

OHIO POWER SITING BOARD

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In the Matter of: :
: Case No. 10-2865-EL-BGN
Black Fork Wind Energy, :
LLC, for a Certificate to :
Site a Wind-Powered :
Electric Generating :
Facility in Richland and :
Crawford Counties, Ohio. :

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PROCEEDINGS

before Mr. Scott Farkas and Mr. Daniel Fullin,
Administrative Law Judges, at the Public Utilities
Commission of Ohio, 180 East Broad Street, Room 11-D,
Columbus, Ohio, called on Wednesday, October 12,
2011, at 9:00 a.m.

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VOLUME III

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On behalf of the Staff of the Public
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1 Wednesday Morning Session,
2 October 12, 2011.

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4 EXAMINER FARKAS: I would like to take
5 appearances today also. Let's start with the
6 Company.

7 MR. SETTINERI: Thank you, your Honors.
8 On behalf of the applicant, M. Howard Petricoff,
9 Stephen M. Howard, Michael J. Settineri, the law firm
10 of Vorys, Sater, Seymour and Pease, 52 East Gay
11 Street, Columbus, Ohio.

12 EXAMINER FARKAS: On behalf of Staff.

13 MR. REILLY: Thank you, your Honor. On
14 behalf of the Staff of the Ohio Power Siting Board
15 Michael DeWine, Attorney General, John Jones, Summer
16 Koladin Plantz, Devin Parram, and Steve Reilly,
17 assistant attorneys general, 180 East Broad Street,
18 Columbus, Ohio, 43215; for Summer Koladin Plantz, 30
19 East Broad, 25th Floor, Columbus, Ohio 43215.

20 EXAMINER FARKAS: Of behalf of the Farm
21 Bureau.

22 MR. ARNOLD: Yes, your Honor, my name is
23 Dale Arnold, director of energy services, the Ohio
24 Farm Bureau Federation. The address is 280 North
25 High Street, Columbus, Ohio, 43215

1 EXAMINER FARKAS: On behalf of -- I
2 believe Mr. Collier had indicated that he would not
3 be present today. He represents the Board of
4 Crawford and Richard County Commissioners, the
5 Richland County Engineer, Plymouth, Sharon, and
6 Sandusky Township Trustees.

7 Mr. Warrington is not here.

8 Loren or Carol Gledhill?

9 They're not here.

10 Mary Studer?

11 Mary Studer is not here.

12 Alan Price?

13 MR. PRICE: Alan Price.

14 EXAMINER FARKAS: Catherine Price?

15 MS. PRICE: Catherine Price.

16 EXAMINER FARKAS: Nick Rietschlin?

17 Not here.

18 Margaret Rietschlin?

19 MS. RIETSCHLIN: I'm here.

20 Bradley or Debra Bauer?

21 Not here.

22 Grover Reynolds?

23 Not here.

24 Brett Heffner?

25 MR. HEFFNER: Brett Heffner.

1 EXAMINER FARKAS: Gary Biglin?

2 MR. BIGLIN: Gary Biglin.

3 EXAMINER FARKAS: Karel Davis?

4 MS. DAVIS: Karel Davis.

5 EXAMINER FARKAS: Thank you.

6 Mr. Settineri, you may call your first
7 witness.

8 MR. SETTINERI: Your Honor, at this time
9 we would like to mark Exhibit 13, the Direct
10 Testimony of Courtney Dohoney.

11 EXAMINER FARKAS: So marked.

12 (EXHIBIT MARKED FOR IDENTIFICATION.)

13 MR. SETTINERI: At this time we will call
14 Ms. Courtney Dohoney to the stand.

15 - - -

16 COURTNEY DOHONEY,
17 being first duly sworn, as prescribed by law, was
18 examined and testified as follows:

19 DIRECT EXAMINATION

20 By Mr. Settineri:

21 Q. Can you please state your name and
22 business address for the record?

23 A. Yes. Courtney Dohoney, environmental
24 scientist at Ecology and Environment, 1501 Lee
25 Highway, Suite 206, Arlington, VA, 22209.

1 Q. And do you have in front of you what has
2 been marked as Company Exhibit 13?

3 A. I do.

4 Q. And identify that, please.

5 A. It is my direct testimony.

6 Q. Do you have any changes or revisions to
7 your direct testimony?

8 A. I do not.

9 Q. If I asked you the same questions that
10 are in your direct testimony today, would your
11 answers the same?

12 A. They would.

13 MR. SETTINERI: Your Honor, the witness
14 is available for cross-examination.

15 EXAMINER FARKAS: Thank you.

16 Does the Staff have any questions?

17 MR. REILLY: We do not, your Honor.

18 Thank you.

19 EXAMINER FARKAS: Does the Farm Bureau
20 have any questions?

21 MR. ARNOLD: We don't, your Honor.

22 EXAMINER FARKAS: Mr. Price.

23 MR. PRICE: No.

24 EXAMINER FARKAS: Catherine Price.

25 MS. PRICE: Just a couple.

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CROSS-EXAMINATION

By Ms. Price:

Q. On page 5 of your testimony, it says a "plan will be developed to minimize the potential release of hazardous substances during the construction of the Project." Can you tell me what hazardous substances you're referring to?

