

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

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

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

TRANSCRIPT OF
HEARING
(VOLUME I)

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

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

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A P P E A R A N C E S

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A P P E A R A N C E S (Continued)

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COMMISSION.

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1 (The following proceedings were had and
2 made of record herein, commencing at 8:01 a.m.,
3 Tuesday, the 26th day of June, 2007:)

4 JUDGE WAHL: All right. I think we're on
5 the record, as near as I can tell. Good morning.
6 Good morning, Commissioners.

7 COMMISSIONER WEFALD: Morning.

8 COMMISSIONER CRAMER: Morning.

9 COMMISSIONER CLARK: Morning.

10 JUDGE WAHL: I am Al Wahl, the
11 administrative law judge, designated by the Office
12 of Administrative Hearings pursuant to the request
13 of the Public Service Commission to act as the
14 hearing officer for the hearings of Otter Tail
15 Corporation and Montana-Dakota Utilities Co.
16 advance determination of prudence applications for
17 their respective participation and ownership
18 interest in the Big Stone II Generating Plant, the
19 application of Otter Tail Corporation being Public
20 Service Commission No. PU-06-481 and the
21 application of Montana-Dakota Utilities Co. being
22 Public Service Commission Case No. PU-06-482.

23 Otter Tail and Montana-Dakota, along with
24 five other utilities, are proposing to construct a
25 630 megawatt pulverized coal facility located

1 adjacent to the existing Big Stone Plant in Big
2 Stone City, South Dakota. Otter Tail and Montana-
3 Dakota each will own 19.33 percent of Big Stone II.

4 The companies are requesting that the
5 commission determine the construction of Big Stone
6 II Generating Plant to be reasonable and prudent in
7 order to provide the basis for future rate
8 stability proposals the companies will present to
9 the Commission.

10 Before proceeding with the hearings I will
11 ask the Commissioners for their comments and for
12 any directions for the hearing. Commission
13 President Susan Wefald.

14 COMMISSIONER WEFALD: Good morning. I
15 know this is a very important hearing, and the
16 Commission has been preparing for this for quite
17 some time, and I know that the people who are in
18 this room have also spent a great deal of time
19 getting ready for this hearing.

20 I would like to particularly thank our
21 administrative law judge, Al Wahl. He has already
22 done quite a bit of work for this case regarding
23 procedural issues and has demonstrated this morning
24 that he's ready to conduct a very good hearing on
25 this matter.

1 The Commission's extremely interested in
2 getting a good record. We already have a number of
3 documents that have been filed with the Commission
4 that we've had a chance to review, but
5 cross-examination and hearing the questions and
6 answers to our questions and to those of the
7 parties is always an extremely important part of
8 developing a case.

9 And so I wish all of you a good day today,
10 and we may have more than one day on this hearing,
11 I understand, and we're all prepared to spend the
12 time necessary to get a good record in this case.

13 Thank you.

14 JUDGE WAHL: Thank you, Commissioner
15 Wefald. Commission Tony Clark.

16 COMMISSIONER CLARK: I'd just welcome
17 everyone this morning. It's a voluminous record
18 already, and the Commissioners have had an
19 opportunity to read through it, have enjoyed it.
20 It looks like a very interesting case, and I look
21 forward to the hearing.

22 Thank you.

23 JUDGE WAHL: Commissioner Kevin Cramer.

24 COMMISSIONER CRAMER: Well, good morning,
25 everyone. Welcome to our hearing room. We look

1 forward to a very thorough hearing. I must say if
2 there are some days from time to time when we have
3 an extra hour with nothing to do, that's been cured
4 lately, and -- but I must also say I've appreciated
5 the work of all parties, and the preparation that
6 you've all done has helped us prepare well, as
7 well. So I look forward to a good day or two or
8 perhaps three.

9 JUDGE WAHL: Thank you, Commissioners.

10 The record will show that it is some after
11 eight o'clock a.m., June 26th, 2007, the time and
12 date noticed for the hearings of advance
13 determination of prudence applications of Otter
14 Tail Corporation and Montana-Dakota Utilities Co.
15 for their respective participation and ownership
16 interest in the Big Stone II Generating Plant.

17 The issues for these hearings are
18 specified by the notice of rescheduled hearing
19 issued March 7, 2007, for hearings scheduled to be
20 held beginning May 29, 2007, which were again
21 rescheduled to be held beginning today by order of
22 the Commission and notice issued May 16, 2007.

23 Those issues are as follows: One, whether
24 the resource addition is reasonable and prudent.

25 Two, whether the applicants have need for

1 additional generating resources.

2 Three, what alternatives exist for meeting
3 additional generation needs?

4 Mr. Kuntz, will you identify -- please
5 identify yourself, state your appearance for the
6 record?

7 MR. KUNTZ: Thank you. I'm Daniel S.
8 Kuntz, attorney at law, appearing on behalf of
9 Montana-Dakota Utilities Co., 1200 West Century
10 Avenue, Bismarck, North Dakota. Also at the table
11 with me are Ms. Andrea Stomberg and Tamie Aberle of
12 Montana-Dakota Utilities.

13 JUDGE WAHL: Mr. Guerrero, will you state
14 your appearance for the record, please?

15 MR. GUERRERO: Yes. Thank you, Your
16 Honor. Todd Guerrero with the law firm of
17 Lindquist & Vennum in Minneapolis, 4200 IDS Center,
18 Minneapolis, Minnesota, 55402, here on behalf of
19 both Otter Tail Corporation and Montana-Dakota.
20 With me at the counsel table is our paralegal, Dawn
21 Daniels.

22 JUDGE WAHL: Mr. Binek -- I'm sorry. Mr.
23 Breen, will you state your appearance for the
24 record, please?

25 MR. BREEN: I'm Jack Breen. I'm an

1 attorney in Bismarck. Let me introduce Carrie La
2 Seur to the Commissioners. Ms. La Seur is a
3 graduate of Minot High School. Represented North
4 Dakota as a Rhodes Scholar, finished a law degree
5 at Yale, and has an environmental practice in Iowa
6 and has agreed to help the intervenors and the
7 Commission hear the testimony and this evidence.

8 JUDGE WAHL: Mr. Binek, will you state
9 your appearance for the record, please, and
10 identify also each member of the Commission's staff
11 who will participate for the hearing?

12 MR. BINEK: Yes. My name is William
13 Binek. I'm chief counsel for the Commission, and
14 I'm serving as counsel for the advocacy staff in
15 this proceeding. Seated to my right is Terry
16 Deason, who is the staff consultant in this
17 proceeding. To Mr. Deason's right is Jerry Lein,
18 and to his right Mike Diller, and back by the
19 computer here is Annette Bendish. These people
20 comprise the advocacy staff. And at the table --
21 small table to your right, Your Honor, is Patrick
22 Fahn, who is a Commission advisor, and Illona
23 Jeffcoat-Sacco -- I don't think she's in here right
24 now -- is also a Commission advisor in this case.

25 JUDGE WAHL: All right, counsel. Mr.

1 Kuntz, when you're ready.

2 MR. KUNTZ: Thank you, Your Honor.
3 Commissioners, we appreciate the opportunity to
4 come before you to explain the Big Stone II project
5 and receive the Commission's consideration on the
6 prudence of that project.

7 The statutory standard for advance
8 determination of prudence for an electric
9 generation or transmission system is relatively
10 simple. Is the proposed resource reasonable and
11 prudent for the purpose of providing reliable
12 electrical service? That's the sole standard under
13 the statute. Not much direction.

14 But I think there's three key questions
15 the Commission will want to consider in the course
16 of evaluating the prudence of this generation and
17 transmission source.

18 First, is the resource needed to meet the
19 anticipated demand of the utilities customers?
20 Second, will the resource assist in providing
21 reliable electric service to those customers? And,
22 third, will the resource provide cost-effective
23 electric service to customers? I think those are
24 the three questions that are before the Commission.

25 MDU will be sponsoring five witnesses in

1 addition to the joint project witnesses that will
2 address each of those questions. The testimony
3 will show from MDU's perspective that the need for
4 this plant was precipitated by the expiration of
5 the contract for the purchase of 66 megawatts of
6 power from Basin Electric's AVS station. Combined
7 with electric growth on MDU's system, MDU has a
8 need for additional generation resources, including
9 the baseload generation represented by Big Stone
10 II.

11 Ms. Stomberg and Mr. Steen will present
12 testimony and exhibits showing that the company's
13 demand needs and existing -- needs the additional
14 resources represented by Big Stone II and that Big
15 Stone II, along with other resources that the
16 company is currently engaging or planned with, are
17 needed to meet its future demand.

18 No one has really challenged the overall
19 need, at least for Montana-Dakota and I believe for
20 Otter Tail, as well, for the need for this resource
21 and their generation mix.

22 On the second question the testimony will
23 show that the proposed baseload facility will
24 provide long-term reliable service to customers
25 while using highly efficient technology for the

1 reduction of emissions at both Big Stone I and Big
2 Stone II.

3 The companies have long-term experience at
4 Big Stone I and other similar facilities over a
5 number of decades that have provided the
6 reliability -- or demonstrated the reliability of
7 these types of units in providing electric service
8 to their customers, and the Commission is well
9 familiar with the service that these plants have
10 provided to customers over a number of years.

11 On the third question the testimony will
12 show that MDU has determined from a number of
13 perspectives that Big Stone II provides the best
14 opportunity for long-term cost-effective electric
15 service for its customers. The testimony will show
16 that MDU explored a number of alternatives, and
17 that in each instance Big Stone II was the most
18 prudent choice for its system.

19 As a check on its internal analysis it
20 also retained Mr. Heidell, who will also be
21 presenting testimony in this proceeding, to
22 independently model the generation alternatives
23 available to MDU, and Mr. Heidell likewise
24 concluded that Big Stone II was the best
25 alternative -- most cost-effective and best

1 alternative available to MDU.

2 Are there risks associated with Big Stone
3 II? Certainly. The capital cost of a project of
4 this size are substantial. Rita Mulkern will
5 present testimony -- brief testimony on the
6 relative magnitude of the capital costs in
7 relationship to the company's existing current
8 rates. Because of those -- that cost, there are
9 also costs and risks of not making a prudence
10 determination that are even greater than the risks
11 of a prudency decision. Because of the capital
12 costs of the project, the company cannot commit to
13 this project without the assurance of an
14 opportunity to recover those capital costs.

15 Without the determination of prudence the
16 company would be forced to pursue shorter-term
17 alternatives that are less capital intensive but
18 also offer greater risks to our customers from a
19 price stability and reliability standpoint than
20 what Big Stone II does. So they're offsetting
21 risks to all the alternatives that are out there.

22 The latter option of seeking short-term
23 alternatives that are less capital intensive is
24 really what, I think, the intervenors are seeking
25 the Commission to rule on. As a practical matter,

1 however, the intervenors don't have the same
2 responsibility that the utilities and the
3 Commission has, to look out for the long-term best
4 interests of our customers in providing cost-
5 effective and reliable service that the Big Stone
6 II plant offers.

7 After you've had an opportunity to
8 consider all the testimony in this case, I believe
9 you'll come to the same conclusion that Montana-
10 Dakota has come to, and that is that Big Stone II
11 offers the best alternative providing long-term and
12 reliable, cost-effective service to its customers.

13 Thank you, Your Honor.

14 JUDGE WAHL: Mr. Guerrero.

15 MR. GUERRERO: Thank you, Your Honor. I
16 have a few opening remarks. Todd Guerrero is my
17 name. I'm with the law firm of Lindquist & Vennum,
18 and it's been a few years since I've been in front
19 of the Commission and it's good to be back. I want
20 to say just a few more words. Dan did a very good
21 job of summing up what we believe the evidence will
22 show, so I will -- he stole my thunder a little
23 bit, so I'll try to be brief.

24 To provide a little bit of background in
25 which this case comes to the Commission, the

1 applicants, along with their five other co-owners,
2 are in a region that needs additional power and
3 energy, and MAPP, Mid-Continent Area Power Pool,
4 and other forecasts, including the applicants'
5 forecasts, show that there's a shortage looming as
6 soon as 2011. The most credible forecasts predict
7 that we need about 6300 to 8,000 megawatts by the
8 year 2020. That's a significant -- as the
9 Commission knows, a significant amount of energy.

10 Along with that we know that in this
11 region we need additional transmission capacity.
12 As the Commission is well aware, the transmission
13 system has not kept pace with the demand for
14 electricity, and there are significant constraints
15 in the transmission system that the utilities in
16 this region are trying to address, including along
17 with this project.

18 As Judge Wahl noted, we are with five
19 other applicants -- or five other regional
20 utilities proposing to construct a supercritical
21 pulverized coal plant of 630 megawatts. The plant
22 is intended to fill part of the applicants' needs.
23 It is certainly not intended to fill all of the
24 applicants' needs.

25 The plant will be 20 percent more

1 efficient than the existing fleet of plants on CO2
2 emissions. This will be best in class. The
3 project proposes to install a common wet scrubber
4 that along with the existing unit at Big Stone will
5 have one-seventh of the SO2 emissions than
6 currently being emitted today, a significant
7 contribution to environmental quality.

8 The project also includes transmission
9 facilities, both interconnection facilities and
10 delivery service facilities, and we'll talk a
11 little bit about that during the course of the
12 hearing.

13 As Judge Wahl noted, the applicants will
14 each propose to own 19.33 percent of the overall
15 project, and with its other five members, the
16 project is intended to serve approximately 2.5
17 million customers in a five-state area.

18 The Commission is obviously well aware of
19 the service territory for both Otter Tail and MDU,
20 but these are North Dakota utilities.

21 A little bit of background on what we've
22 been through through the project. Last summer your
23 neighbor to the south, the South Dakota Public
24 Utilities Commission, issued an energy conversion
25 facility permit for Big Stone. We went through an

1 extensive contested case proceeding there, and the
2 Commission found that the project was reasonable
3 and in the public interest and approved. They also
4 have approved related transmission facilities route
5 permits. A decision on the certificate of need and
6 route permits for the two interconnection high-
7 voltage transmission facilities is currently
8 pending before the Minnesota Public Utilities
9 Commission. We expect a decision sometime later
10 this summer. As I note there on the opening
11 comments, we filed this application back in
12 November of '05, so it's been -- it's been quite a
13 process.

14 Our air permit is currently -- we are
15 scheduled to go to hearing on that later this
16 summer, and we are trying to complete a federal
17 environmental impact statement that's being
18 conducted through the Western Area Power
19 Administration.

20 As Mr. Kuntz indicated, primarily in the
21 context of the questions that the Commission needs
22 to consider, you will need to consider need and
23 alternatives. Again, as Mr. Kuntz pointed out, no
24 party here has questioned the need for the
25 applicants' capacity or energy needs. They've

1 questioned the manner in which the applicants
2 intend to fill part of that need. No party opposes
3 the proposed transmission facilities.

4 Let's talk briefly about the alternatives
5 and what we believe the evidence will show. We
6 believe that each applicant has determined through
7 its comprehensive integrated resource planning
8 processes that its participation in this baseload
9 plant is best for it and its customers.

10 They've screened renewable and non-
11 renewable resources. They've screened wind. Wind
12 is not a baseload resource. Applicants, as this
13 Commission is very much aware, are doing wind.
14 This case is not wind versus coal as some may
15 suggest, and applicants, including the other five
16 members of the project, have plans to do
17 approximately 850 megawatts of wind by 2015.

18 So this is -- Big Stone Unit II and the
19 transmission facilities fit within a portfolio, we
20 believe a very balanced portfolio, of resources
21 going forward.

22 The evidence will show that we've looked
23 at biomass and hydro. We've looked at natural gas.
24 The Commission, I believe, is aware of the issues
25 regarding natural gas service for baseload

1 facilities. We've looked at an IGCC. We don't
2 believe that the integrated gasification would be
3 cheaper for our customers or best for our customers
4 than would a supercritical pulverized coal plant.
5 We've looked at a gas plus a wind combination. And
6 again, Big Stone Unit II comes out as a better
7 option. We looked at conservation and DSM, and we
8 would respectfully submit we believe the evidence
9 will show that even under the best and most
10 aggressive circumstances for conservation and
11 demand side management, we cannot effectively or
12 cost-effectively replace the need for 630 megawatts
13 of baseload power.

14 Proposed transmission facilities. Very
15 briefly, we've gone through the federal process for
16 interconnecting generators to the system. That is
17 a process, as the Commission is aware, that's
18 governed by the Federal Energy Regulatory
19 Commission through MISO and through MISO's tariffs.
20 Pursuant to that process the project has engaged in
21 extensive transmission studies. Both of those --
22 the facilities that are being proposed as part of
23 this project have been approved by MISO, they've
24 been approved by the Mid-Continent Area Power Pool,
25 and those studies have determined that a 230 kv

1 line to Morris, Minnesota, from the plant and a 230
2 line built to 345 kv standards to Granite Falls to
3 afford extra capacity are least-cost prudent
4 facilities under the circumstances.

5 This is not a great map, but you can see
6 Big Stone sort of in the middle left there going
7 south with a dotted line -- red dotted line. That
8 is proposed to be new corridor in South Dakota.
9 South of Blair we head east, and right around
10 Canby, Minnesota, we pick up an existing corridor.
11 There's a 115 corridor already in place there, and
12 we propose to convert that to 230 built to 345 kv
13 standards, and so we will be utilizing for a
14 significant number of miles from Canby to Granite
15 Falls existing corridor. Going north out of the
16 plant up to Morris, Minnesota, you see the blue
17 dotted line. That's an existing corridor, a 115
18 line. So we will be using existing corridor to
19 build that facility. And so under a sort of least-
20 cost analysis these facilities certainly make
21 sense.

22 I want to note -- it's not necessarily
23 going to be relevant here, but in the Minnesota
24 certificate of need process and in the South Dakota
25 transmission routing process, the project did not

1 have a single landowner objecting to these
2 transmission facilities, not one.

3 You're going to hear some discussion
4 throughout the next couple of days about global
5 warming and carbon CO2 regulation. As the
6 Commission is aware and as Judge Wahl has ruled,
7 North Dakota has a statute that addresses
8 environmental externalities and the environmental
9 cost of future regulation. We believe the statute
10 speaks for itself.

11 Unlike what the Dakota Resource Council
12 suggests, the Big Stone Unit II project, nor the
13 applicants, are not in a state of denial. We
14 believe that Big Stone Unit II is consistent in a
15 carbon-constrained future. Mr. Uggerud will speak
16 to that. We believe that the evidence shows that
17 clearly Big Stone Unit II, even in the light of
18 future carbon regulation, continues to make sense
19 for our customers and for the companies; and again,
20 the project is consistent with a balanced resource
21 mix of traditional renewables and conservation.

22 In conclusion, Judge Wahl and Commission,
23 we believe that after a thorough review of this
24 case you will find that we have met our prudence
25 requirements, and we respectfully ask that you

1 issue a finding that this project is prudent, is
2 reasonable, and in the public interest.

3 Thank you, Your Honor.

4 JUDGE WAHL: Mr. Breen.

5 MR. BREEN: Carrie La Seur will make
6 opening statement.

7 JUDGE WAHL: All right. Ms. La Seur.

8 MS. LA SEUR: Good morning. I'm Carrie La
9 Seur, it's L-a, capital S-e-u-r, on behalf of
10 intervenors Dakota Resource Council and Mark
11 Trechock. Thank you for the opportunity to provide
12 a brief opening statement.

13 The applicants have brought a very
14 detailed application now before three PSCs; in
15 South Dakota, Minnesota and North Dakota. The
16 intervenors have a few simple points to make, so
17 we're not going to dance around a lot.

18 This prudence proceeding comes down to one
19 basic question: What is good for North Dakota
20 ratepayers, or more simply, what is good for North
21 Dakota? The analysis done by applicants looks at
22 the big picture of energy needs across a six-state
23 region, and intervenors will question important
24 aspects of that analysis, but always this
25 proceeding has to come down to the best interests

1 of North Dakota's ratepayers and North Dakota's
2 economy.

3 It's not what's prudent for South Dakota
4 or Minnesota or even MDU or OTP as corporate
5 investors. What's good for North Dakota? That's a
6 different question and one not addressed directly
7 by most of the materials presented to this
8 Commission.

9 Intervenors notice a few things about this
10 application. First, it's for a power plant in
11 eastern South Dakota. No North Dakota jobs.
12 Second, it's for a plant that burns Powder River
13 Basin coal. No North Dakota coal. Third, this
14 plant uses supercritical pulverized coal technology
15 that can't be economically retrofitted for carbon
16 sequestration. No North Dakota profits from
17 sequestration.

18 Fourth, producing electricity in eastern
19 South Dakota and transferring it into an electrical
20 consumption area primarily in western North Dakota
21 is inefficient. We could produce this power in
22 state, lose fewer watts in transmission and keep
23 rates lower.

24 Fifth, this 630 megawatt plant stands more
25 or less in the transmission pathway between the

1 country's best wind resource in the west river and
2 markets to the southeast. Applicants will tell you
3 that building this plant will somehow benefit North
4 Dakota's wind industry, but common sense says that
5 if your product is at point A and the market is at
6 point B and someone else manages to produce that
7 product in a large quantity between you and the
8 market, you're going to lose out.

9 So the greatest wind resource in the
10 country, North Dakota's clean energy future, stands
11 to suffer from the construction of Big Stone II.

12 And, finally, getting to the substance of
13 the testimony that intervenors will bring, North
14 Dakota ratepayers risk an enormous downside when
15 Congress passes carbon regulation, and all
16 indications are that Congress will. Without
17 getting into any numeric costs or quantified values
18 we can show a strong probability that carbon costs
19 will be part of this plant's future. Considering
20 that probability is as important to understanding
21 the true internalized cost of running Big Stone II
22 throughout its lifetime as considering coal price
23 forecasts.

24 It's not good for North Dakota to take on
25 a major economic risk on energy prices without

1 taking a hard look at exactly what that risk will
2 be.

3 South Dakota's PUC has already approved
4 this plant, as I'm pretty sure this Commission
5 would if applicants were proposing to spend over
6 1.3 billion dollars in North Dakota, but they're
7 not. The outcomes of the South Dakota and
8 Minnesota proceedings can't tell us whether or not
9 buying into Big Stone II is good for North Dakota.
10 The facts are different. North Dakota's interests
11 are different.

12 Fortunately, this Commission need not feel
13 that it has the fate of Big Stone II in its hands
14 because, as Mr. Guerrero said in his opening
15 statement to the Minnesota tribunal on December
16 5th, 2006, this project is self-healing. If a
17 particular applicant pulls out, Mr. Guerrero says,
18 the developers have a commercial arrangement in
19 place that would allow one or the other utilities
20 to pick up the slack.

21 So if this plant isn't good for North
22 Dakota, it's okay to say no thanks. It's also okay
23 to say not yet, to ask for more data or for
24 alternatives that would bring income into North
25 Dakota instead of take it out.

1 The world energy is changing before our
2 eyes. There are many questions about this
3 application still unanswered. The regulatory
4 environment is uncertain, and altered climate holds
5 more risks for North Dakota than higher energy
6 prices. Scientific consensus is that within our
7 lifetimes we will see increased drought in this
8 region, decreased soil moisture as heat
9 intensifies, more violent storms, and the spread of
10 invasive plant and animal species because of milder
11 winters.

12 What's good for North Dakota? I've really
13 wrestled with this question in reviewing all the
14 testimony from South Dakota, Minnesota, this
15 proceeding, talking with Mr. Schlissel. What's
16 good for North Dakota? Well, wind is fantastic for
17 North Dakota, not just wind farms, but wind
18 component factories; consulting businesses;
19 research and development; energy efficiency
20 retrofits for low income housing across the state
21 to offset rising energy prices. It's win for
22 everyone. Taking advantage of carbon sequestration
23 potential, great for North Dakota. Producing power
24 as close as possible to where it will be consumed,
25 also good for North Dakota.

1 But buying into an out-of-state power
2 plant that gets its fuel from Wyoming can't
3 sequester CO2, hasn't accounted for major
4 regulatory risks, and stands between North Dakota
5 power sources and the biggest markets. That is
6 plainly not good for North Dakota.

7 Thank you.

8 JUDGE WAHL: Mr. Binek.

9 MR. BINEK: I have no opening statement.

10 JUDGE WAHL: All right. Mr. Kuntz, when
11 you're ready.

12 MR. KUNTZ: Mr. Guerrero will --

13 JUDGE WAHL: Or Mr. Guerrero.

14 MR. GUERRERO: Thank you, Your Honor. The
15 applicants would call Mr. Ward Uggerud.

16 JUDGE WAHL: Mr. Uggerud, if you will be
17 seated, please, be as comfortable as you can. Mr.
18 Uggerud, as you are probably aware, your testimony
19 is required to be under oath and I'm required by
20 law to advise you regarding perjury before
21 administering the oath. Perjury is a false
22 statement of material fact which you do not believe
23 to be true, in other words, generally speaking, a
24 lie. In North Dakota perjury is punishable as
25 Class C felony by a fine up to \$5,000, imprisonment

1 for a period of up to 5 years, or both.

2 (Witness sworn.)

3 JUDGE WAHL: Mr. Guerrero.

4 MR. GUERRERO: Thank you, Your Honor.

5 **WARD UGGERUD,**

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

8 **DIRECT EXAMINATION**

9 **BY MR. GUERRERO:**

10 Q. Good morning, Mr. Uggerud. Could you
11 please state your name for the record?

12 A. My name is Ward Uggerud.

13 Q. By whom are you employed and in what
14 capacity?

15 A. Otter Tail Power Company as senior vice
16 president.

17 Q. How long have you been with Otter Tail
18 Power Company?

19 A. 36 years.

20 Q. And what are some of the things you've
21 done while at Otter Tail?

22 A. Currently I am the vice president
23 responsible for energy supply, wholesale market
24 trading, and environmental considerations for the
25 company. I have also during the course of my

1 career been involved in the planning of high-
2 voltage transmission facilities. I've served as
3 the chairman of the Mid-Continent Area Power Pool
4 operating committee and I've also served as
5 chairman of the North American Electric Reliability
6 Council operating committee.

7 Q. Thank you. Could you describe your
8 educational background?

9 A. Yes. I have a Bachelor of Science in
10 electrical engineering from North Dakota State
11 University.

12 Q. Mr. Uggerud, did you prepare or cause to
13 be prepared direct testimony and rebuttal testimony
14 in this matter?

15 A. Yes, I did.

16 Q. Do you have those with you this morning?

17 A. Yes, I do.

18 Q. And your direct testimony is marked as OTP
19 Exhibit 101 and your rebuttal testimony is marked
20 as OTP Exhibit 102?

21 A. That is correct.

22 Q. Do you have any corrections or
23 clarifications to those exhibits, Mr. Uggerud?

24 A. I do not.

25 Q. If I were to ask you the same questions

1 today as outlined in OTP-101 and 102, would your
2 answers be the same?

3 A. Yes, they would.

4 Q. Mr. Uggerud, do you have a short summary
5 of your testimony with you today?

6 A. Yes, I do.

7 Q. Could you please give that?

8 A. Surely. And as I begin, I just have to
9 comment that every time I come out here from this
10 floor to be able to look out over the North Dakota
11 landscape is an important scenery.

12 By way of background before I do my
13 introductory comments, I just want the Commission
14 to know, if they don't already, that I grew up on a
15 farm in northeastern North Dakota. My grandfather
16 came over from Norway in 1880. This year my
17 brother's son graduated from college and is now
18 farming with my brother and my father, who is still
19 farming up in northeastern North Dakota. So the
20 issue of providing reliable electric service to
21 North Dakota customers is important to me as a
22 matter of personal historical background.

23 Another thing that I would just mention as
24 a part of my introductory comments is my job at
25 Otter Tail Power Company is to produce electricity

1 as reliably and economically as possible, and I
2 have a standing deal for anyone -- anyone,
3 anywhere, you can ask anyone who works for me what
4 their job is, and if the answer that is received is
5 not that their job is to produce electricity as
6 reliably and economically as possible, they owe me
7 dinner for two, and that invitation is open to any
8 of you. If you ask anybody who works for me what
9 their job is and if that's not the answer, let me
10 know and I'll give that dinner for two to you. In
11 36 years with the company I've only collected
12 dinner once, and that was from Wally Ness, and I
13 can give you his phone number. If you want to call
14 him today, I'm sure that he would give you the
15 right answer even today, but that is an important
16 responsibility. I take that job seriously.

17 A little bit about Otter Tail Power
18 Company. As you're probably well aware, Otter Tail
19 is an investor-owned utility. We serve service
20 territory in South Dakota, North Dakota, and
21 Minnesota. It's a 50,000 mile -- square-mile
22 service territory. As you're well aware, we serve
23 423 communities, but most of them are very small.
24 In fact, half of them have got fewer than 200
25 people in them. We only have three communities

1 with 10,000 or more people and no communities with
2 20,000.

3 Otter Tail Power Company is the operating
4 agent for Big Stone Unit No. I. It's also the lead
5 developer for Big Stone Unit No. II, and for Otter
6 Tail Power Company we propose to own a 19.3 percent
7 share of the Big Stone Unit II project.

8 One of the things that I have spoken to
9 this Commission about over the years is the fact
10 that in order for Otter Tail to provide electricity
11 as reliably and economically as possible to our
12 customers, it's important that the context of
13 what's been happening in the region for the last 25
14 years also be mentioned.

15 Providing electricity as reliably and
16 economically as possible for Otter Tail Power
17 Company has meant that a decision was made back in
18 the early 1980s that we would be a deficit utility
19 in a surplus pool.

20 In the late Seventies and early Eighties
21 the region had installed significant numbers of new
22 generation resources. Reserves in the
23 Mid-Continent Area Power Pool climbed from the
24 standard industry practice of 15 percent operating
25 reserves up until in 1987 when Sherburne County III

1 finished construction, reserves climbed to 44
2 percent. At that time Otter Tail Power Company was
3 in the process of building a generation plant at
4 Spiritwood, North Dakota, and that project was
5 canceled because the decision was made -- and it
6 was a tough decision for Otter Tail Power
7 Company -- but the decision was made to cancel that
8 project because in order for Otter Tail to provide
9 electricity as reliably and economically as
10 possible, we would be able to do that job better by
11 being able to take advantage of the surpluses that
12 exist in the power pool.

13 The first power contract that I personally
14 was engaged in was the purchase of a contract from
15 Lincoln Electric System. I was able to buy energy
16 from their participation in the Laramie River
17 Station at the cost of fuel only without a markup
18 because Lincoln Electric had a take-or-pay
19 obligation with regard to their off-take from
20 Laramie.

21 And over the years that has been the case.
22 For two-and-a-half decades there have been
23 surpluses in the power pool. We have a whole
24 generation of employees and legislators and
25 regulatory people that have observed the electric

1 utility industry from that perspective, that there
2 have been surpluses.

3 We are seeing now, however, that that is a
4 changing condition. Currently this Commission is
5 aware of the cost to Otter Tail's customers and to
6 Montana-Dakota Utilities' customers and to the cost
7 of electric consumers across North Dakota that the
8 power purchase prices that utilities, Otter Tail,
9 MDU, Minnkota, Basin are paying are being affected
10 by the increase of prices in the power pool, and
11 that's simply a function of the fact that the basic
12 laws of supply and demand hold, and our surpluses
13 are gradually being eroded. As they are eroded the
14 prices of electricity are climbing, and they will
15 continue to do so even though as we speak today the
16 pool still carries surpluses on the books, but that
17 condition won't last forever.

18 Otter Tail's loads are growing at about
19 2.4 percent a year. We have met our loads over the
20 past years with our existing resources plus
21 purchases from other utilities. Those purchases
22 expire, and cost information that we have for
23 inquiry with regard to continuing those purchases
24 suggests that purchasing from other utilities would
25 be more costly than owning our own resources.

1 But Big Stone is only a portion of Otter
2 Tail's needs going into the future. In addition to
3 the baseload increment that we will be adding with
4 Big Stone II, we intend to provide electricity
5 resources to our customers from other resources, as
6 well. That will include the construction of
7 significant amounts of wind generation. That will
8 include the continuing purchases of electricity
9 from others. It will include significant amounts
10 of additional conservation and demand side
11 management, and it will also include the
12 construction of additional peaking resources.

13 A little bit more about Big Stone Unit II.
14 It would be designed to be a 630 megawatt nominal
15 unit. It would use supercritical pulverized coal
16 technology for the purpose of being able to
17 construct the most likely efficient unit possible.
18 It would use Powder River Basin coal again because
19 of the efficiencies and the availability of Powder
20 River fuels and the application of Powder River
21 Basin fuels for the construction of supercritical
22 design power plants which have the greater
23 efficiency.

24 We would expect that as a baseload highly
25 efficient facility that we would have operating

1 capacity factors on an annual basis of
2 approximately 88 percent. The facility, as has
3 been mentioned, would be located in South Dakota.
4 One of the attributes of the Big Stone Plant is
5 that it's a location that would allow for the
6 construction of a unit of that size with an
7 absolute minimum amount of additional transmission
8 required because of the fact that we will use
9 primarily as outlet facilities for Big Stone II
10 existing transmission lines that are there that
11 were constructed at 115,000 volts that can be
12 upgraded to higher voltages.

13 Some of the environmental features that
14 have been considered and included in the design of
15 the Big Stone Unit II is that we'll have a wet
16 scrubber that will be designed so that it
17 accommodates the flue gas for both Unit II and Unit
18 I. We'll reduce the total sulfur dioxide emissions
19 by 85 percent.

20 There will be a baghouse filter for the
21 control of small particles. We will have a
22 selective catalytic reduction system for the
23 control of nitrous oxide emissions, and mercury at
24 both limits will be capped at the present limits
25 for Unit No. I, and in addition we are

1 contemplating and committing to further mercury
2 reductions for the technology that can be installed
3 as a part of the combination of the baghouse filter
4 and the wet scrubber.

5 With regard to the coal supply and
6 delivery, it will be Powder River Basin coal that
7 will be hauled by rail over the Burlington Northern
8 Santa Fe Railroad. We anticipate that the number
9 of train sets that will be necessary to provide the
10 fuel for the combined two units will be either five
11 or six train sets. The exact number hasn't been
12 determined yet. The coal inventory for Unit No. I
13 is currently 30 days. That has been sufficient for
14 Unit No. I. The exact amount of inventory for the
15 combined Units I and II has not been selected
16 exactly, but the fuel-handling facilities and the
17 spaces available there would allow us to have a
18 coal inventory easily between 30 and 45 days.

19 With regard to providing electricity as
20 reliably and economically as possible to our
21 customers there is another attribute that I would
22 mention to the Commission, and that is that to the
23 extent that there are margins that occur in the
24 wholesale power market associated with assets that
25 are included in the rate base of our existing

1 customers, that any margins in the wholesale market
2 that would result from that we would anticipate
3 would be credited back to the customers directly in
4 proportion to the margins obtained on those sales.

5 With regard to alternatives and because we
6 are in North Dakota, I just thought I would mention
7 that when we first contemplated the Big Stone II
8 project, and that dates back to a study that was
9 conducted in 1995, we looked at all possible
10 alternative locations and concluded in 1995 and
11 revisited that on different occasions in the
12 ensuing years, Big Stone emerged as a more
13 competitive location for a generation expansion
14 site than Coyote Station primarily because of the
15 fact that the transmission outlet associated with
16 another unit in western North Dakota will have
17 significant amounts of additional transmission over
18 and above that which would be required from the
19 utilization of the Big Stone site.

20 Additionally -- and I'll use a metaphor
21 here -- if one were to contemplate a clothesline
22 running from western North Dakota to the load
23 centers in Minneapolis, you would anticipate that
24 there would be a sag in the line, and the amount of
25 clothes that you could hang on the line would be a

1 function of the clearances that you would have in
2 the mid span.

3 That's similar to the transmission system
4 and the way in which it operates. By building a
5 power plant facility somewhere between western
6 North Dakota and the load centers in Minneapolis,
7 you're actually able to enhance the performance of
8 the entire transmission network.

9 One fact that is probably not apparent to
10 most people is that when the current unit at Big
11 Stone is not running, conventional wisdom would
12 make you believe that perhaps then you might be
13 able to export more power out of North Dakota
14 because you have removed that generation that sits
15 midway between the North Dakota resources and the
16 load. To the contrary the reverse is true. When
17 the existing unit at Big Stone is not operating,
18 the export capability out of North Dakota is
19 actually reduced because you remove that support
20 from the system in the middle of the system where
21 it is critically required.

22 The same will be true with the addition of
23 Big Stone II. We will be providing more support at
24 that critical location between the western North
25 Dakota resources and the loads in the Minneapolis,

1 Milwaukee, Chicago area, and the construction of a
2 generation facility at that location will actually
3 enhance the ability of the interconnected
4 transmission system to deliver resources from
5 western North Dakota to the load centers.

6 That concludes my short summary of my
7 testimony.

8 JUDGE WAHL: Mr. Kuntz, will you
9 cross-examine?

10 MR. GUERRERO: No. This is my witness,
11 Your Honor, and I'm not quite done with him yet.

12 JUDGE WAHL: Oh, I'm sorry. I'm sorry. I
13 got ahead of you, Mr. Guerrero.

14 MR. GUERRERO: Thank you, Your Honor. I
15 would move the admission of OTP-101 and 102.

16 JUDGE WAHL: Mr. Kuntz?

17 MR. KUNTZ: No objection.

18 JUDGE WAHL: Mr. Breen?

19 MR. BREEN: No objection.

20 MR. BINEK: No objection.

21 JUDGE WAHL: Exhibits OTP-101 and 102 are
22 received.

23 MR. GUERRERO: Thank you, Your Honor. I
24 have a couple of preliminary questions that I want
25 to address with Mr. Uggerud before I tender him for

1 cross-examination.

2 Q. (MR. GUERRERO CONTINUING) Mr. Uggerud,
3 I've just handed to you what's been pre-marked but
4 it hasn't been identified yet. It's Mr.
5 Schlissel's testimony in this matter on behalf of
6 Dakota Resource Council, and I'm directing your
7 attention to page 23 of that document, Mr. Uggerud.
8 Do you have that in front of you?

9 A. Yes, I do.

10 Q. Can you go to line 17?

11 A. Yes, I can.

12 Q. And Mr. Schlissel makes a comment there,
13 and I will read it, In other words, a utility that
14 ignores future carbon regulations is implicitly
15 assuming that the allowance value will be zero.

