 Q. Page 4, line 18 and 19.

15 A. Yes.

16 Q. So your testimony today is that the
17 proposed Big Stone II unit is an uneconomic unit?

18 A. Yes, as our analyses in a number of
19 proceedings have demonstrated.

20 Q. Do you know that Big Stone II is a
21 supercritical plant -- proposed?

22 A. It's proposed to be, yes.

23 Q. And they have not ruled out ultra-
24 supercritical?

25 A. That's correct.

1 Q. It's true that this plant will be one of
2 the most efficient plants in the country?

3 A. Well, it's said that it will be one of the
4 most efficient plants in the country. Again, it's
5 proposed.

6 Q. As proposed, it would be one of the most
7 efficient plants in the country?

8 A. That's true.

9 Q. Given the fact, Mr. Schlissel, that carbon
10 capture sequestration is not commercially viable
11 perhaps as long as not until 2030 and, in your
12 words, if ever, and the fact that you consider Big
13 Stone II uneconomic, in your opinion as you sit
14 here today, Mr. Schlissel, is there any coal plant
15 being planned -- pulverized coal plant being
16 planned today that you would consider economic?

17 A. I've not -- I've looked at the economics
18 of about eight or ten, and those have not been
19 economic. I can't say every one. I've not seen
20 the economic analyses of every one. I would
21 expect, given the large numbers of plants that are
22 being canceled or delayed, that the owners are
23 finding they're not economic, so --

24 Q. We're going to talk about some of those
25 plants.

1 A. Great.

2 Q. You've mentioned eight to ten that you've
3 looked at. Is that the reference to your
4 consulting work that you've done similar to your
5 work in this matter, on the Big Stone matter?

6 A. Yes, I guess I've looked at eight to ten
7 power plants in detail over the past two and a half
8 years. Do you want me to list them?

9 Q. No.

10 A. Okay.

11 Q. Thanks. Did that include a review of
12 American Municipal Power's proposed 960-megawatt
13 coal-fired plant?

14 A. Yes.

15 Q. And your client there was the Natural
16 Resources Defense Council and the Sierra Club --

17 A. Yes.

18 Q. -- among others?

19 COMMISSIONER WEFALD: Where is that plant
20 located?

21 MR. GUERRERO: Ohio.

22 THE WITNESS: Proposed to be built along
23 the Ohio River, which divides Ohio from West
24 Virginia.

25 COMMISSIONER WEFALD: If you can tell us

1 where they're each located, that would be helpful.

2 MR. GUERRERO: I'll try. Sure.

3 THE WITNESS: I'll help.

4 Q. (MR. GUERRERO CONTINUING) IGCC plant that
5 was proposed by Duke Indiana, you testified in that
6 case -- or you consulted in that case?

7 A. I consulted. I presented CO -- estimate
8 of CO2 costs.

9 Q. And your client was Citizens Action
10 Coalition of Indiana, Save the Valley, Valley Watch
11 and Sierra Club; correct?

12 A. I don't remember all of them, but it
13 sounds good.

14 Q. And the proposed Duke Cliffside project,
15 North Carolina, the Carolinas?

16 A. Correct.

17 Q. Your client was Southern Environmental Law
18 Center and the Environmental Defense Group?

19 A. Correct. I think also Southern Alliance
20 For Clean Energy.

21 Q. Thank you. And you've testified in
22 this -- in the Big Stone matter both in South
23 Dakota and Minnesota, your client was Minnesota
24 Center For Environmental Advocacy, Fresh Energy,
25 among other groups; correct?

1 A. Izaak Walton League, Dakota Resource
2 Center.

3 Q. The proposed Glades project in Florida,
4 2,000-megawatt coal project?

5 A. Right. That was rejected by the
6 Commission.

7 Q. Sierra Club is your client?

8 A. They were one of the clients. There was a
9 coalition.

10 Q. And Citizens -- which one is this? This
11 is the Longview Power matter. Did you participate
12 in that one?

13 A. No.

14 Q. Synapse Energy presented in that one?

15 A. Synapse Energy participated. The Longview
16 plant is proposed for West Virginia. Synapse
17 presented testimony on a very, very limited issue.
18 I think the question was whether the plant would
19 qualify for county tax relief and a clean coal
20 facility, and Synapse presented testimony.

21 Q. Excuse me. Thank you.

22 MS. LA SEUR: Objection. Are we getting
23 to a question that's relevant to this proceeding?

24 MR. GUERRERO: We are, Your Honor. At
25 least I believe we are.

1 JUDGE WAHL: The objection is overruled.

2 Q. (MR. GUERRERO CONTINUING) In any of these
3 cases, Mr. Schlissel, did you find any of these
4 projects economic?

5 A. Well, again, I wasn't involved in
6 Longview. And in the IGCC project I did not look
7 at the economics of the project. Synapse did, and
8 in that one we found that energy efficiency and
9 renewables were a more economic investment. With
10 regards to the other projects in which I was
11 involved, no, I did not find that they were
12 economic.

13 Q. Were you involved in the Little Gypsy case
14 in Louisiana?

15 A. Yes, that's in Louisiana.

16 Q. That was a gas-to-coal?

17 A. That's a gas-to-coal conversion, yes.

18 Q. About 538 megawatts?

19 A. I think that's the correct number. It
20 might be a little higher actually.

21 COMMISSIONER CLARK: Coal-to-gas?

22 THE WITNESS: No, gas-to-coal.

23 MR. GUERRERO: Gas-to-coal.

24 THE WITNESS: If I might, Louisiana, where
25 we talked about overdependence on gas, they're very

1 heavily dependent on gas down there. So this is a
2 project by Entergy Louisiana that would burn
3 petcoke and some other derivatives, I guess is the
4 right word, from refineries so that it actually
5 would be a gas-to-coal conversion.

6 Q. (MR. GUERRERO CONTINUING) That's an
7 Energy project -- or was an --

8 A. Entergy.

9 Q. Entergy?

10 A. Yes.

11 Q. E-n-t --

12 A. -- e-r-g-y.

13 Q. E-n-t-e-r-g-y. You just mentioned that
14 they're heavily dependent on gas. Do you know how
15 heavily they're dependent on gas?

16 A. I think they're 80 percent or more
17 dependent on gas -- Entergy Louisiana.

18 Q. With respect to the Florida matter, the
19 Glades project that you testified against, do you
20 know what Florida Power & Light has indicated that
21 their alternative is in that case?

22 A. Well, I know that they're planning to
23 build a number of nuclear power plants, but the
24 State of Florida is also, under the governor's
25 direction, pushing very heavily into energy

1 conservation, so it's a -- I think it's a
2 combination of the two. I don't know -- I have not
3 been involved in the project. I don't know to what
4 extent renewables are a piece of the puzzle.

5 Q. What about natural gas?

6 A. I'm not sure that they want to build any
7 more natural gas down in Florida at this time. It
8 may be that it is gas.

9 Q. You don't know?

10 A. I just don't recall again. My involvement
11 in the Florida project ended about 14 months ago.

12 Q. You don't know whether or not they have
13 just completed construction of a 1,150-megawatt
14 natural gas combined cycle plant?

15 A. Oh, I do know that. The question was what
16 -- I thought your point was what were the
17 alternatives to the Glades project, and I'm not
18 sure that natural gas is being considered as an
19 alternative to the Glades project because they
20 already have built and are building a lot of
21 natural gas in Florida. That's why I said that.
22 So I'm somewhat aware of what they're doing now.
23 It's just what alternatives they're considering.

24 Q. Do you know that they're considering
25 bringing on line in 2009 and 2010 about 3,700

1 megawatts of additional natural gas?

2 A. Yes, that was in the case I did -- the
3 Glades case.

4 Q. And they're uprating their nuclear power,
5 they're not building new nuclear facilities?

6 A. Well, they're doing both. I mean, they're
7 proposing to build new and they're doing power
8 uprates -- I thought they've actually already done
9 them -- at their five nuclear power plants in the
10 state.

11 Q. Do you know what percentage of natural gas
12 Florida Power & Light is -- their portfolio?

13 A. I knew it a year and three months ago, but
14 I don't recall.

15 Q. Would you consider -- you mentioned
16 earlier in your statement -- your opening statement
17 that the South is overreliant on natural gas.

18 A. No. There may be a concern about over-
19 reliance in the South because it's heavily
20 dependent on gas.

21 Q. And do you know what percentage of natural
22 gas FP&L is?

23 A. No. I mean, I can't remember all these
24 numbers. If you give me a number subject to check,
25 I'll see whether it makes sense.

1 Q. A 50 percent going to 70 percent.

2 A. I don't know about going to 70, but I do
3 recall it is roughly 50 percent.

4 Q. Do you know how much coal Florida Power &
5 Light uses?

6 A. There are some coal plants in the state,
7 but not much.

8 Q. Would you disagree if I told you that it
9 was -- their portfolio was about 5 percent coal?

10 A. That's not much, yeah.

11 Q. And you testified against the Glades
12 project?

13 A. Correct, and the Commission adopted that
14 position. They basically cut and paste my
15 testimony into their order based on the same kind
16 of issues I raised here, that CO2 costs and
17 construction costs were very, very risky.

18 Q. Page 8 of your testimony.

19 A. 8?

20 Q. Yeah. And this is your similar statement
21 toward the -- with respect to we don't need to be
22 concerned about natural gas reliance up here.
23 The -- line 19 to 20.

24 A. No. My position isn't you shouldn't be
25 concerned about it. You don't have to worry about

1 an overreliance on natural gas. As I've explained
2 a couple of times in response to your questions and
3 said it in my summary statement, I believe you may
4 have to build gas to the most limited extent
5 necessary, that it may be a necessary evil, so to
6 speak, in order to address climate change issues.

7 Q. Did you -- have you reviewed Mr. Klein's
8 testimony in this case -- Daniel Klein on behalf of
9 the applicants? He filed rebuttal testimony on
10 April 23rd.

11 A. I read it last week after I got it.

12 Q. Did you see the Wall Street Journal
13 article that he attached to his testimony?

14 A. I don't recall.

15 Q. Do you recall seeing the Wall Street
16 Journal article from a week or two ago?

17 A. If you give me a topic. I mean, I've
18 looked at a lot of Wall Street Journal articles.

19 Q. That's fair. It would be the article from
20 April 18th, 2008.

21 A. Dates don't help. The topic would be
22 good.

23 Q. I'm going to get you a copy in a minute.

24 MS. LA SEUR: May I hand the witness a
25 copy?

1 MR. GUERRERO: It's in the -- yeah, I will
2 in a second. It's Exhibit OTP/MDU 350.

3 COMMISSIONER WEFALD: What section is it
4 included in in the Commissioners' papers?

5 MR. GUERRERO: It's Exhibit No. 350 --
6 OTP/MDU Exhibit No. 350. It's attached to Mr.
7 Klein's testimony.

8 COMMISSIONER WEFALD: Is it in the
9 supplemental?

10 MR. GUERRERO: The April 23rd testimony.

11 THE WITNESS: I don't -- should I wait?

12 JUDGE WAHL: It's tab 41, Commissioner.

13 COMMISSIONER WEFALD: I found it under tab
14 8.

15 COMMISSIONER CRAMER: He's looking at the
16 big book.

17 JUDGE WAHL: Oh, you're not using --

18 COMMISSIONER WEFALD: I don't have the big
19 book. Sorry.

20 MR. DILLER: Last few pages of tab 8.

21 COMMISSIONER CRAMER: Tab 8.

22 MR. DILLER: Last few pages.

23 COMMISSIONER WEFALD: Thank you.

24 Q. (MR. GUERRERO CONTINUING) Did you see
25 this article when it came out?

1 A. No, but I've seen articles similar to it.

2 Q. And it references in that article 93
3 percent increase in natural gas cost since August?

4 A. Correct. I've not confirmed that number.

5 Q. You don't have any reason to disagree with
6 it, though?

7 A. I have no reason to agree or disagree.

8 Q. And the article references that it's a 33
9 percent from an all-time record on the NYMEX, New
10 York Mercantile Exchange?

11 A. Excuse me. Are you talking about the
12 second paragraph from the bottom?

13 Q. Correct.

14 A. I'm sorry. What's the question?

15 Q. I just want to know if you had seen that.

16 A. I see it now.

17 Q. And you don't have any reason to disagree
18 with that?

19 A. Yeah. It's unclear whether it's a
20 short-term, long-term, what the price is.

21 Q. You -- I'm sorry. Are you finished?

22 A. Yes.

23 Q. Do you know what gas prices the applicants
24 used in their modeling forecast?

25 A. I don't remember all -- if you show them

1 to me, yes, I mean, we've looked at them.

2 Q. Well, I'm just asking you, do you recall
3 what they were?

4 A. Yes. Not every number, but yes.

5 Q. Generally what was it?

6 A. I don't know. We would have to look at a
7 specific exhibit and a specific applicant.

8 Q. Do you know what the cost of natural gas
9 is trading on at NYMEX right now?

10 A. For what delivery?

11 Q. May delivery.

12 A. No. I haven't looked -- as I've been out
13 of circulation because of my surgery, I haven't
14 looked at it recently, but the May delivery price
15 -- May 2009 -- 8 delivery price may mean nothing
16 regarding long-term price of natural gas.

17 Q. Go to page 13, Mr. Schlissel, of your
18 testimony.

19 A. Okay. We're done with this article?

20 Q. Yes.

21 A. Okay. Page 13. Okay.

22 Q. Towards the top you reference an Idaho
23 Power Company in your discussion of cancellation of
24 plants.

25 A. Yes.

1 Q. And on line 9 it says, "IPC has shifted
2 its focus to the development of a natural gas-fired
3 combined cycle combustion turbine," et cetera;
4 correct?

5 A. Correct.

6 Q. So its alternative to the cancellation of
7 the coal project was natural gas; is that a fair
8 statement?

9 A. I think that's part of -- if you read
10 their IRP, their integrated resource plan, they've
11 come up with a different plan. I don't recall that
12 it's a one-for-one -- megawatt-for-megawatt
13 replacement.

14 Q. And on page 16 --

15 A. Page 16?

16 Q. Page 16. You reference the Orlando
17 Utilities Commission, line 24 --

18 A. Yes.

19 Q. -- the cancellation of their IGCC project
20 and they will continue with their natural gas-fired
21 combined cycle generating unit?

22 A. Correct.

23 Q. I'm going to ask you a few questions about
24 biases, Mr. Schlissel. Do you know that both Otter
25 Tail and Montana-Dakota are investor-owned

1 utilities?

2 A. Yes.

3 Q. And their rates are regulated by this
4 Commission?

5 A. Yes.

6 Q. And their profits are regulated by this
7 Commission?

8 A. I don't know that the profits are. I'm
9 sure in a rate case they look at a return on
10 equity.

11 Q. Isn't that the purpose of looking at
12 return on equity?

13 A. I'm sure, but with -- between rate cases
14 companies sometimes over -- companies have
15 deregulated investments.

16 Q. I'm talking about their utility companies,
17 not their unregulated investments.

18 A. Right, but they're all part of the same
19 holding company generally. Some parts are
20 regulated, some aren't.

21 Q. Are you saying that that's the case for
22 these two utilities?

23 A. No. Talking generally.

24 Q. And you're not alleging when you talk
25 about biases, Mr. Schlissel, that these two

1 utilities believe that they can make more money
2 building a coal plant than building a natural gas
3 plant or wind plants or any other plant?

4 A. I -- well, of course, having more
5 investment in rate base helps the companies'
6 earnings, but I have not seen any evidence in their
7 documents to show that they've decided to load up
8 on their rate base at the expense of ratepayers.

9 Q. You're not alleging that?

10 A. I've seen no evidence of it.

11 Q. Have you reviewed Mr. Rolfes' testimony in
12 this case?

13 A. Yes.

14 Q. Okay. If you could go to page 5 of your
15 testimony.

16 A. Okay.

17 Q. And line 7, your comment, "The flawed and
18 biased new modeling analyses presented by OTP and
19 MDU are the only evidence that has been presented
20 to show that adding new baseload generating
21 capacity is the most economic option." Did I read
22 that correctly?

23 A. Yes.

24 Q. So it's basically flawed and biased
25 analyses that got us here; is that correct?

1 A. I believe that they are flawed and biased.
2 I mean, the statement, I think, speaks for itself.
3 I don't know what else to add.

4 Q. You're not disagreeing that the MAPP -- do
5 you know -- the Midcontinent Area Power Pool,
6 M-A-P-P -- region is predicting capacity deficits
7 as soon as 2011? You're not disagreeing with that,
8 are you?

9 A. That's correct. But as I discussed, they
10 don't mention -- they don't address a number of new
11 developments.

12 Q. Do you know what the purpose of reserve
13 sharing is in a power pool such as MAPP?

14 A. Sure, so that you can lower the overall
15 reserve margin so that a utility in South Dakota,
16 for example, gets the benefit of capacity owned by
17 a utility in northern Ohio or western Wisconsin.

18 Q. Do you agree with that philosophy?

19 A. Oh, absolutely.

20 Q. Is it surprising, given the nature of the
21 pool, Mr. Schlissel, that we find the industry
22 needing to build at about the same time?

23 A. I'm sorry. Could you repeat the question?

24 Q. Is it surprising, given the nature of the
25 pool, that you find utilities needing to build

1 resources at about the same time?

2 A. No. I mean, I think that goes in waves.

3 Q. Page 26, Mr. Schlissel, please, line 22.

4 You say -- or you're referencing --

5 A. I'm sorry. I wasn't --

6 Q. I'm sorry. Page 26.

7 A. 26, line 22?

8 Q. Correct.

9 A. Yes.

10 Q. You're referencing an Edison Foundation
11 report -- line 22 -- "Construction costs for
12 electric utility investments have risen sharply
13 over the past several years, due to factors beyond
14 the industry's control."

15 A. Correct.

16 Q. Do you agree with that statement?

17 A. Yes.

18 Q. And what are those factors beyond the
19 industry's control?

20 A. I mentioned it before in my summary
21 statement, international competition for design and
22 construction resources, competition for
23 manufacturing capacity. There are only a certain
24 number of companies that have the foundry
25 capabilities of building large boilers, for

1 example, labor resource, construction labor
2 competition, and then competition for the basic
3 commodities, the steel, the piping, the copper that
4 you use in building a power plant.

5 Q. Page 30, Mr. Schlissel, please, line 11.
6 I think there you're referencing some statements --

7 A. From Black & Veatch.

8 MR. BINEK: This is -- is this trade
9 secret?

10 MR. GUERRERO: Oh, it's not stricken.
11 It's trade secret. But I'm certainly -- well,
12 given the fact that it would be difficult to recuse
13 people.

14 JUDGE WAHL: Well, we can take a brief
15 recess, we have to change the card, and continue
16 with the testimony.

17 MR. GUERRERO: Your Honor, one alternative
18 would be to simply waive the trade secret
19 protection for purposes of this one line that I
20 would like to ask him a question about.

21 JUDGE WAHL: Sure. That's optional with
22 you.

23 MR. KUNTZ: That's fine.

24 Q. (MR. GUERRERO CONTINUING) Do you have a
25 copy of your testimony, Mr. Schlissel, where you

1 actually have a line 11?

2 A. Yes.

3 Q. On line 11 it just simply references U.S.
4 and world electricity industry in the early stages
5 of a large build cycle; correct?

6 A. Yes.

7 Q. And that's consistent then with the
8 comments that you've just indicated; correct?

9 A. Correct. China.

10 Q. Consistent with the comments of the Edison
11 Foundation report; correct?

12 A. Yes. All of the evidence I've seen is --
13 well, not all the evidence. Just about all the
14 evidence, except that filed by the Big Stone II
15 co-owners in Minnesota in November, is consistent
16 about that it's likely to be a long-term process
17 for the competition for resources.

18 Q. And yet where there's a need, these
19 utilities, with an obligation to serve, might
20 actually have to build something given those
21 circumstances, nonetheless; correct?

22 A. Yes, that is -- that is a possibility, but
23 you would look to alternatives that had lower costs
24 or expectation of lower costs over time.

25 Q. Mr. Schlissel, I'm handing you a copy --

1 I'm not going to introduce it into the record, but
2 I wanted you to have it as I ask you questions from
3 it. This is a copy of the applicants' brief from
4 last summer. Would you have any reason to disagree
5 with that?

6 A. No.

7 Q. You're a lawyer in addition to being an
8 economist; is that correct?

9 A. I'm not an economist. I'm an engineer and
10 a lawyer, yes.

11 Q. An engineer and a lawyer. Are you
12 familiar with definitions of "prudence standard"
13 given your long involvement in the electric utility
14 industry?

15 A. Yes.

16 MS. LA SEUR: Objection. The witness is
17 not testifying as an attorney and it would be
18 inappropriate to testify about legal conclusions.

19 JUDGE WAHL: Oh, can you give me some
20 authority for that? I don't think so. He's
21 qualified to testify on the subject matter.

22 MS. LA SEUR: He's not being offered as a
23 legal witness.

24 JUDGE WAHL: It doesn't make any
25 difference, unless you can show me otherwise. The

1 objection is overruled.

2 THE WITNESS: Yes, I've testified a number
3 of times on prudence standards, I've written
4 briefs, I've helped clients write briefs about
5 prudence, yes.

6 Q. (MR. GUERRERO CONTINUING) Thank you. I'm
7 going to direct your attention to the middle of
8 that page where there's a quote from a Federal
9 Energy Regulatory Commission case. Are you
10 familiar with the Federal Energy Regulatory
11 Commission?

12 A. Yes.

13 Q. Done work before them before?

14 A. I filed testimony in a couple of FERC
15 cases.

16 Q. I'm going to read this standard to you,
17 Mr. Schlissel. "Managers of a utility have broad
18 discretion in conducting their business affairs and
19 in incurring costs necessary to provide services to
20 their customers. In performing our duty to
21 determine the prudence of specific costs, the
22 appropriate test to be used is whether they are
23 costs which a reasonable utility management (or
24 that of another jurisdictional entity) would have
25 made, in good faith, under the same circumstances,

1 and at the relevant point in time." Did I read
2 that correctly?

3 A. Yes.

4 Q. Do you find any fault with that particular
5 standard, Mr. Schlissel?

6 A. No. As you're aware, the prudence
7 standard changes from state to state a bit at
8 times. I think that this is a reasonable
9 enunciation of the general standard. The only
10 thing I would add is that the utility management is
11 held to the standard and knowledge of other utility
12 managements. There's a big -- as I'm sure you're
13 aware in prudence standard, it's is it a reasonable
14 person or reasonable utility management with the
15 knowledge of utility management. No, I think this
16 is a reasonable -- reasonable enunciation of it.

17 Q. Thank you, Mr. Schlissel. I'm going to
18 direct your attention to the footnote 21 on that
19 page, where it states, "Good faith is presumed on
20 the part of managers of a business. In the absence
21 of a showing of inefficiency or improvidence, a
22 court will not substitute its judgment for theirs
23 as to the measure of a prudent outlay." Do you
24 agree with that or have any reason to disagree with
25 that particular statement?

1 A. No. That one I think would depend on
2 whether you're in the federal courts or in the
3 state court as to what a court looks at in terms of
4 when it reviews a Commission decision, and that's
5 not something I followed in my practice, so I don't
6 know what would -- the federal courts would do now
7 and I don't know what the State of North Dakota
8 would do in reviewing a decision of this
9 Commission.

10 Q. But just as a general proposition, given
11 your legal background and your background in the
12 electric utility industry, do you have any reason
13 to disagree with that particular enunciation?

14 A. Yeah. I mean, I've seen it -- I guess
15 it's not disagree with it. I just put it in the
16 context I've seen instances where courts, even
17 though there is a showing of inefficiency, will not
18 review a decision, and I've seen instances where
19 the court is upset about the outcome and it does
20 review a decision, so I think that --

21 MS. LA SEUR: I'd like to renew my
22 objection and refer the tribunal to Federal Rule of
23 Evidence No. 704, barring legal conclusions by an
24 expert witness as usurping the jurisdiction of the
25 tribunal or the jury.

1 JUDGE WAHL: I'll take a look at that.
2 Let's take a recess. Ten minutes, is that
3 sufficient? Let's be in recess until 11:30.

4 (Recess taken at 11:21 a.m. to 11:32 a.m.)

5 JUDGE WAHL: I have reconsidered
6 intervenors' objection to the continuing
7 interrogation of cross-examination of Mr. Schlissel
8 with regard to legal questions. I've reviewed Rule
9 701 through 706 of the North Dakota Rules of
10 Evidence. I don't see those rules exclude this
11 examination. I think the examination is
12 appropriate as cross-examination and I think that
13 Mr. Schlissel as a lawyer -- and, quite frankly,
14 whether or not regardless of whether he's a lawyer,
15 as an expert witness can testify even as to the
16 application of law as to the subject matter in
17 which he's qualified to testify. The objection is
18 overruled. You may proceed, Mr. Guerrero.

19 MR. GUERRERO: Thank you, Your Honor. And
20 you'll be glad to know we don't have any further
21 questions at this time of Mr. --

22 JUDGE WAHL: I'm very glad to know that,
23 indeed.

24 MR. GUERRERO: -- Mr. Schlissel. So we
25 will pass the mike.

1 JUDGE WAHL: Mr. Binek.

2 MR. BINEK: Thank you.

3 CROSS-EXAMINATION

4 BY MR. BINEK:

5 Q. I hope to try to avoid duplication of
6 issues that have already been covered, but it's
7 been kind of difficult to keep track, so there
8 probably will be some.

9 First of all, you criticize MDU and Otter
10 Tail for not considering CO2 prices in their
11 analysis, but you're aware of North Dakota law,
12 aren't you, that specifically prohibits the
13 Commission from considering these costs -- alleged
14 costs of complying with future environmental laws
15 or regulations that have not been enacted? I'm
16 referring to North Dakota Century Code 49-02-23.

17 A. I am familiar with the North Dakota law,
18 but I'm also familiar with what prudent utilities
19 consider in their analyses and, in fact, what
20 companies have responsibility to their investors to
21 consider, so I think it's a really complicated
22 issue as to what MDU can or cannot include in their
23 analyses.

24 Q. But you -- you're not suggesting that this
25 Commission should ignore North Dakota law in its

1 decision in this -- in this proceeding, are you?

2 A. Well, I guess what -- I'm certainly not
3 counseling anybody to violate a law, if the
4 Commission got arrested on the basis of my advice.
5 But in all seriousness, I think the Commission has
6 to decide whether ignoring CO2 -- how you can
7 show -- make an advance determination of prudence
8 without considering the 800-pound gorilla in the
9 room.

10 Q. But when North Dakota law specifically
11 says the Commission cannot consider these things,
12 are you suggesting that the Commission should
13 consider them in their decision and ignore the
14 North Dakota law?

15 A. Well, if the Commission were asking me for
16 my opinion on how they should work their way out of
17 this contradiction --

18 Q. I'm just asking a question of whether they
19 should ignore the law and consider these costs.
20 That's the only question I'm asking.

21 A. No, I don't think they should ignore the
22 law, but I don't think that the law -- that
23 determining prudence and saying there's an
24 extraneous factor that we can't consider that means
25 that this investment is imprudent is violating the

1 law necessarily.

2 Q. So they should consider the costs of --

3 A. You don't have to consider the costs to
4 know that there is a problem. You don't have to do
5 an analytic analysis, a quantification, so to
6 speak, to know that there's a serious problem and
7 that that serious problem is likely to lead to
8 increased costs that have not been considered by
9 the applicants.

10 Q. The law says that they can't consider the
11 alleged costs of complying with future
12 environmental laws or regulations that have not yet
13 been enacted.

