

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

enXco Development Corporation
Merricourt Wind Project
Siting Application

Case No. PU-08-932

TRANSCRIPT OF
HEARING

Taken At
Teddy's Grill
1101 Industrial Park
Edgeley, North Dakota
February 10, 2011

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

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A P P E A R A N C E S

COMMISSIONERS PRESENT:

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

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1 (The proceedings herein were had and made
 2 of record, commencing at 10:00 a.m., Thursday,
 3 February 10, 2011, as follows:)
 4 JUDGE WAHL: Let's be in order, please. I
 5 don't see -- find a clock in the room, so I guess
 6 my watch is the official clock. Those of you who
 7 have cell phones, this is a good time to turn them
 8 off.
 9 Good morning. I am Al Wahl, the
 10 administrative law judge pursuant to temporary
 11 appointment designated by the Office of
 12 Administrative Hearings upon the request of the
 13 Public Service Commission to serve as the hearing
 14 officer for this hearing.
 15 This is the hearing of the application of
 16 EnXco Development Corporation for a certificate of
 17 site compatibility to authorize construction of a
 18 150-megawatt wind power project consisting of up to
 19 100 wind turbine generators and associated
 20 facilities located in Dickey and McIntosh Counties,
 21 North Dakota. This will be identified as the
 22 Merricourt Wind Power Project.
 23 The hearing for this case was initially
 24 scheduled to be held December 21, 2010, pursuant to
 25 a notice of filing and notice of hearing duly

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1 issued by the Commission November 12, 2010. The
 2 hearing initially scheduled was canceled because of
 3 a winter storm which made travel imprudent and the
 4 hearing was rescheduled to be held today pursuant
 5 to a notice of rescheduled hearing issued by the
 6 Commission December 30th, 2010. This is North
 7 Dakota Public Service Commission Case Number
 8 PU-08-932.
 9 Before proceeding with the hearing, I will
 10 ask the commissioners for their comments and any
 11 directions for the hearing. Commission Chairman
 12 Tony Clark.
 13 COMMISSIONER CLARK: Thank you, Judge
 14 Wahl, and thanks to everyone for being here today.
 15 This is a wonderful turnout and appreciate your
 16 interest in this particular siting hearing.
 17 These are remarkable times in North
 18 Dakota. Of course, our economy seems to be bucking
 19 the national trend, as you all know, and a good
 20 part of the reason for that is because of this very
 21 dynamic energy sector that we have in the state,
 22 both more traditional forms of power, but also new
 23 renewable forms of power such as wind energy, and
 24 that, of course, is what brings us here today.
 25 We've over the last 10 years had an

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1 increase of about 1,400 megawatts of wind power in
 2 North Dakota, which is a remarkable amount of
 3 development when you think about it. A typical
 4 like large-scale coal plant unit is something like
 5 500 megawatts, so it's about like putting on line
 6 three new large coal plants, which is a significant
 7 amount of investment and it's happened very, very
 8 quickly because of the nature of the way wind farms
 9 tend to come together. So that's what brings us
 10 here today.
 11 While all of us who sit on the Commission
 12 are state officials and are excited about the level
 13 of investment in the state, we also know that we
 14 have a separate responsibility under the law, and
 15 that is to make sure that as these wind farms are
 16 developed they're done in the right way, and that's
 17 what this hearing is about, is ensuring that the
 18 cultural resources, environmental resources impact
 19 on the environment, other landowners, things like
 20 that, all have an opportunity to be heard at an
 21 open meeting and then the Commission can take that
 22 into consideration when we process the siting
 23 application.
 24 Let me say to the applicant, thank you for
 25 the thoroughness of the application. This, I

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1 think, is probably noteworthy. We've sited a lot
 2 of wind farms, but this has been a very, very
 3 well-documented one. The document that I have in
 4 front of me, I think, is about one of five folders
 5 like this. Four others are back at the office. So
 6 I thank you for the thoroughness of which you
 7 provided background information to the Commission.
 8 Finally, I'll just offer a word of
 9 encouragement to anyone who might wish to testify
 10 today. Judge Wahl will talk about the procedures
 11 for this in a few moments, but Public Service
 12 Commission hearings might be a little bit more
 13 formal than you're used to. They almost look a
 14 little bit like a judicial proceeding. Please know
 15 that the formality that we have here today is not
 16 in any way intended to discourage you from
 17 testifying. It's just that under state law we have
 18 to hold a hearing like this and in this type of
 19 format, and the reason is because the Public
 20 Service Commission can only make a decision based
 21 on a record that's actually developed at a hearing
 22 like this where you have sworn testimony and
 23 evidence that's placed into record. So it's just
 24 the form we have to use, but it's not to discourage
 25 you from testifying.

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1 In fact, just the opposite. We want to
 2 hear from you if there's anything that you think
 3 the Commission should take into consideration, and,
 4 again, we can only take into consideration the
 5 things that are said on the record. I've been to a
 6 few of these hearings from time to time where
 7 someone will sit through the whole hearing, they'll
 8 say -- after the gavel closes, they'll say, wow,
 9 that was really interesting, but what you really
 10 need to know is this. Now, after that's done out
 11 in the hall outside, I can't take it into
 12 consideration, unfortunately. So please do feel
 13 free to testify if you have anything at all that
 14 you want us to consider.

15 With that, I will thank you again for
 16 being here, I look forward to a good hearing, and
 17 turn it back to Judge Wahl.

18 JUDGE WAHL: Commission Kevin Cramer.
 19 COMMISSIONER CRAMER: Thank you, Your
 20 Honor. Thanks all of you for the irrevocable gift
 21 of your time. Tony has done a nice job of
 22 outlining our responsibilities as well as the
 23 tremendous opportunities that North Dakota is
 24 experiencing and hopefully taking advantage of in a
 25 responsible manner, but I can tell you that the

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1 stresses are constant, whether it's wind
 2 development or oil development or coal development,
 3 pipelines, transmission lines, there's no end to
 4 what's going on, and to this point it's been quite
 5 responsible, but it's an important charge that we
 6 have as regulators to ensure the cultural and
 7 natural resources, the welfare of our citizens is
 8 minimally adversely impacted, if adversely at all.

9 I think in addition to what Commissioner
 10 Clark has said, there are a few other things I
 11 would say. I think that policymakers were very
 12 wise when they decided that the hearings for siting
 13 major developments like this should be held in the
 14 communities most affected, not only because it's
 15 the right thing to do for you, we are here for your
 16 convenience, but also because it helps us.

17 While the company has done an incredible
 18 job, and Tony is right to highlight this fact, this
 19 is a very thorough application, I know that this is
 20 important to Xcel Energy, the company buying the
 21 power, it's important certainly to enXco and it's
 22 important to Kadrmas, Lee & Jackson, one of the top
 23 engineering firms not only in our state, but in the
 24 country.

25 I will say this, though, that Tony's four

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1 binders are represented by 300 megabytes on my
 2 little travel drive here. I had a little time a
 3 couple days ago to load it up because my backpack
 4 couldn't carry four binders, either. So that's why
 5 I have -- I'm really not ignoring the witnesses.
 6 I'm trying to follow along here with lots of maps
 7 and documents and pictures, so I appreciate all of
 8 that.

9 I also have to say in addition to the
 10 preparation for this hearing, the hospitality has
 11 been superb. So thank you to the mayor and to
 12 Teddy's and the folks that have been very
 13 accommodating for us today. It makes it all go
 14 much better.

15 I also think just for the purposes of
 16 disclosure, counsel, and some of you might find
 17 this somewhat boring, but in addition to our
 18 environmental oversight of this project, this
 19 project is also part of or subject to another open
 20 docket we have in front of us, and that's an Xcel
 21 Energy rate case, a rate increase, and so I think
 22 just for purposes of disclosure, we want to state
 23 that upfront that we're aware of that. It is
 24 irrelevant to the environmental protections, and
 25 that's important to note, but at a future time we

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1 will be, of course, considering the recovery of the
 2 costs of this facility, which has already been
 3 deemed prudent by the Commission.

4 So with that, Your Honor, thank you. We
 5 look forward to a good and thorough hearing.

6 JUDGE WAHL: Commissioner Brian Kalk.
 7 COMMISSIONER KALK: I would say the same
 8 thing. By the time Tony and Kevin are done talking
 9 all the good stuff is gone, so I always try to keep
 10 it short. But just, I guess, a couple thoughts
 11 that add to what the fellow commissioners said.

12 If you look at the national news today,
 13 you see what's going on in Egypt, all the problems
 14 going on there and all the instability of energy
 15 coming from different parts of the world. Take
 16 that back to what we're doing here in North Dakota,
 17 we need more domestic energy. That, I think, is
 18 the backdrop of why North Dakota is so successful.
 19 We have what this country needs, is energy, but I
 20 think we have also a big responsibility of making
 21 sure we develop our state the right way, making
 22 sure we take into account the air, the water, the
 23 wildlife, all those things, while we deliver the
 24 energy. So that's the purpose of this hearing
 25 today, is to go through the record that they've put

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1 together, it's very thorough, and really let all of
 2 you tell us what your thoughts are, because we've
 3 read the paperwork, we've seen what it looks like
 4 on paper, but you folks are the ones that's going
 5 to be living with this project for decades to come.
 6 So that's why we're here today, is to get
 7 your thoughts and let the company answer any
 8 questions you might have, or others, but we want to
 9 thank you for coming out today and, as my fellow
 10 commissioner said, this is your chance to tell us
 11 about the project. That's why we're here, is to
 12 listen to what you have to say.
 13 And I would encourage you that when you're
 14 done, Teddy's lunch special today, he's told me, is
 15 hamburger steak and fries, so make sure you stop
 16 by. Thank you very much.
 17 JUDGE WAHL: Thank you, Commissioners.
 18 The record will show that it is about 10 minutes
 19 after 10 o'clock a.m., February 10, 2011, the time
 20 and date noticed pursuant to a notice of
 21 rescheduled hearing of the application of enXco
 22 Development Corporation for a certificate of site
 23 compatibility to authorize construction of a wind
 24 power project located in Dickey and McIntosh
 25 Counties, North Dakota, which will be identified as

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1 the Merricourt Wind Power Project, all as I have
 2 previously recited and as is set forth in each of
 3 the notices of filing and hearing and rescheduled
 4 hearing and as shown by the map which is part of
 5 each notice and is duly published in accordance
 6 with the requirements of statute and rule.
 7 The Commission's notice of filing and
 8 notice of hearing, as well as the notice of
 9 rescheduled hearing for this hearing, specified the
 10 following issues to be considered and determined
 11 upon this hearing:
 12 First, will the location, construction,
 13 and operation of the proposed facilities produce
 14 minimal adverse effects on the environment and upon
 15 the welfare of the citizens of North Dakota?
 16 Second, are the proposed facilities
 17 compatible with the environmental preservation and
 18 the efficient use of resources?
 19 And, third, will the proposed facility
 20 locations minimize adverse human and environmental
 21 impact while ensuring continuing system reliability
 22 and integrity and ensuring that energy needs are
 23 met and fulfilled in an orderly and timely fashion?
 24 Mr. Swanson, please state your and Mr.
 25 Leclerc's appearance for the record.

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1 MR. SWANSON: Thank you, Judge. And good
 2 morning, Judge, Commissioners, counsel, and most of
 3 all good morning to all of you who are here. Thank
 4 you for being here. Eric Swanson from the law firm
 5 of Winthrop & Weinstine here on behalf of the
 6 applicant, EnXco Development Corporation, and with
 7 me is Jeff Leclerc also of our office.
 8 JUDGE WAHL: Mr. Armstrong, please state
 9 for the record your appearance and the appearance
 10 of Commission staff who will participate in the
 11 hearing.
 12 MR. ARMSTRONG: Mitch Armstrong on behalf
 13 of the Public Service Commission. Along with me is
 14 Jerry Lein, a public utility analyst at the
 15 Commission, and I request that Mr. Lein be allowed
 16 to ask questions of the witnesses.
 17 JUDGE WAHL: Motion granted. May I have
 18 just a show of hands, please, of anyone other than
 19 witnesses for EnXco who plan to make a presentation
 20 or who have comments or information which they wish
 21 to present to the Commission? Is there anyone
 22 here? Good.
 23 Well, if you have previously made a
 24 presentation to the Public Service Commission and
 25 are familiar with the procedure, that's fine,

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1 you're set to go. I will at the close of EnXco's
 2 presentation probably -- we'll see how things go,
 3 how the time passes here, but I will take a recess
 4 at that time. If you're familiar with the
 5 procedure, if you don't have any questions, if
 6 there isn't any way that I can help you, then no
 7 problem, you need do nothing further except be
 8 ready when I call for additional persons who wish
 9 to make a presentation to the Commission.
 10 However, during that recess I will be
 11 happy to talk to anyone who has any questions about
 12 how they may make their presentation to the
 13 Commission. If you have photographs or maps or
 14 other documents that you would like the Commission
 15 to have, which you would like to be part of the
 16 record, I will help you with those, we'll get them
 17 marked as exhibits, I'll tell you how you can
 18 handle those and I'll be prepared to help you get
 19 that information to the Commission.
 20 Of course, I really can't help you with
 21 your testimony, with what you may have to say, but
 22 I can certainly help you with any questions you
 23 have about how you can present it. So at that
 24 point during that recess I'll stay right here, be
 25 sure to come up, introduce yourself and I'll do

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1 what I can to facilitate your presentation.
 2 It's important for me to emphasize to the
 3 Commission and to you that your testimony, your
 4 information is very, very important, but it has to
 5 be part of the record, it has to be part of the
 6 formal process that you will see here with EnXco's
 7 presentation. That's the only way that the
 8 Commission can hear that -- whatever information
 9 you have that you want them to know. So at that
 10 time please don't hesitate to come forward.
 11 Now, having said that, if you're not sure
 12 whether or not you want to make a presentation to
 13 the Commission, you don't come up and talk to me,
 14 but you're listening to someone else talk to the
 15 Commission, make their presentation and you're
 16 sitting there and you're saying, boy, you know, I
 17 want to add to that, I really should -- I really
 18 should let the Commission know about this or that.
 19 Just because you haven't come up and talked to me,
 20 that doesn't mean you can't testify, that you can't
 21 make your presentation. So if you're sitting there
 22 and you say, Look, I'm going to do this, I'll
 23 make -- I will not close this hearing until I have
 24 asked whether there's anyone else who wishes to
 25 address the Commission. You just come forward,

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1 have a seat and you'll do just fine.
 2 All right. Mr. Swanson, you may proceed.
 3 MR. SWANSON: Thank you, Judge. And,
 4 again, good morning, Judge, Commissioners, members
 5 of the public, I do want to particularly thank you
 6 for being here. I know many of you are landowners
 7 on the project. I should also probably say a
 8 double thank you for those of you who also showed
 9 up in December only to find out that weather had
 10 prevented a number of us from getting here. We
 11 apologize obviously for the weather and the
 12 inconvenience, but we're very happy to be here
 13 today with what we think is a great project.
 14 Just a very brief overview of what you'll
 15 be hearing from us today, we will be entering a
 16 variety of exhibits to the record. These are, I
 17 think with one exception, documents that have
 18 already been filed with the Commission, but for
 19 ease of our discussion today we're going to be
 20 entering a few exhibits to the record, as well, and
 21 then we'll be presenting three witnesses to give an
 22 overview really of what's already there in the
 23 written record: Chris Sternhagen from enXco, the
 24 project development manager; Jennifer Turnbow from
 25 KLJ, who is the project manager for the application

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1 and a lot of the studies that went along with the
 2 application; and then Jay Haley, our noise and
 3 shadow flicker expert.
 4 But we also would like to echo the
 5 encouragement from both Chair Clark and the judge,
 6 the purpose of these hearings is as much to hear
 7 from the public as it is from the applicant, and we
 8 would very much encourage you to fully engage in
 9 the process.
 10 With that, Judge, I can walk through the
 11 exhibits and offer those now if that would be most
 12 convenient and then I'd be ready to call our first
 13 witness.
 14 JUDGE WAHL: However you wish, Mr.
 15 Swanson.
 16 MR. SWANSON: Thank you, Judge. We're
 17 offering eight exhibits today from the record
 18 that's already been submitted. Exhibit No. 1 is
 19 the Application For a Certificate of Site
 20 Compatibility, which was filed by enXco Development
 21 Corporation back in September of 2010.
 22 JUDGE WAHL: Mr. Armstrong?
 23 MR. ARMSTRONG: No objection.
 24 JUDGE WAHL: Exhibit 1 is received.
 25 MR. SWANSON: Exhibits 2a and 2b are the

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1 Cultural Resource Report for the project -- the
 2 Class III Cultural Resource Report. Volume a is
 3 the guts of the report, if you will, and volume
 4 b -- 2b is the maps that accompanied the report.
 5 JUDGE WAHL: Mr. Armstrong?
 6 MR. ARMSTRONG: No objection.
 7 JUDGE WAHL: Exhibit 2, consisting in two
 8 parts of 2a and 2b are each received.
 9 MR. SWANSON: Thank you, Judge. Exhibit 3
 10 also has two parts. 3a is the Merricourt Wetland
 11 Delineation Report of September 2010 and then
 12 Exhibit 3b is the December 2010 Revised Wetland
 13 Delineation Report.
 14 JUDGE WAHL: Mr. Armstrong?
 15 MR. ARMSTRONG: No objection.
 16 JUDGE WAHL: Exhibit 3, consisting of two
 17 parts, 3a and 3b, are each received.
 18 MR. SWANSON: Thank you, Judge. Exhibit 4
 19 is the Biological Conditions and Effects Summary.
 20 JUDGE WAHL: Mr. Armstrong?
 21 MR. ARMSTRONG: No objection.
 22 JUDGE WAHL: Exhibit 4 is received.
 23 MR. SWANSON: Exhibit 5 is responses to
 24 supplemental staff requests that were submitted
 25 together with accompanying maps submitted in

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1 December of 2010.
 2 JUDGE WAHL: Mr. Armstrong?
 3 MR. ARMSTRONG: No objection.
 4 JUDGE WAHL: Exhibit 5 is received.
 5 MR. SWANSON: Thank you. Exhibit 6 is the
 6 Merricourt Preliminary Shadow Flicker Analysis,
 7 revised in February of 2011.
 8 JUDGE WAHL: Mr. Armstrong?
 9 MR. ARMSTRONG: No objection.
 10 JUDGE WAHL: Exhibit 6 is received.
 11 MR. SWANSON: Exhibit 7 is a letter from
 12 the U.S. Army Corps of Engineers that has not been
 13 previously submitted to the record. It's the
 14 Corps' letter on jurisdictional determination.
 15 JUDGE WAHL: Mr. Armstrong?
 16 MR. ARMSTRONG: No objection.
 17 JUDGE WAHL: Exhibit 7 is received.
 18 MR. SWANSON: And then finally, Judge,
 19 Exhibit 8 is a December 20, 2010, letter from the
 20 U.S. Fish and Wildlife Service.
 21 JUDGE WAHL: Mr. Armstrong?
 22 MR. ARMSTRONG: No objection.
 23 JUDGE WAHL: Exhibit 8 is received.
 24 MR. SWANSON: Those are all the exhibits
 25 that I wanted to have marked for ease of discussion

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1 later and then we would be ready to call our first
 2 witness, Chris Sternhagen.
 3 JUDGE WAHL: Mr. Sternhagen, as you are
 4 probably aware, your testimony is required to be
 5 under oath and I'm required by law to advise you
 6 regarding perjury before administering the oath.
 7 Perjury is a false statement of material fact which
 8 you do not believe to be true. In North Dakota
 9 perjury is a Class C felony, punishable by a fine
 10 up to \$5,000, imprisonment for a period of up to
 11 five years, or both. Will you raise your right
 12 hand, please?
 13 **CHRIS STERNHAGEN,**
 14 being first duly sworn, was examined and testified
 15 as follows:
 16 JUDGE WAHL: Mr. Swanson.
 17 MR. SWANSON: Thank you, Judge.
 18 **EXAMINATION**
 19 **BY MR. SWANSON:**
 20 Q. Good morning, Mr. Sternhagen. First, can
 21 you just give a quick personal background and your
 22 experience relevant to this project?
 23 A. Absolutely. Commissioners and general
 24 public, my name is Chris Sternhagen. I am a
 25 regional development manager for enXco Development

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1 Corporation. I work out of a regional office for
 2 enXco in Minneapolis, Minnesota.
 3 My primary job responsibilities entail
 4 oversight of the development portions of the
 5 transactional phases of a particular project. That
 6 more specifically includes refinement of project
 7 area, assessment and evaluation of project sites,
 8 siting of the wind turbines, access roads and other
 9 ancillary facilities. I also assist in finance,
 10 client relations and permitting, as you can see
 11 here today.
 12 I've been with enXco for -- going on six
 13 years this year and I've worked on probably 15 or
 14 16 different wind projects in about six or seven
 15 different states, pretty much all in the Upper
 16 Midwest: Iowa, Indiana, Minnesota, Kansas, to name
 17 a few. This is not only mine, but EnXco's first
 18 proposed project in the State of North Dakota, and
 19 we're looking very much forward to seeing this
 20 through to operation essentially.
 21 Personal background for myself, I do come
 22 from an agricultural background. I have an
 23 electrical engineering degree from South Dakota
 24 State University. Both of my core disciplines and
 25 background fit well with the industry that I am

25

1 working in and some of the responsibilities that I
 2 have with enXco, and it's been very, very useful
 3 for me to develop particularly projects such as the
 4 Merricourt one where it's a traditional
 5 agricultural community that we can, I think,
 6 appropriately address the particular concerns of
 7 the citizens and the local economies, you know, as
 8 best as possible essentially.
 9 For the benefit of the Commissioners and
 10 the public and this being EnXco's first project in
 11 the State of North Dakota as well as essentially a
 12 case of first impression for the Commission, I
 13 would like to spend a little bit of time to also
 14 familiarize yourself with the company enXco, who we
 15 are and kind of what we do before I talk a little
 16 bit more specifically about the Merricourt project,
 17 itself.
 18 So a little bit of background. EnXco is
 19 what we would consider a full-service renewable
 20 energy firm that provides extensive services
 21 throughout the entire value chain of a renewable
 22 generational project. We handle site development
 23 as early as greenfield site origination, we handle
 24 transactions, construction management, operations
 25 and maintenance all the way through to

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1 decommissioning of the project. It's somewhat of a
 2 unique component in that we do have -- we do offer
 3 services in each of those components of the entire
 4 life cycle of a generator essentially. We're
 5 organized essentially into three components: Our
 6 development corporation, which I am an employee of;
 7 our operations and maintenance corporation, or
 8 service corporation, if you will; and then our
 9 asset management group, as well, each providing
 10 various disciplines to our overall mission
 11 statement.