16 Do you see that comment?

17 A. Yes, I do.

18 Q. Mr. Uggerud, is it your understanding --
19 do you agree with that statement?

20 A. I do not.

21 Q. Why not?

22 A. Well, because we did not ignore the
23 possibility that there would be future carbon
24 values that might apply to the Big Stone II
25 project.

1 Q. And how did you address carbon in the
2 context of this project?

3 A. Well, in fact, we did extensive
4 sensitivity studies to identify what the economic
5 implications on the project would be under the
6 scenario of various carbon protocols that might be
7 adopted in the future, and at no point did we ever
8 consider that those future carbon protocols, should
9 they be adopted, would not be applicable to Big
10 Stone II.

11 Q. Thank you, Mr. Uggerud. I'm directing
12 your attention now to page 24 of that same
13 document, line 17, there's a question there to Mr.
14 Schlissel as to thoughts or opinions that Otter
15 Tail or Montana-Dakota have as to when carbon or
16 regulation of greenhouse gases will occur. Do you
17 see that question?

18 A. Yes, I do.

19 Q. Do you have an opinion on when greenhouse
20 gas regulation may occur?

21 A. Well, I have a comment and that is I may
22 not have an opinion as to exactly what year or as
23 to exactly what the form of a potential carbon
24 regulation might be, but that doesn't mean that I
25 haven't considered what the implications of various

1 carbon scenarios would mean for Big Stone II,
2 because, in fact, we have.

3 MR. GUERRERO: Thank you, Mr. Uggerud.
4 Your Honor, we would tender Mr. Uggerud for
5 cross-examination.

6 JUDGE WAHL: Mr. Kuntz, will you
7 cross-examine?

8 MR. KUNTZ: No, Your Honor. Mr. Uggerud
9 is testifying as both a project witness and on
10 behalf of Otter Tail. We would not be
11 cross-examining this witness.

12 JUDGE WAHL: Mr. Breen.

13 MR. BREEN: I'll be brief.

14 **CROSS-EXAMINATION**

15 **BY MR. BREEN:**

16 Q. Sir, do we agree that carbon dioxide is a
17 pollutant? Should I repeat that?

18 JUDGE WAHL: I think you're okay. Go
19 ahead.

20 MR. BREEN: Thank you.

21 THE WITNESS: I'm not going to comment as
22 to whether I personally agree that it's a
23 pollutant. I have, however, performed extensive
24 examination as to what the implications of a carbon
25 cost associated with the production of electricity

1 from coal would do to the economics of the project.
2 There's certainly debate out there. There are
3 people that say that carbon dioxide is a pollutant,
4 there are people that say it is not. I don't need
5 to form an opinion as to whether it is or is not as
6 long as I'm diligent in examining what the impacts
7 of the cost implications of a carbon protocol would
8 be to the economics of the project.

9 Q. (MR. BREEN CONTINUING) Do we agree that
10 in April of 2007 --

11 JUDGE WAHL: Mr. Breen, I'm sorry. This
12 will work better if you will be seated, and I'm
13 sorry there's but one microphone for your table,
14 but if you would just slide the microphone over in
15 front of you, then you can be sure you will have a
16 good record. All right.

17 Q. (MR. BREEN CONTINUING) Thank you, Your
18 Honor. Forgive me if I don't look at you when I
19 ask the questions then.

20 A. That's all right.

21 Q. Do we agree that the United States Supreme
22 Court in April of 2007 found that carbon dioxide
23 was a pollutant under the requirements of the
24 Federal Clean Air Act?

25 MR. GUERRERO: Your Honor, I guess I would

1 object. The Supreme Court's decision speaks for
2 itself.

3 JUDGE WAHL: Well, he's not a lawyer, Mr.
4 Breen, and --

5 MR. BREEN: I'm only testing his
6 knowledge.

7 JUDGE WAHL: The objection is overruled.
8 Go ahead, Mr. Uggerud.

9 THE WITNESS: Well, I've not studied the
10 decision extensively. It's my understanding,
11 correct me if I'm wrong, that that was a case
12 involving the auto industry. I'm not sure, I could
13 be wrong, but I'm not sure that the Supreme Court
14 made the same determination with regard to carbon
15 dioxide as it relates to electric power generation.

16 Q. (MR. BREEN CONTINUING) And, sir, do we
17 agree that carbon dioxide as a pollutant is a major
18 contributor to global warming?

19 A. Again, my personal opinions with regard to
20 carbon dioxide's role in global warming I don't
21 think is necessarily relevant to the fact that this
22 project has applied for various permits and offers
23 this project as the most reliable and the most
24 economic resource even in consideration of the
25 implications of various carbon protocols if they

1 were to be applied to this project.

2 MR. BREEN: Respectfully, Your Honor, it's
3 unusual for a witness to raise an objection to
4 relevancy.

5 JUDGE WAHL: Proceed, Mr. Breen.

6 Q. (MR. BREEN CONTINUING) Do we agree, sir,
7 that the Big Stone II proposed project in South
8 Dakota will emit 4.6 million tons of carbon dioxide
9 a year?

10 A. Yes, it will.

11 Q. And do we agree that the expected life
12 expectancy or use of this plant to produce
13 electricity is 40 years?

14 A. I don't know that there's an exact year.
15 I've seen 35 to 50, but I'll not disagree with 40.

16 Q. Okay. Then do we agree that over that --
17 if I may use 40 years, sir, between your 35 and 50
18 life expectancy -- that this plant will produce 18
19 million tons of carbon dioxide?

20 A. No. I think your math is wrong there. If
21 you multiply 40 by 4.7, I think you get more than
22 18.

23 Q. Thank you. Do we agree, sir, that once
24 this Big Stone II plant is completed as proposed,
25 that there's no reasonably commercially available

1 way to retrofit this plant for carbon
2 sequestration?

3 A. No, we do not agree on that.

4 Q. Do we agree, sir, that presently in North
5 Dakota at the Dakota Synthetic Fuel Plant a source
6 of income comes into North Dakota by selling
7 sequestered carbon to oil enhancement recovery
8 sites?

9 A. I'm aware of that.

10 Q. And there's no opportunity to do that in
11 your plants at Big Stone II in South Dakota; is
12 that correct?

13 A. I just said I did not agree with you on
14 that.

15 Q. Oh, I'm sorry. I misheard you. I thought
16 you said you were aware of that.

17 A. I said I was aware but that I did not
18 agree.

19 Q. I'll offer an --

20 A. Do you want me to say why do I not agree?

21 Q. I offer an apology if I misheard you, sir.
22 Do we agree that your analysis in considering --
23 withdraw. Do we agree that the OTP and MDU
24 analyses in considering the busbar cost of this
25 does not include a specific carbon valuation cost?

1 MR. GUERRERO: I'm going to object. The
2 statute specifically requires that that not be
3 included in the analysis, and questions regarding
4 what our analysis does or doesn't have with respect
5 to CO2 cost is excluded pursuant to the statute.

6 JUDGE WAHL: Well, counsel, we've got a
7 fine line here. I view the application of the
8 statute to exclude any numerical costs or
9 quantified values. Doesn't mean that the
10 intervenors can't talk about the risks and the
11 problems of compliance with environmental
12 regulations. But, Mr. Breen, don't -- don't push
13 the envelope on that. If the question is going to
14 call for an implied cost, then it's not going to
15 work under the statute, and I --

16 MR. BREEN: I'll press the questions no
17 further than asked.

18 JUDGE WAHL: Restate your question,
19 please.

20 Q. (MR. BREEN CONTINUING) Do we agree that
21 many of the analyses of OTP and MDU has not
22 considered a specific numerical value for the
23 management of carbon in creating their busbar
24 costs?

25 JUDGE WAHL: Well, but they can't. They

1 can't consider a specific numerical value, not for
2 this Commission in any event.

3 MR. BREEN: Then you sustain the
4 objection?

5 JUDGE WAHL: The objection is sustained.

6 MR. BREEN: I'll move on. Thank you, Your
7 Honor.

8 Q. (MR. BREEN CONTINUING) Do we agree that
9 the United States Senate has held hearings in the
10 last year concerning the issue of carbon dioxide
11 constraints?

12 A. Yes.

13 Q. Do we agree the U.S. House has held
14 hearings in the last year concerning the issue of
15 carbon dioxide restraints?

16 A. Yes.

17 Q. And do we agree that there's a reasonable
18 risk -- withdraw. Do we agree that the expected
19 completion date of this plant, Big Stone II, as
20 proposed in South Dakota is somewhere between 2011
21 and 2012?

22 A. Yes.

23 Q. And do we agree that there's a reasonable
24 risk that there may be issues of carbon restraints
25 before that plant is completed before 2011 and

1 2012?

2 MR. GUERRERO: I guess I would object just
3 on vagueness. I'm not sure what issues of carbon
4 restraints necessarily means. Could you rephrase
5 the question?

6 MR. BREEN: I'm rephrase the question.

7 JUDGE WAHL: All right.

8 Q. (MR. GUERRERO CONTINUING) Do we agree
9 that there is a reasonable risk concerning issues
10 of carbon regulation prior to the completion of
11 that plant in 2011 and 2012?

12 A. Yeah. I have previously indicated both in
13 my summary comments and in a previous question that
14 there's a possibility that there will be a carbon
15 constraint future in front of us and that we have
16 analyzed the Big Stone II project in light of that
17 possibility and that Big Stone II is the most
18 economic resource, in our opinion, even in the
19 eventuality that there would be future carbon
20 regulation. I have said that.

21 Q. We agree?

22 A. Pardon?

23 Q. We agree?

24 A. Yes.

25 Q. Do we agree?

1 A. That there is a possibility --

2 Q. Yes.

3 A. -- of future carbon regulations, yes.

4 Q. Before the completion of this plant in
5 2011 and 2012.

6 A. Yes.

7 Q. Thank you. Does MDU and OTP in this model
8 intend to have the investors shoulder this risk of
9 future carbon regulation and costs or do you intend
10 to have the ratepayers shoulder that risk?

11 MR. GUERRERO: I'm going to object. I'm
12 not sure what model he's referring to.

13 JUDGE WAHL: Mr. Breen, there is --

14 MR. BREEN: The proposed Big Stone plant.

15 JUDGE WAHL: -- more than one model.

16 MR. BREEN: I'm sorry?

17 JUDGE WAHL: I guess there is more than
18 one model being used.

19 MR. BREEN: Yes, there is.

20 Q. (MR. BREEN CONTINUING) Does the Big Stone
21 II proposal before this Commission intend to have
22 the investors of these investor-owned companies
23 shoulder the risk of this future carbon constraint
24 and cost, or do you intend to have the ratepayers
25 shoulder that risk?

1 A. To the extent that a federal law would
2 alter the price of electricity, it would be my
3 expectation that electricity consumers would pay
4 for the costs that result from that law regulation,
5 and as I indicated before, we have evaluated
6 whether or not Big Stone II would still be the
7 cheapest electricity resource even under that
8 scenario. I see no reason why -- if it would still
9 be the cheapest resource, why it would not be a
10 cost that would be borne by the customers that
11 receive electricity from the project.

12 Q. Then we agree that it's your opinion that
13 OTP and MDU intend to have the ratepayer, the
14 customer, assume the burden of this prospective
15 carbon dioxide regulation or constraint?

16 MR. GUERRERO: Asked and answered,
17 objection.

18 JUDGE WAHL: Sustained.

19 MR. BREEN: Thank you.

20 Q. (MR. BREEN CONTINUING) Let's talk about
21 forecasting, if we may. In doing this you had to
22 forecast certain natural gas prices; is that
23 correct?

24 A. That's correct.

25 Q. And those gas prices are very volatile.

1 Hopefully they can decline and more likely perhaps
2 they may increase or they may do both in a very
3 volatile price scale; is that correct?

4 A. That's correct.

5 Q. So we're making a speculative but
6 reasonably educated guess as to what those prices
7 will be in the future up and down; is that correct?

8 A. I don't know that we're making guesses.
9 We're using forecasted data that's provided by
10 various sources that are used in our planning
11 models. I wouldn't refer to them as guesses.
12 We're using published data.

13 Q. I'll change the word "guess" for the next
14 question. Do we agree that in your analysis you're
15 forecasting the future prices of coal?

16 A. I would apply the same response to coal.
17 We're not forecasting the price of coal. We're
18 using the forecast prices of coal as provided by
19 various sources.

20 Q. And those prices of coal are very
21 volatile. They can go down, they can go up?

22 A. The forecast prices that you see for coal
23 are far less volatile than the forecast prices you
24 see for natural gas.

25 Q. And do we agree that we're forecasting the

1 future price of oil?

2 A. When you say "we," are you referring to --

3 Q. That you are using forecasts.

4 A. We're using forecasts.

5 Q. Correct. And those prices are very
6 volatile. They can go up and down over a period of
7 time.

8 A. Yes, they do.

9 Q. And do we agree that we're forecasting --
10 withdraw it. You have corrected me, sir, and I'll
11 accept your correction. Do you -- do we agree that
12 you're relying on forecast prices of commodities,
13 materials necessary to build this plant? Those
14 prices are also volatile. They can go up and down
15 depending upon the supply and demand issues of
16 those materials. Cement, metal, steel, copper.

17 A. Yes. There are estimates with regard to
18 materials prices.

19 Q. And do we agree that as a resource wind is
20 a forecast price that doesn't go up and down; it's
21 free?

22 A. No, I do not agree to that. The variable
23 component to the wind would not go up and
24 down -- --

25 Q. Thank you.

1 inventory because of delivery problems that
2 occurred?

3 A. Yes, that's correct.

4 Q. And were there also delivery problems in
5 2005?

6 A. I'm not sure what the timing was, Mr.
7 Binek, but I am aware that there were some delivery
8 problems associated with some derailments out in
9 the Powder River Basin, and I don't recall just
10 exactly what the time frame was, but I don't
11 disagree that we did experience delivery problems
12 associated with some railroad events.

13 Q. Did Big Stone have to rely on other supply
14 sources to obtain coal during that period of time?

15 A. Not to obtain coal, but during the time
16 that the plant was reduced in its output Otter Tail
17 Power Company and the other plant participants,
18 Montana-Dakota Utilities and Northwestern, were
19 replacing some of that generation with purchases
20 from the wholesale power market.

21 Q. With the addition of Big Stone II, coal
22 delivery requirements will more than double the
23 amount --

24 A. That's right.

25 Q. -- that is currently used; isn't that

1 true?

2 A. That's right.

3 Q. I think you alluded to this in your
4 overview, but how many coal trains will be required
5 per week once Big Stone II is in operation?

6 A. Right now I think that we take in two to
7 three trains per week, so if we double that, I'm
8 assuming it would be in the range of four to six or
9 seven trains per week or approaching one per day
10 probably.

11 Q. Isn't it true that projections are for
12 significant increases in the demand for Powder
13 River Basin coal over the next several years?

14 A. I don't know that I have seen projections
15 for significant increases in Powder River. In
16 fact, one of the things that I think is happening
17 that moderates that is that as certain requirements
18 of the Clean Air Act provisions kick in, I think
19 that you're finding that some of the utilities
20 further east that were able to be in compliance
21 with regard to sulfur emissions by using the low
22 sulfur western fuels are actually now finding that
23 with the increased restrictions on sulfur dioxide
24 that it's more economical for them to build
25 scrubbers, and so I think that there may be an

1 offsetting downward pressure on deliveries from the
2 Powder River Basin. So I think that there are
3 projections for increased coal consumption out of
4 the Powder River Basin, but I don't think I would
5 characterize it as being a significant increase
6 because there are some offsetting factors.

7 Q. In response to questions concerning carbon
8 sequestration, I believe you disagreed with the
9 statement by Mr. Breen that there was no capability
10 for carbon sequestration at Big Stone II?

11 A. I thought I heard him say that there was
12 no possibility of sequestration from Unit II.
13 That's what I disagreed with. Certainly there's no
14 capability there now, but I didn't agree with the
15 fact that there's no possibility.

16 Q. Assuming technology becomes available at
17 some future date for capture of CO2 from that type
18 of plant, is there any potential for underground
19 sequestration of CO2 near the Big Stone plant site?

20 A. You know, I'm not sure that the country
21 has already identified what would be the protocol
22 for carbon sequestration, but I am aware that both
23 the Department of Energy and the Electric Power
24 Research Institute have identified as high priority
25 research goals the ability to capture and sequester

1 carbon from the existing fleet of power plants, and
2 I'm assuming that in that eventuality that there
3 would probably be some sort of a protocol for
4 establishing a carbon pipeline network that would
5 collect carbon from various plants, and I can't
6 imagine a future where every plant would have to
7 adopt its own sequestration capability; that there
8 would probably be certainly the likelihood of some
9 sort of a repository protocol for the collection
10 and deposition of carbon dioxide in the event that
11 we come to that.

12 Q. In your summary you talked about other
13 plans that Otter Tail has for meeting its
14 anticipated future growth, and specifically on page
15 nine of your direct testimony you state that Otter
16 Tail is planning for additional demand side
17 management, additional wind, renewal of hydro
18 purchases, and additional peaking?

19 A. That's right.

20 Q. What additional DSM are you looking at?

21 A. Well, I think that, you know, we're
22 looking -- and I don't have any specific programs
23 that I can cite, but I do know that we are looking
24 at things that we can do to enhance our demand side
25 management programs within the company, and, in

1 fact, I think that our forecasts include additional
2 amounts of demand side management capability, and
3 if you want more detail or specificity with regard
4 to that, I think Mr. Morlock, a future witness,
5 would be able to quantify that better than I would,
6 but I can testify to the fact that we are
7 anticipating additional amounts of demand side
8 management activity.

9 Q. How much wind generation does Otter Tail
10 currently have -- or wind generation not
11 necessarily owned, but owned or purchased?

12 A. Again, I might not have the exact number.
13 I think that currently it's approximately 22
14 megawatts. We just have the Langdon project that
15 will give us an additional 60, and I think that we
16 have as a part of our long-range forecast -- I
17 think that another witness has probably got that
18 number, but I think it's about 160 megawatts.

19 Q. 160?

20 A. I believe that, but that would be
21 something also to ask Mr. Morlock.

22 Q. As far as wind generation in the future
23 besides the Langdon project, this 160 megawatts,
24 when do you anticipate that that would be on line?

25 A. I'm not personally aware of what the dates

1 would be. I know that in addition to the Langdon
2 project, I know that there's another project that
3 is still under confidential discussions that would
4 be in the not far distant future, but certainly our
5 long-range plans for the 160 megawatt total would
6 be over the next several years, and what the timing
7 of each of the various components of that wind
8 development would be, I'm not personally aware of
9 the timing detail on that.

10 Q. The hydro purchase power agreement that
11 you mentioned, is that with Manitoba Hydro?

12 A. That's correct.

13 Q. And how much hydro is involved in that?

14 A. Well, over the years we've had up to as
15 much as 110 megawatts at one time contracted with
16 Manitoba. We currently, I believe, only have a 50
17 megawatt contract with Manitoba, and that expires
18 in the time frame of 2011.

19 Q. And is it the 50 megawatt contract that
20 you're anticipating renewing?

21 A. I don't -- I think that the hydro
22 contracts would probably be energy contracts rather
23 than capacity contracts. We don't -- to my
24 knowledge, we do not have any contemplated
25 long-term capacity and energy contracts with

1 Manitoba Hydro. The contracts that we would have
2 with Manitoba Hydro I think would be shorter term
3 in duration and allow us to use our contracting
4 capability with them as a way to smooth out our
5 resource expansion growth opportunities.

6 Q. How much additional peaking is projected?

7 A. Our last peaking facility was roughly a 50
8 megawatt gas facility in the Bemidji area, and I
9 think that we have another similar unit planned in
10 our forecast.

11 Q. With the current wind generation that you
12 have, I think you said 22 megawatts, what is the
13 capacity factor on that wind generation?

14 A. I would be able to only give you an
15 approximate capacity factor. If you want something
16 specific, again I think Mr. Morlock would have more
17 detailed numbers on many of these questions, Mr.
18 Binek, but wind capacity factors, I believe, are
19 generally in the 35 percent area. Whether the
20 existing facilities are plus or minus from that a
21 little bit I'm not sure, but as a rule of thumb, I
22 generally think in the 35 to 37 percent range.

23 Q. I appreciate you setting Mr. Morlock up.

24 A. Yeah. He's good with numbers.

25 Q. You talked about the installation of this

1 common wet flue gas desulfurization system that
2 will serve both Unit I and Unit II at Big Stone,
3 and you said that that will result in the
4 ability -- or you or somewhere in the testimony I
5 saw a statement that there will be the ability to
6 burn coal with higher sulfur content. Will that
7 create the possibility of burning lignite coal in
8 these facilities?

9 A. I'm not saying that we couldn't burn it,
10 but there would certainly be inefficiencies that
11 would be introduced to take a boiler that was
12 designed for the heat transfer associated with one
13 Btu content fuel and then burning a lower heating
14 value fuel. Certainly I'm sure that you could burn
15 it and you could probably get steam out of it, but
16 whether or not the efficiencies that you would lose
17 would make that a practical thing to do or not, I
18 don't know. From an engineering design standpoint
19 you are optimizing the design by matching the fuel
20 to the boiler design, and the fuel is contemplated
21 to be a subbituminous fuel. The boiler to optimize
22 its efficiency will be designed to that fuel. I do
23 not know what the resultant inefficiencies would be
24 if you were to burn a lower grade of fuel in a
25 boiler designed for subbituminous.

1 Q. In your rebuttal testimony I believe you
2 basically agreed that Otter Tail will comply with
3 all the recommendations that were made by advocacy
4 staff witness Terry Deason; is that correct?

5 A. Absolutely. Those were reasonable.

6 Q. Do you believe that Mr. Deason's
7 recommendations regarding coal delivery issues will
8 ensure reliable delivery of the necessary coal
9 supplies?

10 A. Yeah, absolutely. I'm not concerned about
11 the deliverability of fuel in the long-term basis.
12 We've rectified the problem with Unit No. I by
13 getting a third train set. That's more than enough
14 train capability to serve Big Stone I. That third
15 train set is available for subleasing to other
16 utilities. The delivery problems out of the Powder
17 River Basin were a function of a derailment, and
18 there are maintenance programs and additional track
19 expansion capability in the Powder River that are
20 alleviating that problem, and then, you know, the
21 line of rail to the Big Stone site once you get out
22 of the Powder River is relatively light density
23 rail, so that's not a problem. And certainly there
24 are many other coal buyers that are participating
25 in the funding of the capital expansion to get more

1 track out of the Powder River. So I don't think
2 that's a long-term problem, at least I'm not
3 particularly concerned about it, and I think it can
4 be managed easily by just identifying the optimum
5 number of trains.

6 Q. You state that the Coyote Plant remains a
7 viable place for future generation considerations.
8 Do you agree with Terry Deason's analysis
9 concerning the Burns & McDonnell power plant site
10 evaluation study and specifically the three
11 specific scores he stated he believes merit further
12 consideration?

13 A. I don't have that in front of me right
14 now.

15 Q. Those three were -- the three that he
16 talked about was the evaluations that Coyote
17 received because of its proximity to the Beulah
18 airport, the surface water proximity, and highway
19 access.

20 A. Yes.

21 Q. Do you agree basically with the concerns
22 or criticisms that Mr. Deason had of the Burns &
23 McDonnell study?

24 A. I apologize that I'm not recalling -- I
25 read Mr. Deason's recommendations. Let me see if I

1 have that here.

2 MR. GUERRERO: Maybe it would be helpful,
3 Your Honor, if Mr. Binek could specifically
4 identify which recommendations and sort of handle
5 them one by one since I'm not sure that Mr. Uggerud
6 has committed them all to memory.

7 Q. (MR. BINEK CONTINUING) I should have
8 written down the page numbers here, but I -- I
9 didn't. But the proximity to the Beulah airport,
10 I -- well, if I could just take a moment --

11 JUDGE WAHL: Would it help, Mr. Binek, if
12 we took just a brief recess --

13 MR. BINEK: Sure.

14 JUDGE WAHL: -- for a few minutes? Why
15 don't we take a five-minute recess. It's probably
16 a good time to stretch, if a little premature, and
17 we'll resume in approximately five minutes.

18 (Recess taken.)

19 JUDGE WAHL: All right. Let's be in
20 order. We're back on the record. Mr. Binek, are
21 you ready? You may proceed.

22 MR. BINEK: Yes, I am.

23 Q. (MR. BINEK CONTINUING) I did refer, Mr.
24 Uggerud, to the -- to Mr. Deason's testimony. It's
25 on pages nine and ten, beginning at line six on

1 page nine, where he discusses those three issues,
2 and my question was whether you agreed with his
3 analysis.

4 A. Yes, I do.

5 MR. BINEK: Okay. Thank you. I have no
6 further questions.

7 JUDGE WAHL: All right. Does any
8 Commissioner have any question?

9 COMMISSIONER WEFALD: Yes.

10 JUDGE WAHL: Commissioner Wefald.

11 **EXAMINATION**

12 **BY COMMISSIONER WEFALD:**

13 Q. On page six of your original testimony you
14 talk about that Otter Tail has company-owned
15 generation resources of 699 megawatts and provides
16 the rest of its required capacity from purchases
17 from other utilities. As part of your preparation
18 for the need for this particular facility, did you
19 go out to the market and look at long-term
20 contracts from independent power producers?

21 A. We did go out to the market and looked at
22 long-term contracts from various sources. Yes.

23 Q. Where are those recorded in your exhibits?

24 A. Well, those would be a part of the
25 activities that would be undertaken as part of the

1 development of our integrated resource plan, and
2 while I have general knowledge of those, Mr.
3 Morlock would have specific knowledge of the
4 resources that were considered as alternatives
5 through purchase.

6 Q. So I should wait and ask some of those
7 questions to Mr. Morlock?

8 A. He would have more detailed knowledge of
9 those.

10 Q. All right. That would be fine. All
11 right. And then you mentioned in answering
12 someone's questions -- you were talking about that
13 you're planning to purchase wind from the Langdon
14 site. When the Commission was doing a siting for
15 the Langdon wind farm, although Otter Tail had
16 announced at a press conference that it would be
17 purchasing wind from that site, as the mission went
18 through its siting proceedings we were told that
19 Otter Tail had not made a decision on purchasing
20 any power or building any power yet at the Langdon
21 site. Has Otter Tail at this time made up its mind
22 about whether it's going to be purchasing power
23 from the Langdon site or actually owning its own
24 towers at the Langdon site?

25 A. I'm not personally the individual that is

1 involved in the contractual discussions with regard
2 to Langdon, and so my answer is one of observation
3 from within our company. It's my understanding
4 that it would be a combination of part ownership
5 and part purchase from FP&L.

6 Q. Has that final decision been made yet?

7 A. I thought that it had, but again, I'm not
8 the one that is specifically involved in those
9 contractual negotiations. So I could certainly be
10 wrong with regard to whether or not it has been
11 finalized.

12 Q. All right. And who would be the person I
13 would check -- who would I ask that answer to?

14 A. Well, I don't think that we have anyone
15 here. Mr. Morlock might know. It is generally
16 being management within the department in which he
17 works. I suspect that he would have sufficient
18 knowledge to answer the question as to whether
19 those arrangements have been finalized or not.

20 COMMISSIONER WEFALD: Okay. Thank you.
21 I'll wait then to talk to Mr. Morlock. Thank you.
22 That's all the questions at this time.

23 JUDGE WAHL: Any other member --

24 COMMISSIONER WEFALD: Oh, excuse me. I
25 have one more.

1 JUDGE WAHL: Commissioner Wefald.

2 Q. (COMMISSIONER WEFALD CONTINUING) I know
3 that you're going to have a witness appear from
4 Burlington Northern Santa Fe, but this is a
5 question that either -- if you can answer it or if
6 you can refer me to the correct person. We know
7 that Otter Tail has been involved because you've
8 come to the Commission and told us about a case
9 that you had against Burlington Northern Santa Fe
10 regarding the cost of transportation for the last
11 several years.

12 A. Right.

13 Q. So it was interesting to me that you're
14 calling upon someone from Burlington Northern Santa
15 Fe to lend support for this project. The cost of
16 transportation -- who is going to be the person
17 who's going to address that in this particular case
18 that we should ask questions of? For transporting
19 coal.

20 A. As long as you don't get too specific, I
21 guess I'm probably the witness that would
22 probably -- that is scheduled that would have the
23 most information with regard to cost.

24 Q. Do you have a long-term contract for cost
25 with Burlington Northern Santa Fe and how long is

1 the contract for cost?

2 A. We do not have a long-term contract. We
3 currently operate under a tariff, and you
4 understand what the tariffs are and they are
5 subject to change from time to time. They're under
6 the control of the provider, but we do not have a
7 long-term contract. We've entertained the notion
8 of a longer-term contract, but currently we're
9 operating under a tariff.

10 COMMISSIONER WEFALD: Thank you. That's
11 all the questions I have right now.

12 JUDGE WAHL: Commissioner Clark.

13 COMMISSIONER CLARK: I do have a few.

14 **EXAMINATION**

15 **BY COMMISSIONER CLARK:**

16 Q. Ward, in your original testimony there was
17 just a brief question that I recalled about nuclear
18 power, and you had indicated -- you had indicated
19 that you briefly looked at nuclear power, but it
20 wasn't seriously considered. Could you go a little
21 bit more into that explanation about why nuclear
22 wasn't seriously considered by the applicants?

23 A. Well, I suspect that the experience of the
24 industry in the last round of nuclear development
25 has made utilities cautious with regard to that.

1 You know, I was -- I happened to succeed Larry
2 Kinard from Texas Utilities as the chairman of the
3 North American Electric Reliability Council
4 operating committee at the time when they were just
5 finishing Comanche Peak, and, you know, Larry had
6 an opportunity to tell me firsthand the huge
7 financial implications that the cost escalations
8 had meant for their company. I think that the cost
9 of building Comanche Peak escalated by a factor of
10 close to 300 percent during the time of
11 construction. When I was chairman of the North
12 American Electric Reliability Council it was also
13 the time in which Long Island Lighting had to
14 abandon their Shorem unit. It was a unit that had
15 actually been built. It was operated on a test
16 basis, but they were never able to get the
17 evacuation permit for Long Island, and so
18 consequently they had to abandon a project that had
19 been completely built and installed. So I think
20 that the financial risk right now of a nuclear unit
21 certainly for small companies like Otter Tail and
22 MDU is one that before our companies would eagerly
23 venture into a nuclear project, I think that there
24 would probably be a degree of conservatism and
25 waiting to see if, indeed, the country is ready for

1 a revived nuclear program before we would be among
2 the first of the utilities in the country to
3 undertake one.

4 Q. Is it safe to say there is a number of
5 utilities that would be interested in being perhaps
6 a second or third nuclear unit built in this next
7 round?

8 A. Well, I mean I think that if we're serious
9 about reducing our carbon footprint, that nuclear
10 is certainly an option to consider, but I can
11 remember well the demonstrations against nuclear
12 and it would -- I'm not sure whether the country
13 really is serious about nuclear again or not.
14 We'll see.

15 Q. I do have a few questions on the coal
16 hauling aspect of this.

17 A. Surely.

18 Q. Commissioner Wefald had touched on some of
19 them. I seemed to recall somewhere -- I don't
20 remember if it's in the testimony or where it was,
21 but is it true that transportation is now more than
22 half the cost of fuel?

23 A. That's right.

24 Q. About what percentage is that? Do you
25 have an idea?

1 A. Well, I suppose I can't reveal the actual
2 numbers so I'll give you a percentage here. It
3 might be in the range of 65 to 70 percent of
4 delivered fuel is transportation.

5 Q. Okay. And that's off the currently
6 tariffed rates?

7 A. That's correct.

8 Q. Okay. And these are costs that are simply
9 flowed through the fuel cost adjustment; correct?

10 A. That's right.

11 Q. They're just borne by the ratepayers and
12 the risk is on ratepayers; is that correct?

13 A. That's correct.

14 Q. When assumptions were made for Big Stone
15 II as far as the cost -- end cost to consumers, was
16 that taking into consideration a favorable outcome
17 of the STB proceeding that Otter Tail initiated, or
18 were the assumptions that it would be an
19 unfavorable outcome as happened both at the STB and
20 the Eighth Circuit?

21 A. The assumption was an unfavorable outcome.
22 We used in our analysis the existing tariff rates
23 assuming that we would not be successful in our
24 appeal to the STB.

25 COMMISSIONER CLARK: That's all the

1 questions that I have. Thank you.

2 JUDGE WAHL: Are there any further
3 questions from the Commission?

4 COMMISSIONER CRAMER: Yeah. I have --

5 JUDGE WAHL: Commissioner Cramer.

6 COMMISSIONER CRAMER: Thank you, Judge. I
7 have a couple of them.

8 **EXAMINATION**

9 **BY COMMISSIONER CRAMER:**

10 Q. And just -- the previous Commissioners
11 have asked most of them, but going with the same
12 kind of train of thought on the railroad issue
13 then, let me boil it down to even probably a more
14 basic question. Given yours and several others
15 history with the railroad that holds you captive
16 for the fuel source and the STB that's supposed to
17 regulate them, why should we trust even all the
18 recommendations that Mr. Deason has provided and
19 you're willing to adopt? Why should we trust that?

20 A. Well, you know, I'll be candid in my
21 response here. I'm not completely enamored, you
22 know, with a system that has evolved relative to
23 rail transportation where we essentially have
24 unregulated monopolies. I'm personally
25 disappointed that the Surface Transportation Board

1 hasn't been more responsive to the shippers, but
2 I'm not necessarily without hope and optimism that
3 over the long-term that our system of government
4 has its checks and balances and it is still a
5 regulated industry.

6 With regard to Big Stone II I think that
7 this issue might be significant. The rate case
8 that we put forward before the Surface
9 Transportation Board assumed that the only traffic
10 that the Burlington Northern would be hauling would
11 be the coal going to Unit I. By more than doubling
12 the amount of coal going to the site, if we were to
13 issue another challenge before the Surface
14 Transportation Board, the way in which those
15 challenges are offered up for consideration we
16 would now be in a position to have a significantly
17 different case. We would be able to propose
18 hypothetical traffic to the site that is more than
19 doubled what we had in our original case, and that
20 would alter the mathematics of the case.

21 There are certain things that are
22 happening in Congress right now. Discussions,
23 while not yet concluded, there are certainly
24 efforts that are being advanced by others with
25 regard to clarification to the Surface

1 Transportation Board with regard to the intention
2 of the Staggers Act of 1980 under which will the
3 current regulation is pursued by the STB. The
4 clarifications with regard to the competitive
5 nature of the board's inquiry I think would be
6 useful in a future case.

7 So I think that the possibility of -- of
8 this country forever operating with an unregulated
9 monopoly on not only coal but also wheat and
10 ethanol and various agricultural products, I think
11 that at some point we have to just have a -- an
12 inherent belief in our system of government, and
13 sometimes those things take patience.

14 I'm certainly aware of the efforts in
15 North Dakota to try and get some favorable rate
16 treatment for, you know, the agricultural products
17 out of the state. I share your current frustration
18 with that, but I've also, you know, been around
19 long enough to observe that sometimes there is an
20 ebb and flow in things like that, and I think that
21 right now what we are experiencing is probably
22 certainly a situation that is less favorable to
23 shippers than I wish it were, but I certainly think
24 that with regard to Big Stone II if we were to go
25 in with a rate case now, it would be a different

1 one than the one we just got denied on by virtue of
2 the fact that we would be able to more than double
3 the traffic that we're including for consideration.
4 That has a fairly significant impact on rates. So
5 maybe if we filed another challenge now, we'd be
6 successful this time. I don't know. Maybe the
7 length of time that it took and the cost might
8 dissuade us from trying. The possibility of
9 negotiating with the railroad is maybe an option.
10 I certainly am not here to say that I'm willing to
11 accept the status quo forever, but what I would do
12 as my next step I'm not exactly sure.

13 Q. Following up then on your answer, how good
14 did you feel or how certain did you feel of a
15 favorable outcome the last time you went to the STB
16 for relief?

17 A. Well, we're not done yet. You know, we
18 thought we had a good case. We went in and we were
19 the first case that had ever been tried before the
20 Surface Transportation Board where the Surface
21 Transportation Board accepted our operating plan
22 for the stand-alone railroad, and what happened to
23 us, if you followed the case at all, is that in a
24 case involving Pennsylvania Power & Light for their
25 Montana properties the Surface Transportation Board

1 changed the rules in that case and applied them for
2 the first time there, and then they further changed
3 the rule in the Big Stone case with regard to
4 segmenting the stand-alone railroad.

5 So I certainly am not the only one that
6 shares the opinion that the Surface Transportation
7 Board erred in applying a segmented test to a
8 stand-alone railroad criteria, but those are things
9 that can be corrected by Congress to go in and
10 provide direction. We thought that there was an
11 opportunity to correct those errors through the
12 court system. What's interesting, when we appealed
13 the decision of the Surface Transportation Board to
14 the Eighth Circuit Court of Appeals, we were
15 dismissed on a procedural basis saying that we had
16 not argued our case loudly enough, and therefore
17 they threw us out on the exhaustion principle, and
18 yet in our appeal to the Eighth Circuit we actually
19 appealed not only the decision, but we also said
20 that even if you segment the railroad, we still
21 pass the PP&L test because the Surface
22 Transportation Board did not distinguish between
23 attributable and unattributable costs, and they
24 said that all of the costs on the stand-alone
25 railroad can be attributed on one segment or

1 another, which is just not the case for certain
2 administrative costs, the salaries of the CEO.

3 So now we have gone back to the Eighth
4 Circuit Court and said, look, we had two things
5 that we were appealing to you on. We were
6 appealing, yes, the PP&L segmentation, but even if
7 you deny us relief based on that, we said, you also
8 have to look at the issue of -- they did not
9 consider attributable versus unattributable cost.
10 It's entirely likely that we will lose again at the
11 Eighth Circuit in our appeal of their decision
12 because sometimes the reality is that courts don't
13 like to get involved in things that are complex
14 enough that is difficult to understand. They
15 prefer to have agencies make those decisions, but
16 even if we lose that appeal, you know, nothing is
17 forever.

18 Q. Thank you. I'll resist asking any leading
19 questions about the third branch of government that
20 you mentioned. If -- getting on to the potential
21 carbon cost issue, if potential carbon legislation
22 costs were considered and specific numbers can't be
23 considered due to, of course as we all know now
24 North Dakota's externalities prohibition, how did
25 you measure the risk to ratepayers -- realizing, of

1 course, that after the last legislative session the
2 successful passage of House Bill 1221 ensured there
3 would be no risk to utilities, how did you measure
4 the risk to the ratepayers?