A. Primarily that would be related to any like diesel storage tanks that are on site that are used to refill construction equipment and things like that. There may be small quantities of other, you know, hydraulic fluids or other oils primarily that are necessary during construction to maintain and operate the construction equipment.

Q. After construction is there like oil tanks to lubricate the turbines?

A. Typically there will be -- depends on who the final turbine manufacturer is because frequently they're the ones that actually maintain the turbines, so it's up to them what they store on site and what they don't. Typically there's some hydraulic fluids for the turbines, but it's usually in small quantities, but there will likely be SPCC during the operation as well.

1 EXAMINER FARKAS: What is SPCC?

2 THE WITNESS: Spill prevention,
3 containment, and countermeasure.

4 MS. PRICE: That will be all. Thank you.

5 EXAMINER FARKAS: Margaret Rietschlin.

6 - - -

7 CROSS-EXAMINATION

8 By Ms. Rietschlin:

9 Q. Hello, how are you?

10 A. I'm good.

11 Q. When Scott Hawken was on the stand, he
12 deferred the water well questions to you, and in a
13 document dated August 5 and August 11, Response to
14 Staff's Data Request, there's a section that has
15 water well questions. There's also a diagram that
16 was provided in that document where it looks like you
17 or someone has noted the locations of the private
18 water wells.

19 A. Correct.

20 Q. Did you prepare that document?

21 MR. SETTINERI: Your Honor, if I could,
22 do you mind, could I show the witness the document?

23 MS. RIETSCHLIN: I have it here. I
24 thought you knew every document in this whole thing.

25 THE WITNESS: Close. Okay.

1 MR. SETTINERI: Thank you.

2 Q. Did you locate the private water wells on
3 this map?

4 A. We did.

5 Q. Where did you get the information to do
6 that?

7 A. We get that information from the Ohio
8 Department of Natural Resources, Division of Water
9 Well Law Database that they have online for all wells
10 that have been dug. It goes back -- you know, there
11 are wells that were dug in the '40s that were
12 included in it, so we are able to include the
13 locations as reported in the database into that map.

14 Q. Did you go out and double-check the
15 database in the field to make sure that what the
16 database held was actually accurate?

17 A. We did not.

18 Q. Okay. I know for one my well is not
19 located on here.

20 My next question in the document is a
21 Notice of Filing, Applicant's July 22, July 25,
22 August 1 Response to Staff's Data Request. Under the
23 section Wildlife and Ecological Questions and
24 Clarifications, I'll show you the chart, it's a
25 description of forest and wetland impact concerns and

1 remedies.

2 A. Okay.

3 Q. My question is, were these the only days
4 you came out into the field, were 7/12 and 7/14?

5 A. No, that's absolutely not the only days
6 we were out there. Those were the days we were out
7 there with Ohio Power Siting Board Staff to look at
8 the site. We did extensive vegetation, wildlife,
9 wetland delineation surveys from 2008 through 2011
10 when we were out there then.

11 Q. So how many trips to the area did you
12 make?

13 A. I would have to -- I mean, we have
14 been -- a variety of Staff have been out there
15 working. I would have to pull records to figure out
16 that exact number, but we have spent, I would venture
17 to say, you know, a couple months out there.

18 Q. Are you aware were any bald eagles in
19 that area?

20 A. I am.

21 Q. Is there a nest in the area?

22 A. We, after filing our Application, were
23 notified by Fish and Wildlife there were two bald
24 eagle nests northeast of the project area that have
25 been started since we did our surveys in the project

1 area. So those are approximately a little over two
2 miles away from the project area boundary. So we
3 have initiated a consultation with Fish and Wildlife
4 and have set up a monitoring protocol to determine
5 use of the project area by those two bald eagles.

6 Q. Back to this description of forest and
7 wetland, the field verification dates in here are
8 July 12 to 14, and in nearly every case it says there
9 are no wetlands present. Does that mean there was no
10 wetland indicated ever, or just on that particular
11 period?

12 A. That means that we -- likely what that
13 wetland designation was, was an Ohio Wetland
14 Inventory wetland that was listed, which during our
15 previous surveys we determined that wetland was not
16 present, and that confirmed out with the Power Siting
17 Board Staff on those dates.

18 Q. If there were private wells that were not
19 on this diagram, what would be the procedure to
20 identify those wells that were not part of the
21 database?

22 A. Well, it's a requirement, I believe, of
23 all wells that are drilled in the state that they be
24 included in the database, so we are kind -- if a
25 water well wasn't registered, we are unaware of it.