12 For enXco wind is currently the key
 13 competency for the company, but we're also engaged
 14 in solar and other biomass opportunities as they're
 15 presented both on a commercial and the retail side
 16 of those particular generations.

17 EnXco has developed and constructed wind
 18 projects in over 15 states, Mexico and Canada. We
 19 have an extensive history that dates back 23 years,
 20 making enXco one of the oldest renewable energy
 21 firms in a fairly young industry.

22 We currently in our portfolio own 74 wind
 23 projects across North America. We provide
 24 operations and maintenance services for over 5,200
 25 wind turbines across North America. That totals

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1 about 4,600 megawatts of wind power. EnXco is
 2 actually the largest provider of third-party
 3 operations and maintenance services in North
 4 America. That serves us very, very well on the
 5 development side because we have very key
 6 intelligence and understanding of the turbine
 7 models and various technical aspects of the
 8 machines that are available and out there, as well
 9 as longstanding relationships with the various
 10 turbine manufacturers, whether domestic or foreign.

11 EnXco has successfully developed over 35
 12 additional wind projects for third-party entities
 13 such as the Merricourt Wind Power Project that's
 14 being proposed to the Commission today. That
 15 equates to about 3,430 megawatts of electricity.

16 EnXco also provides remote monitoring 24
 17 hours a day, seven days a week for third-party
 18 generational projects, over 2,700 wind turbines.
 19 That remote monitoring is out of an operations
 20 control center in Pipestone, Minnesota, and from
 21 there they operate and troubleshoot wind projects
 22 all over the country.

23 EnXco prides itself in optimizing
 24 profitability for every part of a development
 25 project such as this, not only for ourselves, but

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1 for our customers and our clients, such as Xcel
 2 Energy is today.

3 Like I mentioned, enXco has over 20 years
 4 of experience in the renewable energy industry. We
 5 are one of the oldest firms in the U.S. and we're
 6 able to make use of that institutional knowledge of
 7 the industry, the various components and
 8 disciplines that go into it.

9 EnXco is a North American arm of the
 10 publicly traded company called EDF EN. We're
 11 headquartered in San Diego, California, with seven
 12 regional offices across North America: San Diego,
 13 California; Denver, Colorado; Philadelphia,
 14 Pennsylvania; Minneapolis, Minnesota; an office in
 15 Mexico; and an office in Canada, and then countless
 16 operations and maintenance facilities at each of
 17 our operating projects that we either own and
 18 operate or operate for a third party.

19 EnXco employs over 400 U.S. employees
 20 nationwide, and we are very much looking forward to
 21 adding 10 to 12 additional full-time employees with
 22 the successful implementation of the Merricourt
 23 project here in North Dakota.

24 Q. Could you, Mr. Sternhagen, now maybe turn
 25 to just a broad overview of the Merricourt project,

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1 as well?

2 A. Absolutely. So the Merricourt project, as
 3 you guys can see in the application submitted,
 4 consists of 100 1.5-megawatt wind turbines. The
 5 model that will be used for this particular project
 6 is a General Electric sle wind turbine that's
 7 situated on an 80-meter monopole tower and will
 8 consist of a 77-meter rotor diameter hub and blade
 9 setup. The total nameplate capacity for the
 10 project is 150 megawatts, and it is expected to
 11 produce between 576,000 and 596,000 megawatts hours
 12 of power annually, enough annually to probably
 13 generate -- or power maybe 50 to 70 thousand homes
 14 at any given time.

15 The power will be generated on a three-
 16 phase DC power up to 650 and 800 volts and stepped
 17 up to 34.5 kilovolts at the base of each tower.
 18 The power will then be transmitted via underground
 19 cable to a collector substation that will be
 20 located -- it is proposed to be located in about
 21 the center of the proposed project site as depicted
 22 in the application, itself. The power will then be
 23 conditioned and stepped up to 230 kilovolts at a
 24 collector substation and transferred to a new
 25 interconnect substation to be permitted and built

30

1 by Montana-Dakota Utilities. That will be
 2 transmitted via a short, less than a hundred-foot,
 3 overhead line. Both of the interconnect substation
 4 facilities are being sited directly adjacent to
 5 each other to minimize the need for any additional
 6 overhead line between those facilities.
 7 EnXco -- excuse me. The power is then
 8 supplied to the regional transmission grid via
 9 Montana-Dakota Utilities' existing 230-kV
 10 Wishek-to-Ellendale transmission line. EnXco has
 11 entered into a generational interconnect agreement
 12 with Montana-Dakota Utilities and the Midwest
 13 Independent System Operator. This will allow the
 14 power to interconnect to MDU's existing
 15 transmission system.
 16 The necessary transmission upgrades to
 17 allow for the project's interconnection will be the
 18 responsibility of Montana-Dakota Utilities. These
 19 facilities are being permitted and constructed
 20 separately from the Merricourt project.
 21 The project in itself will consist of 100
 22 wind turbine generators, underground collector
 23 cables and access roads installed to each of the
 24 wind turbine generators. There will be an
 25 operations and maintenance facility that will

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1 consist of a shop and essential office that will
 2 employ about 10 to 12 full-time employees. There
 3 will also be a project collector substation, like I
 4 mentioned, will condition the power and step it up
 5 to the interconnection voltage. All of these
 6 facilities are being sited on land under wind
 7 easement with EnXco Development Corporation.
 8 Overall enXco has wind easement agreements
 9 on over 22,000 acres of land in McIntosh and Dickey
 10 County. As indicated in the project application,
 11 though, the Merricourt project will consist of
 12 approximately 12,000 acres of land currently under
 13 easement. The remaining land will be considered
 14 for future development opportunities.
 15 The wind turbines have been sited using a
 16 deductive approach as you can see in the project
 17 application. In practical terms what I mean is
 18 we've evaluated essentially a significantly larger
 19 area than we ever anticipated the project to
 20 actually encompass, and we do that to get a great
 21 idea of what type of stakeholders are in the area,
 22 what type of constraints and what type of impacts
 23 the project may present, and we look through that
 24 entire area and deductively narrow down the area
 25 that would be the best fit for the project, itself,

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1 taking into account all the various stakeholders,
 2 efficient use of the wind resource, impact on the
 3 environment and the local economy and the citizens
 4 that live in the area, just to name a few. The
 5 permit application, itself, I think steps through
 6 those considerations very, very well and very, very
 7 detailed.
 8 The final project site as presented on the
 9 maps that you see in the room here as well as in
 10 the late-filed exhibits that were submitted today
 11 encompass an area about 18 square miles, which is
 12 about 12,000 acres of land. There is 103 wind
 13 turbines proposed in the current project designs.
 14 Three of those turbines are alternates and they
 15 will be dropped prior to mobilization for
 16 construction.
 17 The designs also include 60 percent civil
 18 designs or access roads and 60 percent underground
 19 collector designs, as well. As we approach
 20 construction mobilization, those designs will be
 21 modified as necessary before the construction. We
 22 do not anticipate any significant changes to the
 23 project designs as demonstrated to the Commission
 24 today with the exception of the dropping of the
 25 three alternate turbines and, if anything, there

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1 may be some minor adjustments to civil -- to access
 2 roads, if necessary, as we complete the development
 3 and evaluation of the site, itself.
 4 The evaluation and siting process that
 5 we've utilized, we've done so to try to balance the
 6 best possible use of the wind resource. Like I
 7 mentioned, we're also addressing impacts the
 8 project may have on the environment and local
 9 communities.
 10 The evaluation criteria that we use as
 11 indicated in the application is set forth in the
 12 North Dakota Century Code, as well as past
 13 experiences of both enXco and Kadrmas, Lee &
 14 Jackson. We've implemented practical
 15 recommendations of various tribal authorities
 16 through coordination with them, local community
 17 members, landowners and their agricultural tenants,
 18 as well as consultations with local government
 19 officials.
 20 Q. Could you also give just a quick
 21 discussion of the expected project timeline?
 22 A. The project timelines that we're looking
 23 at right now, the schedule that we're calling for
 24 is a construction mobilization of mid-May, May 15th
 25 to be exact. Back feed power will be available

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1 right around September 1st, which will allow us to
 2 start commissioning of the project facilities, and
 3 we expect the commercial operations date to be
 4 December 31st, 2011. So all in all, the
 5 construction portion of the proposed Merricourt
 6 project will actually be the shortest, and that
 7 will span the summer, fall and then maybe into
 8 early next winter. But as contemplated in the
 9 proposed application in our current project
 10 schedules, we expect that the project will be
 11 commercially operable by the end of 2011.

12 If I may just back up a second to discuss
 13 a little bit more about the project siting
 14 opportunities, I want to just convey to the
 15 Commission and the public in attendance today some
 16 of the -- some of the things we found when we did
 17 the evaluation of the area and some of the things
 18 that we've adjusted on account of what some of
 19 those things have done.

20 Jen with KLJ will give you guys a much
 21 more detailed summary of all the project studies
 22 and evaluations and things that we did, but as a
 23 result of the result -- as a result of the results
 24 of those studies, some of the setbacks that we have
 25 incorporated into the project, which I think a lot

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1 of people are probably very interested in, are as
 2 follows: To minimize impacts to residences in the
 3 area both from noise, shadow flicker, we have
 4 incorporated a minimum setback of 1,500 feet from
 5 all residences to the center pin of each wind
 6 turbine generator.

7 To minimize any impacts to local use of
 8 county and township roads, we've incorporated a
 9 setback of 1.1 times the tip tower height from the
 10 edge of the right-of-way for those roads, which
 11 puts us at a little bit over 400 feet total.

12 Additionally, we've incorporated setbacks
 13 from cultural and archeological sites that were
 14 identified. As proposed in the application, no
 15 identified archeological and cultural resources
 16 will be impacted by the construction or operation
 17 of the project.

18 We've also included setbacks from the
 19 existing transmission lines in the area of 500
 20 feet. Unoccupied home and building sites we've
 21 incorporated setbacks in, as well.

22 And we've also included a number of
 23 environmental setbacks from identified raptor,
 24 grouse lek nests that were found in the area and
 25 wetlands, as well, and this is done to minimize the

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1 effect of the construction and operation of the
 2 project on those particular nesting species and the
 3 wetland habitat species that use those. And like I
 4 said, Jen can get probably a little bit more into
 5 detail to the results of those studies and more
 6 detail into that.

7 The siting and evaluation of the project,
 8 like I mentioned earlier, consisted of a lot of
 9 discussions with various governmental agencies,
 10 including the United States Fish and Wildlife
 11 Service. Some of those discussions are ongoing and
 12 we expect that there may be additional measures
 13 that we will agree to to minimize and avoid any
 14 impacts to the environment and avian species in the
 15 area.

16 We expect ultimately that the development
 17 work of the project will conclude right around the
 18 end of March.

19 The Merricourt Wind Power Project is being
 20 financed through a develop, build, sell model with
 21 Xcel Energy, as the Commission noted earlier. The
 22 parameters of that deal are such that enXco will
 23 develop the project site under a purchase and sale
 24 agreement, and once we meet the obligations of said
 25 purchase and sale agreement, that the sale

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1 transactions close, the project ownership will be
 2 transferred to Xcel Energy, and at that point enXco
 3 assumes a contractor role responsible for the
 4 construction and commissioning of the wind power
 5 project, itself.

6 For the proposed Merricourt Wind Power
 7 Project enXco has also secured the initial
 8 operations and maintenance contract for the
 9 project, so enXco will essentially develop, build
 10 and operate this particular wind farm on behalf of
 11 Xcel Energy.

12 Q. Thank you. Could you also, Mr.
 13 Sternhagen, just give a brief discussion of the
 14 various community interactions and involvement of
 15 members of the community?

16 A. Sure. EnXco has actually had the proposed
 17 Merricourt project in our development pipeline for
 18 a number of years, and over those years we tend to
 19 host -- we generally host landowner meetings or
 20 community meetings in the area at least every six
 21 months. For this particular project we generally
 22 host meetings at the cafe there in Ashley, invite
 23 local participating landowners and landowners that
 24 are interested in the project. Additionally, we
 25 correspond with landowners in the area via mail

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1 quite often and we have land agents that are
 2 available to speak in person or to meet in person
 3 with members of the community as necessary.
 4 As I mentioned earlier, part of the site
 5 evaluation and siting process did include
 6 coordination with the participating landowners. We
 7 have received input on turbines locations, access
 8 roads, collector lines from all the participating
 9 landowners in the project as well as their
 10 agricultural tenants, and those comments and
 11 considerations have been incorporated into the
 12 project design as proposed here today.
 13 Q. Before we have you available for
 14 questioning from staff or commissioners, are there
 15 any other key points that you wanted to bring up
 16 and put on the record?
 17 A. I would just kind of wrap up my comments
 18 with, you know, we're very excited about this
 19 particular project, this being our first in North
 20 Dakota, and we're looking very much forward to the
 21 successful implementation and operation of this
 22 project and that we feel very strongly that the
 23 application and the information submitted to you
 24 meets the North Dakota Century Code guidelines that
 25 you've referenced here for a site certificate of

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1 compatibility. Thank you.
 2 MR. SWANSON: I don't have any further
 3 questions, Judge.
 4 JUDGE WAHL: Mr. Armstrong.
 5 MR. ARMSTRONG: Thank you.
 6 **EXAMINATION**
 7 **BY MR. ARMSTRONG:**
 8 Q. Mr. Sternhagen, I do have a few questions
 9 for you, and I understand that there will be other
 10 witnesses testifying today so I may ask you
 11 questions that are more appropriate for them, and
 12 if there are, I'd appreciate you just telling me
 13 and maybe identify which one it's more appropriate
 14 for. So if you don't know something that I ask
 15 you, just let me know and I'll follow up with one
 16 of the additional witnesses.
 17 A. Okay.
 18 Q. I'd like to first talk to you about the
 19 ongoing discussions you're having with like the
 20 U.S. Fish and Wildlife Service, such as that.
 21 What's the status of that discussion?
 22 A. We recently had a very successful meeting
 23 with members of the U.S. Fish and Wildlife on
 24 January 25th, 2011, in Bismarck. The results of
 25 that discussion essentially centered around

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1 measures -- additional measures than what are maybe
 2 contemplated in the application you guys see today
 3 that we can implement to minimize as best as
 4 possible impacts to avian species and in particular
 5 the endangered whooping crane and threatened piping
 6 plover. We expect that by the time that
 7 consultation is done with the U.S. Fish and
 8 Wildlife that we will have agreed to additional
 9 measures that will minimize the impacts to those
 10 species.
 11 Q. The last communication that we have on
 12 file is what's been marked as Exhibit 8, I believe,
 13 and it's the December 2010 letter from the U.S.
 14 Fish and Wildlife Service. Are you familiar with
 15 that letter?
 16 A. Yes.
 17 Q. In that letter it asks or recommends that
 18 a habitat conservation plan and an application for
 19 an incidental take permit. What's EnXco's position
 20 on, I guess, implementing those measures?
 21 A. EnXco's position based on literature and
 22 study work conducted for this project primarily by
 23 members of the Kadrmas, Lee & Jackson, as well as
 24 other environmental firms that we've employed, do
 25 not believe that there's a likely adverse effect on

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1 either species. However, we cannot deny that there
 2 is zero effect, and as a result we're trying to
 3 work with U.S. Fish and Wildlife to identify those
 4 measures by which we can minimize the potential
 5 impacts on those particular species, and that's
 6 kind of the process that we're going through. So
 7 at this point enXco has no intention to pursue an
 8 HCP and incidental take permit.
 9 I will add, I guess, to the record that we
 10 are participating as recommended by the U.S. Fish
 11 and Wildlife with a regional HCP process that is
 12 affectionately called the rewag effort that's put
 13 on by various industry, developers, utilities, and
 14 it's an approach -- it's a new approach to
 15 conservation and minimization measures for wind
 16 projects on a regional level. That was a
 17 recommendation made by U.S. Fish and Wildlife that
 18 we did pursue and continue to be part of that.
 19 Q. Is that the bi-regional whooping crane and
 20 lesser prairie chicken HCP effort that's discussed
 21 in their letter?
 22 A. Yes.
 23 Q. In your discussions with the U.S. Fish and
 24 Wildlife, you know, you mentioned that you're not
 25 intending to do an HCP or an ITP. Are they, I

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1 guess where it stands now, willing to consider
 2 alternatives to that? You know, their
 3 recommendation was to conduct these or get an HCP
 4 and to apply for the permit at least in our last
 5 correspondence.
 6 **A.** Yes. We -- our understanding is that they
 7 have informed us that there are alternative methods
 8 by which we can pursue minimization efforts.
 9 **Q.** And is that what's still being negotiated
 10 with the U.S. Fish and Wildlife Service?
 11 **A.** Yes.
 12 **Q.** And as I understand your testimony, that
 13 process is intended to take probably until sometime
 14 in March?
 15 **A.** Correct.
 16 **Q.** Are there any other agencies that you're
 17 currently negotiating with or discussing other
 18 measures with other than the U.S. Fish and Wildlife
 19 Service?
 20 **A.** With regards to avian?
 21 **Q.** With regard -- more generally. Just with
 22 the whole project. Still ongoing negotiations or
 23 discussions.
 24 **A.** Yeah, I wouldn't consider it negotiations,
 25 but we are working very closely with members of the

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1 Sisseton-Wahpeton Oyate Tribe to minimize and avoid
 2 any impacts to cultural resources in the area.
 3 Those discussions are going very well, but they
 4 have not concluded yet.
 5 **Q.** In Exhibit 8 the U.S. Fish and Wildlife
 6 Service mentions that they believe that the take of
 7 piping plovers due to turbines strikes is likely at
 8 some point in the life of the project, and that
 9 enXco should prepare a project specific HCP or get
 10 ESA coverage under the bi-regional HCP to cover
 11 them for any take. What's the process of that?
 12 **A.** We are considering pursuing coverage under
 13 the regional process.
 14 **JUDGE WAHL:** Counsel, let me interrupt and
 15 remind both counsel that we have a court reporter,
 16 so when you read, please read slowly.
 17 **MR. ARMSTRONG:** Usually Ms. Andahl is the
 18 one to remind me of that.
 19 **JUDGE WAHL:** Well, but I can see her
 20 wrinkling up her brow and I thought maybe I would.
 21 **MR. ARMSTRONG:** Thank you, Your Honor.
 22 **Q.** (MR. ARMSTRONG CONTINUING) You mentioned
 23 that you're considering that. What's the status of
 24 the piping plover portion of the discussions with
 25 U.S. Fish and Wildlife Service?

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1 **A.** Well, the next step that we've discussed
 2 with Fish and Wildlife is enXco, together with KLJ,
 3 will be submitting -- proposing some additional
 4 minimization measures to be reviewed and discussed
 5 with Fish and Wildlife.
 6 **Q.** And correct me where I'm wrong, but as I
 7 understand it from the application, the
 8 correspondence, the western edge of this project is
 9 in the eastern edge of the whooping crane corridor
 10 that U.S. Fish and Wildlife Service is concerned
 11 about and there appears to be some differences
 12 between enXco and U.S. Fish and Wildlife Service as
 13 to whether there's really any potential impact on
 14 whooping cranes. Is that accurate?
 15 **A.** I would say for the record that enXco does
 16 not believe that take will be likely of either
 17 species, but we cannot -- we cannot say for certain
 18 that there will be no impact. For that reason
 19 we're working very closely with Fish and Wildlife
 20 to identify certain things that we can do to
 21 minimize the potential for those impacts.
 22 **Q.** What sort of minimization are you working
 23 towards -- enXco?
 24 **A.** Nothing has been finalized yet, but like I
 25 mentioned, we expect that to happen here over the

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1 course of the next 30 to 45 days or so, but some of
 2 the things that we're discussing are some habitat
 3 preservation efforts, as well as some research
 4 components to identify maybe some additional
 5 information and understanding of particular risks
 6 that may be present from wind turbines on those
 7 species, as well, and a number of other measures,
 8 and I will probably defer to Jen Turnbow with
 9 Kadrmas, Lee & Jackson to get into more of the
 10 details there. My background isn't in biology so I
 11 don't want to misrepresent anything.
 12 **Q.** Did the avian studies result in any
 13 sightings of whooping cranes during the analysis?
 14 **A.** No.
 15 **Q.** And as far as piping plovers, it looks to
 16 me like there's some piping plover habitat to the
 17 southwest of the project. Are you familiar with
 18 that?
 19 **A.** Yes.
 20 **Q.** And what were the results of, I guess, the
 21 aviation surveys in that area? Was it just habitat
 22 or were there sightings of piping plovers?
 23 **A.** I'll defer to Kadrmas, Lee & Jackson to
 24 answer specific questions with regard to studies in
 25 the reports.