5 A. Well, my approach to things is fairly
6 simple in all regards, and that is I took a look
7 at -- our job is to provide electricity to our
8 customers at the lowest price possible. We took a
9 look at various carbon scenarios, and even in a
10 scenario where carbon costs would be as high as
11 what we thought that the most likely scenarios were
12 being advanced in Congress, Big Stone was still the
13 lowest cost resource. So to make a decision on a
14 different generation plant on an assumption that
15 there would be a carbon tax, if you call it that,
16 that high, and to choose a different generation
17 expansion alternative that costs more than the Big
18 Stone I, then our customers would pay those costs.
19 So would it not then follow that our customers are
20 paying less if we come up with a generation
21 expansion program that is less costly than what the
22 alternative one would be?

23 I think that it's important to point out
24 another aspect of that evaluation, too. When we
25 did that carbon sensitivity evaluation, we did a

1 couple of things that were, I think, pretty
2 aggressive. We applied a carbon value -- and I'm
3 just going to throw it out relatively speaking --
4 in the ten-dollar-a-ton range per ton of carbon,
5 and we applied that value to every ton of carbon,
6 and it was still cheaper to do Big Stone than the
7 next alternative.

8 Now there are a lot of carbon scenarios
9 that are being proposed in Congress that wouldn't
10 necessarily apply those kinds of numbers to every
11 ton emitted. Under a cap and trade program, for
12 example, you would apply those penalties only to
13 the values above a certain amount as it is
14 currently done for SO₂. For SO₂ you've got a
15 baseline emission that you're allowed. The cost
16 penalties only occur after you achieve that
17 baseline, but we applied it to every ton of carbon
18 emitted from Big Stone, and that's a pretty severe
19 penalty.

20 Furthermore, in our sensitivity analysis
21 we hold all other costs constant. We did not make
22 any assumptions, for example, that natural gas
23 would go above the EIA numbers of, I think, around
24 \$5.50 per million Btu, and I don't recall the last
25 time that we saw \$5.50 per million Btu, and under a

1 carbon constrained protocol the increased demands
2 that would occur for natural gas I think would have
3 the impact of putting upward pressure on natural
4 gas prices.

5 I think that currently people are talking
6 about how soft natural gas prices are, and I was on
7 vacation last week, but before I left they were in
8 the seven-and-a-half to eight dollar per million
9 Btu at Henry Hub, and that means you've still got
10 to deliver them up here, and I don't think that,
11 you know, a 60 percent differential between what we
12 used in our model and today's prices was not
13 reflected in our analysis. I think that was
14 extremely conservative. We used \$1400 per kw of
15 installed wind capacity. Well, our current
16 estimates are that installed wind capacity is in
17 excess of \$2100 per kw.

18 So I think when we looked at the
19 sensitivity of the Big Stone decision relative to
20 carbon and concluded that Big Stone was more
21 reasonably priced than our alternatives, I don't
22 think that we can be faulted for trying to provide
23 a bias toward Big Stone II when, in fact, I think
24 we were conservative in every regard with regard to
25 the analysis that we made.

1 being able to recover additional oil from the
2 oilfields out here, but I don't know if it's clear
3 if Congress passes a sequestration requirement,
4 whether or not what happens with regard to enhanced
5 oil recovery in North Dakota would qualify the
6 sequestration, but I don't know that pipelines are
7 terribly expensive, and if -- if indeed we're going
8 to try and reduce our carbon dioxide emissions by
9 80 percent by the country by 2050 without
10 sacrificing our economy completely, I think that
11 there's certainly efforts under way by the DOE and
12 EPRI to try and develop technologies for
13 sequestering it from existing units. I have not
14 seen any report from the Federal Government, the
15 Department of Energy, or any other agency of the
16 Federal Government that suggests that the future of
17 our national electric supply is going to be to
18 abandon coal-fired generation.

19 Q. Okay.

20 A. In fact, everything I see suggests that,
21 in fact, we're going to be increasing the amount of
22 coal we burn to produce electricity, and the way
23 that we're going to do that is to increase the
24 capability of our generating units to produce
25 electricity as efficiently as possible. That's why

1 we chose a supercritical boiler design.

2 Q. I have just one more question then about
3 fuel source. Mr. Binek had asked about the
4 possibility of this plant being able to burn
5 lignite, and you gave a good answer, I think, with
6 regard to the possibilities versus efficiencies and
7 all of that. Are you familiar with the coal-drying
8 process that GRE uses up at Coal Creek Station up
9 here that's called coal beneficiation, and if so,
10 would that process provide an opportunity to
11 utilize North Dakota beneficiated coal at Big Stone
12 II should Powder River Basin become an unreliable
13 supply or the railroad become an unreliable
14 transporter?

15 A. I don't mean to be evasive, but I think
16 that either Mr. Rolfes or Mr. Trout would
17 probably -- I mean, they're far more familiar with
18 the engineering design aspects than I would be.
19 There's no question, though, that beneficiated coal
20 would have less efficiency losses than would just
21 straight lignite coal, and, yes, there may be a
22 greater possibility, but I do know that the -- the
23 issue of using coal drying for Big Stone II was
24 originally considered as one of the options. It
25 was an issue that was visited by the partners, and

1 a decision was made to not use coal drying, but one
2 of the reasons there was that we had to make a
3 decision and get on with the engineering design,
4 and there were certain aspects of the coal drying
5 that were still unknown yet.

6 Now since the time that we made the
7 decision, I see that GRE has announced that there
8 have been some favorable results of some of their
9 testing and they're committing now to go forward,
10 but in the sequence of how things happened and the
11 timing of them, at the time that we had to make the
12 decision with regard to the fuel, GRE was not far
13 enough along in their demonstration project for us
14 to feel comfortable that that was a risk that we
15 could take to employ an unknown result with regard
16 to a demonstration project and scale it up to a 630
17 megawatt commercial project. I mean, I've been
18 involved in R&D projects that didn't work, and
19 those don't feel good.

20 COMMISSIONER CRAMER: That's all I have.
21 Thank you.

22 JUDGE WAHL: Commissioner Clark.

23 COMMISSIONER CLARK: I do have just a
24 couple of follow-up questions that Commissioner
25 Cramer spurred.

FURTHER EXAMINATION

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BY COMMISSIONER CLARK:

Q. First, I appreciate your candor with regard to the STB and regulatory proceedings. We both have a lot of experience in this, Otter Tail on the electrical sides and the Commission probably more on the agricultural side, and I share your concern. In fact, for me it is -- I'm speaking for myself and offering some candor -- it's a major concern for this case, that this is the sole source and the sole provider and the sole link that we're depending on, Burlington Northern Santa Fe, who doesn't have a great track record recently with regard to coal transporting and certainly on the rate side, which is perhaps even more disappointing. And I'll ask this of the Burlington Northern representative, as well, that will be tendered, but it looks like the BN is committed to investing a lot into these lines that serve the PRB, but at the same time I would guess that those investments are not yet captured in their rates. It's already been established and it's awfully tough to bring a successful coal-hauling rate case against the currently tariffed products. Is it fair to assume that their tariffs are going to be

1 going up on the heels of the, I guess, hundreds of
2 millions that they're in testimony saying that
3 they're going to be investing in this line?

4 A. I suspect that one of the tensions that we
5 will continue to see is that very one, Commissioner
6 Clark. And again, if I can repeat myself, my
7 personal belief is that in the long run things have
8 to be equitable. I don't think that the country
9 will tolerate an unregulated monopolist forever,
10 and certainly I know that if we were to file a case
11 today, it would be a different case than the one
12 that we filed because we would have double the
13 volume to put into our hypothetical railroad, and
14 that would make a difference.

15 Q. Is it fair, though, to put consumer
16 pocketbooks on the line with simply the hope that
17 the STB will reform itself or that Congress will
18 come to its senses and reform the STB for it?

19 A. Well, I think that there are limits to
20 what unregulated monopolies can do with regard to
21 rates. I -- certainly there is a stand-alone
22 railroad test under the coal rate guidelines that
23 were enacted by the Surface Transportation Board.
24 We put together -- and the way these cases work is
25 that you put together a hypothetical case and you

1 submit that one and they make a determination on
2 it, but it's not that we're not without the ability
3 to put together another one. The one we put
4 together failed, but there is a process in place
5 whereby you can challenge railroad rates. The one
6 we challenged, we were not successful in. Not
7 ruling out that we might not be at the end because
8 it's still under appeal. I think our chances are
9 slim, but it's not without possibility to put
10 together another.

11 But -- and I think as Commissioners you'll
12 appreciate, I hope, this comment. I think that one
13 of the things that's going on right now with regard
14 to railroad regulation is that the assumption at
15 the time that the Staggers Act was passed was a
16 different one than what the reality of today is.
17 When Staggers was passed in 1980, we had a railroad
18 system that was far overbuilt. Railroads were
19 being encouraged to abandon non-profitable lines,
20 and the entire concept of regulation was to respond
21 to the conditions that existed in 1980 within the
22 railroad industry.

23 It's a completely different situation
24 today. The unprofitable lines for the most part
25 have been abandoned, and what you have now is a

1 rail system that is operating now under a
2 constrained capacity situation. And regulatory
3 theory would suggest that in the environment that
4 exists today, there should be a different
5 regulatory protocol, and --

6 COMMISSIONER WEFALD: But I think
7 you're -- that's all philosophy of what might
8 happen, you know.

9 THE WITNESS: Right. But I'm an optimist
10 with regard to our process, and my point was --

11 COMMISSIONER CLARK: I'm glad you are
12 because I'm a bit of a pessimist myself about
13 Washington, D.C.

14 THE WITNESS: My point was this simple
15 one, though: If the railroads were cost-of-service
16 regulated, I would have no concerns at all with
17 regard to the long-term effect of freight
18 transportation rates to the Big Stone Plant, and
19 under a capacity constrained environment a cost-of-
20 service rate regulation would be the protocol that
21 would be adopted.

22 Q. (COMMISSIONER CLARK CONTINUING) Maybe one
23 other question. Mr. Deason, his testimony, had
24 discussed very briefly the opportunity for
25 performance guarantees from the railroad. He had

1 indicated in his he didn't think that that would be
2 a viable option. I'm curious, has Otter Tail
3 explored the option of performance guarantees with
4 the Burlington Northern Santa Fe on coal hauling to
5 Big Stone and proposed Big Stone II?

6 A. Not specifically with regard to Big Stone
7 II. We had some modest performance guarantees in a
8 contract that we had with them, but then we
9 abandoned the contract to go to the tariffs so that
10 we could challenge the tariff, and the issue now,
11 when we finally get done with our appeal of going
12 back to a contract, is something that we will be
13 exploring. Certainly if we can negotiate a
14 contract with the railroad, we would try and
15 negotiate for contract guarantees. I understand
16 from what he hear that they're not necessarily
17 interested in providing them, but that would
18 certainly be something for negotiation.

19 COMMISSIONER CLARK: Okay. Thanks. Well,
20 we'll follow up on that point with the railroad
21 witness. I think that's -- I do have a question
22 for the hearing officer. Is it proper to -- I
23 don't know what the proper procedure is -- but
24 either take judicial notice of or submit into the
25 testimony -- the National Association of Regulatory

1 Utility Commissioners last year, May 25th, at a
2 U.S. Senate hearing submitted testimony on behalf
3 of the association -- it's the association that we
4 and all other state utility commissions are members
5 of -- specific on this point of coal delivery from
6 the PRB, and, in fact, the testimony itself
7 references quite a bit about the Big Stone Plant.
8 Is it appropriate to enter that into the record?

9 JUDGE WAHL: And that testimony was
10 offered where or what is it? Was it testimony, in
11 the first place?

12 COMMISSIONER CLARK: Yes. It's testimony
13 before the United States Senate Committee on Energy
14 & Natural Resources, testimony of The Honorable
15 Robert K. Sahr, Chairman, South Dakota Public
16 Utilities Commission, on behalf of the National
17 Association of Regulatory Utility Commissioners.
18 Obviously it can't be cross-examined, but at the
19 same time the -- the expert nature of the testimony
20 I don't think can be questioned, either.

21 JUDGE WAHL: Let's make --

22 COMMISSIONER CLARK: It was part of the
23 public record.

24 JUDGE WAHL: Let's have copies made,
25 Commissioner Clark, for me and counsel and let's

1 take a look at it, and, Mr. Binek, why don't you
2 make a motion on behalf of the -- on behalf of the
3 Commission as you think appropriate, and we'll
4 consider it on that basis and maybe we will have a
5 stipulation.

6 MR. BINEK: Okay.

7 JUDGE WAHL: All right. Let's proceed in
8 that way.

9 COMMISSIONER CLARK: Thank you. That's
10 all I have.

11 JUDGE WAHL: Any further questions from
12 the Commission?

13 COMMISSIONER CRAMER: None from me.

14 JUDGE WAHL: Mr. Guerrero, followup?

15 MR. GUERRERO: We have no redirect.

16 JUDGE WAHL: All right. Mr. Breen,
17 followup?

18 MR. BREEN: No followup.

19 JUDGE WAHL: Mr. Binek?

20 MR. BINEK: No.

21 JUDGE WAHL: All right. Mr. Guerrero,
22 your next witness.

23 MR. GUERRERO: Thank you, Mr. Uggerud.
24 Applicants would call Mr. Mark Rolfes.

25 JUDGE WAHL: Mr. Rolfes, as you heard me

1 advise Mr. Uggerud, your testimony is required to
2 be under oath and I'm required by law to advise you
3 regarding perjury before administering the oath.
4 Perjury is a false statement of material fact which
5 you do not believe to be true, in other words,
6 generally speaking, a lie. In North Dakota perjury
7 is a Class C felony, punishable by a fine up to
8 \$5,000, imprisonment for a period of up to 5 years,
9 or both.

10 (Witness sworn.)

11 JUDGE WAHL: Mr. Guerrero.

12 MR. GUERRERO: Thank you, Your Honor.

13 **MARK ROLFES,**

14 having been first duly sworn, was examined and
15 testified as follows:

16 **DIRECT EXAMINATION**

17 **BY MR. GUERRERO:**

18 Q. Mr. Rolfes, could you please introduce
19 yourself?

20 A. I'm Mark Rolfes. I'm the project manager
21 for the Big Stone II project.

22 Q. On whose behalf are you submitting
23 testimony this morning?

24 A. On the behalf of the -- of Otter Tail and
25 MDU.

1 Q. By whom are you employed?

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

3 Q. And how long have you been employed by
4 Otter Tail?

5 A. 30 years.

6 Q. And what are some of the responsibilities
7 you've had in those 30 years?

8 A. My responsibilities have centered around
9 the existing Big Stone Plant. I began there as an
10 engineer -- staff engineer. I then was the
11 electrical supervisor having responsibility for the
12 instrumentation and controls there, and then for 14
13 years I was plant manager for Big Stone, and for
14 part of the time I was also managing Otter Tail's
15 Hoot Lake facility.

16 Q. What are the responsibilities of the
17 project manager for the Big Stone II project?

18 A. I have the responsibility for the overall
19 coordination of the development and hopefully the
20 implementation of the Big Stone II project.

21 Q. And you have people reporting to you?

22 A. Yes, I do.

23 Q. What is your educational background?

24 A. I have a Bachelor of Science degree in
25 mechanical engineering from North Dakota State

1 University.

2 Q. And did you prepare or cause to be
3 prepared direct and rebuttal testimony in this
4 matter?

5 A. Yes, I did.

6 Q. And do you have in front of you what's
7 been premarked as Exhibit OTP/MDU-301 and 302?

8 A. Yes, I do.

9 Q. Can you identify those documents?

10 A. The 301 is my direct testimony and 302 is
11 the rebuttal testimony.

12 Q. And have you had an opportunity to review
13 those before this morning?

14 A. Yes, I have.

15 Q. Are there any corrections or
16 clarifications you'd like to make?

17 A. The only minor correction is I've been at
18 this long enough, it says 28 years of experience.
19 It's 30 years by now.

20 Q. What page is that?

21 A. That is on page 1, line 15.

22 Q. Just seems like 30. Any other
23 clarifications?

24 A. No.

25 Q. If I asked you the same questions that are

1 set forth in OTP/MDU Exhibits 301 and 302, would
2 your answers be the same?

3 A. Yes, they would.

4 MR. GUERRERO: Your Honor, we would offer
5 OTP/MDU-301 and 302.

6 JUDGE WAHL: Mr. Kuntz?

7 MR. KUNTZ: We agree. We join.

8 JUDGE WAHL: Mr. Breen?

9 MR. BREEN: No objection.

10 JUDGE WAHL: Mr. Binek?

11 MR. BINEK: No objection.

12 JUDGE WAHL: Exhibits OTP/MDU-301 and
13 OTP/MDU-302 are received.

14 Q. (MR. GUERRERO CONTINUING) Mr. Rolfes,
15 could you please provide your short summary to the
16 Commission?

17 A. Yes, I will. And I'll make my remarks
18 brief, as much of what is in them you have already
19 heard. First -- and you've heard this before --
20 the proposed Big Stone II unit is a 630 megawatt
21 nominal capacity. By nominal we mean average
22 capacity. By the nature of the thermodynamic cycle
23 on cold days the unit will produce more, on hot
24 days it would produce less. It's a supercritical
25 pulverized coal unit, and that really refers to the

1 operating pressure and temperature of the steam
2 cycle.

3 As you heard many times, it's planned to
4 be fueled by Powder River Basin fuel. We expect it
5 to have an 88 percent capacity factor, but that is
6 a number that was used in all the analyses used in
7 the project, and it's a baseload facility located
8 in the northeast corner of South Dakota. And it
9 will be served by two new, high-voltage
10 transmission lines.

11 On the back screen is an artist's
12 rendition of what the project will look like. The
13 existing unit is the plant on the right side. The
14 new unit is on the left side, and then on the
15 further left would be the joint or common scrubber
16 with the common stack. In the foreground the white
17 buildings are an ethanol facility for bio-refining
18 that is located adjacent to the existing units, and
19 in the background -- in the far background is Big
20 Stone Lake, the primary source of water for the
21 unit.

22 In the process we considered alternative
23 sites, and we began with the three-state area and
24 then narrowed it down to 30-some sites and from
25 there to eight and then finally to these six sites

1 for further consideration. You see North Dakota,
2 South Dakota and Minnesota sites.

3 The evaluation criteria used by Burns &
4 McDonnell, the engineering firm commissioned to do
5 this work -- basically they weighted the
6 requirements with water, fuel, transmission, giving
7 it a 20 percent weighting, environmental 15, air
8 quality 15, and others like access -- and road
9 access and such, 10 percent.

10 Also I touch briefly on the alternative
11 technologies that we considered. We only looked at
12 the baseload technologies. The resource planners
13 for each company looked at what is appropriate for
14 their baseload needs. Of course we looked at the
15 supercritical pulverized coal technology. We also
16 looked at wind and natural gas combinations. We
17 looked at the IGCC, the Integrated Gas Combined
18 Cycle. We did look at others, some biomass in
19 smaller sizes, and this was also done by Burns &
20 McDonnell in their baseload generation alternative
21 studies; and, of course, the supercritical
22 pulverized coal came out best in these analyses.

23 The estimated cost for the plant -- this
24 does not include transmission -- but the plant is
25 1.442 billion dollars corresponding to a 2012

1 commercial operation date. There's a lot of
2 confusion on what this cost is in some of the
3 testimony in people's interpretation of the data,
4 but just briefly, a cost estimate was done in 2006
5 based on a 2011 in-service date, and that revealed
6 a 1.361-billion-dollar project. We believe that
7 escalation inflation will cause the price to raise
8 approximately six percent per year. So at this
9 time we're looking at a mid 2012 in-service date,
10 so the corresponding total capital cost in 2012
11 dollars is 1.442 billion.

12 And as during Mr. Uggerud's testimony, the
13 fuel supply is Powder River Basin fuel delivered by
14 the Burlington Northern Santa Fe Railroad. And
15 that ends my very brief introduction.

16 Q. Thank you. Before I tender Mr. Rolfes for
17 cross-examination, I do have just a couple
18 follow-up questions. Mr. Rolfes, do you have a
19 copy of -- or I'm handing you a copy of Mr.
20 Schlissel's testimony on behalf of the Dakota
21 Resource Council, and I'm directing your attention
22 to page 15, and generally in around page 15 Mr.
23 Schlissel makes comment of a figure of 199-million
24 dollars and a six percent escalation cost. Can you
25 clarify those numbers, please?

1 A. I will attempt to. The six percent
2 escalation, which I mentioned just briefly before,
3 is the cost increase that everything sees, whether
4 you're buying a car or a home, anything, you expect
5 it to cost more in a year from now or two years
6 from now, and based on an analysis done by Black &
7 Veatch, our engineer, they believe that six percent
8 is approximately the escalation that this project
9 will see.

10 Now that's an approximate number. They
11 did a very detailed analysis looking at all the
12 components, you know, labor, material, et cetera,
13 and each one was given what they believe is the
14 appropriate escalation. You add them all together
15 and it's approximately six percent. Some were as
16 low as three percent -- some of these components,
17 some were as high as eight, so just a rough
18 approximation for a delay in the operation of this
19 unit will cost roughly six percent per year
20 increase in cost.

21 There's been -- in Mr. Schlissel's
22 testimony he talks about a 199-million-dollar
23 increase, and I assume the only way he got that was
24 to make the assumption that the in-service date
25 would be July of 2013. That is not our projected

1 in-service date. We are look at a mid-2012
2 in-service date, so we are not looking at a 199-
3 million-dollar cost increase.

4 Q. Thank you. Do you have a copy of OTP/MDU
5 Exhibit 321?

6 A. Yes, I do.

7 Q. And I believe it's also included in the
8 handout books that we provided the Commission and
9 the Judge. Can you identify that document for me?

10 A. This is a very simple spreadsheet trying
11 to illustrate where the cost -- the cost
12 projections for this project are coming from in a
13 very simple, straightforward format. The first
14 line shows the cost projection for the plant
15 portion of the project is 1.361 billion if we had
16 an in-service date of 2011.

17 Q. And is there a note there with respect to
18 whether or not it was a 2012 in-service date?

19 A. Yes. If you look at note number three --
20 and this all relates back to my opening comments --
21 for the 2012 in-service date, which we believe is
22 the most realistic now, and I have to caution, you
23 know, there are things that are beyond our control
24 like this process and the rest of the permitting
25 process we cannot control when they will reach

1 their conclusions so we cannot guarantee an
2 in-service date, but our best projection right now
3 is a mid-2012 date, which would correspond to the
4 1.442-billion dollars, which matches, you know,
5 what was in my opening remarks taken into the
6 escalation from the 2011 cost estimate.

7 Q. So this is an overall cost summary of the
8 project; is that correct?

9 A. That's correct.

10 Q. And did you help prepare it?

11 A. Not -- indirectly, I did.

12 MR. GUERRERO: Your Honor, we would offer
13 OTP/MDU Exhibit 321.

14 JUDGE WAHL: Mr. Breen?

15 MR. BREEN: I have no objection to the
16 exhibit.

17 JUDGE WAHL: Mr. Binek?

18 MR. BINEK: No objection.

19 JUDGE WAHL: Exhibit OTP/MDU-321 is
20 received.

21 MR. GUERRERO: And just for -- FYI, it's
22 under tab 13 of the hearing book.

23 COMMISSIONER WEFALD: Okay. Thank you. I
24 should have told you that earlier. We will tender
25 Mr. Rolfes for cross-examination, Your Honor.

1 JUDGE WAHL: Mr. Breen.

2 MR. BREEN: Thank you.

3 JUDGE WAHL: You will do better sitting,
4 Mr. Breen. We will do better sitting.

5 MR. BREEN: Thank you. I will do better
6 sitting, also.

7 **CROSS-EXAMINATION**

8 **BY MR. BREEN:**

9 Q. Sir, do you have a copy of your testimony
10 before you?

11 A. Yes, I do.

12 Q. Thank you. To assist you, why don't you
13 look at page 17. I'll start there.

14 MR. GUERRERO: 301?

15 MR. BREEN: Whatever the number of that
16 testimony was, sir.

17 THE WITNESS: I'm at page 17.

18 Q. (MR. BREEN CONTINUING) Now, I'm going to
19 ask some questions about the busbar cost of the
20 combined cycle natural gas plant and the
21 supercritical pulverized coal plant to help us get
22 through this rather quickly.

23 A. Okay.

24 Q. You hired Burns & McDonnell to do analyses
25 of these alternative models of generation for these

1 electricity needs; correct?

2 A. That's correct.

3 Q. And one of them was the pulverized coal
4 plant, which is the Big Stone II project.

5 A. Correct.

6 Q. Another was the combined cycle natural gas
7 plant plus wind?

8 A. Correct.

9 Q. Okay. Now the analyses you received from
10 Burns & McDonnell indicates on page 17 that they
11 assume after their analysis the busbar cost for
12 wind with the combined cycle natural gas turbine at
13 80.78 for investor-owned utilities?

14 A. Yes.

15 Q. Now, that's a measure against what?
16 Kilowatts of energy or what's the measure of the
17 energy that the 80.78 is measured against?

18 A. That's per megawatt-hour.

19 Q. Per megawatt-hour. Thank you. And that
20 report assumes that the supercritical pulverized
21 coal plant has a busbar cost of only 69.62; is that
22 correct?

23 A. That's correct.

24 Q. So there's a difference of \$11 on the
25 Burns & McDonnell analysis between pulverized coal

1 and a natural gas turbine plant plus wind; is that
2 correct?

3 A. That's correct.

4 Q. All right. Now, let's -- let's turn to
5 the Burns & McDonnell report which was submitted
6 with your testimony. I'll give you an opportunity
7 to do that, sir.

8 A. I don't have a copy of that with -- in
9 front of me.

10 MR. GUERRERO: We can get a copy.

11 MR. BREEN: Thank you.

12 THE WITNESS: I've got it now.

13 Q. (MR. BREEN CONTINUING) Thank you. This
14 report -- you reviewed this report before preparing
15 your testimony, I assume.

16 A. It's been a while, but, yes, I have.

17 Q. Okay. Let's turn to Section 1.5, which
18 discusses summary of carbon tax scenarios.

19 A. I'm there.

20 Q. I'll wait for you, sir.

21 A. I'm there, in the September report.

22 Q. Now, MDU and Otter Tail Power have had to
23 submit three applications, Minnesota, South Dakota
24 and North Dakota; is that correct?

25 A. Correct.

1 Q. And it appears that there's different
2 statutory standards of reviews in the three
3 different states --

4 A. Yes.

5 Q. -- is that a reasonably fair statement?

6 A. That's correct. And we're also applying
7 for different permits and different issues in each
8 state. Minnesota was a transmission permit; South
9 Dakota was a siting, air transmission permit, et
10 cetera.

11 Q. Thank you.

12 MR. GUERRERO: If I can interrupt, just
13 for the benefit of the Commission, it's tab 10 is
14 where you will find the reports that Mr. Breen is
15 referring to.

16 COMMISSIONER WEFALD: Thank you.

17 Q. (MR. BREEN CONTINUING) It probably would
18 be simpler if you simply read only that one
19 paragraph under Section 1.5 into the record so we
20 could all find it quickly at a later time, and it
21 references requirements before the Minnesota Public
22 Utilities Commission, not this one. Thank you.

23 A. The paragraph begins, The Minnesota Public
24 Utilities Commission has identified a range of
25 values for a carbon dioxide externality of 35 cents

1 per ton to 3.64 -- \$3.64 cents per ton. The
2 inclusion of a carbon dioxide externality value, or
3 imposition of a carbon tax, would cause an increase
4 in the busbar cost of power for a new baseload
5 resource. Figures 1-3 and 1-4 below present the
6 impact of the \$3.64 per ton CO2 externality value
7 on the economic modeling results under both
8 investor-owned utility and public power utility
9 ownership structure. The subcritical PC unit will
10 emit approximately 4.6 million tons of CO2 per
11 year. At a \$3.64 per ton CO2 externality value,
12 the levelized busbar cost will increase by \$4.98
13 per megawatt-hour under the investor-owned utility
14 ownership, and the levelized busbar cost will be
15 increased by \$4.94 per megawatt-hour under a public
16 power utility ownership.

17 Q. Now I'm sorry, sir, were you a witness
18 testifying in the Minnesota proceeding?

19 A. Yes, I was.

20 Q. Thank you. So in the Minnesota regulatory
21 scheme they had to consider this cost of \$4.98
22 megawatt value when they came up with a busbar cost
23 analysis to contrast the busbar cost analysis
24 between supercritical pulverized coal and combined
25 cycle natural gas plant plus wind.

1 A. I believe that's not the case. I believe
2 in the Minnesota -- and I'm no expert here. I
3 believe in the Minnesota case for a plant located
4 outside of Minnesota the value to be used in the
5 proceeding is zero. So this was provided as a
6 reference.

7 Q. I'll ask an additional testimony, but this
8 is an analysis that your consultant, Burns &
9 McDonnell, considered in evaluating the issues of
10 regulation in Minnesota and that was the numbers
11 they came up with; is that a fair statement?

12 A. Well, this was provided as a reference
13 point.

14 MR. GUERRERO: And we'll note for the
15 record that Mr. Jeff Greig, the principal author of
16 this study with Burns & McDonnell, is a -- will be
17 a witness this afternoon by phone.

18 Q. (MR. BREEN CONTINUING) Sir, tell me when
19 you're ready. Let's turn to Section 6.2 of this
20 report.

21 JUDGE WAHL: How about a page number, Mr.
22 Breen?

23 MR. BREEN: Sir, I'm very sorry, but I
24 only have 6-1. It doesn't --

25 JUDGE WAHL: Oh, I see.

1 THE WITNESS: I'm there now.

2 MR. BREEN: If the Commissioners are ready
3 with that, I'll proceed.

4 JUDGE WAHL: Proceed, Mr. Breen.

5 Q. (MR. BREEN CONTINUING) Let's look at the
6 last paragraph of that page. It starts 6.2. I'm
7 only interested in -- and I'll start the paragraph
8 for you, sir. "The estimated carbon dioxide
9 emissions of each of the baseload technologies are
10 listed below."

11 A. Okay.

12 Q. The pulverized coal unit emits 208 pounds
13 per MMBtu. Can you tell us what that MMBtu factor
14 is?

15 A. That stands for per million Btu's, and it
16 refers to the input fuel.

17 Q. Thank you. And the coal cycle gas turbine
18 unit emits 110 pounds per MMBtu; is that correct?

19 A. That's a natural gas-fired combustion
20 turbine.

21 Q. Yes. I meant to say natural gas. Pardon
22 me. And the wind plus natural gas-fired turbine
23 unit emits 110 pounds.

24 A. Based on their assumptions for that.

25 Q. For the natural gas, but zero pounds for

1 the MMBtu wind analysis; is that correct?

2 A. Right.

3 Q. The IGCC unit emits 200 pounds of carbon
4 per MMBtu; is that correct?

5 A. Correct.

6 Q. And that's without considering carbon --
7 capture and sequestration of carbon dioxide.

8 A. Correct. Basically it has almost the same
9 emissions as a PC unit.

10 Q. And the biomass unit, which didn't seem to
11 be a serious contender here to meet your
12 requirements, doesn't emit any carbon dioxide
13 emissions.

14 A. Well, technically it actually will emit
15 more carbon dioxide, but because it's coming from
16 biomass that's considered closed loop, so that's
17 why it gets the --

18 Q. Zero.

19 A. -- zero. So, I mean, it's assuming that
20 if you're burning a tree, that the tree is
21 absorbing that, but the unit itself will actually
22 emit more CO₂, but because of the closed cycle it's
23 given a value of zero.

24 Q. Now, this diagram estimate presented to
25 you by Burns & McDonnell clearly establishes that

1 the gas turbine natural gas unit plus wind emits
2 perhaps 100 pounds less carbon dioxide per MMBtu
3 unit; correct?

4 A. Correct.

5 Q. Okay. Can we agree that carbon dioxide is
6 a pollutant?

7 A. My opinion, and all I can give you is my
8 opinion, is it's not a pollutant. It may be a
9 greenhouse gas, but what trees and flowers and
10 plants need to exist I don't consider a pollutant.
11 It may be a greenhouse gas. That's my opinion.

12 Q. Can we agree that carbon dioxide is a
13 greenhouse gas?

14 A. It's classified as a greenhouse gas.

15 Q. Thank you. Can we agree that carbon
16 dioxide is a major contributor to global warming?

17 A. That is a matter of opinion. Not everyone
18 agrees with that.

19 Q. And can we agree that the Big Stone II
20 proposed plant emits 4.6 million tons of carbon
21 dioxide a year?

22 A. We can agree with that.

23 Q. Can we agree the practical, useful life
24 expectancy of this plant is probably 40 years?

25 MR. GUERRERO: I guess I'm going to

1 object. These questions were asked of Mr. Uggerud,
2 and I'm not sure they need to be repeated.

3 JUDGE WAHL: I agree, Mr. Breen. I think
4 you've made your record.

5 THE WITNESS: And my answers would be the
6 same as Mr. Uggerud's.

7 MR. BREEN: That was my last question,
8 sir.

9 JUDGE WAHL: Mr. Binek.

10 MR. BINEK: Thank you. I need to make
11 some room here.

12 **CROSS-EXAMINATION**

13 **BY MR. BINEK:**

14 Q. In your summary you had talked about all
15 the alternatives that were looked at by Otter Tail
16 and MDU. Besides the Big Stone II Plant, what
17 other pulverized coal plant possibilities were
18 included in the analysis?

19 A. Well, just to clarify, the project looked
20 at these alternatives. Otter Tail and MDU may have
21 looked at additional alternatives to the ones
22 listed, but the project participants look at that.
23 For the pulverized coal units we looked at
24 basically subcritical and supercritical and we also
25 looked at circulating fluidized bed as a

1 possibility for a coal-fired unit.

2 Q. In the screening process that was used on
3 the six -- excuse me, the six sites that were
4 evaluated you showed the criteria, the water supply
5 20 percent, et cetera. What factors went into the
6 weighting?

7 A. To begin with, this report was done by
8 Burns & McDonnell, and we followed their lead based
9 on their recommendations for the weighting factors
10 from a very high level -- the higher the weighting
11 the more important it is for the facility. That's
12 why water was rated very high, transmission was
13 rated very high because these are the critical
14 components. You know, factors like highway access
15 are not as important because it will not have as
16 long-term and as great of an effect. So it's
17 really the effect on the profitability, final
18 cost -- I shouldn't say profitability -- final cost
19 for the generation had the highest weighting.

20 Q. Water supply was 20 percent, so that was
21 one of the highest rated. In the Burns & McDonnell
22 report and as pointed out by Mr. Deason, I believe
23 that Coyote received a low rating in that analysis
24 and Mr. Deason questioned that. Have you reviewed
25 Mr. Deason's testimony?

1 A. Yes, I have.

2 Q. Would you agree that -- with his criticism
3 of the analysis that was done by Burns & McDonnell?

4 A. I have not double-checked that Coyote's
5 pipeline has capacity for a second unit, but I
6 believe it does, and if that is correct, I would
7 agree with Mr. Deason's recommendation.

8 Q. Fuel lines was another factor. What is
9 meant by fuel lines? Is that the railroad or gas
10 pipeline? Are those the things that are being
11 considered?

12 A. The supply of fuel, yes.

13 Q. A location like the Coyote plant would
14 rank very high on that or should rank high in that
15 regard, shouldn't it?

16 A. Yes.

17 Q. Transmission is the big problem with the
18 Coyote location; is that correct?

19 A. That's correct.

20 Q. Transmission and the emission concerns?

21 A. That's correct.

22 Q. In your rebuttal testimony, pages one and
23 two, you talk about the coal delivery and that --
24 you state that the owners of Big Stone I have
25 worked with BNSF to address the coal delivery

1 problems that existed in 2005 and 2006. You said
2 that the owners have added a third train set. I'm
3 assuming when you're talking about a train set,
4 you're talking about the cars -- the coal cars?

5 A. Correct.

6 Q. And with regard to the coal inventory you
7 state that there's room onsite to afford more than
8 30-days supply if the owners decide that is
9 appropriate. What's the maximum inventory that
10 could be carried onsite for the anticipated coal
11 uses of both Big Stone I and Big Stone II?

12 A. To be honest, I do not know the maximum.
13 I know that we can do greater than 45 days. I
14 haven't calculated the maximum.

15 Q. Mr. Deason in his testimony, I think it
16 was on page 17 of his testimony, stated that in an
17 interview with you on April 2nd you indicated that
18 capital costs used in the revised busbar
19 analysis -- cost analysis would have to be updated
20 to reflect a later in-service date for Big Stone
21 II. In your opinion, will the impact be material
22 enough to change the conclusion that Big Stone II
23 is the lower-cost alternative?

24 A. My opinion is it will not. If Big Stone
25 is delayed for a later in-service date, it will

1 experience escalation, inflation, and most likely
2 the competing projects will experience the same
3 type and same amount of escalation, not exactly as
4 we look at combined cycle gas, you know, the
5 factors are different, and like I said earlier,
6 some of the factors -- Black & Veatch recommended a
7 three percent, some four, five, six, all the way up
8 to eight and the combination is different. So it
9 will not affect all projects exactly the same, but
10 I believe the difference will not be great.

11 Q. Is a construction timetable of 48 months
12 achievable or is it overly optimistic?

13 A. It is achievable. It is, I would say,
14 slightly optimistic with the current labor
15 situation because of the post-Katrina demand for
16 labor, tar sands projects and other projects, but
17 that can improve, and we're taking steps to try and
18 address that by looking at apprenticeship programs,
19 working with the vocational schools and such trying
20 to help that situation, but it is realistic, maybe
21 a little bit optimistic.

22 Q. I believe that Mr. Deason stated that the
23 88 percent capacity factor for Big Stone II is a
24 conservative assumption. Do you agree with him?

25 A. Yes, I do. I would think a new unit being

1 designed the way we are designing it, low cost,
2 that it would be capable of doing higher than 88
3 percent.

4 Q. What do you believe the higher number
5 might be?

6 A. Well, we picked the 88 percent because
7 it's a conservative, very solid estimate, but I
8 believe the unit should be able to do 90, 92
9 percent reliably.