1 Obviously, there's instances where, you know, it's an
 2 historic well and maybe didn't make the transfer to
 3 the online database. I'm not sure. We will be doing
 4 site-specific geotechnical surveys at each turbine
 5 location, so if there is a well nearby, we would
 6 know -- we wouldn't know from the geotechnical
 7 surveys where the well is specifically, but we will
 8 be doing surveys to determine where the water table
 9 is and the potential for impacts.

10 Q. I guess I'm a little confused about this
 11 water well because I know for a fact that my well was
 12 drilled in 1992 and I know it's on the database, and
 13 the neighbor's to the north was drilled in the
 14 interim between '92 and now, and one of those wells
 15 is not listed, and I'm just kind of surprised.

16 A. I guess -- I mean, we pulled directly
 17 from the database. Everything that was in that
 18 database was transferred to our map. I'm not sure
 19 what happened.

20 Q. Okay.

21 A. The location, of course, may not be
 22 100 percent accurate. It could be, you know,
 23 100 yards off from where it actually is. It's
 24 dependent on the data put in the database.

25 Q. Thank you.

1 EXAMINER FARKAS: Brett Heffner.

2 MR. HEFFNER: I have a few questions.

3 - - -

4 CROSS-EXAMINATION

5 By Mr. Heffner:

6 Q. Does your Company ever recommended
7 against a wind development for ecological reasons?

8 A. Yes, we have.

9 Q. And in what circumstance and what project
10 have you done that and for what reason?

11 A. We worked for a variety of confidential
12 projects. I can't tell which ones we specifically
13 recommended we not proceed with, but that is our
14 integrity at stake. If we feel there are ecological
15 concerns, we recommend against it.

16 Q. Is it confidential because they built the
17 project anyway, or is it confidential because -- in
18 other words, did they hire another firm to get the
19 result they needed in order to accomplish the task?

20 A. No, it's confidential because as wind
21 developers are picking sites, they have a variety of
22 them they are looking at, and they may only proceed
23 with one. Not all wind projects are subject to a
24 public review process, such as this, so it may have
25 been -- the company may have decided to abort that

1 project way before we reached this stage.

2 Q. So you don't know really whether your
3 study actually had an impact on following through or
4 not?

5 A. Yes, I do.

6 MR. SETTINERI: Your Honor, at this time
7 I would object to this line of questioning. It is
8 not relevant to the application we are here for.

9 EXAMINER FARKAS: I'll allow it.

10 Go ahead.

11 Q. Can I ask you to define "barotrauma"?
12 It's in the Staff Report, B-A-R-O-T-R-A-U-M-A.

13 MR. SETTINERI: Ms. Dohoney, do you have
14 a copy of the Staff Report?

15 THE WITNESS: I do.

16 EXAMINER FARKAS: What page?

17 MR. HEFFNER: I'll have it here in just a
18 second.

19 EXAMINER FARKAS: Could I get a page
20 reference?

21 EXAMINER FULLIN: He's looking it up.

22 EXAMINER FARKAS: Oh.

23 Q. Page 31 of the Staff Report of
24 Investigation, there's the word "barotrauma." I
25 wondered if you knew it.

1 EXAMINER FARKAS: Could you give me a
2 location on the page, the full page?

3 MR. HEFFNER: That would be under the
4 heading of Wildlife in the first full paragraph.
5 It's the last word in that paragraph, and also it's
6 footnoted under No. 21 at the bottom.

7 EXAMINER FARKAS: Thank you. And your
8 question is?

9 Q. Just the definition, that definition, I
10 wasn't sure whether that was fully explanatory of
11 barotrauma.

12 A. Well, I'm not a medical expert or a
13 wildlife biologist to determine exactly how it
14 happens, but it basically occurs when turbine blades
15 create a pressure differential in an area, and the
16 way bats are, their biology, their lungs aren't
17 capable of expanding or contracting with the pressure
18 differential and the lungs essentially explode.

19 Q. I know you are also not an attorney and
20 you don't practice law, but in your environmental
21 experience, have there been private citizens that
22 have been prosecuted for certain bird and bat deaths
23 that would be similar to the bird and bat deaths
24 caused by barotrauma?

25 A. I don't know of any cases where

1 barotrauma has specifically been the cause of death
2 that's been prosecuted.

3 Q. I don't know, are you aware of any
4 differentiation in the law between cause of death if
5 a person were to kill that animal by some other
6 means, I mean?

7 MR. SETTINERI: I'll object.

8 EXAMINER FARKAS: I'll sustain the
9 objection.

10 Q. There's 9,400 acres in the project area.
11 And, for clarification, project area, as I generally
12 use it, is the area within that is the solid black
13 line that in the legend says "Project Area."

14 And, you know, that works out to
15 39 percent of the project area. On question No. 7 of
16 your testimony under the answer, there are nine
17 studies that are listed. Did you undertake any of
18 the above studies on unleased land?