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1 Q. I noticed in the application -- well, I
 2 want to get something clear for the record, and
 3 this would be Exhibit 5, which is the December 2010
 4 submission and response to the Commission staff.
 5 I'll get you a copy of that.
 6 MR. ARMSTRONG: Counsel, do you have the
 7 original?
 8 MR. SWANSON: Yes.
 9 MR. ARMSTRONG: Your Honor, is it all
 10 right if we approach?
 11 JUDGE WAHL: You may.
 12 Q. (MR. ARMSTRONG CONTINUING) I guess on my
 13 submission I've got a -- do you have this map? I'm
 14 looking for the most updated micro siting of the
 15 location of the proposed turbines. I understood --
 16 is it this one you have in front of you here?
 17 A. Are you looking for the photographs?
 18 MR. ARMSTRONG: No. I'm making sure it's
 19 the same one that I have, I guess.
 20 MR. SWANSON: I apologize, counsel. The
 21 format is a little different than what was
 22 submitted today on Exhibit 5 than you have in your
 23 hand.
 24 Q. (MR. ARMSTRONG CONTINUING) Have there
 25 been some changes to the location of the turbines

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1 since the December 2010 submission? Are you
 2 familiar with that, or would that be better for
 3 another witness?
 4 A. Since KLJ made those submissions, I'll
 5 defer the answer to them. I can state for the
 6 record that there has been no turbine moves in the
 7 layout at all. The only changes would be the
 8 dropping of alternate turbines, so essentially it's
 9 just less turbines, but nothing has changed
 10 locations.
 11 Q. And it's still the three alternate
 12 turbines?
 13 A. Correct.
 14 Q. And I noticed, I guess, the project area
 15 is quite a bit bigger than the actual, I guess,
 16 turbine location. Are you looking for siting that
 17 entire project area, or is it smaller, so to speak,
 18 to just cover where the turbines are located?
 19 A. The design and layout that was submitted
 20 today includes essentially what we believe to be
 21 the smallest project area that we can reasonably
 22 site the facilities in, so everything that's
 23 represented on this exhibit would essentially -- is
 24 essentially part of the project.
 25 Q. And I guess I noted from earlier

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1 submissions, I guess, the turbines from Spring
 2 Creek Township have been removed; is that correct?
 3 A. I believe you mean Spring Valley Township.
 4 Q. Spring Valley Township.
 5 A. That is correct, yes.
 6 Q. And in the submissions there's some
 7 proposed zoning ordinances for McIntosh County.
 8 Are you familiar with those in the application?
 9 A. Yes.
 10 Q. Is it your understanding that those have
 11 been enacted by McIntosh County?
 12 A. It is not my understanding.
 13 Q. Do you know if they have not been or have
 14 been, or are you unfamiliar?
 15 A. As I understand it, those regulations have
 16 not been put into place.
 17 Q. Do you know if they were, so to speak,
 18 defeated, or are they still in the process of
 19 putting them in place; do you know?
 20 A. My understanding is they were voted down.
 21 Q. Was there any consideration in putting
 22 together the sites of, I guess -- I apologize, but
 23 I'm not familiar exactly where the whooping crane
 24 corridor ends, but was there any consideration of
 25 moving this completely out of the corridor, or is

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1 that just not feasible?
 2 A. To move it completely out of the corridor
 3 was not considered, but we did evaluate a
 4 significantly larger area than is represented by
 5 the proposed project designs in an attempt to
 6 minimize and define the area that would have the
 7 least likely impact to whooping cranes should they
 8 be present.
 9 Q. And I guess the reason I was using this
 10 map that was submitted in December 2010, and I
 11 believe it's reflected on yours, it's outlined in
 12 white and red, shows kind of the areas within the
 13 project that you don't have easements for, and
 14 there's, I guess, three areas in there that are
 15 kind of right in the middle without easements.
 16 Have you had interactions with those landowners?
 17 A. Yes, we have. All of the property owners
 18 that fall within the project boundary were
 19 approached to participate in the project. Those
 20 parcels that you referenced that are not
 21 participating either did not wish to or were
 22 actually signed in with another developer for an
 23 alternate project.
 24 Q. And you mentioned there were community
 25 meetings and such. I mean, are those -- I don't

1 know, that might be one or two or three or more
2 landowners at issue. Do you know how many are at
3 issue with those? I know there's one residence in
4 that square one right in the middle. Are these
5 owned by the same person, or are they multiple
6 different people; do you know?

7 **A.** They would be different people, as I
8 understand it.

9 **Q.** Have they objected to this project or
10 voiced any concerns over the project to enXco?

11 **A.** We have had concerns expressed from one of
12 the unsigned property owners, yes.

13 **Q.** Could you tell me which one? I can show
14 you on mine. These are kind of the three I'm
15 talking about.

16 **A.** (The witness indicates on the map.)

17 **Q.** It's the square one and I guess it's the
18 furthest east landowner of those ones that are, I
19 guess, surrounded by the project. What type of
20 work have you done with that landowner?

21 **A.** We've consulted with that particular
22 landowner on numerous occasions on which we were
23 presented with various concerns, most of which were
24 centered around the impact to their lifestyle and
25 primarily their agricultural business, and we've

1 been working with those individuals to minimize
2 those impacts as best we can.

3 **Q.** And will the construction of the project
4 have an impact on, I guess, the agricultural
5 business of that landowner?

6 **A.** Not a significant one, we don't believe.

7 **Q.** And what do you do to make sure that there
8 isn't an impact on those -- I guess all the
9 landowners in general and particularly the ones
10 that aren't under easement with enXco?

11 **A.** We try to clearly and as early as possible
12 communicate what can be expected from the
13 construction and operation of the project and then
14 address specific concerns as they're brought to our
15 attention. The primary impacts to agricultural
16 business in the area will be the heavy use of roads
17 during the construction of the project, as well as
18 an understanding of where the facilities will be
19 placed and disturbance to -- potential disturbance
20 to growing crops on those properties. But we
21 believe through coordination with the property
22 owners and their agricultural tenants about where
23 the facilities will be placed, that we can minimize
24 those impacts as best as possible, and we do
25 believe that they're temporary impacts through the

1 construction process.

2 **Q.** And I guess I assume with the ones that
3 are under easement that those are covered in your
4 agreement, that the agricultural issues and such as
5 that are covered in your easement agreements?

6 **A.** To what extent?

7 **Q.** Like if they lose some crop or cropland,
8 are those covered in your easement agreements, or
9 do you take that as a -- you know, as they come
10 throughout the course of the project?

11 **A.** We -- per the terms of our easement
12 agreements, we are responsible for damage to then
13 growing crops to the property owners, and we've
14 also made commitments -- similar commitments to
15 agricultural tenants really on a case-by-case basis
16 depending upon the agricultural use, i.e., is it a
17 cash rent situation, is it a sharecrop? Basically
18 we follow the direction of the property owner to
19 which we have an easement agreement.

20 **Q.** And as far as the landowners and land
21 areas that are not under easement, are there risks
22 of impact to their crop or businesses or things
23 like that, their income, so to speak, as this
24 project is constructed? I guess, from dust or from
25 access even, are you aware of any potential?

1 **A.** The facilities and construction equipment
2 will not occur on properties that we do not have an
3 easement with, so there should be no direct impact
4 to any growing crops on those particular
5 properties. We will implement certain measures
6 with regards to use of the jurisdictional roads.
7 There will be dust control and implementations put
8 in to kind of minimize those. We'll also put into
9 place certain measures to alleviate traffic impacts
10 on the roads between construction equipment and
11 agricultural equipment. Those plans are still kind
12 of being worked out and they're kind of adjusted to
13 the site-specific characteristics, the road
14 conditions, the width of them, where they're at,
15 things like that, but we do incorporate measures
16 through our construction crews to again minimize
17 the impacts to traffic.

18 **Q.** During construction will any access to any
19 of the -- I think there was in the nature of 16
20 residences within the actual turbine layout area,
21 if you will. Will there be any impact to access to
22 those residences, whether under easement or not,
23 during construction?

24 **A.** We don't anticipate there being any, and
25 if there are, you know, we will commit to again

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1 either mitigating or minimizing those impacts, but
 2 we don't anticipate any.
 3 Q. This square that's not under easement that
 4 we were discussing, kind of the easternmost one, I
 5 notice that that is a residence where there were
 6 some, I think, shadow flicker concerns in the
 7 studies, and I think during your testimony you
 8 mentioned something had been filed yesterday, and I
 9 don't have that updated map, and it was moved as a
 10 result of shadow flicker. Could you comment on
 11 that or would that be better for EAPC?
 12 A. I'll defer any technical questions to
 13 those studies to EAPC, but I can tell you that the
 14 initial shadow flicker study that we did indicated
 15 two residences within the project area that may be
 16 subjected to excessive shadow flicker as a result
 17 of the operations of the project. Those impacts
 18 were attributed to two particular offending wind
 19 turbines, and those wind turbines were removed from
 20 the layout, and as such we don't anticipate any
 21 impacts to residences in the area with regard to
 22 shadow flicker.
 23 Q. So those two wind turbines that were
 24 causing the shadow flicker issues have been removed
 25 from the layout?

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1 A. Correct.
 2 Q. And I assume that would have some impact
 3 on the noise study then, too; is that correct?
 4 A. Correct.
 5 MR. ARMSTRONG: Your Honor, this witness,
 6 I think, would be the one to get the, I guess, one
 7 PSC exhibit that I intend to enter today, and it
 8 would be Exhibit 9, which is a true and correct
 9 copy of the certification executed by enXco for the
 10 project. The original is in Mr. Lein's possession
 11 and will be filed with the Commission in the
 12 Commission's docket after the hearing today, but I
 13 would like to offer Exhibit 9, which is the
 14 Certification Relating to Order Provisions - Wind
 15 Energy Conversion Facility Siting and the attached
 16 Tree and Shrub Mitigation.
 17 JUDGE WAHL: Mr. Swanson?
 18 MR. SWANSON: No objection, Judge.
 19 JUDGE WAHL: Exhibit 9 is received.
 20 Q. (MR. ARMSTRONG CONTINUING) Mr.
 21 Sternhagen, just so I can understand then, because
 22 I don't have the newest site plan in front of me, I
 23 did look at the map before today and you mentioned
 24 the two turbines that were removed from the
 25 project. Can you tell me any other changes from

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1 December 2010 to, I guess, today of the location of
 2 the turbines generally in the newer submission?
 3 A. With regard to turbines, you mean?
 4 Q. Yeah, with the location of them.
 5 A. Yeah, essentially, like I mentioned
 6 before, the only adjustments were that turbines
 7 were dropped. The previous submission, the turbine
 8 layout consisted of 122 proposed wind turbine
 9 locations. We've basically just dropped
 10 alternative locations resulting in 103, which is
 11 under the current. There's been no movements to
 12 turbines at all.
 13 Q. And then, I guess, on mine I've got the
 14 three alternates located in the southwest portion.
 15 Are those still the same three alternates?
 16 A. Correct.
 17 Q. And as I understood your testimony, those
 18 alternates were planning to be dropped, also, or
 19 are those still optional depending on what happens
 20 with the construction?
 21 A. Correct. They would be the first three to
 22 be dropped from the layout, but we're leaving them
 23 in there to account for any particularly troubling
 24 issues that may come up between, you know,
 25 essentially now and construction mobilization. But

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1 those three are not intended to be built unless
 2 necessary.
 3 Q. And I guess, as I understand it, the goal
 4 is to have 100 turbines, and it may be that one up
 5 in the northeast corner can't be built and then you
 6 would use one of the alternate sites, it's not
 7 necessarily one right next to it or something like
 8 that; is that correct?
 9 A. Correct. The contract that we have in
 10 place with Xcel Energy calls for 150 megawatts, so
 11 100 wind turbines will be constructed for this
 12 particular project.
 13 MR. ARMSTRONG: I turn it over to
 14 Commission staff at this point in time.
 15 JUDGE WAHL: Mr. Lein.
 16 MR. LEIN: I just had a couple quick
 17 questions. First of all, this map that's behind us
 18 here, do we have that as an exhibit or is it --
 19 MR. ARMSTRONG: It's within Exhibit 8 or
 20 in Exhibit 5 now.
 21 MR. LEIN: It's in Exhibit 5. Is this
 22 Exhibit 5 that came in December?
 23 JUDGE WAHL: Exhibit 5 is on the table,
 24 Mr. Lein.
 25 MR. LEIN: Okay. I just want to make sure

1 we've got that map in the record.
 2 MR. SWANSON: It is as Exhibit 5, Mr.
 3 Lein, and, Judge and Commissioners, I also have
 4 extra copies of that for staff or Commissioners if
 5 it would be helpful.
 6 MR. ARMSTRONG: Could we get a copy?
 7 COMMISSIONER KALK: That would be helpful.

EXAMINATION

9 **BY MR. LEIN:**

10 Q. So are we abandoning all of the locations
11 that were in Spring Valley Township?

12 A. Yes.

13 Q. Okay. The alternates, everything? You're
14 not going to be in that township at all anymore?

15 A. Correct.

16 Q. And then my last question was, how deep
17 are you burying the collector lines?

18 A. A minimum of 48 inches. It will depend on
19 the final evaluation of our geotechnical
20 engineering study that's being actually conducted
21 right now.

22 MR. LEIN: Thanks. No further questions.

23 JUDGE WAHL: Questions from the
24 Commission. Commissioner Clark.
25

EXAMINATION

2 **BY COMMISSIONER CLARK:**

3 Q. Thank you. Just a couple questions and
4 thanks for your testimony. I noted in the
5 application there's a discussion of setbacks from
6 roadways of 1.1 times the tower height from base to
7 blade tip. Is that 1.1 times from the edge of the
8 roadway, the edge of the right-of-way, the
9 centerline of the roadway? Can you specify that?

10 A. Yeah, edge of the right-of-way.

11 Q. Edge of the right-of-way. Okay. You'd
12 mentioned the timeline trying to get this on line
13 and producing by the end of 2011. Is that -- are
14 there any federal timelines that drive the need to
15 have this producing by that time, whether it be
16 federal grants, production tax credit, things like
17 that? I know we hear from time to time that
18 projects need to come on line by a certain deadline
19 to take advantage of certain advantages that are
20 granted by the federal government. Is that the
21 case in this farm?

22 A. For this particular project our contract
23 with Xcel Energy calls for the power to be on line
24 no later than December 31st, 2011, so that's our
25 primary motivator.

1 Q. It's driven by the contract as opposed to
2 any federal deadline. I noted that all the
3 residences are at least 1,500 feet from the closest
4 turbine. Do you know what the closest residence is
5 in terms of feet?

6 A. I'll actually defer to KLJ on that. I
7 don't have those figures right in front of me.

8 Q. And then, finally, a question about the
9 generator interconnect. It's a little bit
10 ancillary to this particular siting hearing, but
11 I'm curious about it, nonetheless. The generator
12 interconnection is being done through MDU. I know
13 there was concerns that this Commission had and I
14 think some of our local investor-owned utilities,
15 oh, a year or two ago that related to generator
16 interconnection costs in the MISO formula that
17 might have been in effect for how those costs get
18 allocated and there was concern that an
19 inappropriate amount might be dumped into the local
20 zone as opposed to where the power is being used.
21 Can you walk through the -- what MISO cost
22 allocation formula you're going to be utilizing for
23 the generator interconnect?

24 COMMISSIONER CRAMER: This would be a good
25 time for you to get coffee.

1 Q. (COMMISSIONER CLARK CONTINUING) And
2 that's fine if off the top of your head you don't
3 know this, because I'm drawing back a little bit on
4 my memory as well, too, here.

5 A. I'll do my best.

6 Q. Okay.

7 A. The generator interconnect agreement that
8 we executed is subject to the most recent FERC
9 tariff filing for MISO, which essentially puts, I
10 believe, 90 percent of the generator interconnect
11 costs on to the interconnect customer, so in this
12 case enXco and/or NSP. We are subject to a new
13 service agreement provision which allows for the
14 interconnect customer to handle the operations and
15 maintenance costs in a recovery component as
16 outlined in the tariff filings themselves.

17 Q. And that was effective what date?

18 A. That I couldn't tell you exactly.

19 COMMISSIONER CLARK: All right. That's
20 all I have. Thank you.

21 JUDGE WAHL: Commissioner Cramer.

EXAMINATION

23 **BY COMMISSIONER CRAMER:**

24 Q. You can tell we've done a lot of these
25 together as both commission and counsel because I

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1 put a lot of Xs on the questions I had.
 2 I have a couple others, though. One is
 3 specifically about the choice of the G.E., the
 4 one-and-a-half-megawatt turbines. Does enXco use
 5 them as a matter generally with all of their
 6 developments, or is there a preference, is there
 7 anything to do with their efficiency and the wind
 8 startup speeds, or do you have just a really good
 9 contract with them? Is there a reason why you
 10 choose those turbines?
 11 **A.** We have a longstanding relationship with
 12 General Electric. We're one of the few warranty-
 13 certified companies in the U.S. that's able to do
 14 warranty work on the General Electric machines.
 15 They are probably the most popular wind turbine
 16 model that's deployed in the United States and we
 17 do like them for a lot of their mechanical
 18 components, as well, but we also do have a master
 19 turbine supply agreement with G.E. that sources the
 20 bulk of our turbines across the U.S., but we do use
 21 other -- we do use other turbines in other
 22 projects.
 23 **COMMISSIONER CRAMER:** I don't have -- I
 24 don't think I have any other questions for Mr.
 25 Sternhagen other than I might just contemplate

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1 Commissioner Clark's question about the year-end.
 2 My sense is that it might be driven by the fact
 3 that there's a 2011 test year that this project is
 4 involved in in relation to the rate case.
 5 **JUDGE WAHL:** Further questions from the
 6 Commission? Commissioner Kalk.
 7 **COMMISSIONER KALK:** Thank you.
 8 **EXAMINATION**
 9 **BY COMMISSIONER KALK:**
 10 **Q.** Thank you, Chris, for your testimony.
 11 Just, I guess, a variety of questions. First, you
 12 said this is the first time you have done business
 13 in North Dakota. Just a general knowledge question
 14 for me. Is there something particularly you liked
 15 or didn't like about doing business in North Dakota
 16 compared to all the other states that you've worked
 17 in, just out of curiosity?
 18 **A.** I love North Dakota.
 19 **Q.** That's always the answer in front of a
 20 hearing, isn't it? As far as other states, I mean,
 21 our policies for development, do you find them to
 22 be easier to work with or more restrictive or just
 23 in general?
 24 **A.** I do not find North Dakota regulations to
 25 be any more restrictive at all. There are a number

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1 of pieces that need to come together for a
 2 particular project like this, and for enXco we just
 3 haven't able to do that to date in North Dakota,
 4 but we look forward to this project and many more
 5 out here.
 6 **Q.** Fair enough. I do have a variety of
 7 questions, I guess, about just kind of the
 8 throughput of equipment. This project is very big
 9 and covers a lot of ground, but with these hundred
 10 turbines coming in, are you going to have a
 11 lay-down lot somewhere, or are you going to hope
 12 just to bring them in, set them down and put them
 13 right up and install them?
 14 **A.** Yes, we will have a lay-down yard, and
 15 that's actually indicated on the exhibit map. I
 16 think we've highlighted it as an operations and
 17 maintenance facility.
 18 **Q.** I see that on the map then. All right.
 19 **A.** Yep. And, additionally, as I understand
 20 it, for this particular project General Electric
 21 will be handling the major component logistics, the
 22 delivery of the turbines and the cells, the steel
 23 towers, blades and stuff. They will be working on
 24 the kind of logistics and routing plan for the
 25 deliveries of those currently.

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1 **Q.** Okay.
 2 **A.** But it's our anticipation that the turbine
 3 deliveries will be made to each of the
 4 site-specific locations, so there will be a staging
 5 area around each turbine location that will hold
 6 those until they're ready to be erected.
 7 **Q.** Okay. And then Mr. Lein asked a question
 8 about the depth of cables. What's the
 9 decommissioning plan right now as far as the
 10 concrete structures. How far down will you remove
 11 the concrete when it's time to decommission? Do
 12 you go down two feet, four feet, eight feet, ten
 13 feet?
 14 **A.** As we've contemplated here, we'll follow
 15 the NDCC decommissioning guidelines, but that will
 16 be handled by Xcel Energy ultimately.
 17 **Q.** Okay. All right. Fair enough. And let's
 18 see here. Workforce. I think I heard you say
 19 something about 12 additional employees, but I
 20 couldn't figure out what that meant. Is that 12
 21 when you're all done, or where did that 12 come
 22 into play?
 23 **A.** Full-time jobs that will be generated here
 24 will be operations and maintenance-related jobs
 25 that will probably be -- they'll be employed, I

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1 would assume, by the time that we complete
 2 commissioning of the wind project, so we'll have a
 3 full-time maintenance staff ready to go as soon as
 4 we kind of flip the switch and turn it on.
 5 Q. So will that be 12 new additional
 6 employees somewhere in this area, living here,
 7 going to school, whatever else, with their kids?
 8 A. Correct. Yes.
 9 Q. And how about a worker surge in the
 10 construction, do you have any numbers of how many
 11 people will be involved in the middle of the
 12 project?
 13 A. Yeah. I would say anywhere between two to
 14 three hundred construction workers on a given day.
 15 There will be a bit of an ebb and flow to that as
 16 various disciplines come in and leave. But, yeah,
 17 the local area can expect probably two to three
 18 hundred construction workers in the area utilizing
 19 services of different facilities.
 20 Q. And then how do we -- this is not a set-up
 21 question, but maybe it is. How do you verify those
 22 200 workers are eligible to work in the U.S.?
 23 A. That's handled actually through our major
 24 subcontractor contract. We will be employing one
 25 of the major construction firms in the area. We do

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1 a public RFP process to select those, but those
 2 responsibilities will be handled through those
 3 contracts essentially.
 4 Q. So how does somebody from town here apply
 5 to work on these projects?
 6 A. They can get ahold of enXco or when we
 7 start to establish who the major contractors and
 8 subcontractors are, their contact information will
 9 be available.
 10 Q. Okay. And I guess the last line of
 11 questions is, you talked a lot with our attorney
 12 about this, about this whole habitat conservation
 13 plan, take permit. I want to talk about that a
 14 little bit more, because the way I understand it is
 15 the -- let's see here -- the regional habitat
 16 conservation plan doesn't come on line until
 17 roughly 2013, so you're participating in that, and
 18 that's a good thing. I'm just trying to get a
 19 thought process of why you wouldn't want to go for
 20 an incidental take permit. I get it that's your
 21 responsibility, it's your liability. It's not
 22 anybody else's. But just why wouldn't you do that?
 23 I mean, my background, I did 20 years in the Marine
 24 Corps, part of it was doing Marine stuff and part
 25 of it was base management, and things happen. We

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1 would kill a major species sometimes. That's the
 2 way it worked out. We'd apply for these take
 3 permits and have it set into place when things did
 4 happen and it didn't cause as much damage as it
 5 could. Why wouldn't you guys do this?
 6 A. To give you a short answer, the
 7 uncertainties that are inherent in the HCP/ITP
 8 processes, i.e., through Section 10 and Section 7
 9 consultation.
 10 Q. I don't know what you mean by that,
 11 though.
 12 A. The Fish and Wildlife Service could not
 13 assure us of successful completion of those
 14 processes in a timely fashion for this particular
 15 project. Additionally, they expressed concern over
 16 resource availability to do one of those.
 17 Q. So that means that they can't guarantee
 18 that they'll do the study they got to do if you
 19 have this take permit in place by the time you want
 20 the project to be done?
 21 A. Correct. So we pursued alternative
 22 strategies to minimize and avoid the impacts to
 23 avian species, and that's kind of the process that
 24 we are in presently. Additionally, early
 25 coordination with Fish and Wildlife indicated a

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1 potential impact for the endangered whooping crane
 2 to which we feel we have very successfully
 3 addressed with the Fish and Wildlife. Very --
 4 quite sometime afterwards -- in fact, I think it
 5 was November of this year, was it, that they
 6 brought up their concerns about a potential for
 7 piping plover impacts. The timing of their concern
 8 and their address to us did not allow for the
 9 opportunity to even consider the HCP/ITP processes
 10 and so we've again pursued alternative measures
 11 that we feel that we can implement as agreed to by
 12 the Fish and Wildlife that will essentially
 13 minimize the impact of those species such as an
 14 HCP, but we understand the take authorization is
 15 not allowed under those type of alternative
 16 strategies, and for that reason we are considering
 17 pursuing take authority, if necessary, under the
 18 regional plan once that's complete.
 19 Q. Did you find the Fish and Wildlife Service
 20 difficult to work with, or they were just
 21 overwhelmed with all the projects they've got going
 22 on in the state?
 23 A. I wouldn't say difficult, but definitely a
 24 challenge.
 25 Q. I mean, because we interact with lots of

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1 folks lots of places, but was it the timeliness of
 2 response to your projects or just they had a
 3 direction in mind they wanted to go and if you
 4 weren't going in that direction, they weren't going
 5 to support it?
 6 **A.** We received a lot of -- a lot of
 7 information from Fish and Wildlife. Not all of it
 8 was very consistent. Additionally, we did
 9 extensive review of previously permitted and
 10 constructed wind projects in the area that had the
 11 potential for similar avian and environmental
 12 concerns and reviewed some of the processes and
 13 procedures and measures that they implemented, and
 14 we discussed those with Fish and Wildlife and we
 15 continue to discuss those with Fish and Wildlife.
 16 So there's been a lot of information, a lot of
 17 work, and Jen with KLJ can probably get into more
 18 of the specifics of it, but ultimately we kind of
 19 looked at the record of Fish and Wildlife and the
 20 projects in the area that had similar
 21 characteristics and potential for impacts as
 22 Merricourt and kind of modeled our approach to
 23 impacts off of those. And as it stands today,
 24 we're looking at having to do some additional
 25 measures that what projects in the past have had to

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1 do to get kind of similar positioning from the Fish
 2 and Wildlife which we feel is a little bit unfair,
 3 but we understand and we're very, very committed to
 4 minimizing those impacts when we can.
 5 **COMMISSIONER KALK:** I'm glad we had this
 6 discussion because in reviewing the application, I
 7 looked at what you folks did to what previous wind
 8 farms have done, and you did what they did and
 9 maybe a little bit more, but still haven't got the
 10 same type of response. I guess that was it. Thank
 11 you.
 12 **JUDGE WAHL:** Any further -- Commissioner
 13 Clark.
 14 **COMMISSIONER CLARK:** Just following up on
 15 Commissioner Kalk's questions about your level of
 16 love for North Dakota. I note that you're a
 17 graduate of South Dakota State University and --
 18 **COMMISSIONER KALK:** He couldn't get into
 19 North Dakota State.
 20 **COMMISSIONER CLARK:** And reminding you --
 21 reminding you that you're under oath, when NDSU
 22 plays SDSU, for whom do you root?
 23 **THE WITNESS:** Oh, Gophers.
 24 **COMMISSIONER CLARK:** I find this witness
 25 to be very credible.