14 A. Correct.

15 Q. And do you agree that they cannot consider
16 those?

17 A. I'm not aware of any North Dakota court
18 decision that defines "alleged costs." You're
19 interpreting it to mean anything related to CO2 and
20 an impact that that might have. That may be what a
21 North Dakota court ultimately decides. You may be
22 correct. I could also see an interpretation of
23 that law meaning you can't talk about that the cost
24 will be \$9 a ton versus \$10 a ton, but that perhaps
25 you can consider that in fact there will be generic

1 costs that affect a project that have not been
2 considered. Again, with the absence of a court
3 decision of which I'm aware, it's hard to answer
4 your question with more specificity.

5 JUDGE WAHL: I'm sorry, Mr. Schlissel.
6 You have your microphone turned away from you.

7 THE WITNESS: I apologize.

8 JUDGE WAHL: There you go.

9 THE WITNESS: We don't have to start over,
10 do I?

11 JUDGE WAHL: No.

12 THE WITNESS: Okay. Sorry about.

13 Q. (MR. BINEK CONTINUING) I'm not sure I
14 have an answer yet, but I don't know where else to
15 go with this.

16 In your testimony you talk about companies
17 that have decided not to undertake new coal-fired
18 power plants and there has been considerable
19 discussion between you and Otter Tail counsel
20 concerning this, and you say it's because of
21 concerns over increasing construction cost and/or
22 potential for federal regulations of greenhouse
23 gases. There have been companies that have gone
24 forward with plans for construction of coal-fired
25 power plants, too, haven't there?

1 A. Yes, there have been some investor-owned
2 companies that have gone ahead, yes.

3 Q. The fact that one company decides against
4 building a coal-fired plant doesn't necessarily
5 mean that a coal-fired plant isn't a correct
6 resource selection for another company, is it?

7 A. It's evidence of it, but, of course, it's
8 not conclusive. The analyses done by each company
9 is what should be conclusive.

10 Q. Each company has to make its decision
11 based on the facts and circumstances of their
12 situation; isn't that correct?

13 A. Correct.

14 Q. Do you believe that a company should rely
15 solely on what modeling results show in selecting a
16 generation resource, or should they also use the
17 knowledge, expertise and experience of their
18 management employees and consultants in making a
19 determination?

20 A. Of course, they should look at -- they
21 have to consider their expertise and experience and
22 experience of other companies.

23 Q. In your testimony on page 19 you identify
24 risks associated with building natural gas
25 alternatives, as well as renewable alternatives and

1 energy efficiency, and you say those are potential
2 CO2 emission costs, possible capital costs,
3 escalations, and fuel price uncertainty and
4 volatility. Are those the only risks associated
5 with a natural gas alternative?

6 A. Well, I mean, I suppose you could include
7 a question of availability of supply, although I
8 think there always -- I think within our lifetime
9 there will be supply of natural gas. It's a
10 question of price.

11 Q. With the CO2 emissions, I believe that we
12 have testimony in this case that natural gas-fired
13 generation emits roughly 50 percent of the CO2 --
14 the amount of CO2 as a coal plant. Do you agree
15 with that?

16 A. It's roughly 50 to 60 percent.

17 Q. Okay. So if CO2 costs are imposed,
18 they're going to be imposed on gas-fired
19 generators, as well; right?

20 A. That's correct, and should be considered
21 in the analysis.

22 Q. The applicants' rebuttal witness, Thomas
23 Hewson, talked about possible CO2 legislation. Do
24 you agree that if Congress enacts future
25 legislation, that it will likely -- that it will

1 more likely be a cap-and-trade program?

2 A. Yes.

3 Q. Do you also agree that under the proposed
4 legislative programs that a portion of the emission
5 allowances would likely be allocated at no cost to
6 affected parties to reduce their compliance cost
7 impact?

8 A. I think that's great -- that's highly
9 uncertain. My opinion is I think that initially
10 some portion will be allocated free, but --

11 Q. In your analysis did you factor in any
12 no-cost allocations?

13 A. No. Would you like me to explain why?

14 Q. No. I needed to know.

15 A. Okay.

16 Q. Your counsel can explore further if that's
17 necessary.

18 A. Fine.

19 Q. Do you agree with Mr. Hewson that overall
20 costs of wind generation facilities are more
21 capital intensive on-a-dollar-per-kilowatt-hour
22 basis than conventional fossil fuel costs?

23 A. On a kilowatt --

24 Q. Kilowatt-per-hour basis.

25 A. Not necessarily.

1 Q. Kilowatt-hour basis.

2 A. Wind capital costs now at the high end of
3 the estimated range is roughly \$2,000 a kW, 2,100.
4 Coal plant costs are now 2,500 to \$3,000 per kW.
5 Doing a levelized cost analysis with CO2 costs we
6 find wind to be less expensive than coal.

7 Q. So wind generation facilities are not more
8 capital intensive?

9 A. Well, if you look at a dollar per kW,
10 they're not.

11 Q. Okay. What do you believe is a realistic
12 capacity factor for wind generation?

13 A. Depends on where you are.

14 Q. In North Dakota.

15 A. I think you're probably talking a 40
16 percent. I've seen some studies that have assumed
17 45. Again, it depends on where you are and how
18 diverse. If you're talking one wind farm, are you
19 talking about, you know, geographically dispersed
20 wind facilities, you can probably have as a group a
21 higher capacity factor. I think as an estimate you
22 would look -- 40 to 45 percent would be the top.

23 Q. Do you know if that's what the experience
24 has been in North Dakota?

25 A. I don't recall all of the wind facilities.

1 Q. What about Minnesota, do you know what the
2 capacity factor is for wind generation in
3 Minnesota?

4 A. We've looked at it. Sitting here today,
5 I'm sorry, I don't remember all of the results.
6 One thing you have to factor in, too, is that the
7 new wind facilities are projected to be more
8 efficient in terms of operation than the older, so
9 you're likely to get better capacity factors, but,
10 again, I don't remember the exact operating
11 performance statistics.

12 Q. Well, would you agree with Mr. Hewson that
13 the EIA, DOE wind production data shows 2005
14 average output capacity for Minnesota wind projects
15 was close to 32 percent?

16 A. No. I would have to verify his numbers
17 before I would agree with Mr. Hewson.

18 Q. Because of the volatility of fuel prices,
19 would coal-fired generation likely result in more
20 stable electric power rates?

21 A. Than what? Than just --

22 Q. Well, than natural gas.

23 A. Perhaps. I mean, if natural gas prices
24 are fluctuating up and down, then the answer is
25 yes.

1 Q. Does the United States rely on imports of
2 natural gas to satisfy its demand?

3 A. Increasingly it's relying on LNG imports,
4 yes.

5 Q. And where do LNG imports come from?

6 A. There's LNG off Australia, there's LNG in
7 the western part of Russia, just north of Japan,
8 there's LNG in Iran. I forget the list. There's
9 LNG, I believe, in Venezuela, other places in the
10 Caribbean. I have to look at a list. Those are
11 the ones I recall offhand.

12 Q. And do you know primarily where U.S.
13 imports come from?

14 A. I've seen the data. I don't recall. If
15 you have something subject to check.

16 Q. No, I'm just asking.

17 A. Those countries I mentioned are, I
18 believe, some sources. Oh, some other countries in
19 the Persian Gulf, Qatar, Abu Dhabi -- I know Qatar.
20 Q-a-t-a-r, I think, is how you spell that one.

21 Q. How about Saudi Arabia?

22 A. I was about to say Saudi Arabia.

23 Q. As far as imports of natural gas, does the
24 United States import from Canada and Mexico, also?

25 A. I think so.

1 Q. Okay. I don't recall whose testimony it
2 was, but there was indication -- or a statement
3 that imports from Canada and Mexico are declining.
4 Would you agree with that?

5 A. I think it's expected to decline over
6 time, certainly. There's actually going to be an
7 LNG terminal or two in Baja, California, so I don't
8 know whether that counts as imports through Mexico,
9 but there will be additional LNG through Mexico
10 coming into southern California.

11 Q. From Mexico or through Mexico?

12 A. Through Mexico.

13 Q. Does an increasing dependence on foreign
14 supplies of natural gas present any supply and
15 security risks?

16 A. Yes.

17 Q. Will requirements to reduce CO2 emissions
18 affect natural gas demand and price volatility?

19 A. I don't know. That's a really complicated
20 question. You would expect that it will affect
21 natural gas demand depending on a number of other
22 factors. How much energy efficiency we do, how
23 much renewable resources we build, how much nuclear
24 is added, those will affect how much CO2 regulation
25 affects natural gas demand. As to volatility, I

1 don't -- people interchange price increases with
2 volatility. Volatility to me means it's going up
3 and going up, changing month by month or over a
4 couple months. I don't know that CO2 prices will
5 affect volatility, per se. There have been various
6 studies of the impact of regulation, the current
7 bills before Congress -- adoption of the current
8 bills before Congress on natural gas prices, and it
9 looks like it will have -- well, actually the
10 results of many of these scenarios are that it will
11 end up leading to lower natural gas prices because
12 eventually CO2 regulation, as you, yourself,
13 pointed out, will be applied to natural gas plants,
14 and that will end up pushing companies away from
15 building and operating natural gas plants to more
16 energy efficiency and renewables and maybe nuclear.
17 So it's really a complicated issue that I can go
18 into more detail if you want.

19 Q. No. I accept your statement it's a
20 complicated issue. I think that's pretty obvious.

21 Is wind generation competitive with Big
22 Stone II without production tax credits?

23 A. Wind on itself without a production tax
24 credit, I don't think it is on a levelized basis.

25 Q. When do you project that the production

1 tax credits will expire?

2 A. It's a political issue so it's hard to
3 come up with a projection. I think that Otter Tail
4 Power's estimate that the wind production tax
5 credit will continue through the end of 2013 is
6 reasonable. Xcel Energy does 2015. I think that's
7 kind of a reasonable ballpark. What I think will
8 happen is that when we eventually get some form of
9 CO2 cap-and-trade regime in this country and CO2
10 prices get high enough, then the production tax
11 credit will not be renewed because it will be
12 duplicative, that the wind industry will not need
13 it, the solar industry won't need it because
14 carbon-emitting sources will be paying CO2 prices.
15 So I think the actual date of when it goes away is
16 tied in to when we get meaningful greenhouse gas
17 regulation in the U.S.

18 Q. Do you think the cost of wind generation
19 will increase because of demand for wind generation
20 resources if there's a significant CO2 tax or other
21 cost imposed by the states or federal government
22 for CO2 emissions?

23 A. I think it's a factor to consider, but I
24 think counterbalancing that is we're seeing
25 companies expanding production facilities for wind

1 facilities -- wind power dramatically. Just go
2 down to Iowa as an example. In Iowa there are any
3 number of factories for wind turbine blades, other
4 components of wind turbines. So the industry
5 estimates that the production capability will
6 quadruple by 2012 in terms of how much wind -- how
7 much wind capacity they can produce -- build that
8 can then be installed.

9 Q. Are there more uncertainties and more
10 risks for higher fuel prices and fuel supply
11 disruptions with natural gas-fired generation than
12 with coal-fired generation?

13 A. I think that in general you would think
14 there's more -- you lumped a number of things
15 together. I think the evidence is that coal prices
16 are going up. If you look at the spot markets now,
17 the spot market prices for coal have doubled,
18 tripled, even more, within the last year. We're
19 now exporting more coal to foreign countries.
20 That's going to affect the price of domestic coal.
21 You'd think in general that, yes, supply
22 disruptions are a bigger concern with natural gas,
23 but then you look at the actual history. There
24 have not been natural gas supply disruptions --
25 significant ones -- other than during the cold

1 spell, and at the same time Powder River Basin
2 coal, because their railroad track problems, led to
3 major cost increases by coal-fired utilities all
4 around the Midwest. So, yes, there's an
5 expectation -- and you should be concerned about
6 natural gas supply stability. That's why we
7 propose you only build and operate gas to the
8 minimum extent necessary.

9 Q. Getting to that, when you're talking about
10 building natural gas and talking about an
11 alternative to Big Stone II, the testimony from an
12 Otter Tail witness was that to replace Big Stone
13 II, you need 500 megawatts of natural gas.

14 A. Yeah, that's -- that's old-time thinking.
15 That's old-time thinking that gives no -- Mr. --
16 you're talking about Mr. Greig. Mr. Greig's
17 analysis gives no capacity credit to wind at all,
18 even though these companies -- two companies in
19 their modeling analyses give capacity credit to
20 wind, and have done so in the past.

21 Q. Well, if capacity credit is given, how
22 much natural gas would have to be built to replace
23 Big Stone II?

24 A. Again, you look at the economics, you
25 balance off how much wind do you have to build,

1 what capacity factor do you get from wind, and what
2 capacity factor do you then -- how much gas do you
3 have to build and how much do you have to operate
4 that gas, so it's a complicated analysis, but
5 generally if you build 400 -- let's assume wind got
6 a 20 percent capacity credit. Okay?

7 Q. Okay.

8 A. And you build 500 megawatts of wind, so
9 that for reliability purposes that equals 100
10 megawatts of wind for capacity, just for
11 reliability purposes, you then have to build 400
12 megawatts of gas.

13 Q. Okay. So a minimum 400, maximum 500,
14 depending on whether capacity credits are factored
15 in?

16 A. Well, yeah, but it's not a simple matter.

17 Q. No, I realize. And my question was fairly
18 simple, but you've answered the question that I've
19 asked.

20 A. I kind of feel like I've given half of it,
21 but you get the say. I would go on to explain that
22 you also have now the economics of how much
23 electricity is produced by the wind, which has a
24 zero fuel cost, versus the natural gas capacity.

25 Q. Well --

1 A. So you might want to build more wind and
2 less gas or operate gas less, have some of your gas
3 be peaker and some be baseload.

4 Q. I realize that there are all of those
5 alternatives, but I was trying to address the
6 situation --

7 A. Okay.

8 Q. -- of Otter Tail's testimony, the 500
9 megawatts and yours about the lack of recognition
10 of capacity credits.

11 A. Okay.

12 Q. Your counsel may want to inquire further
13 on this. That's fine.

14 A. Okay.

15 Q. Have you reviewed Daniel Klein's rebuttal
16 testimony?

17 A. I went through it very quickly.

18 Q. Mr. Klein -- in his testimony Mr. Klein
19 states that if Big Stone II is not built -- I think
20 -- wait a minute. Maybe we've covered that
21 already.

22 Okay. Mr. Klein in his testimony states
23 that natural gas prices are much more volatile than
24 coal prices. And my question is -- this kind of
25 goes back to what we talked about a little bit

1 before -- whether you agree with that.

2 A. I agree that gas prices are volatile, but
3 you've got to put it in the context of an analysis
4 that looks at the potential increases in capital
5 costs, CO2 costs and then gas volatility, and you
6 evaluate whether Big Stone II makes economic sense
7 even if you consider volatility, and by which I'm
8 not talking about month-to-month variations. I'm
9 talking about differences between what a low
10 long-term forecast and a high long-term forecast
11 would be. So it's one factor that needs to go into
12 a rigorous analysis of risk.

13 Q. Mr. Klein -- we talked about the stability
14 of rates, and Mr. Klein in his testimony makes a
15 statement that regions with more coal-fired power
16 in their generation tend to have more stable power
17 rates, and regionwide now, would you agree with
18 that statement?

19 A. No. I mean, I have to see the numbers
20 behind it. I think stability of rates changes over
21 time. I mean, there have been some companies in
22 this region that don't have stable rates even
23 though they have a lot of coal. There are
24 companies with coal that have very stable rates.
25 For example, Kansas City Power & Light, which

1 building Iatan II, I-a-t-a-n II, a coal plant, is
2 having severe financial problems and rate issues
3 due to their increased cost of their coal-fired
4 power plant. So I think you can't just make a
5 blanket statement like Mr. Klein attempts to do.

6 Q. Mr. Klein also states that natural gas
7 markets are becoming more international and
8 increasingly are subject to the same type of price
9 spikes as seen with petroleum. Do you agree with
10 that statement?

11 A. No. I've not seen the evidence about it
12 becoming increasingly susceptible to price spikes
13 as with petroleum, but certainly with the increased
14 market for LNG around the world, there is
15 developing an international market for natural gas.

16 Q. Do you agree with Mr. Klein's statement
17 that while CO2 requirements would affect the cost
18 of using coal at Big Stone II, it would also affect
19 costs of using natural gas by the direct effect of
20 CO2 pricing on natural gas emissions and also by
21 the potential rise in market price and volatility
22 of fuel?

23 A. Well, there's a lot in there. I would
24 agree that it would affect the price of natural gas
25 generation, because, as you and I spoke before,

1 gas-fired power plants emit CO₂. As to the impact
2 on natural gas prices, I think you and I discussed
3 this before, it's really complicated.

4 Q. Yeah. We don't need to go over that.

5 A. Well, I'm not going to go over it, but
6 I'll just say that the studies we've seen, and
7 we've looked at all of the analyses done by the
8 EIA, the Department of Energy, the EPA, the
9 National Gas Council, show that when CO₂ prices get
10 high enough, there is an impact on natural gas
11 prices in some scenarios. But if you're going to
12 assume an increase in natural gas prices, then you
13 have to assume fairly substantial CO₂ costs, as
14 well. You can't assume a low CO₂ price -- really
15 low CO₂ price and then a really high impact on
16 natural gas. That doesn't work. That's not the
17 way the studies are showing -- the results of what
18 the studies are showing.

19 Q. Would you agree with Mr. Klein's statement
20 that North Dakota's participation in MISO exposes
21 it to a natural gas price volatility risk that is
22 much larger than its actual percentage of
23 generation?

24 A. I don't know about that one. I think that
25 it also offers access to cheaper power, so that I

1 think that those are two balancing factors.

2 MR. BINEK: I think that covers all my
3 questions.

4 JUDGE WAHL: I think it may be time for
5 lunch.

6 COMMISSIONER CRAMER: Might be.

7 JUDGE WAHL: Let's be in recess until one
8 o'clock.

9 (Recess taken at 12:03 p.m. to 1:01 p.m.)

10 JUDGE WAHL: All right. Let's be in
11 order. It appears everyone's ready. As a
12 preliminary matter and as a matter of information
13 for anyone who is listening via the Internet,
14 Commissioners, I'm advised that it appears that --
15 that Otter Tail and MDU expect to finish with their
16 witnesses today with perhaps some adjustment yet,
17 and then that we will complete the supplemental
18 hearings with Mr. Deason's testimony tomorrow
19 morning. That appears to be our agenda.

20 All right. Questions for Mr. Schlissel
21 from the Commission. Commissioner Wefald.

22 **EXAMINATION**

23 **BY COMMISSIONER WEFALD:**

24 Q. On page 62 of your testimony -- page 62,
25 line 21.

1 A. Yes.

2 Q. It states: "For example, the National
3 Commission on Energy Policy has recently
4 recommended that new coal plants built without
5 carbon capture and sequestration not be
6 grandfathered." Can you tell me when they made
7 that determination?

8 A. They made the recommendation, I think, in
9 December of 2007.

10 Q. Okay. Thank you. And then on page 61 --

11 A. Yes, ma'am.

12 Q. -- line 11, it reads, Synapse believes it
13 is important for the Minnesota PUC to rely on the
14 most current information. Should it read "North
15 Dakota"?

16 A. It should be "North Dakota." I'm sorry.
17 I missed that typo. I apologize.

18 MR. GUERRERO: Just for clarification,
19 Your Honor.

20 JUDGE WAHL: Go ahead, Mr. Guerrero.

21 MR. GUERRERO: The clarification is that
22 lines 8 through 29 on page 61 were actually
23 stricken.

24 JUDGE WAHL: They were, Commissioner.

25 COMMISSIONER WEFALD: I don't have a

1 redacted copy --

2 JUDGE WAHL: Yeah. I'm sorry.

3 COMMISSIONER WEFALD: -- and I don't have
4 any copy that has indicated what should be
5 stricken. You'll just have to tell me as I go
6 along.

7 JUDGE WAHL: Do you not have the large
8 volume, Commissioner?

9 COMMISSIONER WEFALD: No. I've never been
10 given that.

11 MR. BINEK: You were given a copy.

12 COMMISSIONER WEFALD: Is that what this
13 is? Okay. Thank you.

14 JUDGE WAHL: If you would -- tab 42 is Mr.
15 Schlissel's testimony.

16 COMMISSIONER WEFALD: Actually, all my
17 questions are written in my old one, so just tell
18 me as I go along.

19 JUDGE WAHL: Oh, all right. All right.

20 COMMISSIONER WEFALD: All right. Thank
21 you. Okay. Then my next question is page 81. Is
22 that also stricken? Let's see here. I think --

23 COMMISSIONER CLARK: It depends where.

24 COMMISSIONER WEFALD: I actually would
25 like to go to page 77 next. Is the chart able to

1 be discussed?

2 JUDGE WAHL: Only the -- portions of Table
3 6 are stricken except for the first, third and
4 fourth columns -- I'm sorry. First, fourth and
5 fifth columns.

6 COMMISSIONER WEFALD: The first column is
7 the year?

8 JUDGE WAHL: Yes.

9 COMMISSIONER WEFALD: That's okay?

10 JUDGE WAHL: That's all right. And the
11 fourth and fifth columns are with regard to capital
12 cost.

13 Q. (COMMISSIONER WEFALD CONTINUING) All
14 right. Would you please just still go over with me
15 what this shows even between the first column and
16 the fourth and the fifth?

17 A. Sure.

18 Q. Thank you.

19 A. When we -- "we" meaning Synapse -- re-ran
20 the Strategist model for MDU in the Minnesota
21 certificate of need case this past December, the
22 only change -- the modeling change we made was to
23 increase the cost of Big Stone II by ten percent.

24 Q. Okay.

25 A. And this is the plan that the model picked

1 out. So if you look at the fourth column, that was
2 their case with a 500 megawatt size Big Stone II
3 Plant. It picked these two DSM programs that Mr.
4 Guerrero and I discussed this morning, which were
5 the same as the company picked. It then picked
6 30.6 megawatts of wind in 2011 -- 2010, excuse me,
7 61.2 megawatts of wind in 2011, and 87 megawatts of
8 combustion turbine. It then added some more wind
9 in 2012. It added combustion turbines then in 2017
10 and 2024. That was the plan that the model picked
11 as its lowest cost plan.

12 Q. All right. Thank you. And then the next
13 column, is that the same explanation only that
14 relates to -- these both relate to MDU; is that
15 correct?

16 A. Correct.

17 Q. So what's different? Tell me what's
18 different between the next column.

19 A. The fourth column, the one I just
20 described, is with regards to MDU's share of a 500
21 megawatt sized Big Stone II.

22 Q. And the other one is 580?

23 A. Yes, ma'am. Those were the two sizes that
24 the companies indicated in Minnesota that they were
25 considering for Big Stone II. So MDU ran two sets

1 of computer runs.

2 Q. All right. How much demand side
3 management was projected then in 2008 and 2009; do
4 you know that?

5 A. I don't recall -- I don't have the numbers
6 with me. Mr. Heidell can probably, when he gets on
7 the witness stand, talk about it because it was his
8 modeling assumption that we used, Mr. Heidell from
9 the company. He did the Strategist modeling for
10 MDU.

11 COMMISSIONER WEFALD: Is Mr. Heidell going
12 to be a witness?

13 MR. KUNTZ: (Nods head.)

14 COMMISSIONER WEFALD: All right. Thank
15 you. Then page 81 is the chart, Table 7. Are we
16 able to discuss that?

17 JUDGE WAHL: Page 81?

18 COMMISSIONER WEFALD: Mm-hmm.

19 MR. GUERRERO: (Shakes head.)

20 COMMISSIONER WEFALD: No. And the charts
21 on page 82, are we able to discuss those?

22 JUDGE WAHL: No.

23 Q. (COMMISSIONER WEFALD CONTINUING) All
24 right. And then I had a question on -- I'm going
25 to ask you a rather general question, and I

1 understand if you can't answer it. If you want to
2 refer me to another witness, that's just fine.

3 A. Okay. Thank you.

4 Q. All right. Let's say that MDU serves
5 about 500 megawatts of load. These days, given the
6 environment that we're in, what percentage of load
7 do you think a company should be trying to meet
8 with demand side management-type programs?

9 A. Wow, that is a complicated question. Do
10 you mean -- well, clearly as much -- I mean, if
11 you're talking about general energy efficiency, you
12 want to reduce the demand as much as you can. So
13 if you're just talking about -- I mean, let's
14 assume you had -- the company came to you and said
15 we have programs that can reduce our demand from
16 500 to 400 megawatts. That's good. There's
17 nothing negative. You want to get that down as low
18 as possible.

19 Q. But what I'm wondering, though, is like is
20 it one percent? See, that would be probably a 20
21 percent reduction in their load. Sometimes
22 companies come to us and they say we want to start
23 demand side management programs and then they
24 present us with one percent of their load. I
25 suppose that's a good place to start, but I'm

1 asking what is a reasonable number these days for
2 demand side management?

3 A. Well, companies are and commissions are
4 raising the amounts. I mean, generally now one to
5 two percent is believed to be achievable by many
6 companies and many commissions.

7 Q. And that would be -- in that case if a
8 company served 500 megawatts, it would be
9 approximately ten megawatts; right?

10 A. But that's year -- each year --

11 Q. Each year.

12 A. -- and it's cumulative.

13 Q. Cumulative?

14 A. Yes. So let's forget about growth. Let's
15 assume the company's not growing. With your
16 example it would be ten megawatts the first year,
17 and then again two percent would be -- then it
18 would be 49 -- it would be --

19 Q. So it's ten percent. Another one percent
20 would be another five megawatts.

21 A. So it would be either ten megawatts a year
22 or five megawatts --

23 Q. Five megawatts a year --

24 A. Yes.

25 Q. -- on top of each other.

1 A. On top of each other. They're cumulative.
2 The northwest -- the Midwestern Governors
3 Association in November adopted a goal of a two
4 percent of load served by energy efficiency by 2015
5 and two percent additional every year thereafter.

6 COMMISSIONER CRAMER: So in 50 years you
7 wouldn't need the plant anymore.

8 THE WITNESS: Well, yeah. The problem is
9 you've got to -- I mean, you've got to do something
10 in the interim to be able to meet it, and you
11 also -- in a real world situation you do have
12 growth. So it's more complicated than this
13 example, but it's basically -- one to two percent
14 is certainly achievable, we believe, and it's
15 cumulative.

16 Q. (COMMISSIONER WEFALD CONTINUING) And so
17 the 1.5 that Minnesota has set is cumulative --

18 A. Yes.

19 Q. -- from year to year?

20 A. Yes.

21 Q. So it's one-and-a-half percent of the load
22 the first year and then three percent the second
23 year and four-and-a-half the second year, something
24 like that?

25 A. No. It's -- the increment increases.

1 It's not three percent. It's one-and-a-half
2 percent the first year and then the same number of
3 megawatts the second year or -- I mean, and so on,
4 so that it does build up. Over time you would have
5 significant savings.

6 COMMISSIONER WEFALD: Okay. Thank you.

7 JUDGE WAHL: Any further questions from
8 the Commission? Commissioner Clark.

9 COMMISSIONER CLARK: Just a few, and I
10 think they're mainly based off some responses.

11 **EXAMINATION**

12 **BY COMMISSIONER CLARK:**

13 Q. Good afternoon, Mr. Schlissel.

14 A. Yes. Good afternoon. I'm glad I'm not
15 sitting next to you. I think my green cast and
16 your tie would make us look like a pumpkin.