19 A. No, we did not.

20 Q. Were any of the studies conducted outside
21 of the black outlined project area?

22 MR. SETTINERI: Your Honor, if we could,
23 with regards to what is being referred to as the
24 black line project area, it might be helpful to refer
25 the witness to an actual diagram to see it.

1 EXAMINER FARKAS: Thank you.

2 MR. HEFFNER: That is part of the
3 Application map. Do I need to provide something if
4 that has already been admitted or submitted?

5 EXAMINER FARKAS: No. All you have to do
6 is identify for the witness where in the Application,
7 of which there are plenty of copies on the table.

8 MR. HEFFNER: Page 9 of the Staff Report.

9 EXAMINER FARKAS: Do you have a copy of
10 the Staff Report?

11 THE WITNESS: I do.

12 EXAMINER FULLIN: Page 9.

13 THE WITNESS: Yes.

14 Q. (By Mr. Heffner) Could you, in round
15 numbers, as a percentage let me know how much of the
16 survey was done outside of that area as compared to
17 inside? Is the preponderance of the study done
18 inside the study area?

19 A. Which study are you referring to?

20 Q. The nine studies listed on question 7 of
21 your testimony.

22 A. That's -- there are some survey points
23 for some of these surveys that were done outside of
24 the project area because they were started with the
25 previous project boundary under the previous Black

1 Fork Application, so there are a few residences, and
2 I would have to look in the Application to see which
3 specific ones there are, but there are maybe one or
4 two of the Passerine Migration Study that are outside
5 the currently defined project area, for example.

6 Q. With your familiarity with the
7 engineering data regarding the spread footers, will
8 any pilings be driven or will any substructure be
9 below that concrete pad that may intersect with an
10 existing aquifer or reservoir?

11 A. Not an existing aquifer or reservoir.
12 For any site-specific foundation, there is a
13 technical survey for turbine location to make sure
14 there's no high water table in that limited area.
15 There won't be any driving of pilings at any point
16 that they are anticipating. It is just going to be
17 the foundation that will be excavated to 9 to
18 10 feet, and the concrete will be poured. There
19 won't be any infrastructure below that level.

20 Q. Under question 12 in your answer, and it
21 continues onto the following page, which isn't
22 numbered, but at the last paragraph, which is a
23 partial paragraph, "Any concerns that residents have
24 regarding water wells can be reported and addressed
25 using the protocol established as part of the

1 Project's Complaint Resolution Plan, which is
2 currently under development."

3 Has that development been completed?

4 A. No. I believe Scott Hawken talked about
5 that yesterday. That isn't finalized yet.

6 Q. It is my understanding that report was
7 required at the time of the Application. Was a
8 waiver requested for that?

9 A. I would have to defer to legal counsel.

10 Q. Well, it's in your testimony, and Scott's
11 not coming back up, so I have to ask you what you can
12 find out or tell me about that.

13 MR. SETTINERI: I object to lack of
14 foundation as to the requirement for that to be part
15 of the Application, the foundation laid for that.
16 That can be a legal conclusion.

17 EXAMINER FARKAS: I'll sustain the
18 objection.

19 Do you have a reference point for your
20 question regarding the complaint resolution process
21 being required at any certain point in time?

22 MR. HEFFNER: I don't. I guess I wasn't
23 expecting to have to explain portions of 4906 and 7.
24 I thought that would be something that was fairly
25 well-known to everybody in the room.

1 I'll just skip that one over.

2 EXAMINER FARKAS: Just, for the record,
3 if there is a specific date upon which a complaint
4 resolution process has to be developed in the
5 Application in process, then that would be a rule
6 that is -- that would be a part of the rules, so.

7 MR. HEFFNER: It's my mistake for not
8 researching that.

9 Q. Page 20 of the Staff Report, Item 17
10 states no wetlands will be impacted. Could you tell
11 me in your experience with dealing with the Ohio
12 Wetland Inventory, what is the agency that makes a
13 determination as to whether something is designated
14 into the Ohio Wetland Inventory or is not?

15 A. Well, the Ohio Wetland Inventory is not
16 ground-truth wetlands. It is based on satellite
17 imagery that basically analysts looked at, looked at
18 the map, and said this could be a wetland area. It
19 would take further confirmation to determine whether
20 that is, in fact, a wetland.

21 That gives you an idea what is out there
22 potentially and where the target -- where lowland
23 areas may be or drainage may be. There's no
24 jurisdiction assigned to those Ohio Wetland Inventory
25 wetlands.

1 The next step is to go out and actually
2 delineate in the field and do a vegetation survey in
3 that location, do a soil sample in that location, and
4 determine the hydrology of that specific location.

5 Once you satisfy those three categories
6 and there's a wetland, then you need to coordinate
7 with the Ohio EPA and isolate the wetland or the Army
8 Corps of Engineers if it is a jurisdictional wetland.