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1 **JUDGE WAHL:** Commissioner Cramer.
 2 **COMMISSIONER CRAMER:** And very smooth,
 3 very good.
 4 **FURTHER EXAMINATION**
 5 **BY COMMISSIONER CRAMER:**
 6 **Q.** With regard to the take issue for whooping
 7 cranes, when transfer of ownership goes over to
 8 Xcel, would the vulnerability or exposure to
 9 violation go with that?
 10 **A.** It's possible that it would, yes. Since
 11 we haven't concluded those discussions, I can't say
 12 for certain, you know, what the arrangement will
 13 be -- what the measures will be that we're going to
 14 implement, but our intent and expectation is that
 15 we will be able to handle the brunt of the
 16 additional measures as we're discussing with Fish
 17 and Wildlife ourselves and not pass any additional
 18 obligations on to our client, Xcel.
 19 **COMMISSIONER CRAMER:** Very good. Thank
 20 you.
 21 **JUDGE WAHL:** Further questions from the
 22 Commission? Followup, Mr. Swanson?
 23 **MR. SWANSON:** I just have one thing so
 24 that we don't build too long of a to-do list for
 25 Ms. Turnbow. The closest residence, I think you'll

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1 see the residency distances all on a map that's
 2 part of Exhibit 5 and the closest is 1,605 feet.
 3 **COMMISSIONER CLARK:** Is that a
 4 participant?
 5 **MR. SWANSON:** Yes. But, otherwise, I have
 6 no followup, Judge.
 7 **JUDGE WAHL:** Mr. Armstrong?
 8 **MR. ARMSTRONG:** Just a couple, Your Honor.
 9 **FURTHER EXAMINATION**
 10 **BY MR. ARMSTRONG:**
 11 **Q.** I guess just to follow up here, you know,
 12 it seems December 31st, 2011, is not that far away.
 13 I know we've had some delays in this. This is, I
 14 know, a speculative question, but what happens if
 15 it's not producing power on December 31st, 2011?
 16 **A.** There are some stipulations that allow for
 17 those sort of situations in our contract with Xcel
 18 Energy, but ultimately that would be a private
 19 business decision between them and us at that time
 20 to determine what we do and what happens.
 21 **Q.** I mean, I guess -- and I understand that
 22 and the proprietary nature of that, but, I mean, I
 23 guess, the Commission's perspective if we've got 99
 24 turbines built and we're not producing electricity
 25 and that -- I mean, are you concerned about the

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1 timeline or do you have things in place to get it
2 constructed by that time?

3 **A.** With regards to the construction
4 schedules, I have no concerns. We have actually a
5 long history of constructing this size and figure
6 projects in actually shorter periods.

7 **Q.** And I want to take a moment, I guess, to
8 look at Exhibit 5 to make sure that -- and for the
9 record, my Exhibit 5 which was filed in December
10 2010 didn't have the removed turbines and that also
11 included some maps with the distance from
12 residences and things of that nature. Have those
13 been updated to include the removal of certain
14 turbines, or have all of those maps been updated
15 with removal of the turbines, or do you know, in
16 Exhibit 5?

17 **MR. ARMSTRONG:** Counsel might know, too.

18 **MR. SWANSON:** Yes, they have, counsel.

19 **MR. ARMSTRONG:** So Exhibit 5 would be what
20 we received in December 2010, but supplemented
21 including removal of turbines?

22 **MR. SWANSON:** What was submitted today is
23 identical with the exception of turbines removed,
24 correct.

25 **MR. ARMSTRONG:** Do you have copies of the

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1 other maps that were with that? If it's just
2 removal of turbines, that's --

3 **MR. SWANSON:** I'm sorry, I don't with me.

4 **Q.** (MR. ARMSTRONG CONTINUING) And then my
5 last question, following up, I guess, on
6 Commissioner Kalk's questions, when you get done
7 with your discussions with U.S. Fish and Wildlife
8 Service, are you anticipating there being some sort
9 of written result or, you know, some sort of
10 certification, if you will, of, okay, we've reached
11 an agreement here of what enXco has to do to
12 address our concerns with the birds and such?

13 **A.** Yes, I do expect that there will be
14 something put on to the administrative record, if
15 you will, that will clarify the measures as agreed
16 to between Fish and Wildlife and enXco and kind of
17 the resultant effect on the species.

18 **Q.** And how -- I know there's discussions
19 ongoing, but how confident are you that those will
20 be -- are close to wrapping up?

21 **A.** Boy, I don't know if I can really comment
22 on that. It's a fluid situation. We are very
23 hopeful, and we believe based on the work that
24 we've done, that there are certain things that we
25 can do, and we do have it on account with Fish and

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1 Wildlife that they agree with that, so from that
2 regard I am very hopeful, but as any discussion
3 that involves more than one party, it's hard to
4 place any certainty on that and I would refrain
5 from doing so today.

6 **MR. ARMSTRONG:** I have no further
7 followup.

8 **JUDGE WAHL:** Followup, Mr. Lein?

9 **MR. LEIN:** No questions.

10 **JUDGE WAHL:** Followup from the Commission?
11 Any further questions from the Commission? Any
12 followup, Mr. Swanson?

13 **MR. SWANSON:** No, Judge. Thank you.

14 **JUDGE WAHL:** All right. Thank you very
15 much, Mr. Sternhagen. Let's take a recess of about
16 10 minutes.

17 I would say to members of the public that
18 you are welcome to look at these exhibits if you
19 wish, certainly you may wish to look at the maps.
20 It's possible -- I'm not saying it's likely, but
21 it's possible that Mr. Swanson has some additional
22 copies of some maps if you're interested, but
23 you're certainly welcome to look at the exhibits
24 during the recess. We'll be in recess for
25 approximately 10 minutes. We'll have to rely on my

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1 watch.

2 (Recess taken at 11:28 a.m. to 11:43 a.m.)

3 **JUDGE WAHL:** All right. This is a
4 continuation of North Dakota Public Service
5 Commission Case No. PU-08-932. Mr. Swanson.

6 **MR. SWANSON:** Thank you, Judge. We would
7 call Jennifer Turnbow.

8 **JUDGE WAHL:** Ms. Turnbow, as you heard me
9 advise the previous witness and as you well know,
10 your testimony is required to be under oath and I'm
11 required by law to advise you regarding perjury
12 before administering the oath. Perjury is a false
13 statement of material fact which you do not believe
14 to be true. In North Dakota perjury is a Class C
15 felony, punishable by a fine up to \$5,000,
16 imprisonment for a period of up to five years, or
17 both. Will you raise your right hand, please?

18 **JENNIFER TURNBOW,**
19 being first duly sworn, was examined and testified
20 as follows:

21 **JUDGE WAHL:** Mr. Swanson.

22 **MR. SWANSON:** Thank you, Judge.

23 **EXAMINATION**

24 **BY MR. SWANSON:**

25 **Q.** Good morning, Ms. Turnbow.

1 **A.** Good morning.
 2 **Q.** First, can you just give a quick
 3 background on your professional experiences and
 4 maybe also an overview of Kadrmas, Lee & Jackson?
 5 **A.** Sure. Commissioners, Your Honor, I'm
 6 Jennifer Turnbow and I work at Kadrmas, Lee &
 7 Jackson, and Kadrmas, Lee & Jackson is an
 8 engineering, surveying and planning company. We
 9 have been in this state since 1938. Currently we
 10 have 14 offices in five states throughout the Upper
 11 Great Plains.

12 I have worked at KLJ for the past eight
 13 years and exclusively in the Upper Great Plains.
 14 My role at KLJ is I'm the work group manager for
 15 the environmental group and I also manage large-
 16 scale environmental projects, those through large-
 17 scale permitting processes or else NEPA projects.
 18 I also focus on agency coordination, public
 19 involvement and I specialize in energy, renewable
 20 energy, large-scale corridor and transportation
 21 projects.

22 Prior to joining Kadrmas, Lee & Jackson, I
 23 worked for four years at the University of Idaho's
 24 Cooperative Fish and Wildlife Research Unit. I
 25 have a bachelor's of science degree in

1 of Transportation, U.S. Fish and Wildlife Service,
 2 North Dakota Game and Fish, et cetera.
 3 And then in June of 2009 we followed that
 4 up with a scoping package that we sent out to
 5 federal, state, tribal and local agencies and
 6 entities. And as Chris had alluded to, too, we
 7 started out with a much larger study area, about 50
 8 square miles and then through this area a process
 9 of using field studies, desktop studies and just
 10 other research. We then -- the study area was
 11 lowered to about 30 square miles and eventually it
 12 probably will be around 18 square miles.

13 We had many different types of studies,
 14 field studies, desktop studies, for the project,
 15 approximately about 15 or 14 studies throughout the
 16 whole project. And, again, the layout was revised
 17 and modified based on this information that we
 18 found. And we had numerous coordination, which I
 19 will get into more in detail later in my testimony,
 20 with U.S. Fish and Wildlife Service Ecological
 21 Service Office in Bismarck, along with the U.S.
 22 Fish and Wildlife Service Wetland Management
 23 District from Kulm, tribal representatives from
 24 Sisseton-Wahpeton, Standing Rock and Rosebud, also
 25 with the State Historic Preservation Office and

1 environmental science from the University of Idaho,
 2 and I am a native North Dakotan.

3 **Q.** Thank you. And Mr. Sternhagen discussed
 4 this some in his testimony, but as the project
 5 manager for the application, could you also give a
 6 description of sort of the overall approach that
 7 was taken on this project for project siting?

8 **A.** Yes. As Chris mentioned, we did more of a
 9 deductive or iterative approach to the project, and
 10 we first -- the project started around 18 months
 11 ago and one of the first things that we did is
 12 Kadrmas, Lee & Jackson conducted a critical issues
 13 analysis and we used the avoidance and exclusion
 14 criteria outlined in the North Dakota Conversion
 15 Facility Siting Act along with a lot of other
 16 categories, as well. We sort of built a GIS
 17 database from this and we built on that foundation
 18 ever since.

19 Another important aspect that we did right
 20 away is we started the project off by meeting with
 21 U.S. Fish and Wildlife Service. We also attended
 22 an interagency committee meeting in Bismarck, and
 23 those meetings are held and like the U.S. Army
 24 Corps of Engineers was there, the North Dakota
 25 Department of Health, the North Dakota Department

1 officials from McIntosh and Dickey Counties.

2 **Q.** You mentioned that there have indeed been
 3 a number of studies and those are all part of the
 4 record. We don't need to get into details unless
 5 questioning from others takes you there, but could
 6 you at least give an overview of the various
 7 studies that were performed under your supervision?

8 **A.** Yes. I'll start out with just kind of a
 9 quick summation of each of the studies. There was
 10 an RF study performed by Evans Associates -- a
 11 search, and they searched for FCC licenses and FCC
 12 applications for microwave communications within a
 13 40-mile radius of the project area. The study also
 14 looked into radio frequency facilities, interface
 15 of electromagnetic fields as well as blade
 16 interface on radio communications.

17 We also did a desktop and sort of a
 18 habitat assessment for threatened and endangered
 19 species. Kadrmas, Lee & Jackson conducted that,
 20 and we looked at different habitats in the corridor
 21 for the endangered whooping crane and threatened
 22 piping plover and the endangered gray wolf.

23 North Dakota Birding, Dr. Bob Anderson,
 24 who is a professor at Valley City State University,
 25 conducted an avian assessment in the spring of 2009

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1 and 2010, and this was mainly to identify raptor
 2 nests. He identified 10 raptor nests within the
 3 project area, and setbacks from these results have
 4 been incorporated into the project.
 5 Bob Anderson from North Dakota Birding
 6 again also conducted sharp-tailed grouse lek
 7 surveys in the spring of 2009 and 2010, and he
 8 identified 17 active grouse leks, and setbacks for
 9 those also have been incorporated into the project.
 10 Dr. Bob Anderson also conducted a piping
 11 plover habitat survey, and the results of that
 12 survey were no piping plovers were identified
 13 during the survey and then there was minimal
 14 potential piping plover habitat identified in the
 15 project area due to very high waters.
 16 Western EcoSystems Technology conducted a
 17 whooping crane habitat review study, and the goal
 18 of the study was to develop and implement a desktop
 19 review and analysis of the whooping crane habitat
 20 resources in the project area and to compare these
 21 resources to areas outside of the project area,
 22 north, south, east and west. The study analysis
 23 concluded that the habitat for migrating whooping
 24 cranes does exist in and around the project areas.
 25 However, the project does not contain the only

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1 suitable whooping crane stopover habitat.
 2 Dr. Erin Gillam with NDSU conducted a bat
 3 assessment, and she did that using Anabat
 4 echolocation devices to determine if bat
 5 populations were present within the project area.
 6 There were five bat species that were identified
 7 during the course of the study, and the project
 8 also has incorporated avoiding hardwood
 9 shelterbelts during construction to preserve
 10 habitat for bats.
 11 One of the bigger studies that was done in
 12 the field surveys was a Class III cultural
 13 resources inventory. And, first of all, the Class
 14 I literature review was conducted in May 2009. And
 15 because most of the project area had not been
 16 previously inventoried, Kadrmas, Lee & Jackson
 17 recommended a Class III cultural resource
 18 inventory, and the State Historic Preservation
 19 Office concurred.
 20 This inventory was conducted between 2009
 21 and 2010. A total of 2,792 and a half acres were
 22 inventoried. The inventory was also carried out
 23 with the tribal monitors from Sisseton-Wahpeton
 24 Oyate and from the Standing Rock Sioux Tribe. A
 25 total of 166 previously undocumented cultural

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1 resources were recorded. Since all facilities are
 2 avoiding cultural resources, a finding of no
 3 significant sites affected and no historic
 4 properties affected determination was made. The
 5 State Historic Preservation Office concurred with
 6 this determination on September 4th, 2010.
 7 An FAA prescreening study was also
 8 conducted by enXco and they have submitted their
 9 FAA form 7460s, and the results of the
 10 recommendations of marking and lighting of the wind
 11 turbines and 60 determinations of no hazards and 62
 12 determinations of does not exceed have been
 13 acquired.
 14 The wetland delineations were conducted by
 15 Kadrmas, Lee & Jackson for the project in August
 16 and September of 2009 and June and July of 2010.
 17 In addition, the U.S. Fish and Wildlife mapped and
 18 identified 66 wetland basins under easement by the
 19 employees of the Kulm Wetland Management District.
 20 And on January 31st of this year, the U.S. Army
 21 Corps reviewed the wetland delineation report, and
 22 the project does not contain any jurisdictional
 23 wetlands. Therefore, a Section 404 permit will not
 24 be needed.
 25 We also did a Phase I environmental site

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1 assessment. Kadrmas, Lee & Jackson conducted this.
 2 And there were no identified hazardous waste sites,
 3 underground storage tanks or one-time use permits
 4 within the project area. During the phase I
 5 environmental site assessment reconnaissance,
 6 several locations were identified that may contain
 7 potentially hazardous materials. Most of these are
 8 farm related, the pesticides, herbicides, petroleum
 9 products, et cetera, and it's not anticipated that
 10 any hazardous waste sites will be encountered
 11 during construction.
 12 Q. Thanks. I know, again, Mr. Sternhagen
 13 discussed this some, but could you give a brief
 14 discussion, as well, sort of an overview of the
 15 agency contacts and responses throughout the course
 16 of your work on this project?
 17 A. Yes. For the scoping package we received
 18 18 responses back. We solicited 84 agencies in our
 19 package. And most of the coordination, like I
 20 mentioned, we had met with the U.S. Fish and
 21 Wildlife, the Kulm Wetland Management District, the
 22 State Historic Preservation Office, Sisseton-
 23 Wahpeton and that type of thing. But probably the
 24 biggest coordination that we had was with U.S. Fish
 25 and Wildlife Ecological Services Office in

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1 Bismarck, and sort of a timeline of that is we have
 2 met approximately eight or nine times, and that's
 3 not even including the numerous coordination we've
 4 had via e-mail and telephone.
 5 But we did meet with them, as Chris
 6 alluded to, on November 16th, and out of that --
 7 actually let me back up. We met with them in
 8 October and that meeting was -- actually we met
 9 with them on September 8th, 2010. I apologize.
 10 And out of that meeting -- the purpose of the
 11 meeting was to discuss potential effects to
 12 whooping cranes as a result of the proposed
 13 project, and from that meeting what we did is we
 14 conducted a whooping crane habitat assessment the
 15 Fish and Wildlife had recommended that we do, and
 16 that was to look at all the wetland acres within a
 17 half-mile of the proposed wind turbines and access
 18 roads in order to identify potential whooping crane
 19 habitat that may be affected.
 20 And we did do that study and it is -- we
 21 anticipated about approximately 1,743 acres of
 22 wetlands. What we did with this study and this
 23 information is we -- or enXco will be putting those
 24 acres and possibly more acres into conservation
 25 easements, and this model, you should be fairly

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1 familiar with, was used with the Basin project, as
 2 well. And we've met with the North Dakota Natural
 3 Resource Trust to carry out sort of these
 4 conservation easements.
 5 Since that time we have met with Fish and
 6 Wildlife numerous times, and we did put together
 7 the biological conditions and effects summary,
 8 which is -- Fish and Wildlife wanted something that
 9 they could actually really read and dive into the
 10 project, and that's when we submitted the
 11 biological conditions and effects summary.
 12 Q. And just to make clear for the record,
 13 that's Exhibit 4 in the record?
 14 A. Yes. And through this summary of this
 15 study that we did submit to U.S. Fish and Wildlife
 16 Service, what we really did is we further assessed
 17 the potential for piping plover habitat in the
 18 project area. There is critical habitat about 1.2
 19 miles away from the closest turbine. And what we
 20 did with this desktop level assessment is we looked
 21 at the soil types at the two designated piping
 22 plover critical habitat locations and we analyzed
 23 that to identify commonalities. And we went back
 24 through aerial photography from 2003, 2005, 2009
 25 and 2010, and we analyzed this data to see if there

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1 was any potential piping plover habitat in the
 2 area. Due to such the high water years that we've
 3 been having, there are currently no potential
 4 piping plover habitat, but we did find about 23
 5 acres that, if all the stars aligned and the
 6 weather cooperated and was perfect, that those 23
 7 acres could potentially be piping plover habitat.
 8 And so what we did is, since we had these 1,700
 9 plus acres that enXco plans to put into
 10 conservation easements with the North Dakota
 11 Natural Resource Trust, we also said that there
 12 should be at least 24 acres that would be suitable
 13 for piping plover habitat in our conservation
 14 easements.
 15 And as Chris said in his testimony, as
 16 well, we did have a meeting recently with Fish and
 17 Wildlife Service on January 25th of 2011, and we
 18 are continuing working with Fish and Wildlife
 19 Service to come up with more minimization measures
 20 and commitments that will be part of the project.
 21 Q. The application certainly presents the
 22 conclusions of the various studies at that point in
 23 time and the mitigation plans that are in place.
 24 Is there anything that you want to add to that
 25 discussion at this point?