17 Q. My questions, I think, were raised
18 primarily by some responses that you gave, and I
19 just want to clarify them. You had talked about
20 the -- I think the installed cost of wind being
21 something like 2,000 to 2100 kilowatts -- per
22 kilowatt. Now, is that the all-in price of wind,
23 or is that just kind of the tower installed itself?
24 The reason I ask is because any wind, of course,
25 has to be backed up by something else. Is that

1 including that back-up cost or not?

2 A. No. It's the cost of building a wind
3 turbine. Just the all-in cost.

4 Q. For comparative purposes, though, the
5 Commission would need to consider the total cost of
6 the resource, both wind and --

7 A. Well, sure, you'd want to -- I mean,
8 firstly, wind can be backed up by the general
9 system. The system has a lot of dispatchable
10 capacity. So it isn't -- I mean --

11 Q. When you say the system, buying from the
12 market?

13 A. The grid. The grid has a lot of
14 dispatchable power plants already existing. Now,
15 if you're going to look one-on-one, Big Stone II
16 versus wind and energy efficiency and gas
17 alternative, then you would want to have some
18 backup. Yes. You want to factor in the maximum
19 amount of energy efficiency you think you can
20 achieve, the amount of wind, and the amount of gas
21 you need.

22 Q. Sure. What's installed combined cycle gas
23 plan --

24 A. Costing nowadays?

25 Q. Yeah.

1 A. Somewhere in the -- I think OTP assumes 8
2 to \$900 per kw, and I think that's a pretty fair
3 number, maybe a thousand, somewhere in that range
4 for an overnight cost.

5 Q. And when you were talking about backing up
6 by the system, that's essentially buying off the
7 market; is that correct?

8 A. Yes. I mean they -- right, that's
9 correct. Either buying off the market or having a
10 contract.

11 Q. Do you have an idea what typical spot
12 market prices are right now in the MISO?

13 A. No. That's why I think the kind of
14 analysis where you would compare -- you know,
15 assume everything's new is probably a better type
16 of analysis to try to do without a computer model.

17 Q. You'd made a statement that under some
18 models that you had read, if you factored in new
19 carbon regulations, that potentially natural gas
20 prices could decline because the -- there's less
21 demand on the resource. Would that also be true
22 for coal under those scenarios then, as well?

23 A. I would expect, yes, that under CO2
24 regulation, excluding CO2 cost, that the cost of
25 coal probably would go down if there's less being

1 used.

2 Q. But either way the delivered cost to the
3 consumer is going to be more under -- for either
4 commodity; is that right?

5 A. Well, the -- not necessarily. The
6 delivered cost of the coal would depend on the --
7 all the factors that you were talking about with
8 the previous --

9 Q. Right. And I may have used the wrong word
10 when I said "delivered." The end cost to the
11 consumer for either commodity is -- under any
12 carbon regulation plan is going to be more than it
13 is today; is that correct?

14 A. Not necessarily. I mean, not if -- I
15 don't know that the price of natural gas going to
16 heat my home is going to have a CO2 adder. I think
17 that the CO2 adder will be applied to certain
18 sectors of the economy.

19 Q. But to the degree that carbon regulation
20 encompasses coal and coal for electric utilities,
21 doesn't that place pressure on natural gas -- I
22 mean, even if you didn't have a CO2 adder on your
23 residential home heating, it would still place
24 quite a bit of pressure on the commodity itself,
25 wouldn't it, as utilities move towards that?

1 A. What we see in the studies that have been
2 done by -- again, it's the Energy Information
3 Administration, the DOE, the U.S. EPA, the National
4 Gas Council, the researchers at MIT and now at
5 Duke, we have a range of studies, and what they do
6 is they take -- they're basically focused on three
7 bills in Congress -- this Congress. The McCain
8 Lieberman greenhouse gas bill, Lieberman-Warner,
9 and Bingaman-Specter, and they put it in their
10 model and try to figure out -- these are the
11 reductions they want to achieve in CO2 emissions --
12 what CO2 prices do they need in order to get those
13 reductions?

14 They then also produce as output: What
15 natural gas prices do they predict under each of
16 their scenarios year by year? So we can take the
17 CO2 prices and the natural gas prices year by year
18 for each scenario, and what it shows is that for
19 many of the scenarios that when the CO2 prices get
20 high enough, companies will not build natural gas.
21 They'll turn away from it. Because as you add a
22 CO2 price to the cost of generating power at a
23 fossil plant, gas or coal, it makes energy
24 efficiency and renewables more economic.

25 Q. Right. But if that's the scenario,

1 wouldn't the same then be true for coal?

2 A. It is. That's what happens. It pushes
3 coal --

4 Q. But the end cost to the consumer in either
5 case is dramatically more than it is now.

6 A. That's correct. I'm sorry. I didn't
7 understand you. If that's what you're asking, yes.
8 When there is ultimately federal regulation, the
9 price of electricity will cost more. I don't think
10 there's any way around that. Whether you assume
11 carbon capture and sequestration or some kind of
12 cap and trade, it will cost more.

13 Now, what some of the bills talk about
14 doing -- I mean, it's not like -- it's not like
15 we're sending money to Saudi Arabia for oil. The
16 money would go into the Federal Government and then
17 be either fed back to people in terms of a tax
18 decrease or in terms of some payment back to
19 ratepayers who are also taxpayers. So it's not
20 like the money gets sucked out of the economy.

21 That's why when you read these studies
22 that show carbon regulation will cost the economy
23 800 billion dollars each year, they're assuming
24 that this money is sucked out of the economy and
25 going to Saudi Arabia. It's not.

1 Q. Well, it's less efficient than the market,
2 though. I mean, it's still the government -- sort
3 of the same way that tax dollars are sucked out and
4 then some people view that as being reinvested,
5 isn't it?

6 A. Right. But here there's more direct --
7 here it's relying on the market to set the price.
8 It's just that when the government gets the
9 revenues from auctioning off the CO2 allowances,
10 they then have this pot of money and the question
11 is what do they do with it.

12 Q. It's a different definition of market than
13 I have.

14 A. Well, no, no. The price is set by the
15 marketplace.

16 Q. But cap and trade, itself, is an
17 artificial invention to raise the price of
18 something that's free now by imposing something out
19 there.

20 A. Well, true. But I think -- I mean, I
21 think the difference is you're opposing a cap on
22 the amount. That if we did that for anything else,
23 we'd probably end up in the same kind of situation,
24 so you're right.

25 COMMISSIONER CLARK: That's all I have.

1 Thanks.

2 JUDGE WAHL: Commissioner Cramer.

3 EXAMINATION

4 BY COMMISSIONER CRAMER:

5 Q. Well, I'd like to continue with a
6 clarification, and it's very possible that I just
7 wasn't understanding right, but with regard to the
8 cost of wind -- the capital costs of wind, and I
9 think Mr. Binek's question was -- he asked you what
10 were the capital costs per kilowatt-hour, and you
11 said \$2,000 per kilowatt, and is that -- so am I
12 understanding that means \$2,000 per nameplate
13 kilowatt capacity?

14 A. Right.

15 Q. What would be the cost then for the energy
16 per kilowatt-hour? And isn't that a more -- isn't
17 that a more important number for me to consider?

18 A. Well, they're both important, but I didn't
19 understand the question when -- with all respect --
20 from Mr. Binek.

21 Q. Well, it's possible I didn't --

22 A. As you've asked it now I think I
23 understand what he's talking about. I would guess
24 that because you're assuming the wind operates at a
25 45 percent capacity factor and that a coal plant

1 would operate at 85 percent capacity factor, that
2 the wind capital cost per megawatt-hour is probably
3 higher than the coal plant capital cost per
4 megawatt-hour.

5 The reason I was confused is you usually
6 talk about capital intensity in terms of dollars
7 per kilowatt. When you get to dollars per
8 megawatt-hour you have to factor in the cost of
9 fuel, the cost of variable O&M, and things like
10 that. So when you talk dollars per megawatt-hour,
11 capital cost per megawatt-hour really doesn't --
12 it's meaningless because wind has a zero energy
13 cost. You don't pay for the wind.

14 Q. Sure. I understand.

15 A. And coal or nuclear or gas has a fuel
16 cost.

17 Q. You also -- along those same lines you
18 talked about the fact that the newer technologies
19 being implemented in the new turbines and other, I
20 guess, technologies related to wind development
21 were more productive or more efficient, perhaps is
22 what you said. Is it also true that as newer sites
23 for wind farms are discovered and developed, that
24 those sites aren't as probably productive as the
25 first sites. Is that a fair statement?

1 A. It's a fair question. I don't think the
2 answer is necessarily -- the answer is -- I
3 wouldn't agree with that necessarily. I think that
4 the science of siting wind turbines is growing by
5 leaps and bounds. That now the wind turbine
6 experts are talking about the ability to actually
7 predict the wind, so that wind could bid into a
8 day-ahead market so that they do analyses of
9 weather conditions, I guess, hundreds of miles west
10 of here and that they would then be able to tell
11 what hours -- what's the wind -- the range of wind.

12 So I think that advances in how they
13 incorporate wind into the -- into the system and
14 advances in the physical -- the technology of the
15 wind turbines tell me that it's likely to be --
16 that wind turbine capacity factors will increase.
17 I've seen nobody kind of reach the conclusion
18 you're suggesting, to be honest. I think everyone
19 assumes that the new wind will do better than the
20 old, and it's not a situation of the best sites are
21 taken.

22 I think -- just to finish it, I think in
23 the last five to ten years the benefits of your
24 state, of South Dakota, and of Kansas as places to
25 put wind turbines has grown astronomically --

1 that's a bad metaphor -- meteorologically. So that
2 really now companies think about, well, let's build
3 a big wind farm in North Dakota, South Dakota,
4 Kansas, and build a transmission line and take the
5 power into Minneapolis, Chicago, or to other areas.
6 So I think the best sites are far from taken.

7 Q. Sure. Okay. There's been a lot of
8 discussion about greater dependency on coal in this
9 region. You had testified earlier in talking
10 about Entergy, I guess, down in Louisiana as having
11 a high dependency on natural gas, and I'm not being
12 flippant when I ask this, but why would a Louisiana
13 utility be more dependent on natural gas than other
14 fuels for --

15 A. Because it's right there.

16 Q. Okay. That's what I thought. So is it
17 then -- well, then let me ask you this: In your
18 analysis of the -- or comparison of Big Stone II to
19 wind/gas, wind/gas, did you do any analysis of the
20 economics of a mine-mouth lignite plant in North
21 Dakota?

22 A. No.

23 Q. Why not?

24 A. That just wasn't an alternative we looked
25 at. I know that MDU over the years had done -- I

1 think it was MDU, it might be OTP -- over the years
2 has looked at some of those alternatives.

3 COMMISSIONER CRAMER: I have nothing
4 further.

5 JUDGE WAHL: Any further questions from
6 the Commission? Ms. La Seur, followup?

7 **REDIRECT EXAMINATION**

8 **BY MS. LA SEUR:**

9 Q. Following up initially on some of Mr.
10 Guerrero's questions, Mr. Schlissel, in your recent
11 coal plant consulting, what have some other
12 representative clients been that you didn't mention
13 in response to Mr. Guerrero's questions?

14 A. Yes. Basically in response to Mr.
15 Guerrero's direct questions, I listed some of the
16 environmental groups for whom we've worked on coal
17 plant issues. My clients on coal plant issues also
18 included the Office of Consumer Advocate of the
19 State of Iowa, the office of -- the Division of
20 Consumer Advocate of the West Virginia Public
21 Service Commission.

22 Q. Turning back to the Wall Street Journal
23 article that is at tab 41 in the black binders and
24 I think tab eight in some of them. It's an exhibit
25 to, I think, the Klein testimony referenced by Mr.

1 Guerrero. Would you please turn to page three?

2 A. I can't. You took my copy.

3 Q. I took your copy. I'll give it back.

4 And, Mr. Schlissel, would you please read into the
5 record the last paragraph -- last paragraph
6 beginning on that page?

7 MR. BINEK: What page?

8 MS. LA SEUR: It's page three of The Wall
9 Street Journal article we all looked at before
10 lunch. It's Exhibit --

11 THE WITNESS: Well, the context of this
12 paragraph is that not everyone agrees U.S. natural
13 gas prices are certain to rise. And then it cites
14 the Chesapeake Chief Executive Aubrey, A-u-b-r-e-y,
15 K. McClendon, M-c-C-l-e-n-d-o-n, sees production
16 continuing to grow holding U.S. gas prices between
17 seven dollars to ten dollars per million Btus and
18 avoiding the need to increase imports, and Michael
19 Stoppard, S-t-o-p-p-a-r-d, a senior director of
20 Energy Consultants Cera, predicts world -- sorry --
21 world LNG supply will grow by 30 percent in the
22 next two years making more chilled gas available
23 for the U.S.

24 Q. Thank you. Please turn to page five of
25 your supplemental direct testimony. This is

1 Intervenor's Exhibit I 10 at page five, referencing
2 the lines that Mr. Guerrero asked about, 9 to 11.
3 When you referred to the modeling analyses
4 presented by OTP and MDU as flawed and biased, to
5 what were you referring?

6 A. I was referring to the fact that the
7 company -- MDU and OTP, at least my understanding,
8 have presented two pieces of evidence to show that
9 there's need for new capacity. One is general data
10 from NERC, North American Electric Reliability
11 Corporation, showing capacity -- actual capacity
12 versus demand, the peak demands, and then the
13 second piece of evidence is a table of the need of
14 the current Big Stone II applicants and the need
15 for each company from -- shown in that table, I
16 believe, is drawn from their modeling analyses. So
17 that's what I meant in this sentence.

18 Q. So it's the lack of external reference?

19 A. There's no other reference other than the
20 modeling analysis. It's not even referenced, but
21 that's, to my knowledge, the source of the numbers.
22 I mean, let's assume OTP showed 150 megawatts. I
23 forget exactly what number they showed. That 150
24 megawatts would be the result of Mr. Morlock's
25 modeling analysis.

1 Q. As opposed to --

2 A. As opposed to an analysis of capacity
3 requirements and needs that you can do independent
4 of modeling. You can look at what are our peak
5 loads. Then you apply a reasonable reserve margin
6 and you get a total capacity required. You look at
7 what your actual capacity is expected to be and you
8 compare them and you figure out how much you need.
9 I've seen those kinds of assessments all the time.

10 So what OTP and MDU do is they kind of mix
11 the economics and actual need, which is okay as
12 long as you lay it out that way, but they don't.
13 It's not a strict need -- they don't -- there's no
14 need for 150 megawatts of baseload other than
15 through the modeling analyses that we've critiqued.

16 Q. Following up on some of Mr. Binek's
17 questions, why didn't you include low cost or free
18 allocation of carbon allowances in your analysis?

19 A. When we developed our Synapse CO2 prices,
20 we assumed in the scenarios that there would be
21 some free allocation. So it's already embedded in
22 our prices -- our CO2 prices. To have then in our
23 analyses have assumed again free allocation of some
24 allowances is basically double counting.

25 So that when we came up with the Synapse

1 C02 prices that I understand have been stricken, so
2 I won't mention them, they reflect our belief that
3 there may -- that initially there will be some
4 allocation of free allowances and that will decline
5 over time. I hope that's clear.

6 Q. Returning to a question by Mr. Guerrero
7 about your other recent coal plant work. Have
8 other PSCs chosen to reject coal plants in favor of
9 likely LNG or nuclear options?

10 A. I've not seen it set off in terms of
11 other -- they haven't chosen between a coal plant
12 and another option. The instances in which I've
13 testified and the commissions have rejected
14 proposed coal plants, in Florida the company came
15 in and had done a significant number of modeling
16 analyses using the same Strategist model that MDU
17 looks at, and they varied -- they changed three
18 significant variables, the capital -- estimated
19 capital cost of the plant, C02 cost, and natural
20 gas prices.

21 So they came up with a matrix that had
22 these three changes, and the Commission -- this is
23 their decision that they basically cut and pasted
24 from my testimony, was that based on this -- the
25 numbers in this table, yes, there were some

1 scenarios where the plan was economic, but you had
2 to assume high gas prices and low construction cost
3 and low CO2 prices. That if you then went to other
4 scenarios with higher construction costs, lower gas
5 prices, the plant was -- the proposed 2,000
6 megawatt plants were noneconomic, and that's what
7 the Florida decision was.

8 The Duke -- North Carolina Commission in
9 the Duke Cliffside case ruled on the basis of need;
10 that the company hadn't shown a need for one of the
11 two 800 megawatt units. And recently the Virginia
12 State Corporation Commission rejected a proposed
13 plant by AEP, American Electric Power. The plant
14 would be built in West Virginia, had been certified
15 by the West Virginia Commission, but I think it's
16 roughly half of AEP's -- the subsidiary's load is
17 in Virginia, so the Virginia Commission has to
18 rule, as well.

19 The Virginia Commission rejected the
20 proposed plant on the basis that the cost estimate
21 was too old. It was from November of 2006. And
22 that the company had refused to -- had decided not
23 to provide a new cost estimate until after the
24 Virginia Commission ruled, which made the Virginia
25 Commission very angry. So they rejected the

1 proposed coal plant.

2 And a number of other commissions around
3 the country have rejected proposed coal plants, as
4 well, as I discussed in my testimony.

5 Q. Do you consider any of these other
6 proposals comparable to the Big Stone II proposal?

7 A. Generally, some of them are a lot larger,
8 but some of them were pulverized coal plants. Yes.
9 I think they're comparable.

10 Q. Are you able to draw parallels between the
11 Florida proposal and Big Stone II?

12 MR. GUERRERO: I guess I'm going to object
13 on the basis the question is vague.

14 JUDGE WAHL: Overruled.

15 THE WITNESS: The Florida Glades proposal
16 was for two 980 megawatt coal plants -- pulverized
17 coal plants, so it was a lot bigger than Big Stone
18 II, is one difference. Another difference, as I
19 mentioned a minute ago, the company did a much more
20 vigorous set of analyses of how -- what the
21 economics were, the plant compared to actually
22 natural gas alternatives, under different
23 assumptions as to capital cost increases, CO2
24 costs, and natural gas prices than has been done in
25 this case by either OTP or MDU.

1 Q. (MS. LA SEUR CONTINUING) Mr. Guerrero
2 asked about carbon capture and storage and the
3 timeline on which it might be available. Do you
4 believe that it's reasonable to suggest that CCS
5 will be available economically within the
6 foreseeable future?

7 A. Well, it -- I know it's not polite to
8 disagree on redirect, but it depends on how you
9 define "foreseeable future." I don't think that
10 it's realistic to expect that CCS will be available
11 for a new power plant before Big Stone II would be
12 completed, before 2015, 2020, which means it's
13 likely to have to be retrofitted, which is believed
14 to be more expensive than adding it on from the
15 beginning.

16 Q. And how much more expensive do you expect
17 retrofitting to be than the currently proposed CCS
18 technology?

19 A. The estimates that I've seen about CCS at
20 new plants range from the MIT future of coal study
21 of roughly \$40 per ton to a study by Black & Veatch
22 of roughly \$71 per long ton, European/English ton,
23 which is about probably \$65 per U.S. short ton to
24 about \$68 per U.S. ton from NETL, National Energy
25 Technology Lab. That's for a new plan. The

1 estimates I've seen for retrofit are something, I
2 think, 10, 20 percent higher.

3 Q. And why didn't you consider scenarios
4 without the production tax credit?

5 A. This specifically applies to Mr. Greig's
6 levelized analysis. He was preparing what would be
7 built in place of Big Stone II -- would go into
8 service when Big Stone II would go into service.

9 If you assume that the wind production tax
10 credit would extend past 2013, as OTP does
11 specifically, then it would be in effect when Big
12 Stone II went into service. So that the wind that
13 went into service in place of Big Stone II would
14 have the benefit of the wind production tax credit.

15 So it's entirely consistent to assume
16 along with -- I'm sorry. Let me start again. If
17 you accept that OTP is right and that it's
18 reasonable to believe the wind production tax
19 credit will be in effect through 2013 and that Big
20 Stone II would go -- be built and go into service
21 before then, then your analysis should include that
22 wind would go into service before 2013 and would be
23 eligible for the production tax credit. That's why
24 I did it.

25 Q. I'd like to hand Mr. Schlissel

1 Intervenor's Exhibit 17, the NERC 2007 long-term
2 reliability assessments.

3 A. Is that in the --

4 Q. It's a new exhibit. I'd like to direct
5 you to page 65 of that portion of NERC excerpts. I
6 refer you to page 65. It's a set of excerpts, so
7 it's not in direct numerical order, and there is a
8 quotation from the Federal Energy Regulatory
9 Commission about halfway down the page. Would you
10 please read that into the record?

11 A. The FERC --

12 MR. GUERRERO: I'm going to object. This
13 has already been read into the record yesterday.

14 MS. LA SEUR: I will clarify that I'm
15 responding to a question asked by Commissioner
16 Wefald and offering evidence that may be responsive
17 to something she's just asked Mr. Schlissel.

18 MR. GUERRERO: I'm just kind of wondering
19 if she could just ask the question as opposed to --

20 JUDGE WAHL: Well, I agree, but let's do
21 it.

22 COMMISSIONER WEFALD: What page are we on?

23 MS. LA SEUR: Just so we all know what
24 we're talking about. I could just as soon make the
25 reference.

1 Q. (MS. LA SEUR CONTINUING) I'm just
2 interested in the italicized quotation from the
3 FERC, just so we all know what we're talking about.

4 A. "The potential immediate reduction in peak
5 electric demand that could be achieved from
6 existing demand resources is between three and
7 seven percent of peak demand in most regions."

8 Q. And my question is whether or not this
9 information from the reliability assessment is
10 responsive to Commissioner Wefald's question
11 regarding what can be achieved by DSM.

12 MR. GUERRERO: Well, I guess facts
13 speak -- I'm going to object. Facts speak for
14 themselves. We don't know whether this is
15 responsive to Commissioner Wefald's testimony or
16 not. She'll be the decider of that.

17 JUDGE WAHL: All right. The objection is
18 sustained. Rephrase your question, please.

19 Q. (MS. LA SEUR CONTINUING) Mr. Schlissel --
20 oh, now I'm doing it.

21 JUDGE WAHL: You know, let's go. Let me
22 just change that. This is not -- this is not worth
23 arguing about. Respond to the question, please,
24 Mr. Schlissel, as it was stated.

25 THE WITNESS: Yes. I believe that

1 demand -- this quote about demand response, as well
2 as the description of demand response that's given
3 two paragraphs earlier, is information that I would
4 believe would be responsive to her question.
5 Again, she does have to decide whether it is, but
6 it's what I think is responsive.

7 MS. LA SEUR: Nothing further.

8 JUDGE WAHL: Mr. Guerrero, followup?

9 MR. GUERRERO: Yes. Just a couple of
10 questions, Your Honor. I'll try to be brief.

11 **RECROSS-EXAMINATION**

12 **BY MR. GUERRERO:**

13 Q. Just on this question, conservation and
14 the quote from the NERC assessment, three to seven
15 percent. You weren't Synapse's expert witness on
16 conservation issues last January before the
17 Minnesota Public Utilities Commission, were you?

18 A. That's correct. Bob Fagan testified on
19 those issues.

20 Q. Do you know what Bob Fagan testified to in
21 terms of what he thought the penetration level
22 could be in Minnesota?

23 A. Penetration level for what?

24 Q. Energy conservation.

25 A. Well, this is -- demand resource is

1 different than energy efficiency. This is in
2 addition to energy efficiency. Demand resources
3 are basically getting customers to be able to
4 change their energy usage either in response to
5 incentive payments or cost.

6 Q. Okay. Fair enough. Do you know what Mr.
7 Fagan's proposal was in Minnesota with respect to
8 kilowatt-hours?

9 A. Well, it was -- I don't remember the exact
10 number, but my recollection is that he was talking
11 about how much energy efficiency could be achieved.
12 You'd have to refresh me with regards to the
13 specific number.

14 Q. I can't remember specifically what it was
15 in reference to, but you -- earlier you criticized
16 Mr. Greig's testimony in not giving a capacity
17 credit for wind; do you recall that testimony?

18 A. That's correct.

19 Q. And in Mr. -- do you recall reading Mr.
20 Greig's rebuttal testimony that was filed April
21 23rd?

22 A. I went through it quickly.

23 Q. Okay. How would you assign a -- give
24 capacity credit to wind?

25 A. As we did in South Dakota, we would

1 assume -- and as I discussed before -- I don't know
2 whether it was you or Mr. Binek -- I would
3 assume -- I'd take a conservation value --

4 Q. Conservation value of what? I'm sorry?

5 A. A conservative percentage, a 15, 20
6 percent capacity credit. You assume that if you
7 build 100 megawatts of wind, that -- that gets 20
8 megawatt credit towards meeting peak demand, so
9 then --

10 Q. But my question is: Do you know how --
11 under what circumstance would an organization like
12 the Midcontinent Area Power Pool or Midwest
13 Reliability Organization actually assign credit to
14 wind?

15 A. Oh, they have a set of rules whereby they
16 look at -- I think it's the peak -- it's certain
17 hours around the peak load over a certain number of
18 months, is my recollection of how it was done. So
19 first they'll project it for a year or a couple of
20 years, and then based on actual plant output they
21 will then modify that.

22 Q. Well, isn't it true that you'd actually
23 have to assign firm transmission to the wind?

24 A. Sure.

25 Q. Yeah. And in your analysis did you ever

1 assign firm transmission to the cost of your wind
2 proposals?

3 A. No. We didn't do -- there's no "our
4 analysis." We responded to Mr. Greig.

5 Q. Have you ever evaluated the cost of the
6 wind option assigning a firm transmission
7 capability to that option?

8 A. Yes. I believe in one of the pieces of
9 testimony we did. Maybe it was South Dakota we did
10 look at that.

11 Q. But not here?

12 A. In North Dakota, no, because, again, we
13 were just responding to Mr. Greig, and we did not
14 make an adjustment in the numbers that I guess have
15 now been stricken.

16 Q. There's been some discussion about natural
17 gas prices and what may happen to that, and I think
18 that the -- probably the best answer was that it's
19 very complicated in light of future CO2 regulation,
20 but you've mentioned a couple of times that you
21 paid a great deal of attention to studies performed
22 by EIA, Department of Energy. Were there others?

23 A. EPA, National Gas Council, MIT and Duke.

24 Q. With respect to the EIA, we talked about
25 it in Minnesota, about some of the assumptions that

1 were behind some of those studies that would seem
2 to conclude that natural gas prices aren't going to
3 increase in light of federal CO2 regulation?

4 A. That's right. Your cross convinced me
5 that some of the scenarios were unrealistic because
6 they had wildly inflated estimates of how much new
7 nuclear power would be added or new biomass would
8 be added, and so we went back and we looked at
9 scenarios in which the amounts of new nuclear
10 capacity and biomass were far more constrained and
11 saw that even in those scenarios there's not a
12 major impact in the near term. Over time it may
13 get up to 10, 15 percent increase in natural gas
14 prices, but there wasn't much of a major impact in
15 the short-term.

16 Q. Some of those studies included like
17 300,000 megawatts of new coal with carbon capture
18 sequestration by 2030; is that --

19 A. Right. And we talked -- your cross, to
20 give you credit, taught me that, yes, it's
21 important to focus on scenarios that don't have
22 such wildly inflated estimates of new capacity
23 that's added. But even if you look at other
24 studies, other than the EIA, which don't make those
25 same wild assumptions, they also don't show much of

1 an increase, if at all, in natural gas prices, but
2 then again, it is complicated.

3 Q. I didn't understand the question -- or
4 excuse me, your response to Ms. La Seur's question
5 about the no-cost allowances, and I think you said
6 something like we included the fact that there may
7 be no-cost allowances in our original allowance
8 price guesstimates. Can you go through that again
9 for me briefly?