9 Q. So it's not a wetland until it's verified
10 and taken to the EPA?

11 A. Or the Army Corps of Engineers.

12 Q. But to vacate its wetland status only
13 requires a survey from the Company or its designee?

14 A. There is no status given to the Wetland
15 Inventory. There's a disclaimer in that data set
16 that says these are not ground truth. There's no
17 regulatory enforcement related to these wetlands.

18 Q. Okay. So there is no authority that
19 designates a wetland through the Ohio Wetland
20 Inventory?

21 A. No. That was an effort by ODNR to
22 determine potential for wetlands and what the habitat
23 is like and where they may have wetlands.

24 Q. Thank you. On page 22, item (iv), Staff
25 Report states, "Breeding bird surveys were not

1 conducted because agricultural land is not considered
2 to be suitable nesting habitat for most species of
3 bird."

4 How would you characterize the nature of
5 the 9,400 acres of unleased land? Would you call it
6 primarily agricultural?

7 A. I believe there are 24,000 acres.

8 Q. There's 24,000 acres of land that's in
9 the project area. There's 14,000 some-odd acres
10 under lease, and there's 9,400 acres of unleased
11 land. My contention -- if I get objected here --
12 from my own personal observation a lot of that 9,400
13 acres is not agricultural land, hence the reason why
14 was it was not suitable to be part of this project.

15 What I'm asking is, the suitable nesting
16 habitat was based upon leased land and that is
17 primarily agricultural.

18 A. It was based on where the turbines will
19 be, so it is leased land.

20 Q. Right, leased land.

21 EXAMINER FARKAS: You have to let her
22 answer.

23 A. The concern was that you would be
24 destroying habitat where birds breed by clearing the
25 land for turbines. Since none of our turbines

1 require forest clearing, we didn't feel we would be
2 disturbing breeding habitat land.

3 Q. As an example, I have five herons nesting
4 adjacent to me. When they were done eating the frogs
5 in my pond, then they came up to the house and ate
6 all the frogs out of that pond. They have to go
7 quite aways into the project area in order to find
8 more frogs.

9 Is barotrauma not one of the concerns
10 when you talk about the need for a study of nesting?

11 MR. SETTINERI: I'll object to everything
12 before the word "barotrauma."

13 MR. HEFFNER: Pardon me, I didn't hear
14 that.

15 EXAMINER FARKAS: I'll allow the
16 question.

17 You need to ask the witness a question
18 rather than testifying prior to your question.

19 MR. HEFFNER: Okay. Yesterday when I was
20 talking to the expert on aviation, that was okay
21 because he asked me to give an example. Am I
22 correct?

23 EXAMINER FARKAS: If a witness asks you
24 to give an example, I would allow that.

25 MR. HEFFNER: Okay, all right, a

1 misunderstanding.

2 Q. The question was then -- well, let me
3 rephrase. If there's no suitable nesting habitat,
4 where are all these birds coming from?

5 A. There is -- like I said, there are forest
6 blocks in the area. There is certainly breeding
7 habitat, but the project is not impacting those areas
8 so we were not required to do surveys in those areas.

9 Q. Your statement says they don't impact
10 those areas. Are you saying that 9,400 acres of
11 unleased land, the turbines on the leased land are
12 not impacting the birds that nest and inhabit those
13 acres?

14 A. They're not impacting the breeding
15 habitat, which is what those surveys are designed to
16 look at.

17 Q. Are we still discussing the nine surveys,
18 or is there one in particular?

19 A. You referenced the breeding bird survey.

20 Q. That's right. That's right. Okay. How
21 do you accomplish a post-operation survey when the
22 baseline surveys were not established using the
23 Division of Wildlife protocol?

24 A. Well, currently that's a wind energy
25 problem in general, is correlating preconstruction

1 and post-construction conditions, so I don't think
2 this project is different from any other wind project
3 across the country in trying to correlate your
4 preconstruction and post construction.

5 MR. HEFFNER: Thank you so much. Thank
6 you.

7 EXAMINER FARKAS: Mr. Biglin.

8 MR. BIGLIN: I don't have anything.
9 Thank you.

10 EXAMINER FARKAS: Ms. Davis.

11 - - -

12 CROSS-EXAMINATION

13 By Ms. Davis:

14 Q. I have one question. On your testimony,
15 page 4, question No. 12, you described the foundation
16 for each turbine as being 8 feet deep with a 40-foot
17 radius spread footer. Is that radius correct?

18 A. That is what is -- that's the total
19 approximate width of the foundation.

20 Q. So it's the diameter, not the radius,
21 40 feet diameter?

22 A. Yes.

23 Q. Thank you.

24 MS. DAVIS: Those are my only questions.

25 - - -

EXAMINATION

By Examiner Fullin:

Q. I have one question relating to the Stipulation with the Staff, and the first Stipulation, I think we call it, condition No. 31 seems to cover an area that seems to be related to the field that you're testifying about. Could you have a look at that?

A. Yes.

Q. Seems like it's a two-part condition. One talks about if a threatened or endangered species is encountered during construction, and then the second half deals with the threatened or endangered species encountered during operation.