10 MR. BINEK: Thank you. I have no further
11 questions.

12 JUDGE WAHL: I think, counsel, Commission,
13 let's take another about five minutes, please, and
14 let's try hard for about five minutes.

15 (Recess taken.)

16 JUDGE WAHL: All right. Counsel,
17 Commission, we are back on the record. Counsel is
18 present. Let's proceed with questions from the
19 Commission of Mr. Rolfes.

20 COMMISSIONER WEFALD: I have one.

21 JUDGE WAHL: Commissioner Wefald.

22 **EXAMINATION**

23 **BY COMMISSIONER WEFALD:**

24 Q. In your original testimony on page 2 and
25 page 13, you talk about the process began with an

1 initial screening of various alternatives to
2 determine whether the alternative has the potential
3 to address the need to be served by the proposed
4 project, and then you analyzed those different
5 alternatives. I noted that hydro and a mix of
6 hydro and wind was not chosen as one alternative.
7 Can you tell me why?

8 A. In basic terms for the project
9 participants we felt that hydro was not available
10 for all the participants to use as options.

11 Q. But aren't we in this particular situation
12 looking at the options for MDU and Otter Tail Power
13 only?

14 A. Well, the MDU and Otter Tail witnesses
15 will have to address that. I'm coming strictly
16 from a project perspective on what the seven
17 co-owners have done, and the seven co-owners as a
18 group did not look at hydro because it was not
19 available to all the owners. Otter Tail and MDU
20 may have looked at that option.

21 Q. So which witnesses would you suggest that
22 I ask those questions of?

23 A. Well, Mr. Morlock and probably Mr. Heidell
24 or someone from MDU.

25 Q. Thank you. And then on page eight of your

1 testimony you talk about the efficiency of a -- of
2 a thermal efficiency of approximately 38 percent.
3 That's the last line, line 21, on page eight.
4 That's in your new supercritical coal unit?

5 A. Correct.

6 Q. What is the thermal efficiency in, for
7 example, Big Stone I, just to give me an example of
8 how things are going to improve using the
9 supercritical technology that you're suggesting?

10 A. Probably the easier comparison because the
11 numbers come to my memory easier, if you look at
12 Big Stone II, just a couple lines above it -- in
13 fact, the line above it, right now our estimates
14 are that we'll have a heat rate of 8,988 -- roughly
15 9,000 Btu's per kilowatt-hour. It takes that many
16 Btu's of energy from the fuel source. The current
17 Big Stone I Unit, its heat rate -- and this is not
18 the exact number, but it's approximately 10,600
19 Btu's to produce that same kilowatt of electricity.
20 So --

21 Q. So approximately what percentage less fuel
22 is needed for this new plant than the old plant?

23 A. Well, for Big Stone II as opposed to the
24 existing fleet, the average of all the units out
25 there, is 20 percent less. For Big Stone I,

1 without the calculator, it's probably 18 percent
2 less.

3 Q. And you would figure that number by taking
4 the number 8,988 --

5 A. Compared to --

6 Q. -- compared to 10,600.

7 A. -- 10,600, yes.

8 Q. Is that a large -- is that considered a
9 dramatic increase in efficiency these days?

10 A. Yes, it is.

11 Q. An 18 percent efficiency --

12 A. Yes.

13 Q. -- gain. And is the -- does that -- to
14 help me then, does that mean that it will take
15 approximately 18 percent less coal supply?

16 A. That's correct. A good ballpark
17 comparison in large numbers, you know, Big Stone II
18 will be a third bigger than Big Stone I, but the
19 fuel consumption is -- we're only going from two
20 million tons to two-and-a-half million tons.

21 Q. So although you need more fuel to run the
22 new plant because of its increased size, you're
23 going to be --

24 A. I was trying to make a simple analogy and
25 it didn't turn out so simple. The simple is if it

1 takes -- what used to take 100 pounds of coal to
2 produce -- we'll produce with 80 pounds. Where it
3 took 100 trains, it will only take 80 trains. You
4 know, a comparison in the airline industry, my son
5 works for Boeing. Boeing is going to be
6 introducing a plane next month, the 787, that's
7 supposed to be 20 percent more efficient, and
8 that's huge step for that industry. They're
9 expecting 65,000 people at the unveiling of that
10 plant because it's such a leap in technology.
11 We're proposing in our industry in our plant to be
12 20 percent efficient.

13 Q. How many supercritical coal plants have
14 been built already in the United States?

15 A. There's approximately 160 existing
16 supercritical units in this country. What is --
17 why we're getting the efficiency is we're taking
18 the operating temperatures even higher than the
19 majority of those existing plants. That's how
20 we're getting the 20 percent, but it's not -- the
21 concept of supercritical is not new. It's been
22 around since the early Sixties. Like I said,
23 there's approximately 160 supercritical units in
24 this country, over 500 worldwide, so it's a very
25 proven, reliable technology.

1 Q. What's different about this coal plant
2 than Big Stone I or let's say the one that's up
3 here, built up near -- near Beulah? Are those both
4 supercritical plants?

5 A. No.

6 Q. Why weren't those chosen at that time if
7 that technology's been around since the 1960s?
8 Well, you don't know the answer to that.

9 A. Well, yeah, I can give you -- the real
10 driver is cost. You know, back in the early
11 Sixties there were -- and Seventies there were a
12 lot of supercritical units built, but in the
13 Seventies and Eighties we've had such low-cost fuel
14 that people didn't pay the slight extra for that
15 efficiency, and there were some, you know,
16 challenges with the very first -- since 1960
17 vintage technology, but those have long been
18 resolved as they went into the new higher
19 temperatures and pressures, but it's just a matter
20 of cost. Fuel was cheap and people didn't spend
21 the extra increment of expense to get that. Now
22 with today's costs and the concern about emissions,
23 it's cost justifiable to go to those higher
24 operating temperatures and pressures.

25 Q. I've heard a little bit about fluidized

1 bed combustion. Explain to me why is this plant
2 better than fluidized bed?

3 A. Fluidized bed combustion is an ideal
4 technology for burning difficult fuels. The fuel
5 is suspended in a fluidized bed, in a bed material
6 that is lifted by airflow, and for, you know, fuel
7 that is high in sulfur or high -- you know, it's --
8 it's a great way to burn difficult fuels or a
9 variety of fuels. A lot of fluidized bed boilers
10 have been built that will burn petroleum coal, the
11 waste product from the petroleum refining industry,
12 kind of a waste fuel, because it can handle that
13 material, but its efficiency is much less. It's
14 even less than a subcritical pulverized coal unit.
15 So it's very good if you have a difficult fuel or a
16 wide variety of fuel, but we're not looking at
17 difficult fuels and a wide variety of fuels. We're
18 looking at Powder River Basin fuel, and so we
19 thought it was more important to have the higher
20 efficiency than that fuel flexibility when we
21 didn't see burning opportunity fuels.

22 Q. Are you convinced that all of the possible
23 fuel efficiencies and emission efficiencies have
24 been designed into this particular supercritical
25 plant? I mean, is this going to be a different

1 supercritical plant than those that were built in
2 1960, or have there been new advances in technology
3 so that I could say to people this is not your
4 grandfather's supercritical coal plant, or are we
5 building the same thing that was available back in
6 the Sixties?

7 A. No. This is definitely not your
8 grandfather's coal plant. This is state of the art
9 technology. And what is different? There's a lot
10 of tiny things, but the main important points that
11 are different is the operating temperature. The
12 higher the temperature -- and this gets back to the
13 engineering side, the thermodynamic side. The
14 higher the temperature, the higher the efficiency,
15 and Big Stone is still looking at what the final
16 operating temperature will be, but we've committed
17 to be at least 1,085 degrees on the main steam
18 temperature and the re-heat temperature. We may
19 even go higher than that. Coyote, Big Stone, I
20 believe most of the units in North Dakota are
21 operating at around a thousand degrees, and that 85
22 degrees of temperature and the pressure is -- the
23 higher the operating pressure is where the higher
24 efficiency comes from, and that's taking advantage
25 of the materials that are available today, the

1 metallurgy, the materials, high chrome content, a
2 lot more stainless steel material in the boiler
3 that can tolerate and handle these higher
4 temperatures and pressures. So it is definitely
5 not your grandfather's coal plant.

6 COMMISSIONER WEFALD: Thank you.

7 JUDGE WAHL: Any other Commissioner have
8 any questions?

9 COMMISSIONER CLARK: I do.

10 JUDGE WAHL: Commissioner Clark.

11 **EXAMINATION**

12 **BY COMMISSIONER CLARK:**

13 Q. Could you describe the Fargo site that you
14 had -- that was in the initial screening group?

15 A. I just know that it's a site slightly west
16 of Fargo. I --

17 Q. Was it a combined cycle gas turbine?

18 A. No. It was a site considered for the
19 supercritical unit.

20 Q. Oh, it was. Okay. Gascoyne was not on
21 that list for Otter Tail; is that correct? I know
22 it appears in MDU's testimony, but --

23 A. For the screening we started with the
24 entire three-state area, and then I believe it was
25 38 sites, and it may have been one of the 38. I

1 don't recall.

2 Q. But --

3 A. It didn't make that final six.

4 Q. Wasn't in that final list. Okay. We've
5 had at least one cost revision, I think, that was
6 submitted to the Commission in December of last
7 year, December of 2006. Have there been any more
8 cost revisions since then?

9 A. Not since December of 2006.

10 Q. So those numbers are still --

11 A. As good as we've got.

12 Q. As good as you've got. Okay. Did the --
13 in going through various cost analyses -- and I
14 think most of my questions are going to be for the
15 witness from Burns & McDonnell; is that right? But
16 I am curious, was there a consideration given of
17 wind backed up by the market as opposed to wind
18 backed up by a combined cycle turbine, and what
19 would the cost of that be or is it just not within
20 the realm of possibility?

21 A. From my recollection we didn't consider
22 that as an alternative.

23 Q. Why not?

24 A. Just because of the expected high cost
25 from relying on the market.

1 referred to as a chilled ammonia which holds great
2 promise for bringing that cost way down. So EPRI
3 and others -- you know, even though there isn't a
4 commercially available technology today based on
5 our standards, I firmly believe that there will be
6 in the future.

7 COMMISSIONER CRAMER: That's all I have.

8 COMMISSIONER CLARK: I do have one
9 further.

10 JUDGE WAHL: Commissioner Clark.

11 **FURTHER EXAMINATION**

12 **BY COMMISSIONER CLARK:**

13 Q. In the Burns & McDonnell testimony they
14 did indicate that when they put it together, they
15 excluded utility company-owned wind and assumed
16 that it would be purchased as a -- sort of a fuel
17 cost adjustment-type mechanism. I think Mr. Deason
18 brought that up in his testimony, as well. Is that
19 a reasonable assumption on the IOU side of things?
20 I understand from the rebuttal testimony that the
21 rationale for that is that it probably wouldn't be
22 done from a public power standpoint because then
23 you can't capture the entire value of the
24 production tax credit, but from an investor-owned
25 utility standpoint, Otter Tail -- and I assume the

1 same would go for MDU -- is that a valid assumption
2 anymore, or are utility companies more likely to
3 now build to own or some other arrangement so they
4 can capture it in rate base and not have to have a
5 constant sort of ratcheting up every 20 years as
6 these contracts go?

7 A. I'm not an expert, but my opinion is I
8 believe you're right. It's more likely today that
9 it would be a utility-owned project than it was
10 just a short period of time ago, and a study was
11 done a while ago.

12 Q. Right. Would that have an effect on cost
13 or should I direct that to --

14 A. I think Mr. Morlock would be better able
15 to --

16 JUDGE WAHL: Any further questions from
17 the Commission? Mr. Guerrero, followup?

18 MR. GUERRERO: Yeah, thank you, Your
19 Honor. Just a few followups to some good
20 questions.

21 **REDIRECT EXAMINATION**

22 **BY MR. GUERRERO:**

23 Q. Mr. Rolfes, Commissioner Wefald had asked
24 you about your grandfather's coal plant and you had
25 talked about the operating temperatures. What are

1 some of the things that you need to consider when
2 you look at increasing the operating temperatures
3 of a unit?

4 A. Well, the biggest concern is truly just
5 the metallurgy in the boiler and the turbine so
6 that you have materials that can withstand those
7 operating temperatures and pressures. That's the
8 basics. A lot of the plant is still the same.
9 It's just the high temperature and high pressure
10 portions, boiler and turbine. What's referred to
11 as the back-end portion of the turbine is unchanged
12 and the feed water heaters and such, other than
13 higher pressures, are still seeing the same type of
14 temperatures.

15 Q. Have you heard of the term ultra
16 supercritical?

17 A. Yes.

18 Q. And what does that generally refer to as
19 you understand it?

20 A. Well, maybe I should quickly explain what
21 the term supercritical means. It's an engineering
22 term. It's any steam cycle or water cycle that's
23 above what's referred to as a critical point or the
24 critical pressure is referred to as supercritical,
25 and it's around 3400 pounds per square inch, and

1 it's the pressure where the volume of steam is
2 the -- you know, it occupies the same volume at
3 that pressure, a pound of steam as a pound of
4 water. So anything above that pressure is referred
5 to as supercritical. There's an engineering
6 definition for supercritical. There isn't an
7 engineering definition for ultra supercritical.
8 Ultra supercritical is used -- as we've gone
9 further and further above that supercritical point
10 people have termed the phrase ultra supercritical.
11 In general when people refer to ultra
12 supercritical, they're usually referring to a steam
13 cycle that's operating above 1100 degrees
14 Fahrenheit.

15 Q. Thank you. Commissioner Wefald also asked
16 about Big Stone I and Coyote. What kind of
17 facilities are those, just for the record?

18 A. They're subcritical units. Their
19 operating pressure is 2400 pounds, temperature of a
20 thousand degrees. Big Stone II will be like 3800
21 pounds and somewhere over 1085 -- 1,085 degrees
22 Fahrenheit for its steam cycle.

23 Q. Thank you. And in order to achieve the
24 supercritical efficiencies, can you give the
25 Commission an indication or an idea of what the

1 cost premium is in a subcritical versus a
2 supercritical project?

3 A. In rough terms the increased capital cost
4 to go from the subcritical to supercritical is
5 probably in the order of ten million dollars. One
6 of the interesting things -- difference that people
7 may be able to relate to, a supercritical power
8 plant doesn't have a boiler drum.

9 Q. What does that mean?

10 A. In a subcritical -- you know, most people
11 have heard the term "boiler drum." A boiler drum
12 for a subcritical boiler or a heating boiler in
13 your house that operates on steam -- I don't think
14 anybody has steam heat anymore -- the boiler drum
15 is where you have the interface between water and
16 steam. It's like the kettle on the stove where you
17 have both steam and water. In -- because it's
18 subcritical there is a difference in volume so you
19 have an interface. In a supercritical you don't
20 have a boiler drum. You put water in one end, it
21 heats and comes out the other end of the pipe as
22 steam. There is no interface point like there is
23 on a subcritical boiler. That's more engineering
24 than anybody really wants to know.

25 Q. Thank you. Commissioner Clark referenced

1 the screening selection study that has been the
2 subject of some discussion this morning. That was
3 the study that Burns & McDonnell originally did;
4 correct?

5 A. Correct.

6 Q. Did you have any part in how those sites
7 were selected or you or the project have any
8 influence over how Burns & McDonnell did their
9 report?

10 A. Really, the only influence we had is we
11 said because of the makeup of the group, South
12 Dakota, North Dakota, Minnesota is the area, and
13 they took it from there.

14 Q. Would you consider that an independent
15 ranking of sites?

16 A. Yes.

17 MR. GUERRERO: No further questions, Your
18 Honor.

19 JUDGE WAHL: Let's loop back again,
20 counsel. Commissioner Wefald?

21 COMMISSIONER WEFALD: Yes.

22 **FURTHER EXAMINATION**

23 **BY COMMISSIONER WEFALD:**

24 Q. Just to help me -- thanks for that
25 information about going from -- I'm going to call

1 it critical and then you go to supercritical and
2 then you said there's ultra supercritical, and did
3 you say that to go, let's say, from the critical to
4 the supercritical is about an additional ten
5 million dollars of investment?

6 A. In rough numbers.

7 Q. Terms. Okay. So out of a 1.3- or 1.4-
8 billion-dollar plant, ten million, give or take, is
9 not a big expenditure.

10 A. Correct.

11 Q. Then how much would it cost to go to ultra
12 supercritical and was that decision made?

13 A. In rough terms it probably -- in rough
14 terms it will be five to ten million dollars to go
15 to ultra supercritical, and that's one of the
16 issues that we're still looking at.

17 Q. Whether to spend that extra five to ten
18 million dollars to gain that additional efficiency
19 from the plant.

20 A. And with that we would probably gain about
21 one percent more efficiency.

22 Q. Only one percent more?

23 A. That's why it's a tougher decision.

24 Q. Okay. So it isn't -- you said over 1100.
25 So you can't go too much more over 1100 degrees

1 Fahrenheit in these components, and you're at 1085
2 right now?

3 A. The engineering development, you know, to
4 get greater efficiency is looking at eventually
5 getting up to 1400 degrees by improved materials,
6 but that's part of the research and development
7 effort, and we --

8 Q. That's not there yet.

9 A. We don't want to have an R&D project.

10 COMMISSIONER WEFALD: Thank you.

11 JUDGE WAHL: All right. Mr. Guerrero,
12 followup to Commissioner Wefald?

13 MR. GUERRERO: No, thank you.

14 JUDGE WAHL: Mr. Breen, followup?

15 MR. BREEN: Yes, I do.

16 **RE-CROSS-EXAMINATION**

17 **BY MR. BREEN:**

18 Q. Sir, do Otter Tail and MDU -- are they
19 implementing any environmental planning or
20 applications in excess of what's required under the
21 Federal Clean Air Act?

22 A. Yes. The joint -- to begin with, the
23 environmental law is complicated, at best. At
24 worst it's extremely confusing, but the Big Stone
25 project is proposing the joint scrubber. The joint

1 scrubber will take and clean and scrub the
2 emissions of both units; where Big Stone II would
3 be required to have some type of scrubber, wet or
4 dry. Big Stone I is not required to do that. So
5 it is above and beyond what -- in my opinion, what
6 the law requires. The joint scrubber is going that
7 step.

8 Q. Now you indicated, sir, that the projected
9 completion date of Big Stone II is -- of 2012 is
10 optimistic.

11 A. It's realistic, maybe a little optimistic.
12 I said midyear 2012.

13 Q. And what do you think in your opinion is
14 the realistic completion date? 2012 or early 2013?

15 A. I believe midyear 2012 is what we can do
16 if permitting is granted in time and the owners
17 feel comfortable starting procurement.

18 Q. And you have not considered wind as an
19 input source of energy from an external force -- an
20 external business outside of OTP and MDU?

21 MR. GUERRERO: I'm sorry. Could you
22 repeat the question? I did not understand it.

23 Q. (MR. BREEN CONTINUING) Your evaluation
24 did not consider the input of wind energy as a
25 source from a business independent of Otter Tail

1 and MDU?

2 MR. GUERRERO: I guess I'm going to
3 object. The question is vague.

4 JUDGE WAHL: Well, I'm not sure I
5 understand the thrust of your question, either, Mr.
6 Breen.

7 MR. BREEN: I'll withdraw it. It's
8 already been asked and answered by one of the
9 commissioners, so I'll move on. I don't have to
10 stop here, sir. Thank you.

11 Q. (MR. BREEN CONTINUING) Now I'd like to
12 revisit, if I may, about the cost-effective issues
13 about installing carbon capture technology post the
14 completion of the Big Stone II project. You
15 indicated this was possible. Is it probable as we
16 sit here today that on the completion of the Big
17 Stone II project we can install a carbon capture
18 option on this completed project?

19 A. I'm not sure I understand your question.
20 I said it was possible to do it, and now are you
21 asking my opinion whether we will do it?

22 Q. No. Lawyers like to move from possibility
23 to probability. There's a difference, and you're
24 an engineer and I think that you deal with that
25 distinction. So is it probable as we sit here at

1 the present time that once this project is
2 completed with this model that we can retrofit a
3 carbon capture technology?

4 A. My opinion is it definitely is probable it
5 will be retrofitted.

6 Q. And you indicated, however, that you
7 believe that it was not cost-effective.

8 A. I said it was not cost-effective in
9 today's environment. I mean, today there is no CO2
10 cap and trade, there is no CO2 cost, there is no
11 reason to do it today. Because there is no
12 reason -- you know, the technology to do it is very
13 expensive. So you're going to have to have a
14 change in the regulatory environment and then you
15 will have -- then technology will address that
16 environment.

17 Q. Let me clarify that question. I didn't
18 mean to infer carbon tax or carbon trade credits.
19 I meant to ask the question, sir, about the dollar-
20 and-cents building expenditures cost of
21 retrofitting this BS II Plant with this present
22 model with a carbon capture technology. Building
23 costs, construction costs.

24 A. I don't -- again, I'm not sure I
25 understand your question. If you are implying is

1 there a disadvantage in retrofitting instead of
2 building with the technology, I believe there is no
3 disadvantage from the Big Stone II project in
4 retrofitting it at a later date.

5 Q. And do you believe that it's more cost-
6 effective to retrofit this Big Stone II project for
7 a carbon capture technology -- more cost-effective
8 after this plant is completed rather than do it now
9 during the design of the plant?

10 A. Well, the design of the plant -- well, to
11 retrofit you have to look at what are the
12 obstacles, and the biggest obstacles are space and
13 access. Well, this plant is being built in the
14 Dakotas where usually space and access are not a
15 problem. So the design, the layout of Big Stone II
16 I don't think is going to be prohibitive or even a
17 disadvantage in having the space and the access to
18 be able to install retrofit technology, whether it
19 is an amine system or a chilled ammonia system or
20 advanced amine system or any of the other
21 technologies that are being worked on today.

22 Q. Hopefully, it's my last question, sir. Is
23 it your opinion that it is not more cost-effective
24 to build carbon capture technology when you
25 initially build this plant over applying carbon

1 capture technology after the plant is completed?

2 A. I believe for Big Stone II it is more
3 cost-effective to do Big Stone II carbon capture if
4 that is the route that we go as a retrofit because
5 of the technology changes that we will see in the
6 next year as the capture technology develops.

7 MR. BREEN: I have no other questions.

8 JUDGE WAHL: Mr. Binek, followup?

9 MR. BINEK: No.

10 JUDGE WAHL: Mr. Guerrero, anything
11 further?

12 MR. GUERRERO: Nothing further. Thank
13 you.

14 COMMISSIONER WEFALD: I have one.

15 JUDGE WAHL: Commissioner Wefald. You
16 know you start another round of --

17 COMMISSIONER WEFALD: I don't think so.

18 JUDGE WAHL: Okay. Go ahead. You're
19 entitled.

20 **FURTHER EXAMINATION**

21 **BY COMMISSIONER WEFALD:**

22 Q. I just need to clarify this one point for
23 myself. How many ultra supercritical plants are in
24 operation today?

25 A. There's approximately 15.

1 Q. 15. So you said in your last testimony
2 that people a number of years ago didn't choose to
3 build supercritical plants because the cost of fuel
4 was low. They didn't put in that extra several
5 million dollars. Why wouldn't we want you to spend
6 the extra 5 million dollars, as you just said, and
7 build the newest technology available to use the
8 least amount of fuel today and go with one of those
9 15 and becomes the 16th ultra supercritical plant?

10 A. I don't know why you wouldn't want us to.

11 Q. Why aren't you planning to do that then?

12 A. It's under discussion right now. The
13 decision hasn't been made. The differences between
14 1085 and higher than 1100 will not affect the basic
15 design of the plant. So we're talking about, you
16 know, five- to ten-million-dollar cost increase,
17 but that decision can still be made without any
18 adverse effects, and it is one of the decisions
19 that we are looking at. And just the units -- I
20 said there's 10 to 15 operating. They're all
21 operating -- almost all of them are operating in
22 Japan where the cost of fuel is very, very high.
23 So that's why they're out in front of us in the
24 technology.

25 COMMISSIONER WEFALD: Thank you.

FURTHER EXAMINATION

1

2 **BY COMMISSIONER CRAMER:**

3 Q. So it's a matter of cost benefit analysis,
4 I presume.

5 A. And what your vision of the future is.

6 JUDGE WAHL: For the record, the last
7 question was from Commissioner Cramer. Anything
8 further, Commissioner?

9 COMMISSIONER CRAMER: Nothing.

10 JUDGE WAHL: Commissioner Clark?

11 COMMISSIONER CLARK: Nothing.

12 JUDGE WAHL: Mr. Guerrero, followup?

13 MR. GUERRERO: No, thank you.

14 JUDGE WAHL: Mr. Breen, followup?

15 MR. BREEN: No, thank you.

16 JUDGE WAHL: Mr. Binek, followup?

17 MR. BINEK: No.

18 JUDGE WAHL: All right. Thank you very
19 much, Mr. Rolfes.

20 MR. GUERRERO: The applicants would call
21 Mr. Kermit Trout, Your Honor, and while Mr. Trout
22 makes his way to the stand I would note for the
23 record that we have talked with Mr. Jeff Greig of
24 Burns & McDonnell, and he is available for a one
25 o'clock call if we want to choose to call him at

1 that specific time. He is on vacation in
2 California, and as a convenience to him we thought
3 it might be better if we could designate a time. I
4 believe we should be done with Mr. Trout fairly
5 quickly.

6 JUDGE WAHL: And do counsel stipulate?

7 MR. BREEN: We'll agree.

8 JUDGE WAHL: All right. The plan will
9 then be whether or not we are -- we are finished
10 with Mr. Trout, we will recess Mr. Trout's
11 testimony and take Mr. Greig's testimony at one
12 o'clock, that is when we return, hopefully, at one
13 o'clock.

14 MR. GUERRERO: Sure. And, Judge, I guess
15 the important point is if we could provide a
16 specific time when he be available, 1:00 or 1:15 or
17 1:30. If the Commission wants to take a little bit
18 longer lunch or whatever, if we could just
19 designate a time that we could call him and let him
20 know that that's when we will call him, that would
21 be the most important convenience.

22 JUDGE WAHL: I was thinking of taking a
23 little shorter lunch actually. All right. Let's
24 go. Mr. Trout, as you have heard me advise
25 previous witnesses, your testimony is required to

1 be under oath and I'm required by law to advise you
2 regarding perjury before administering the oath.
3 Perjury is a false statement of material fact which
4 you do not believe to be true, in other words,
5 generally speaking, a lie. In North Dakota perjury
6 is a Class C felony, punishable by a fine up to
7 \$5,000, imprisonment for a period of up to 5 years,
8 or both.

9 (Witness sworn.)

10 JUDGE WAHL: Mr. Guerrero.

11 MR. GUERRERO: Thank you, Your Honor.

12 **KERMIT E. TROUT, JR.,**

13 having been first duly sworn, was examined and
14 testified as follows:

15 **DIRECT EXAMINATION**

16 **BY MR. GUERRERO:**

17 Q. Please state your full name for the
18 record.

19 A. My name is Kermit Trout, Jr.

20 Q. By whom are you employed?

21 A. I've vice president with Black & Veatch.

22 Q. What do you do as vice president for Black
23 & Veatch?

24 A. My responsibilities are associated with
25 project execution work. We have been engaged by

1 the applicants, as well as the other co-owners, to
2 do the engineering and construction management on
3 the Big Stone II project.

4 Q. And how long have you been with Black &
5 Veatch?

6 A. 31 years.

7 Q. And what do you do for Black & Veatch in
8 addition to your work on this project?

9 A. I am a project manager on other ongoing
10 projects.

11 Q. What's your educational background?

12 A. I have a Bachelor's of Science in
13 engineering and a Master's in engineering.

14 Q. And you're testifying here this morning on
15 behalf of both Otter Tail and Montana-Dakota;
16 correct?

17 A. That's correct.

18 Q. And, Mr. Trout, did you prepare or have
19 cause to be prepared direct and rebuttal testimony
20 in this case?

21 A. Yes.

22 Q. And do you have those with you?

23 A. Yes, I do.

24 Q. And can you identify them for the record,
25 please?

1 A. They're Exhibits 303 and then there's some
2 actual exhibits to that, supplemental information,
3 304, 305, 306, 307, and then the rebuttal
4 testimony.

5 Q. And what's the rebuttal testimony marked
6 as?

7 A. 308, I believe.

8 MR. GUERRERO: Okay. And for benefit of
9 the Commission, do we know -- off the record one
10 second.

11 (Off the record.)

12 MR. GUERRERO: That would be tab nine in
13 the Commission's trial book. At this time I would
14 move OTP/MDU-303, which is the direct testimony of
15 Mr. Trout, along with all exhibits, which are
16 303 -- excuse me, 304 through --

17 JUDGE WAHL: 307.

18 MR. GUERRERO: -- 307, and we would also
19 offer 308, which is Mr. Trout's rebuttal testimony.

20 MR. KUNTZ: Just for a procedural matter,
21 Todd, Exhibit 305 is a trade secret exhibit. Is
22 that -- do we want to make sure that that's -- I
23 assume that protection is preserved. It's already
24 been filed as a trade secret document, trade secret
25 protection has been granted to it. So I assume

1 we'll not be marking an additional copy here then
2 or --

3 JUDGE WAHL: No, we're not. It'll just be
4 identified, offered and received presumably as
5 Exhibit 305.

6 MR. KUNTZ: The existing filed copy.

7 JUDGE WAHL: Yes.

8 MR. GUERRERO: Thank you.

9 JUDGE WAHL: Mr. Breen?

10 MR. BREEN: I have no objection to this.

11 JUDGE WAHL: Mr. Binek?

12 MR. BINEK: No objection.

13 JUDGE WAHL: OTP/MDU Exhibits 303 through
14 308, inclusive, are received.

15 MR. GUERRERO: Thank you, Your Honor.

16 Q. (MR. GUERRERO CONTINUING) Mr. Trout, do
17 you have a short summary that you can provide to
18 the Commission?

19 A. Yes, I do.

20 Q. Please go ahead.

21 A. My testimony today talks about the Black &
22 Veatch role in the project, and then most of my
23 discussion will be on the cost estimate that was
24 produced for the project, as well as the process
25 that was used to develop that estimate.

1 Back in October of 2005 Black & Veatch was
2 requested to do an analysis of some prior cost
3 estimate that had been done as part of a
4 feasibility study for the project. At that time we
5 did a higher level sanity check-type evaluation
6 based on generic plant information. We hadn't
7 completed any of the conceptual design or
8 optimization studies at that time.

9 We did that analysis at a very high level,
10 as I mentioned, and concluded that at the time back
11 in October of 2005 that the feasibility estimate
12 was in line with current market conditions and
13 costs. We then proceeded to do conceptual design
14 and develop information in more detail and more
15 specifically for the Big Stone project. We
16 completed project control information and drawings
17 and did optimization studies to come up with the
18 arrangements for the project, itself.

19 Once we had done that we started a
20 detailed estimating process to come up with the
21 final cost estimate for the project, which is
22 included in my testimony.

23 The development process that we used is
24 similar to the other 10 to 12 projects that we're
25 doing that are comparable in size to this project

1 and in complexity in terms of the scope of work for
2 coal-fired projects.

3 We obtained cost information from
4 equipment suppliers. We actually went out and took
5 detailed bids or wrote specifications and took
6 detailed bids on the five major components of the
7 project, and then we also looked at indicative
8 estimates for the rest of the major equipment. We
9 did some surveys on the construction costs and also
10 factored those into the estimate.

11 In July of 2006 we submitted that to the
12 co-owners, the estimate, and indeed the cost at
13 that time was 1.8 billion. That's a total project
14 cost, including transmission, and owners' indirect
15 costs, and that was significantly higher than the
16 1.2 billion in the original 2004 feasibility study.
17 The reasons for that change over the two-year
18 period were basically fourfold. There was an
19 increased demand for coal-fired projects and
20 generating facilities. Costs then increased and
21 materials as well as the specialty engineering
22 equipment like the turbine and boiler, and
23 commodities increased, also. Copper, steel,
24 concrete, other metals increased significantly.
25 And finally there was the labor rate escalation as

1 more projects competed for a given labor market.

2 As my colleague, Mr. Rolfes, has
3 testified, the current estimate based on that is
4 now 1.44 billion. That excludes the transmission
5 and has been escalated to mid-2012 dollars. So
6 that's an estimate in the plant when it would go
7 into commercial operation in 2012.

8 That completes my --

9 Q. Thank you, Mr. Trout. I failed to ask you
10 whether or not you had any corrections or additions
11 or subtractions to your --

12 A. No, I have none.

13 MR. GUERRERO: Okay. Thank you. We would
14 offer Mr. Trout for cross-examination, Your Honor.

15 JUDGE WAHL: Ms. La Seur.

16 MS. LA SEUR: Yes.

17 **CROSS-EXAMINATION**

18 **BY MS. LA SEUR:**

19 Q. Mr. Trout, I'd like to direct you to your
20 rebuttal testimony, page four. You indicated in
21 response to the question at line 13 that there has
22 not been any update to the cost estimates since --
23 for the last six months. Does that mean there was
24 a cost estimate in January of '07 or are we looking
25 back to the July '06 estimate?

1 A. It's the latest estimate that we had in
2 December of 2006, yes, and that's correct. We
3 haven't done any adjustments or increases to that.

4 Q. And so that hasn't changed in the last
5 weeks since this rebuttal has been filed. You
6 would still say that there is no material change to
7 that cost estimate.

8 A. That's correct.

9 Q. Are there any current coal plant
10 development trends that might cause significant
11 increases between now and the anticipated
12 completion of Big Stone II?

13 A. Just the ones that I just mentioned in my
14 prepared testimony.

15 Q. And would you say that that trend of
16 increased construction has leveled off or does it
17 continue to increase?

18 A. It depends on which area. We've seen
19 increases in labor, but there's other commodities
20 that are flat, they're not increasing, and
21 equipment prices are varying all across the board.
22 So without specifically one component or another,
23 there's -- the six percent that we've talked about
24 previously is still a good estimate for the
25 escalation over time of the whole project. There

1 are other components that are higher, there are
2 some that are lower.

3 Q. And that's including the transmission?

4 A. I can't address the transmission. The
5 transmission estimates were all done by -- by
6 others, not Black & Veatch.

7 Q. Do you recall estimating in your Minnesota
8 testimony in December of '06 that there were around
9 18 to 24 coal plants proposed in the U.S.?

10 A. Yes, I do.

11 Q. And after testifying were you able to
12 verify that number?

13 A. I was on the stand clarified in my
14 estimate, and we were working on different
15 databases. I was saying there were 18 to 24 plants
16 that were planned, and those were actually planned
17 or in construction by the database that Black &
18 Veatch has internally that we track. There are
19 nationally published databases that have hundreds
20 of plants identified. So I was made aware of that
21 during my testimony in the Twin Cities.

22 Q. And would you now modify your estimate of
23 how many plants are proposed nationwide?

24 A. Yeah. I would have to based on that
25 information. Sure.

1 Q. And what estimate would you make now?

2 A. I haven't looked at that database. I
3 mean, I'm focused on project execution, and so
4 there are other projects that are competing with
5 Big Stone and I'm aware of those in the region, and
6 that includes the 18 to 24 that I mentioned there.

7 Q. If I were to tell you that the Department
8 of Energy's May 2007 numbers are that there are 151
9 coal plants proposed under construction or recently
10 completed nationwide, would you disagree?

11 A. No, I wouldn't argue with that.

12 Q. As a general rule would you say that more
13 plants being constructed put increasing pressures
14 on costs?

15 A. That's correct.

16 Q. If I told you that those 151 new plants
17 tracked by the Department of Energy planned to burn
18 more subbituminous coal than all other types of
19 coal mined in this country put together, would you
20 disagree with that?

21 A. I haven't looked at that, but it sounds
22 reasonable.

23 Q. And do you agree with Mr. Uggerud that
24 coal supply is not a worry?

25 MR. GUERRERO: I guess I would object to

1 the characterization of Mr. Uggerud's testimony.

2 Q. (MS. LA SEUR CONTINUING) Okay. I'll put
3 that question straight to you then. Do you believe
4 that coal supply is not a worry?

5 A. I'm not a coal expert, but I know how many
6 hundreds of years of coal we have in this region of
7 the country, and so based on that I would say coal
8 is not a concern. We have a lot of coal in the
9 United States.

10 Q. Do you consider the trend in the price of
11 coal a concern?

12 A. I'm not familiar with the coal pricing
13 trends. No.

14 MS. LA SEUR: Okay. Thank you.

15 JUDGE WAHL: Mr. Binek?

16 MR. BINEK: Thank you.

17 **CROSS-EXAMINATION**

18 **BY MR. BINEK:**

19 Q. On page three of your rebuttal testimony
20 you state that if a 630 megawatt combined cycle gas
21 turbine plant were constructed today instead of a
22 630 megawatt supercritical pulverized coal plant,
23 the labor and equipment cost likely would be lower
24 but over the long haul the fuel cost would be
25 higher. Is what you're saying basically that if

1 you build a CCGT plant, it would be cheaper in the
2 short run, but in the long run it's going to be
3 more expensive?

4 A. Yeah. That's the gist of my text there.
5 I was really responding to some direct testimony
6 and making the point that you have to evaluate
7 total evaluated costs, life cycle costs, not just
8 compare capital costs to determine which option
9 might be the best alternative.

10 Q. Have the costs for wind turbines increased
11 as dramatically as the costs for coal plants?

12 A. My understanding is that they've actually
13 increased percentagewise greater in the last
14 year -- six months to a year.

15 Q. Greater than coal plants?

16 A. Greater than coal plants. And I've
17 provided in my rebuttal testimony some reasons for
18 that on pages three and four.

19 Q. Why isn't there a big demand for gas
20 turbine plants at this time?

21 A. I would have to speculate it's due to the
22 fuel costs.

23 MR. BINEK: I have no further questions.

24 JUDGE WAHL: Questions from the
25 Commission? Commissioner Wefald?

EXAMINATION

1

2 **BY COMMISSIONER WEFALD:**

3 Q. You've told us that you anticipate the
4 cost to be 1.442 billion if constructed in the
5 middle -- and finished in the middle of 2012.