10 A. Well, I wouldn't call it guesstimates. In
11 our forecast of future prices we reduced them from
12 what they might otherwise have been assuming that
13 some were allocated freely. Okay. Are you with
14 me?

15 Q. Yeah, I think. Go ahead.

16 A. Then if we had to -- I mean, if we assumed
17 that there was no free allocation, the price would
18 have been higher. The average price per ton of CO₂
19 would have been higher, because when there is free
20 allocation, you're averaging -- some you're paying
21 for and some you're getting free, so that the
22 average price -- no matter what proportion you
23 have, the average price is going to be lower.

24 Q. Your testimony in Minnesota, was it not,
25 Mr. Schlissel, that under no circumstance would

1 Congress ever allocate any no-cost allowances to a
2 unit like Big Stone II? Wasn't that your
3 testimony?

4 A. Correct. But it could have been free
5 allocation -- or there still could be to existing
6 power plants. So that free allocation comes into
7 the equation even if existing plants are not
8 grandfathered.

9 Q. And so you're -- excuse me.

10 A. So that our numbers -- if you remember the
11 figure with all the -- the colored triangles and
12 squares and circles that drove Mr. Glaser nuts or
13 he had difficulty with because he's colorblind, the
14 Synapse forecast could have and would have been
15 higher if we had assumed no free allocation. I
16 hope that's clear.

17 MR. GUERRERO: One minute, Your Honor.

18 Q. (MR. GUERRERO CONTINUING) You keep
19 referring to the fact that Otter Tail has made a
20 prediction that the PTC will be extended through
21 the end of 2013. Do you know whether that's a
22 prediction or whether that's just a planning
23 assumption?

24 A. I'm sure it's a planning assumption.

25 Q. Okay. So it's not a corporate prediction.

1 A. I don't know that I used the word
2 "prediction." I meant it's a planning assumption,
3 but I assume that their planning assumptions would
4 reflect what they expect is going to happen or
5 could happen.

6 Q. In the event that we have a situation
7 where we've canceled coal plants and utilities and
8 their customers are forced to go to alternatives,
9 including large amounts of natural gas, and in the
10 event that some predictions indicate that natural
11 gas is going to continue to increase, who's going
12 to bear that risk, Mr. Schlissel?

13 A. I assume ratepayers bear that risk.

14 Q. So what we're talking about here obviously
15 is a great deal of how do we allocate risk fairly,
16 prudently.

17 A. Sure, yes.

18 Q. There are risks across the spectrum.

19 A. How do we study and consider risk and how
20 are they allocated. Yes.

21 MR. GUERRERO: I don't have anything
22 further at the moment, Your Honor.

23 JUDGE WAHL: Mr. Binek?

24 MR. BINEK: Just one more question on
25 these free allocation issues.

1 THE WITNESS: Okay.

2 **RECROSS - EXAMINATION**

3 **BY MR. BINEK:**

4 Q. When you talked about free allocations
5 being included in your analysis or your study, what
6 level of free allocations were included?

7 A. We didn't have a specific number.

8 Q. So how do you figure them in if there
9 isn't any specific number?

10 A. It was just our judgment that we reduce
11 prices by roughly 10, 20 percent from what they
12 would have been otherwise if there had been no
13 allocation.

14 Q. Okay. Thank you.

15 A. The alternative would have been to assume
16 no free allocation and use higher CO2 prices, which
17 probably would have gotten us back to the same
18 place.

19 MR. BINEK: I have no further questions.

20 JUDGE WAHL: Any further questions from
21 the Commission?

22 COMMISSIONER WEFALD: No.

23 JUDGE WAHL: Ms. La Seur?

24 MS. LA SEUR: Nothing further.

25 JUDGE WAHL: Mr. Guerrero?

1 MR. GUERRERO: No, thank you.

2 JUDGE WAHL: That's it. Thank you very
3 much, Mr. Schlissel.

4 THE WITNESS: Thank you very much.

5 COMMISSIONER WEFALD: I do have one
6 question, but it's for Ms. La Seur just to tell me
7 what document she was referring to on page 65,
8 because I found page 65, but I never found --

9 MS. LA SEUR: It's Intervenor's Exhibit
10 17, the NERC reliability.

11 COMMISSIONER WEFALD: It's the NERC
12 report. Okay. Thank you. I have it. I have it.

13 MR. KUNTZ: Can we have five minutes?

14 JUDGE WAHL: We'll be in recess for five
15 minutes.

16 (Recess taken.)

17 JUDGE WAHL: We can proceed, I think, Mr.
18 Kuntz, when you're ready.

19 MR. KUNTZ: Thank you. Montana-Dakota
20 calls Andrea Stomberg.

21 JUDGE WAHL: Ms. Stomberg, I do recall
22 your previous appearance for the prior hearings in
23 this matter, and I have personal knowledge, of
24 course, that you have been advised and are informed
25 concerning perjury. Accordingly, you understand,

1 of course, that your testimony continues under oath
2 and subject to the penalties of perjury.

3 MS. STOMBERG: I do.

4 JUDGE WAHL: Mr. Kuntz.

5 **ANDREA STOMBERG,**
6 having been previously duly sworn, was examined and
7 testified further as follows:

8 **DIRECT EXAMINATION**

9 **BY MR. KUNTZ:**

10 Q. Please state your name?

11 A. Andrea Stomberg.

12 Q. And whom are you employed by?

13 A. Montana-Dakota Utilities Company.

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

15 A. Vice president of electric supply.

16 Q. Could you tell the Commission briefly what
17 your responsibilities are in that position?

18 A. Certainly. I oversee power production,
19 transmission communications.

20 Q. And you prepared -- you testified in this
21 proceeding earlier at the previous hearing; is that
22 correct?

23 A. I did.

24 Q. And have you caused to be prepared
25 prefiled supplemental testimony and prefiled

1 rebuttal testimony?

2 A. I have.

3 Q. I'm showing you what's been marked as
4 Exhibit MDU 213. Is that a copy of your
5 supplemental prefiled direct testimony?

6 A. It is.

7 Q. Do you have any changes or corrections to
8 make to that testimony?

9 A. I do. On page seven, if I can find it,
10 line 13, I realized as I reviewed this last night
11 that some of these percentages were incorrect, and
12 I thought we should take this opportunity to
13 correct those. They're minor changes, but line 13,
14 72 percent coal. I think it was 77. 72 percent.
15 Line 14, 24 percent dual fuel turbines, and under 4
16 percent wind.

17 Q. Four, f-o-u-r?

18 A. F-o-u-r, four. So 72, 24 and 4. I think
19 that should add up, I hope. And then on line 17
20 then, we would need to change the 82 percent to 78
21 percent, and that would complete my few little
22 changes.

23 Q. To Exhibit 213. What about to 216? Do
24 you have any changes or corrections to that
25 exhibit?

1 A. Not that I noted.

2 Q. And if I were to ask you the questions
3 that are set out in Exhibits 213 and 216, would
4 your answers be the same with those corrections?

5 A. They would.

6 MR. KUNTZ: We would offer Exhibits 213
7 and 216.

8 JUDGE WAHL: Ms. La Seur?

9 MS. LA SEUR: Yes. No objection.

10 JUDGE WAHL: Mr. Binek?

11 MR. BINEK: No objection.

12 JUDGE WAHL: Exhibits MDU 213 and 216 are
13 each received.

14 Q. (MR. KUNTZ CONTINUING) Ms. Stomberg, also
15 in front you, I believe, is 213A. Is that a
16 summary of your testimony?

17 A. It is.

18 Q. At this point could you go through and
19 provide the Commission a summary of your
20 supplemental direct and rebuttal testimony?

21 A. Sure. As a result of the change in the
22 size of the Big Stone II Plant -- proposed Big
23 Stone II Plant and a number of other significant
24 changes, Montana-Dakota updated a resource planning
25 analysis, and in this update we reaffirmed our load

1 forecast, our level of participation in the
2 proposed plant, plant costs, as well as assumptions
3 about the market and other generation alternatives.

4 This analyses supported ownership of
5 approximately 130 megawatts of a 500 megawatt Big
6 Stone II Plant on line in 2013. This plant would
7 allow Montana-Dakota significant economies of scale
8 and efficiencies related to location and boiler
9 design, as well as participation with partners
10 experienced in plant design and operation.

11 In our analysis we did not adjust the
12 modeled natural gas price to account for likely
13 increases in the cost of natural gas with future
14 carbon regulations. Montana-Dakota continues to
15 agree to the conditions recommended by the
16 Commission expert, Mr. Deason, and is willing to
17 update the Commission with regard to new cost
18 estimates that the plant participants will obtain
19 prior to financial close.

20 In response to concerns of Mr. Schlissel
21 on behalf of the intervening parties,
22 Montana-Dakota believes that Big Stone II is cost
23 effective even with reasonable estimates of future
24 carbon regulations.

25 Montana-Dakota considers that Big Stone II

1 is a stepping stone to our future, providing better
2 fuel efficiency and lower carbon dioxide emissions
3 than our existing fleet, allowing us to reduce the
4 emissions from our existing plant and provides a
5 good location for future carbon capture.

6 Montana-Dakota's analysis of the project
7 uses reasonable assumptions. Modeling by PA
8 Consultants indicates Big Stone II is a less costly
9 alternative than gas/wind, and Montana-Dakota
10 believes that Big Stone II is a prudent supply
11 source for our customers.

12 Q. Does that complete your summary?

13 A. It does.

14 MR. KUNTZ: We would offer Exhibit 213A.

15 JUDGE WAHL: Ms. La Seur?

16 MS. LA SEUR: Good afternoon, Ms.
17 Stomberg.

18 JUDGE WAHL: No, no, no, no. Your
19 response to Exhibit 213A.

20 MS. LA SEUR: No objection.

21 JUDGE WAHL: Mr. Binek?

22 MR. BINEK: No objection.

23 JUDGE WAHL: Exhibit 213A is received.

24 MR. KUNTZ: We would offer Ms. Stomberg
25 for cross-examination.

1 JUDGE WAHL: Ms. La Seur.

2 MS. LA SEUR: Yes.

3 CROSS-EXAMINATION

4 BY MS. LA SEUR:

5 Q. Good afternoon, Ms. Stomberg.

6 A. Good afternoon.

7 Q. Would you please turn to page five of your
8 supplemental testimony?

9 A. Supplemental prefiled direct?

10 Q. That's right.

11 A. March 10, page five. I'm there.

12 Q. With regard to your discussion of risk
13 assessment and also the discussion at page seven of
14 the decision not to perform a quantitative analysis
15 of CO2 costs, are you concerned about the risk of
16 future carbon regulation over the life of Big Stone
17 II?

18 A. I'm certainly aware of the impacts carbon
19 regulation could have on our entire fleet.

20 Q. But are you concerned?

21 A. Well, I'm concerned of about any costs
22 that could impact our plans. Yes.

23 Q. And at page seven the decision not to
24 perform a quantitative analysis of CO2 costs, if
25 MDU were not prohibited by state law from

1 considering quantified costs of environmental
2 regulation that may happen in the future in its
3 resource selection process, would MDU have
4 performed a quantitative analysis of a range of CO2
5 costs?

6 A. Well, I don't want to get into any sort of
7 legal analysis, but it seems to me that our company
8 can perform internal analyses that we don't
9 necessarily provide to the Commission for their use
10 in determining the validity of an integrated
11 resource plan. So certainly we have considered
12 what we might think of as reasonable carbon costs.

13 Q. But had you not been barred in this
14 jurisdiction, would this have been part of your
15 normal analysis?

16 A. That we've presented -- certainly we try
17 to be as complete as possible when we present data
18 to the commissions.

19 Q. Is that a yes?

20 A. Sure. That's a yes.

21 Q. As someone whose job is to do risk
22 assessment, do you believe that North Dakota's
23 environmental externality statute limits your
24 ability to present this Commission with a thorough
25 risk assessment for proposed generation projects?

1 A. I think that the statute prohibits us from
2 presenting certain analysis to the Commission for
3 their consideration, but I think that our analysis
4 is complete and adequate.

5 Q. Since North Dakota law has barred MDU from
6 performing this risk assessment, is it MDU's
7 position that North Dakota ratepayers should
8 shoulder the risk associated with potential carbon
9 regulation?

10 A. Your question is should the ratepayers
11 shoulder the risk of carbon regulation?

12 Q. Right.

13 A. Our customers. Yes. Our customers are
14 subject to the costs that we are subject to.

15 Q. And at page six there's reference to
16 modeling -- reference to the recent change in
17 mercury regulations, at line 22 at the bottom of
18 the page. What kind of modeling input changes, if
19 any, did MDU make in response to the recent change
20 in mercury regulations?

21 A. We didn't -- to my knowledge, Mr. Heidell
22 did not make any changes specific to the mercury
23 regulations.

24 Q. Do you recall testifying in the hearing in
25 the matter last year that until problems with

1 sulfur dioxide exceedances in the south unit of
2 Theodore Roosevelt National Park are resolved, it
3 would be impossible to site a power plant in the
4 coal regions of North Dakota?

5 A. I don't recall saying that exactly, but I
6 believe that to be the case. It would be very
7 difficult to site a coal plant in the coalfields of
8 North Dakota.

9 Q. But would you accept, subject to check,
10 that that was your testimony last year?

11 A. Subject to check, sure.

12 Q. And is this still your testimony?

13 A. I do not believe that all of the SO2
14 issues have been completely resolved. I do not
15 know for certain the status. If the SO2 increment
16 issues with regard to the south unit or north unit
17 of Teddy Roosevelt have not been resolved in the
18 state, I think it would be very difficult to permit
19 a coal-fired plant in what we consider the coal
20 fields of North Dakota, which in my mind is the
21 Beulah area.

22 Q. The -- okay. Let's see. Does the -- does
23 the increment issue in North Dakota bear on the
24 decision to choose -- to make the -- bear on the
25 decision to site a power plant in South Dakota

1 rather than North Dakota?

2 A. No. That wasn't -- that wasn't a
3 significant factor in this decision for us.

4 Q. With -- and this is going back to page
5 seven with regard to your testimony that Big Stone
6 II will increase MDU's dependence on coal, and are
7 these numbers still correct after the changes you
8 made, 77 to 82 percent of installed generation
9 capacity?

10 A. 82 changed to 78 percent. Let me make
11 sure -- which line are you talking about? Line 17?
12 Once Big Stone II is constructed and retaining all
13 of our existing generation, the percentage of coal
14 generation in our mix would increase to 78 percent.

15 Q. The mix increases -- so now from 72 to 78
16 percent?

17 A. I'm sorry. Mine says -- are we on line 13
18 or are we on line 17?

19 Q. Well, I think we're on both because I'm
20 asking about --

21 A. Okay. Oh, I'm sorry. Now I'm tracking
22 with you. I'm a slow study. 72 to 78, correct.

23 Q. Okay. And in recommending this six
24 percent increase in coal dependence in MDU's
25 installed generation capacity, is fuel diversity a

1 factor in your risk assessment?

2 A. Fuel diversity is a good thing, so, yes.

3 Q. And how did fuel diversity and concern for
4 fuel diversity factor in your decision to increase
5 dependence on coal?

6 A. Well, there's a couple ways you can look
7 at it. There can be fuel diversity within a solid
8 fuel. So we have fuel diversity with regard to a
9 subbituminous resource that we'd be using in one
10 unit versus a lignite potential.

11 The other thing that's, I think, key to
12 this is the statement about retaining current
13 generation. Our existing fleet is an old fleet of
14 our -- of the generation that we own and run. It's
15 an old fleet, and we have to take a broad picture
16 and look at what we're running now and what our
17 future might look like in terms of ultimately how
18 we move the mix of resources in our fleet.

19 Q. But doesn't any new generation add a new
20 generation unit to what is an older generation
21 fleet?

22 A. Yeah. Unless you retire one.

23 Q. Okay. Does MDU intend to comply with the
24 North Dakota renewable energy objective?

25 A. Montana-Dakota certainly is aware of the

1 interest in wind in our service area. We also are
2 aware of the concern of our customers with regard
3 to cost, and we'd be looking at cost-effective ways
4 to meet the REO.

5 Q. So is that a yes, there is an intent to
6 meet the objective?

7 A. There is an intent to look at meeting it
8 in a cost-effective manner. Yes. If I had to go
9 out and buy wind at a higher cost, I would have to
10 think very hard about doing that -- higher cost
11 than a substitute generation.

12 Q. Does the objective place an additional
13 weight on the scales between wind or renewables and
14 other forms of generation for MDU?

15 A. I'm not sure I understand your question.

16 Q. As between two generation sources that
17 would otherwise have been weighed on a pure cost-
18 effectiveness basis, does the objective provide any
19 additional motivation for MDU to choose renewables
20 over non-renewables?

21 A. It would be some part of additional
22 motivation, I'm sure.

23 Q. Are you able to say anything about the
24 weight of the objective in the decisionmaking
25 process?

1 A. No. I couldn't quantify that.

2 Q. What amount of additional renewable and
3 recycled energy would be necessary on MDU's system
4 to comply with this objective at a utility level?

5 A. Well, if we were starting from zero, about
6 60 megawatts of some sort of renewable to meet that
7 ten percent of energy sold at retail, which is I
8 think what the REO calls for.

9 Q. There are a few questions that I've
10 already asked Mr. Uggerud that I'd like to ask you
11 about, as well. Would you agree that this
12 Commission should have the most current, most
13 up-to-date information about the Big Stone II
14 project when it makes its decision in this
15 proceeding?

16 A. The most up-to-date as possible, yes, I
17 agree.

18 Q. Is it fair to say that MDU has confidence
19 in the Big Stone II capital cost estimate presented
20 in this proceeding?

21 A. We understand that it's an estimate, but
22 we have confidence in it.

23 Q. And would you agree that MDU has
24 confidence in the evidence in the rebuttal
25 testimony presented by Mr. Rolfes in this

1 proceeding regarding capital costs?

2 A. Yes.

3 Q. Is MDU willing to commit to limit its rate
4 recovery from the Big Stone II project to its share
5 of the current project capital cost estimate?

6 A. No.

7 Q. Is MDU willing to agree to limit its rate
8 recovery to any set percentage increase above the
9 current cost estimate?

10 A. No.

11 Q. Is MDU willing to agree to limit its rate
12 recovery with regard to any carbon costs that may
13 attach to Big Stone II generation in the future?

14 A. No.

15 Q. If this Commission makes a finding of
16 prudence and financing turns out to be more
17 expensive than anticipated, who will bear that
18 cost? MDU shareholders or ratepayers?

19 A. The ratepayers, the people that use the
20 energy.

21 Q. And isn't this yet another blank check
22 that you're asking this Commission to write on
23 behalf of ratepayers?

24 MR. KUNTZ: Objection. Argumentative.

25 JUDGE WAHL: Sustained.

1 Q. (MS. LA SEUR CONTINUING) Turning to your
2 rebuttal at page seven, it's the second to the last
3 page, and you make reference at the top of the
4 page, lines one, two, three, to the Diamond Willow
5 plant and overall reduction in company carbon
6 emissions of approximately eight percent.

7 A. Mm-hmm.

8 Q. How do you calculate your estimate that
9 Big Stone II along with Diamond Willow will reduce
10 company carbon emissions by eight percent?

11 A. That was a modeled -- a ProSIM model,
12 which looks at the dispatch of our plants based on
13 fuel cost and variable cost and dispatches them
14 effectively.

15 Q. Is that part of the record?

16 A. No, I do not believe it's part of the
17 record.

18 Q. Diamond Willow represents less than one
19 percent of electrical generation on the MDU system;
20 is that right?

21 A. About four percent of our installed
22 capacity.

23 Q. Four percent. Okay.

24 A. Of our installed capacity.

25 Q. From which less efficient plants do you

1 anticipate that MDU will be able to displace
2 generation when Big Stone II goes on line?

3 A. Well, again, that's a complicated answer,
4 but typically Diamond Willow is a price taker.
5 When it's generating, it is sold into the market or
6 is used to meet our load, as it were. After that
7 our dispatch order is -- you know, Coyote and Big
8 Stone, of course, are our lowest cost baseload
9 units followed by Lewis & Clark and the Heskett
10 units, and absent the use of any kind of peaking or
11 gas, it would likely be our Heskett Unit I, which
12 is our least efficient unit.

13 Q. Do you currently use market purchases as
14 part of your overall generating capacity?

15 A. Yes.

16 Q. Would some of those be displaced by Big
17 Stone II?

18 A. Absolutely. That's one reason we need to
19 build the plant.

20 Q. If your forecasts are correct and there is
21 load growth such that your reserve margins will
22 disappear by 2015, won't it be impossible to
23 displace any generation less efficient or not?

24 A. Did I say that our reserve margins will
25 disappear by 2015? I'm sorry? Who's reserve

1 margins will disappear by 2015?

2 Q. Well, what is your testimony then with
3 regard to reserve margins? Will there be
4 sufficient reserve margins by 2015?

5 A. For our particular --

6 Q. For MDU, yes.

7 A. For MDU? Well, we make sure we will have
8 our reserve margins. That's the way we do
9 business. We will have our reserve margins for our
10 load.

11 Q. Without the addition of Big Stone II will
12 there be sufficient --

13 A. We would have to continue to buy it.
14 Without Big Stone II we would buy it, we would
15 build a combustion turbine, we would get it because
16 that's our obligation.

17 Q. And so your testimony that Big Stone II
18 would displace generation refers to current market
19 purchases?

20 A. Yes.

21 Q. Okay. Referring to your rebuttal
22 testimony at page five and the reference to the
23 anticipated financial close in first quarter of
24 2009, lines 19 and 20, will a prudence
25 determination from this Commission prior to the

1 financial close affect the outcome of MDU's
2 decision about whether to proceed with
3 construction?

4 A. Yes.

5 Q. So you are in effect asking the Commission
6 at this point to commit ratepayers to this
7 investment that MDU, itself, is not yet willing to
8 commit to?

9 A. Well, we are committed to developing this
10 resource, but we -- if we can get Commission
11 assurances that this is a prudent decision, it will
12 impact our ability to -- it should improve our
13 financing, it gives certainly our shareholders much
14 more confidence in our ability to recover this, and
15 I'm not sure if I've answered your question. Maybe
16 you would want to restate it if I haven't.

17 Q. Well, my question is: If MDU and OTP are
18 waiting on the Commission's commitment of --
19 commitment to rate recovery to make its own
20 commitment to contracting for this plant, aren't
21 ratepayers being asked to buy in before MDU
22 shareholders are willing to?

23 A. Well, we won't make a final decision until
24 financial close. And maybe I'm just -- I'm not
25 sure I'm tracking with your question here. We will

1 have a financial close after we have updated
2 estimates.

3 MS. LA SEUR: I think you've answered the
4 question. Thank you. Nothing further.

5 JUDGE WAHL: I'm sorry? Nothing further?

6 MS. LA SEUR: Nothing further.

7 JUDGE WAHL: Mr. Binek.

8 MR. BINEK: Thank you.

9 **CROSS-EXAMINATION**

10 **BY MR. BINEK:**

11 Q. In your rebuttal testimony you respond to
12 Mr. Deason's request for clarification regarding
13 the potential natural gas price impacts as a result
14 of CO2 regulation, and in your response you state
15 that you believe that enactment of CO2 or
16 greenhouse gas emission regulation will increase
17 the use of and demand for natural gas and will
18 increase the price of natural gas, but you say that
19 rather than speculate as to the magnitude of the
20 impact, MDU did not reflect such impacts in its
21 natural gas price forecast.

22 Does that mean that MDU's natural gas
23 price forecasts are likely on the low side?

24 A. I believe they're on the low side, yes.
25 Conservative, as it were.

1 Q. Well, I'm avoiding the use of the word
2 "conservative."

3 A. I noticed that.

4 Q. Mr. Schlissel is very critical of the cost
5 projections and risks associated with Big Stone II.
6 Do you believe that MDU's cost estimates are
7 accurate based on the information that's currently
8 available?

9 A. I do. Well, I do, but I also see the need
10 to refresh those quotes before financial close,
11 which we have committed to do.

12 Q. Okay. And those were some followups that
13 I had here. And that the final decision on Big
14 Stone II, when will that be made by MDU and the
15 other participants?

16 A. The final decision will be made at the
17 time of financial close, which right now we
18 anticipate to be sometime the first quarter -- I
19 have it in here -- yeah, first quarter of '09,
20 probably February of '09 based on currents.

21 Q. Okay. And if I understand right, there
22 will be updated cost estimates and projections that
23 will be evaluated at that time?

24 A. Absolutely.

25 Q. In your supplemental direct testimony you

1 state that MDU intends to expand the Diamond Willow
2 wind project from the current size of ten megawatts
3 by at least another ten megawatts. What's the --
4 what is the maximum expansion that MDU would
5 consider for the Diamond Willow project?

6 A. Well, the additional ten megawatts will
7 allow us to comply with the Montana renewable
8 portfolio standard. I believe our transmission --
9 or reservation out of that site is for 30
10 megawatts, so we'd have to go back into the MISO
11 queue for additional megawatts at that location,
12 and I don't know if we have anything else under
13 lease there; not to say that we couldn't do both of
14 those things.

15 Q. How long has Diamond Willow been
16 operating?

17 A. Since the first of the year.

18 Q. Do you know what the average capacity
19 factor for that facility has been?

20 A. About 38 percent.

21 MR. BINEK: Okay. I have no further
22 questions. Thank you.

23 JUDGE WAHL: Questions by the Commission?
24 Commissioner Wefald.

25

EXAMINATION

BY COMMISSIONER WEFALD:

Q. I want to go back to page five of your testimony. Let's see. Well, the financial close. Let's just talk a little bit more about that.

A. Which --

Q. That's on the bottom of page five of your rebuttal testimony.

A. Thank you.

Q. Will the final decision on plant construction -- is it only MDU that that's going to be the time of financial close, the first quarter of 2009?

A. No. All the participants will make the final decision at that time.

Q. Okay. And by that time you'll have received updated bids and you'll have approached financial institutions about bonding and financial costs?

A. It's anticipated everyone will bring big bags of money to the table.

Q. It'll be interesting to see what happens.

A. Yes, it will. But, yeah, that is the time when we all have to look at each other and say, I can -- I can finance this, can you? Everybody has

1 to say I can finance my part of this plant, is at
2 financial close. We need to have the costs and
3 understand and believe in the financing mechanisms
4 of all the partners -- participants.

5 Q. What risk -- what would prevent the
6 company from saying let's go ahead at that time if
7 you know that all of the risk is going to ship to
8 the ratepayers?

9 A. Well, we're certainly not guaranteed
10 complete rate recovery. We have to come to our
11 commissions and ask for -- for reasonable cost in
12 rates, and if you find that our costs -- we weren't
13 able to control the costs of that plant in a
14 reasonable manner, I assume the Commission has the
15 right and the obligation to say you can't recover.
16 So we would assume that if we move forward with
17 that plant on the basis of capital costs which we
18 believe are prudent and real and we construct the
19 plant -- and there will be a number of people
20 watching Otter Tail very closely to make sure this
21 plant is constructed well -- I would expect that it
22 would be reasonably straightforward to come to the
23 Commission and try to make that showing, that we
24 would expect to have rate recovery on what we would
25 have considered to have been prudently incurred

1 costs.

2 Q. Yesterday I mentioned about a plant in
3 Illinois that was a nuclear plant that the risk
4 shifted to shareholders partway through because of
5 overruns of costs. So is that still a risk for MDU
6 in this particular case?