A. Yes.

Q. Did you have anything to do with the language that's in this? Are you familiar with the language?

A. I'm familiar with the language. I did not author it. I believe that's --

Q. Do you have an explanation for why it there might be different treatment during the construction phase versus during the operational phase, those encounters?

A. I mean, there is a process in place

1 during the operational phase to do post construction
2 mortality surveys, and we are required for any
3 threatened or endangered species encountered during
4 the surveys, so there's a process in place for post
5 construction.

6 Q. That's in place with the agencies that
7 are here that have jurisdiction over it?

8 A. Right. So while the projects will be
9 operating, we do post construction surveys. If there
10 is a threatened or endangered species, we'll work
11 with DOW with that issue.

12 Q. During the construction phase it is under
13 the condition to immediately contact if encountered;
14 where during the operational phase, you have 24 hours
15 to report. What's the difference between immediately
16 and 24 hours? Is there a real distinction? Does
17 "immediately" mean 24 hours?

18 A. I'm not exactly sure of one intent versus
19 the other.

20 EXAMINER FARKAS: Any redirect?

21 MR. SETTINERI: May I have a second, your
22 Honor?

23 EXAMINER FARKAS: Yes.

24 MR. SETTINERI: Your Honor, we have no
25 redirect for this witness.

1 EXAMINER FARKAS: Thank you.

2 MR. SETTINERI: Your Honor, at this time
3 we would like to admit into evidence Company
4 Exhibit 13, the Direct Testimony of Courtney Dohoney.

5 EXAMINER FARKAS: Any objection?

6 Hearing none, it will be admitted.

7 (EXHIBIT ADMITTED INTO EVIDENCE.)

8 EXAMINER FARKAS: You may call your next
9 witness.

10 MR. SETTINERI: Your Honor, at this time
11 we would like to mark as Company Exhibit 14 the
12 direct testimony of Dale Arnold.

13 EXAMINER FARKAS: It will be so marked.

14 (EXHIBIT MARKED FOR IDENTIFICATION.)

15 MR. HEFFNER: Excuse me.

16 MR. SETTINERI: At this time we like to
17 call Mr. Arnold to stand.

18 EXAMINER FARKAS: You want this on the
19 record? Let's keep this on the record. Go ahead.

20 MR. HEFFNER: According to my list, did I
21 miss something with Jay Haley? He was next on the
22 list before Mr. Arnold. Are we going out of order
23 here?

24 EXAMINER FARKAS: I'm allowing them to
25 put their witnesses on.

1 MR. HEFFNER: In any order?

2 MR. SETTINERI: Your Honor, the reason we
3 are submitting Mr. Arnold is simply because we have
4 marked Exhibit 14.

5 EXAMINER FARKAS: Do you have any
6 objection to going out of order?

7 MR. HEFFNER: I'm just -- no. It's just
8 helpful for me when we get to our part, I'm just
9 trying to learn a little bit about what is going on
10 here. Thank you.

11 EXAMINER FARKAS: Okay.

12 - - -

13 DALE R. ARNOLD,
14 being first duly sworn, as prescribed by law, was
15 examined and testified as follows:

16 DIRECT EXAMINATION

17 By Mr. Settineri:

18 Q. Can you please state your name and
19 business address for the record?

20 A. My name is Dale Arnold. I am director of
21 energy services with the Ohio Farm Bureau Federation.
22 We are located at 280 North High Street, Columbus,
23 Ohio.

24 Q. Do you have in front of you what has been
25 marked as Company Exhibit 14?

1 A. That is correct.

2 Q. Will you please identify that for me?

3 A. That is a copy of my direct testimony.

4 Q. Do you have any changes on revisions to
5 your testimony?

6 A. No, I do not.

7 Q. If I asked you the questions that are in
8 your testimony today, would your answers be the same?

9 A. Yes they would.

10 MR. SETTINERI: Your Honors, the witness
11 is available for cross-examination.

12 EXAMINER FARKAS: Thank you.

13 Does the Staff have any questions?

14 MR. REILLY: We do not, your Honor.

15 EXAMINER FARKAS: Ms. Davis, do you have
16 any questions?

17 MS. DAVIS: No, I don't think so.

18 EXAMINER FARKAS: Mr. Biglin.

19 MR. BIGLIN: Yes, a few things in here.

20 - - -

21 CROSS-EXAMINATION

22 By Mr. Biglin:

23 Q. You mentioned under question 8 of your
24 testimony about agricultural land use, and, I guess,
25 to the effect that this promotes farmland

1 preservation. Is that your opinion?

2 A. That is correct, sir.

3 Q. Irregardless of residential areas that
4 may be in the project boundary?

5 A. The question asked was there farmland
6 preservation. There are a number of farmers who
7 their business, their farm basically is there. If
8 you take a look at this particular type of project,
9 it does allow the area to remain open and rural for
10 farming development.