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1 A. Yes. We are currently revising this
 2 biological conditions and effects summary, and
 3 there are some commitments if you read through
 4 there. We will be doing an avian and bat
 5 protection plan and post-construction mortality
 6 monitoring, and there will probably be other
 7 commitments to avoid and minimize as we work
 8 through this process with U.S. Fish and Wildlife
 9 Service.
 10 Q. Anything further that you wanted to make
 11 sure that we discussed for the record before
 12 questioning from counsel and staff or
 13 commissioners?
 14 A. No.
 15 JUDGE WAHL: Mr. Armstrong, but let me
 16 interrupt before you get started and say to the
 17 people who are present, I intend to recess for
 18 lunch. I do not intend to do that now, however. I
 19 think we'll do better if we forge ahead a bit with
 20 this witness and we'll see how the testimony goes,
 21 and if we can finish, great, I would then recess
 22 for lunch, but I think now we might as well avoid
 23 what I assume is everybody else is eating lunch at
 24 the same time. So we'll see about lunch perhaps in
 25 another half-hour, 45 minutes or so. Mr.

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1 Armstrong.

2 MR. ARMSTRONG: Thank you, Your Honor.

3 **EXAMINATION**

4 **BY MR. ARMSTRONG:**

5 Q. Ms. Turnbow, I would like to start off

6 right at the end of what you were testifying about.

7 You mentioned you're currently revising the

8 biological summary, which is Exhibit 4, I believe.

9 A. That's correct.

10 Q. Is that something that's certainly going

11 to be revised?

12 A. Yes.

13 Q. And are you in the process of revising

14 that right now?

15 A. That's correct.

16 Q. Is there an anticipated completion date

17 for that revision?

18 A. As soon as possible.

19 Q. I'm just wondering if this is something we

20 should have marked as a late exhibit, would be the

21 revisions to the biological summary. You know, we

22 can't have a late exhibit that might not ever

23 exist, but if it's something that will certainly

24 exist, I think we should have it entered as a

25 late-filed exhibit in this matter. Is it something

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1 that will exist in the near future?

2 A. Yes.

3 MR. ARMSTRONG: I would like that revision

4 entered as late-filed Exhibit No. 10.

5 JUDGE WAHL: 10. It would be the late --

6 it would be late-filed Exhibit 10, and how would

7 you have it identified, Mr. Armstrong?

8 Q. (MR. ARMSTRONG CONTINUING) I think, Ms.

9 Turnbow, what will that exhibit be called?

10 A. It will be called the biological

11 conditions and effects summary, and it would

12 probably just be not the November 2010, but

13 either --

14 Q. Let's call it the updated biological --

15 A. Or revised.

16 MR. SWANSON: Since there are two options

17 on the record, I'll break the tie and say we'll

18 call it the updated.

19 MR. ARMSTRONG: Works for me.

20 JUDGE WAHL: All right. A late-filed

21 exhibit has been requested, late-filed Exhibit 10

22 described as the updated biological conditions and

23 effects summary. Mr. Swanson, objection?

24 MR. SWANSON: No, Judge.

25 JUDGE WAHL: The late-filed exhibit is

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1 received, late-filed Exhibit 10.

2 Q. (MR. ARMSTRONG CONTINUING) Ms. Turnbow,

3 you talked about the piping plover and there being,

4 I think, 23 current acres of piping plover habitat

5 and the remaining thousand-some acres not being

6 current habitat because of high water. You know,

7 being from North Dakota the water levels change and

8 such. Is that -- once there's high water making it

9 uninhabitable for piping plover, does it go back to

10 habitable, so to speak?

11 A. I guess what I meant with the 23 acres was

12 that what we did is we looked through the entire

13 project area, and what -- it was a desktop study so

14 what we did is, there's designated critical piping

15 plover habitat as detected by U.S. Fish and

16 Wildlife Service. So what we did is we took that

17 investigative piping plover critical habitat and we

18 analyzed the soil types, and then we took those

19 soil types that were common to the designated

20 critical habitat and then we looked in the project

21 area to see if there were any commonalities with

22 the soil types. And so that was just really

23 potential -- that may be potential on piping plover

24 habitat, the 23 acres.

25 Q. And --

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1 A. And that would just be if there were no

2 other factors identified into it other than those

3 are the soil types necessary for habitat for piping

4 plover, so it would have to be almost a perfect

5 scenario.

6 Q. And taking -- not talking about those 23

7 acres, you'd mentioned something in your testimony

8 about other acres that were not habitable because

9 of high water. Could you explain that to me or am

10 I --

11 A. The 1,700 acres is a wetland assessment

12 that we did for whooping cranes, and that was --

13 what Fish and Wildlife had recommended was within a

14 half-mile of the project area, we'll get all of the

15 wetlands in that area and half-mile out to see how

16 many acres of potential stopover habitat for

17 whooping cranes, and that's what I was referencing

18 with the 1,700 acres.

19 Q. And I saw this in the application and you

20 said it during your testimony, and it was it

21 doesn't include the only whooping crane stopover

22 habitat. Does this area include whooping crane

23 stopover habitat?

24 A. Well, pretty much all of North Dakota is

25 potential whooping crane habitat, so any sort of

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1 wetland -- I mean, whooping cranes are
 2 opportunistic, so they can stop -- if you're within
 3 this migration corridor, which North Dakota is,
 4 there is always a potential for them to either stop
 5 or roost or rest.
 6 Q. Has there been anything done -- I know
 7 this application was filed in -- or the letter of
 8 intent, anyway, was filed in 2009. Has there been
 9 any observation by somebody on the ground seeing if
 10 any whooping cranes were in this area or not?
 11 A. The closest documented observation of a
 12 whooping crane has been about six miles north of
 13 the project area.
 14 Q. Where is -- and is that documented
 15 somewhere with U.S. Fish and Wildlife?
 16 A. U.S. Fish and Wildlife. They keep
 17 documented observations. And they will be the
 18 first to tell you that, you know, that data may not
 19 be exactly kosher at times because they just take
 20 calls from people who do see them and that type of
 21 thing, so --
 22 Q. Would the noise and shadow questions be
 23 better for EAPC, or is that --
 24 A. That's correct, yes. I will defer.
 25 Q. And Mr. Sternhagen referred me to you on

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1 the piping plover, and I apologize for jumping
 2 around a little bit here, but what was done as far
 3 as observation as far as whether there are actually
 4 piping plovers within the project area or very
 5 close to the project area?
 6 A. Yeah, a piping plover survey was conducted
 7 by Dr. Bob Anderson, who is a professor at Valley
 8 City State University. He also owns the company
 9 called North Dakota Birding. And he did do a
 10 piping plover survey, and no piping plovers were
 11 identified during the survey. And he also said
 12 that there was very minimal potential piping plover
 13 habitat identified in the project area, and that is
 14 mainly due to such the high water years we've been
 15 having.
 16 Q. And I think that's where I got the high
 17 water and the piping plover. Is it your
 18 understanding that if we have low water years,
 19 which we tend to go up and down here in North
 20 Dakota, that there could be, you know, more piping
 21 plovers in the area, or was there no determination
 22 made in that regard?
 23 A. I don't know about numbers, but, I mean,
 24 there is potential for habitat if there was sort of
 25 -- there always could be potential for habitat, but

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1 there is designated critical habitat .2 miles away.
 2 Q. You mentioned these conservation easements
 3 that are under discussion with U.S. Fish and
 4 Wildlife Service. Is that -- are you in the
 5 process of getting these easements, so to speak, or
 6 is that something that will have to happen once the
 7 discussions are completed? Is that -- the amount
 8 of easements as such part of the discussion, or are
 9 you right now actively in the process of getting
 10 these conservation easements?
 11 A. No, not actively. Where we are in the
 12 process is, we submitted to Fish and Wildlife sort
 13 of our understanding of the conservation easements,
 14 the land values for the conservation easements, how
 15 many easements that we would have under
 16 conservation, and they had some comments that we
 17 should consider, and so we are in the process of
 18 revising the acreage and possibly the land values
 19 and then resubmitting that to U.S. Fish and
 20 Wildlife Service, and then enXco will be working
 21 out a contract, per se, with North Dakota Natural
 22 Resource Trust and they would be the ones who would
 23 actually get the easements.
 24 Q. You had discussion about the 10 raptor
 25 nests, I think you said 17 grouse nests.

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1 A. That's correct.
 2 Q. And the incorporated setbacks for those.
 3 How far are the setbacks?
 4 A. For the grouse it's a quarter-mile from
 5 all of the active lek sites from March 15th to May
 6 15th. And for the raptors it's a quarter-mile from
 7 the red-tailed hawks and Swainson's hawks, and a
 8 half-mile from, and I'm going to slaughter the name
 9 of this, ferruginous hawks.
 10 Q. And is it your understanding that that
 11 amount of setback is sufficient from turbines to
 12 protect these birds?
 13 A. Yes. In Bob Anderson's report he had
 14 documented where he came up with the setbacks and
 15 the reasons why, yes.
 16 Q. As I understand it, the project layout
 17 with the turbines completely avoids any areas of
 18 cultural concerns and environmental concerns that
 19 were found?
 20 A. That's correct. The project does avoid
 21 all impacts of known cultural resources.
 22 Q. And that includes the roads and the
 23 underground lines?
 24 A. That's correct.
 25 Q. Tell me a little more -- I'm a little

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1 unclear from the application and your testimony
 2 about the relationship here with the tribe
 3 involvement. Can you tell me about that? Where
 4 does that come in?
 5 **A.** Sure. As part of our scoping package that
 6 we sent out, Sisseton-Wahpeton did receive one of
 7 our scoping letters, and once they received that, a
 8 representative from Sisseton-Wahpeton had called me
 9 and said that they would really like to have tribal
 10 monitors out with the archaeologists while they did
 11 the Class III cultural resource inventory, and so
 12 enXco made the decision that they would have the
 13 tribal monitors out, and so the tribal monitors
 14 worked directly with the archaeologists from
 15 Kadrmas, Lee & Jackson on the project.
 16 **Q.** Did the tribal monitors raise any concerns
 17 about the area or having the wind turbines in the
 18 area?
 19 **A.** No. The tribes are very happy that we are
 20 avoiding all cultural resources, and we have worked
 21 hand in hand with them throughout this entire
 22 process, and Sisseton-Wahpeton has been the main
 23 tribe that we have worked with and they've sort of
 24 taken this project kind of under their wing or they
 25 have been the main contact for all the other

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1 tribes. We also held a big -- a meeting in
 2 Mitchell, South Dakota, with four other tribes, and
 3 that was a request from Sisseton-Wahpeton.
 4 **Q.** And this area -- and I'm not from here.
 5 What's the significance of this area to the tribes?
 6 Are they geographically close or is it just a
 7 special area for them? Can you give me some
 8 details on that?
 9 **A.** It's in close proximity to the White Stone
 10 Battle site. It's about -- I'm not exactly sure
 11 how many miles away, but that's basically the
 12 reason why they asked to be monitors, because it
 13 was close to a battle site.
 14 **MR. ARMSTRONG:** I'll turn it over to
 15 Commission staff.
 16 **JUDGE WAHL:** Mr. Lein, any questions?
 17 **MR. LEIN:** No questions. Thank you.
 18 **JUDGE WAHL:** Questions from the
 19 Commission. Commissioner Clark.
 20 **EXAMINATION**
 21 **BY COMMISSIONER CLARK:**
 22 **Q.** If -- and, again, thanks for your
 23 testimony. If you'd rather defer this question,
 24 let me know. I had asked about the closest
 25 residence to a turbine and it happened to be a

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1 participant. Do you know the closest residence --
 2 or the closest turbine to a nonparticipant
 3 residence?
 4 **A.** I don't.
 5 **Q.** And if that can be provided later, that's
 6 fine.
 7 **A.** I might have to defer that to Chris.
 8 **JUDGE WAHL:** If you can with an exhibit,
 9 Mr. Swanson.
 10 **MR. SWANSON:** I'm sharing with the witness
 11 one of the maps that's marked as Exhibit 5.
 12 **THE WITNESS:** Can I share this with Chris?
 13 **COMMISSIONER CLARK:** If they want to
 14 recall, that's fine.
 15 **JUDGE WAHL:** Yes, I would rather recall
 16 Mr. Sternhagen.
 17 **COMMISSIONER CLARK:** That's the only
 18 question I have.
 19 **JUDGE WAHL:** Any questions from the
 20 Commission? Commissioner Cramer.
 21 **EXAMINATION**
 22 **BY COMMISSIONER CRAMER:**
 23 **Q.** Hi, Jen. Are you familiar with any
 24 history of piping plovers colliding with wind
 25 turbines? Do you know of any incident like that?

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1 **A.** There has been no documented cases of
 2 piping plover and turbine blade strikes.
 3 **Q.** Can you give some sense of odds or
 4 likelihood that those 23 potential acres would ever
 5 become suitable to -- I mean, piping plover are
 6 largely Great Lakes shoreline birds is my
 7 understanding. I understand why there's some
 8 habitat that would be suitable around here, but I
 9 sense from your description of the potential that
 10 the potential was very unlikely, and I'm a little
 11 concerned by the request for a late-filed exhibit,
 12 and I'm hopeful you'll be able to provide that.
 13 I'm a little uncomfortable with the whole U.S. Fish
 14 and Wildlife Service accommodation and wondering at
 15 what point does the line get drawn and the
 16 appropriate reasonable people say, this isn't going
 17 to happen. So if you could give me some sense of
 18 the odds of that potential being reached, that
 19 would be helpful. And maybe that's unfair to ask.
 20 You're the only expert I'm looking at right now.
 21 **A.** You know, I really don't know if I could
 22 give you odds of that happening. I think Fish and
 23 Wildlife's major concern is the possibility that it
 24 might happen, and since Materi has told us
 25 repeatedly that piping plovers can't speak for

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1 themselves, they have to do everything they can to
 2 protect the piping plover. And so I don't know if
 3 I -- I don't think I could ever give odds on that,
 4 though.

5 Q. Let me just follow up. What's the next
 6 creature that can't speak for itself that might
 7 possibly be -- you know, hang around and get hit by
 8 a wind turbine. I'm just -- and that's just a
 9 rhetorical question.

10 A. I have no idea, but I'm sure we'll find
 11 out.

12 Q. Yeah, I suppose we will. Also, sort of
 13 commenting on Kadrmas, Lee & Jackson's role in all
 14 of this. I noticed several very nice pictures.
 15 You documented very well pictorially several
 16 potential cultural sites, and one of them I noticed
 17 was a dump. When you come across something like
 18 that, is there anything that's done to sort of --
 19 besides identifying it and documenting it, where
 20 you notice either an artifact or the potential for
 21 any type of artifact and how that might be shared
 22 or whether it's even important, because it's hard
 23 to not notice a picture of a dumpground cultural
 24 resource.

25 A. I'm not sure how to answer the question.

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1 I'm not an archaeologist. But Jen Harty, who was
 2 the principal investigator for the project, is here
 3 and she could answer that question for you.

4 COMMISSIONER CRAMER: Well, if we don't go
 5 real long. I don't know it will be critical to
 6 this siting issue. It's more of a curiosity.
 7 Because one of the things, Jen, and I think maybe
 8 you and I talked about this before, but it always
 9 impresses me about these proceedings, and
 10 especially one that's as thorough as this one has
 11 been, the application is, the impressive inventory
 12 of new finds, whether they're cultural sites,
 13 natural resources, and the role that development
 14 actually plays in assisting preservation and
 15 conservation of our culture and history, so
 16 sometimes you're punished for your thoroughness,
 17 perhaps. At any rate, that's all I have, Your
 18 Honor. Thank you.

19 JUDGE WAHL: Further questions from?
 20 Commissioner Kalk.

EXAMINATION

22 **BY COMMISSIONER KALK:**

23 Q. Thank you, Jennifer, for your testimony.
 24 Where are you from in North Dakota? You said North
 25 Dakota native. What town?

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1 A. I'm from New Salem, North Dakota.

2 Q. Very well. We all know New Salem well.
 3 It's interesting, as Commissioner Cramer was asking
 4 his questions, I think that I had some illumination
 5 of how this might have played out with your
 6 testimony about Basin and the 23 acres of potential
 7 conservation easement and it's just kind of
 8 speaking out loud. Basin's wind farm had a federal
 9 nexus --

10 A. Correct.

11 Q. -- as you're well aware. Basically for
 12 the rest of the crowd, that just means they've got
 13 to come to some conclusion of finding of no
 14 significant impact or do something, and so the
 15 layer of environmental review that goes into that
 16 is much more -- I won't say better, but a lot more,
 17 and if that has become the standard the Fish and
 18 Wildlife Service is now instituting on all of our
 19 development, that's unfortunate. We'll perhaps
 20 look at it later as a commission. But it appears
 21 that that has now become the de facto standard that
 22 you're being held towards, is what would be
 23 required for a full-blown NEPA assessment. I mean,
 24 do you have any comments back to what I just said
 25 as far as agree or disagree or assessment of that?

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1 You've got a background in NEPA and Fish and
 2 Wildlife Service, quite honestly.

3 A. I would say that, yes, it seems that
 4 that's kind of what they're more leading towards --
 5 U.S. Fish and Wildlife -- if there is a federal
 6 nexus or not. I don't know if it will become the
 7 standard with them, but that's what -- it seems as
 8 if the process that they're kind of going down.

9 Q. Sure enough. What we do in North Dakota,
 10 I think we meet all the demands without the extra
 11 bureaucracy, quite honestly. We've got clean air,
 12 clean water, good fish and wildlife and all that
 13 stuff. But enough about that, I guess.

14 In the first part of your testimony you
 15 talked about a review of FCC electromagnetic
 16 interferences or something like that.

17 A. That's correct.

18 Q. What do you mean by that exactly?

19 A. There is a search -- there's a search
 20 that's done to look at point-to-point microwave
 21 services and also like radio frequency if there's
 22 going to be any sort of impact to like radio
 23 stations, digital TV stations, radio and TV
 24 broadcast signals, that type of thing.

25 Q. Because where I'm going with this, we've

1 had some meetings with -- up at Grand Forks with
2 the air base and the aviation school up there about
3 potential wind turbines throwing off radar and
4 things like that, so you have some data somewhere
5 that shows that wind turbines could throw that off
6 or what's the concern that you're looking at there
7 particularly?

8 **A.** I believe that we're looking at just sort
9 of the impact to the households within the project
10 area if it were to disrupt like HDTV, their signals
11 to that.

12 **Q.** So do you have data that shows that
13 there's disruption that we could look to somewhere
14 or that's just something you know?

15 **A.** I believe the study is in the appendices
16 to the application.

17 **Q.** Okay.

18 **A.** And I think that what the study -- the
19 final results were that the project could
20 potentially impact maybe 22 households.

21 **Q.** Sure.

22 **A.** And that that would be handled kind of on
23 a one-by-one or case-by-case basis if there was
24 disruption.

25 **Q.** Fair enough. And then it's been a while

1 since I did wetlands determination. What's the
2 latest and greatest on how do you determine the
3 wetland with these changing water levels? I know
4 it used to be two years of hydro soil or something
5 like that. How do you approach that now in an ever
6 changing environment like we have?

7 **A.** Well, they look at different parameters to
8 do the wetland delineations, and, again, I'll have
9 to kind of reiterate I'm not a wetland specialist.
10 We have a wetland specialist here today. But they
11 look at the different parameters, and if they meet
12 two of those three parameters, then they identify
13 boundaries.

14 **COMMISSIONER KALK:** But there was no way
15 this project affected it. I think that was it.
16 Thank you.

17 **JUDGE WAHL:** Any further questions from
18 the Commission? Followup, Mr. Swanson?

19 **MR. SWANSON:** No, Judge.

20 **JUDGE WAHL:** Followup, Mr. Armstrong?

21 **MR. ARMSTRONG:** Just a couple quick ones,
22 Your Honor.

FURTHER EXAMINATION

24 **BY MR. ARMSTRONG:**

25 **Q.** I want to talk about this updated

1 biological summary which will be marked as
2 late-filed Exhibit 10. It's my understanding we
3 can't have a late-filed exhibit that might never
4 exist. It's my understanding that's something
5 that's currently being prepared and something that
6 will be submitted to U.S. Fish and Wildlife Service
7 in the near future; is that correct?

8 **A.** We'll be talking to Fish and Wildlife
9 Service actually tomorrow, we have a meeting
10 scheduled, and they did request some additional
11 information from a January 25th meeting that we
12 *had, and the method that we wanted to do that was
13 to update this biological conditions and effects
14 summary. However, if U.S. Fish and Wildlife does
15 not like that method, then we probably won't update
16 this current report that is out there. So I would
17 say the chances are that we probably would
18 definitely update this biological conditions and
19 effects summary.

20 **Q.** Probably definitely.

21 **A.** You know, I'm pretty sure that that's how
22 they want us to do it, but I guess I'm not a
23 hundred percent positive.

24 **Q.** What I want for the record is, I guess I
25 wasn't requesting the results of your U.S. Fish and

1 Wildlife Service negotiations because we don't
2 necessarily know how that's going to play out, so
3 that's no good for asking for a late-filed exhibit,
4 but if this is something that will exist in the
5 near future, you know, I guess that's what we would
6 want, just have the most current, up-to-date
7 information, and that's the purpose of my
8 late-filed exhibit request. Is that something that
9 will exist and that we can have as a late-filed
10 exhibit is your understanding?

11 **A.** Well, I guess to be a hundred percent
12 sure, we're not sure if Fish and Wildlife at this
13 point is going to have us revise this or update it.
14 We will know that tomorrow, so I'm not sure
15 how we'll handle it.

16 **MR. SWANSON:** I think, counsel, what we
17 could commit to, because I think the record would
18 benefit from additional documentation on this, is
19 there will be a follow-up filing made and we will
20 call that follow-up filing the updated biological
21 conditions and effects summary. It may or may not
22 be a simple recopy and addendum to what is already
23 in the record, but there will be a stand-alone
24 document filed in followup.

25 **MR. ARMSTRONG:** Okay. That will work.