7 A. Well, I suppose there's always a risk if
8 something completely unforeseen happens, and again,
9 one of the -- to me the really great things about
10 Big Stone II is we have five different entities
11 with a combined huge amount of construction
12 experience and power plant experience that will be
13 working with Otter Tail in the construction of this
14 plant. To me that mitigates that risk. So you've
15 got an awful lot of smart people working with Otter
16 Tail to try to make sure this is done as
17 efficiently as possible. It's not to say something
18 couldn't happen.

19 Q. That is a big concern of mine, just on the
20 record.

21 A. Well, it's a concern. You know, it's
22 always the concern that you can't completely
23 control your destiny.

24 Q. On page seven, Our estimates are -- line
25 one, Our estimates are that Big Stone II, along

1 with the existing Diamond Willow wind plant, will
2 allow Montana-Dakota to displace generation from
3 its least efficient coal plants, resulting in an
4 overall reduction of carbon -- company carbon
5 emissions of approximately eight percent.

6 But another place in your testimony, which
7 I couldn't find just now, it said that you're
8 planning to sell the extra power that you have at
9 the first part -- once the project is built for the
10 first few years onto the MISO market. So which is
11 correct? Which is correct?

12 A. Well --

13 Q. One is that you're going to be selling the
14 extra power onto the MISO market -- that's in one
15 part of your testimony -- and another is that you
16 would be shutting down least efficient coal plants
17 and so then your company would need all of that
18 power. So which is the correct statement here?

19 A. Both are correct.

20 Q. Why? How can that be?

21 A. Sure. And I didn't say shutting down. I
22 said displaced generation from.

23 Q. So what does that mean if it's not
24 shutting down?

25 A. Within a ProSIM run, which we use in our

1 forecasting, you dispatch your plants economically
2 to meet your own load, and this is the problem we
3 have now in the MISO market -- we're certainly part
4 of the MISO market -- and MISO directs the dispatch
5 of our plants --

6 Q. I understand that.

7 A. -- based on their needs. We still are
8 responsible for making sure that our system --
9 Montana-Dakota's integrated system has adequate
10 generation. Our ProSIM run allows us to dispatch
11 our plants for our load, and in that modeled
12 scenario it shows that the energy from Diamond
13 Willow allows us to back down Heskett Unit I. So
14 within that modeled scenario for our system Diamond
15 Willow displaces some of the generation.

16 Q. I understand that Diamond Willow does
17 because it has no energy cost, I mean, as far as --
18 it has no costs as far as --

19 A. Well, it still has some variable costs,
20 but nonetheless --

21 Q. But it's very, very low, very low, so
22 those are always the first choice resources on the
23 market?

24 A. Sure. They're price takers. Right.
25 Absolutely.

1 Q. But -- but Big Stone II could have a
2 higher cost than some of your older plants.

3 A. Oh, it's not -- we don't expect that it
4 will.

5 Q. But it does. I mean, you're telling us
6 it's eight-and-a-half cents?

7 A. Sure. Fuel cost it will. It will.

8 Q. And your other plants are producing at,
9 let's say, three, and so why --

10 A. You're correct there.

11 Q. So why would that be -- why would this
12 displace any of those older resources unless you
13 chose to shut them off; unless you decided not to
14 use them any longer? How in the world are you
15 going to displace, you know, carbon emissions if
16 your choice is going to be based on price?

17 A. My understanding of the fuel cost and the
18 dispatch price for Big Stone II is that it will
19 dispatch before Heskett or Lewis & Clark.

20 Q. Well, what's the cost of those? I know
21 that they go on -- get the least cost?

22 A. You know, quite frankly -- I do not --

23 Q. Pricing --

24 A. I do not have those costs with me right
25 now, Commissioner, and certainly I could get them

1 very easily, obviously. The dispatch order -- is I
2 know the dispatch order, those dispatch last.

3 Q. Maybe you could -- maybe you could get
4 that for us.

5 A. Sure. You want the --

6 Q. The dispatch order and --

7 A. Well, the dispatch order --

8 Q. -- what order it would be in with Big
9 Stone II included in the mix. So let's say you'd
10 say your Diamond Willow would be first probably.

11 A. That's a price taker.

12 Q. And then submit to us a list of in what
13 other they come next under the vocational marginal
14 price concept dispatch.

15 A. Okay. I can certainly do that. I mean,
16 as I recall our modeling, our capacity factors
17 for -- and our utilization of Big Stone II is very
18 high, and the capacity factors utilization of our
19 older units backs down into the 40 percent after
20 Big Stone I comes on, and I don't want to try to
21 get into the weeds of that will modeling because I
22 didn't run it, but we'll certainly provide that to
23 you.

24 Q. Okay. That would be great.

25 A. Not a problem.

1 Q. That would be great.

2 JUDGE WAHL: All right. Excuse me,
3 Commissioner. For the record, Mr. Kuntz, that will
4 be late-filed Exhibit MDU 220?

5 MR. KUNTZ: Correct.

6 JUDGE WAHL: And for the record, Mr.
7 Kuntz, what is the description of this exhibit?

8 MR. KUNTZ: This will be the dispatch
9 order for the MDU electric generation plants,
10 including the anticipated Big Stone II.

11 JUDGE WAHL: All right. Commissioner, you
12 may proceed.

13 Q. (COMMISSIONER WEFALD CONTINUING) Okay.
14 And then if you're -- how long do you anticipate
15 that you'd be selling -- well, let's just say
16 this -- let's ask this question first. For the
17 first five years that the plant is in operation, in
18 order to meet your requirements for your own
19 customers with the reserve margin that's then in
20 place, how many megawatts will you need from Big
21 Stone II for the first five years that it's
22 actually running? So let's say it's in place by
23 2014, and so let's say until 2020, how will you --
24 what proportion of the megawatts -- of the 133 will
25 you need for your own customers' use to meet your

1 reliability requirements?

2 A. I do not know that.

3 Q. Okay. Can you submit that to the
4 Commission, as well?

5 A. We would have to dig that out of the
6 models. Megawatts used for MDU load -- I'm sorry.
7 I didn't get the years.

8 Q. To meet your reliability requirements?

9 A. Right. I didn't get the dates.

10 Q. I had said the first five years, so let's
11 say by 2020?

12 A. 2020. Sure, sure.

13 Q. That would be six years assuming that your
14 schedule goes on schedule. Because I'm just
15 curious about how much is needed by your own load
16 versus -- I know you had said you're going to grow
17 into this need for this plant?

18 A. Sure. You know, we lost the --

19 JUDGE WAHL: Excuse me. I'm sorry. For
20 the record, Mr. Kuntz, this will be MDU late-filed
21 Exhibit 221, and the description for that exhibit
22 is?

23 MR. KUNTZ: Number of megawatts of the Big
24 Stone II Plant needed to meet MDU's load
25 requirements for reliability purposes between the

1 years 2014 and 2020.

2 JUDGE WAHL: All right. You may continue.

3 THE WITNESS: I think it's important to
4 remember that Big Stone II will replace the 66
5 megawatt baseload contract we had with Basin that
6 expired in 2006, and since then our load grows
7 about five megawatts a year, and so we've got that
8 need. We're purchasing capacity -- 110 megawatts
9 of capacity we're purchasing this year, and then we
10 bought about 300,000 megawatt hours of energy on
11 the market last year to meet our load. So
12 there's -- you know, there was a big hole in our
13 generation capability when the Basin contract
14 expired. That said, certainly I can provide this
15 information to you. Not a problem.

16 Q. (COMMISSIONER WEFALD CONTINUING) Thank
17 you. And if you want to do it on a yearly basis,
18 that would be fine, building up to 2020. That
19 would be helpful so that I have a better sense of
20 that. When I read this, I just knew I had that
21 question and didn't know how much and when you --

22 A. We'll get it to you.

23 Q. Yes. Thank you. All right. And then my
24 next question relates to -- relates to your future
25 purchases for energy. Otter Tail, remember, went

1 through with us that they're planning to purchase
2 additional energy and capacity in the next -- up
3 until the year -- let's say the next 15 years, and
4 they went through and they said, all right, we're
5 going to need to have -- Mr. Uggerud -- he said
6 they were going to need to purchase approximately
7 400 megawatts of new energy in that time period,
8 and the Big Stone is a piece of that, and so he had
9 the amount of energy he was going to purchase
10 from -- percentage he was going to purchase from
11 coal, renewables, natural gas -- peaking plants or
12 whatever -- natural gas, and demand side
13 management. Can you give me the same breakdown for
14 MDU of what you anticipate up to the year 2022?

15 A. Well, once --

16 Q. What are your energy needs going to be in
17 that time, and if Big Stone is 100 percent of your
18 energy needs during that time, you could just tell
19 me, I'm going to be purchasing 100 percent coal and
20 that's going to take care of it.

21 A. Well, when Big Stone comes on line in
22 2013, it will pretty much replace our capacity
23 purchases up to that date, roughly, roughly.

24 Q. So that's 133 megawatts.

25 A. Roughly, yeah. And then within two years

1 we would be deficit again and we would likely be
2 building a combustion turbine at that point in
3 time.

4 Q. All right. And that would be about how
5 many megawatts?

6 A. Well, usually we would expect that to be a
7 30 to 45 megawatt unit. Kind of depends on what's
8 available out there.

9 Q. And so that's natural gas?

10 A. That's natural gas. Now -- and then I
11 think our resource plan shows another CT coming on
12 line in 2018 or so.

13 Q. 2018. And that would be approximately --

14 A. About the same. About 30, 45 megawatts.
15 Now, understand that that's based on a least-cost
16 scenario, and we've been in here before saying
17 sometimes least cost isn't best cost. Least cost
18 would not select wind. We may very well want to
19 expand our wind generation, in which case we're
20 going to displace some of -- maybe not the
21 capacity, but we'll displace some of that need for
22 that combustion turbine potentially with the wind
23 and the capacity from that.

24 So it's not a done deal as to exactly what
25 our next resource will be, but in terms of having

1 to go out and buy off the market or contract, we
2 don't expect having to do that. We will expect to
3 build our own.

4 Q. But your integrated resource plan -- and I
5 know it's probably here on file with the
6 Commission, but I'm just asking you to give me this
7 information from it.

8 A. Sure.

9 Q. It's 133 megawatts of coal, approximately
10 90 megawatts of natural gas. Any more renewables?

11 A. Again, in a least-cost plan, they don't
12 get selected.

13 Q. Even against what you've told us the
14 natural gas skyrocketing?

15 A. Even against the -- sure. If we wanted to
16 change those assumptions against the gas prices
17 that were used in our most recent IRP, which were
18 lower than I believe were in the market now, so
19 there's no question that you could run this model
20 every day and have a slightly different answer. So
21 we would need to refresh -- we will refresh our IRP
22 absolutely before we would go forward and commit to
23 any new resource.

24 Q. But at the present time there's no new
25 renewables in your IRP plan?

1 A. Not in the IRP based on the least-cost
2 model results.

3 Q. And is there any demand side management in
4 there of a certain percentage?

5 A. Yes, there certainly is. In our IRP the
6 DSM and the efficiency programs that we have in
7 place now have been subtracted from the forecast.
8 If our forecast was for 100 and we had ten
9 megawatts of DSM out there, our forecast should
10 have read 110. It reads 100 because it's been
11 subtracted out. In all our models it's been
12 accounted for, so it's subtracted out, and then in
13 our other models -- we have another four programs
14 that we're getting ready to implement, and in the
15 analysis that Mr. Heidell did -- and he can get
16 into the weeds on this one. I'd rather he talked
17 about the details because it's his model. Those
18 programs were selected prior to Big Stone being
19 selected. So those are also absorbed in that
20 model.

21 Q. Can Mr. Heidell tell me approximately what
22 percentage or what number of megawatts you're
23 talking about with --

24 A. I believe he -- I believe he can.

25 Q. -- conservation programs?

1 A. He'll know what's in the model. Yes.

2 Q. You don't?

3 A. Well, rough numbers, but really I'd rather
4 he pulled that out. We have about six-and-a-half
5 megawatts of interruptible right now and about
6 38,000 megawatt-hours of avoided electric usage in
7 the existing programs in place today.

8 Q. Six-and-a-half?

9 A. Megawatts of interruptible, yeah.

10 Q. And so do you -- can you give me a
11 projection of what that could be by 2020?

12 A. I don't -- I don't remember what we have
13 in the model.

14 Q. All right.

15 A. Or we can provide it otherwise.

16 Q. Thank you. Do you know the total
17 megawatts that you need then by about 2020?

18 A. I know by 2013 we'll be deficit 110. Our
19 obligation in 2013 is going to be about 650. 20 --
20 another 70 megawatts on top of that, so with a
21 reserve maybe 720 megawatts. You know, I learned
22 long ago I should never do math after lunch.

23 Q. That's your total megawatts for a whole
24 year's --

25 A. That's what I would roughly estimate our

1 demand will be.

2 Q. All right. And so that's not new.

3 That's --

4 A. No.

5 Q. That's the difference between what you
6 have right now?

7 A. Yeah. That should be in our load
8 forecast.

9 Q. So 133 and about 90 of new natural gas,
10 and that would add up to about right, about 220
11 new.

12 A. Well, I'm not sure. I was adding up in my
13 mind what I thought our load forecast roughly would
14 be versus our installed capacity. Did you want our
15 installed capacity?

16 Q. Actually, you know, I had the 133 of new
17 coal and then you gave me 45 megawatts of natural
18 gas in the next few years and 45 megawatts of
19 natural gas in 2018.

20 A. Right.

21 Q. And so that adds up to about 223.

22 A. Right. I got the same number. That's
23 good.

24 Q. Is that pretty good for the new?

25 A. Yep.

1 COMMISSIONER WEFALD: Okay. All right.

2 Thank you.

3 JUDGE WAHL: Commissioner Clark.

4 COMMISSIONER CLARK: Thanks.

5 EXAMINATION

6 BY COMMISSIONER CLARK:

7 Q. Good afternoon.

8 A. Good afternoon.

9 Q. I'd like to ask a few questions on Diamond
10 Willow. Refresh my memory. Are the costs for
11 Diamond Willow -- is that a purchase power
12 agreement that MDU has or is it being incorporated
13 into rate base at some point?

14 A. It will be incorporated into rate base.
15 That is an MDU-owned facility.

16 Q. It is. Okay. So right now North Dakota
17 ratepayers haven't seen any --

18 A. No.

19 Q. -- impact from Diamond Willow other
20 than --

21 A. Energy.

22 Q. -- whatever energy has been displaced from
23 the FCA.

24 A. That's right.

25 COMMISSIONER CLARK: Okay. I think that's

1 my only question right now. Thanks.

2 JUDGE WAHL: Commissioner Cramer.

3 EXAMINATION

4 BY COMMISSIONER CRAMER:

5 Q. I want to try to get to maybe a clearer
6 answer, if I understood Ms. La Seur's line of
7 questioning, regarding MDU and I guess the
8 partners' expectation that -- maybe I'm
9 characterizing her question somewhat -- but that
10 all of the -- the burden of risk -- all of the risk
11 is being borne by ratepayers in this proceeding as
12 opposed to the company; that this is a risk the
13 companies aren't willing to make without this -- or
14 this pre-prudence determination. If I'm
15 mischaracterizing the question, I apologize.

16 A. No. I think that's correct.

17 Q. Okay. Is it fair to expect, given the
18 climate of things today that -- that any new, major
19 baseload investment would probably come to us for
20 an advance determination of prudence?

21 A. We would even bring a wind project before
22 you for an advance determination of prudence.

23 Q. Okay. So this isn't -- although it might
24 be new to our state and culture, this may be more
25 the norm than unusual.

1 A. I think so. Given the opportunity under
2 the rules to do this, we will ask for this. Yes.

3 COMMISSIONER CRAMER: I have nothing
4 further.

5 JUDGE WAHL: Any further questions from
6 the Commission?

7 | COMMISSIONER WEFALD: I have one.

8 JUDGE WAHL: Commissioner Wefald.

9 | **FURTHER EXAMINATION**

10 BY COMMISSIONER WEFALD:

11 Q. Then why didn't you do it with the Diamond
12 Willow?

13 A. We did go to Montana with the Diamond
14 Willow. I guess that's a fair question. It's also
15 a fairly small project.

16 Q. I know. You'd just said you'd do it for
17 any generation.

18 A. Well, you caught me. We probably should
19 have. Probably should have in hindsight. Correct.

20 JUDGE WAHL: Ms. La Seur?

21 MR. KUNTZ: Oh, do I --

22 JUDGE WAHL: I'm sorry. I'm thinking --
23 I'm not in the routine. I haven't quite adjusted,
24 Dan, to you. Mr. Kuntz.

25

REDIRECT EXAMINATION

BY MR. KUNTZ:

Q. Ms. Stomberg, in response to some questions Ms. La Seur asked you about the effects of price increases after this prudence determination is made, do you recall the commitments that the companies have made in terms of keeping the Commission advised of developments prior to financial close?

A. Yes.

Q. And would that include significant changes in construction costs?

A. Absolutely.

Q. And just to clarify, I believe Commissioner Wefald used the word "bids" prior to financial close. Do you know whether there will actually be bids or will there be estimates or negotiated prices or a combination thereof?

A. Probably a combination thereof.

Q. And then, finally, in addition to the resources that you discussed with Commissioner Wefald, is the company reviewing other possible generation opportunities that may come along in maybe smaller increments in addition to those that you've discussed in terms of the major projects

1 like CT and major wind projects like that?

2 A. Oh, absolutely. We look for things that
3 seem to make sense with us -- for us. In fact, I
4 guess I could probably talk about a press release
5 that we'll have later today for -- where we sign on
6 with Ormat and Northern Border for a waste heat
7 recovery unit at Glen Ullin. That's a wonderful
8 little project.

9 Q. So any of those generation sources could
10 end up supplementing and determining what the
11 company will use for generation sources between now
12 and the year 2020 or even 2015; is that correct?

13 A. I'm sorry?

14 Q. So any of those generation opportunities
15 could be used in lieu of other things that we may
16 not know about today --

17 A. Sure.

18 Q. -- for supplementing our generation
19 requirements between 2015 and 2020, for example.

20 A. Mm-hmm.

21 MR. KUNTZ: That's all I have.

22 JUDGE WAHL: Now Ms. La Seur.

23 **RECROSS-EXAMINATION**

24 **BY MS. LA SEUR:**

25 Q. Ms. Stomberg, there seems to be a lot of

1 reliance on this assumption of 2,009 first-quarter
2 financial close. How confident are you of that
3 date?

4 A. Well, if the project proceeds on the
5 schedule we believe it will, we believe that that's
6 a reasonable date, but the project has slipped a
7 number of times, as everyone in this room is aware,
8 and the financial close may also slip.

9 Q. And is that financial close date
10 consistent with a 2013 commercial operations date?

11 A. At this point in time it is, yes.

12 Q. If the applicants keep the PSC apprised
13 post prudency ruling of cost, what difference will
14 that make?

15 A. To whom?

16 Q. Well, to anybody. Aside from
17 informational purposes, will that change anything
18 about the cost to ratepayers, about the costs to
19 the applicant?

20 A. I guess in a situation where we would come
21 forward to the Commission and say, well, the price
22 has increased 30 percent, we would also have to
23 bring to them, I believe, some discussion as to the
24 entire market and why that is reasonable.

25 Q. Would you be required to bring any such

1 discussion or modification of the application
2 proposal?

3 A. We would -- we would -- we would accept a
4 recommendation to do that or request to do that.

5 Q. Would the PSC have any authority to
6 withdraw its prudence ruling at that time?

7 A. I don't know.

8 Q. In data requests the intervenors asked in
9 a lot of different ways for all modeling relevant
10 to Big Stone II. Why did we never get the ProSIM
11 runs that you're referring to now?

12 A. I guess I don't know exactly when that run
13 was done.

14 Q. Is that something you could submit into
15 the record posthearing?

16 A. Certainly.

17 Q. And --

18 JUDGE WAHL: Well, just a minute, please.
19 So do I understand MDU is agreeing to submit this
20 as a late-filed exhibit? Is that it, Mr. Kuntz?

21 MR. KUNTZ: That's my understanding. It
22 would be late-filed Exhibit 222, which would show
23 the ProSIM runs for the dispatch order, including
24 Big Stone II, which would basically kind of tie
25 into one of the earlier requests regarding the --

1 MS. LA SEUR: Let me just clarify my
2 request. We're just interested in the date when
3 these runs were done. We're not going to be able
4 to file any responsive testimony if this is entered
5 into the record. We'd just like to know when this
6 was done.

7 THE WITNESS: Okay. That's different than
8 asking for the run. You want the date that the run
9 was done?

10 MS. LA SEUR: Yes.

11 JUDGE WAHL: All right. That'll be MDU
12 Exhibit 222.

13 Q. (MS. LA SEUR CONTINUING) And on this same
14 topic, the ProSIM runs, isn't a discussion of
15 ProSIM runs pretty theoretical in the real world
16 context where MISO makes the decisions about which
17 plants MDU will run and at what capacity?

18 A. Yes. I would say they're very
19 theoretical.

20 MS. LA SEUR: Okay. That's all I have.

21 JUDGE WAHL: Mr. Binek.

22 **RECROSS-EXAMINATION**

23 **BY MR. BINEK:**

24 Q. I'd just like to follow up on a question
25 that Ms. La Seur asked, and that is regarding

1 the -- what would happen if the -- for instance,
2 the costs increased substantially, unexpectedly
3 prior to or at the time of your projected close,
4 and, you know, what -- what could the Commission
5 do? My recollection, and correct me if I'm wrong,
6 in the law -- and I don't have it before me -- that
7 the Commission can determine that a project is not
8 prudent and that the utility is entitled to recover
9 its costs incurred up to that point. Is that your
10 understanding?

11 A. If a project is abandoned?

12 Q. Well, let me just take a look at the law
13 here.

14 A. Yeah. I guess I don't have it in front of
15 me, either, and I'm not a lawyer, but --

16 MR. KUNTZ: Perhaps, Your Honor, would it
17 be best that we just refer to Section 49-05-16? I
18 mean, we could have Ms. Stomberg read it into the
19 record, but I think the statute speaks for itself
20 in terms of the Commission's authority to
21 reexamine -- or the effect of reexamining a
22 prudence determination.

23 MR. BINEK: That would be fine, if you
24 want to do that. I'm just looking at it right now,
25 also.

1 Q. (MR. BINEK CONTINUING) Would you take a
2 look at 49-05-16, subsection 5, and why don't you
3 just read that.

4 A. The entire section?

5 Q. That subsection into the record.

6 A. "If at any time following an initial
7 Commission order the Commission following a
8 subsequent hearing determines that continuation of
9 a project is no longer prudent or that its prior
10 order should be modified, the public utility may
11 recover in its rates, and in a timely manner
12 consistent with the public utility's financial
13 obligations the amounts the public utility has
14 already expensed, incurred or obligated on a
15 project, including interest expense and return on
16 equity invested in the project up to the time the
17 new order is entered, even though the project may
18 never be fully operational or used by the public
19 utility to serve its customers."

20 MR. BINEK: Thank you. That's all I have.

21 JUDGE WAHL: Any follow-up questions by
22 the Commission? Commissioner Clark?

23 COMMISSIONER CLARK: I just did have one
24 that I had forgotten about.

25

FURTHER EXAMINATION**BY COMMISSIONER CLARK:**

1 Q. The Gascoyne option, I recall at our last
2 hearing we discussed that a bit, and one of the
3 reasons that it was knocked out of consideration
4 early on was this economy-of-scale issue; that it
5 would have to be a smaller plant. Was there any
6 reexamination done of Gascoyne who might be
7 potential partners in that given that this is a
8 little bit more northwesterly project than it was
9 before, at least the power where it will be used,
10 and did the downsizing of Big Stone -- I mean,
11 could it potentially put another plant like a
12 Gascoyne into play?

13 A. Well, we did revisit Gascoyne at a high
14 level at the time of the -- of the downsizing of
15 the plant, and by that time it seems to me, as I
16 recall, you know, we certainly still have the
17 economies of scale issues. The other thing that we
18 had that we didn't have at the time of -- that we
19 had the air permit for the Gascoyne plant was a
20 protest by the Federal Land Manager of
21 Westmoreland's permit down there. So that it
22 seemed like the entire regulatory issue with regard
23 to the air permit in the Gascoyne area had gotten
24 25

1 more complex than it had been at the time.

2 Q. Review that again for me.

3 A. Okay. The -- when Montana-Dakota and
4 Westmoreland went forward with the first
5 probably -- with the air permit -- we did several
6 iterations there, but when we did the air permit,
7 it was approved without protest by the Federal Land
8 Manager. Now, that was a smaller plant than
9 Westmoreland eventually went in with a permit for.
10 Westmoreland, I think, put in for a 500 megawatt
11 plant down there, and I understand that the Federal
12 Land Manager has protested that plant because of
13 the visibility impact.

14 So I'm not sure that the regulatory
15 hurdles are clear even should we want to go back
16 and work with Westmoreland, and I haven't talked to
17 Westmoreland to know if they've identified partners
18 or not, but certainly the issues in Minnesota with
19 regard to coal-fired electrons going into that
20 state complicate our ability to find viable
21 partners for that location.

22 Q. Why more so than Big Stone?

23 A. Well, Big Stone has the same issue. I
24 guess I was thinking about other partners that
25 might not want to fight that battle at all.

1 Q. Okay. But as far as -- so you didn't get
2 quite as far as actually penciling things out as
3 far as cost?

4 A. No.

5 COMMISSIONER CLARK: Okay. Thank you.

6 JUDGE WAHL: Any further questions from
7 the Commission? Mr. Kuntz, anything further?

8 MR. KUNTZ: No. Ms. La Seur, anything
9 further?

10 MS. LA SEUR: No thanks.

11 JUDGE WAHL: Mr. Binek?

12 MR. BINEK: No.

13 JUDGE WAHL: Thank you very much, Ms.
14 Stomberg.

15 MR. KUNTZ: Are we ready for our next
16 witness?

17 JUDGE WAHL: Yes, I think so.

18 MR. KUNTZ: Okay. Montana-Dakota would
19 call Jim Heidell, please.

20 JUDGE WAHL: Mr. Heidell, I'm uncertain if
21 I recall you from previous hearings. Did you
22 testify for the previous hearings?

23 MR. HEIDELL: Yes, I did.

24 JUDGE WAHL: Then I can safely say I have
25 personal knowledge that you were advised and

1 informed regarding perjury, and you understand, of
2 course, that your testimony for the supplemental
3 hearings continues subject to the -- under oath and
4 subject to the penalties of perjury?

5 MR. HEIDELL: Yes, I do.

6 JUDGE WAHL: Mr. Kuntz.

7 MR. KUNTZ: Thank you.

8 JAMES HEIDELL,
9 having been previously duly sworn, was examined and
10 testified further as follows:

11 DIRECT EXAMINATION

12 BY MR. KUNTZ:

13 Q. Mr. Heidell, please state your name.

14 A. James Heidell.

15 Q. And whom are you employed by?

16 A. PA Consulting Group.

17 Q. What's your position with PA Consulting
18 Group?

19 A. I am a managing consultant there.

20 Q. What type of work does PA Consulting do?

21 A. Well, PA is a global management consulting
22 firm, so more specifically do you want my
23 experience?

24 Q. What's your role with PA?

25 A. My role in the firm is far more limited.

1 I am an expert in the electric energy sector. I
2 advise utilities on resource planning; I advise
3 private investors on investments related to power
4 plants and whole companies for transactions ranging
5 from a couple hundred million to billions of
6 dollars; and I do a significant amount of market
7 energy forecasting.