11 Q. Okay. Do you know, if you know, we have
12 to declare our farmland as agricultural use every
13 year for tax purposes.

14 A. That's called Current Agricultural Use
15 Value, CAUV.

16 Q. Do you know what portion of a project
17 like this where you are actually locating generating
18 facilities like this, is that taken out of that
19 status under these?

20 A. Under current Ohio law, the footprint
21 where the wind turbine is, which is approximately two
22 acres, is taken out of Current Agricultural Use Value
23 because the land use there has changed. Under Ohio
24 law any tax basically different from CAUV is paid by
25 the developer. The remaining ground in that

1 particular field is still basically utilized as
2 agriculture and still eligible for CAUV.

3 Q. So any turbine access roads or actual
4 area around the base of a turbine, might be two,
5 three acres or so, that actually comes off of a
6 different tax base?

7 A. If I understand correctly, yes. That
8 also is basically made by determination of your
9 county auditor.

10 Q. Okay.

11 EXAMINER FARKAS: Just for the record,
12 you used the acronym CAUV.

13 THE WITNESS: Yes.

14 EXAMINER FARKAS: Can you say what that
15 is?

16 THE WITNESS: Current Agricultural Use
17 Value. Under Ohio law if you use land for
18 agricultural production, there is a special tax for
19 that. Where it's identified as agricultural land,
20 you pay a tax with regard to that.

21 EXAMINER FARKAS: I just wanted that on
22 the record. Thank you.

23 Q. (By Mr. Biglin) I know you represent
24 farmers. A lot of them are concerned about drainage
25 systems and tiling.

1 A. Yes, they are.

2 Q. And I just -- what do you think the
3 impact is of a trench versus a cable plow, knowing
4 that you'll disturb drainage tile systems?

5 A. Very good question. As part of my job,
6 and it's basically in my testimony, I've been working
7 for the Ohio Farm Bureau for a number of years, and I
8 was also an executive director of the Ohio Land
9 Permit Contractors Association, which is the
10 association of a lot of companies that do that type
11 of tiling.

12 It is our policy and our recommendation
13 in a number of these cases that the machine used
14 basically is a wheel or cable machine and not a plow.
15 The wheel or cable machine actually creates a trench
16 where as you cut a tile, it is readily seen and can
17 be easily identified and easily repaired.

18 And also using that particular machine,
19 there is less stress, basically less compaction, less
20 problem with regard to ground. That's always been
21 our recommendation on what types of machine to use in
22 installing that and also taking into consideration
23 repair and remediation of field tile.

24 Q. Okay. As far as the Ohio Farm Bureau
25 going along with any Stipulations or any agreement

1 with these applications, do you recommend they use a
2 cable trencher versus cable plow?

3 A. That's correct. And in other cases
4 before, and there will probably be discussion with
5 regard to this one, our recommendation would be
6 basically to use a cable trencher or a wheel and not
7 necessarily use a plow. There should be a clear
8 trench where that cable is going to be installed,
9 and, consequently, those tiles which had been cut
10 with regard to that process can be easily identified,
11 and following the procedures as stated in the
12 Stipulation, those tiles can be repaired.

13 Q. And that is the because actually using a
14 cable plow, you have no indication if you might have
15 cut a drainage tile or not?

16 A. With regard to a plow, no, because
17 basically the cable or whatever the material is
18 installed underneath that ground, there is not a
19 trench. You can not readily see it.

20 Q. Now, does the Farm Bureau have any
21 recommendation on a depth for a collection line in a
22 project that you would have in your policy?

23 A. In the past, what's interesting is this.
24 As part of my job responsibility over the years, and
25 stated in my testimony, I helped take a look at and

1 had input with regard to rules that are used by the
2 Power Siting Board in this process. We feel
3 basically the State sets very good minimum standards.

4 We have also advised a number of farmers
5 with a lease agreement that those are State minimum
6 standards. You need to take a look basically at your
7 drainage table, the depth of your particular tiles.
8 You need to let the Company know with regard to and
9 also put into your individual lease agreement what
10 depth that line needs to be to accommodate both
11 systems in the field.

12 Q. So I guess my question now would be, as
13 far as putting a collection line in, the proper depth
14 with regard to electrical -- some kind of electrical
15 safety standard versus your recommendation could be
16 different?

17 A. I don't understand the question.

18 Q. What I'm trying to say is the national
19 electric standard or something to that effect would
20 declare a cable of this idea be a certain depth of
21 4 feet or something and you would recommend 5, but
22 that would just be a recommendation. It would have
23 to be worked out with a landowner actually if he
24 wanted a certain depth. Is that what you're saying?

25 A. Yes. I do understand this, and in

1 relating to Mr. Hawken's testimony yesterday, if you
2 have something specified in your lease with regard to
3 a particular depth because of individual needs of
4 that particular farm, basically if it's in the lease
5 and negotiated, it will be on there.