6 A. Yes.

7 Q. That's a lot of money. And so it's hard
8 for me to get a handle on a budget that is that
9 big. All right. And one of the things that I was
10 wondering about was, was it in your testimony that
11 you told -- which of these are already kind of bids
12 that you think you can hold the contractor to and
13 which were just kind of estimates, what if we do
14 the project, you know, and it was -- and had to do
15 the work between now and 2012? Which ones were
16 kind of firm bids and which ones are, you know, we
17 guessed the cost is going to be this?

18 A. None of those actual quotations we had
19 that had we signed them up last October would have
20 been signed, sealed and delivered. None of those
21 are valid anymore. Their bid period has expired,
22 but the five major contracts -- or specifications
23 and cost estimates we had at that time, I'm
24 guessing it was 30, 40 percent of the total price
25 of the project, and again, I'm going from memory

1 there.

2 Q. Okay. All right. You know, as a
3 commissioner I'm trying to think ahead of the --
4 about ratepayers, and in a prudence case, you know,
5 we have the -- if we decide to approve this, you
6 can come back to us in a rate case -- or Otter Tail
7 and MDU can come back to us in a rate case and say
8 now we need to have these costs included in rates,
9 and I've heard about cost overruns. You know,
10 especially you hear about them in nuclear plants
11 and such. If you were a commissioner, what advice
12 would you give to us to prevent cost overruns in a
13 project like this?

14 A. Well, the first thing of that 1.4 billion,
15 which is a big number, there's -- 200-some million
16 of that is for allowances for contingencies and for
17 escalation through the period of time to 2012.

18 Q. So it includes some margins.

19 A. So there is money in there to handle just
20 the very thing that you said. And then I'm not in
21 a position to give you advice, but if I had to say
22 one thing, I'd say it's -- you know, good
23 contracts. Good contracts with equipment,
24 suppliers and construction contracts. We're in the
25 process of using a multiple contracting approach,

1 so we will have about 110 equipment, supply and
2 construction contracts on this project, and that to
3 a certain extent by breaking up the amount of
4 money -- it's not going to one big contract -- that
5 in itself allows the owners and Black & Veatch to
6 manage those contracts.

7 Q. And does the company always go out for
8 multiple bids on all those contracts?

9 A. In most instances that's the plan. In
10 some areas it may make sense from a cost and
11 scheduled delivery standpoint to just sole source
12 to someone, and again, we're providing our advice
13 and based on our experience and knowing if that's a
14 good thing to do for certain pieces of equipment.

15 Q. Last week I was at a conference and then I
16 was told, you know, at that same kind of conference
17 that if you hear an idea there that you'd like to
18 explore, you have to bring it up at the hearing.
19 So I'm going to do that, and if you're not the
20 right person to respond, then tell me who it is.
21 At one of the meetings they talked about how in
22 Minnesota when they were converting a coal plant to
23 a natural gas plant, Xcel was, and the Commission
24 put in place a -- kind of a performance-based
25 ratemaking deal on this. They said if you -- if

1 you're -- if you meet this cost -- if you -- let's
2 just say this: Let's say if you go over 1.4
3 billion dollars on the project, a certain range
4 over, your rate of return would be higher, and if
5 you go under -- come in with costs under 1.4
6 billion, your rate of return that we give you will
7 be higher. Did I say that right?

8 COMMISSIONER CRAMER: Almost.

9 MR. GUERRERO: Yeah.

10 COMMISSIONER WEFALD: All right. Let's do
11 it again.

12 Q. (COMMISSIONER WEFALD CONTINUING) If you
13 come in over the cost -- oh, no. The second one
14 should have been lower. Your --

15 COMMISSIONER CRAMER: No. Actually --

16 Q. (COMMISSIONER WEFALD CONTINUING) Okay.
17 If you come in under the cost that we set as the
18 set cost, you get a higher rate of return. If you
19 come in over the cost, you get a --

20 MS. JEFFCOAT-SACCO: Lower.

21 Q. (COMMISSIONER WEFALD CONTINUING) -- lower
22 rate of return.

23 COMMISSIONER WEFALD: Thank you, Illona.

24 Q. (COMMISSIONER WEFALD CONTINUING) All
25 right. I don't know how the Commission would get a

1 handle on costs for this to know whether 1.442
2 billion is the right number to base something like
3 that on. Do you have any thoughts for us on that
4 or should I talk to someone else?

5 A. The concept --

6 Q. You're the only money person up here. I
7 looked through all of the different people.

8 A. I'm not the money person. The concept
9 that you're alluding to is used in the -- in the
10 engineering and construction industry a lot. It's
11 a risk-sharing basis. So, you know, there's a
12 target price, in this case the 1.44 billion, and if
13 you exceed that for whatever reason, there is some
14 skin in the game, if you will, where you don't get
15 as high a return as you might have expected.
16 Likewise, if you bring a project in under that
17 target, there's some compensation for that. So
18 there's an incentive. Whether that applies in this
19 arena, again, I'm not in the position to say, but
20 it is used in the industry a lot, that kind of
21 concept, but again -- and you've hit a key point,
22 is determining what the right target cost is, and
23 from that standpoint I'm confident that we've done
24 a very detailed estimate and that that's a good
25 number to believe.

1 Q. You wouldn't suggest I take 20 percent off
2 of that then.

3 A. If you're willing.

4 COMMISSIONER WEFALD: No. Okay. Thank
5 you.

6 JUDGE WAHL: Does any other Commissioner
7 have any questions? Commissioner Clark?

8 COMMISSIONER CLARK: I don't.

9 JUDGE WAHL: Commissioner Cramer?

10 COMMISSIONER CRAMER: I do not.

11 JUDGE WAHL: Followup, Mr. Guerrero?

12 MR. GUERRERO: None here. Thank you.

13 JUDGE WAHL: All right. Followup, Ms. La
14 Seur?

15 MS. LA SEUR: No, thank you.

16 JUDGE WAHL: Mr. Binek?

17 MR. BINEK: No.

18 JUDGE WAHL: All right. Thank you very
19 much, Mr. Trout. I suggest -- it's the stroke of
20 12.

21 MR. KUNTZ: Your Honor, it's been brought
22 to my attention that the books that were
23 distributed this morning may include Exhibit 305,
24 which is the trade secret exhibit. If your book
25 has one of those, we'd ask that you provide it to

1 us, be removed, rather than be left as a --

2 COMMISSIONER WEFALD: What section would
3 it be in?

4 MR. KUNTZ: -- sealed document.

5 COMMISSIONER CLARK: Tab nine.

6 JUDGE WAHL: Tab nine. I do indeed have
7 Exhibit 304.

8 MR. KUNTZ: 305.

9 JUDGE WAHL: 305.

10 MR. KUNTZ: If you could remove those for
11 us, we'd appreciate it.

12 COMMISSIONER CRAMER: I can't read it
13 anyway.

14 MR. KUNTZ: Thank you.

15 JUDGE WAHL: Let's resume at one o'clock
16 with the testimony of Mr. Greig. Do I pronounce
17 that correctly?

18 MR. GUERRERO: Greig.

19 JUDGE WAHL: All right. Please, counsel,
20 one o'clock. Not five after.

21 (Recess taken at 11:59 p.m. to 12:57 p.m.)

22 MR. GUERRERO: Mr. Greig, hi, this is Todd
23 Guerrero. How are you?

24 MR. GREIG: Good.

25 MR. GUERRERO: Jeff, we have you on

1 speakerphone. We are in the Commission hearing
2 room in front of the North Dakota Public Service
3 Commission. We have Commissioner Susan Wefald,
4 president of the Commission present, also
5 Commissioner Kevin Cramer and Commissioner Tony
6 Clark. The hearing is being presided over by Judge
7 Wahl. We have parties who you're familiar with,
8 Mr. Greig, including both Otter Tail and
9 Montana-Dakota Utilities. We also have counsel and
10 representatives from the Dakota Resource Council,
11 which is an intervening party, and we also have
12 staff from the North Dakota Public Service
13 Commission.

14 We're just about ready to call you, Mr.
15 Greig, for your testimony here before the
16 Commission. We want to thank you for taking
17 time out of your vacation to accommodate us, and we
18 also want to thank Judge Wahl and the Commission
19 obviously for allowing us to take your testimony by
20 telephone to accommodate your vacation.

21 MR. GREIG: Good afternoon.

22 JUDGE WAHL: Good afternoon, Mr. Greig.
23 This is Al Wahl speaking. As you are doubtless
24 aware, your testimony is required to be under oath
25 and I'm required by law in North Dakota to advise

1 you regarding perjury before administering the
2 oath. Perjury is a false statement of material
3 fact which you do not believe to be true, in other
4 words, generally speaking, a lie. In North Dakota
5 perjury is a Class C felony punishable by a fine up
6 to \$5,000, imprisonment for a period of up to 5
7 years, or both.

8 (Witness sworn.)

9 JUDGE WAHL: Mr. Guerrero.

10 MR. GUERRERO: Thank you, Your Honor.

11 **JEFFREY GREIG,**

12 having been first duly sworn, was examined and
13 testified as follows:

14 **DIRECT EXAMINATION**

15 **BY MR. GUERRERO:**

16 Q. Could you please introduce yourself, Mr.
17 Greig?

18 A. Yes. My name is Jeffrey Greig, G-r-e-i-g.
19 I'm currently vice president and general manager of
20 the business and technology services division of
21 Burns & McDonnell. Our business address is 9400
22 Ward Parkway, Kansas City, Missouri, 64114.

23 Q. Thank you. And you are testifying today
24 on behalf of both Otter Tail and Montana-Dakota
25 Utilities; is that correct?

1 A. Yes.

2 Q. Could you describe Burns & McDonnell
3 briefly, please?

4 A. Yes. Burns & McDonnell is an engineering
5 and construction firm headquartered in Kansas City.
6 We're involved in a number of different
7 infrastructures, including power generation,
8 transmission distribution, water, wastewater, and
9 other public utility consulting design and
10 construction services. I manage our business and
11 technology services division, which is the
12 consulting arm of the company, and we are primarily
13 involved in resource planning efforts, transmission
14 planning, siting studies, feasibility work, market
15 assessments, information technology consulting, and
16 security consulting.

17 Q. Thank you. And what is your educational
18 background?

19 A. I hold an undergraduate degree in finance
20 and undergraduate degree in economics from Eastern
21 Illinois University and a Master's degree in
22 economics from Iowa State University.

23 Q. And did you prepare or cause to be
24 prepared rebuttal testimony in this matter?

25 A. Yes.

1 Q. We have marked that, Mr. Greig, OTP/MDU
2 Exhibit 309. Do you have a copy of your rebuttal
3 testimony with you today?

4 A. I do.

5 Q. And do you have any corrections or
6 clarifications that you would like to make with
7 respect to Exhibit Otter Tail/MDU-309?

8 A. No.

9 Q. Okay. If I asked you those questions
10 today that are set forth in OTP/MDU-309, which is
11 your rebuttal testimony, would your answers be the
12 same?

13 A. Yes.

14 Q. Mr. Greig, we also have before us here the
15 original reports that you were the principal author
16 of, the first of which is a September 2005 analysis
17 of baseload generation alternatives. The second
18 one is the revised analysis of baseload generation
19 alternatives dated October 2nd, 2006. Are you
20 familiar with those reports?

21 A. Yes.

22 Q. And did you author those reports?

23 A. Yes. Those reports were prepared under my
24 direction.

25 Q. And you're familiar with those reports?

1 A. Yes.

2 Q. Do you have copies of those reports with
3 you today?

4 A. Yes.

5 MR. GUERRERO: Your Honor, we would move
6 OTP/MDU Exhibits 309, 310 and 311.

7 JUDGE WAHL: Mr. Breen?

8 MR. BREEN: No objection.

9 JUDGE WAHL: Mr. Binek?

10 MR. BINEK: No objection.

11 JUDGE WAHL: Exhibits OTP/MDU-309, 310 and
12 311 are received.

13 Q. (MR. GUERRERO CONTINUING) Mr. Greig,
14 could you provide a brief summary of both your
15 rebuttal testimony and your two reports, that is
16 the September 2005 report and the October 2nd,
17 2006, report?

18 A. Yes. Going back to the September 2005
19 report, the purpose of that report was to evaluate
20 different baseload generation technologies. We had
21 five different primary alternatives that we
22 evaluated from an economic standpoint: A 600
23 megawatt supercritical pulverized coal plant, a 600
24 megawatt combined cycle gas turbine project, an
25 integrated gasification combined cycle unit with a

1 nominal rating of 535 megawatts, and a 100 percent
2 biomass facility with a nominal rating of 600
3 megawatts. The fifth alternative was combining the
4 600 megawatt combined cycle project with purchases
5 of wind, and in the study we put together the
6 capital cost estimates, operating and performance
7 estimates from the different alternatives and ran
8 those through an economic model under two different
9 ownership structures, one for investor-owned
10 utility ownership structure and a second set of
11 alternatives for public power financed
12 alternatives, and we determined the levelized
13 busbar costs of each of the different baseload
14 generation alternatives.

15 And the conclusion of the September 2005
16 analysis of baseload generation alternative study
17 was that the supercritical pulverized coal unit
18 represented a lowest cost baseload resource, and we
19 evaluated it both under an assumption that the
20 production tax credit for wind would continue or
21 that it would expire as scheduled, and then we also
22 prepared some different carbon sensitivities on the
23 economics for each of those, and the conclusions
24 held that the supercritical pulverized coal unit
25 was the lowest cost alternative.

1 Following that report the company's
2 engineering firm, Black & Veatch, had prepared an
3 updated cost estimate for the Big Stone II project,
4 and that led to the generation of the revised
5 analysis in October 2006 where basically the
6 economic analysis was updated for just three
7 alternatives; that would be the supercritical
8 pulverized coal unit; the gas fired combined cycle
9 unit; and the gas fired combined cycle plus wind
10 case, and reflecting updated capital cost
11 information for Big Stone II, as well as the other
12 alternatives.

13 And the overall conclusions of that
14 updated study also reconfirmed that the Big Stone
15 II project represented a lowest cost baseload
16 generation alternative.

17 Then in my rebuttal testimony I was
18 offering some clarifications to some questions that
19 had been raised by witness Terry Deason and witness
20 David Schlissel.

21 Q. Is that all, Mr. Greig?

22 A. Yes.

23 MR. GUERRERO: Thank you. Your Honor, we
24 would tender Mr. Greig for cross-examination.

25 JUDGE WAHL: Mr. Breen?

1 MR. BREEN: May I have a minute, please?

2 JUDGE WAHL: You may. Ms. La Seur?

3 MS. LA SEUR: Yes.

4 JUDGE WAHL: You may proceed when you're
5 ready.

6 **CROSS-EXAMINATION**

7 **BY MS. LA SEUR:**

8 Q. Mr. Greig, did you do any North Dakota
9 specific analysis of generation options?

10 A. The -- I guess, could you clarify what
11 specifically --

12 Q. Well, you've referred at several points in
13 your testimony to taking into account the positions
14 of variation partners, some of which are public
15 power operators and can't take advantage of the tax
16 advantages of owning wind generation. That's not
17 the case for MDU and OTP. So I wonder if at any
18 point in your analysis you looked at the state-by-
19 state realities of generation choices and wind
20 ownership choices?

21 MR. GUERRERO: Before you answer, if I
22 could interrupt. The question just posed to you,
23 Mr. Greig, is from Ms. Carrie La Seur. She is a
24 lawyer on behalf of the Dakota Resource Council, an
25 intervenor in this case. Thank you.

1 THE WITNESS: Okay. No. We put together
2 two sets of ownership assumptions. We had seven
3 participants that have service territories and
4 obligations in several different states, and we put
5 together two cases to represent those different
6 ownership structures, one for investor-owned
7 utilities and one for public power. So, no, we
8 didn't further segregate it down state-by-state.

9 Q. (MS. LA SEUR CONTINUING) So would it be
10 correct to say that there's nothing in your
11 testimony that represents the economics of wind
12 ownership for MDU and OTP?

13 A. We modeled wind as being developed by an
14 independent power producer that would take full
15 advantage of the production tax credits and then
16 those two utilities would purchase the output of
17 that wind generation under a purchase power
18 agreement, was how that was modeled.

19 Q. Okay. So is that a no?

20 A. It's -- as I've just clarified, that's how
21 we handled the situation. We did not evaluate
22 direct ownership of those two utilities in wind
23 generation.

24 MS. LA SEUR: Thank you, Mr. Greig.

25 JUDGE WAHL: Mr. Binek?

CROSS-EXAMINATION

1

2 **BY MR. BINEK:**

3 Q. You state in your rebuttal testimony that
4 you do not find serious inconsistencies between
5 Burns & McDonnell's work and Mr. Heidell's work.
6 Mr. Deason, the advocacy staff expert witness,
7 states that there are inconsistencies between those
8 reports. Do you agree with Mr. Deason that there
9 are some inconsistencies?

10 A. I would agree that there are differences
11 in assumptions, particularly regarding projection
12 of future costs, such as fuel costs, but I -- if
13 you want to label those inconsistencies, I don't
14 find that they rise to the level that I would
15 consider them material differences and would note
16 that the analyses conducted by Mr. Heidell and by
17 Burns & McDonnell resulted in the same conclusions,
18 and therefore I view it as more robust the fact
19 that even under, you know, different forecasts for
20 projections of future cost that different analyses
21 came back to the same conclusion.

22 Q. It's my understanding that in calculating
23 wind cost, the production tax credit is not
24 included; is that correct?

25 A. We evaluated under both scenarios, under

1 the production tax credit expiring and under an
2 extension of the production tax credit.

3 Q. Okay. Assuming that the production tax
4 credit is extended, does Big Stone II still have
5 the lowest cost?

6 A. That's correct, yes.

7 Q. Mr. Deason stated another inconsistency
8 between the two studies is the capacity factor for
9 wind. Please explain the differences between
10 the -- your study and that of Mr. Heidell.

11 A. Sure. In our study we were using wind to
12 replace some of the dispatch of higher cost gas-
13 fired generation out of the combined cycle unit,
14 and we assumed that wind would have an overall
15 capacity factor, which is the amount of energy you
16 would get in a year of about 40 percent, which is a
17 fairly conservative assumption, meaning a high
18 assumption. That's a robust assumption for how
19 much wind energy you would get out of a particular
20 wind farm or out of a particular power purchase
21 agreement for wind. I believe that the assumption
22 that Mr. Deason was referring to was an assumption
23 Mr. Heidell had made regarding the capacity value
24 of wind, which is its contribution towards helping
25 meet a peak demand situation for a utility. So

1 those two assumptions are evaluating different
2 components of overall performance.

3 Q. And your assumption is based on basically
4 a gas turbine providing the baseload energy and
5 wind -- wind would basically supplement that --

6 A. That's correct.

7 Q. -- when wind was available; is that
8 correct?

9 A. Yes. The two alternatives being directly
10 compared are really the pulverized coal plant
11 compared to a natural gas-fired combined cycle
12 plant as baseload alternatives, and then we
13 prepared another case recognizing that due to the
14 high cost of gas, that the energy produced out of
15 the combined cycle unit is very high cost, and so
16 we supplemented that case with the purchase of
17 non-firm wind energy when it's available to lower
18 the overall cost of that case.

19 MR. BINEK: Thank you. I have no further
20 questions.

21 JUDGE WAHL: Questions from the
22 Commission?

23 COMMISSIONER WEFALD: I have no questions
24 for this witness.

25 JUDGE WAHL: Commissioner Clark?

1 COMMISSIONER CLARK: I do have some.

2 Thank you.

3

EXAMINATION

4 **BY COMMISSIONER CLARK:**

5 Q. In one of your attachments is your
6 economic analysis, page 6-1, impacts of carbon tax
7 on a new baseload unit.

8 MR. GUERRERO: Is that Exhibit 310 or 311?

9 COMMISSIONER CLARK: Let's see. It's in
10 310.

11 MR. GUERRERO: Thank you. Page?

12 COMMISSIONER CLARK: Page 6-1.

13 Q. (COMMISSIONER CLARK CONTINUING) Are you
14 there?

15 A. Yes, I've found that. Sorry.

16 Q. At the bottom of that page you list the
17 estimated carbon dioxide emissions for each of the
18 baseload technologies that are listed below, and a
19 combined cycle gas turbine unit and wind plus
20 combined cycle gas turbine unit both have 110 --
21 they both list 110 MMBtu as an output, but would --
22 under the second scenario would the output from the
23 gas unit be less because perhaps in North Dakota 40
24 percent of the time it's kicked off by virtue of
25 the wind that's on?

1 A. That's correct. Under that third bullet
2 the first reference to 110 pounds per million Btu
3 for gas, that's when the combined cycle unit is
4 being used for energy and then, comma, zero pounds
5 per minute Btu for when the wind is available. So
6 the composite emissions for that case would be 60
7 percent of the 110 and 40 percent of zero, which is
8 approximately, I guess, 65 pounds, thereabouts.

9 Q. So when you actually did your
10 calculations, it did have the -- it didn't count
11 the full 110 and the --

12 A. No. It dispatched each of these based on
13 the contribution of wind.

14 Q. Okay. Thanks. When you calculated the
15 cost of transportation -- fuel transportation to
16 the Big Stone II Plant, was the -- it was
17 previously referred to by Mr. Uggerud that the
18 numbers that were used were off the current tariff
19 that BNSF has in place. Is that the number that
20 you used in your modeling?

21 A. That's in the second study, which would be
22 Exhibit 311, the updated revised baseload
23 alternatives. That's correct. We used the \$1.71
24 per million for the total delivered cost of coal,
25 which included the tariff that was in place from

1 BNSF that was -- it's my understanding was under
2 challenge by Big Stone -- or Otter Tail.

3 Q. And to what degree do your calculations
4 take into consideration future price increases in
5 the cost of transportation?

6 A. That overall value is escalated at 2.9
7 percent a year.

8 Q. In the submitted testimony that was
9 submitted by the Burlington Northern Santa Fe
10 witness, Mr. Brautovich, he indicates that in 2005
11 235 million was spent on locomotives and coal cars,
12 16 million was spent on the joint line, 32 million
13 on various coal corridors, 29 million on coal
14 terminals, and then goes on to indicate that 600
15 million plus will be spent for coal capacity
16 expansion in 2006, which is the most for any year
17 since our merger in '95 and it's 50 percent more
18 than our previous year record spending for coal
19 capacity. That's on page four of the Brautovich
20 testimony. Given that, what consideration did you
21 give to that in deciding whether the 2 -- I'm
22 sorry, I forgot the number -- 2.9 percent increase
23 is a reasonable expectation? I mean, is that
24 reasonable given the amount of investment that the
25 Burlington Northern Santa Fe says it's putting into

1 it and is it reasonable to expect that it might be
2 a lot more given a record level of spending that
3 probably is not yet incorporated into their tariff
4 rate?

5 A. I'm not familiar with the testimony you
6 were referring to from the representative of the
7 BN. I do -- you know, if you look historically at
8 coal prices from both a supply standpoint and a
9 delivered standpoint, they've been relatively
10 stable, and, in fact, throughout -- sometimes
11 they've declined on a real cost basis. So I do
12 believe that the 2.9 percent overall escalation
13 rate when compared to how we're treating future
14 costs for gas-fired generation and for capital cost
15 escalation is a reasonable assumption.

16 Q. How did you get the 2.9? I mean, was it
17 just purely historical or --

18 A. No. That was a forecast that we were
19 provided from Otter Tail, and we reviewed that and
20 found that to be reasonable, and that was the
21 underlying assumption in that forecast.

22 Q. What was the basis for the reasonability?
23 I guess I'm trying to get at what factors went into
24 deciding that 2.9 percent is the right number?

25 A. It's more of a relative case. When we

1 compare it to what we were using for our gas cost
2 forecast, which was three percent, we felt that 2.9
3 percent was reasonable for general inflation terms.

4 Q. Aren't the markets completely different
5 for natural gas and coal hauled from the PRB?

6 A. Correct. Which is why I mentioned that
7 historically coal has not escalated to the same
8 rate that gas has. So the fact that we were using
9 something that was very close to what we were using
10 for the gas side led us to believe that that was a
11 reasonable forecast. You know, if costs did rise
12 in the future more than 2.9 percent, it would also
13 be as likely that the gas cost side would rise
14 quickly, as well.

15 Q. I guess I'm not sure that I follow why
16 that would be. There's two completely different
17 forms of transportation between natural gas and
18 coal. I mean, coal is -- it was testified to
19 earlier approximately 60 percent of delivered cost
20 is transportation. I don't know what it is with
21 natural gas, but I would -- I'm guessing not 60
22 percent of the cost is pipeline cost. Maybe it is.
23 I don't know.

24 A. No, it's not. I'm not comparing directly
25 the two transportation components. I'm comparing

1 the total delivered cost, which would be the supply
2 cost and the transportation costs.

3 Q. Okay. Was your analysis the one that
4 considered the weighting factors that we've heard
5 about? I mean, you weren't here for the previous
6 testimony, but we've had some discussion about
7 weighting factors in the selection process and, for
8 example, the availability of water was 20 percent
9 weighted. Does that come from your analysis or is
10 that another witness?

11 A. No, I'm afraid not. I did not -- I'm not
12 familiar with that effort.

13 COMMISSIONER CLARK: Could counsel --
14 which --

15 MR. GUERRERO: What Commissioner Clark is
16 referring to, Mr. Greig, is a siting study -- an
17 initial siting study that Burns & McDonnell did on
18 behalf of the project a couple, two, three years
19 ago probably in a different area than your group at
20 Burns & McDonnell, and the question is whether or
21 not you are familiar with how that study was put
22 together or any of the information in it.

23 THE WITNESS: No. I have no direct
24 involvement in that. I know the gentlemen that
25 were responsible for that, but I did not review

1 that effort.

2 COMMISSIONER CLARK: Will there be a
3 witness who will be able to answer questions about
4 that study?

5 MR. GUERRERO: Not necessarily today.
6 Probably our best witness is probably Mr. Rolfes.
7 To the extent that, you know, we can make somebody
8 available, we can try to do that, maybe even as
9 soon as tomorrow.

10 COMMISSIONER CLARK: Or maybe if someone
11 can point to me, is it anywhere in our record? Are
12 those studies available?

13 MR. GUERRERO: The siting study --
14 Commissioner, I think the siting study actually
15 came up in the course of Staff Witness Deason's due
16 diligence review with Otter Tail in the project,
17 and I don't believe it was ever introduced actually
18 in the record. We would be happy to do that if it
19 made sense to do that, but we haven't brought it
20 forward.

21 COMMISSIONER CLARK: I would like to
22 explore that just to see how various factors were
23 weighted in the decisionmaking process. It would
24 be helpful for me.

25 Q. (COMMISSIONER CLARK CONTINUING) Moving to

1 questions regarding wind. In your analysis am I
2 correct that -- that you did, in fact, render the
3 possibility of an investor-owned utility actually
4 owning the wind itself; right?

5 A. The wind was modeled as a power purchase
6 agreement.

7 Q. Is it more expensive if you model it as a
8 purchase power agreement as opposed to including it
9 in rate base?

10 A. I would -- based on my experience having
11 modeled wind projects under different structures in
12 the past, I think that the cost would be very
13 comparable in terms of the overall total cost of
14 capital for an investor-owned utility versus an
15 independent power producer.

16 Q. Okay. Thanks. Did you run any models
17 of -- the models that I noticed were ones when you
18 had paired wind with combined cycle gas turbine.
19 Was there any modeling of wind just paired with the
20 market?

21 A. No.

22 Q. Would it be reasonable to do that or -- I
23 mean, was there a reason to not do that?

24 A. You would have to have a specific market
25 purchase that was capacity based, and we did not

1 have any -- we did not have any alternatives
2 identified at that -- that would provide both
3 capacity and energy.

4 Q. Does that -- I just want to make sure I
5 understand your answer. Does that mean that you --
6 I mean, you chose not to do it because the
7 information wasn't available or the information is
8 there, but you just weren't asked to answer that
9 question?

10 A. No. I believe that each of the utilities
11 issued requests for an RFP for market purchases and
12 the evaluation of those alternatives was done by
13 the utility resource planners.

14 Q. Okay. But it wasn't done by you.

15 A. No.

16 COMMISSIONER CLARK: Okay. Thanks.

17 That's all the questions I have.

18 JUDGE WAHL: Commissioner Cramer?

19 COMMISSIONER CRAMER: I have nothing.

20 JUDGE WAHL: All right. Followup, Mr.
21 Guerrero?

22 MR. GUERRERO: Thank you, Your Honor.

23 **REDIRECT EXAMINATION**

24 **BY MR. GUERRERO:**

25 Q. Mr. Greig, I want to talk a little bit

1 about this modeling the PPA -- or modeling the wind
2 as a PPA versus ownership just a little bit more.
3 You mentioned in your answer to Commissioner Clark
4 the costs were likely to be comparable for an
5 investor-owned utility modeled as a purchase power
6 agreement or through ownership or rate base. Can
7 you explain why you believe that those are likely
8 to be comparable?

9 A. Yes. The -- basically, you know, the vast
10 majority of costs in wind generation are capital
11 costs. You know, with no fuel there's very little
12 ongoing operating costs other than operation and
13 maintenance costs. So the cost of the wind will be
14 primarily driven by the capital structure of the
15 owning entity, and an independent power producer is
16 going to go out and secure debt financing and then
17 invest equity in that, and typically, you know, the
18 cost of debt for the independent power producer is
19 probably going to be in the seven-and-a-half to
20 eight percent range, depending upon their -- their
21 credit quality, and the return on investment that
22 the independent power producers typically try to
23 seek is about 15 percent return on equity.

24 So depending upon the overall weighted
25 amount of debt and equity, you're combining, you

1 know, 7-and-a-half, 8 percent debt with a 15
2 percent equity requirement. If you compare that to
3 an investor-owned utility, I believe the assumption
4 we were using was a 50/50 debt equity mix with a
5 return on equity of 12 percent and the cost of debt
6 about 7-and-a-half percent, and now both entities
7 will also have potential tax liabilities.

8 And all combined when you evaluate the
9 cost of capital structure between those two
10 entities and the potential tax liability, we find
11 that the overall cost of capital is relatively
12 consistent.

13 Q. Thank you, Mr. Greig. Would it be fair to
14 say also that if an investor-owned utility or a
15 utility owned the wind farm or the wind turbine as
16 part of rate base that there would be other risks
17 that they would have to assume as part of that
18 ownership, as well?

19 A. Well, that's correct. You know, one of
20 the features of a power purchase agreement that's
21 beneficial for a utility is the fact that it shifts
22 the development risk to the developer. The overall
23 capital cost risks for the construction of the
24 project are borne by the developer. Since they
25 would have offered an overall price for the energy

1 out of that project, they're bearing those risks;
2 as opposed to if a utility were to proceed with
3 that project, then they're bearing the development
4 risk that the project can be put together as well
5 as the capital cost risk that it can be built for
6 the estimate.

7 Q. Thank you. And as in any contract there
8 are risks that have to be accounted for in the
9 overall compensation paid for that contract;
10 correct?

11 A. Correct.

12 Q. Just to button this one up, it's fair from
13 your perspective, is it not, to compare wind as a
14 power purchase agreement across the board versus
15 having it in ownership -- in an ownership
16 structure?

17 A. I believe it's -- well, it's consistent
18 with how the industry is developed. The majority
19 of the wind generation done in the U.S. has been
20 developed by independent power producers and sold
21 to utilities under power purchase agreements. So I
22 think from that standpoint that is how the industry
23 has evolved; and then, secondly, for an
24 investor-owned utility, you know, as we've
25 discussed, I don't find that there would be a

1 significant cost difference in the overall cost of
2 the project to the ratepayers whether or not the
3 utility owned it directly or whether the utility
4 secured it through a power purchase agreement.

5 Q. Thank you. Do you see any other -- are
6 you seeing any other trends in the industry right
7 now with respect to wind development whether or not
8 utilities are taking more of that into ownership
9 versus PPAs or is it too early to tell?

10 A. We are seeing some trend for utilities to
11 want to have ownership of wind farms and have those
12 assets in rate base, and I think some of that's
13 driven by the fact that under a power purchase
14 agreement the rating agencies are viewing a
15 component of that commitment as debt or quasi debt
16 to the utility. Therefore, you know, if they're
17 going to be -- if their credit rating is going to
18 be impacted by having these contracts, they might
19 as well pursue the asset themselves.

20 Q. And would that trend, to the extent that
21 you could call it a trend, would that change your
22 analysis in any way?

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

25 Q. And the trend towards maybe possibly more

1 ownership by investor-owned utility companies,
2 would that change your analysis in any way?

3 A. From other economics that we've run
4 evaluating the overall cost of wind under an
5 investor-owned ownership structure, I don't believe
6 that it would change the overall conclusions that
7 Big Stone is the low cost baseload resource.

8 Q. Thank you. A couple of questions, Mr.
9 Greig, with respect to fuel transportation. Again,
10 Commissioner Clark had asked you about the 2.9
11 percent escalation on the coal delivery costs. Let
12 me just ask you: Do you believe that to be too low
13 of an escalation to use?

14 A. No. I mean, in the original study the
15 delivered cost for coal to Big Stone was assumed to
16 be, I believe, \$1.31 per million, and then the
17 revised --

18 (Telephone interruption.)

19 THE WITNESS: I apologize. -- in the
20 revised analysis of baseload alternatives we had
21 increased the delivered cost estimate to \$1.71 per
22 million. So we already incorporated a fairly
23 significant increase in the cost, which I do
24 believe was primarily due to transportation rates,
25 from \$1.31 to \$1.71. So from that point forward

1 the escalation rate that was selected for the
2 overall delivered cost of coal relative to the
3 overall delivered cost of gas, we believe the 2.9
4 percent was reasonable.

5 MR. GUERRERO: Thank you. Given that was
6 probably your daughter asking why you're not at the
7 pool, I have no further questions.

8 JUDGE WAHL: But you're not quite done,
9 Mr. Greig. Ms. La Seur.

10 MS. LA SEUR: Yes. I think there's just
11 one.

12 **RE-CROSS-EXAMINATION**

13 **BY MS. LA SEUR:**

14 Q. Just to be clear, Mr. Greig, when you say
15 that the cost of buying versus building wind is
16 similar, you're speaking in general terms rather
17 than from any fact specific analysis of MDU and
18 OTP?

19 THE WITNESS: Correct.

20 MS. LA SEUR: Okay. Thank you.

21 JUDGE WAHL: Mr. Binek?

22 **RE-CROSS-EXAMINATION**

23 **BY MR. BINEK:**

24 Q. My understanding is that Otter Tail is
25 considering owning a portion of a wind farm

1 development in North Dakota. The question I would
2 have is if there is no difference between the cost
3 of purchasing that power or owning it, why would
4 Otter Tail get into an ownership position?

5 A. Well, I think to clarify first, you know,
6 I don't think that I've testified there would be
7 absolutely no cost difference. There could be --
8 there could be a cost difference between a
9 negotiated power purchase agreement and the
10 ownership of a wind farm. I don't believe that it
11 would be a material difference that would change
12 the results of any of the economics that we have
13 evaluated by making the assumption that it would be
14 a purchase. And as I mentioned, I think the trend
15 is somewhat driven by the fact that some of these
16 contracts are viewed by the rating agencies as, you
17 know, long-term commitments and therefore rising to
18 the level of having a debt-type component to them,
19 and in that case if the utility's credit rating is
20 going to be evaluated assuming that that long-term
21 commitment has a debt component, they might as well
22 own the asset and have the benefit of ownership.

23 Q. Are you aware that Otter Tail Power
24 Company asked for a letter of support from staff
25 for purchase of -- or ownership of the wind farm

1 interest because of the cost difference to the
2 company?

3 A. No.

4 MR. BINEK: I have no further questions.

5 JUDGE WAHL: Very good.

6 COMMISSIONER CRAMER: I have one, if I
7 can.

8 JUDGE WAHL: Commissioner Cramer.

9 **EXAMINATION**

10 **BY COMMISSIONER CRAMER:**

11 Q. Just following up on that, in your
12 analysis between ownership and purchased power, did
13 you consider any state specific incentives to
14 ownership such as an investment tax credit, say, in
15 North Dakota? That North Dakota asks for
16 specifically an IOU owning -- or paying income tax?

17 A. No. Just the federal production tax
18 credit was incorporated.

19 COMMISSIONER CRAMER: All right. Nothing
20 further.

21 JUDGE WAHL: Anything further from the
22 Commission? Mr. Guerrero?

23 MR. GUERRERO: Just one.

24

25

REDIRECT EXAMINATION

1

2 **BY MR. GUERRERO:**

3 Q. Mr. Greig, you're not taking a position
4 whether one form of -- whether it's better for an
5 IOU to own wind versus taking it under a PPA, are
6 you?

7 A. No. I'm just clarifying the reason that
8 we assumed wind was incorporated into the economics
9 as a purchase was driven by a couple factors. One,
10 is that that is how the industry has developed and
11 a lot of the wind has been purchased. Secondly, we
12 had some participants in the Big Stone II project
13 which were public power utilities and therefore as
14 opposed to trying to model ownership of wind for
15 investor-owned utilities, which would have a --
16 would be easier for them to accommodate taking
17 advantage of the production tax credit versus a
18 public power utility that may have to enter into a
19 complex ownership structure in order to capture any
20 benefits, we made the assumption that wind would be
21 a power purchase so that we could evaluate it for
22 both ownership structures from a consistent and
23 reasonable standpoint. Where -- we are not making
24 any conclusions that investor-owned utilities
25 should secure wind by power purchase agreement or

1 should secure it by building and owning it
2 themselves.

3 Q. The purpose was really to try to do to the
4 greatest extent possible an apples-to-apples
5 comparison; correct?

6 A. That's correct. We had seven different
7 utilities in a number of different states, and
8 instead of trying to model out every potential
9 scenario, we made an assumption which we believed
10 was reasonable, consistent with how the industry
11 has worked to capture the cost of wind.

12 MR. GUERRERO: No further questions.
13 Thank you.

14 JUDGE WAHL: Commission Tony Clark.

15 COMMISSIONER CLARK: I apologize. This is
16 dangerous.

17 JUDGE WAHL: No. That's fine. That's
18 fine.

19 **FURTHER EXAMINATION**

20 **BY COMMISSIONER CLARK:**

21 Q. Getting back to this idea of modeling this
22 group as a whole, is it possible that something
23 could be the low cost option, economically
24 speaking, for a group of utilities as a whole but
25 not be the best option for individual utilities

1 that are the parts of that sum?