8 Q. And it was noted by the hearing officer
9 you previously testified in this proceeding; is
10 that correct?

11 A. That's correct. I testified in June of
12 last year.

13 Q. And for the supplemental hearing did you
14 cause to be prepared supplemental prefiled direct
15 testimony with exhibits and then also supplemental
16 rebuttal testimony -- or prefiled rebuttal
17 testimony?

18 A. That is correct.

19 Q. And showing you first what's been marked
20 as MDU Exhibit 214, prefiled supplemental direct
21 testimony of James Heidell, do you have any
22 corrections or additions to make to that testimony?

23 A. I have one correction to make.

24 Q. Could you point that out to us?

25 A. Yes. On page four, line 12, the answer

1 starts with the word "no." The word "no" should be
2 stricken.

3 Q. Okay. And with respect to MDU Exhibit
4 215, the prefiled James Heidell exhibit tables
5 referenced in your testimony, are there any changes
6 that need to be made to the exhibits?

7 A. No, there are not.

8 Q. And the prefiled rebuttal testimony of
9 James Heidell marked as MDU Exhibit 217, do you
10 have any changes to make to that?

11 A. No, I do not.

12 Q. And if I were to ask you the questions
13 that are contained in MDU Exhibits 214 and 217,
14 would your answers be the same today?

15 A. Yes, they would.

16 MR. KUNTZ: We would offer MDU Exhibits
17 214, 215, and 217 at this time.

18 JUDGE WAHL: Ms. La Seur?

19 MS. LA SEUR: No objection.

20 JUDGE WAHL: Mr. Binek?

21 MR. BINEK: No objection.

22 JUDGE WAHL: MDU Exhibits 214, 215, and
23 217, inclusive, are each received.

24 Q. (MR. KUNTZ CONTINUING) And do you have a
25 summary of your testimony, Mr. Heidell, that's been

1 marked as MDU Exhibit 214A?

2 A. Yes, I do.

3 Q. At this time could you provide the
4 Commission that summary?

5 A. Yes, I will. Good afternoon
6 Commissioners. The scope of my rebuttal testimony
7 is essentially to reexamine the resource planning
8 modeling that was originally presented to you in
9 June of 2007. The changes that are reflected in
10 the supplemental testimony, of course, reflect the
11 changes in Big Stone that have been the subject of
12 this hearing. They also address additional
13 changes, you know, driven by more knowledge or
14 changing market conditions. These additional
15 changes I view as normal in the course of doing
16 resource planning, and the fact that we updated
17 them was just to not present a stale analysis to
18 this Commission.

19 The results of these model runs is that
20 the Big Stone II Plant is still identified as the
21 most cost-effective option.

22 In the rebuttal -- supplemental rebuttal
23 testimony I addressed questions by staff witness
24 Mr. Deason and tried to answer his questions
25 related to the wind production tax credits, the

1 role of the PTCs on -- the role of PTCs and the
2 role of wind in terms of the Montana-Dakota
3 resource expansion plan; addressed the capital cost
4 assumptions that have been the subject of concern
5 to him; and also described how we treated income
6 tax and cost of capital in the model.

7 The -- we presented runs where the
8 production tax credit was assumed to continue
9 actually to 2014. We present runs where the
10 production tax credit is assumed to expire at the
11 end of 2008. I think it is reasonable to
12 consider reasons why the PTC might not be extended
13 in terms of from an economic perspective, although
14 I realize that tax credits tend to be a little
15 sticky.

16 The wind fixed and variable costs do not
17 really depend on the PTC for the most part.
18 Essentially the way we modeled the PTC is a
19 reduction in the total revenue requirement that
20 would be required from Montana-Dakota's customers.

21 Just to be clear, because it's been in
22 many proceedings about how much wind can be
23 absorbed on Montana-Dakota's system, it was not my
24 testimony that by adding more than the Diamond
25 Willow project that there would necessarily be any

1 operational problems. We are continuing to be
2 concerned about that and the costs seem to be
3 properly reflected.

4 Again, continuing with the issues that
5 staff witness Mr. Deason raised, the cost of the
6 natural gas-fired combined cycle gas turbine are
7 actually similar to Otter Tail's, and I think that
8 Bryan Morlock addressed that. The natural gas
9 forecast that we have actually really differs from
10 Otter Tail in terms of the transportation costs. I
11 think Montana-Dakota appropriately considered the
12 cost of delivering natural gas to where the likely
13 generation sites would be as opposed to just
14 generic costs to a hub.

15 And, finally, I believe that the capital
16 costs that we used, essentially 11 percent return
17 on equity as a long-term number, is a reasonable
18 benchmark. I'm not testifying as to a specific
19 number in the near term with what would be
20 appropriate.

21 Finally, responding to DRC's witness, Mr.
22 David Schlissel -- I'm sure I didn't pronounce that
23 correctly either. Sorry.

24 MS. LA SEUR: He's gone.

25 THE WITNESS: I go into a fair amount of

1 detail as to the capital costs of the gas-fired
2 turbines, and I just want to emphasize that these
3 costs come from the 2006 cost assessment. So we've
4 had a lot of discussion about, you know, potential
5 cost increases in the industry, and so to risk
6 using the word, the lower combined cycle costs are
7 actually conservative; that there are many who
8 would argue that the costs of such turbines would
9 be more expensive to Montana-Dakota today.

10 There was, I would say, sort of an
11 allegation that somehow we're biasing the results
12 and we restricted the availability of the model to
13 look at combined cycle turbine. In two
14 supplemental runs referred to as scenarios three
15 and four there's actually no restriction at all.
16 In scenarios one and two they were -- in the model
17 runs that were delivered to DRC they were
18 restricted after 2013, but that restriction was a
19 result of iterative testing.

20 We've also been criticized about these
21 limits in the model and the model reaching limits
22 in the number of scenarios that we considered. So
23 we did extensive testing, looked at lots of
24 permutations, and then in the final runs to try to
25 remove those limitations, we delivered a version.

1 The DRC could have easily verified that for
2 themselves.

3 We did raise the cost of the wind turbines
4 since I came and talked to you last June. We
5 raised them to \$2,000. I do not consider that a
6 bias. I'd be happy to explain why I think that is
7 a very reasonable cost estimate.

8 And I think that we had some criticism
9 regarding that if you look at a 20-year period, the
10 Big Stone -- the net present value of costs over a
11 20-year period, that the Big Stone Plant may not be
12 the lowest cost for Montana-Dakota's customers,
13 while over the whole lifetime of the study it is.
14 I don't -- I think it is appropriate, and for
15 reasons I'm happy to explain, that to look at the
16 whole time period, truncation of results would
17 actually be inappropriate.

18 And, finally, I -- while there are runs
19 and there are scenarios -- and you can basically
20 get any results you want out of the Strategist
21 model depending on the inputs -- we do not -- I do
22 not believe that the scenario that has been
23 presented by DRC is a reasonable alternative.

24 MR. KUNTZ: We would offer Exhibit 214A --
25 MDU Exhibit 214A.

1 JUDGE WAHL: Ms. La Seur?

2 MS. LA SEUR: No objection.

3 JUDGE WAHL: Mr. Binek?

4 MR. BINEK: No objection.

5 JUDGE WAHL: MDU 214A is received.

6 MR. KUNTZ: Your Honor, at this time I'd
7 like to make an offer of proof with respect to what
8 was marked as MDU Exhibit 218.

9 JUDGE WAHL: You may proceed, Mr. Kuntz.

10 Q. (MR. KUNTZ CONTINUING) Mr. Heidell, did
11 you cause to be prepared supplemental rebuttal
12 testimony marked as Exhibit MDU 218?

13 A. Yes, I did.

14 Q. If that exhibit were to be received into
15 the evidence, could you explain what that exhibit
16 would indicate?

17 A. Yes, I could.

18 Q. Would you do that at this time?

19 A. Yes. Staff witness Mr. Deason had a
20 concern in his -- in reviewing our testimony that
21 two of the scenarios we presented did not have the
22 production tax cost extended, but I had also made
23 other changes, you know, from the first two
24 scenarios. So his question was, well -- the way I
25 interpret his question, all else being equal, if

1 | you allow the production tax credits to be
2 | extended, would the results change? So we just --
3 | what I did is I got permission from Montana-Dakota
4 | to renew the Strategist license. It,
5 | unfortunately, took a number of days to get that
6 | renewed, and then I did that analysis.

7 | Q. And the result was?

8 A. The result is -- it's the same result.
9 The least-cost plan is still with Big Stone II.

10 MR. KUNTZ: That completes our offer, Your
11 Honor, and we would tender the witness for
12 cross-examination.

13 JUDGE WAHL: All right. I note for the
14 record and for the advice of the Commissioners that
15 an offer of proof is not evidence and may not be
16 considered by the Commission for its determination.
17 Ms. La Seur.

18 MS. LA SEUR: Thank you.

19 **CROSS-EXAMINATION**

20 BY MS. LA SEUR:

21 Q. Good afternoon, Mr. Heidell. Would you
22 please turn to page seven of MDU Exhibit 214, your
23 supplemental, prefiled direct testimony, and I'm
24 referring to line three of page seven in which you
25 refer to additional demand side management projects

1 that were incorporated into your updates. Would
2 you be able to describe what projects?

3 A. Yes. Actually in the same testimony, if I
4 can refer you to a table, it actually lists the
5 projects that were added, and that is Table 5 on
6 page four of exhibit --

7 MR. KUNTZ: 215.

8 THE WITNESS: 215. So the -- what was
9 added was a --

10 COMMISSIONER WEFALD: Just a minute. I
11 need to find it, if you can help me.

12 MR. KUNTZ: It would be under tab 15 of
13 the big book, Commissioner. It's marked as Exhibit
14 215, and it's under tab 15, page four, I believe he
15 said.

16 THE WITNESS: That is correct.

17 Q. (MS. LA SEUR CONTINUING) And at page ten
18 you've referred to these programs, this is lines 16
19 and 17, the conservation programs that
20 Montana-Dakota is already implementing, and these
21 are the residential high efficiency air
22 conditioning, the commercial high efficiency
23 lighting, the interruptible load program. So are
24 the programs described or listed in Table 5
25 additional programs not currently implemented?

1 A. There are additional programs. I guess
2 what I -- I actually am not sure exactly on what
3 stage of implementation that Montana-Dakota is on
4 these programs. I know that Montana-Dakota has
5 been planning to go ahead with them, but I don't
6 know whether they've been filed with this
7 Commission yet or not, but they are incremental, as
8 Ms. Stomberg testified.

9 What we did is the load forecast
10 essentially takes -- we have additional demand side
11 management programs, we subtract that out of the
12 load forecast, we put them into Strategist, we
13 added additional programs, and effectively what
14 Strategist does is it says, oh, are these programs
15 cost effective. If they're cost effective, then
16 they reduce the load forecast again. No double
17 counting. They reduce it again, and then it
18 dispatches the thermal plants and contracts to meet
19 the remaining load after demand side management and
20 energy conservation.

21 Q. And we seem to be looking at an average
22 cost per kilowatt-hour of anywhere from 2 cents to
23 16 cents. Was this cost of various DSM projects
24 incorporated into the overall modeling?

25 A. Yes. The cost -- essentially -- and just

1 I think probably way past the point of confusion,
2 the higher cost programs on a kilowatt-hour basis
3 are programs that are actually targeted to reduce
4 the peak demand. They don't provide a lot of
5 energy, but they provide a reduction to the peak
6 demand. So on a kilowatt-hour basis they look more
7 expensive, but having said that, yes, what the
8 program -- we input characteristics of these
9 programs in energy savings, demand reduction
10 attributes, a cost. The model determines whether
11 they're cost effective. Once the model determines
12 that they're cost effective, they will then go
13 through and reduce the load that needs to --
14 generation needs to be dispatched for.

15 Q. And so the model would only look at these
16 programs listed?

17 A. It's just a model that only looks at the
18 inputs we give it.

19 Q. Going back to page eight of this same
20 exhibit of your testimony, looking at line 21,
21 "Montana-Dakota is showing slightly more growth
22 than previously forecast." On what evidence does
23 MDU base this higher, long-term forecast?

24 A. Well, the -- what the testimony tries to
25 lay out in the prior Q and A is that essentially

1 Montana-Dakota changed the forecast methodology,
2 and as a result of this change of the forecast
3 methodology, the growth rates changed a little bit.

4 You know, we're talking about a utility
5 with not a very large load growth. I mean, when
6 demand is growing at .99 or 1.07 percent, that's a
7 relatively small amount, and ultimately it's -- you
8 know, there's really no way to -- because a --
9 essentially the old forecast wasn't repeated, so I
10 don't believe, subject to check, that
11 Montana-Dakota could tell you how much of this
12 change is a result of changes in assumptions versus
13 changes in methodology. I think had the
14 differences been much more significant, I would
15 have expected that they would have gone back and
16 examined that question.

17 Q. Okay. Would you say that the change is
18 within the statistical margin of error for the
19 modeling methodology?

20 A. Without being really sure about exactly
21 what was done, I mean, my general sense is that
22 they are within the margin of error. I mean, I
23 find both these changes to be relatively small.

24 Q. Okay. Going to page 13, lines 14 to 17,
25 you discuss the emergency curtailments in Texas,

1 and your testimony is that the need for sufficient
2 responsive thermal resources to maintain system
3 reliability with large amounts of wind was recently
4 demonstrated by these emergency curtailments of
5 interruptible load as a result of wind variations;
6 correct?

7 A. That is my testimony.

8 Q. Okay. How does management of wind
9 variations with DSM or load management, if you
10 will, demonstrate the need for sufficient
11 responsive thermal resources?

12 A. Well, I believe that the preliminary ERCOT
13 assessment of the events basically said that, you
14 know, the system did respond, and essentially the
15 system responded through a combination of load
16 curtailment, as well as splitting reserves. So I
17 think what it says is that at least in the case of
18 ERCOT that both of those resources have potential
19 to help support wind variability.

20 Q. But couldn't the Texas event also be cited
21 as an example of how wind variability can be
22 handled successfully without massive thermal
23 backup?

24 A. Well, I think the results of the report
25 actually said that, you know, we think the system

1 worked. I do believe -- and this is just a rough
2 number -- but I believe that Texas wind is in the
3 range of six or seven percent of the capacity. So
4 that sort of gets to my opening comment that there
5 is a matter of degree of, you know, 10, 15 percent
6 versus 25, 30 percent.

7 Q. Getting back to the conservation and
8 efficiency programs that have been modeled, you may
9 have already answered this. I wanted to know if
10 MDU has modeled any conservation or efficiency
11 programs other than those already implemented.

12 A. I'm not aware. It was my intent in doing
13 the modeling that we captured, you know, the full
14 range of programs that Montana-Dakota was studying,
15 and I asked that question. So that was certainly
16 my intent. I don't know anything more than that.

17 Q. Would you know anything about how MDU
18 chooses the programs that it models?

19 A. In a broad sense. Probably a company
20 witness would be better to answer this question,
21 but in a broad sense I believe that the company has
22 an advisory committee, looks at programs, does a
23 cost-effectiveness test and in a process that
24 brings in public input and economics similar to
25 what many utilities do.

1 Q. Let's turn to page 20 in this same
2 exhibit, looking at the chart with the various
3 scenarios listing wattages for certain generation
4 sources. You describe these various scenarios
5 generally by wattage that can be gained from
6 specific sources except for conservation. Why
7 would you not assign a wattage that can be gained
8 from or avoided from conservation?

9 A. And just for the record, the table is in
10 megawatts, not in watts, but --

11 Q. Let's just a whole lot of watts; right?

12 A. That's just a whole lot of watts. So to
13 answer your question, basically the table was
14 designed to focus people on the decisions that were
15 made. I think I tried to emphasis that through the
16 testimony that the program -- that the model
17 selected all the conservation programs, and that
18 table that we discussed was designed to provide
19 that information. We weren't trying -- I wasn't
20 trying to hide anything.

21 Q. Okay. Would it be possible to make that
22 kind of one-to-one comparison between potential for
23 avoiding megawatts or for generating megawatts?

24 A. Well, I think we can. I mean, let's --
25 you know, we see 116, 93, 43, we see different

1 levels of megawatts, and then if we turn to Table 5
2 of Exhibit 215, page four, you know, essentially
3 what we have here is 13-and-a-half megawatts of
4 conservation plus another approximately
5 six-and-a-half megawatts that were in that process.
6 So, I mean, the answer is that conservation is
7 providing on the order of, you know, 20 megawatts.

8 Q. Okay. Turning to page 13, this is back on
9 the same page with the Texas example, down at the
10 bottom 21, 22, 23, you say that you're not aware of
11 any studies related to Montana-Dakota's system with
12 regard to the amount of wind capacity the system
13 can absorb without incurring costs for initial
14 additional generation resources to support the
15 wind, and isn't it also the case that MDU hasn't
16 determined the maximum amount of conservation,
17 energy efficiency and DSM that could be implemented
18 cost effectively on its system?

19 A. I think there are two questions, but the
20 end question -- I think the tail question is what
21 you're asking -- what you're trying to ask is did
22 MDU look at the maximum potential of conservation
23 on this system. Is that the question?

24 Q. Yes.

25 A. I don't know if they did or not. I asked

1 for all the programs they considered, but I'm not
2 aware of everything they did.

3 Q. And so it's also not possible -- you're
4 also unable to say what's possible in terms of
5 maximized wind capacity?

6 A. I could only give you general comments. I
7 don't have anything specific to Montana-Dakota.

8 Q. Okay. Turning to pages 18 and 19, and
9 looking at the top of the page, "higher cost
10 expansion plans that incorporated smaller amounts
11 of Big Stone Unit II in conjunction with building
12 more combustion turbines." Did --

13 A. I'm sorry. I'm probably staring right at
14 it, but I can't find that reference. Is it page
15 18?

16 Q. Sorry. I was looking at the bottom of the
17 page, and top of page 19 is where I'm actually
18 referring to. It would be lines one, two and
19 three.

20 A. Okay. Thank you.

21 Q. And in modeling these options that would
22 have expanded baseload coal in various increments,
23 was there also modeling of the risk of diminished
24 fuel diversity?

25 A. No. I mean, the model is essentially

1 looking at Big Stone in 25 megawatt units. I mean,
2 the risk -- again, it's just a model. To model the
3 risk of fuel diversity, one would have to describe
4 some inputs for it calculate. No such calculations
5 were done.

6 Q. Right. That was the follow-up question I
7 was getting to, is have you made any assumptions
8 with regard to fuel diversity that could inform
9 this model or these scenarios?

10 A. Well, the Strategist model is just an
11 optimization given Montana-Dakota's --
12 Montana-Dakota's load and resources. In terms of
13 fuel diversity, if you want me to put my two cents
14 worth in on the region, I'm happy to do that, but
15 that was not modeled.

16 Q. Let me ask the question this way: If you
17 were to make assumptions with regard to expanded
18 reliance on coal as an input to the Strategist
19 modeling, would you be able to characterize those
20 assumptions?

21 A. Well, I think the way to probably look at
22 it would be to say look at the various coal price
23 options and gas price options, look at the
24 difference in the net present value of those plans,
25 and then exogenously to the model, you know, make

1 some kind of criteria as to, you know, what that
2 risk is.

3 Q. And so that's what you would do, but you
4 have not done it at this point.

5 A. I have not done that.

6 Q. Okay. Going to page 11 of your rebuttal,
7 you refer at question, lines 14 and 15, to Mr.
8 Schlissel's conclusion that it is appropriate to
9 increase the capital cost of the Big Stone II unit
10 but not the capital cost of the alternatives.
11 Isn't this a bit of a mischaracterization of what
12 Mr. Schlissel says at page 76 with regard to -- let
13 me point you then to --

14 A. Yeah. I'm real sorry. Can you again
15 point me to the reference in my testimony?

16 Q. Okay. Your testimony is page 11 of the
17 rebuttal. So let's just open it up to both of
18 these so we can compare. Your question is at lines
19 14 and 15, page 11 of the MDU Exhibit 217.

20 A. Thank you. That was the --

21 Q. That's the number you need. Okay. I have
22 them labeled. And I'd like to refer you for
23 reference to Mr. Schlissel's testimony at page 76.

24 A. I actually do not have that in front of
25 me.

1 MR. GUERRERO: I can --

2 MR. KUNTZ: I can get it.

3 MS. LA SEUR: Thank you.

4 THE WITNESS: Okay. I'm sorry. I'm with
5 you now. Page 76.

6 Q. (MS. LA SEUR CONTINUING) Page 76 of the
7 Schlissel testimony, and I'd refer you to lines
8 five, six and seven where Mr. Schlissel said it was
9 not necessary or appropriate to further increase
10 the cost of these alternatives when we increased
11 the cost of Big Stone II, and is it a fair
12 characterization to say that he concludes that it
13 is appropriate to increase the capital cost of Big
14 Stone II but not the capital cost of the
15 alternatives? Isn't he actually saying the capital
16 cost of the alternatives has already been assumed
17 as so high that there is no need to increase it
18 further?

19 A. I believe that's his testimony, and I
20 believe my testimony is that I lay out how the
21 costs were developed and provide reasoning and
22 where the costs come from and conclude that
23 there's -- you know, why the costs are not
24 unreasonably high. I see only a statement and no
25 numbers to back up this assertion in Mr.

1 Schlissel's testimony.

2 Q. So you're, in fact, saying that you just
3 disagree with Mr. Schlissel about the correctness
4 of the capital costs attached to the alternatives?

5 A. Well, I think it goes back to my opening
6 remarks. I mean, you can run the model with any
7 range of assumptions and it's up to the person
8 running the model to determine, you know, what's
9 reasonable. You know, at least I think in terms of
10 presenting a base case, I've explained my reasons
11 why I do not think his options are -- you know, his
12 conclusions are reasonable. I mean, that's all I
13 can say.

14 Q. You disagree.

15 A. I disagree.

16 Q. Okay. And again in your rebuttal, this is
17 just a couple of pages later, at 14, you say, "Mr.
18 Schlissel implies that it is a flaw to incorporate
19 the more speculative future in identifying the
20 lowest cost expansion option," and I think this is
21 a reference to Mr. Schlissel's testimony at 74. It
22 should be just about where you already are, two
23 pages earlier, and I refer you to Mr. Schlissel's
24 statement at lines 13 and 15, that it was only in
25 the more distant, and consequently the more

1 speculative, future that the Strategist model
2 presented Big Stone II as a lower cost option, even
3 with all of Mr. Heidell's flawed assumptions.
4 Wouldn't you agree that models of the distant
5 future are more speculative than models of the near
6 future?

7 A. As I get older, I'm beginning to be
8 convinced that all models are speculative
9 regardless of the time frame. I don't know how to
10 answer that, you know, the degree of speculation.
11 There's just a whole range of short-term
12 assumptions as well as long-term assumptions. I
13 would admit that in general, you know, uncertainty
14 tends to increase over time. I would submit that
15 when people come up with a cost of equity of 11
16 percent for utilities, that cost of equity is based
17 upon various capital asset pricing model and other
18 ways and essentially is a discount rate that has
19 been designed to reflect the appropriate level of
20 risk. So I would argue that there is risk. The
21 discount rate is one mechanism to deal with that,
22 and the discount rate is appropriately chosen.

23 Q. And so then would you agree that Mr.
24 Schlissel is not actually arguing against
25 projections into the distant future but speaking

1 about the reliability of those projections?

2 A. Well, that may be his case. I -- I took
3 this -- I read this as a -- sort of a -- a
4 suggestion to the Commission that it's
5 inappropriate to consider the whole study period
6 and just consider the first 20 years. If that
7 wasn't his intention, then I guess I misread it.

8 Q. Back to page three of your rebuttal, lines
9 18, 19 and 20, the sentence that reads, "In any
10 event, it is more prudent to include scenarios in
11 which the PTC is not extended than to assume in
12 every instance that it will be extended
13 indefinitely." And should we take this to mean
14 that you would also agree that it is more prudent
15 to anticipate that any relevant future legislation
16 may make a project less economic rather than
17 assuming no impact or a positive impact?

18 A. I mean, I would say that my -- you know,
19 one of the big things that I do for clients is
20 to -- is to look at these things, and sometimes
21 legislation adds value, sometimes legislation
22 decreases value. So it's fair to say that
23 investors consider those risks -- regulatory risks.

24 Q. But you would say that it's prudent to
25 model in both directions and to be pessimistic

1 rather than optimistic where the case is even? Or
2 we could break that into two questions. Is it more
3 prudent to model in both directions considered both
4 possibilities?

5 A. I think it's -- well, a lot depends on --
6 I mean, if you're a rating agency, you only care
7 about downsides, so we deal with asymmetric risks
8 with rating agencies, but I think that most people
9 try to understand the upside and downside of their
10 investments.

11 Q. Let's look at page 20 of -- I think look
12 at your direct testimony here. Yeah. 20 of your
13 direct, lines nine and ten, which says that in
14 scenarios where the federal PTC is extended, the
15 comparative costs between Big Stone Unit II and a
16 natural gas/wind option become very close with the
17 wind/gas option within two percent of the Big Stone
18 Unit II scenario. Let's see. And referring to the
19 scenarios where the PTC is extended -- let me just
20 ask this preliminarily: Are you aware that earlier
21 this month the U.S. Senate voted 88 to 8 to extend
22 the PTC through 2009?

23 A. Yes. I am also aware that that
24 legislation was not passed in their -- over
25 concerns about the federal budget deficit.

1 Q. That which legislation has not passed?

2 A. That the senate committee's
3 recommendations in the legislation did not
4 ultimately get passed because of concern over the
5 federal budget deficit to extend the PTC. The PTC
6 is not extended.

7 Q. I'm talking about the housing bill that
8 was recently passed in the Senate. Are you
9 familiar with that?

10 A. I'm sorry. The housing -- I'm in left
11 field. Could you please describe -- I'm not aware
12 what you're talking about, at least not at this
13 point.

14 Q. I'd like to distribute a rollcall vote
15 printed off the senate.gov website of Senate
16 amendment 4419 to Senate amendment 4387 to HR 3221,
17 which was originally the Renewable Energy and
18 Energy Conservation Tax Act of 2007. Mr. Heidell,
19 does this appear to be a printout of a rollcall
20 vote from the senate.gov website?

21 A. It does, except I would say that there is
22 a Table 8-4A on the last page. I do not -- do not
23 think that that would be part of the rollcall vote,
24 but you can correct me if I'm wrong.

25 Q. Yeah. I'm not offering the table on the

1 back. That was apparently a copying error.

2 A. With the exclusion of that page --

3 Q. With exclusion of the table on the back --

4 A. -- it does appear to be a rollcall vote.

5 Yes.

6 Q. -- that is not part of the rollcall vote.

7 MS. LA SEUR: Okay. I would like to offer
8 this as Intervenor's Exhibit -- are we up to 22?

9 JUDGE WAHL: 23.

10 MS. LA SEUR: 23.

11 JUDGE WAHL: Let's just take a minute,
12 Steph, and mark your copy I 23. All right. I'm
13 sorry. Ms. La Seur, did you offer it?

14 MS. LA SEUR: Yes, I did offer it.

15 JUDGE WAHL: Mr. Kuntz?

16 MR. KUNTZ: No objection.

17 JUDGE WAHL: Mr. Binek?

18 MR. BINEK: No objection.

19 JUDGE WAHL: Exhibit I 23 is received.

20 Q. (MS. LA SEUR CONTINUING) And, Mr.
21 Heidell, does the purpose of this amendment appear
22 to be -- from the statement on the first page of
23 this exhibit to be to provide for the limited
24 continuation of clean energy production incentives?

25 A. That appears to be what's described in the

1 statement of purpose, although I'm not clear what
2 the detailed language is associated with this
3 particular bill.

4 Q. Sure. And that's the only question I
5 wanted to ask about it, to confirm that that's your
6 understanding of the amendment.