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1 Q. (MR. ARMSTRONG CONTINUING) And then
 2 Commissioner Cramer asked you about any documented
 3 piping plover collisions with turbines. Are you
 4 aware of any documented whooping crane collisions
 5 with turbines?
 6 A. No, there has been no documented
 7 collisions with whooping cranes to blade strikes.
 8 MR. ARMSTRONG: I have no further
 9 questions.
 10 JUDGE WAHL: Mr. Lein, anything further?
 11 MR. LEIN: Nothing further.
 12 JUDGE WAHL: Followup by the Commission?
 13 Followup, Mr. Swanson?
 14 MR. SWANSON: No, Judge.
 15 JUDGE WAHL: All right. Thank you very
 16 much, Ms. Turnbow. Bring me Exhibit 4, please.
 17 Thank you.
 18 We'll be in recess for, let's say, 45
 19 minutes, so let's be back here at about 1:15.
 20 (Recess taken at 12:27 p.m. to 1:27 p.m.)
 21 JUDGE WAHL: Let's be in order, please.
 22 Mr. Swanson, are you ready, Mr. Armstrong? The
 23 Commission is ready. This is the continuation of
 24 the hearing of North Dakota Public Service
 25 Commission Case No. PU-08-932. Mr. Swanson.

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1 MR. SWANSON: Thank you, Judge. We would
 2 call Jay Haley.
 3 JUDGE WAHL: Mr. Haley, as you know, your
 4 testimony is required to be under oath and I'm
 5 required by law to advise you regarding perjury
 6 before administering the oath. Perjury is a false
 7 statement of material fact which you do not believe
 8 to be true. In North Dakota perjury is a Class C
 9 felony, punishable by a fine up to \$5,000,
 10 imprisonment for a period of up to five years, or
 11 both. Will you raise your right hand, please?
 12 **JAY HALEY,**
 13 being first duly sworn, was examined and testified
 14 as follows:
 15 JUDGE WAHL: Mr. Swanson.
 16 MR. SWANSON: Thank you, Judge.
 17 **EXAMINATION**
 18 **BY MR. SWANSON:**
 19 Q. And good afternoon, Mr. Haley. First,
 20 could you just describe your personal and
 21 professional background and qualifications?
 22 A. Sure. I am a mechanical engineer. I have
 23 been involved in the community for a little over 20
 24 years. I'm a partner with the firm called EAPC
 25 Architects Engineers. We are a multidisciplinary

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1 consulting firm with engineers and architects.
 2 We're involved in commercial buildings, we're
 3 involved in industrial plants, and we're involved
 4 in wind energy, which is the group that I head up.
 5 With EAPC I have been involved entirely in
 6 wind energy projects for the last 10 years. We
 7 have a little over a hundred people in our firm
 8 spread out in nine offices mostly in North Dakota
 9 and Minnesota. We've also got an office in
 10 Norwich, Vermont; Boston, Massachusetts; and
 11 Buenos Aires, Argentina. We are the North American
 12 sales and support agents for a computer program
 13 called WindPRO, which was developed by our Danish
 14 partners and it is the world's standard computer
 15 program which is used in the design of a wind farm.
 16 We are also -- just recently took on another
 17 computer program which is called Mayodyne, which is
 18 a French program which is also used to model wind
 19 flow over complex terrain. We sell these products
 20 and we support them in terms of technical support,
 21 and we also use them on a daily basis in our own
 22 consulting work and we train probably 100 to 150
 23 engineers and meteorologists per year in the
 24 methods of designing wind farms with these software
 25 products.

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1 My involvement in this project is strictly
 2 with regard to noise calculations and shadow
 3 flicker calculations.
 4 Q. And do you have a -- can you give a
 5 ballpark at least of how many wind projects you've
 6 worked on in your professional career?
 7 A. Yes. Between myself and my partner, Bob
 8 Sherwin, we've got a combined experience base of
 9 over 30,000 megawatts of wind projects.
 10 Q. And could you describe in general the
 11 approach you took to your analyses here and in
 12 particular the sort of worst case analysis and then
 13 the realistic -- more realistic analysis?
 14 A. Sure. Talking about the noise first?
 15 Q. Sure.
 16 A. So with the noise calculations, the wind
 17 turbine locations were provided to us by enXco as
 18 well as the occupied residences in the structural
 19 locations that we were to consider. We analyzed
 20 the noise emissions in two cases in worst case
 21 scenario where very conservative assumptions are
 22 made which would result in larger numbers which
 23 would be less favorable to the developer, a worst
 24 case scenario, so these are the absolute worst
 25 numbers that you could possibly get.

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1 We provided those numbers, results of
2 those analyses back to enXco, and that information
3 was then used by enXco to determine which turbines
4 they wanted to take out of the array. They then
5 would supply us with an updated array and we would
6 then run another analysis which was a more
7 realistic analysis where you take into
8 consideration what the actual damping values would
9 be. There's going to be some sound attenuation due
10 to the terrain, for example. If you have a turbine
11 that's on the other side of the hill, in the worst
12 case scenario you would pretend that that hill
13 wasn't there, so you would be taking no credit for
14 the fact that some sound is going to be attenuated
15 by the hill. In the realistic scenario you then
16 model that hill and account for the attenuated
17 effects of the hill.

18 In the same respect, if you have a valley,
19 sound is going to carry across that valley more so
20 than it would across flat terrain, so that would
21 work against you in the other way.

22 We modeled the worst case assuming
23 basically a flat terrain like a tabletop so that no
24 topographic effects or ground attenuating effects
25 were included, then in the realistic case we added

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1 those effects back in to get more realistic
2 numbers.

3 Q. And what were the ultimate conclusions
4 both of the noise and the shadow flicker studies
5 for this project?

6 A. Well, for the noise at this point there's
7 no residence in the project that has a sound level
8 greater than 44 decibels.

9 And for shadow flicker, which I really
10 haven't talked about yet, the end results of that,
11 there were five residences that had shadow -- total
12 shadow flicker hours of between 10 and 20 hours per
13 year as realistic estimates.

14 Q. And maybe since you mentioned that we
15 hadn't really discussed the shadow flicker, could
16 you give a brief overview of the analysis and the
17 analytical approach on that?

18 A. Sure. There again, we did a worst case
19 analysis first and then refined that and did a more
20 realistic analysis. In the worst case analysis you
21 assume that the sun is shining a hundred percent of
22 the time, there's never a cloudy day. You're also
23 assuming that the wind is always blowing so the
24 turbines are always in motion. If the turbines are
25 not in motion, there's no shadow flicker. You also

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1 assume that the turbines are always directly facing
2 the sun, so as the sun traverses across the sky
3 that the turbines are going to follow the sun like
4 a sunflower, which is going to create a worst case
5 shadow cast on the ground.

6 In the realistic case then we factor in
7 the actual wind distribution, which is the amount
8 of time that the wind spends blowing at different
9 speeds and also the amount of time that there is no
10 wind, and we also factor in the amount of time that
11 the turbine spends facing each of the 12 sectors
12 around the compass, thereby the turbines are not
13 always facing the sun. So if the turbine was
14 facing 90 degrees from the sun, you're going to be
15 presenting the edge of the blade towards the sun,
16 so you're going to have a very narrow shadow, and
17 that narrow shadow casts a flickering effect for a
18 much shorter length of time than the full rotor
19 would if it were facing the sun. So, at any rate,
20 a little bit of information regarding the worst
21 case scenario and a realistic scenario.

22 Q. And as a result of your studies then, were
23 adjustments made in the project, to your knowledge?

24 A. Yes, there were a number of iterations. I
25 think we're on iteration 17c right now. And the

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1 way that those took place was we would perform the
2 calculations, provide them with the results, the
3 numbers from those calculations, and they would
4 then make decisions about which additional turbines
5 to remove from the array. To my knowledge, there
6 was no actual turbine shuffling, moving of turbines
7 around in the array. It was simply a matter of
8 deciding which ones to completely take out of the
9 array, leaving the rest in their same locations.

10 Q. And as far as a final impact for noise or
11 shadow flicker, how would you say this project
12 compares to others that you've worked on?

13 A. It's very much on the low end in terms of
14 impacts. We've seen projects that have been
15 permanently built with much higher numbers in both
16 noise and shadow.

17 MR. SWANSON: Those are all the questions
18 I had, Judge.

19 JUDGE WAHL: Mr. Armstrong.

20 MR. ARMSTRONG: Thank you, Your Honor.

EXAMINATION

22 **BY MR. ARMSTRONG:**

23 Q. Mr. Haley, you talked about the noise
24 first. I noticed in the application there is a
25 worst case scenario and a realistic scenario. Is

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1 the actual effect of the noise going to be
 2 somewhere in between there, or is the realistic
 3 what can truly be expected on this project?
 4 **A.** Noise is a difficult thing to predict, and
 5 the reason for that is -- well, it's not hard to
 6 predict it, but it's hard to get it exact because
 7 of the fact that at the same location on any given
 8 day depending on the wind speed, depending on the
 9 atmospheric conditions and depending on the
 10 background noise around that measurement point,
 11 every time you measure you'll get a different
 12 number, so you have to fall back on statistics to
 13 say, you know, exactly how -- what's the
 14 probability that if you went out there, you would
 15 measure and get the same value we predicted.
 16 For example, different times of the year
 17 vegetation may be higher or lower. There will be
 18 more or less rustling, which contributes to the
 19 background noise, which again is going to affect
 20 the sound measurement. So they're good
 21 representative values, but on any given day the
 22 measurements would probably be different than you
 23 would predict.
 24 **Q.** And is there any industry standard of what
 25 the level of acceptable noise is?

1 right now is probably higher than that.
 2 **Q.** From the buzzing?
 3 **A.** (Nods.)
 4 **Q.** I take it as a result of the noise
 5 analysis then -- at least a realistic noise
 6 analysis, that didn't require any turbines being
 7 moved; is that correct?
 8 **A.** I believe that to be true. I think that
 9 in the process of satisfying the shadow flicker,
 10 which is a greater setback typically -- in
 11 satisfying the shadow flicker requirements, you're
 12 satisfying the noise requirements by default.
 13 **Q.** By removing or making them further away,
 14 it's obviously not going to be as loud?
 15 **A.** That's right.
 16 **Q.** And as far as your noise analysis, does
 17 that incorporate like the type of turbine, the type
 18 of rotors and things of that nature?
 19 **A.** Yes, it does. We actually get detailed
 20 sound emission or noise emission data from the
 21 turbine manufacturer, including octave data, so
 22 it's been stated as it comes from the manufacturer,
 23 which they obtained it through measurements.
 24 **Q.** So your noise analysis here would be the
 25 actual proposed turbines that are going to be used

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1 **A.** Yeah. I don't know if you'd call it a
 2 standard, but it's typically dictated by a
 3 jurisdiction -- jurisdictional agency, whether that
 4 be a country. Most European countries have set
 5 standards that everybody has to abide by. In the
 6 United States here we find that it could be defined
 7 something at a township level, a county level or a
 8 state level. Those numbers would be typically 45
 9 decibels in town, in the outskirts of a suburb, and
 10 typically we see 50 decibels in the country.
 11 **Q.** I know it's in, I guess, your analysis
 12 here, you ultimately concluded that all the
 13 locations had less than 45 decibels of noise?
 14 **A.** That's correct.
 15 **Q.** And that would be an average, or is that
 16 at high wind speeds?
 17 **A.** The calculations were performed with the
 18 assumption that the wind was at 9 meters per
 19 second, which was chosen as the wind speed where
 20 the turbines are putting out the maximum amount of
 21 noise.
 22 **Q.** And I'm not a decibel expert. Any example
 23 you can give of what 45 decibels would be, like a
 24 passing car or something like that?
 25 **A.** The noise that you're hearing in this room

1 on this project?
 2 **A.** That's correct. A G.E. 1.5sle with a 77
 3 meter rotor.
 4 **Q.** And that would be the same for the shadow,
 5 also?
 6 **A.** That's correct.
 7 **Q.** I would like to go to the shadow analysis
 8 now then and there were -- in the realistic
 9 analysis there were how many residences that were
 10 concerned?
 11 **A.** There were five that were in the range --
 12 the five highest were in the range of 10 to 20
 13 hours per year.
 14 **Q.** What's the acceptable shadow flicker per
 15 year?
 16 **A.** There again, there are no standards. The
 17 most I would say in the United States from my
 18 experience in participating in hearings such as
 19 this, I found that most groups, agencies, whatever
 20 you want to call them, or whatever they were, I
 21 guess, would adopt a number from Germany, which is
 22 30 hours per year. The German code has actually
 23 had a legal ruling on how many hours they felt
 24 would be acceptable and that number became 30, so
 25 that's a number that's commonly used as a

1 for-lack-of-anything-better number.
 2 Q. And if I understand your testimony
 3 correctly then, with removing certain turbines all
 4 of the residences would have less than 30 hours per
 5 year of shadow flicker?
 6 A. In actuality it turns out that there are
 7 less than 20.
 8 Q. So there's --
 9 A. Everything is less than 20. The top five
 10 worst ones were in the range of 10 to 20 hours --
 11 actually 19 hours.
 12 Q. So I guess the maps that we have from --
 13 that were submitted with the application, they have
 14 the ones with more, but with the removal of certain
 15 turbines, all residences will have less than 20
 16 hours per year of shadowing?
 17 A. I believe that the exhibit submitted this
 18 morning has the updated numbers, which indicated
 19 all are less than 20.
 20 Q. And when the shadow flicker analysis is
 21 done, does that incorporate, say, like a standard
 22 angle towards the sun of each turbine, or are they
 23 all different in this project?
 24 A. For the realistic analysis we use the
 25 actual wind measurements that tell us how much time

1 the wind blows from different directions, and with
 2 that information we factor that in so we model how
 3 many minutes or hours of the year that the wind
 4 turbine spends pointing into the wind in those
 5 various directions. So it's going to result in a
 6 lower number than the worst case scenario that I
 7 described where the turbines -- we model them as if
 8 they're always facing the sun, casting an actual
 9 shadow. It's a more realistic real world
 10 calculation.
 11 Q. Do the final numbers -- do you incorporate
 12 at all anything like standing trees or anything
 13 around the residences, or are they just straight
 14 numbers?
 15 A. In this analysis we took no credit for any
 16 blockage or shading from trees, even though we know
 17 that there are some shelterbelts there. We assumed
 18 that there were none. In reality, if we model it
 19 with the blockage from trees, some of those numbers
 20 would come down in some cases.
 21 The other thing, I guess, to point out in
 22 that regard is that we also modeled the locations
 23 as what we call a Greenhouse sensor, and what we
 24 mean by that is we didn't model a specific window
 25 facing west or north or south. We assume like a

1 half-round glass globe sitting where the house
 2 would be, so it can see shadow and sun from all
 3 directions, when in reality it's going to be
 4 windows facing certain directions. So if we
 5 actually modeled the directional -- the directions
 6 that the windows were actually pointing, then those
 7 numbers would come down some more.
 8 MR. ARMSTRONG: I don't have any further
 9 questions.
 10 JUDGE WAHL: Mr. Lein?
 11 **EXAMINATION**
 12 **BY MR. LEIN:**
 13 Q. Just one. Looking at the shadow analysis,
 14 your wind turbines are numbered. Can you tell me
 15 which turbines were removed from that analysis?
 16 A. I would have to defer to KLJ or enXco for
 17 that.
 18 MR. LEIN: No questions. Thanks.
 19 JUDGE WAHL: Questions from the
 20 Commission? Commissioner Clark.
 21 **EXAMINATION**
 22 **BY COMMISSIONER CLARK:**
 23 Q. Thank you, Jay, for being here. My only
 24 questions were related to the shadow flicker study
 25 and it looked like even in the document that we

1 have that had previously been filed, the only two
 2 residences where you had realistic expectations of
 3 shadow hours per year at or near 30 hours were H8
 4 and H15. Are those -- the turbines around those
 5 two locations are the ones that have been removed
 6 that have taken care of those problems?
 7 A. There again, I would have to defer to
 8 enXco for that because they're the ones who made
 9 those decisions.
 10 COMMISSIONER CLARK: That's all I've got.
 11 Thanks.
 12 JUDGE WAHL: Any further questions from
 13 the Commission? Commissioner Kalk.
 14 **EXAMINATION**
 15 **BY COMMISSIONER KALK:**
 16 Q. Thank you, Jay, for your testimony. I
 17 don't really have any questions specific to this
 18 project. I think folks already asked them, but we
 19 have a lot of folks in front of us and your
 20 background is pretty good in this area, so I just
 21 want to ask some general industry questions if you
 22 don't mind.
 23 You throw out a number of 9 meters per
 24 second is kind of like the area where that velocity
 25 is the largest amount of noise -- the turbines. So

1 how do you base that? Is that on a certain turbine
2 or all turbines? How do you factor in different
3 turbines into the model in that kind of business,
4 because the model, I assume, is good obviously, but
5 how do you factor in all those variables?

6 **A.** Well, we actually input -- or we actually
7 have a library, a database within the software that
8 has all the wind turbine specifications for just
9 about all the turbines that are being manufactured,
10 so we have the power curve information, we have the
11 thrust curves, we have the noise emission data,
12 it's all already in the library, and we know -- for
13 example, in the noise library we will have a table
14 in there that says at 9 meters per second, the
15 turbine emits 104 decibels, at 8 meters per second
16 it might emit 102 decibels. We have that detail of
17 information. So we can intelligently decide what
18 wind speed to choose to make sure we're modeling it
19 at a wind speed that is putting out the maximum
20 amount of noise.

21 **Q.** Okay. So you work through the models and
22 you get some computer simulation. Walk me through
23 how you would go out and correlate the actual noise
24 on the ground. Do you have some value at some spot
25 and do you have some type of device that will

1 actually physically read that noise to then
2 correlate back into this? How do you do that?

3 **A.** We don't do that. In this case we've
4 simply made calculated projections or predictions
5 of what the noise levels will be. What we're
6 modeling is how much has the sound level dropped
7 off with distance from the source of the noise. We
8 model because there's formulas that can tell you
9 how much noise will be attenuated over distance and
10 by the trees and the ground and the water,
11 et cetera.

12 There are people -- acoustic engineers and
13 sound measurement companies that will go out with
14 microphones and recorders and place them at exact
15 locations and measure for some period of time to
16 validate whether or not predictions have been met.
17 That isn't a part of what we have done.

18 **Q.** So nowhere in this data set you gave us --
19 I guess you can't model it because the stuff isn't
20 built yet. Is that something -- I guess that's a
21 question for the company -- that they'll do at some
22 point in time, to go back and see what you modeled
23 is actually what appears on the ground? Is that
24 typical SOP for development of these type of
25 projects?

1 **A.** It's done. That's one of those things
2 that's going to vary by township, county, state,
3 country. It's usually a jurisdictional thing. It
4 can also come up where it can be done in cases
5 where it turns out that someone is complaining that
6 there's too much noise, so then you have to go out
7 and measure to see what's really going on. Whether
8 or not you're required to go out and validate or
9 verify the predicted versus the measured, that's
10 usually jurisdictional.

11 **Q.** Sure. And then, I guess, just the last
12 question, suppose you go back at some point in time
13 and the data that you actually measure is different
14 than what you predicted, is there some type of --
15 you know, rather than this big old hill, something
16 to put between to block sound, it's just, I assume,
17 big trees. Is there something that's the best for
18 mitigating sound?

19 **A.** Well, you can actually operate the
20 turbines in a reduced sound mode, which means you
21 reduce the power output of the turbine and that
22 will reduce the noise level. There are things you
23 can do after the fact to mitigate a sound issue.

24 **Q.** So reduced sound mode, just slowing down
25 the velocity?

1 **A.** Yeah. Well, you're not slowing -- you're
2 changing the power curve of the turbine so it's
3 extracting less power out of the wind, therefore,
4 it's not making as much noise.

5 **COMMISSIONER KALK:** Okay. I'm not an
6 engineer, but I understand what you're saying.
7 Okay. Thank you.

8 **JUDGE WAHL:** Further -- Commissioner
9 Clark.

10 **FURTHER EXAMINATION**
11 **BY COMMISSIONER CLARK:**

12 **Q.** Thank you. I apologize, I was going to
13 ask this question just based on your experience in
14 general, things that may be emerging in the wind
15 industry and it's not specific to this one. One of
16 the things that we've heard commented on in the
17 past after a wind farm goes on is the lights at
18 night and they're usually synchronized to blink at
19 the same time, and I think any of us that have
20 driven around North Dakota have seen this.

21 There was some sort of technology that
22 I -- I don't know, I read about or got an e-mail,
23 or something like that, where the lights, I'm sure,
24 are a requirement of the FAA, but there was some
25 sort of technology that someone was developing so

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1 that in general they wouldn't blink constantly, but
 2 there would be something that would trigger them to
 3 blink when there was something in the area that
 4 would need them to do so. Does this sound at all
 5 familiar? Have you heard about this issue of how
 6 to deal with nighttime kind of light blinking that
 7 some folks may not like?
 8 **A.** No, I'm not familiar with any sort of a
 9 proximity sensor that would trigger the lights.
 10 The only thing from my own experience is that the
 11 FAA requirements basically dictate what type of
 12 light and how much brightness intensity they have
 13 to be and whether or not they should be
 14 synchronized or not. That's usually recommended,
 15 so to speak, by the FAA.
 16 **COMMISSIONER CLARK:** Okay. Thanks.
 17 **JUDGE WAHL:** Commissioner Cramer.
 18 **EXAMINATION**
 19 **BY COMMISSIONER CRAMER:**
 20 **Q.** Jay, thanks for being here, and impressive
 21 background, by the way. It's my understanding that
 22 the G.E. 1.5sle maxes out or reaches its generation
 23 capacity at about 9, 10 meters. So if noise is
 24 directly attributable to that, might that explain
 25 why 9 meters can be pretty close to the worst case

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1 scenario or is the worst case scenario?
 2 **A.** Yeah. What we do is we go at 95 percent
 3 of rated power, is usually about where you can
 4 expect to see the worst -- the most noise.
 5 **Q.** Thinking about it, just imagining what 9
 6 meters of wind sounds like without a wind turbine,
 7 I'm almost wondering, is there a point where the
 8 wind makes more noise than the turbine?
 9 **A.** Definitely, yes.
 10 **Q.** And is it there or is it greater?
 11 **A.** That's part of the problem of trying to
 12 verify your predictions because, yeah, the wind
 13 turbine is putting out -- emitting more noise at a
 14 higher wind speed, but then if you're out there
 15 trying to listen to it, that background noise of
 16 the wind brushing past your ears is going to
 17 completely drown out the noise of the turbine at a
 18 very short distance from the turbine. It's a
 19 complicated phenomenon to measure.
 20 **COMMISSIONER CRAMER:** I have nothing
 21 further. Thank you.
 22 **JUDGE WAHL:** Further questions from the
 23 commissioners? Followup, Mr. Swanson?
 24 **MR. SWANSON:** No, Judge. Thanks.
 25 **JUDGE WAHL:** Mr. Armstrong?