2 A. That could be possible, yes.

3 Q. But you didn't look into that?

4 A. Well --

5 Q. I mean, you didn't attempt to answer that
6 question.

7 A. We did not attempt to answer that
8 question. Each of the seven utilities conducted
9 their own resource planning analyses.

10 COMMISSIONER CLARK: Okay. Thanks.

11 JUDGE WAHL: Mr. Guerrero?

12 MR. GUERRERO: Nothing further.

13 JUDGE WAHL: Ms. La Seur?

14 MS. LA SEUR: Nothing further.

15 JUDGE WAHL: Mr. Binek?

16 MR. BINEK: Nothing further.

17 JUDGE WAHL: All right. Thank you very
18 much, Mr. Greig.

19 THE WITNESS: Thank you. I appreciate
20 your flexibility with my schedule.

21 JUDGE WAHL: You're welcome.

22 MR. GUERRERO: We would call Mr. Robert
23 Brautovich on behalf of BNSF.

24 JUDGE WAHL: Mr. Brautovich, as you are
25 doubtless aware, your testimony is required to be

1 under oath and I'm required by law to advise you
2 regarding perjury before administering the oath.
3 Perjury is a false statement of material fact which
4 you do not believe to be true, in other words,
5 generally speaking, a lie. In North Dakota perjury
6 is a Class C felony punishable by a fine up to
7 \$5,000, imprisonment for a period of up to 5 years,
8 or both.

9 (Witness sworn.)

10 JUDGE WAHL: Mr. Guerrero.

11 MR. GUERRERO: Thank you.

12 **ROBERT BRAUTOVICH,**

13 having been first duly sworn, was examined and
14 testified as follows:

15 **DIRECT EXAMINATION**

16 **BY MR. GUERRERO:**

17 Q. Welcome, Mr. Brautovich. Could you
18 provide your name and business address to the
19 Commission, please?

20 A. Bob Brautovich. I'm with the BNSF Railway
21 in Forth Worth, Texas.

22 Q. And what is your position with the BNSF?

23 A. I'm assistant vice president of coal
24 marketing for the western half of the United
25 States.

1 Q. What does that entail?

2 A. Basically responsible for marketing and
3 sales of our coal transportation services out to
4 predominantly utilities but also to industrial
5 consumers of coal, and my territory extends
6 basically from a line north/south just west of the
7 Mississippi River to the western half of the U.S.,
8 three Canadian provinces, the Pacific rim, and
9 Mexico.

10 Q. How long have you been with the railroad?

11 A. 15 years.

12 Q. And you're here on behalf of the project,
13 but you're really here on behalf of your own
14 company; is that correct?

15 A. I'm -- yes.

16 Q. What is your educational background?

17 A. Got a Bachelor's degree from Villanova
18 University and Master's degree in finance from
19 University of Houston.

20 Q. Could you just briefly tell us a little
21 bit about BNSF?

22 A. We're one of seven Class I railroads in
23 North America. Our footprint or our network
24 extends about 32,000 miles. Those are main line
25 track miles. It's the western two-thirds of the

1 United States, 28 states, two Canadian provinces,
2 and Mexico. We move many, many commodities, as you
3 might imagine, as a railroad. One of the primary
4 or most important commodities is coal. Coal
5 represents about 20 percent of our gross revenue,
6 and in 2006 we moved right at about 287 million
7 tons of coal.

8 Q. Thank you. And did you prepare or cause
9 to be prepared direct testimony in this matter?

10 A. Yes, I did.

11 Q. Do you have that with you today?

12 A. Yes. Yes, I do.

13 Q. And it's been marked as Exhibit OTP/MDU-
14 319. Do you see that?

15 A. Yes, I do.

16 Q. And then Exhibit 320 has been marked and
17 that is your -- appears to be your bio; correct?

18 A. That is correct.

19 Q. If I asked you the questions that are set
20 forth in Exhibit 319, would your answers be the
21 same?

22 A. Yes.

23 MR. GUERRERO: Your Honor, we would move
24 the admission of OTP/MDU Exhibits 319 and 320.

25 JUDGE WAHL: Mr. Breen?

1 MR. BREEN: No objection.

2 JUDGE WAHL: Mr. Binek?

3 MR. BINEK: No objection.

4 JUDGE WAHL: Exhibits OTP/MDU-319 and 320
5 are each received.

6 MR. GUERRERO: Thank you, Your Honor.

7 Q. (MR. GUERRERO CONTINUING) Could you
8 provide a short summary of your direct testimony,
9 Mr. Brautovich, to the Commission?

10 A. Sure. The testimony provided -- and is it
11 appropriate to go ahead and use the --

12 Q. Yes?

13 A. -- slides at this time? Basically we
14 started with an overview of BNSF Railway, as I
15 mentioned basically in my opening comments.
16 There's about 32,000 track miles and a little over
17 40,000 employees. I'm sorry. I forgot I was in
18 charge of --

19 Q. It's this one. Page down.

20 A. Oh, page down. I've got some other
21 information in there, statistics about locomotives
22 and freight cars in regard to our company. The
23 testimony also contains some information about the
24 Powder River Basin. It's the world's largest,
25 single deposit of low sulfur coal. There's about

1 180 billion tons, which represents at today's
2 consumption rates well over 250 years of energy
3 supply.

4 The basin itself has grown exponentially
5 over the years since the passage of the Clean Air
6 Act in 1970. As a matter of fact, in 2006
7 production reached about 477 million tons, and
8 railroads moved about 458 of that 477 out of the
9 basin.

10 As the next line mentions, statistically
11 about 96, 97 percent of the production moves by
12 rail, and the PRB coal has for many, many years
13 been one of the lowest cost delivered coals for
14 generating electricity.

15 The rest of the testimony basically
16 focused on two things. One was some well
17 publicized capacity and production issues that
18 occurred in 2005 and then there was some discussion
19 about deliveries to the Big Stone facility at --
20 owned by Otter Tail and MDU.

21 And with regard to the 2005 problems, we
22 basically have structurally completed the repairs
23 and the infrastructure has been returned to its
24 current -- to a better condition, number one, but
25 we've also expended an awful lot of money and spent

1 a lot of time on expanding the capacity of the
2 basin. More than 300 million in 2005 -- and this
3 the coal expansion capital, more than 600 million
4 in 2006, and another 600 million approximately in
5 2007.

6 Contained in that capital expansion
7 numbers are predominantly track infrastructure,
8 terminals, yards and locomotives. Obviously, the
9 workforce has increased by thousands over the last
10 couple of years, as well.

11 In 2005 there was some -- a couple of
12 derailments, some unprecedented water accumulation
13 in the roadbed, which basically caused a
14 fundamental collapse of the infrastructure. Even
15 with the collapse of the infrastructure in 2005 the
16 aggregate tonnage that moved out of the basin
17 was still higher than it was in 2004, albeit it was
18 rather modest, the growth of about six million
19 tons.

20 And with the recovery efforts with regard
21 to the maintenance programs, we also had some
22 expansion work going on, as well. From 2005 to
23 2006 the basin grew 43 million tons. So I think
24 what's indicative of the statistics is it's
25 testimony to the overall capacity and the

1 wherewithal of the infrastructure in the railroads
2 to move the tons once you have a catastrophic event
3 like we had in '05 remedied.

4 With regard specifically to deliveries to
5 Big Stone, they incurred some delays in 2005. In
6 2006 deliveries were quite a bit better. I
7 mentioned about 43 million tons in aggregate in '06
8 versus '05 and appreciably or ratably that 43
9 million is about 11 percent growth, and the
10 deliveries to Big Stone went up incrementally about
11 the same as we did to other utilities around the
12 country.

13 Q. What --

14 A. I'm sorry. Just -- I did add a map just
15 so everybody by way of context could get a feel for
16 where we are physically with the Powder River Basin
17 as we talk about these issues and then also to give
18 you an idea of where some of the work is going on
19 with regard to expansion capital. You can see that
20 area -- it's in Wyoming and Montana that's been
21 blocked out in the small graph of the U.S. It's
22 been enlarged. The yellow line down across the
23 bottom is what's called the joint line, and it is a
24 section of railroad that's about 103 miles long,
25 and 355 million tons last year moved off of that

1 103-mile stretch.

2 If you go further north and you see the
3 little white diamonds there just north of Gillette,
4 that's what we call the Campbell subdivision. We
5 had about 70 million tons of coal move off of that
6 stretch of railroad just north of Gillette; and
7 then the orange triangles up on top are actually
8 the Montana properties, and about 30 million tons
9 moved out of those properties, as well.

10 So if you add all that up, it's somewhere
11 in the neighborhood of 458 million that the
12 railroads collectively moved out of the Powder
13 River Basin. Again, for BNSF in particular, we
14 were about 364 million tons out of PRB, 387 million
15 total, which includes some tonnage out of Montana,
16 Illinois and New Mexico.

17 MR. GUERRERO: Thank you, Mr. Brautovich.
18 We would tender Mr. Brautovich for examination. I
19 would make a note that the map, if at all possible,
20 may be helpful for Commissioners and all parties.
21 So if we could move that as a separate exhibit, I
22 would propose to do that at this time, as well.

23 JUDGE WAHL: You may.

24 MR. GUERRERO: And I'm not sure -- do we
25 have a hard copy of that?

1 MS. DANIELS: I have a hard copy that I
2 put in Bob's reference book. I could label it and
3 go make copies quick.

4 MR. GUERRERO: Well, we will label that --
5 I believe it would be 321, and we would move 321
6 subject to making available copies.

7 JUDGE WAHL: Mr. Breen?

8 MR. BREEN: We have no objection.

9 JUDGE WAHL: Mr. Binek?

10 MR. BINEK: No objection.

11 JUDGE WAHL: Exhibit 321 will be received.

12 MR. KUNTZ: I think it's 322. The project
13 cost summary was 321.

14 MR. GUERRERO: Thank you. 322.

15 JUDGE WAHL: Correction. Exhibit 322 will
16 be received.

17 MR. GUERRERO: Thank you, Mr. Brautovich.

18 JUDGE WAHL: Mr. Breen.

19 MR. BREEN: I have no questions.

20 JUDGE WAHL: Mr. Binek.

21 MR. BINEK: Thank you.

22 **CROSS-EXAMINATION**

23 **BY MR. BINEK:**

24 Q. You talked about the -- and I missed some
25 of the numbers. You said coal represents 20

1 percent -- roughly 20 percent of BNSF's revenues?

2 A. That's correct.

3 Q. And early on you talked about 287 million
4 tons that were moved in what year?

5 A. In 2006.

6 Q. Okay. And in 2006 you had a 43 million
7 ton increase?

8 A. No. The BNSF actually grew 28 million
9 tons from 2005 to 2006. The Powder River Basin in
10 aggregate grew 43 million tons. It was 15 million
11 plus or minus -- 15 million tons moved on the Union
12 Pacific.

13 Q. That leads to the next question. Other
14 than BNSF and Union Pacific, are there any other
15 railroads that transport coal out of the Powder
16 River Basin?

17 A. No.

18 Q. This catastrophic event in 2005, what
19 specifically were the problems with the -- that
20 caused this event? There were derailments -- major
21 derailments and apparently track damage. Can you
22 be more specific about what actually occurred?

23 A. Yes. The roadbed, which is the stone
24 basically that -- the security that holds the track
25 in place as the trains traverse over the rail, that

1 roadbed was -- the integrity of that roadbed was
2 compromised by an accumulation of coal dust, and
3 that's dust that comes off the top of the cars out
4 of the weep holes out of the bottom of the cars,
5 and that accumulation in certain areas got higher
6 than it had been in the past because of the volumes
7 that were moving. Then we encountered some
8 unprecedented rains and a late snow and a heavy
9 thaw associated with that. So we got a tremendous
10 amount of moisture, and that -- the coal dust and
11 the moisture combined to basically compromise the
12 integrity of that stone bed that holds those tracks
13 in place, and what that precipitated was a massive
14 maintenance operation, which we call undercutting,
15 to get in there and literally pick the track up,
16 strip that coal dust or anything else that's
17 compromising the stone base, clean it out, replace
18 that base and then put the track back on.

19 Q. Other than doing those repairs, what other
20 track improvements were made during the 2005, 2006
21 period?

22 A. Well, because you do run over several
23 years, I can give you numbers including what we're
24 doing this year in terms of just expansion
25 capacity. If you look at our network outside of

1 the coal area, we've got about 100 miles worth of
2 track being installed. At several locations around
3 the system we're expanding fueling and sanding
4 stations at terminals.

5 With regard to the Powder River Basin in
6 particular, that yellow line on there -- well, it's
7 103 miles long. It's now a triple track in -- 100
8 percent of it is triple track, and by the end of
9 this year there will be a 21-mile stretch of
10 actually quadruple track, so you'll have four
11 parallel tracks, and over the last three years we
12 embarked on -- we've got 40 miles of triple track
13 going in this year, 21 miles of double track -- I'm
14 sorry, 21 miles of quadruple track going in this
15 year, and last year 15 miles of triple track went
16 in in 2006.

17 So that's just indicative over the years
18 as the basin has increased and the demand for the
19 product there has increased and they've increased
20 production, we've likewise increased the capacity
21 to get the coal out of the basin.

22 Q. Looking at this map, I see the -- that --
23 I'm a little bit colorblind, is it green or blue,
24 the line that goes up through Forsythe, Glendive
25 and Bismarck, which is the old Northern Pacific

1 line? You also have a line from basically Miles
2 City that runs across southwestern North Dakota,
3 the old Milwaukee Road line. Is that the line that
4 you use to transport coal to the Big Stone Plant?

5 A. There's a station west, if you will, of
6 Glendive called Terry, and it's basically a right-
7 hand turn on to that line to go down to Big Stone
8 II.

9 Q. But that isn't shown on that map at all,
10 that line?

11 A. No. This -- with all the names these get
12 very busy with lines and stations. You could fill
13 up the page with a lot of detail, and this is a cut
14 that we use to describe -- visually to give people
15 a picture of the Powder River Basin without trying
16 to depict every segment of the railroad.

17 Q. Are there any problems with that line from
18 Terry to the Big Stone Plant that need to be
19 addressed?

20 A. Not that -- not material that I'm aware
21 of. There's ongoing maintenance on the line. The
22 traffic densities there are not as great as they
23 are on other sections of the railroad. So our
24 focus has been on places around the network that
25 are carrying ton miles that are in need of work.

1 So right now the Terry line for the traffic that's
2 moving on it is fine.

3 Q. Now this -- the problems that you
4 encountered in 2005 and 2006, what portion of the
5 track were those problems encountered?

6 A. On the yellow portion.

7 Q. Okay. So it wasn't on the line that goes
8 to Big Stone.

9 A. No, no, no. It was very, very focused.
10 Like I mentioned to you, that's only a 103-mile
11 stretch, and the area that was compromised is
12 around Reno, which is about in the center of that.
13 The reason it caused so many problems is because of
14 the traffic density, the number of trains that
15 traverse those tracks, because that's where the
16 mines are concentrated.

17 Q. Now where did the Big Stone coal come
18 from?

19 A. In 2005?

20 Q. Right.

21 A. I think they were taking some Eagle Butte
22 and some Black Thunder coal at the time. I could
23 be mistaken. Eagle Butte, you can see, is one of
24 the white triangles, and Black Thunder is a black
25 triangle down there on that yellow line.

1 Q. Okay. Well, I'm still trying to figure
2 out why there were the delivery problems to Big
3 Stone. Was it that you didn't have equipment
4 available, because apparently it wasn't the track
5 that was the problem?

6 A. Right. But there's over 500 trains trying
7 to get in and out of the yellow line. There's
8 another 150 trains trying to get in and out of the
9 white and the orange lines. So once -- when the
10 network is operating, it's very fluid and it gets a
11 rhythm, and when you get out of that rhythm, when
12 one of the -- a primary point -- we call them pinch
13 points. The main line -- the joint line is not
14 necessarily a pinch point, but it's a pivotal point
15 for the entire network. So when that point has a
16 problem, it has a tendency to cascade, because with
17 the derailments you stop moving trains, and you've
18 got 500 trains basically trying to make their way
19 to this triple stretch of 103 miles. So these --
20 and these trains are a mile-and-a-half long. So
21 they start parking and what we call staging, trying
22 to get into this area, and trains were staged in a
23 lot of different locations waiting to get their
24 opportunity to get back in.

25 So it has implications across the network

1 when you have a concentrated area like that and
2 have a problem. I mean, there are issues that come
3 up across -- as you might well imagine, across
4 32,000 miles every day. There's floods, you know,
5 hurricanes, there's derailments. These are
6 day-to-day occurrences. But when you take an area
7 like the joint line, which is so highly
8 concentrated, and there's so much traffic there,
9 it's created some problems across our network,
10 which affected every utility that we serve.

11 Q. I don't remember which witness it was, but
12 an earlier witness testified that he thought that
13 perhaps because of coal plants further east putting
14 in scrubbers and other technology, that there
15 might -- he foresees less coal moving to the east
16 out of the Powder River Basin or not as large a
17 growth. Do you agree that that's likely to happen?

18 A. I know that there is a lot of scrubber
19 installations that are taking place primarily --
20 not primarily but in the eastern quarter -- the
21 East Coast, east side of the United States, and
22 those scrubbers will afford those utilities
23 opportunities to look at alternative coals, and
24 that may include the Illinois Basin, which is
25 obviously closer to those facilities. So, yes,

1 there is a school of thought that suggests that the
2 installation of these scrubbers may, in fact,
3 decrease some of the demand for Powder River Basin
4 coal.

5 Q. Apparently the forecast by DOE is that the
6 Powder River production is to grow by 215 million
7 tons from 2005 through 2025. Do you agree with
8 that or is that your understanding?

9 A. That's my understanding. I've read that.
10 Yes.

11 Q. How will Burlington -- or BNSF and the
12 Union Pacific be able to handle that increased
13 traffic? You've already experienced difficulties
14 dealing with current traffic.

15 A. Right. But I -- I don't think you can
16 take a one-year event, even though it was a serious
17 occurrence, and extrapolate out across future
18 problems, nor can you ignore the fact that for 30
19 years that this has been a reliable and dependable
20 source of energy for half of this nation's
21 electricity for coal, not Powder River Basin, but
22 coal for a long, long time.

23 So I think the testimony to that
24 particular area and that particular area as an
25 energy source for this country for the future is

1 the fact that the infrastructure that the railroads
2 have put in has been more than adequate to deal
3 with the growth so far. In 1970 there was fewer
4 than five million tons. Today there's 458.

5 We've had engineering companies work with
6 us to design the infrastructure, and with the
7 mines, that would be necessary to carry additional
8 coal out of the basin. So as that infrastructure
9 gets designed and installed and as we see the
10 demand actually materialize, we'll make the
11 investments that are necessary.

12 If you look at the growth rate going
13 forward, it's actually less than the growth rate
14 that we've experienced in the past. So we will
15 incrementally have opportunities to put in the
16 necessary -- make the necessary investment.

17 Q. There's another railroad company that has
18 proposed running a line into the Powder River
19 Basin. I don't recall the name of the company, but
20 it would go through South Dakota and Minnesota.
21 Are you familiar with that?

22 A. Yes, I am.

23 Q. Has BNSF been supportive of that proposal?

24 A. We've basically had no comment on that
25 proposal.

1 MR. BINEK: I have no further questions.

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

4 **EXAMINATION**

5 **BY COMMISSIONER WEFALD:**

6 Q. How many customers are on the line which
7 serves the Big Stone Plant?

8 A. How many --

9 Q. You said that --

10 A. -- customers?

11 Q. Yes. You said that there's a -- the line
12 that goes over into North Dakota -- goes actually
13 into South Dakota to serve the Big Stone Plant.

14 A. I honestly don't know how many customers
15 are on that line.

16 Q. Can you get that information and submit
17 that to the Commission?

18 A. Sure.

19 Q. Thank you. Then I'm also interested in
20 cars. I need a little help in understanding how
21 cars are supplied -- are used. In your testimony
22 it says that the co-owners -- I'm looking at page
23 five -- the co-owners are obligated to supply a
24 sufficient number of railcars to deliver the coal
25 necessary to operate the plant. Earlier in your

1 testimony, though, you go on about how many cars
2 have been purchased by Burlington Northern Santa Fe
3 in order to -- in order to be able to facilitate
4 transportation of the coal that's produced in the
5 Powder River Basin. Can you help me understand
6 then about car purchases both by the companies that
7 use them to provide their own coal -- you said they
8 have to have their own sufficient number of
9 railcars, and then also you followed that up with a
10 statement, Burlington Northern Santa Fe has
11 recently supplied additional train sets to
12 supplement deliveries of the co-owner's fleet of
13 railcars. So then do you charge more for those or
14 what? How does that work?

15 A. Our portfolio, if you will, of train
16 sets -- because most of this coal moves in unit
17 trains and they're about --

18 Q. And is the train set an engine plus a set
19 number of cars?

20 A. Yes.

21 Q. Like how many cars? 110?

22 A. Anywhere from 110 to 140.

23 Q. Okay. Thank you.

24 A. And when I say a train set, it's basically
25 that group of cars and then the necessary road

1 engines to move that set of cars, and today on any
2 given day we're operating, I would guess, somewhere
3 in the neighborhood of 470 coal trains around our
4 network, just BNSF.

5 Q. BNSF --

6 A. Just BNSF.

7 Q. -- owns those?

8 A. No, no. We don't own them. About 75
9 percent of those train sets, but just the cars.

10 Q. 75 percent of the four-hundred-and --

11 A. 75 percent of the 450 or 470 train sets
12 that are operating are owned by electric utilities.

13 Q. They own the engines?

14 A. No. That's the distinction I needed to --
15 as I went through this I realized the distinction I
16 needed to make. All of the road engines are owned
17 by BNSF, by the railroad, 100 percent of them. The
18 train sets that are the cars -- or the car sets are
19 owned by -- most of them are owned by the electric
20 utilities. 25 percent of the fleet, however, is
21 owned by BNSF, and we have a variety of reasons why
22 we own those trains. Sometimes we contractually
23 obligated ourselves to supply the cars, and
24 sometimes we have equipment available to
25 incrementally add capacity when people need it.

1 Because utilities don't necessarily have a demand
2 that satisfies a set year, if you will, of
3 capacity, so we can incrementally supplement.

4 Q. So when you say they're obligated to
5 supply a sufficient number of railcars, do you tell
6 them how many they need?

7 A. Yes. We work collaboratively on
8 determining how many cars are necessary based on
9 the distances involved, based on the tonnages that
10 are involved, and based on the time that you
11 presume it's going to take to go from point A to
12 point B with that asset, and then you can do the
13 calculus and determine how many train sets, which
14 means locomotive for us and railcars for the
15 electric utility -- how many are necessary.

16 Q. So both parts become part of their coal
17 transportation costs, the costs of the coal cars
18 that they use plus the tariff that they pay to you?

19 A. Yes. Now the cars they actually own
20 physically. So --

21 Q. But that still becomes a part of their
22 rail transportation costs, wouldn't you think?

23 A. Yes.

24 COMMISSIONER WEFALD: Okay. Thank you for
25 helping me understand that better. And then I

1 have -- I have no other questions at this time.
2 I'm sure my fellow Commissioners have others.

3 JUDGE WAHL: Commissioner Clark.

4 **EXAMINATION**

5 **BY COMMISSIONER CLARK:**

6 Q. Service and rates have become for me a top
7 of my concern in this particular case, and one of
8 the -- a concept which was brought up in Mr.
9 Deason's testimony and I asked earlier of a
10 previous testimony and I'll ask of you is: Is
11 Burlington Northern Santa Fe prepared to commit
12 today to entering into some sort of performance
13 guarantee so that there will be some reasonable
14 assumption that the Commission can have that BNSF
15 will hold itself accountable to providing the
16 service that it says it will provide?

17 A. Yes.

18 Q. And so an ironclad performance guarantee
19 is something you're willing to commit to as part of
20 the contract?

21 A. Each of the contracts that we enter into
22 have -- are different. So whatever terms
23 ultimately are negotiated between ourselves and
24 Otter Tail, MDU, or the consortium, whoever is the
25 other signator on this arrangement, this contract

1 would contain an assurance that the tons that are
2 required for a particular year would, in fact, be
3 delivered.

4 Q. Is this something that is common in the
5 rail industry that you've entered into in the past?

6 A. We have various pricing mechanisms that we
7 use to contract for our services, and a contract is
8 one and it is not atypical for a contract to
9 contain some service assurance.

10 Q. Do they typically have financial penalties
11 for non-performance?

12 A. They have in the past. That's correct.

13 COMMISSIONER WEFALD: Depending on
14 timely -- excuse me. Depending on like a timely
15 delivery? I mean, you said a certain amount of
16 coal in one year, but that doesn't get to whether
17 it would get there in a timely manner so that
18 they'd have their 30-day supply. We find that
19 happens in the grain industry. They can get cars
20 but sometimes not always when they need them.

21 THE WITNESS: Right. And that is an issue
22 in terms of car availability, but with -- most
23 utilities carry an inventory of 30, 40 days on the
24 ground. So the nuance of month to month or quarter
25 to quarter on deliveries typically do not -- are

1 not material in terms of the inventory maintenance.
2 That's why we look at typically a longer time
3 arising with regard to the tonnage deliveries to
4 these coal-fired plants.

5 Q. (COMMISSIONER CLARK CONTINUING) Will this
6 performance guarantee indemnify the utility so that
7 to the extent that it has to switch to other
8 sources of fuel, buy power on the open market, that
9 that will be covered by the railroad?

10 A. No.

11 Q. What does it -- I mean, what do they do
12 then? I mean, isn't that -- as a utility
13 commissioner that would be a, I would think, rather
14 large concern, if not the biggest concern, from a
15 ratepayer perspective. Who does the contract
16 protect then or what's the penalty? Give me an
17 example.

18 A. Typically there is a liquidated damage
19 associated with non-performance, and that carries a
20 percent of the transportation rate typically. It
21 would be some percent of the transportation rate,
22 and there's reciprocity to that, also. Whereas, if
23 the utility doesn't tender what they have committed
24 to us because we went out and acquired resources
25 also, there is typically a quid pro quo that it's

1 the same order of magnitude as ours.

2 Q. Why wouldn't the Burlington Northern be
3 willing to enter into that type of agreement that
4 indemnifies the --

5 A. If we did it for any utilities, the order
6 of magnitude is just too large. Like I said, we
7 take coal to the entire western two-thirds of the
8 United States, and that utility market -- the value
9 of utilities actually dwarfs our industry, and
10 those kind of guarantees we just could not
11 financially support.

12 Q. You've said in your testimony on the top
13 of page five that the planning for coal capacity
14 expansion will certainly meet future demand
15 requirements. Do you wish to back off from that?
16 I mean, if it's certain -- if there's no possible
17 doubt, why would you not performance guarantee
18 through an indemnification?

19 A. Well, we don't have an issue -- we're not
20 concerned about our performance. We can't
21 financially guarantee the kind of recovery that
22 you're asking for. It's just -- it's financially
23 impossible.

24 Q. How much is the PRB in a -- I don't
25 know -- percentage increase -- it's been alluded to

1 a few times, but exactly how much is it expected to
2 increase in future years, exports from the PRB?
3 Not just this plant but overall.

4 A. Exports for domestic consumption or
5 otherwise?

6 Q. Correct?

7 A. Well, the EIA numbers or the Department of
8 Energy's EIA numbers, the last that I saw, were 215
9 million tons by 2025.

10 Q. That's a 250-million-ton increase?

11 A. Yes.

12 Q. You had referred in your PowerPoint to a
13 few figures, 300 million -- I think it was 300
14 million in 2005, 600 million in 2006. Could you
15 just state again what that money was going towards?

16 A. That's coal expansion capital. So that's
17 money for track, money for terminals, money for
18 locomotives, and money for cars.

19 Q. How does that compare with the levelized
20 annual spending on those types of items? If you
21 were to look at past history, how does that
22 compare?

23 A. I think '05 -- I'm sorry. '06, which was
24 600 million -- actually turned out to be about 618
25 million was double -- about double what we've --

1 what we had expended earlier on coal capacity
2 expansion on an annual basis.

3 Q. So typically it was running about 300
4 million?

5 A. 3 or 400 million typically, and several
6 years where it was quite a bit less than that, but
7 on average.

8 Q. Has spending on maintenance increased
9 since the 2005 rail service disruptions?

10 A. Our maintenance budget went up to fix the
11 problems out in the Powder River Basin, but for
12 years we've maintained the line. Our maintenance
13 budget is about 1.2 or 1.4 billion in terms of
14 maintenance capital. So -- and we've continued to
15 spend that year after year after year. I don't
16 have it graphically, but if you saw the maintenance
17 capital bar on a bar graph, it would be pretty
18 consistent over the years and a blip in '05 and '06
19 because of the problems if you focused on the PRB.

20 Q. Has the issue of coal dust been resolved
21 or does that continue to --

22 A. Almost. We had the -- the mines have
23 changed the way they load the coal, and we call
24 it -- there's a profile. In the past there had
25 been almost a teepee-type loading configuration on

1 the top of the cars which had a tendency to
2 catch -- when the wind blew, it caught the dust and
3 pulled it out, and by changing the configuration of
4 these chutes that drop down and drop the coal into
5 the cars, we flattened that peak, if you will, of
6 the coal on the top of the car and reconfigured the
7 profile so that dusting has been reduced
8 considerably, and then there will be another step
9 that will take and require a dusting agent to be
10 sprayed on top of the coal before it leaves the
11 mine property.

12 Q. Are there -- beyond the 600 million in
13 2006, are there other major capital projects that
14 the BNSF intends to happen over the next few years
15 here to increase export capacity?

16 A. Of Powder River Basin?

17 Q. Yes. Or does that 600 million sort of
18 incorporate all of the --

19 A. Yeah. For coal specific expansion capital
20 that's the number.

21 Q. Okay. Have these projects all been
22 financed yet or how are they being financed? Is it
23 private equity or is it --

24 A. Well, you know, we haven't -- we haven't
25 had a stock offering for some time. So I'd have to

1 get my finance guy in here to actually give you an
2 accurate assessment of where the money comes from.
3 I know we fund some of this with internal cash flow
4 and we go out and secure debt, so I'm not sure.

5 Q. Is it reasonable to assume that at some
6 point these increased expenditures, which are quite
7 significant, will find their way into the tariffed
8 rates?

9 A. Yes.

10 Q. But that hasn't been incorporated yet?

11 A. Well, as the demand has increased on our
12 railroad, rates have increased. As fuel has
13 quadrupled our rates have increased. So the cost
14 structure is changing for us, also. So rates have
15 to follow that.

16 Q. Sure. Does BNSF levy a fuel surcharge or
17 how are fuel costs recovered for coal shipments?

18 A. We levy a fuel surcharge.

19 COMMISSIONER CLARK: I think that's all
20 I've got right now. Thank you.

21 JUDGE WAHL: Commissioner Cramer.

22 COMMISSIONER CRAMER: Yes. Thank you.

23 **EXAMINATION**

24 **BY COMMISSIONER CRAMER:**

25 Q. As I sit here as a member of the

1 Commission, that is the last line of defense
2 between -- for ratepayers, quite honestly, I don't
3 find -- and this is a bit of a statement. I'll get
4 to a question -- but I see you as representing the
5 greatest threat to a positive outcome for the
6 utilities given now with the history of BNSF with
7 regard to deliverable -- deliverability and rates,
8 as well, and as difficult as that history is for me
9 to deal with, I have a harder time dealing with the
10 fact that there's no other relief evidently,
11 because every case in the last five or six years
12 that a utility has brought against the BNSF or
13 tried to recover some injustice, the utility has
14 lost, and in my mind that means the ratepayers have
15 lost. So prior to making a favorable decision for
16 an advance determination of prudence, I really am
17 struggling to get in my mind some greater assurance
18 than you've been able to give to this point that
19 ratepayers aren't going to be gouged later. And
20 let me just add a little bit more. The fact that
21 ratepayers are captive to one railroad creates more
22 of a problem because whatever you agree to in this
23 ironclad agreement that you've said you would
24 sign -- or your company would be willing to sign
25 becomes, you know, pretty vulnerable once we leave

1 here and these companies build this plant because
2 you're it for them.

3 So I guess I'm just wondering, is there
4 anything more that -- any reason you can give us
5 beyond what has already been said or testified to
6 that should give us comfort that the ratepayers can
7 be assured in the long run not only that there are
8 enough railcars and enough units and enough
9 infrastructure, but the price as well -- that
10 they'll be protected as well from price gouging
11 from BNSF in the long run?

12 A. Well, has the Big Stone facility been a
13 competitive source of power for the last 30 years?
14 I would say in the five-state area where Big Stone
15 resides it's in the lower quartile of cost of
16 generators for that territory in that area, and I
17 think that's the testimony or testament to the fact
18 that we aren't out there gouging because gouging
19 doesn't do us any good. Our business only grows
20 with the succeed of our customer base, and that's
21 our focus. Unless the plants on my railroad are
22 competitive, unless they compete against other rail
23 carriers or they compete against other fuels or
24 they compete against purchased power from other
25 coal-fired facilities, I don't win.

1 COMMISSIONER CLARK: Just one quick one.
2 What rail carrier would they be competing against
3 to serve -- would you be competing against to serve
4 Big Stone?

5 THE WITNESS: Any Union Pacific, sir,
6 plant, that has transmission access to the same or
7 similar industrial or other customers that Big
8 Stone wheels to. So that --

9 COMMISSIONER CLARK: Does the UP serve --
10 does the UP have trackage to Big Stone?

11 THE WITNESS: No, no, no. I'm talking
12 about other coal-fired plants that they serve that
13 can wheel power across transmission lines. So --
14 and I -- 50 percent of the generation in this
15 country comes from coal. The U.S. mines about 1.1
16 billion tons. 458 million of that came out of the
17 Powder River Basin, and I think the evidence also
18 is in energy choice. Build a natural gas plant and
19 look at what's happened with the price of natural
20 gas? Look at what's happened in Texas with our
21 costs of electricity because we have a
22 preponderance of natural gas-fired electricity. I
23 would look to the history, to get back to the
24 point, and answer your question of Big Stone, and
25 it's quite a success story.

1 Q. (COMMISSIONER CRAMER CONTINUING) I guess
2 my point and question -- first of all, I despise
3 natural gas for generating electricity when we sit
4 on so much coal, so you don't have to convince me
5 of the fuel source, but my question is: As a
6 protector of the ratepayer asked to determine in
7 advance the prudence of this particular investment,
8 the greatest thing that get in the way in my mind
9 is I'm having a hard time reconciling the history
10 of BNSF, the history of Congress -- or the lack
11 of -- the history of STB, and the lack of
12 performance by all of those institutions in
13 protecting the ratepayers. And look at BNSF's
14 recent history in the last five, six years, whether
15 it's PPL, Arizona Electric Utility, Otter Tail
16 Power, Basin Electric, Western Fuels Association,
17 case after case after case after case. Now I
18 assume those aren't all frivolous. They cost the
19 companies millions of dollars to enter into, and in
20 every case the STB has found in favor of the BNSF.
21 I'm just telling you I'm the last line of defense
22 before the railroad and STB and Congress gets -- is
23 the next line of defense, which hasn't been a good
24 defense for the ratepayers at all. So I'm just
25 asking for a little more specific answers on what

1 kind of long-term considerations and guarantees can
2 we get from BNSF in this proceeding, because once
3 this proceeding is done, the utilities and thus the
4 ratepayers are captive to BNSF one more time, and
5 I'm very uncomfortable throwing the ratepayers into
6 that situation without greater assurances.

7 A. Well, I still lean on past performance as
8 the most important and primary indicator, but to
9 speak to the regulatory process, your statements
10 about us winning aren't completely accurate.
11 There's been rollbacks in rates as a result of STB
12 cases in three instances of the cases that you
13 mentioned that I know happened to us. So the STB
14 process is what it is. I mean, that's the
15 regulatory vehicle that's available for shippers.
16 If shippers bring good cases, shippers win. It's a
17 revenue and a cost gain, and it's -- it's the
18 revenues that are associated with traffic and it's
19 the costs of the infrastructure and do the rates
20 ultimately that we have either published or put out
21 for transportation -- are those rates reasonable,
22 and it's through that process -- it's the only
23 process that we have -- they make a determination,
24 and in those instances -- and it's Public Service
25 Colorado and it's Texas Municipal Power Agency, and

1 it is the first go-around with Arizona Public
2 Service. All those utilities got rate rollbacks.
3 The utilities that didn't get rate rollbacks didn't
4 have a good case, and the cost of service that was
5 determined by the Service Transportation Board's
6 process couldn't support changing the rate that we
7 had proposed. We had a fair rate.

8 The other aspect of this that no one in
9 this room would have any information regarding is
10 what goes on behind the scenes between the railroad
11 and the utility to try to solve this without
12 litigation, because that's our primary motivation.
13 We don't want to go to the STB, we don't want to go
14 to court, we don't want to spend millions of
15 dollars on these cases, either, and these are all
16 confidential negotiations, which unfortunately in
17 some cases have not resulted in a contract.

18 COMMISSIONER CRAMER: That's all I have.
19 Thank you.

20 JUDGE WAHL: Commissioner Clark.

21 COMMISSIONER CLARK: Just a couple of
22 follow-up questions to Commissioner Cramer's
23 questions.

24

25

FURTHER EXAMINATION

1

2 **BY COMMISSIONER CLARK:**

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Q. Just to give you the basis for why I'm asking this particular question, I was recently reading an article in Public Utilities Fortnightly, and the title is, A Wake-Up Call For Coal, and the following statement is in here and I just want to see if you agree with it: Production, production capacity and transportation capacity remain problematic in this key coal-producing region -- speaking of the PRB -- where veiled references to limitations and restrictions on the demonstrated reserve base and speculation on sufficient future transportation capacity depends on not-yet financed mega projects -- and this is the part that I'm interested in -- and double-digit rate increases rather than solid research backing a strategic vision.

Are we looking -- you had said that there's going to be some rate increases to finance these projects. Are we looking at double-digit rate increases?

A. I have no idea what the total cost of these -- our capital expenditures are going to be in the long run, and we're going to have to price

1 our services to be competitive, and we will price
2 those services at market rates. We don't compete
3 by taking the entire cost of service and our
4 capital expenditures and crafting a rate. Unless
5 the customer succeeds, then we don't succeed.