7 A. No. It's my understanding of what this --
8 the statement purpose.

9 Q. Your understanding of the exhibit as I've
10 offered it to you. Yes. Do you agree with Mr.
11 Schlissel that the most likely point at which the
12 PTC would be phased out would be upon enactment of
13 federal carbon legislation?

14 A. I would agree that that is a factor. I
15 don't believe that is the only factor.

16 Q. Would you agree, though, that it is the
17 most likely point for phase out of the PTC?

18 A. I'm struggling because, you know, I -- one
19 is sort of a political -- politically when a
20 politician can do whatever they want to do. I
21 don't have any great insight to that. From an
22 economic perspective I could argue that the fact
23 that states have renewable portfolio standards that
24 mandate renewable energy, essentially what -- the
25 PTC then isn't bringing -- you know, isn't what's

1 causing most of the new generation -- renewable
2 generation that's causing the state mandates. So
3 the PTC essentially from an economic perspective
4 just becomes a transfer from between one group of
5 taxpayers and another.

6 There are other factors that would --
7 economically I would say would also from an
8 economic perspective mean that the PTC is not as
9 important and there has been significant discussion
10 about the rising cost of generation, and in fact in
11 places like California where gas generation is very
12 expensive, we find that from an economic
13 perspective that, you know, it doesn't take carbon
14 legislation to, you know -- from an economic
15 perspective not to need the PTC.

16 Q. So the economic perspective would then be
17 that the PTC might be phased out as wind becomes
18 even more competitive as a result of market forces?

19 A. Market forces or alternative regulation
20 that requires those investments to be made
21 otherwise. I mean, you're not incenting any new
22 behavior if you're required to put in the wind
23 already. The PTC isn't needed. It's a wealth
24 transfer.

25 Q. And so would you consider it an unlikely

1 scenario that in interest in expanding wind
2 generation would slack off and the PTC would be
3 withdrawn because the wind industry was on a slide?

4 A. Oh, boy, at that point you're sort of
5 getting into the nature of state mandates. You
6 know, is it required; is it required subject to an
7 economic test. I mean, it unfortunately becomes
8 bogged down in a myriad of detail to answer that
9 question.

10 Q. Okay. Well, getting back to your specific
11 testimony on page 20, lines nine and ten, this
12 comparison you make between Big Stone II and wind
13 with the PTC, is that based on the 2006 capital
14 cost estimate for Big Stone II?

15 A. No. Scenarios one through four all are
16 based upon \$2,000 a kw capital costs. The
17 difference is between scenarios one and two and
18 scenarios three and four with regard to wind are
19 primarily the capacity factor assumed for the wind
20 turbines and the production tax credit.

21 There is a third factor that would
22 influence potentially how much wind is selected,
23 and that third factor is that the delivered gas
24 price is lower in scenarios three and four than it
25 is in scenarios one and two. So we have multiple

1 assumption changes.

2 Q. Okay. My question is just about the
3 capital cost assumptions for Big Stone II.

4 A. I'm sorry. Oh, the capital cost. I'm
5 sorry. The capital cost assumptions for Big Stone
6 II are the same for all scenarios. I'm sorry.

7 Q. And is this the 2006 capital cost
8 estimate?

9 A. No. I believe the origin of the estimate
10 was September or October 2007. It was -- it is the
11 updated estimate of the cost.

12 Q. So this is the one with just the time-
13 based adder and then it was, I think, a two percent
14 undefined savings also calculated as part of that
15 number?

16 A. I'm afraid I'm going to leave it to others
17 to describe exactly how that cost estimate was
18 developed.

19 Q. Okay. So --

20 A. I took it as a given.

21 Q. And the wind/gas option comes within two
22 percent of Big Stone II without any consideration
23 of carbon costs; correct?

24 A. Given the assumptions in scenarios one and
25 two, that is correct.

1 MS. LA SEUR: Okay. That's all. Thank
2 you.

3 COMMISSIONER WEFALD: Could we take a
4 break?

5 JUDGE WAHL: Yes, I think we should. I
6 agree. Let's be in recess until four o'clock.

7 (Recess taken.)

8 JUDGE WAHL: All right. We're back on the
9 record. Mr. Binek.

10 MR. BINEK: Thank you.

11 **CROSS-EXAMINATION**

12 **BY MR. BINEK:**

13 Q. In your -- the four-some scenarios that
14 you set forth in your testimony, what was the
15 capacity factor that was used for wind?

16 A. The table on page two describes that, so
17 in scenarios one and two we used -- I used a
18 capacity factor of 52 percent. In scenarios three
19 and four I used a capacity factor of 38 percent.

20 Q. And how did you come up with those
21 different capacity factors?

22 A. The 52 percent came from a South Dakota
23 wind project that was proposed to Montana-Dakota.
24 At the time that this project was being proposed,
25 let's say, myself and others had a fair amount of

1 skepticism that this capacity factor would be
2 realized, but it was the developer's contention, so
3 that's what we used. The 38 percent came from
4 looking at the capacity factors actually published
5 by a couple Minnesota utilities. Minnkota I
6 believe was one of them and I do not recollect the
7 second one, but they're sort of actual operating
8 capacity factors as opposed to a capacity factor
9 put forth by a developer trying to get a contract
10 with Montana-Dakota.

11 Q. Did you hear the testimony of Andrea
12 Stomberg earlier that the capacity factor that
13 they're seeing at the Diamond Willow facility is
14 approximately 38 percent, also?

15 A. I did hear that.

16 Q. Am I correct that the model -- as I read
17 your testimony, it's my understanding that the
18 model picked a minimum of 116 megawatts at Big
19 Stone II as the least cost resource mix in all four
20 of the scenarios?

21 A. Scenarios one and two essentially -- well,
22 scenario one, you know, was the choice that you
23 could take 116 megawatts at Big Stone or not. So
24 it was a binary choice that the model had to
25 select. Scenario two had this binary choice of

1 taking 116 megawatts or not and if 116 megawatts
2 were selected, then up to five -- additional five
3 megawatt blocks could be selected, but it was
4 conditional upon selecting the 116, and that's
5 where we got up to 113 megawatts versus 116.

6 Q. Got to what?

7 A. I'm sorry. 131 megawatts versus 116.
8 Scenario three and four was essentially designed to
9 investigate one of the criticisms that I believe
10 was offered by Mr. Schlissel that, well, gee, what
11 if you only needed 50 megawatts at Big Stone. So I
12 modeled Big Stone in 25 megawatt increments, and
13 that's how it got to in scenario three selecting 75
14 megawatts in 2011 and 50 megawatts in 2013. I
15 mean, we know that's not a viable scenario, but it
16 was designed to test that function.

17 And, likewise, scenario four had that
18 same -- it could select a plant in 25 megawatt
19 increments. It ended up selecting it -- putting it
20 all right upfront. I think -- you know, you're
21 always trying to think about what Strategist is
22 doing, but you never really know exactly what it's
23 doing -- it's because of that opportunity for off-
24 system sales, it's more economical in the model to
25 put it all in right away versus delay 50 megawatts

1 a couple years.

2 Q. I'm looking in your testimony, and maybe
3 I'm looking at something wrong here. Your direct
4 testimony, table ten at the back of your testimony,
5 and I'm looking at scenario three, and I see 2013
6 there's 75 megawatts at Big Stone II and 2016, 25
7 megawatts. What am I not understanding here? It
8 looks to me like it selected 100 megawatts of Big
9 Stone II in that scenario.

10 A. You have me checking back here, also, to
11 see what's going on here. That -- that -- I'm
12 sorry. That is a typo. It should be 50 megawatts.
13 So the table on scenario -- in expansion of plan
14 summary on page two is correct. This is not
15 correct. I apologize for that.

16 Q. Okay. So the 25 in 2016 should be 50?

17 A. It should be 50. Yes. Sorry for the
18 confusion.

19 Q. I make so many errors, I like to find one
20 that other people have made. Okay. And in these
21 four scenarios, what was the lowest cost
22 alternative choice?

23 A. Big Stone II. I mean -- you mean the
24 resource is Big Stone II?

25 Q. Right.

1 A. Yes.

2 Q. You updated the capital cost of wind from
3 1200 per kilowatt to 2,000 per kilowatt or --

4 A. That's correct.

5 Q. Is that right?

6 A. That's correct.

7 Q. That -- in my rough math that comes to --
8 my calculation is 67 percent increase in the
9 capital cost of wind, and there's been some
10 explanations about how that came about, but I guess
11 I still -- I guess I'd like to have a little bit --
12 I'd like to have an explanation from you as to why
13 those costs jumped from 12 to 2,000 -- 1200 to
14 2,000?

15 A. Well, the 1200 was actually a fairly old
16 estimate, I think, that sort of, you know, went
17 back to be even before the original filing, and my
18 recollection could be wrong, but I seem to remember
19 sitting in this room and people asking me how I
20 could come up with such a low number of \$1200. My
21 recollection could be wrong, but that's my
22 recollection of what happened here last June.

23 I think, you know, at the time, you know,
24 \$1200 was a number using in the original numbers.
25 It is too low. There's, you know, a strong body of

1 evidence that, you know, it's closer to 2,000, if
2 you can -- you know, in the short-term if you can
3 get it, despite the expansion of blade factories
4 and others. It's still hard to get wind turbines
5 in a short-term.

6 Q. You say that the estimate includes an
7 assumed cost to connect wind to the grid but does
8 not assume any cost for transmission upgrades.
9 When you're talking about assumed -- or the assumed
10 cost to connect wind to the grid, you're talking
11 about the transmission from the wind field to the
12 closest interstate transmission line or something
13 that would connect it?

14 A. This would be subject to check, but my
15 understanding is that the \$85 per kw that's in
16 there is -- really has no transmission lines in it
17 and it's basically some, you know, busbar-type
18 work. I mean, that's not a lot of money in the
19 world of transmission.

20 Q. Okay. So that doesn't even get you to the
21 grid; is that what you're saying?

22 A. Well, in this case the units, I believe,
23 are connected to the grid. So in this case it did
24 get you to the grid.

25 Q. Okay. So that isn't -- the transmission

1 that you're talking about here isn't similar --
2 it's not similar to the \$200 per kilowatt that
3 Bryan Morlock assigned for transmission to wind
4 generating facilities.

5 A. No, I don't believe it is. I don't know
6 exactly how Mr. Morlock came up with that estimate.

7 Q. Okay. We've already talked about that.
8 On page -- in your rebuttal testimony, page seven,
9 lines three to five, in that testimony --

10 A. Yes, I'm there.

11 Q. Okay.

12 A. Thank you for checking, though.

13 Q. You assumed the capital cost of a 120
14 megawatt combined cycle gas turbine plant to be
15 \$1,122 per kilowatt. Is this cost consistent with
16 the \$674 per kilowatt cost of a 500 megawatt CCGT
17 plant used by Mr. Greig in his revised busbar cost
18 analysis?

19 A. Unfortunately, I don't know the source of
20 his assumption. I don't know whether he took it
21 from the -- I'd say to be consistent it would mean
22 that it came from the Otter Tail supply site study.
23 It may well have. Unfortunately, I don't know that
24 answer. If it came from that study, it would be
25 consistent.

1 Q. Okay. And also in your rebuttal on page
2 nine, lines nine and ten -- are you there?

3 | A. Yes, I am.

4 Q. Is the fixed charge rate for the Big Stone
5 II at 10.14 percent lower than the fixed charge
6 rate for gas-fired turbines, which is 11.37
7 percent, because of the longer life of Big Stone
8 II?

9	A. That is correct.

10 Q. Are there any other reasons for the lower
11 fixed charge rate for Big Stone II?

12 A. No. I believe the -- in my model really
13 the only change -- it's essentially I put in the
14 capital cost and the tax assumptions, and
15 everything stayed the same except for the asset
16 life was changed.

17 MR. BINEK: Okay. I have no further
18 questions.

19 JUDGE WAHL: Any questions from the
20 Commission?

21 COMMISSIONER WEFALD: I have one.

22 JUDGE WAHL: Commissioner Wefald.

23

EXAMINATION

24 BY COMMISSIONER WEFALD:

25 Q. The previous witness I had asked what the

1 energy conservation component is of needed
2 resources until, let's say, approximately 2020.
3 She said you could answer that question.

4 A. The -- the best source of information is
5 really that Table 5 that we referred to earlier,
6 which would then be -- I should have this exhibit
7 memorized, but it would be Exhibit 215, page four,
8 Table 5, and so to those numbers we add
9 approximately three-and-a-half billion for the
10 existing programs. So 46, 57 -- you know, on the
11 order of 65 million kilowatt-hours would be what's
12 in the model.

13 Q. Those are only -- when I look at that --
14 and by the way, just to let you know, today in the
15 mail I received a notice about the residential
16 refrigerators and freezers in my Montana-Dakota
17 Utilities bill about the rebate program?

18 A. Should I modify my earlier testimony that
19 the programs have started?

20 Q. Let's see. Those four programs that you
21 have listed in table five, there's a number of
22 other programs that are listed on page three of the
23 exhibit -- that late-filed exhibit that
24 Montana-Dakota Utilities filed last summer.

25 A. And that would probably be things like the

1 commercial high efficiency lighting and --

2 Q. Yes. And that included programs from 2006
3 through 2009, and so there's quite a number of
4 other programs that they had listed at that time.

5 A. And those programs are ongoing and those
6 programs are reflected as a reduction in the load
7 forecast.

8 Q. But there's a number of programs in
9 that -- do you have a copy of that list?

10 A. I'm sorry. I do not have it in front of
11 me.

12 Q. I'll just pass it to you. You'll see that
13 the difference between the lists that I have
14 here --

15 MR. KUNTZ: We have one, Commissioner.

16 COMMISSIONER WEFALD: Okay. Thank you.

17 Q. (COMMISSIONER WEFALD CONTINUING) For
18 example, residential refrigerators and freezers, if
19 we checked them off, that's two programs that they
20 said the would start in 2008, and then you have
21 residential commercial air-conditioner cycling.
22 That's about eight down. It said they would start
23 in 2009, and then high-efficiency commercial AC and
24 motors. Commercial AC is right below that one and
25 motors is like two down, high-efficiency motors,

1 and those would be started -- that would be started
2 in 2008. And interruptible rate demand side
3 management four, I'm not -- interruptible rate --
4 they have load management programs down below
5 starting in 2007. Okay. I think that's the same
6 one. It would be ND 1. Do you see it? Is that
7 the same?

8 A. I believe there is a -- that there is
9 probably some overlap as that's why I went back
10 to -- and unfortunately I'm probably not the best
11 one on the stand to resolve that. I'm sure we can
12 resolve that to give you the two pieces, but that's
13 why I sort of said, well, if we take the -- you
14 know, the roughly, you know, 60 million
15 kilowatt-hours in the new program and add another
16 three-and-a-half million or so, that gives you a
17 good order of magnitude of the projected savings of
18 the programs that are currently in the model.

19 Q. But I need some help with that. Does that
20 model reflect -- the demand side management
21 options, is that per year?

22 A. These kilowatt -- these kilowatt numbers
23 here are -- in Table 5 are cumulative.

24 Q. Through what year?

25 A. I believe it's through the -- most of

1 these programs, I believe, have a life of ten
2 years. I'm sorry. I don't know the exact life of
3 these programs. So, I mean, these programs would
4 be renewed presumably. I mean, they're
5 cost-effective ones. I mean, we always hope on
6 these kinds of programs that the extent that the --
7 these are programmatic conservation, so we always
8 hope on these kinds of programs to the extent that
9 the customer went out and bought a high-efficiency
10 refrigerator, and that when it came time to replace
11 it in eight, ten years, that they would go out and
12 buy another one without a rebate from the utility.

13 Q. My -- I'm just wondering whether in the --
14 in the plan through 2020, let's say, that's in
15 their integrated resource plan, which I believe
16 this is from, these only go through 2009 and then
17 they stop, and they don't show any new programs
18 after that.

19 A. Well, again, those are the available
20 dates, and then the measures, of course, persist in
21 the load forecast, and then you have some of these
22 programs, but --

23 Q. Is this typical of programs that you see
24 where they -- if you're supposed to -- if, as we
25 heard from a prior witness, that you try to

1 increase by one percent each year the amount of
2 demand side management that's in the system, is it
3 typical to just stop then only three years or four
4 years into a program and then not have any new
5 programs after that?

6 A. Well, I mean, I first started doing these
7 programs in the early Eighties, and essentially
8 what happens is that you have a list of measures
9 and you have a cost-effectiveness test, and so you
10 essentially keep adding these measures until you,
11 you know, essentially either run out of measures
12 that are cost effective or -- you know, in this
13 case you can assume that the customers -- you'll
14 get these savings, but you don't need a program to
15 continue them.

16 I think you're right. I mean, I think
17 that as one goes out in time and one looks at
18 the -- you know, this DSM assessment in the
19 least-cost plan is -- you know, happens
20 periodically, and I would assume that, you know,
21 there will be more programs in the future, I mean,
22 as a result of technological changes.

23 Q. The reason I ask is -- one of the reasons
24 I ask is because Otter Tail -- you know, basically
25 they're probably looking at this similarly.

1 They're looking at what is -- from some
2 conversations -- what's the avoided cost out in the
3 market, what is the market price they'd have to
4 pay, let's say, for gas turbine generated
5 electricity, and then that's the high cost that
6 they use, and then they put in programs that fall
7 underneath that, that as being cost -- to save that
8 avoided cost. Well, you think both companies would
9 have to face the same costs in the MISO market, so
10 it's hard for me to understand why Otter Tail would
11 have a list of like 25 or more programs that would
12 meet that avoided cost test and MDU would have far
13 less programs that need it.

14 A. And that's a fair question. I'm not
15 trying to make it overly complicated, but I think
16 the first thing what you're talking about is what I
17 would refer to as technical potential. So if both
18 utilities are seeing \$60 a megawatt-hour of avoided
19 cost, you know, you think that whether it's -- you
20 know, refrigerators are a national market, light
21 bulbs, and all those kinds of things. You would
22 think that their technical potential would be very
23 similar.

24 The trick in all these assumptions in this
25 modeling is coming up with feasible potentials.

1 We're not forcing consumers to do something; we're
2 trying to convince consumers to do things. One of
3 the things that -- I can't give you a specific
4 citation, but the experience of our company that
5 does a fair amount of DSM assessment work is that
6 the propensity to consumers to accept demand side
7 management or the feasible potential really grows
8 with more exposure to the programs.

9 So it could be that, you know, since
10 Montana-Dakota has been doing these programs
11 longer, that in the near term their feasible
12 potential is higher -- their view what's feasible,
13 what we could get the consumers to do actually is
14 higher than a company like Montana-Dakota. I admit
15 that's a bit of speculation.

16 COMMISSIONER WEFALD: Thank you.

17 JUDGE WAHL: Any further questions from
18 the Commission? Commissioner Clark.

19 COMMISSIONER WEFALD: So --

20 COMMISSIONER CLARK: Go ahead, if you --

21 COMMISSIONER WEFALD: I just need to
22 finish that.

23 Q. (COMMISSIONER WEFALD CONTINUING) So then
24 the total megawatts that's available basically
25 through -- to your best estimate, is about that

1 6-and-a-half megawatts plus 13 -- you said
2 13-and-a-half megawatts plus 6-and-a-half or
3 something, 20 megawatts?

4 A. That's what's modeled. I mean --

5 COMMISSIONER WEFALD: Okay. Thank you.

6 JUDGE WAHL: Commissioner Clark.

7 COMMISSIONER CLARK: Thank you.

8 **EXAMINATION**

9 **BY COMMISSIONER CLARK:**

10 Q. I'd just like to explore a little bit
11 the -- the modeling of the Strategist that you
12 discussed in your supplemental prefiled testimony.
13 Mr. Binek had asked about the -- whether the
14 assumptions when you added wind included
15 transmission cost. Do the assumptions that you had
16 for the Big Stone Plant in that model include the
17 known transmission cost for Big Stone?

18 A. Yes. The assumptions for Big Stone
19 include transmission costs as well as the combined
20 cycle turbine and the simple cycle turbine.

21 Q. But the wind to gas combo we don't know
22 what those transmission costs would be.

23 A. For better, for worse, we did not
24 speculate on a general average number to integrate
25 transmission projects for wind.

1 Q. Is it likely that the transmission costs
2 for wind would be higher than the costs for adding
3 just straight combined cycle or Big Stone itself?

4 A. Well, I think there's a -- you know, it's
5 a difficult question to answer because there's an
6 economy of scale issue. To bring more wind onto
7 the system, you have to build 115 kv line or a 230
8 kv line, and let's say you need -- MISO says to
9 integrate a 50 megawatt project of wind on the
10 system, you need to build 10 miles of 115 kv
11 transmission line. Given the capacity of a 115 kv
12 line, it's probably likely that you could put in,
13 you know, more wind than that 50 megawatts in this
14 hypothetical. So there's an economies of scale
15 question. I guess it depends on how big the wind
16 project is. I mean, quite frankly, that's why on a
17 dollars per kw basis, Big Stone is less than the
18 combined cycle because I think a part is economies
19 of scale.

20 Q. I'm trying as much as I can to get an
21 apples-to-apples comparison because when -- which
22 is a little tough to do, and the reason I ask this
23 is because of your statement on line eight and nine
24 of that page 20 where you talk about the federal
25 PTC being extended, which I think is -- it's just

1 my own guess -- but is likely in the short term.
2 We don't know if that's the case, but it seems to
3 have been the trend in Congress at least lately.
4 That even you state -- I mean, it gets close,
5 within two percent, but there are other costs that
6 aren't there, too, and what are the chances that,
7 say, if carbon regulation comes into play and
8 understanding that the Commission can't quantify a
9 dollar value but can at least assess the risk of
10 it, what impact does that have in your mind on the
11 cost of alternative forms of generation --
12 alternative to coal? I mean, do they all go up
13 commensurately? Even if they don't have as much
14 carbon emitted as coal does, does simply the market
15 pressure for wind turbines and blades and at least
16 partial carbon regulation on gas, does it all just
17 sort of equal out?

18 A. Well, to your comment about apples and
19 apples, I mean, I take responsibility. It's my
20 assumption to put in 52 percent capacity factor for
21 the wind. For reasons I've explained I think 38 --
22 I explained why the 52 percent. If you're trying
23 to do apples and apples, I would recommend you go
24 to 38 percent. That's just my view of an apples to
25 apples, and I don't want to run afoul here. I

1 guess something about offered for proof or
2 something like that, but, I mean, we have looked
3 at -- and I guess someone will object -- we have
4 looked at trying to put the PTC back in to give you
5 that apples to apples, and so there is a
6 difference.

7 I personally, you know -- well, I
8 personally -- PA's view is that everything doesn't
9 move equally. We do fundamental gas modeling, and
10 so essentially when we look at the world, we don't
11 assume because -- you know, if there's carbon
12 legislation, that the demand -- you know, demand
13 for electricity is pretty inelastic. In other
14 words, when price goes up, people don't change
15 their use that much.

16 So we do a model and we say, well, what
17 generation is going to fill that hole, and what
18 fills that hole is DSM, you know, renewables, gas.
19 This is sort of at a system level, and so we see
20 there's more demand for gas. We put that through
21 our fundamental gas model and gas prices rise. We
22 also see that there's less demand for coal because
23 of some of the very marginal units, you know, what
24 are these 50, 100 megawatt old units. It's less
25 likely that's economical to keep them going.

1 So we see an easing pressure on coal FOB
2 mine prices -- I'm not dealing with transportation.
3 I'm not going to touch that one, and so, I mean, we
4 don't see everything moving -- I mean, our
5 fundamental modeling doesn't say everything moves
6 together.

7 COMMISSIONER CLARK: That's all I've got.
8 Thanks.

9 JUDGE WAHL: Commissioner Cramer.

10 EXAMINATION

11 BY COMMISSIONER CRAMER:

12 Q. As long as you're on the topic of gas, do
13 you ever model the upward pressure, or if there is
14 upward pressure, then on other -- other uses of
15 gas -- in other words, we live in a cold part of
16 the country where gas is a significant source of
17 home heating obviously, obviously an important
18 commodity in manufacturing processes. Have you --
19 do you have any either opinion or experience that
20 tells us what we can consider the impact of more
21 gas being burned for electricity would have on home
22 heating costs?

23 A. Yeah. I mean, our -- our fundamental
24 supply and demand model for gas is total gas in the
25 economy. So it's -- you know, and I -- and it's a

1 national market. I mean, we have pipeline
2 constraints with things like the Rockies Express
3 Pipeline, you know, essentially to the detriment
4 that the west is going to -- we believe will
5 essentially equilibrate -- have the difference in
6 prices between western gas and eastern gas has come
7 up -- you know, western gas will come up. So we
8 view it as a national market for gas, subject to
9 pipeline constraints, and we do factor in all uses
10 of gas in our fundamental model. That's why I say
11 gas demand would go up.

12 COMMISSIONER CRAMER: Nothing further.

13 JUDGE WAHL: Commissioner Wefald.

14 COMMISSIONER WEFALD: Yep. Just one more
15 followup.

16 **FURTHER EXAMINATION**

17 **BY COMMISSIONER WEFALD:**

18 Q. And that is on the commercial lighting, it
19 does show five megawatts of peak savings and -- a
20 little over five megawatts, and that wasn't modeled
21 in. So would we just assume then that Big Stone II
22 really doesn't need 131 megawatts; it only needs
23 126?

24 A. It is my understanding that the commercial
25 lighting program is in the forecast, in other

1 words, is in the DSM programs. If the -- if it's
2 not, the hypothetical --

3 Q. It's already happening. I know they're
4 providing it?

5 A. So it's in the forecast. I'm saying it's
6 in the forecast. So we've already reduced the load
7 for commercial lighting. So our assessment of the
8 need for Big Stone is occurring after all these
9 programs are accounted for.

10 Q. Even though it's not on the chart?

11 A. Yes. Because it -- because, remember, we
12 have two groups of programs. We have programs that
13 we put into the model and allow the model to
14 select, and we have programs that we subtracted
15 from the -- "we" being -- I'll be -- it's
16 Montana-Dakota. Montana-Dakota's load forecast
17 said, you know, when they project load out into the
18 future, they say, oh, gee, our load's going to be
19 lower because of these commercial lighting programs
20 and other programs. So I will give to Strategist
21 the load forecast after the demand and energy
22 savings of these commercial lighting programs. So
23 we've already accounted for it in the analysis.

24 COMMISSIONER WEFALD: All right. Thank
25 you.

1 THE WITNESS: Sorry to be confusing on
2 that.

3 JUDGE WAHL: Any further questions from
4 the Commission? Mr. Kuntz, followup?

5 MR. KUNTZ: Thank you. Yes.

6 **REDIRECT EXAMINATION**

7 **BY MR. KUNTZ:**

8 Q. Followup on that DSM question, in response
9 to an issue that Commissioner Wefald raised with
10 you regarding comparing the economics of DSM
11 programs between utilities. Will a program of
12 economics depend on the customer characteristics,
13 usage characteristics of the utilities?

14 A. Absolutely. I mean, without trying to
15 bore anybody, I mean, this assessment of the
16 technical potential actually does take into account
17 the amount of gas heating, amount of electric
18 heating. It takes into account income of
19 customers, the mix of residential, commercial, and
20 industrial customers. So, actually, when I said
21 technical potential, while both utilities might see
22 the same price, that is the price of a gas turbine
23 is similar to both utilities, they could start with
24 separate technical potentials, as well.

25 Q. So, for example, a utility that has higher

1 concentration of electric space and water heating
2 might have DSM programs available to it that would
3 be economic for that utility but not another
4 utility that had a lower concentrate of electric
5 space.