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1 **MR. ARMSTRONG:** No, Judge.
 2 **JUDGE WAHL:** Mr. Lein?
 3 **MR. LEIN:** No questions.
 4 **JUDGE WAHL:** Thank you very much, Mr.
 5 Haley. Mr. Swanson.
 6 **MR. SWANSON:** Yes, Judge, I think there
 7 were a couple things that got deferred to either
 8 enXco or KLJ, so I'd ask Mr. Sternhagen to come
 9 back and see if we can clean those up.
 10 **JUDGE WAHL:** Mr. Sternhagen, you
 11 understand, of course, that your testimony
 12 continues under oath and subject to penalties of
 13 perjury?
 14 **MR. STERNHAGEN:** I do.
 15 **JUDGE WAHL:** Mr. Swanson.
 16 **MR. SWANSON:** Thank you, Judge.
 17 **CHRIS STERNHAGEN,**
 18 having been previously duly sworn, was examined and
 19 testified as follows:
 20 **FURTHER EXAMINATION**
 21 **BY MR. SWANSON:**
 22 **Q.** First, there was a question regarding the
 23 distance between the closest turbine and a
 24 nonparticipant.
 25 **A.** Yes. To clarify, we do have that

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1 information here. So what we've got essentially is
 2 there's two residences that fall under
 3 consideration here, both of which are on property
 4 that's not currently signed under an easement with
 5 enXco, one of which is 1,646 feet away from the
 6 nearest wind turbine. However, this residency is
 7 owned by a property owner that is participating in
 8 the project with other lands. The particular
 9 parcel that is in question, as I understand it, is
 10 signed under easement with another wind developer.
 11 And then the second is a home that is not
 12 participating in the project, nor does the
 13 landowner have any other lands participating in the
 14 project, and the closest wind turbine there, that
 15 distance is 2,865 feet away from that residence.
 16 **Q.** Thank you. There was also a question
 17 about which turbines may have been -- which
 18 alternate locations may have been removed from the
 19 array as a result of either the noise or the shadow
 20 flicker analysis. Can you address that?
 21 **A.** Yes, I can. As the Commission noted, home
 22 15 and home 8 of EAPC's shadow flicker indicated
 23 that those homes may be subjected to, you know,
 24 additional shadow flicker. When we did some
 25 additional analysis, we identified wind turbine 55

1 and wind turbine 75 as the offending wind turbines.
2 Those two turbines were dropped from the project
3 layout and are not considered in the version 17c in
4 the application.

5 Q. Thank you. There was also with Ms.
6 Turnbow some discussion of piping plover habitat.
7 Is there anything that you wanted to add to that
8 discussion for the record?

9 A. Yes. I did want to make it clear that one
10 of the challenges that we have been faced with with
11 regards to Fish and Wildlife Service and their
12 concerns over piping plover impacts was that we
13 were presented essentially by the Fish and Wildlife
14 with an understanding that there's not a lot of
15 science or biological data that has been conducted
16 on the piping plover. There's not a lot known
17 about their behavioral or how they may be
18 subjected to risk by a wind project such as the
19 Merricourt project. And I wanted to clarify for
20 the record that according to Fish and Wildlife
21 Service, their position with us has been in the
22 absence of such data suggesting the potential for
23 an impact, that they default to a likely to adverse
24 effect position for the particular species. So I
25 just wanted to make that clear to the Commission

1 that we're working with Fish and Wildlife again to
2 try to minimize those impacts, but there is no
3 science according to Fish and Wildlife that
4 suggests there is a likely impact to those species
5 from wind power projects.

6 MR. SWANSON: I don't think there were
7 other open-ended -- or open questions that had been
8 deferred, but certainly if there are, we'll go
9 around the horn again.

10 JUDGE WAHL: We'll find out in a minute.
11 Mr. Armstrong.

FURTHER EXAMINATION

BY MR. ARMSTRONG:

14 Q. Mr. Sternhagen, this one wasn't deferred,
15 but it was something that I meant to ask earlier
16 and it's probably why you had some confusion with
17 some of my questions earlier, and this was before I
18 had the new map that's in Exhibit 5 in front of me,
19 and that map is titled Proposed Primary and
20 Alternative Turbine Placements. And as I
21 understand it, what you're asking to be sited is
22 what is outlined in the red and white section on
23 that map; correct?

24 A. That is correct.

25 Q. And the map I had before had a larger

1 project area and that's why I just wanted to
2 clarify for the record that what we have as Exhibit
3 5 now is what's being asked to be sited today?

4 A. Correct.

5 MR. ARMSTRONG: I have no further
6 followup.

7 JUDGE WAHL: Mr. Lein?

8 MR. LEIN: No questions.

9 JUDGE WAHL: Questions from the
10 Commission? Commissioner Cramer.

FURTHER EXAMINATION

BY COMMISSIONER CRAMER:

13 Q. The problem with being recalled is that we
14 think of other things. And maybe this is going to
15 be addressed by a member of the public, but one of
16 the things I noticed in the application enacted
17 identifies competition, not signed competition
18 farms. I see one where there's white on two sides
19 of a section line, it's Gary and Shirley Grosz. Do
20 they have both sides of that, do you know? Are you
21 familiar with that site at all?

22 A. Could the commissioner direct me to the
23 map he's looking at?

24 Q. I'm looking at a map in the application,
25 itself. I've got it all blown up. It's about page

1 172 of 1031, if that helps. I'm just -- whenever I
2 see two sides of a section line and I see turbines
3 and it looks like a road -- I mean, it is a road,
4 it's 89th Street Southeast and it's highlighted in
5 bright blue and ends at a turbine the way it looks
6 to me. I'm just wondering if there's anything
7 abnormal about that situation because there's a
8 nonparticipating landowner, and I don't know if
9 it's the same landowner on both sides, but it must
10 be because the other side -- north side of the
11 street is not -- the road is not identified. I'm
12 wondering what kind of a road that is. It's about
13 in the middle of the map.

14 A. I'm sorry. Could you repeat what your
15 question is?

16 Q. My question is, is there anything unusual
17 about this situation where you have a
18 nonparticipating landowner and a road that seems to
19 be going through his land, while there's not a
20 turbine on it, I'm wondering what kind of a road
21 that is. And the reason I wonder is because on
22 either side of the bright blue it looks like just a
23 section line, so I'm wondering if that's a
24 construction road, if that's his farm, if that's
25 his driveway or what that might be.

1 A. Are you referring to, and I don't know if
2 it's labeled on the map you're looking at. I'm
3 still unclear which one you're looking at, but is
4 it 89th Street Southeast?

5 Q. 89th Street Southeast, that's correct.

6 A. Yeah, my understanding, that is an
7 existing jurisdictional road that essentially is
8 improved only up to that residency and, from just
9 being out in the field, beyond that the section
10 line is just -- it's not improved. That is not a
11 road that we're proposing as part of the project,
12 but rather an existing one.

13 Q. All right. Yeah, the only reason I
14 wondered is because I do see there are a couple of
15 turbines that would likely be accessed by that
16 road, but perhaps you'll access them another way.

17 A. Yes, that is correct. Actually in
18 discussions with the particular resident there,
19 they had voiced some concerns about the use of that
20 road for the construction of the wind project, and
21 as a result we were able to find alternative access
22 to those wind turbines that are situated to the
23 east and south of that residence that completely
24 avoids that particular road.

25 COMMISSIONER CRAMER: Thank you. I have

1 nothing else.

2 JUDGE WAHL: Further questions from the
3 Commission? Commissioner Kalk.

4 **FURTHER EXAMINATION**

5 **BY COMMISSIONER KALK:**

6 Q. Thank you for coming back up here again.
7 Like Kevin said, we always come up with more
8 questions. I actually had one just to follow up
9 from Jay's testimony. Tell me, does the company
10 after the project is built go back out and verify
11 what you thought was going to happen as far as
12 noise or maybe environmental impacts?

13 A. EnXco has done similar measures with
14 projects in the past as concerns have been raised.
15 It's not a standard procedure necessarily.

16 Q. Okay.

17 A. Particularly in light of, you know,
18 relevant study data to suggest that there may be
19 issues that we need to be concerned of. We don't
20 feel that such is the case here. We think that the
21 thresholds as modeled by EAPC are low enough that
22 we feel very comfortable that there will not be too
23 many concerns.

24 For this particular project, though, I
25 must also remind the Commission that this is a

1 project that would essentially be turned over to
2 Xcel Energy, so decisions about potential
3 mitigation once the project has been commissioned
4 would need to be coordinated not only with enXco as
5 the operator and maintainer of the project, but
6 with the project owner, as well.

7 Q. That poses an interesting dilemma that we
8 would want to site something in the best possible
9 way not to have to do things later, which would
10 potentially create a greater return coming back
11 around. But that's another day, I guess.

12 You gave distances to the two homes
13 closest to residences. What numbers are those on
14 Exhibit 5? If you were to tell me like number 20,
15 where were you talking about?

16 A. Are you asking where the residences are
17 that I was referring to?

18 Q. For the turbines. There are two turbines
19 that are close and I didn't hear a number you said.

20 A. Yeah, the two turbines that would be
21 closest to residences that are not part of the
22 project would be turbine 27, which is 2,865 feet
23 from the closest residence.

24 Q. Okay.

25 A. And the other one is turbine 40, which is

1 1,646 feet from the nearest residence. But, again,
2 as a reminder, that is a particular -- that
3 particular landowner is a participant in the
4 project.

5 Q. Okay. And then the last question I forgot
6 to ask from earlier is, a lot of challenges in the
7 state right now with all this development as far as
8 the call before you dig, the 811. We've had some
9 pipeline problems, quite honestly. How do you
10 approach the call before you dig when you do all
11 these roads and you do all the turbines and the
12 markings? How do you broach that because there's a
13 lot of dirt moving here?

14 A. Yeah, we do coordinate with all local
15 regional utilities. For example, for this
16 particular project we're in contact with James
17 Valley Electric Co-op, which provides the retail
18 power for the area, as well as Dickey Rural
19 Telephone, and through kind of coordination with
20 them we're able to identify in advance of
21 construction the locations of those facilities.

22 Additionally, we also do the -- forgive me
23 if I don't have the name right, but the North
24 Dakota One-Call, and they come out and flag all
25 those utilities, and we take GPS locations of those

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1 and they're included into our constraints analysis.
 2 We avoid those facilities where we can either
 3 through directional boring if they're buried cable
 4 or routing around them. In the areas where we
 5 cannot, we coordinate with those utilities to allow
 6 for a crossing of our facilities without an impact
 7 to those. As a result of that coordination, we do
 8 not expect any problems with regional service for
 9 those utilities as a result of the construction
 10 project.
 11 Q. Okay. So where the turbine locations are
 12 exactly -- I understand most of this is out in the
 13 rural areas, but you don't anticipate any problems
 14 with that? They have not seen -- the North Dakota
 15 One-Call, have they seen this project layout --
 16 have any of these folks beforehand? Have they had
 17 any particular concerns?
 18 A. We did actually put in a North Dakota
 19 One-call and we did share with them preliminary
 20 design drawings to identify the potential areas for
 21 ground disturbance.
 22 Q. Good.
 23 A. And the utilities came out and, like I
 24 said, marked those lines with the standard visual
 25 indicators and then our surveyors went out and took

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1 GPS locations of each of those.
 2 COMMISSIONER KALK: Super. Thank you.
 3 JUDGE WAHL: Further questions from the
 4 Commission? Followup, Mr. Swanson?
 5 MR. SWANSON: No, Judge.
 6 JUDGE WAHL: Followup, Mr. Armstrong?
 7 MR. ARMSTRONG: No, Judge.
 8 JUDGE WAHL: Mr. Lein?
 9 MR. LEIN: No, Judge.
 10 JUDGE WAHL: Thank you very much, Mr.
 11 Sternhagen, again.
 12 Commissioner Cramer, you had a pending
 13 question. I don't know whether you wish to pursue
 14 it.
 15 COMMISSIONER CRAMER: It's okay. It's not
 16 relevant to this proceeding.
 17 JUDGE WAHL: Mr. Swanson, anything
 18 further?
 19 MR. SWANSON: We do not have anything
 20 further, Judge. Thank you.
 21 JUDGE WAHL: Mr. Armstrong, anything
 22 further?
 23 MR. ARMSTRONG: No, Your Honor.
 24 JUDGE WAHL: Then, please, is there
 25 anybody -- is there any member of the public who

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1 wishes to make a presentation who has not talked to
 2 me, but who has a question and would like to talk
 3 to me before we begin that? All right. Then, Mr.
 4 Grosz, please.
 5 Mr. Grosz, please state your name for the
 6 record.
 7 MR. GROSZ: Gary Lee Grosz.
 8 JUDGE WAHL: And I understand, Mr. Grosz,
 9 that you're here representing yourself, you do not
 10 represent a government agency or business or any
 11 other -- anybody other than yourself?
 12 MR. GROSZ: Correct.
 13 JUDGE WAHL: What is your -- please state
 14 for the record your residence address and post
 15 office address.
 16 MR. GROSZ: 8902 63rd Avenue Southeast,
 17 Kulm, North Dakota 58456.
 18 JUDGE WAHL: Mr. Grosz, as you heard me
 19 advise previous witnesses, your testimony is
 20 required to be under oath and I'm required by law
 21 to advise you regarding perjury before
 22 administering the oath. Perjury is a false
 23 statement of material fact which you do not believe
 24 to be true. In North Dakota perjury is a Class C
 25 felony, punishable by a fine up to \$5,000,

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1 imprisonment for a period of up to five years, or
 2 both. Will you raise your right hand, please?
 3 **GARY GROSZ,**
 4 being first duly sworn, was examined and testified
 5 as follows:
 6 JUDGE WAHL: You may proceed, sir.
 7 THE WITNESS: Thank you. Commissioners,
 8 I'd like you to refer to the infamous drawing that
 9 we're all looking at today. I guess I'm the island
 10 that we have been discussing off and on, and I'm
 11 happy to be here and to voice my concerns. As you
 12 can see, in reference I live there, it's my
 13 residence, it's my business. I am a tenant of a
 14 large portion of the project where the towers are
 15 located. I've lived there for approximately 12
 16 years and raised my family there.
 17 As we've discussed, one of my concerns is
 18 noise. I have to agree with several of the
 19 statements made by the consultant. When we found
 20 out that we were located within this project,
 21 approximately having turbines on all sides of us.
 22 According to the map here, probably about from a
 23 half-mile to a mile we have turbines situated
 24 there. Noise is a difficult thing. We've taken it
 25 upon ourselves to read several articles on noise.

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1 We have visited several wind tower projects at
 2 various times of the day. Along with what he said,
 3 there's several setbacks. I would say when it
 4 comes to setbacks, it's an illusion. Okay.
 5 There are several other variables that
 6 affect noise transmission that have a greater
 7 effect than distance. In trying to give you a
 8 direct visual effect of this, Tatanka Wind Power
 9 Project, we went out there on Sunday afternoon at
 10 about 5 p.m. I drive a 2001 Dodge diesel pickup.
 11 We drove up to an area, turned the pickup off and
 12 got out approximately three-quarter of a mile away
 13 from a tower, a south wind of about 20 miles an
 14 hour. It was very difficult to hear the noise
 15 coming off of the tower.
 16 We returned right back to that same
 17 location at 8:30 that evening. I rolled down the
 18 window of my pickup with the engine running, the
 19 radio on, and you could clearly hear the noise
 20 coming off of that tower. And everybody says why?
 21 And the wind speed has lessened. We're probably
 22 down to a 10-, 15-mile-an-hour wind. Similar to
 23 what he said, what happened is the torque -- you
 24 know, and this is from my opinion -- the blade
 25 angle had increased to increase the efficiency of

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1 the wind turbine, the wind speed had gone down,
 2 meaning you didn't have that wind blowing by your
 3 ears, and it was deafening. I mean, my pickup is
 4 not a quiet, it's a diesel. It's hammering away.
 5 We have visited several projects and we
 6 find that maximum noise is probably coming off the
 7 turbines -- seems to be not at 12 noon. The last
 8 time you want to go -- the least time you want to
 9 go and study noise on a wind tower project is 12
 10 noon. Go out there at eight to eleven o'clock at
 11 night, go out there at four o'clock in the morning
 12 to about seven, eight o'clock, that's when you're
 13 going to get your noise transmission.
 14 Most of the people that live on the edge
 15 of wind tower projects, their biggest complaint, it
 16 isn't a concern of the noise at 12 noon. It's a
 17 concern of being woke up in the middle of the night
 18 from sleep. It's the one thing that we do in our
 19 residences more than almost any other thing is
 20 sleep, and I have concerns that, knowing the
 21 terrain, the location of some of the wind towers,
 22 we have learned how the wind kind of reacts through
 23 the hills. I mean, to survive there, that's what
 24 you have to learn. If you can master the wind, you
 25 can survive there. It's a wonderful place to live

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1 because you don't have many mosquitoes in the
 2 summertime.
 3 So based upon that, we're concerned.
 4 We're kind of in between -- sandwiched in between
 5 all these wind towers.
 6 Another one of our concerns, and I would
 7 like to refer you back to the map here, if you
 8 would look at --
 9 JUDGE WAHL: For the record, the witness
 10 is referring to Exhibit 5.
 11 THE WITNESS: Exhibit 5 again. If you
 12 would look at the northern edge of this map, it has
 13 a couple jogs in it, but it's the basic northern
 14 edge, it's really called Dickey County No. 3, it's
 15 a roadway. If you go right off of Highway 56, you
 16 will run into a lake going towards the west.
 17 There's a lake area there. And if you would go
 18 kind of where it takes a jog back in after the
 19 lay-down area, there are a couple, oh, I would say,
 20 half-mile stretches within this map that that is
 21 the only access way through those areas.
 22 Due to the high water of the last years,
 23 several farmers, including myself -- there's
 24 probably about six or seven of us who farm in what
 25 I will consider the southeastern corner of this and

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1 farm north of this area. They have to haul cattle
 2 through here. They have to haul grain. It's their
 3 only way that interconnects between their
 4 farmsteads and a lot of large areas of their land.
 5 Interruption on this roadway would dramatically
 6 lessen the efficiency and have major consequences
 7 to their businesses.
 8 Alongside of this roadway, if you would go
 9 along from, let's say, tower location 53 all the
 10 way out to 24, and then coming back in, if you
 11 go -- would go down past 29, a power line -- the
 12 main power feed for this whole area is located
 13 right along that roadway, so I see several
 14 locations where they're going to be going
 15 underneath that power line or taking that power
 16 line down or somehow working around that power
 17 line. I can't open my shop door. I can't pump
 18 fuel. I can't -- basically it shuts down my
 19 business when I lose electrical power. We can't
 20 pump water for spraying. Our livestock require
 21 power to pump water. So that's a concern of mine
 22 looking at their access points, meaning it's just
 23 not one location where you could bury it. It's
 24 several locations where they're going to be going
 25 underneath that power line.

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1 And I have a 40-foot air seeder. I have
 2 to unfold the wings to get underneath that power
 3 line in spots. So that's to give you a -- you're
 4 not going to drive a crane of any size through
 5 there. You know, I look at the map and I see that
 6 there's going to be times that they're going to
 7 want to go in between -- a good example is between
 8 tower 52 or -- well, really it would be -- let's
 9 jump -- yeah, it would be between 33 and tower 30,
 10 which is basically right north of my square.
 11 There's no access in between there. They got to go
 12 down the road if they don't break down their crane.
 13 Well, that's going to take -- to walk a crane down
 14 that road is going to really tie up that road for
 15 quite a long period of time, and that's the only
 16 access through for a large number of people. So
 17 this is really -- it won't have -- I have a single
 18 access road into my business. There's about three
 19 or four places. We have to maintain the
 20 infrastructure that all of us can continue on.
 21 Understanding their timeline, okay. They have a
 22 very aggressive timeline to build this project.
 23 Understanding that they will be hiring contractors
 24 that have different goals, their number one goal is
 25 to build this project in a timely, efficient

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1 fashion. I have concerns that that's bottlenecked
 2 right there, and I don't have a solution to it, but
 3 I know long term it's going to definitely affect
 4 the local residents.
 5 Another one of my concerns is something
 6 that we've talked about quite extensively is the
 7 effect on wildlife, migratory waterfowl and all the
 8 other species located within this region.
 9 Looking at this project, you have two
 10 sides of it. You have an upper southern half that
 11 is located along a large block of native prairie,
 12 and the northern half, which is located -- towers
 13 are located on -- around and about wetlands. These
 14 wetlands have been a major resting point for
 15 migratory waterfowl for years. Federal Wetlands
 16 have surveyed duck nests in these regions for
 17 approximately 25 years, okay, so if it wasn't a
 18 sensitive area, I don't think they would be out
 19 there surveying nests.
 20 The southern end of this project is native
 21 prairie, without roads, without much development.
 22 It's allowed kind of a fantastic situation. If you
 23 love wildlife, I don't think there's many places
 24 like this in the whole region that has such a large
 25 diverse group of wildlife. I think statewide we

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1 are developing and we are going into these areas
 2 and they are becoming fewer. I don't know if it's
 3 the development of roads or the continuous motion
 4 of the wind blades, but when I have visited these
 5 other sites, a lot of wildlife -- a substantial
 6 amount of wildlife are avoiding these areas. Okay.
 7 That's just my opinion of what I'm seeing. They
 8 don't like people coming through. They want blocks
 9 of area where they can settle down and not be
 10 disturbed.
 11 Kind of in summary, I know there's going
 12 to be effects. You know, my general statement is
 13 in six months from now where do we go if we can't
 14 get down our roads because we have a contractor
 15 that has a very tight construction schedule and the
 16 roads are tied up and we say, Well, I sat there for
 17 fours hours today and I'm out trying to harvest a
 18 crop? Four hours a day in August, September, it --
 19 we don't have four hours for sure when the sun is
 20 shining. It's just not there.
 21 In a year from now when they turn on these
 22 blades and we have a southwesterly wind in my yard
 23 and similar to what you guys were discussing, I
 24 find that there's noise. I mean, I've got a large
 25 building. If I can feel the side of my building