6 Q. Okay. And then just one final question
7 because it was brought up earlier in Mr. Uggerud's
8 testimony. The question was posed whether it was
9 reasonable to assume that Congress and the STB
10 might be more aggressive than they have in the
11 past, and he had expressed the hope that there may
12 be some possibility for some relief. Are you
13 familiar at all with either the Railroad Antitrust
14 Enforcement Act of 2007, which is S772 and HR16550,
15 the Railroad Competition & Service Improvement Act
16 of 2007, which was Senate Bill 953?

17 A. I'm aware of them, yes.

18 Q. And does the BNSF support either of those
19 pieces of legislation?

20 A. No.

21 Q. Is the BNSF active in opposing both of
22 those pieces of legislation?

23 A. I don't know, to be perfectly honest with
24 you.

25 COMMISSIONER CLARK: Thank you. That's

1 all I have.

2 JUDGE WAHL: Any other questions from the
3 Commission? Mr. Guerrero.

4 MR. GUERRERO: Thank you, Your Honor. I
5 do have a few followup.

6 **REDIRECT EXAMINATION**

7 **BY MR. GUERRERO:**

8 Q. Mr. Brautovich, I think you can appreciate
9 the level of consideration, the seriousness that
10 the Commission brings to this issue. I just wanted
11 to ask you a few follow-up questions about the
12 history of service to Big Stone Unit I. Can you
13 comment on the level -- we've talked a lot or at
14 least at some level with respect to the
15 catastrophic events from 2005 that led -- coal
16 dust, et cetera, that led to some service
17 interruptions at Big Stone I. Can you give me and
18 the Commission some context in which BNSF served
19 Big Stone Unit I? Have there been other instances?

20 A. Not that I'm aware of.

21 Q. And how many years have you been serving
22 the plant?

23 A. 1975? No. I'm not sure. 20 years.

24 Q. Okay. Well, in the history that you do
25 know, have there been other service interruptions?

1 A. Not that I'm aware of.

2 Q. And can you provide me and the Commission
3 with some context from your perspective on whether
4 or not you consider -- and this is aside from rate
5 issues -- what the level of service and the
6 reliability of that service has been over the last
7 15 to 20 years with which you're familiar?

8 A. Yeah. There's no question as to the
9 reliability of the rail network and the
10 infrastructure that's been in place out of the
11 Powder River Basin since the early 1970s.

12 Q. Meaning it's been highly reliable?

13 A. Highly reliable, yes.

14 Q. And do you have -- what's the level of
15 confidence as you sit here today that that level of
16 reliability will continue?

17 A. I think the corporation is committed to
18 making sure that there's adequate resources to move
19 the tons that are required for the power generation
20 that consumes Powder River Basin coal. The
21 corporation is committed to make the necessary
22 investments to move the coal out of the basin.

23 MR. GUERRERO: I don't have any further
24 questions. Thank you.

25 JUDGE WAHL: Ms. La Seur -- or Mr. Breen?

1 MR. BREEN: No questions.

2 JUDGE WAHL: Mr. Binek, anything further?

3 MR. BINEK: Apparently. Just a minute.

4 **RECROSS-EXAMINATION**

5 **BY MR. BINEK:**

6 Q. Can utilities provide their own road
7 engines?

8 A. No.

9 Q. Can they provide their own fuel?

10 A. No.

11 Q. Why not?

12 A. Well, road engines every 91 days -- it's
13 an FRA requirement -- have to go in for service,
14 and they're dedicated to a particular location, and
15 these road engines on a particular train may not be
16 the same from one train to the next as these units
17 cycle in and out for the required maintenance. So
18 logistically it's an impossibility for a particular
19 unit to be dedicated to a particular utility and a
20 particular train. Just physically impossible.

21 Q. Is it fair to say that coal transportation
22 rates are capped at the cost of alternate power
23 generation fuels?

24 A. I'd like to think they could be, but if I
25 look at natural gas at \$8 a million and coal at a

1 \$1.71, I'd say, no, we're not capturing all that
2 incremental differential between fuels.

3 Q. You talked about the history of
4 deliverability. Can you tell us about the history
5 of rates over this 20-year period or whatever time
6 period BNSF has served Big Stone?

7 A. Yeah. In a general sense rates have come
8 down -- or had come down through about 2003. So
9 there had been a decline -- if you looked on an
10 average-mills-per-ton-mile basis, there generally
11 was a decline in rates for 20 years perhaps.

12 Q. And what has happened recently?

13 A. Rates are going up.

14 Q. At what rate?

15 A. It varies. I think our average rate
16 increases have been in the neighborhood of -- I
17 think last year we saw about 11 percent.

18 Q. Did these increases in rates follow
19 natural gas rates?

20 A. No. If they followed natural gas, they'd
21 be a lot higher than 11 percent.

22 Q. Did Otter Tail bring a bad case before the
23 STB?

24 A. Otter Tail brought the best case that they
25 could.

1 Q. Well, you said companies basically win if
2 they bring a good case or lose if they don't, so
3 was Otter Tail's a bad case?

4 A. I don't have an opinion about the quality
5 of Otter Tail's case. I know what the result was,
6 and that's basically --

7 MR. BINEK: Okay. I have nothing further.

8 JUDGE WAHL: Any further questions from
9 the Commission.

10 COMMISSIONER WEFALD: No.

11 JUDGE WAHL: Mr. Guerrero, any followup?

12 MR. GUERRERO: Nothing further.

13 JUDGE WAHL: Let's be in recess for -- why
14 don't we take -- this is -- maybe we'll get by --
15 why don't we recess for at least ten minutes.

16 COMMISSIONER WEFALD: How about three
17 o'clock?

18 JUDGE WAHL: How about three o'clock.
19 I'll go for three o'clock.

20 (Recess taken.)

21 JUDGE WAHL: I'm ready.

22 MR. GUERRERO: Thank you. Applicants
23 would call Mr. Bryan Morlock.

24 COMMISSIONER WEFALD: Are we skipping Tom
25 Rogelstad?

1 MR. GUERRERO: I'm sorry. We're going a
2 little out of -- we are going a little --

3 JUDGE WAHL: This is not a commitment,
4 Commissioner.

5 COMMISSIONER WEFALD: All right. I just
6 was curious.

7 MR. GUERRERO: Yeah. Mr. Rogelstad isn't
8 available today, so he'll be here tomorrow.

9 COMMISSIONER WEFALD: Thank you.

10 JUDGE WAHL: We're moving a little bit
11 faster and counsel is adapting. Mr. Morlock, as
12 you have heard me advise other witnesses, your
13 testimony is required to be under oath and I'm
14 required by law to advise you regarding perjury
15 before administering the oath. Perjury is a false
16 statement of material fact which you do not believe
17 to be true, in other words, a lie. In North Dakota
18 perjury is a Class C felony, punishable by a fine
19 up to \$5,000, imprisonment for a period of up to 5
20 years, or both.

21 (Witness sworn.)

22 JUDGE WAHL: All right. Why don't we take
23 just a moment there. All right. Mr. Guerrero.

24 MR. GUERRERO: Thank you, Your Honor.

25

1 planning?

2 A. I've been in resource planning about 20
3 years of my 28 years with Otter Tail Power.

4 Q. And what is your educational background?

5 A. I have Bachelor of Science degrees in
6 engineering and in business administration from the
7 University of North Dakota and I'm a registered
8 professional engineer in Minnesota.

9 Q. Thank you. And some of the previous
10 witnesses were testifying on behalf of both Otter
11 Tail and Montana-Dakota. Are you testifying just
12 on behalf of Otter Tail today?

13 A. I am solely testifying on Otter Tail.

14 Q. Thank you. Did you prepare or have cause
15 to be prepared direct and rebuttal testimony in
16 this case?

17 A. Yes, I did.

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

19 A. Yes, I do.

20 Q. Can you identify it for the Commission,
21 please?

22 A. Okay. I have Otter Tail Exhibit 103,
23 which is my direct testimony; Exhibit 104, which is
24 a resume of my experience and background; Exhibit
25 105, which is energy requirements forecast; 106,

1 which is our capacity surplus and deficit
2 situation; Exhibit OTP 107, which is a breakdown of
3 our winter season capacity resources from
4 2004-2005; Exhibit OTP 108, which is a breakdown of
5 our 2004 summer season capacity resources; OTP
6 Exhibit 109, which is a breakdown of our capacity
7 resources by fuel type for the 2004-2005 winter
8 season; OTP Exhibit 110, which is a breakdown of
9 2004 summer season capacity resources by fuel type;
10 and OTP Exhibit 111, which is a copy of my rebuttal
11 testimony.

12 Q. Thank you, Mr. Morlock. OTP Exhibits 104
13 to 110 were attached as exhibits to your direct
14 testimony; is that correct?

15 A. I believe so, yes.

16 Q. And that's OTP Exhibit 103. Have you had
17 a chance to review your testimony?

18 A. Yes, I have.

19 Q. And are there any corrections or
20 clarifications that you would like to make?

21 A. I have two small corrections. The first
22 one is on page three --

23 Q. Of?

24 A. -- line number 16 of my direct testimony.

25 Q. Page three?

1 A. Exhibit 103. Page three, line 16, right
2 at the end of that line it states our next IRP in
3 Minnesota is scheduled to be filed by September of
4 2007. The Minnesota Commission has since ordered
5 that our next resource plan is not due till April
6 of 2008.

7 Q. So would it be fair just to strike
8 September 2007 and put April 2008?

9 A. Replace that with April 2008. The other
10 change is on page ten of my direct testimony,
11 Exhibit 103, line 17. It says, "While Otter Tail
12 is a winter peaking utility, its baseload capacity
13 needs." The word "baseload" does not belong in
14 there. That should be struck.

15 COMMISSIONER WEFALD: So it should be --
16 it should be "its capacity needs"?

17 THE WITNESS: Right, "capacity needs."
18 That concludes my changes.

19 Q. (MR. GUERRERO CONTINUING) Thank you, Mr.
20 Morlock. If I were to ask you the same questions
21 that are set forth in Exhibits -- Otter Tail
22 Exhibit 103 and 111, would your answers be the
23 same?

24 A. Yes, they would.

25 Q. Do you have a short summary to provide to

1 the Commission this afternoon?

2 A. Yes, I do.

3 Q. Go ahead, please.

4 A. Okay. As I previously mentioned, I'm
5 involved with the resource planning function at
6 Otter Tail Power, and with that we start with the
7 forecast of our customer energy and demand
8 requirements, and we use that information in a
9 capacity expansion model. We've been using the IRP
10 manager for 15 years ever since the model was
11 initially developed as a result of some work done
12 by EPRI. The model has been successfully used in
13 every resource plan that Otter Tail has filed in
14 Minnesota.

15 Our forecasted energy growth out of the
16 raw forecast is about 2.4 percent per year from
17 2005 to 2014. As a result we are seeing some
18 increasing capacity deficits. There are some other
19 reasons for that. When I say this is the raw
20 forecast, that means this is a forecast before we
21 have applied the development of the resource plans.
22 So this actually gets modified by the
23 implementation of conservation and DSM activities.

24 This is our energy requirements forecast,
25 2005 through 2014. It shows continuous growth

1 except there's a step function change about 2008,
2 and that's because we have four large industrial
3 loads that will be coming on line at various
4 periods, but the total impact is about 2008.

5 Those loads include two ethanol plants,
6 one agricultural processing facility, and a
7 pipeline expansion, and I would point out that even
8 though Big Stone II is proposed to be located in
9 South Dakota, it does have an economic impact on
10 the State of North Dakota because the loads that
11 will be served by this expansion involve the use of
12 corn for ethanol and the use of barley at the
13 agricultural processing facility. So they are some
14 critical components.

15 As a result of the load growth but much
16 more so as a result of the loss of some resources,
17 we have some significant summer and winter season
18 capacity deficits that are facing us. Summer --
19 even though we're winter peaking, summer capacity
20 deficits are much more severe than the winter
21 season.

22 I think it was mentioned earlier today, we
23 have the loss of the 50 megawatt Manitoba Hydro
24 purchase in 2010. We've already had another 50,000
25 megawatt purchase from Manitoba Hydro that has

1 expired. We have the loss of an almost 6 megawatt
2 biomass unit that just took place last fall. So a
3 good share of our capacity needs are driven by the
4 requirement to replace other resources that are no
5 longer available to us.

6 While we are here focused on Big Stone II,
7 Big Stone II is really only a small part of the
8 resource plan over the 2006 to 2020 time period.
9 Our resource plan includes about 67 megawatts of
10 conservation impacts, 135 megawatts of natural gas
11 peaking, 160 megawatts of new wind resources in
12 addition to the ones we have. The model also
13 selected a new 50 megawatt purchase from Manitoba
14 Hydro, and then out in about 2018 we see the
15 potential for possibly about 88 megawatts of IGCC
16 capacity, although that is well out into the
17 future.

18 With respect to the wind, the resource
19 plan has 160 megawatts of new wind in it. That --
20 it's a contentious issue because the wind
21 development is being seriously impacted by
22 transmission constraints. We have a number of
23 purchase power agreements in place now. We are
24 going to be involved in ownership. Backup of the
25 wind is going to be real critical for us in

1 association with the power purchases and the
2 transmission constraints, and then we also have
3 production tax credit issues, both with the Federal
4 and with the State. That's been part of our
5 analysis.

6 In the development of our resource plan
7 and as part of the certificate of need filing in
8 Minnesota, we did have to evaluate the second best
9 alternative. IRP manager did select a 50 megawatt
10 purchase from Manitoba Hydro in addition to the Big
11 Stone II Unit. The model had the opportunity to
12 select a lot more of Manitoba Hydro purchase but
13 chose not to. In looking at the results, the Big
14 Stone II Unit came in cheaper and was preferential
15 to the Manitoba Hydro purchase. There are some
16 significant cost differentials later on in the
17 planning period that caused that result.

18 Furthermore, while this was not monetized
19 and included in the specific resource plan
20 analysis, the Manitoba Hydro alternative does not
21 provide any benefit to wind generation in any way,
22 shape or form, and the Manitoba Hydro alternative
23 does not expand the transmission system or help to
24 support it. In fact, it would use up some existing
25 transmission capacity.

1 also considers the low and high environmental
2 externality values applied as required by the MPUC;
3 is that correct?

4 A. Yes.

5 Q. MPUC is the Minnesota Public Utility
6 Commission?

7 A. Yes, it is.

8 Q. Now in response to that you've developed a
9 chart that continues on page five and the top of
10 page six; is that correct?

11 A. Yes.

12 Q. Now that charge considers several
13 scenarios -- withdraw. That chart considers
14 several scenarios: Low growth, base growth, and
15 high growth with no externalities factors.

16 A. Yes.

17 Q. Externalities factors refers to carbon
18 dioxide mitigation or costs?

19 A. The externality mentioned there applies to
20 the externality values as established by the
21 Minnesota Public Utilities Commission in a docket
22 and follows their directive and the statute which
23 requires us to use those values in our resource
24 plan for the State of Minnesota.

25 Q. But they're concerned about carbon dioxide

1 as the factor, nor sulfur dioxide or nitrous oxide
2 or mercury or --

3 A. No. There are values in place for a
4 number of emissions. SO2 currently has a zero
5 value because that value has been internalized by
6 the cap and trade system for SO2 emissions. Up
7 until the point that that cap and trade process
8 took effect, there was a value for SO2, but since
9 that has been internalized by that program, the
10 value then dropped to zero. They do include values
11 for NOX, for particulate, PM10.

12 Q. Is that internalized at present?

13 A. No, it is not. That's a value that is
14 used for lead.

15 Q. Is that internalized or externalized?

16 A. No. That's -- none of the -- sulfur
17 dioxide is the only one that's been internalized.

18 Q. And it also includes carbon; is that
19 right -- carbon dioxide?

20 A. There is a value for carbon dioxide that
21 applies to units located within the State of
22 Minnesota.

23 Q. Okay. Now your scenario then has a low
24 growth, base growth, and high growth analysis with
25 low externality values. I'm just looking at your

1 chart.

2 A. Yes.

3 Q. And then it considers for base growth -- I
4 assume we're talking about the base growth of
5 production of energy from the BS II plant?

6 A. No. The base -- base low and high refers
7 to the load forecast.

8 Q. Okay.

9 A. Okay.

10 Q. And then we have a -- we have a base
11 growth analysis with a high externalities value.

12 A. Yes.

13 Q. And we have a high growth analysis with a
14 high externality values?

15 A. Yes.

16 Q. And both those include, amongst those
17 externality values, a value for carbon dioxide?

18 A. For facilities that would be located in
19 Minnesota, yes.

20 Q. Correct. Now, is there a native coal
21 industry in Minnesota?

22 A. No, there is not, that I'm aware of.

23 Q. And at present the North Dakota regulatory
24 scheme doesn't require you to develop these models
25 with different load base and high growth and to

1 plan for an externality value which may be low,
2 medium or high; is that correct?

3 A. We're actually prohibited from that. Yes.

4 Q. Okay. And is there a native coal industry
5 in North Dakota?

6 A. Yes, there is.

7 Q. Are you able to render an opinion is that
8 why you're not required by statute in North Dakota
9 to apply those?

10 MR. GUERRERO: Objection. Calls for
11 speculation.

12 JUDGE WAHL: Sustained.

13 MR. BREEN: Withdraw it. No further
14 questions.

15 JUDGE WAHL: Mr. Binek.

16 MR. BINEK: Thank you. Let me get my pad
17 straightened out here.

18 **CROSS-EXAMINATION**

19 **BY MR. BINEK:**

20 Q. The Otter Tail Power Company's capacity
21 needs show winter season capacity deficit beginning
22 in 2007 and increasing -- that's at 15 megawatts --
23 and increasing to 193 megawatts to 2014. What are
24 the cause of the capacity deficits?

25 A. The biggest single cause is the expiration

1 of two 50 megawatt contracts with Manitoba Hydro.
2 That is by far the largest impact. Probably second
3 would rank load growth and especially with the step
4 function change due to the four large industrial
5 loads being added.

6 Q. How much of the capacity needs will be
7 expected to be met with wind energy or other
8 renewable energy resources?

9 A. At this time the resource plan includes
10 160 megawatts of new wind. When we evaluate wind
11 generation based on our experience with the
12 existing wind resources on our system, we give it a
13 capacity value of about 15 percent over the summer
14 peak month and 20 percent over the winter peak
15 month.

16 Q. And how much of the capacity needs will be
17 met with DSM measures?

18 A. About 67 megawatts will be met over the
19 2020 planning horizon.

20 Q. On page nine of your direct testimony you
21 referenced two megawatts of a coal-fired facility
22 in western North Dakota. What is that facility?

23 A. That is the Minnkota Power Center No. I
24 Unit. Minnkota Power is within the Otter Tail
25 control area, and as such we provide some control

1 area services to them. As part of the payment for
2 those services we receive the two megawatts of
3 capacity off that unit.

4 Q. When I was questioning Mr. Uggerud, I'm
5 sure you realized he passed on some questions to
6 you, and some of them we've kind of covered here, I
7 think, but with DSM what kinds of DSM are you
8 looking at?

9 A. Boy, I can't remember the entire list, but
10 it includes in the residential area -- what we had
11 modeled it included insulation, both ceiling and
12 wall insulation in residential, commercial and
13 industrial facilities. It included low E windows,
14 it includes storm windows, it includes window
15 films, indoor lighting programs that can be either
16 de-lamping, motion sensors, optical reflectors, low
17 wattage bulbs, compact fluorescents in residential.

18 We have an industrial grant program that
19 they run in Minnesota that's pretty much wide open
20 where an industrial customer can come in with a
21 proposal for any type of energy savings in their
22 facility and it will be evaluated and a rebate
23 determined to obtain those savings. There's
24 air-to-air exchangers. Boy, the list goes on and
25 on. I can't even recall. Right now we're already

1 in the process of gearing up for our next IRP.
2 Right now we are looking and evaluating at 98
3 end-use curves for DSM technologies to go into the
4 new model. There's that many alternatives that we
5 are looking at.

6 Q. One other question that got passed off to
7 you was a question of what is the capacity factor
8 of the wind generation Otter Tail currently has in
9 place, and one other witness, I believe, testified
10 that he thought it was about 35 percent or
11 something like that. Would you agree?

12 A. It varies by facility. For most of the
13 larger developments like the Langdon Wind Center,
14 what we have at Edgeley where you're on the tall
15 towers with pretty good-sized machines, in the
16 North Dakota wind regime 40 percent is pretty
17 reasonable. On some of the other facilities that
18 we have that are smaller turbines, not quite so
19 high in the air located in western Minnesota, 35
20 percent is much closer to what we're seeing. In
21 some of the other wind projects that we have under
22 discussion now that are individual turbine
23 installations that are owned by a customer, so
24 forth, some -- one of them goes as low as 25
25 percent, and that's their number based on their

1 wind data and the performance characteristics of
2 their regime. So it's across the board, but for
3 large development in North Dakota in a good
4 location, 40 percent is reasonable.

5 Q. And is that what you anticipate in
6 Langdon?

7 A. I haven't heard the exact number, but I
8 would expect that.

9 Q. And did you say that Otter Tail will be
10 owning a portion of the Langdon facility?

11 A. The plan right now is for Otter Tail to
12 own 27 turbines or 40-and-a-half megawatts of
13 nameplate wind capacity. We plan to buy the output
14 of another 13 wind turbines from FPL Energy, which
15 is another 19-and-a-half megawatts, so it's 60
16 megawatts total.

17 Q. Why has Otter Tail decided to take an
18 ownership interest in the wind turbines in Langdon?

19 A. There's several reasons here. Number one
20 is we went out for an RFP for up to 75 megawatts of
21 wind in March of 2006, and with that we asked
22 people to propose any type of structure that they
23 wished, whether it was strict PPA, part Otter Tail
24 ownership, all Otter Tail ownership, and then what
25 the costs would be with their proposal. We

1 received about 45 proposals and evaluated those and
2 got down to just a handful of what looked like to
3 be the top ones and started discussions with those
4 developers.

5 Now Otter Tail has zero experience in the
6 ownership of wind generation facilities, and there
7 are a lot of risks with wind generation
8 development. It is a very complex business. We
9 were provided the opportunity here in one of the
10 proposals to have ownership and gain actual
11 experience with FPL Energy, who is literally the
12 biggest and in my mind one of the best wind
13 developers in the United States, and so we have a
14 prime opportunity here to learn and take advantage
15 of their expertise and move forward.

16 From a corporate perspective we will also
17 take advantage of both the federal and the North
18 Dakota tax incentives involved with that project.

19 MR. BINEK: Thank you. I have no further
20 questions.

21 JUDGE WAHL: Questions from the
22 Commission?

23 COMMISSIONER WEFALD: I do.

24 JUDGE WAHL: Commissioner Wefald.

25

EXAMINATION

1

2 **BY COMMISSIONER WEFALD:**

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Q. So you just answered some questions regarding the Langdon wind center, so I asked the question earlier today and they said to ask you. Has a contract actually been signed at this point for that wind from Florida Power & Light either to purchase their output or to -- and/or to own some of your own turbines?

A. I believe the last I heard is at this point we have letters, agreements of understanding. The actual final documents I believe are to be signed here within the next week-and-a-half or so.

Q. All right. Will you let the Commission know when that happens?

A. I will try and pass that on. Yes.

Q. Thank you. That would be helpful. All right. And then on -- on the demand side management you said that there's 98 different proposed ways to -- to enable customers to save energy, use. I've noticed that although you propose many of these in your IRP that is given to the Minnesota Commission, that when you come into North Dakota on rate matters, that we've been told that almost none of them are in place in North

1 Dakota. So I would like to know which of these
2 you're planning to actually put in place in North
3 Dakota and what percentage of the load you have
4 here so that we can figure out how much of this 67
5 megawatts of load conservation is going to be put
6 in place in North Dakota for North Dakota
7 ratepayers?

8 A. The 67 megawatts of impact that is in the
9 IRP is all Minnesota.

10 Q. Oh, that's very interesting.

11 A. Because we --

12 Q. You didn't tell us that earlier.

13 A. We do have a very structured process in
14 Minnesota and some requirements for doing DSM
15 activities.

16 Q. And why wouldn't you plan anything for
17 conservation in North Dakota?

18 A. We have just in March filed a proposal
19 with the South Dakota Commission at their request
20 for implementing some programs effective in 2008 in
21 South Dakota that are not part of the resource
22 plan. Now that's a brand-new development. When --
23 I'm not directly involved in the decision, but my
24 understanding is that in the past we have done some
25 things in North Dakota, and we definitely do the

1 load management DSM-type things where we are
2 controlling load through off-peak rates, and so
3 forth.

4 Q. I know. But this is this new 67
5 megawatts.

6 A. Yeah. And 67 megawatts. I believe it's a
7 regulatory item with our people that are involved
8 with conservation in the regulatory services area.

9 Q. How many -- how many -- now you've told
10 us, though, that 120 megawatts are what you're
11 going to be needing to purchase here from Big
12 Stone, and you have approximately -- how many of
13 your customers are in North Dakota out of your
14 total group versus are in Minnesota?

15 A. Number of customers I don't know. About
16 43 percent of our kilowatt-hours are in
17 Minnesota -- are in North Dakota.

18 Q. 43 percent.

19 A. Yes.

20 Q. All right. So if 67 percent -- 67
21 megawatts can be found from Minnesota Otter Tail
22 customers, if that same proportion were assigned to
23 North Dakota customers, how many megawatts would
24 that involve?

25 A. That I don't know because --

1 Q. Can't you do a calculation for me with the
2 math?

3 A. Well, the makeup of our customer base in
4 North Dakota is not the same as the makeup of the
5 customer base in Minnesota.

6 Q. How is it different?

7 A. I don't -- off the top of my head I don't
8 know the details.

9 Q. Can you give us that information?

10 A. We had a DSM potential study that covered
11 the entire service territory. That was completed
12 in the early to mid Nineties for us. We had a
13 second follow-up DSM potential study that just
14 targeted some commercial and industrial areas that
15 was done in 2002. I would have to go look at those
16 results to see if there's a breakdown by state as
17 to what the potential was for North Dakota versus
18 Minnesota. I know we do have some curves that are
19 labeled North Dakota DSM that we have on the
20 computer.

21 Q. I think that's important information for
22 our Commission to have on the record here, because
23 if 67 megawatts can be saved in the State of
24 Minnesota and you have zero identified to be saved
25 in the State of North Dakota going into the future

1 and we're looking at 120 megawatts that North
2 Dakota customers are going to be sharing your --
3 you would be coming to us to share those costs,
4 then why wouldn't we want to see the same
5 investment put in demand side management in North
6 Dakota to see if we even need the 120?

7 A. It's a good question that I think you
8 would want to ask. What I would point out is that
9 in the development of the resource plan there are
10 other resources that were selected by the model in
11 the same time period after it selected Big Stone
12 II. In other words, Big Stone II came out as the
13 most cost-effective in that time period. Let's say
14 we did 50 megawatts of conservation in North
15 Dakota, that would not touch Big Stone II. That
16 would back off the resources that were added after
17 Big Stone II.

18 Q. Oh, so you're saying it could back off
19 like from 160 wind or 50 from hydro or 88 from IGCC
20 but nothing would come off of --

21 A. It would back off the Manitoba Hydro
22 purchase because in the sequence the model added
23 the resources. It would not touch the wind, it
24 would not touch Big Stone II. It would affect the
25 Manitoba Hydro purchase.

1 Q. And was the Manitoba Hydro purchase more
2 expensive than demand side management?

3 A. It was more expensive than some programs
4 and less expensive than others. There were some
5 DSM programs that are selected before it selected
6 wind and before it selected Big Stone II, but there
7 were a number that were selected after it selected
8 wind, Big Stone II and Manitoba Hydro.

9 Q. And you're telling me that demand side
10 management was more expensive than the cost of
11 purchasing megawatts through Big Stone?

12 A. Some DSM programs were more expensive.

13 Q. Well, of course there could be. It could
14 be the sky's the limit --

15 A. Yes.

16 Q. -- of the 98 you're exploring, but you
17 don't have a list of those that would be under the
18 cost of Big Stone II.

19 A. I would have that out of the model. Yes.

20 COMMISSIONER WEFALD: Okay. Then if you
21 can file that information because I haven't seen
22 anything on those alternatives for North Dakota.
23 If I could ask to have that filed as a late-filed
24 exhibit.

25 JUDGE WAHL: You may.

1 COMMISSIONER WEFALD: Thank you.

2 JUDGE WAHL: But let's -- can we be
3 specific for the record, Commissioner, what you're
4 asking so we -- or, Mr. Morlock, maybe you could --

5 COMMISSIONER WEFALD: Perhaps --

6 JUDGE WAHL: -- state for the record what
7 your -- what you understand Commissioner Wefald's
8 request to be and what you're going to file and
9 when you're going to file it.

10 THE WITNESS: My understanding is that I
11 am to file a listing of when the DSM activities
12 were selected, which ones were selected prior to
13 Big Stone II, which ones were selected after, and I
14 can --

15 Q. (COMMISSIONER WEFALD CONTINUING) And
16 which ones are less cost than Big Stone II with the
17 costs that are indicated in the rate case.

18 A. That would be -- I don't have -- I can't
19 give you the costs. I can tell you which ones were
20 picked before and which ones -- if they were picked
21 before Big Stone II, that means they were cheaper
22 than Big Stone II. If they were picked after Big
23 Stone II, that means they were more expensive than
24 Big Stone II.

25 Q. All right.

1 A. But I don't have the output that will give
2 me a breakdown of the cost by a program.

3 Q. All right. That's fine. Thank you.

4 JUDGE WAHL: All right.

5 Q. (COMMISSIONER WEFALD CONTINUING) And then
6 on -- then I have a question regarding North
7 Dakota's growth in our customer load. You've
8 indicated that across your system you see load
9 growing at 2.4 percent; is that correct?

10 A. Yes.

11 Q. How much of that growth is from North
12 Dakota customers? How much of that load -- you
13 said that you have a different profile with your
14 load in Minnesota, you have a different profile
15 from your load in North Dakota, and a different
16 load from your profile in South Dakota. What --
17 what percentage of growth is happening with your
18 North Dakota customers?

19 A. Off the top of my head, I do not know
20 that.

21 Q. All right. Will you submit that as a
22 late- filed exhibit, as well? Are North Dakota
23 customers -- the reason I'm asking is are North
24 Dakota customers causing the increase of load that
25 is being experienced by Otter Tail or is that

1 coming from another part of your territory? That's
2 what I'd like to know, the difference in
3 percentages between the three states. So not only
4 North Dakota's growth rate, but Minnesota's and
5 South Dakota's.

6 A. I'm not sure I would be able to break
7 out -- have South Dakota, North Dakota broken out.
8 South Dakota is about five percent of our load, but
9 we do have a breakdown of the forecast between
10 Minnesota and the two Dakotas that is readily
11 available.

12 Q. All right. That would be very helpful.

13 A. I do know we are seeing load growth in
14 both places.

15 Q. All right. Thank you. Okay. And then on
16 long-term contracts -- long-term contracts, they
17 said you were the person to ask the questions about
18 long-term contracts. Did you do -- in your IRP did
19 you put out bids for -- from independent power
20 producers for the load that you are now planning to
21 build through Big Stone, and if you did, what were
22 the results of those bids and what was the length
23 of time that you asked for those power contracts?
24 I'm just going to go through my whole list of
25 questions because I'm afraid I'll forget them. And

1 then the last part is would they guarantee you a
2 set price for energy or did it vary, did they want
3 to have it varied based on a market price as you
4 went from day-to-day or month-to-month or year-to-
5 year on the contract?

6 A. In developing our 2005 resource plan
7 filing, we contacted all of the utilities in our
8 area personally.

9 Q. Yes. But those aren't independent power
10 producers.

11 A. I will get to that.

12 Q. Okay.

13 A. We contacted those to see if they would
14 have anything available that we could send them an
15 RFP and request. The answer, other than Manitoba
16 Hydro, was no. We also talked to a number of IPP
17 entities, including the Mesaba project, which is
18 the proposed IGCC project up on the Iron Range in
19 Minnesota. They declined to make a proposal.

20 Q. Yes. But I'm asking about whether you
21 sent -- put out a bid and then an independent power
22 producer could come in and say we will build the
23 plant and we will build it for this much money and
24 we're going to put it here and we'll sell the power
25 to you and your partners over a period of 30 years.

1 Did you put out any proposal like that so that
2 independent power producers would have a chance to
3 bid on this, other than going to Mesaba?

4 A. In the development of the resource plan,
5 no, we did not. The RFP we sent out was for energy
6 that would qualify for the Minnesota renewable
7 energy objective.

8 Q. Excuse me. Say that again.

9 A. We sent out an RFP for energy that would
10 qualify under the Minnesota renewable energy
11 objective.

12 Q. But why didn't you put out an RFP for this
13 project? This is a big project, 630 megawatts.

14 A. One of the very key considerations here is
15 that leading up to this time period -- we've been
16 buying short-term capacity off and on for a number
17 of years. As Mr. Uggerud testified, we have
18 intentionally been a short utility in a long
19 market. What we encountered in 2003, 2002, 2004
20 when we went out and bought this short-term
21 capacity were severe transmission limitations. We
22 could not bring power into Otter Tail from any
23 significant distance. We had one contract that we
24 had signed three years earlier and it took us
25 several months to figure out a way to offset the

1 purchase from Minnesota Power with another purchase
2 from Dairyland Power in Wisconsin and one from
3 Basin Electric in order to get it to Otter Tail.

4 Q. Yes. But that's not my question. I'm not
5 asking about out of the area. I mean, if you'd put
6 out an RFP, they could say I'm going to build it
7 myself in South Dakota or in North Dakota or in
8 Minnesota. They could put it 50 miles from where
9 you need it. Did you put out an RFP? And you're
10 saying, no, we didn't, because it might have to
11 come too far. Isn't the decision of the IPP of
12 where they would build that plant -- that new
13 plant, the new independent power producer. I'm
14 asking these questions because we're being told
15 these days it's a different market out there and
16 that the only way we know whether we're getting a
17 good bargain for a plant is by doing solicitations
18 that are compared to independent power producers
19 versus the utility building it on their own, and so
20 you're telling me, no, you never did this.

21 A. I'm trying to get to the end of the story.
22 I'm sorry, Commissioner. In -- those issues caused
23 us to focus in our region. We have ongoing,
24 continuous discussions with IPPs, such as Tenaska,
25 LS Power, and other IPPs continuously, and they

1 have -- they come to us and they provide us
2 proposals, but all of those proposals that we had
3 talked about with them were in locations that would
4 not work for getting it to Otter Tail. They were
5 located in Missouri or they were located in Kansas.

6 None of them indicated a willingness to
7 build in our service territory with the exception
8 of LS Power, which built one of the facilities in
9 southern Minnesota and then before it was completed
10 sold it to Great River Energy.

11 So based on the input we have received
12 from the IPP people we talked to, we decided not to
13 send out an -- just a blanket RFP to --
14 willy-nilly, but we talked to the people that we
15 could that we knew that we dealt with that worked
16 in the area, and none of them was willing to make a
17 proposal to us. So the answer is, no, we did not
18 do a blanket RFP, but there are reasons for that.

19 Q. Okay. Thank you. On Manitoba Hydro -- on
20 Manitoba Hydro -- I know there's a lot of talk
21 about this so far. On Manitoba Hydro there's some
22 indication that they were willing to make a bid on
23 this; is that correct?

24 A. Yes, they did.

25 Q. And they put in a bid for just the power

1 that Otter Tail needs, 120 megawatts?

2 A. Yes, they did.

3 Q. And -- but their contract would only have
4 been for 20 years?

5 A. It would have been 20, but they were
6 willing to extend it out further.

7 Q. But they weren't able to assure the price
8 after 20 years?

9 A. I'll have to walk a fine line here based
10 on the confidentiality provisions. Their proposal
11 started with initial pricing that was then tied to
12 some indexing, long-term indexing, and then was
13 also tied to a contingency and the actual
14 construction of two additional generating units up
15 in Manitoba well out into the future.

16 Q. Okay. Now I can't find it in your
17 testimony, but somewhere I read, so you're going to
18 have to help me, it said something like -- oh, no,
19 I know where it was. It was on your last slide.
20 Can you pull up that last slide that he had? The
21 Manitoba Hydro alternative does not provide any
22 benefit to wind generation. That's a pretty strong
23 statement since Xcel has just announced that
24 they're going to be purchasing wind with Manitoba
25 Hydro backup or complementing each other. So why

1 is your statement -- when they're going to be
2 purchasing hundreds of megawatts of Manitoba Hydro
3 to compliment wind, what are you saying here and
4 why doesn't it work for Otter Tail?

5 A. If you look at the Xcel Energy detailing
6 proposal, Manitoba Hydro is not backing up wind.

7 Q. Is it like your gas thing, wind is
8 complementing hydro?

9 A. No, it is not. They have a -- signed a
10 letter of intent with Manitoba Hydro for a fixed
11 purchase. What they plan to do separately is to
12 build wind generation, sell that wind generation
13 into the MISO wholesale market and use the revenues
14 to buy down the price of what they're paying
15 Manitoba. There is no link between the two
16 facilities. Manitoba Hydro is not interested in
17 backing up wind or varying their output in order
18 to --

19 Q. Okay. Then why wouldn't -- would that
20 option work for you, what Xcel is doing? Would
21 that be an option combination for you?

22 A. We are already basically doing that,
23 Commissioner. We already have a 50 megawatt
24 purchase from Manitoba Hydro, we have wind
25 generation. It is going into the MISO market as a

1 price taker every day. We are doing the same thing
2 that Xcel Energy is proposing to do. We just
3 haven't packaged it up in a big press release like
4 they're doing.

5 Q. Okay. So they're telling us that that can
6 be used as baseload energy because they're getting
7 from Manitoba Hydro.

8 A. Exactly.

9 Q. So why isn't this -- why doesn't this work
10 together as a package for you with 120 megawatts of
11 energy needed? Why -- if you could get that
12 Manitoba Hydro and then could do the same thing,
13 sell the wind that you would be developing in at no
14 cost for energy or whatever price you get back for
15 it --

16 A. We could do that, but that was a more
17 expensive option than Big Stone II. One of the
18 factors in the Manitoba Hydro proposal is there are
19 provisions there where they don't guarantee the
20 energy. There's a significant risk factor there in
21 their proposal.

22 Q. They don't consider this baseload power?

23 A. They consider it baseload unless they run
24 into a drought condition, which on their system has
25 about a ten percent chance of occurring.