6 A. Absolutely. The role of the technical
7 potential studies is to look at the different end
8 uses that electricity is being used for, look at
9 the -- make an assessment of the appliance stock,
10 and then go from there.

11 Q. You were asked some questions by Ms. La
12 Seur regarding fuel diversity, and you said that
13 you had some opinions on fuel diversity within the
14 region. Could you offer those to the Commission,
15 if you recall it?

16 A. I guess what I was trying to say is that
17 if you're going to rely on the market, in MISO on
18 peak, you know, what's setting the price? The
19 price setting unit for that clearing price in MISO
20 on peak is gas. So it doesn't matter if you say,
21 well, gee, you know, gas is 60 percent of the --
22 you know, coal is 60 percent of the market or 75
23 percent of the market. If you're exposing yourself
24 to the market on peak, you're exposing yourself to
25 gas. That's what I was trying to get at.

1 Q. And then also with respect to questions by
2 Ms. La Seur, she asked you if you recall a series
3 of questions about the wisdom of modeling with or
4 without an assumption for the extension of the PTCs
5 and factors that might affect the likelihood of the
6 extensions or non-extension of the PTC. Do you
7 recall that line of questioning?

8 A. Yes, I do.

9 Q. And in your scenarios one and two in your
10 testimony did that assume extension of the PTC?

11 A. Yes, it did.

12 Q. And then -- and that picked Big Stone II
13 as the least cost?

14 A. That's correct.

15 Q. And your scenarios three and four assumed
16 expiration of the PTC at the end of 2008, along
17 with some other assumption changes, such as
18 lowering the capacity factor for wind; is that
19 correct?

20 A. That is correct.

21 Q. Do you know what the result of your
22 scenarios three and four would be if you assumed
23 that the PTC were extended beyond 2006?

24 A. Yes. The result is the same. The Big
25 Stone II is still the least cost option.

1 Q. And do you recall that Ms. La Seur handed
2 you Exhibit Intervenor 23 that showed the result of
3 a vote by the Senate on April 10th for extension of
4 some clean energy production incentives?

5 A. Yes, I do.

6 Q. Do you know whether the Senate had
7 previously voted for extension of the PTC?

8 A. My understanding is that in December of
9 2007 the Senate voted for the extension and the
10 house did not.

11 Q. And the house did not accept that
12 extension; is that correct?

13 A. The house under their -- for whatever --
14 for reasons of, you know, the pay-as-you-go -- the
15 pay-as-you-go is one of the reasons that was given
16 for not extending it.

17 MR. KUNTZ: That's all the questions.
18 Thank you.

19 JUDGE WAHL: Followup, Ms. La Seur?

20 MS. LA SEUR: I have nothing.

21 JUDGE WAHL: Mr. Binek, anything further?

22 MR. BINEK: No.

23 JUDGE WAHL: Any follow-up questions from
24 the Commission to Mr. Kuntz's questioning?

25

FURTHER EXAMINATION**BY COMMISSIONER CRAMER:**

Q. If I told you Senator Dole was one of the senators that was absent and not voting, could you name the other three?

A. No.

Q. Never mind.

A. How is that for a short answer?

Q. Would it surprise you if they're all running for president?

A. No.

JUDGE WAHL: I assume, Mr. Kuntz, you have no followup?

MR. KUNTZ: We have no followup.

JUDGE WAHL: Likewise, Ms. La Seur and Mr. Binek?

MR. BINEK: No.

JUDGE WAHL: Indeed. All right. Next, counsel. Mr. Guerrero, looks like you wish to call Mr. Hewson; am I correct?

MR. GUERRERO: That is correct, Your Honor, and --

JUDGE WAHL: Okay. Let's see if I can do this. My recollection of the last time we did this was that it was very important to speak into the

1 microphone to communicate. You really must get
2 that microphone relatively close and you must speak
3 directly into it. Otherwise, we're going to have
4 trouble with the person on the telephone.

5 MR. GUERRERO: Your Honor, I was wondering
6 if I could just give him a call real quick, let him
7 know that you're going to be calling him.

8 JUDGE WAHL: Sure. Go ahead.

9 MR. GUERRERO: He might be listening. I'm
10 not sure.

11 JUDGE WAHL: That's fine.

12 COMMISSIONER WEFALD: Who is testifying?

13 JUDGE WAHL: Thomas Hewson. Has he
14 testified previously?

15 MR. KUNTZ: Not in this proceeding. It
16 would be under tab 28.

17 (Off the record.)

18 JUDGE WAHL: Mr. Hewson, this is Al Wahl,
19 the administrative law judge with the North Dakota
20 Public Service Commission, and we're ready for your
21 testimony. Are you ready to proceed?

22 MR. HEWSON: I am indeed.

23 JUDGE WAHL: Mr. Hewson, as you may be
24 aware, your testimony is required to be under oath,
25 and I'm required by law to advise you regarding

1 perjury before administering the oath. Perjury is
2 a false statement of material fact which you do not
3 believe to be true, in other words, generally
4 speaking, a lie. In North Dakota perjury is a
5 Class C felony punishable by a fine up to \$5,000,
6 imprisonment for a period of up to 5 years, or
7 both.

8 (Witness sworn.)

9 JUDGE WAHL: Mr. Guerrero.

10 MR. GUERRERO: Thank you, Your Honor.

11 **THOMAS HEWSON,**

12 having been first duly sworn, was examined and
13 testified as follows:

14 **DIRECT EXAMINATION**

15 **BY MR. GUERRERO:**

16 Q. Good afternoon, Mr. Hewson. Can you hear
17 me okay?

18 A. I can indeed.

19 Q. Okay. Great.

20 A. Can you hear me?

21 Q. We can hear you just fine. State your
22 name for the record, please, and spell it.

23 A. My name is Thomas A. Hewson, Jr., and
24 Hewson is spelled H-e-w-s-o-n.

25 Q. And please tell us your position.

1 A. I'm a principal at Energy Ventures
2 Analysis, Incorporated, in Arlington, Virginia.

3 Q. And what do you do as a principal for
4 Energy Ventures Analysis?

5 A. I direct the environmental practice. I
6 over -- I am responsible for the firm's
7 environmental emission forecasts and industry
8 environmental compliance studies. I do the -- I
9 perform integrated electricity modeling and also
10 have been involved in many numerous renewable
11 project evaluations.

12 Q. Thank you. And what is your educational
13 background, briefly?

14 A. I have a degree in civil engineering from
15 Princeton University from 1976.

16 Q. And did you have occasion to prepare
17 rebuttal testimony in this matter?

18 A. I did.

19 Q. And do you have that in front of you, Mr.
20 Hewson?

21 A. I do.

22 Q. And it's been marked as OTP/MDU Exhibit
23 337?

24 A. Yes.

25 Q. And your resume is attached to that

1 testimony, and that's Exhibit 338?

2 A. That's correct.

3 Q. Okay. And do you have a summary of your
4 testimony, Mr. Hewson?

5 A. I do.

6 Q. And what is that marked?

7 A. I do not have what exhibit that turned out
8 to be.

9 JUDGE WAHL: 337A.

10 Q. (MR. GUERRERO CONTINUING) 337A. And do
11 you have that in front of you, Mr. Hewson?

12 A. I do.

13 Q. And with respect to your testimony, if I
14 asked you the same questions, would your answers be
15 the same?

16 A. They would.

17 Q. Mr. Hewson, do you have any corrections to
18 make to that exhibit?

19 A. No. The only -- no, I do not.

20 MR. GUERRERO: Okay. And with respect to
21 OTP/MDU 337, 337A, and 338, the applicants would
22 offer that into the record, Your Honor.

23 JUDGE WAHL: Ms. La Seur?

24 MS. LA SEUR: No objection.

25 JUDGE WAHL: Mr. Binek?

1 MR. BINEK: No objection.

2 JUDGE WAHL: OTP/MDU Exhibits 337, 338,
3 and 337A are each received.

4 Q. (MR. GUERRERO CONTINUING) Mr. Hewson,
5 could you offer your brief summary, please?

6 A. I will.

7 Q. And, Mr. Hewson, we have it here on the
8 screen. I believe the Commissioners have a hard
9 copy, but if you could just as you go along tell us
10 what page you're on so that we could flip the
11 screen here.

12 A. Okay. I would assume that we could skip
13 over slides one and two, since we've pretty much
14 covered that, and start with slide number three. I
15 was asked by the applicants to review and evaluate
16 the testimony of DRC witness David Schlissel. In
17 specific I was asked to review the risk to new
18 coal-fire power plant projects raised by Mr.
19 Schlissel and the wind energy alternative
20 production costs.

21 There are two risks in specific that I was
22 asked to examine. One was dealing with a future
23 carbon risk, which is now slide number four.

24 In North Dakota the statute specifically
25 prohibits consideration of the carbon costs in the

1 resource analysis; and, therefore, it should not be
2 considered as requested by Mr. Schlissel. However,
3 there have been jurisdictions that the Big Stone
4 project has been -- or it states that it requires
5 that you evaluate the carbon risk of which I have
6 participated.

7 The carbon risks -- so I have examined the
8 carbon risks as this project in other -- in the
9 other venues. Carbon compliance risks are highly
10 dependent upon the type, severity, and timing of
11 the regulation adopted. That remains highly
12 uncertain. However, it appears that under most
13 leading congressional carbon proposals that are
14 being debated that Big Stone II would remain the
15 least cost baseload option, even if they were
16 adopted.

17 This has a lot to do with the fact that
18 the applicants are eligible to receive a large
19 allocation of free allowances, that they are going
20 to have access to be able to purchase lower cost
21 emission offsets to further reduce their carbon
22 liability, and then long-range prices will likely
23 be captured -- or capped by future carbon capture
24 and sequestration costs, and that Big Stone is
25 likely to have much lower carbon retrofit costs

1 than other coal-fired power plants.

2 And then, finally, when you deal with
3 carbon legislation, it also affects other
4 alternatives and other alternatives' costs,
5 including there would be increased pressure on
6 natural gas prices.

7 Mr. Schlissel in his testimony suggests
8 that new coal-fired construction -- that there have
9 been many delays due to concerns over carbon
10 capture and escalating prices. It is also true
11 that there have been many, you know, delays for
12 other non-carbon based technology options, as well.

13 However, we do track new projects for the
14 NERC and others, and currently we are tracking 130
15 coal plants that are still active and in various
16 stages of development. These include 27 coal
17 plants that are currently under construction; 9
18 projects are in advance permitting and financing;
19 15 projects that are in the earlier development
20 stages; and 79 projects that have been announced
21 but not yet canceled or with no recent permitting,
22 financing, or power contracts that have been
23 announced.

24 In addition, if one looks at the annual
25 energy outlook, they forecast coal being the

1 primary dominating new baseload power construction
2 through the year 2030 as being the lowest cost
3 alternative.

4 In addition to these coal risks I also
5 evaluated wind power risks. Like any other
6 project, wind projects also entail significant
7 risks, specifically carbon -- capital cost risks
8 dealing with the rapid cost escalations which have
9 continued to escalate as rapidly in wind, as well;
10 performance risk in terms of whether one is able to
11 achieve high capacity factor utilizations to spread
12 out those capital costs and capital cost
13 recoveries; and dealing with the expiration of
14 governmental subsidies risks dealing with things
15 such as the current production tax credit.

16 Wind energy alternatives would also
17 increase the applicant's natural gas use which also
18 has additional risks associated with it in terms of
19 natural gas prices. I do spend some time talking
20 about the production tax credit, and that is an
21 important element based upon the modeling that has
22 been done to date to reduce wind power acquisition
23 costs.

24 I review the production tax credit
25 histories, the extensions, several expirations, and

1 currently there is indeed a one-year extension that
2 passed the Senate but not yet been adopted by the
3 House of Representatives.

4 However, I believe that there's a material
5 risk that the tax credit will expire and no longer
6 be available to new projects being built to meet
7 the energy requirements in the Big Stone II
8 operating period. This has a lot to do with the
9 fact that the original objective of the production
10 tax credit has been met through demand created by
11 state renewable portfolio standards, and as our
12 wind generation expands from these renewable
13 portfolio standards, the tax revenue losses have
14 continued to grow, and therefore the costs needing
15 to offset these costs become increasingly
16 difficult.

17 That finishes my summary.

18 MR. GUERRERO: Thank you, Mr. Hewson.
19 Your Honor, I forgot to -- or neglected to
20 reference OTP/MDU Exhibits 339 and 340, which are
21 attached to Mr. Hewson's testimony, as well, and we
22 would offer those at this time.

23 JUDGE WAHL: Ms. La Seur?

24 MS. LA SEUR: No objection.

25 JUDGE WAHL: Mr. Binek?

1 MR. BINEK: No objection.

2 JUDGE WAHL: OTP/MDU Exhibits 339 and 340
3 are each received.

4 MR. GUERRERO: We would tender Mr. Hewson.

5 JUDGE WAHL: Ms. La Seur?

6 MS. LA SEUR: No questions.

7 JUDGE WAHL: Mr. Binek?

8 MR. BINEK: I think I have a couple that
9 maybe weren't completely covered in the summary.

10 **CROSS-EXAMINATION**

11 **BY MR. BINEK:**

12 Q. When you talked about Mr. Schlissel's
13 discussion in his testimony about the cancelation
14 of numerous coal-fired plants, what do you believe
15 is the future for coal-fired generating facilities?

16 A. I believe that when we look at our need
17 for baseload power, it needs to come from a
18 baseload power resource, which could be nuclear,
19 and there are difficulties associated with the
20 nuclear power option; it can come from natural gas.
21 Of course, we have significant issues in terms of
22 how sensitive gas prices are to the economics and
23 how sensitive it is to the demand since natural gas
24 is also used by other sources, and we will become
25 increasingly dependent upon imported sources of

1 natural gas; and it could also come from some
2 specific renewable resources such as biomass or
3 geothermal.

4 However, given the load and the increase
5 of the load, I do agree with the Department of
6 Energy that a large portion of this increased
7 demand will need to come from coal-fired base
8 sources. It will remain to be an economically
9 attractive alternative.

10 Q. I was just passed a note that I should
11 introduce myself. I'm William Binek. I'm counsel
12 for the Commission's advocacy staff. Were you
13 listening today when Mr. Schlissel testified?

14 A. I did -- you know, there were parts that I
15 couldn't hear very well in that not all the time
16 were the people speaking into the microphones for
17 those of us listening online, and so I had gotten a
18 lot of it, but I do not profess to have been able
19 to hear all of it.

20 Q. Is it your understanding that Mr.
21 Schlissel assumes the PTC will be extended
22 indefinitely?

23 A. Yes. My understanding is it's his belief
24 that it would be his underlying assumption.

25 Q. In your testimony you conclude that he has

1 overstated carbon risks. Is the primary reason
2 that you make that statement because he doesn't
3 factor in the anticipated no-cost allowances that
4 would be included in anticipated legislation?

5 A. That is indeed one element. It also deals
6 with the type of legislation that is likely to be
7 adopted, and it -- and a judgment in terms of where
8 in the wide range of potential outcomes will the
9 legislation come out, and I have a different
10 viewpoint from Mr. Schlissel in his doing his
11 emission allowance forecasts, which I believe have
12 overstated what the likely cost range will be.

13 Q. Okay. Did you hear when he testified
14 concerning how -- how he had incorporated low cost
15 allowances in his study?

16 A. I did hear that part of his testimony. I
17 think it runs contrary to what he states in his
18 report. He talks about an allowance price
19 forecast, not a cost forecast. When we talk about
20 allowances, we're talking about the credits and the
21 values of the credits as they trade. He bases his
22 forecast based upon prior studies done by EIA, EPA,
23 TELUS, MIT and others. In those forecasts they
24 project the prices for emission allowances, not
25 costs, and so I would say that I was very surprised

1 with his answer to that question.

2 Q. You discussed the risks associated with
3 wind power, including capital risk, output
4 performance risk, and economic risks, and in your
5 summary I don't think you explained all those, or
6 else I just missed it, but would you just explain
7 what are the capital risks, the performance risk,
8 and the economic risk?

9 A. Yes, I would be glad to. The wind -- wind
10 production costs are heavily driven by the capital
11 cost, and so, therefore, most of the cost is based
12 upon getting a return on your capital, the single
13 most dominant cost.

14 We have observed a rapid escalation
15 occurring over the past few years for wind turbine
16 costs. In addition to the turbine costs
17 themselves, wind options also often require
18 transmission costs -- significant transmission
19 costs in addition. While Mr. Schlissel in his
20 testimony talks about going to the high side of
21 \$2,000 per kilowatt, I have seen a high side of
22 more than 50 percent higher than that.

23 We continue to see escalation in prices.
24 Obviously there is a large, international demand
25 for wind turbines, and as a result the prices have

1 continued to escalate and have escalated at a very
2 rapid rate.

3 What we have observed, for example, in the
4 last five years is that wind turbine costs have
5 escalated by roughly 280 percent -- or have
6 escalated 280 percent. So I guess that's almost
7 three times, which is greater than what we observed
8 as far as escalation rates for the coal-based
9 alternatives in that same five-year period.

10 As far as the performance risk, in that
11 you have a capital cost item, obviously the amount
12 of megawatt-hours that you are able to spread it
13 over is a significant -- has a significant
14 influence on ultimately what the costs are.

15 When we look at the national average
16 capacity factor for wind turbines in the United
17 States, it's around 29 percent, which is far --
18 which is less than the values that are being used
19 in the modeling by Mr. Greig and Mr. Heidell. And,
20 therefore, if you -- as we increase the demand for
21 wind generation in order to meet expanding
22 renewable portfolio standards, the question is are
23 we going to base them in increasingly less windy
24 areas, in places where the wind is not quite as
25 strong? Are we going to place them at first in the

1 windiest areas and then work our way down?

2 And as a result, if we do that, we're
3 going to end up with, you know, the risk that
4 future wind projects will be in less windy areas
5 that will not be able to achieve as high a capacity
6 factor.

7 Mr. Schlissel discusses that the
8 technology has improved, and so he would expect the
9 new technology would be able to achieve higher
10 capacity factors; and, in fact, the issue is that
11 there have been improvements, however, has not been
12 a C change for improvements.

13 We did a study two years ago, which we
14 looked at the capacity factors of all plants that
15 were built after the year 2001 and compared them to
16 the national average. The average at that time was
17 that the newer plants had a lower capacity factor
18 than the older plants, which suggests that what
19 really drives the performance is the wind resources
20 more so than the technology that is currently in
21 place.

22 So when we look at performance risk, we're
23 looking at what the capacity factors will be. In
24 that the 38 percent was used, you know, in some of
25 the analyses, if you look at my Hewson Exhibit

1 TAH-SR-2, you can see that in 2005 the average
2 capacity factor for those projects in Minnesota was
3 a 32 percent capacity factor, and so by assuming
4 much higher capacity factors what is probably
5 happening is we're more likely underestimating the
6 cost as opposed to overestimating the costs of
7 that -- or that we're underestimating what the true
8 costs may be.

9 MR. GUERRERO: Just for clarification,
10 Your Honor, the exhibit he referenced is now marked
11 as OTP/MDU Exhibit 339, and in what we're calling
12 the big book it's tab 30.

13 JUDGE WAHL: Thank you.

14 Q. (MR. BINEK CONTINUING) I think there's
15 one part of the question left, but before you get
16 to that --

17 A. With the governmental subsidies?

18 Q. The economic risk.

19 A. Oh, the economic risk was the capital cost
20 risk.

21 Q. Oh, okay.

22 A. There is a governmental subsidies risk.

23 Q. Okay.

24 A. Which is two-thirds of -- there was a
25 paper a while back that suggests that roughly

1 two-thirds of the value of a renewable project was
2 its tax incentives. Obviously we're dealing with a
3 source that -- in wind that has access to many
4 subsidies such as the federal production tax
5 credit, it has accelerated depreciation, it has
6 many local tax breaks, it often has other
7 incentives such as the state renewable portfolio
8 standards and therefore able to achieve additional
9 revenues.

10 These costs are -- or these subsidies are
11 significant because it needs to overcome a
12 significant disadvantage to conventional sources of
13 power. There is a risk that these subsidies as we
14 get higher and higher levels will be -- come down
15 or reduced, and so that is also a very significant
16 risk behind the wind option, because keep in mind,
17 when we look at these alternatives, we're looking
18 at the alternatives over the life cycle costs of
19 these entire -- you know, for the Big Stone
20 facility. So we're not just talking about near
21 term. We're talking about also much longer term
22 issues, as well.

23 Q. I've asked several witnesses this, but
24 when do you believe the PTC will expire?

25 A. You know, obviously every -- this has been

1 an issue. They tried it last year, it did not
2 work. It has kind of leaked through the Senate
3 this year. It always seems to have some
4 difficulties. I assume that we're going to have
5 increased difficulties as the amount of wind being
6 generated increases, and so I would suspect that it
7 will expire before we, you know, truly implement
8 something like a carbon regulation.

9 So I think it's going to be well -- I
10 think it's going to expire before Big Stone II is
11 likely to come on line in terms of the eligibility
12 period. Obviously the way tax production credit
13 works is once you're eligible, you get tax credits
14 for the first ten years of your operation, then
15 they expire. So --

16 Q. What -- I'm sorry. Did you have something
17 more you wanted to add?

18 A. No. I think that's it.

19 Q. Okay. What do you believe the appropriate
20 capacity factor for wind turbines is today?

21 A. I would agree with Mr. Schlissel that it
22 depends where you are. Obviously there in North
23 Dakota I would assume a higher capacity factor as
24 opposed to if I was to locate a project in the
25 east, let's say in the mountains of Pennsylvania.

1 The capacity factors in terms of the projects that
2 are there today is that, you know, we have some
3 projects as low as 30 percent in North Dakota and
4 we have some capacities around 40 percent or a
5 little bit higher, and so in terms of new, it all
6 would depend upon the timing of those and how far
7 out into the future and what sites remain and how
8 far away they are from the transmission lines.

9 MR. BINEK: Okay. Thank you. I have no
10 further questions.

11 JUDGE WAHL: Questions from the
12 Commission? Commissioner Wefald.

13 COMMISSIONER WEFALD: Yes.

14 **EXAMINATION**

15 **BY COMMISSIONER WEFALD:**

16 Q. This is Commissioner Wefald. I'm just
17 interested in your testimony on page five, and it
18 talks about a carbon capture demonstration project
19 in Wisconsin this year.

20 A. That's correct.

21 Q. And I understand it just got started, and
22 my question for you is: Is this located on a new
23 facility or on an old plant?

24 A. This is -- it's on an existing plant.
25 It's the Pleasant Prairie Plant.

1 Q. All right. And then my -- then I have --
2 that's a cost of 20 dollars per ton; right?

3 A. What I'm saying is that the Alstrom
4 vendor, who is the vendor for the chilled ammonia
5 process, which is what they're trying to
6 demonstrate on a slip stream at the Pleasant
7 Prairie Plant, has estimated that their process
8 will cost roughly \$20 a ton removed. I do not
9 believe that they are suggesting that the costs of
10 the demonstration project that they expect to have
11 a \$20 per ton removal cost.

12 Q. All right. What you're saying is it will
13 be higher because this is a demonstration project?

14 A. Right. It's a less than two megawatt slip
15 stream that they are demonstrating this as their
16 first step.

17 Q. Oh, all right.

18 A. Then we do a -- next year we will be doing
19 a larger demonstration at the Mountaineer Station
20 also on a slip stream, and then in 2011 they have
21 planned to do a full scale demonstration of this
22 project on a coal-fired power plant around 250
23 megawatts in Oklahoma.

24 Q. Thank you. And then on top of that you
25 would have the costs of sequestering the carbon;

1 isn't that correct? Because this just captures it
2 from an existing plant and then you'd have the cost
3 of still sequestering it?

4 A. Correct. You would have the cost of
5 getting -- this would be the costs of capturing it
6 and compressing the gas to liquid so that you could
7 transport it.

8 | Q. Yes. Thank you.

9 A. And then, yes, there would be additional
10 costs associated with taking it to where you would
11 sequester it.

12 COMMISSIONER WEFALD: Thank you. That's
13 it.

14 JUDGE WAHL: Any further questions from
15 the Commission? Followup, Mr. Guerrero?

16 MR. GUERRERO: I don't think so, Your
17 Honor.

18 JUDGE WAHL: Ms. La Seur?

19	MS. LA SEUR: No.

20 JUDGE WAHL: Mr. Binek.

21 MR. BINEK: Just one.

22 | **RECROSS - EXAMINATION**

23 BY MR. BINEK:

24 Q. Looking at -- at OTP/MDU Exhibit 339, it
25 shows the 2005 Minnesota wind power production

1 data. Would it be possible to get a similar
2 exhibit for North Dakota that would show the
3 generation and capacity factors for the projects
4 that presently exist in North Dakota?

5 A. Yes. I would be glad to provide that.
6 There are five that report their generation in
7 capacities currently in North Dakota, and I would
8 be more than glad to provide that data.

9 Q. Okay.

10 A. And that would be 2007 data.

11 JUDGE WAHL: All right. First of all, Mr.
12 Binek, an exhibit number, please.

13 MR. BINEK: Well, I think we'd have --

14 JUDGE WAHL: It looks like PSC 5?

15 MR. BINEK: Right.

16 JUDGE WAHL: All right. That'll be
17 late-filed exhibit PSC 5. What's the description
18 of the exhibit?

19 MR. BINEK: It would be 2007 North Dakota
20 wind power production data.

21 JUDGE WAHL: All right. Anything further,
22 Mr. Binek?

23 MR. BINEK: I was thinking about one
24 other --

25 JUDGE WAHL: Take your time.

1 MR. BINEK: -- clarification here.

2 JUDGE WAHL: Don't mean to rush you.

3 MR. BINEK: It escapes me right now.

4 COMMISSIONER CRAMER: That's it.

5 COMMISSIONER WEFALD: Okay.

6 THE WITNESS: Mr. Binek, I should note
7 that from these reports for North Dakota facilities
8 it suggests that there was a total of 947,000
9 megawatt-hours that were produced from the
10 reporting wind projects, which would be equivalent
11 to eight percent of the current -- of the 2007
12 North Dakota retail sales.

13 Q. (MR. BINEK CONTINUING) One other question
14 for Mr. Hewson on exhibits. Would it be possible
15 to update the Minnesota data to 2007?

16 A. It would.

17 JUDGE WAHL: Okay. So that's -- shall we
18 include that -- well, no, let's not. Let's make
19 that PSC Exhibit 6.

20 MR. BINEK: Right.

21 JUDGE WAHL: 2007 Minnesota wind power
22 production data.

23 MR. BINEK: Yes.

24 JUDGE WAHL: Anything further, Mr. Binek?

25 MR. BINEK: No.

1 JUDGE WAHL: Any follow-up questions from
2 the Commission? Anything -- any followup, Mr.
3 Guerrero?

4 MR. GUERRERO: No, thank you.

5 JUDGE WAHL: Ms. La Seur?

6 MS. LA SEUR: (Shakes head.)

7 JUDGE WAHL: All right. Thank you very
8 much, Mr. Hewson.

9 MR. HEWSON: Thank you.

10 JUDGE WAHL: Bye now.

11 THE WITNESS: All right. Bye-bye.

12 JUDGE WAHL: Well, obviously, counsel,
13 Commissioners, we'll resume at nine o'clock
14 tomorrow morning with the testimony of the
15 remaining witnesses for Otter Tail Power and MDU
16 and with Mr. Hewson.

17 MR. GUERRERO: Mr. Deason.

18 JUDGE WAHL: Deason.

19 (Recessed at 5:12 p.m., the same day.)

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