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1 vibrate or if I can't sleep two nights a week, what
 2 is my recourse?
 3 And the other thing is in two years from
 4 now, if we created a large block of land void of
 5 the diverse wildlife that we have, we've lost
 6 something. Everything has a price and I feel this
 7 is one of the prices we're going to have to pay in
 8 this region if we construct this project.
 9 Any questions?
 10 JUDGE WAHL: Mr. Swanson?
 11 MR. SWANSON: No, Judge.
 12 JUDGE WAHL: Mr. Armstrong?
 13 **EXAMINATION**
 14 **BY MR. ARMSTRONG:**
 15 Q. Following up on a question from
 16 Commissioner Cramer earlier, there was a discussion
 17 about the roadway, the east-west one, is it 83rd?
 18 A. That would be a -- it would be either 89th
 19 -- well, 8902 would be -- 89th Street coming across
 20 would be the east-west one. The north-south one
 21 runs straight into my yard and that would be like
 22 63rd, I think.
 23 Q. Does that run all the way through your
 24 property then and keep heading south and north?
 25 A. No. It stops at my driveway. Basically

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1 it stops at the northern edge of my driveway. From
 2 there it is a section line basically used to access
 3 my fields to the south there. And what they're
 4 doing there, they're burying a collection line up
 5 through there. That's the way it appears to me.
 6 Q. And I want to make sure that I have your
 7 property right. I think I do. It's this one right
 8 here?
 9 A. Yes, sir.
 10 Q. Are you one of the landowners under
 11 easement with another company?
 12 A. No, I'm not.
 13 Q. And then that land within your property
 14 there, do you farm that land or is it pasture?
 15 A. That is pasture. I have 5.6 acres of
 16 cropland on the eastern edge, but the balance of it
 17 is my yard, buildings, outbuildings and pasture.
 18 Q. I assume it's winter pasture?
 19 A. Summer and winter.
 20 Q. Summer and winter?
 21 A. Yeah.
 22 Q. Is that for cattle?
 23 A. Cattle.
 24 Q. How many head?
 25 A. I have approximately a 150-head cow-calf

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1 operation.
 2 Q. I didn't hear this testimony earlier, so
 3 with your testimony about these power lines being
 4 down, where is it coming that the power will be
 5 down during construction?
 6 A. Well, okay. They cross a power line. My
 7 understanding is there's no way I can physically
 8 see how they can go underneath the power line, so
 9 there's going to be interruptions at several
 10 locations, and I don't know what their plan is, but
 11 talking to people within -- previously within wind
 12 tower projects, there's a process of taking down
 13 the power lines to get large equipment underneath
 14 them. In some cases they bury them. But any
 15 interruption of power for, let's say, three or four
 16 hours in the middle of the summer, it just don't
 17 work. I mean, yeah, five minutes to make an
 18 interconnection, we understand that, we're out of
 19 power more than we really like to be. But for long
 20 periods of time we can't handle it. Our business,
 21 it just shuts us down.
 22 Q. Is your business -- do you have a
 23 different business other than farming?
 24 A. No.
 25 Q. That power line runs along, I guess I

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1 would call it the -- it's jutting out, but
 2 generally that northern border of the project area?
 3 A. Along that whole northern border and then
 4 right along that access road coming into my yard.
 5 Q. And is there a way then to get into those
 6 turbines, the turbines 53 through 24, that you
 7 discussed from the south?
 8 A. It would be difficult because it's pretty
 9 well, too, blocked by water. That's really one of
 10 my concerns. If you would look at -- well, we have
 11 names for them all, but there's really Ranky Lake
 12 and Meidinger Lake, they have a run of turbines on
 13 the south side and the north side, and to kind of
 14 give you a visual, you're off the hill at that
 15 point, you're down in the lower area. Just north
 16 of the northern edge there's probably about a
 17 2,000-acre wildlife area. From where it jogs out
 18 to where it's the north, that is a federal wetlands
 19 development.
 20 Q. And is that Section 26? Can you read the
 21 section figures?
 22 A. Yeah, basically Section 23.
 23 Q. 23?
 24 A. 23, yeah. North of there is a really
 25 large federal wetlands area.

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1 Q. Okay. You know, I notice around your land
 2 area there, you know, there's some turbines to the
 3 south and to the east. The west, northwest and
 4 northeast don't have turbines for at least a
 5 half-mile or so. Is that through discussions with
 6 you, do you think, or have you had discussions with
 7 the company?
 8 A. If you look at the terrain. Okay. If you
 9 go from tower 29 to tower 58 to my yard, that is a
 10 large draw. Okay. There's several creeks going
 11 through there. It's basically a silty clay
 12 sediment area. I don't think it's real conducive,
 13 but it's probably also in consideration that it's
 14 my yard. And, in fact, one of the towers, if you
 15 were to look at tower 29, the elevation of tower 29
 16 and my yard are about the same with a valley in
 17 between them. You know, in discussions that they
 18 have brought forward how sound can transmit across
 19 a valley, the blade, the turbine elevation and my
 20 yard are about identical.
 21 Q. Your yard is in that northwest?
 22 A. Is right at the northwest corner of that.
 23 Q. And that's in Section 34; correct?
 24 A. Yes.
 25 MR. ARMSTRONG: I have no further

1 questions.

2 JUDGE WAHL: Mr. Lein?

3 MR. LEIN: No questions.

4 JUDGE WAHL: Questions from the
5 commissioners. Commissioner Kalk.

6 **EXAMINATION**

7 **BY COMMISSIONER KALK:**

8 Q. Gary, thank you for your testimony. I
9 mean, it takes a lot of nerve to get up and speak
10 your piece and that's what we're here to do, is
11 hear your thoughts.

12 I guess I'm trying to wrap my hands around
13 what exactly you're asking us to do because -- I
14 mean, are you saying -- first question, I guess,
15 is, are you just against wind development, or are
16 you just against these certain turbines, because a
17 lot of times we get folks come and say we don't
18 like turbines A, B, C because it's too close to our
19 house and maybe ask us to move them around. I
20 think I hear your concern about making sure there's
21 no interruption of power, your concern about making
22 sure the road access is available, but then above
23 that, I mean, is there -- I mean, would you like
24 other turbines to be pulled back? I'm trying to
25 get the specifics of what you're asking.

1 in my rights, and this is going to -- this is
2 devastating to me, I'll be honest with you guys.
3 This is going to lessen my quality of life, there's
4 no question about it. What my plans are -- from
5 day one, my plan was to minimize that as much as
6 possible. I have been talking to enXco saying,
7 Hey, I have concern here. Okay. I think the one
8 tower they removed for flicker. That was my yard.
9 That was one of my concerns. Noise is not one of
10 the things. I have a concern about the row of
11 towers southwest of my yard. Okay. Let's go to
12 the map again. 36, 35, 7, 34 and 37, there's a run
13 there. If you understand the terrain, I get a
14 strong chinook every morning and every evening off
15 the hills depending on the temperature all summer
16 long. Okay. The creeks that are at the end, they
17 are at the ridge line, the creeks where the water
18 flows and the sound transmits come right down to my
19 yard. When my neighbor is -- my neighbor is
20 farming up there, I know the sound transmission
21 from that corner there tracks right down to my
22 yard. I can hear when he gets out of his tractor
23 cab and talks. Okay. That's the type of situation
24 I have. If I look at -- based upon what he said,
25 if I look at tower 29, that's a valley. Okay. The

1 A. Well, see, and here's an issue --

2 Q. But without opening up the whole
3 discussion because I heard what you said.

4 A. Okay. In a year from now, I don't know
5 what recourse I'll have in a year from now. They
6 have -- I have setbacks further back than what
7 legally they have to set them back. Okay. I
8 cannot come and testify conclusively, I think
9 similar to anybody in this room, that I will have a
10 noise problem, but I feel, knowing the terrain,
11 that I will potentially have a noise problem --

12 Q. So is there some --

13 A. -- in the future. I can't testify that,
14 yeah, I'm going to be up 90 percent of the time.
15 There's too many variables here.

16 Q. But is there some setback you're
17 comfortable with?

18 A. Well, basically when we're discussing
19 zoning, I said a mile. I mean, that's not --

20 Q. Zoning with the county?

21 A. But I think they would consider that
22 unreasonable.

23 Q. Okay.

24 A. I am not the owner of this property. I
25 believe in landowner's rights, but I also believe

1 turbine section is facing straight in my yard.
2 Yes, it's within the setback.
3 Q. So maybe if I narrow the focus a little
4 bit. So if there's the three turbines you're
5 concerned, would it be 29, 27 and 37 -- just the
6 top three? I hear your point well, but is there
7 certain turbines you really don't like?
8 A. Well, those are the ones that concern me
9 most, yes, 37, 34, 7, okay, right in that corner,
10 and then probably 29, because those are predominant
11 wind directions and that's -- if you go up there
12 and stand at the proposed locations, if you're
13 standing there and you look at my yard, I don't
14 know -- being 37, 34 and 7 are substantially higher
15 than my yard, okay, and they will be elevated even
16 further up, okay, I don't know how that's going to
17 affect, okay, how that sound transmission is going.
18 Is it going to be over the top of my farm? I can't
19 conclusively -- until they're built, I won't know
20 the end result. And I guess that's why I'm -- I'm
21 expressing concern. I want to know if down the way
22 we find these are a big issue, how are we going to
23 handle it? I don't know how it's going to be
24 handled down the way. I hate to come in here and
25 say, Hey, don't build them, and then, you know,

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1 people say, what are you screaming about, because
 2 they do have rights. Okay. I understand the
 3 rights of the landowner to develop this -- this
 4 project, but where do my rights start and theirs
 5 end? It's kind of a dotted line right now. I'm
 6 not sure where that's at.
 7 COMMISSIONER KALK: Thank you very much.
 8 JUDGE WAHL: Further questions from the
 9 Commission? Commissioner Clark.
 10 **EXAMINATION**
 11 **BY COMMISSIONER CLARK:**
 12 Q. Just so I understand, I noticed on the
 13 county maps, is this the property that's Kungel?
 14 A. Larry Kungel, yes.
 15 Q. So they're the owners of the property, you
 16 rent from them?
 17 A. Well, I lease -- like I said, if you go
 18 around my area there, I lease a large portion.
 19 Yeah, Kungels used to live there. I purchased the
 20 property --
 21 Q. But you own the home?
 22 A. I own the home and that block.
 23 Q. And then lease the --
 24 A. And then I lease the balance of the land
 25 around there.

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1 COMMISSIONER CLARK: Okay. Very good.
 2 Thank you for testifying.
 3 JUDGE WAHL: Further questions from the
 4 Commission?
 5 COMMISSIONER CRAMER: Just thank you.
 6 JUDGE WAHL: Followup, Mr. Swanson?
 7 MR. SWANSON: No, Judge. Thanks.
 8 JUDGE WAHL: Followup, Mr. Armstrong?
 9 **FURTHER EXAMINATION**
 10 **BY MR. ARMSTRONG:**
 11 Q. Do you know if the Kungels are under lease
 12 with any wind company?
 13 A. A large portion of this project is on
 14 their property. I'll be farming around a lot of
 15 these wind towers in the future, hopefully.
 16 Q. I'm looking -- I'm sorry, I'm looking at a
 17 different map than Commissioner Clark so I just
 18 want to make sure I'm clear. The part that I
 19 showed you earlier that's outlined in red and
 20 white, do you own all of that?
 21 A. I own that block, yes.
 22 MR. ARMSTRONG: I just needed that
 23 clarification. Thank you.
 24 JUDGE WAHL: Mr. Lein, followup?
 25 MR. LEIN: No questions.

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1 JUDGE WAHL: Any further questions from
 2 the Commission?
 3 COMMISSIONER KALK: Maybe just a comment,
 4 Judge. If I could, Gary, just a comment. If you
 5 remember my questions I was asking the noise expert
 6 about the difference between what they tell us in
 7 modeling and what they tell us on the ground, and
 8 that's something I think that kind of plays out in
 9 these wind turbines where what is modeled and what
 10 actually appears, that's kind of where I think the
 11 rubber meets the road on some of these issues and I
 12 guess that's what -- our responsibility is to do
 13 orderly development and we do it based on the data
 14 we have, and we'll do that accordingly, but that's
 15 a concern that I do have, as we build projects that
 16 what people testify to today and when the project
 17 is built, that those things match. So that's just
 18 a followup for someday.
 19 JUDGE WAHL: Anything further from the
 20 Commission? One more time then, Mr. Swanson?
 21 MR. SWANSON: No. Thank you, Judge.
 22 JUDGE WAHL: Mr. Armstrong?
 23 MR. ARMSTRONG: No, Judge.
 24 JUDGE WAHL: Mr. Lein?
 25 MR. LEIN: No.

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1 JUDGE WAHL: Thank you very much, Mr.
 2 Grosz. Mr. Moe. Please state your name for the
 3 record, sir.
 4 MR. MOE: John Moe.
 5 JUDGE WAHL: I understand, Mr. Moe, that
 6 you're here representing yourself, you do not
 7 represent a government agency, business or other
 8 person?
 9 MR. MOE: Yes.
 10 JUDGE WAHL: Please state for the record
 11 your post office address and your residence
 12 address.
 13 MR. MOE: 8770 62nd Avenue Southeast,
 14 Fredonia, North Dakota. If you look on the map
 15 it's 28-62. It's up at the top.
 16 JUDGE WAHL: All right. Mr. Moe, as you
 17 have heard me advise previous witnesses, your
 18 testimony is required to be under oath and I'm
 19 required by law to advise you regarding perjury
 20 before administering the oath. Perjury is a false
 21 statement of material fact which you do not believe
 22 to be true. In North Dakota perjury is a Class C
 23 felony, punishable by a fine up to \$5,000,
 24 imprisonment for a period of up to five years, or
 25 both. Will you raise your right hand, please?

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1 whooping crane, but they came back with nothing
 2 about the impacts to ducks and geese and pheasant
 3 and deer, so I personally hold a lot of credibility
 4 when the Fish and Wildlife Service comes back
 5 because they're the expert.
 6 **A.** How come -- I'm there all year -- nobody
 7 has ever come down where I am? I hear about all
 8 these guys checking this stuff out. Nobody. And
 9 they know I have a hunting club there. Why
 10 wouldn't they come and talk to me about this?
 11 **Q.** That's, I guess -- that's the last
 12 question, comment, is that outside of this, if you
 13 have concerns about the Fish and Wildlife in North
 14 Dakota, the best thing to do is to set up a meeting
 15 with the service and sit down and give them your
 16 concerns, and maybe they can give you some data
 17 that reinforces some of their results. I just
 18 appreciate your testimony. I just wanted to let
 19 you know that I feel comfortable that folks have
 20 looked at some of the species, but it doesn't mean
 21 that they have done a perfect job. So if you can
 22 give feedback to them --
 23 **A.** I've already tried that. Ducks Unlimited
 24 came down and talked to me. You know, this was a
 25 year or two ago. Well, we're going to put --

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1 they're thinking about a wind project here. So
 2 when he leaves he says, I'm going to give you an
 3 envelope here. I want you to send in 25,000.
 4 **COMMISSIONER KALK:** Thank you, sir.
 5 **JUDGE WAHL:** I'm sorry. Mr. Moe, just a
 6 moment, please. Any further questions from the
 7 Commission?
 8 **COMMISSIONER CLARK:** No. Thank you.
 9 **COMMISSIONER CRAMER:** Thank you.
 10 **JUDGE WAHL:** Followup, Mr. Swanson?
 11 **MR. SWANSON:** No. Thank you, Judge.
 12 **JUDGE WAHL:** All right. Thank you very
 13 much, Mr. Moe.
 14 Is there anyone else who would offer any
 15 testimony, any comment, any advice to the
 16 Commission? Anyone else who wishes to make a
 17 presentation to the Commission? It wasn't
 18 necessary to talk to me, so if you had some second
 19 thoughts, have anything to say to the Commission,
 20 this is your chance to do so.
 21 If not, Mr. Swanson, anything further?
 22 **MR. SWANSON:** No. Just thank you, Your
 23 Honor, for being here, running a good hearing.
 24 Thank you, Commissioners, and, most of all, thank
 25 you, members of the public who came and Mr. Grosz

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1 and Mr. Moe for stepping up and testifying.
 2 **JUDGE WAHL:** Mr. Armstrong, anything
 3 further?
 4 **MR. ARMSTRONG:** No, Your Honor.
 5 **JUDGE WAHL:** Closing comments from the
 6 commissioners. Commission Chairman Tony Clark.
 7 **COMMISSIONER CLARK:** Just to echo the
 8 comments of others, thank you for spending your day
 9 with us, and for those of you who testified, we
 10 appreciate that, as well. Again, thanks to the
 11 thoroughness of the application before us.
 12 The Commission, of course, doesn't make
 13 any decisions today, but we will go back to the
 14 office, we have the record that was established
 15 here today, as well as some late-filed exhibits
 16 that we'll be getting and look forward to making a
 17 decision at some point in the future.
 18 **JUDGE WAHL:** Commissioner Cramer.
 19 **COMMISSIONER CRAMER:** Just add my
 20 appreciation to everybody, applicants, of course,
 21 and staff for a very, very well-run hearing.
 22 It is interesting, though, that this is
 23 the birthplace of wind development in North Dakota.
 24 We come back some 1,400 megawatts later with a bit
 25 of a culture clash that's happening in our

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1 communities, and it's not without some
 2 predictability and it's probably a pretty good time
 3 in our state to take a high-level look at where
 4 we've been, where we are and where we're going.
 5 And so I appreciate, as well, Mr. Moe and Mr.
 6 Grosz, your comments in general about wind
 7 development. I take your comments to be more
 8 policy oriented and probably of higher-level
 9 concern than simply a turbine in a particular
 10 place. It's an important discussion, frankly.
 11 Our job is not to make those
 12 determinations, however. Our job is to ensure that
 13 any impact or negative impact is minimal. But
 14 there's a legislature in session right now and you
 15 have great access to your policymakers, and I think
 16 it's important to not let this be the last
 17 opportunity to have some say as we sort of set an
 18 agenda for our state going forward, because we are
 19 a blessed state with a whole bunch of resources
 20 that our country wants and needs at a time when we
 21 are, quite frankly, at war over some of these
 22 issues. So it's important we do it, but it's
 23 important we do it right, and I appreciate your
 24 participation in helping us do that.
 25 **JUDGE WAHL:** Commissioner Kalk.


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1 COMMISSIONER KALK: Just to kind caveat
 2 what Commissioner Cramer said, too, just thank you
 3 very much for coming out here, and Commissioner
 4 Clark, for just a high-level discussion about it.
 5 My only comments are, you know, we've got
 6 problems in Egypt right now, I've got a lot of
 7 buddies that are still over in the Middle East. We
 8 need more domestic energy at home, there's no
 9 question about it. We need to find that balance of
 10 energy development.
 11 And it's interesting as we sit here in
 12 North Dakota, we have the lowest-cost electricity
 13 in the country, period. With that it brings in all
 14 the opportunities for business, good for seniors,
 15 good for young folks. Trying to find that balance
 16 of energy development as we go forward, we've got
 17 folks that don't like coal, folks that have
 18 concerns about wind, folks that don't like this,
 19 folks that don't like that, but our job, I think,
 20 here is to have an orderly development, and if we
 21 make a project decision, we make the best decision
 22 that we can given the information we have. That's
 23 why I think it's so important that, thank you very
 24 much for the company for putting all this
 25 information together because we make better

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1 decisions if we have better information.
 2 I can tell you that as I leave here today
 3 I have much more information about this project and
 4 I just want to thank you all for your work. Travel
 5 safe going home.
 6 JUDGE WAHL: Thank you, Commissioners and
 7 thank you everyone who is present.
 8 The hearing in the matter of enXco
 9 Development Corporation Merricourt Wind Power
 10 Project Siting Application, North Dakota Public
 11 Service Commission Case No. PU-08-932, is closed
 12 subject to the filing of late-filed Exhibit 10.
 13 (Concluded at 2:50 p.m., the same day.)
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1 CERTIFICATE OF COURT REPORTER
 2
 3 I, Denise M. Andahl, a Registered
 4 Professional Reporter,
 5 DO HEREBY CERTIFY that I recorded in
 6 shorthand the foregoing proceedings had and made of
 7 record at the time and place hereinbefore
 8 indicated.
 9 I DO HEREBY FURTHER CERTIFY that the
 10 foregoing typewritten pages contain an accurate
 11 transcript of my shorthand notes then and there
 12 taken.
 13 Bismarck, North Dakota, this 22nd day of
 14 February, 2011.
 15 
 16 Denise M. Andahl
 17 Registered Professional Reporter
 18
 19
 20
 21
 22
 23
 24
 25

\$	<p>15-mile-an-hour [1] - 146:22 150 [3] - 29:10, 57:10, 112:22 150-head [1] - 154:25 150-megawatt [1] - 6:18 153 [1] - 3:23 154.5 [1] - 4:24 158 [1] - 3:24 15th [3] - 33:24, 97:5, 97:6 16 [2] - 24:14, 53:19 162 [1] - 3:24 163 [1] - 3:25 165 [1] - 4:3 166 [1] - 83:25 168 [1] - 4:3 169 [1] - 4:4 16th [1] - 86:6 17 [2] - 82:8, 96:25 172 [1] - 137:1 17c [2] - 116:25, 134:3 18 [4] - 32:11, 79:10, 80:12, 85:18 19 [2] - 4:9, 122:11 1938 [1] - 78:9 1:15 [1] - 110:19 1:27 [1] - 110:20 1st [1] - 34:1</p>	<p>21 [14] - 4:11, 4:13, 4:15, 4:18, 4:20, 4:22, 6:24, 168:20 22 [8] - 4:22, 4:25, 5:4, 5:7, 106:20 22,000 [1] - 31:9 225 [1] - 2:14 22nd [1] - 176:13 23 [13] - 3:4, 26:19, 88:4, 88:6, 92:4, 92:11, 92:24, 93:6, 101:4, 104:6, 156:22, 156:23, 156:24 230 [1] - 29:23 230-kV [1] - 30:9 24 [4] - 27:16, 88:12, 149:10, 156:6 25 [1] - 151:17 25,000 [1] - 171:3 25th [3] - 39:24, 88:17, 108:11 26 [1] - 156:20 27 [2] - 140:22, 161:5 28-62 [2] - 165:15, 168:18 29 [7] - 149:11, 157:9, 157:15, 160:25, 161:5, 161:10 2:50 [1] - 175:13 2a [3] - 4:10, 20:25, 21:8 2b [4] - 4:12, 20:25, 21:4, 21:8</p>	4
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