1 construction you have. The model then calculates
2 all the AFUDC during construction and all of that.
3 So that accounting of time delay, value of money
4 and general escalation is all taken into account
5 within the model.

6 Q. So it's all captured within that.

7 A. Yes.

8 COMMISSIONER CLARK: Thank you.

9 JUDGE WAHL: Commissioner Cramer.

10 COMMISSIONER CRAMER: I have nothing.

11 COMMISSIONER WEFALD: I have just one more
12 question right now.

13 JUDGE WAHL: Of course.

14 **FURTHER EXAMINATION**

15 **BY COMMISSIONER WEFALD:**

16 Q. Was natural gas in that group of purchases
17 that could be reduced if demand side management
18 program showed that there were a number of
19 additional megawatts that could be --

20 A. I would presume it would be, but
21 it's because of the timing of when the natural gas
22 resources were selected, and they were strictly
23 peaking resources. The first one might have been
24 selected about 2013, 2014, somewhere in that time
25 period. So --

1 Q. Isn't that just when demand side
2 management is used for peaking, to reduce peaking
3 needs?

4 A. No. Because when the model evaluates, it
5 evaluates the impact of the DSM whenever it occurs.
6 So there may be times when you're buying off the
7 wholesale market and the avoided costs will be off
8 the wholesale market. Sometimes it will be off new
9 combustion turbines, sometimes it will be off
10 existing resources. The model determines based on
11 the economic dispatch where the cost savings come
12 from, and so it is likely to be a combination of
13 all resources, not one specific one. But the end
14 result then is if you save X megawatts of DSM
15 capacity, that's more capacity the model will not
16 have to add later on just for reserve requirements,
17 which is the predominant use for gas-fired peaking,
18 is to meet your reserve requirements.

19 COMMISSIONER WEFALD: Right. I understand
20 that part of it. Thank you.

21 JUDGE WAHL: Followup, Mr. Guerrero?

22 MR. GUERRERO: Yes. Thank you.

23 **REDIRECT EXAMINATION**

24 **BY MR. GUERRERO:**

25 Q. Mr. Morlock, I want to talk to you a

1 little bit about Manitoba Hydro. Do you know --
2 and hydro in general. Do you know what our
3 existing hydro capacity is in the region, including
4 the Missouri River, including some of the dams up
5 on the Nelson River coming out of Manitoba Hydro,
6 generally what's available to us?

7 A. Manitoba Hydro is probably somewhere in
8 the range of between 5 and 6,000 megawatts.
9 Western Area Power -- I don't know exactly. I seem
10 to recall 2500 megawatts or so.

11 Q. It was a bad question. What new capacity
12 is available -- hydro capacity is available?

13 A. What's going on in Manitoba is they have
14 recently, I believe, received permitting approval,
15 although I don't know that it's final, for the
16 Wuskwatim Unit, which is about a 200 megawatt
17 facility. Their next proposed edition is in 2021,
18 and that is roughly a 1250 megawatt unit known as
19 Conawapa. It's basically a run of the river on the
20 Nelson River.

21 Q. Has that received permitting?

22 A. That has not received anything for
23 permitting on Conawapa.

24 Q. Any idea how much the Conawapa project
25 costs?

1 A. No, I don't.

2 Q. Would you disagree if I told you it costs
3 upward of 5 billion dollars?

4 A. It could. I'd have no reason to agree or
5 disagree.

6 Q. Do you know whether or not the Conawapa
7 project would require any additional transmission
8 facilities?

9 A. Yes, it would. I do know that Manitoba
10 Hydro had proposed to build a high-voltage DC line
11 from that facility down the east side of Lake
12 Winnipeg, and that was recently rejected by the
13 Manitoba government.

14 Q. Do you know why?

15 A. I believe environmental concerns of just
16 going through wilderness.

17 Q. As you sit here today, do you know whether
18 or not the Xcel sort of baseload proposal, the wind
19 hydro proposal that they've come out with recently,
20 is going forward?

21 A. I don't know. All I know is initially
22 they had a letter of intent signed. That's as far
23 as I know that it has gone.

24 Q. Do you know whether or not that proposal
25 is being discussed at the Minnesota Public

1 Utilities Commission right now?

2 A. For sure I don't know.

3 Q. Do you know whether or not people are
4 opposing that project based on the fact that it's
5 not necessarily baseload?

6 A. No, I don't.

7 Q. Are there any other provisions in the
8 Manitoba Hydro proposal that Otter Tail received
9 that would otherwise cause you to question the
10 prudence of signing up additional capacity and
11 energy with Manitoba Hydro?

12 A. Well, the pricing is tied to an index.
13 It's not a firm price other than the initial price,
14 and so if economic conditions change in the future
15 to where we got into higher inflation as we saw in
16 the Seventies and Eighties, the price of this
17 proposal would be astronomical.

18 Q. And what is the price indexed to?

19 A. I'm not sure I can reveal that without
20 violating confidentiality provisions of the
21 proposal.

22 Q. It's not necessarily cost of service?

23 A. It is not cost of service at all.

24 Q. The hydro -- the potential for additional
25 hydro energy, was that modeled in your IRP manager

1 integrated resource plan model?

2 A. Yes, it was.

3 Q. And just to clarify, how much of that was
4 picked?

5 A. It picked 50 megawatts. We did not have
6 the model set up to where it could pick any range
7 that it wanted. We had different sizes of
8 purchases it can make from Manitoba, and it chose
9 not to purchase the larger one in place of Big
10 Stone II.

11 Q. And why did you put limits, if I could
12 call it that, on the ability of -- of your ability
13 to purchase hydro from Manitoba Hydro in the model?

14 A. I'm not sure what limits you're referring
15 to.

16 Q. Well, you just said that the model didn't
17 have the ability to choose an unlimited amount of
18 hydro. Was there something in the model that you
19 did that would otherwise --

20 A. We would set up a purchase alternative
21 that would have, you know, an up to maximum limit,
22 and Manitoba Hydro had made a proposal to us that
23 was in the range of the size of Big Stone II
24 capacity.

25 Q. So there wasn't an unlimited amount of

1 energy available to you from Manitoba Hydro.

2 A. No, there was not. In fact, when the
3 announcement was made on the Xcel Energy purchase,
4 Manitoba Hydro specifically gave me a phone call to
5 let me know that the 100 megawatts they had
6 proposed in -- to Otter Tail in an updated proposal
7 was -- that much was still available.

8 Q. Okay. So to put an unlimited amount of
9 hydro in your model would sort of been not
10 reflecting reality; is that a fair statement?

11 A. It would not have been possible without
12 Manitoba Hydro telling me that that was available.

13 Q. And again, just to button this up, Big
14 Stone -- your allocation -- respective allocation
15 from Big Stone that the model developed, that was a
16 lower cost alternative than a Manitoba Hydro
17 purchase?

18 A. The model actually picked Big Stone II not
19 for reserve margin requirements. It picked it as a
20 cost-effective resource, meaning that even if Otter
21 Tail did not need capacity, it would have picked
22 Big Stone II just because of the cost savings due
23 to the reduced energy costs versus buying off the
24 wholesale market.

25 Q. And I'm looking at your outline that we

1 talked about earlier. In the third bullet point,
2 Manitoba Hydro alternative does not provide any
3 benefit to wind generation, could you explain to me
4 what that means?

5 A. A facility that is dispatchable such as
6 Big Stone I, Big Stone II, Hoot Lake, Coyote, can
7 adjust their output based on needs of the control
8 area, either ramping up or ramping down as wind
9 generation changes. Manitoba Hydro alternative
10 would not have that scheduling flexibility. It
11 would be a fixed, set schedule that could not be
12 changed unless there was a transmission
13 contingency.

14 The other thing is baseload facilities
15 such as Big Stone, Coyote, Hoot Lake, so forth,
16 also provide transmission support which can help
17 provide increased output capability for wind.
18 Manitoba Hydro purchase would have done nothing for
19 transmission support.

20 Q. And that fourth bullet point, can you
21 explain to me what that means?

22 A. There would be no transmission additions
23 to do the purchase from Manitoba Hydro assuming
24 that the transmission was available to make the
25 purchase. We assumed that it would be because we

1 do have some rollover rights under the existing
2 purchase power agreements, but it would not add any
3 transmission to the bulk system.

4 Q. No additional transmission?

5 A. No.

6 Q. Do you know whether or not -- well, I'll
7 leave it there.

8 MR. GUERRERO: Your Honor, I was wondering
9 if I could ask Mr. Morlock off the record a
10 question that I'd like to explore with him, but I'm
11 not sure it's subject to the confidentiality
12 provisions of his Manitoba Hydro contract.

13 JUDGE WAHL: Why don't we recess for about
14 five minutes.

15 (Recess taken.)

16 JUDGE WAHL: All right. We're back on the
17 record. Mr. Guerrero.

18 MR. GUERRERO: Just a few more questions.
19 Thank you, Your Honor.

20 Q. (MR. GUERRERO CONTINUING) I want to ask
21 you a few questions about DSM, Mr. Morlock. Does
22 Otter Tail have a program in place in Minnesota
23 with respect to energy conservation and DSM?

24 A. Yes, we do. We have some statutory
25 mandates in Minnesota. Most of it is to provide

1 cost-effective conservation. There are some
2 provisions for low income that don't necessarily
3 have to be cost-effective. Probably the biggest
4 characteristic of the program in Minnesota is that
5 we have a structure and provision in the Minnesota
6 statutes that allow us cost recovery of our DSM
7 activities outside of a rate case.

8 Q. Do you know whether or not you have that
9 similar regulatory structure in North Dakota?

10 A. I believe we do not, but I don't know that
11 for a fact.

12 Q. Do you have a spending requirement in
13 Minnesota for conservation?

14 A. We did have up until the latest
15 legislative session. Our spending requirement was
16 one-and-a-half percent of our retail revenue in
17 Minnesota. The dust hasn't totally settled from
18 the latest legislative session, but there is some
19 additional conservation requirements that we're
20 still trying to sort through.

21 Q. And actually the new legislation would
22 require as opposed to spending requirements getting
23 energy conservation achievements; correct?

24 A. It's more a kilowatt-hour based goal than
25 a dollar goal. Yes.

1 Q. Do you know whether or not the history in
2 Minnesota with respect to energy conservation is
3 one reason why there may be a dissimilar experience
4 with respect to Otter Tail's DSM and energy
5 conservation efforts in Minnesota versus North
6 Dakota or South Dakota?

7 A. I -- excuse me a minute. I'm trying to
8 recall because I was involved in the analysis of
9 some of our very early conservation efforts in
10 Minnesota. I can't remember if we started some of
11 those and to what magnitude prior to having a
12 spending requirement in Minnesota. So we may
13 actually have been doing some in Minnesota, and I
14 think at some time in the past we at least had
15 educational programs, and so forth, in North Dakota
16 and might still have. I think the biggest factor
17 beyond the statutory requirement in Minnesota is
18 the recovery position -- recovery provisions
19 outside of a rate case.

20 Q. Thanks. Let me go back just a moment, if
21 I could, to Manitoba Hydro. In your -- do you have
22 an existing contract with Manitoba Hydro?

23 A. Yes, we do.

24 Q. Have you ever heard of the term
25 "callback"?

1 A. Yes.

2 Q. Can you explain what that is?

3 A. There have been provisions in contracts
4 with Manitoba for the situations when they do run
5 into drought situations that they can either call
6 back energy, change the price, or both, and it will
7 vary by agreement. You know, I can only speak for
8 the ones I've been involved with for Otter Tail.
9 The Manitoba Hydro system is significantly
10 different than the Western Area Power system that
11 we're familiar with here in North Dakota. Manitoba
12 Hydro has very little large storage reservoirs. So
13 within a six-month period they can go from being
14 extremely flush with water to being in drought
15 conditions. Their system can change quite
16 dramatically. We have been impacted by their
17 drought conditions under past purchase power
18 agreements with them.

19 Q. And how does that relate to a callback
20 provision?

21 A. A callback provision might be the
22 situation where you get the energy from them during
23 the day, but at night you have to buy it off the
24 open market or generate it and ship it back to
25 them.

1 Q. Because they're calling the energy back.

2 A. They're calling the energy back. The
3 other possibility might be if they just have a
4 curtailment where they will restrict deliveries
5 during the daytime.

6 Q. And calling the energy back for their own
7 use as opposed to for your use.

8 A. Yes.

9 Q. And again, I want to jump around a little
10 bit and go back to DSM. With respect to the 67
11 megawatts that Commissioner Wefald was asking you
12 about, is there any reason to believe that the
13 model -- the model that chose the 67 megawatts as a
14 part of the least-cost plan knew whether those
15 megawatts of savings were going to be in Minnesota
16 versus North Dakota?

17 A. No. All of our resource plans have
18 involved modeling the system in its entirety.
19 There's no place in there, other than I think in
20 the financial file and deferred debits, whether
21 there's an indication whether it's Minnesota, North
22 Dakota or South Dakota.

23 Q. And so the model's indifferent.

24 A. The model is indifferent to where it's
25 located, whether it's owned or purchased. The

1 model just looks at the bottom line costs.

2 Q. And you're not opposed to doing energy
3 conservation in North Dakota.

4 A. Not as far as I know.

5 Q. Let me ask you a couple of questions if
6 you know about independent power producers. Do you
7 know what their -- have you dealt with IPPs in the
8 past before, Mr. Morlock?

9 A. I've had discussions with several.

10 Q. Have you ever purchased power from them
11 off of one of their projects?

12 A. Well, yes. In most cases it's a customer-
13 owned facility, but we have made purchases off
14 non-utility generation.

15 Q. And non-utility generation typically
16 refers to assets or generation that's owned by
17 private investors; correct?

18 A. Somebody other than an electric utility,
19 yes.

20 Q. And whose returns are not regulated by a
21 Public Service Commission; correct?

22 A. Correct.

23 Q. Would you have a guesstimate as you sit
24 here today based on your experience with IPPs what
25 their -- what's called in the industry a hurdle

1 rate or an ROR that they would expect to achieve
2 when they sell power based off an IPP plant?

3 A. I have heard some discussions, but I don't
4 recall what it is. Typically it's higher than a
5 utility would require.

6 Q. Would you agree that it's typically much
7 higher?

8 A. I'm not sure what you mean by much higher,
9 but I think it would probably be in the range of 15
10 percent or maybe even a little higher, depending on
11 the risks of the particular situation.

12 Q. Is there any reason to believe as you sit
13 here today, Mr. Morlock, that purchasing power from
14 an IPP would somehow achieve a better rate either
15 for Otter Tail or for its customers versus owning
16 the assets internally?

17 A. My personal perception is it would likely
18 cost a little more because of the assignment of
19 risk, and if an IPP is going to take on risk and
20 they have an obligation to deliver it, their down-
21 side risk with something going wrong becomes
22 larger, and therefore they need a higher return in
23 order to compensate for taking on that additional
24 risk.

25 Q. And if you know, you can answer it. Do

1 you believe that Otter Tail Power as the owner and
2 operator of at least two major power plants, one in
3 South Dakota, one in North Dakota, know a little
4 something about operating power plants?

5 A. I do believe we're pretty good at it.
6 Yes.

7 Q. And do you believe you're as good as
8 independent power producers in owning and operating
9 power plants?

10 A. Yes, I do.

11 Q. And squeezing efficiencies out of power
12 plants?

13 A. Yes.

14 MR. GUERRERO: No further questions.

15 JUDGE WAHL: Mr. Breen.

16 **RE-CROSS-EXAMINATION**

17 **BY MR. BREEN:**

18 Q. Sir, can you tell us -- or do you know how
19 much it costs on average to avoid one megawatt of
20 energy with DSM?

21 A. On average, no, I don't. When we model,
22 we are modeling specific programs and specific
23 costs, and I don't know the details out of the
24 model as to, you know, what --

25 Q. The answer is no?

1 A. The answer is no.

2 Q. Do you know what it costs -- what the cost
3 is for one megawatt of energy in the complete Big
4 Stone II model?

5 A. In the complete Big Stone II model?

6 Q. Right.

7 A. No. Because that's not the way resource
8 planning is done.

9 Q. If I said to you, sir, that avoiding one
10 megawatt of energy with demand side management is
11 less expensive than the cost of producing one
12 megawatt of energy in the Big Stone II project,
13 would you agree or disagree?

14 MR. GUERRERO: Excuse me. Is this a
15 hypothetical question?

16 MR. BREEN: Hypothetical.

17 Q. (MR. BREEN CONTINUING) Would you agree or
18 disagree?

19 A. I would agree that some conservation
20 savings would be cheaper and some would not be.

21 Q. On average.

22 A. I don't know that I --

23 Q. The same hypothetical. I'm just giving
24 you -- asking you to answer the question on
25 average.

1 A. On average I don't know that I can answer
2 it. I mean, I deal with modeling, but I don't look
3 at the average costs of all the DSM programs. I
4 don't look at that.

5 Q. So you don't know?

6 A. No.

7 Q. Are there Department of Energy numbers
8 that give this on-average contrast between cost of
9 avoiding one megawatt of energy with demand side
10 management as contrasted to the cost of building a
11 plant such as Big Stone II to gain one megawatt of
12 energy?

13 MR. GUERRERO: I guess I'm going to
14 object. I didn't understand the question. There
15 seems to be a couple of questions within the
16 question.

17 JUDGE WAHL: Well, does the witness
18 understand the question?

19 THE WITNESS: No, I did not.

20 JUDGE WAHL: All right.

21 Q. (MR. BREEN CONTINUING) You were unable to
22 answer the questions I asked earlier; correct?

23 A. Correct.

24 Q. Does the Department of Energy provide
25 answers to those two questions on average?

1 A. They may. That I don't know. What I do
2 know is that in our 2002 DSM potential study the
3 consultant came back with significantly different
4 numbers in terms of what customers are willing to
5 do in our service territory versus other areas
6 where they have performed DSM potential studies,
7 and our participation rates and therefore our
8 potential to do conservation was either much less
9 or it was more expensive or a combination of the
10 two. That I do know.

11 Q. And the Department of Energy may have that
12 information, the cost of avoiding one megawatt of
13 demand side energy, DSM, as opposed to the cost of
14 one megawatt of energy in building Big Stone II,
15 but you don't have that information.

16 MR. GUERRERO: Objection. Asked and
17 answered.

18 MR. BREEN: Withdrawn.

19 JUDGE WAHL: Are you --

20 MR. BREEN: Oh, I'm sorry. I have no
21 further questions, sir.

22 JUDGE WAHL: Mr. Binek.

23 MR. BINEK: I have just a couple
24 questions.

25

RECROSS-EXAMINATION

1

2 **BY MR. BINEK:**

3 Q. Are the DSM costs expended in Minnesota
4 covered entirely by Minnesota customers?

5 A. The costs plus an incentive payment,
6 provided we meet the preset goals.

7 Q. And is this non-dispatchable DSM?

8 A. Yes. This is predominantly conservation
9 that's non-dispatchable.

10 MR. BINEK: Thank you. No further
11 questions.

12 JUDGE WAHL: There's been a lot of new
13 material here, so does the Commission have further
14 questions?

15 COMMISSIONER WEFALD: Yes, I do.

16 JUDGE WAHL: Commissioner Wefald.

17 **FURTHER EXAMINATION**18 **BY COMMISSIONER WEFALD:**

19 Q. Yes. What is the cost -- and if you're
20 not the correct person, then direct me to the right
21 person to answer this question for the Commission.
22 What is the cost of Big Stone II for the customer
23 per kilowatt-hour including operation and
24 maintenance?

25 A. Mr. Rolfes probably would be the best one

1 to answer that, but that -- it's a difficult
2 question to answer, Commissioner, because it
3 requires someone to make an assumption of a
4 capacity factor, which has been done in some of the
5 screening analysis, an 88 percent capacity factor.
6 When it comes to doing a resource plan, you do not
7 put a capacity factor in the model. You put the
8 resource in the model and the model decides how the
9 facility will run, when it will run, and at what
10 level. So there is no presumed initial upfront
11 capacity factor or cost per megawatt-hour because
12 the total cost per megawatt-hour, including
13 ownership costs, the O&M, and the fuel is going to
14 depend on how much that unit runs. I could tell
15 you year by year based on the output of the model
16 what the cost is.

17 Q. I'm not worried about how it would show up
18 through the IRP. I'm sure you've done it, maybe
19 not through your IRP, but just made a calculation,
20 and so using that capacity factor of 88 percent
21 which you had in your testimony this morning, what
22 was the cost of Big Stone II for the customer per
23 kilowatt-hour including operation and maintenance?

24 A. That I don't know. Mr. -- I've never done
25 that calculation.

1 Q. Okay. So Mr. -- can we ask -- how do I do
2 this? If this witness doesn't have --

3 JUDGE WAHL: You certainly may.

4 COMMISSIONER WEFALD: If this witness
5 doesn't have this information and we already have
6 cross-examined the witness that does, should I
7 recall that person in a little bit?

8 JUDGE WAHL: We can ask counsel to recall
9 him, and I'm sure counsel will agree.

10 MR. GUERRERO: Yes.

11 COMMISSIONER WEFALD: Okay. That will be
12 fine. I'll take care of that later.

13 Q. (COMMISSIONER WEFALD CONTINUING) Are you
14 required to do an RFP in Minnesota for large
15 purchases of electricity or only for renewables?

16 A. No. If any -- well, excuse me while I
17 need to think here. The way the statute is
18 written, the Commission in Minnesota cannot allow
19 us to put any rates -- in rates in a non-renewable
20 resource unless it is approved within the
21 integrated resource plan. So a purchase from
22 Manitoba Hydro or a long-term purchase from a
23 renewable facility under that statute presumably
24 would not need specific Commission approval.
25 However, in order for some renewables to count

1 toward the Minnesota renewable energy objective we
2 have to get Commission approval on that. So I
3 think --

4 Q. Okay. Let's say this is not a renewable
5 resource, which Big Stone II is not in the book for
6 renewable resource. Are you required to get an RFP
7 in Minnesota for an energy purchase from an energy
8 facility such as Big Stone II?

9 A. We are not required to get an RFP for a
10 long-term purchase from a non-renewable resource.
11 We would need to have that approved in the IRP or
12 have some type of Commission approval for it.

13 COMMISSIONER WEFALD: Thank you.

14 JUDGE WAHL: Commissioner Clark.

15 COMMISSIONER CLARK: Yes.

16 **FURTHER EXAMINATION**

17 **BY COMMISSIONER CLARK:**

18 Q. I recall that I'd asked a previous
19 question of a witness dealing with Gascoyne and I
20 think he had deferred that to someone else.
21 Gascoyne wasn't in the --

22 COMMISSIONER CRAMER: Is your microphone
23 on?

24 Q. (COMMISSIONER CLARK CONTINUING) All
25 right. Gascoyne Plant was not in the final list of

1 six or seven or whatever were considered. Was
2 Gascoyne modeled in the IRP?

3 A. It was not. In doing modeling of resource
4 alternatives in the IRP, we modeled resources that
5 are available for the company to do. Obviously we
6 can't build a 5 or 600 megawatt unit ourselves. So
7 the baseload coal resource that I modeled was based
8 on the Big Stone II proposal. I did not have a
9 Gascoyne proposal or any other proposal that was
10 valid.

11 Q. Is that a missing number that we should be
12 concerned about? I know MDU in its prefiled
13 testimony has some written testimony regarding
14 Gascoyne and was looking for partners to go
15 together on that. Is that something that should
16 have been looked at?

17 A. That I don't know. If that was looked at
18 in the screening analysis for sites, and so forth,
19 I would think that should satisfy the fact that it
20 was considered.

21 Q. But was it in the initial screening or --

22 A. In the initial screening for site
23 determination the study that Burns & McDonnell -- I
24 don't know. Our resource planning at Otter Tail
25 has been kept totally separate, moved away from the

1 Big Stone II project at all to make sure that the
2 Big Stone II project stands on its own, and our
3 resource planning is totally separate. So from a
4 resource planning perspective I was given a Big
5 Stone II alternative to put the model to compare to
6 all other alternatives available.

7 COMMISSIONER CLARK: And I'll ask this of
8 counsel. This is kind of the second issue
9 regarding some of the early site selection.
10 Weighting process was one of my questions and
11 Gascoyne now is another. Is there someone at Burns
12 & McDonnell who can answer these type of questions
13 on the early selection process?

14 MR. GUERRERO: We're going to try to
15 identify somebody this evening and into tomorrow
16 that can possibly field some questions regarding
17 the overall siting -- site selection study that was
18 done a couple years ago.

19 COMMISSIONER CLARK: Okay. Thank you.
20 That's all I have.

21 JUDGE WAHL: Commissioner Cramer.

22 COMMISSIONER CRAMER: I have nothing.

23 JUDGE WAHL: All right. Followup, Mr.
24 Guerrero?

25 MR. GUERRERO: Just a few at the risk of

1 prolonging this.

2

REDIRECT EXAMINATION

3

BY MR. GUERRERO:

4

Q. Commissioner Wefald asked you some
5 questions about bidding, and I think it's just
6 important that we clarify the record on this
7 because they're good questions. Otter Tail is not
8 required to seek bids when it goes out and acquires
9 energy and capacity; correct?

10

A. Correct.

11

Q. And it's not required for traditional
12 resources?

13

A. Correct.

14

Q. Not required for renewable resources?

15

A. Correct.

16

Q. Are there any utilities in Minnesota that
17 do have bidding requirements?

18

A. Xcel Energy does have some bidding
19 requirements in Minnesota.

20

Q. But those aren't subject to Otter Tail?

21

A. Those are not subject to Otter Tail.

22

MR. GUERRERO: No further questions.

23

JUDGE WAHL: Mr. Breen?

24

MR. BREEN: I have no questions, sir.

25

JUDGE WAHL: Mr. Binek?

1 MR. BINEK: None.

2 JUDGE WAHL: All right. Thank you very
3 much, Mr. Morlock.

4 MR. GUERRERO: Thank you.

5 JUDGE WAHL: It pains me to quit early,
6 but where are we? You have, Mr. Guerrero, Mr.
7 Rogelstad left?

8 MR. GUERRERO: That's correct.

9 JUDGE WAHL: So you would -- you would
10 finish up tomorrow morning with him?

11 MR. GUERRERO: Correct.

12 JUDGE WAHL: And, Mr. Kuntz, you would
13 then start with Mr. Imsdahl?

14 MR. KUNTZ: That's correct.

15 JUDGE WAHL: Well --

16 MR. KUNTZ: And I don't know what --

17 JUDGE WAHL: Is Mr. Imsdahl available now?

18 MR. KUNTZ: He is.

19 COMMISSIONER WEFALD: How about my one
20 question?

21 JUDGE WAHL: Pardon me?

22 COMMISSIONER WEFALD: How about my one
23 question?

24 COMMISSIONER CRAMER: She wanted to
25 re-call --

1 COMMISSIONER WEFALD: I wanted to re-call
2 a witness.

3 JUDGE WAHL: Is Mr. Rolfes --

4 COMMISSIONER WEFALD: He's here.

5 JUDGE WAHL: Oh, he's here. Why don't we
6 do that. Why don't we do that. Let's re-call Mr.
7 Rolfes, and then we'll finish up first thing with
8 Otter Tail and proceed with MDU.

9 MR. GUERRERO: We're going to re-call Mr.
10 Rolfes for the purposes of some additional
11 follow-up questions by Commissioner Wefald.

12 JUDGE WAHL: That's correct. Mr. Rolfes,
13 you understand, of course, obviously that your
14 testimony continues under oath and subject to the
15 penalties of perjury.

16 THE WITNESS: I do.

17 JUDGE WAHL: Commissioner Wefald.

18 **MARK ROLFES,**

19 having been previously first duly sworn, was
20 examined and testified further as follows:

21 **FURTHER EXAMINATION**

22 **BY COMMISSIONER WEFALD:**

23 Q. I have the question about the cost. What
24 is the cost of Big Stone II for the consumer per
25 kilowatt-hour including operation and maintenance,

1 and that's assuming that you have the capacity
2 factor of 88 percent?

3 A. This is in my testimony, and what the
4 project -- the project did -- not Otter Tail, not
5 MDU -- the project asked Burns & McDonnell to
6 estimate that cost. So they made a series of
7 assumptions for a typical investor-owned utility,
8 and so these assumptions may not be identical to
9 what MDU and Otter Tail would actually have for
10 cost of capital and other things, but it should be
11 very close. So it's not an exact number but it's a
12 very close number, and Burns & McDonnell calculated
13 that for the investor-owned utilities on a
14 levelized busbar cost, which means over the life of
15 the -- the 20-year life that they looked at, it
16 would be \$69.62 per megawatt or 6.962 cents per
17 kilowatt-hour over the --

18 Q. Say the number again.

19 A. \$69.62 per megawatt-hour. That's
20 levelized and I believe it's over a 20-year period.

21 MR. GUERRERO: That's correct.

22 Q. (COMMISSIONER WEFALD CONTINUING) Or 6.96
23 cents per kilowatt-hour.

24 A. Per kilowatt-hour.

25 COMMISSIONER WEFALD: Thank you.

1 JUDGE WAHL: Any other questions from the
2 Commission? Followup, Mr. Guerrero?

3 MR. GUERRERO: I just want to clarify that
4 Mr. Rolfes had quoted a busbar cost. That's
5 without transmission and distribution.

6 COMMISSIONER WEFALD: I understand that.

7 MR. GUERRERO: Okay. So it's not
8 necessarily the cost to the customer as delivered.

9 COMMISSIONER WEFALD: I have -- I thought
10 of one more question.

11 JUDGE WAHL: Go ahead.

12 Q. (COMMISSIONER WEFALD CONTINUING) What's
13 the present -- do you know what the cost is of Big
14 Stone I -- what is the cost of Big Stone I for the
15 consumer per kilowatt-hour including operation and
16 maintenance?

17 A. I can just give you a ballpark number, and
18 you have to remember that the biggest component in
19 this cost is the capital cost, and Big Stone was
20 built for approximately \$400 a kilowatt in 1975
21 versus the \$2100 a kilowatt. So I believe the
22 busbar cost for Big Stone is somewhere in the
23 neighborhood of \$25 per megawatt-hour.

24 COMMISSIONER WEFALD: Thank you.

25 JUDGE WAHL: Any further questions from

1 the Commission? Mr. Guerrero, any followup?

2 MR. GUERRERO: No, thank you.

3 JUDGE WAHL: Mr. Breen, any questions for
4 this witness?

5 MR. BREEN: No, sir.

6 JUDGE WAHL: Mr. Binek?

7 MR. BINEK: No, no.

8 JUDGE WAHL: All right. Thank you very
9 much, Mr. Rolfes. All right. So, counsel, is
10 there anything further that we should deal with
11 today?

12 MR. KUNTZ: Did you want to start with Mr.
13 Imsdahl or are we going to wait till tomorrow
14 morning?

15 JUDGE WAHL: How far are you going to get
16 with your direct? I would do the direct if you can
17 do it by about five o'clock.

18 MR. KUNTZ: Well, we can get through the
19 summary of his direct. That shouldn't be a
20 problem.

21 JUDGE WAHL: Let's do it. Mr. Imsdahl, as
22 you have heard me advise other witnesses, your
23 testimony is required to be under oath and I'm
24 required by law to advise you regarding perjury
25 before administering the oath. As you know,

1 perjury is a false statement of material fact which
2 you do not believe to be true. That's lawyer talk
3 for a lie. In North Dakota perjury is a Class C
4 felony punishable by a fine up to \$5,000,
5 imprisonment for a period of up to 5 years, or
6 both.

7 (Witness sworn.)

8 JUDGE WAHL: Mr. Kuntz.

9 **BRUCE IMSDAHL,**

10 having been first duly sworn, was examined and
11 testified as follows:

12 **EXAMINATION**

13 **BY MR. KUNTZ:**

14 Q. Please state your name and business
15 address.

16 A. My name is Bruce Imsdahl at 400 North
17 Fourth Street, Bismarck, North Dakota.

18 Q. Whom are you employed by?

19 A. Employed by Montana-Dakota Utilities.

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

21 A. I'm president and CEO of Montana-Dakota
22 Utilities and Great Plains Natural Gas.

23 Q. Can you describe your responsibilities of
24 that position?

25 A. Yes. I'm responsible for essentially the

1 coordination, the development, and the
2 implementation of the company strategies and
3 policies.

4 Q. What's -- could you give us a background
5 of your education and employment experience?

6 A. Sure. I have a Bachelor's of Science
7 degree in mechanical engineering from the
8 University of -- from the -- wow, boy, that was
9 almost a real mistake. I would have been perjured.

10 Q. We know it's late in the day?

11 A. -- from the North Dakota State University.

12 COMMISSIONER CLARK: At least from one
13 member of the Commission.

14 THE WITNESS: I also have a couple
15 certificates of some management for executives, one
16 from the school -- University of Pittsburgh and one
17 from Stanford.

18 Q. (MR. KUNTZ CONTINUING) And your work
19 experience?

20 A. I started work in 1970, so I've been
21 working for Montana-Dakota Utilities for 37 years.
22 I started as a results engineer in the power plant
23 and eventually went from there to essentially an
24 engineer for -- into the general office in Bismarck
25 and worked on a lot of our smaller power plants,

1 and then transferred to our Lewis & Clark Station
2 as the plant superintendent. Then transferred to
3 the Heskett Station as the plant manager and
4 transferred into the general office as the
5 generation manager where I was responsible for all
6 the plants that we had and became the vice
7 president of power supply and then eventually to
8 energy supply, and then in 2003 I was named the
9 president.

10 Q. So prior to your current responsibilities
11 you've had considerable experience with power plant
12 generation in all aspects of the company; is that
13 correct?

14 A. That's correct.

15 Q. And have you prepared or caused to be
16 prepared prefiled direct and prefiled rebuttal
17 testimony in this proceeding, Mr. Imsdahl?

18 A. Yes, I have.

19 Q. In front of you are what's been marked as
20 MDU Exhibits 201 and 202. Do you see those
21 documents, please?

22 A. Yes.

23 Q. And are those copies of your prefiled
24 direct and prefiled rebuttal testimony?

25 A. Yes, they are.

1 Q. And do you have any corrections to either
2 of those two documents?

3 A. No, I do not.

4 Q. And if I were to ask you the same
5 questions as they appear in those documents, would
6 your answers be the same today?

7 A. Yes, they would.

8 Q. Could you provide the Commission with a
9 summary of both your direct and rebuttal testimony?

10 A. Sure. The -- when we talk about electric
11 operations, Montana-Dakota Utilities has electric
12 service in North Dakota, South Dakota, Montana and
13 Wyoming. Wyoming is a separate, stand-alone system
14 that's in the western grid, so this -- the plant
15 that we're dealing with here at Big Stone II is
16 actually from what we call our integrated system
17 which serves Montana, North Dakota and South
18 Dakota.

19 That integrated system -- those resources,
20 of course, is made up of baseload and peaking
21 generation resources, and we also go out and
22 purchase capacity and energy, and we have some
23 demand side management programs.

24 In October of last year the -- we had a
25 contract with Basin Electric that was expired after

1 20 years. So that is one of the main reasons that
2 we are so interested in the Big Stone II ownership.
3 The -- presently we've replaced that contract with
4 only a capacity contract and we are purchasing the
5 energy from the MISO market. So we would be, you
6 know, purchasing or hopefully owning the 19.3
7 percent of the Big Stone Plant.

8 We are here today because of our advance
9 determination of prudence filing that we've made.
10 It's very important to us to make that filing so
11 that we've got somewhat of a regulatory certainty
12 with a project of this magnitude since our share
13 will be close to 350 million dollars, and it's --
14 this is very important for us to get financing for
15 the project.

16 Absent the prudence filing or the
17 determination of the prudence, we'd have to go to
18 some shorter term resources. We believe that those
19 shorter term resources would increase our
20 customers' costs because they probably would be gas
21 turbine-type resources, along with others, and they
22 would undoubtedly have some increased prices for
23 the energy.

24 This -- we have to remember that this is a
25 prudence application. We're not here for a

1 changing of our electric rates. We're just
2 requesting that the Commission determine the
3 construction of the Big Stone II Station be
4 reasonable and prudent.

5 And looking at our future generation,
6 Montana-Dakota is -- even though we're
7 participating in Big Stone Unit No. II, and it
8 looks like it is the best overall value for our
9 customers and giving us the most reliable and
10 stable resource for those, we are also -- once this
11 station would be on line we would have no excess
12 capacity. So we are continuing to look for future
13 additional resources to take us into the 2020 time
14 period.

15 In my rebuttal testimony I reviewed what
16 the five conditions that Mr. Deason had in his
17 testimony, and we would commit to all five of those
18 conditions, so -- and there's a summary essentially
19 of those conditions there.

20 Q. Does that complete your summary?

21 A. That would conclude my summary, yes.

22 MR. KUNTZ: Montana-Dakota would offer
23 Exhibits MDU-201 and 202.

24 JUDGE WAHL: Mr. Breen?

25 MR. BREEN: I have no objection.

1 JUDGE WAHL: Mr. Binek?

2 MR. BINEK: No objection.

3 JUDGE WAHL: Exhibits MDU-201 and 202 are
4 each received.

5 MR. KUNTZ: And we'd tender the witness
6 for cross-examination.

7 JUDGE WAHL: All right. I don't want to
8 start cross-examination. I'd like to do that as a
9 unit. So we'll be in recess until eight o'clock
10 tomorrow morning.

11 MR. KUNTZ: We're starting at eight
12 tomorrow morning again?

13 JUDGE WAHL: Yes. Counsel will have in
14 mind that we'll go until ten. We'll then recess
15 for a regular meeting of the Commission, and we'll
16 resume just as -- well, will the Commission be done
17 in an hour?

18 COMMISSIONER WEFALD: Probably.

19 JUDGE WAHL: Well, plan on resuming at 11
20 o'clock. All right.

21 COMMISSIONER WEFALD: I have one question.
22 Will Mr. Uggerud be here tomorrow? I may have some
23 questions that I need to re-call him, and I didn't
24 know whether he's leaving or whether he's --

25 MR. UGGERUD: I will be here, Commissioner

1 Wefald.

2 COMMISSIONER WEFALD: Thank you.

3 JUDGE WAHL: All right. Anything else
4 that we need to deal with today prior to tomorrow
5 morning? All right. We'll be in recess then until
6 eight o'clock tomorrow morning.

7 (Recessed at 4:42 p.m., Tuesday, the 26th
8 day of June, 2007.)

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