6 Q. But do you, as the Farm Bureau, have any
7 bylaws in regards to this relating to recommended
8 depth, more of a global, I mean statewide?

9 A. Well, our policy is basically this. When
10 you take a look across Ohio, you have tiles of many
11 different depths. We work very closely with the Ohio
12 Power Siting Board in helping to establish their
13 rules to set minimum standards.

14 We also understand and appreciate
15 depending on what parts of Ohio you are from, you
16 might have tile anywhere from 3 feet to 5 or 6 feet
17 with regard to depth. As I said, the State rules set
18 very good minimum standards.

19 It is still the responsibility of that
20 farmer through his lease agreement if he needs to
21 have that lowered with regard to that and take a look
22 where his system is, he works closely with the
23 Company and has that accommodated.

24 MR. BIGLIN: That's all I have. Thank
25 you.

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EXAMINER FARKAS: Mr. Heffner.

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CROSS-EXAMINATION

By Mr. Heffner:

Q. Hello, Mr. Arnold.

A. Hello.

Q. On page 3 of your direct testimony under question 8 down at the bottom, nearly the last line, you state, "This of a great importance in Ohio" -- perhaps I should back up one line.

"On the plus side, harvesting the wind provides hosting farms with a significant source of revenue. This is of great importance in Ohio where the major threat to prime farmland over past few decades has been the conversion of agricultural ground to industrial development or urban sprawl."

My question, is this project area an area where the major threat to farmland is conversion of agricultural ground to industrial development or urban sprawl?

A. Industrial, I don't know. But I will tell you this. A number of farmers, based on their income, are taking a look at other particular projects and things down the line. They also take a look at things in a long-term trend, 10, 20, 30 years

1 down the line. Many farmers are concerned all over
2 Ohio, including this particular area, they are taking
3 a look at their farming operation. They are a
4 looking at income opportunities they have.

5 Many of them are also rather concerned
6 because some of the alternatives might be selling
7 part of that ground to either an industrial complex
8 or housing development. Many are concerned they
9 still want to contribute to the community. They want
10 to have another option for income; that they see
11 energy development in many ways, shapes, and forms as
12 an opportunity in working with an effective lease
13 agreement, working with rules of the Ohio Power
14 Siting Board, working on those particular projects,
15 many folks have said in meetings that they see an
16 opportunity where you can do a development like this,
17 which will enhance our income, enhance Ohio's needs
18 for basic electric generation. And, because of the
19 size and nature of this particular project, the
20 majority of ground will remain open and rural and
21 remain in farming for years to come.

22 Q. But with the guidelines of setbacks, is
23 there any reason why a lease signer who builds
24 turbines on his property, that doesn't preclude him
25 from breaking the property up and selling it to new

1 landowners. It doesn't limit his potential use of
2 that land in other ways. Am I correct?

3 A. That's true. They still have the ability
4 basically to subdivide and sell that ground to
5 others. They also understand and appreciate this.
6 When they sit down and take a look at this particular
7 opportunity, this system, 10, 20, 30 years down the
8 line, they understand the land use on their farm is
9 going to change because that turbine is there, and
10 they plan accordingly.

11 Q. The land use may change, but the
12 landowner still maintains the right to put a
13 commercial development there if he so chooses because
14 structures built after the turbines are up are not
15 affected by this setback requirements, that sort of
16 thing. Am I correct?

17 A. Could you rephrase the question?

18 MR. HEFFNER: Could I have the question
19 read back so I can see where the flaw was?

20 EXAMINER FARKAS: Yes.

21 (Record read.)

22 MR. HEFFNER: How can I clarify that?

23 EXAMINER FARKAS: Do you understand the
24 question?

25 A. My question is basically this. Maybe you

1 can clarify it for me. You talked about a farmer who
2 has a wind turbine on his property, does he still
3 have the ability to basically go outside of farming
4 and create a commercial development or sell for
5 commercial development on that farm?

6 Q. No. I guess my question would be more
7 geared towards does he still have the right to sell
8 ground to me, to come out and put a commercial
9 enterprise on that ground. Since I am a subsequent
10 structure and subsequent building, I can pretty much
11 build anywhere I like on there. We are not
12 limited -- your argument, I believe, is that it's
13 going to keep the land wide open.

14 But the fact is since, as they discussed
15 with ice throw, there's no reason not to be right
16 next to these things, so how does it limit their
17 ability -- I'm asking about that statement where it
18 says "conversion to industrial development and urban
19 sprawl." Why couldn't the farmer still convert to it
20 urban sprawl and commercial development and instead
21 of having one revenue stream, have two or three or
22 several. What's the disincentive to do that?

23 A. There is no disincentive to do that. He
24 still has the ability to use his property and sell it
25 for commercial property, but he also understands and

1 appreciates that setbacks and things are going to
 2 have to be maintained at that particular point.
 3 Having to do with the setbacks on these projects and
 4 in regard to that, he's subject to those as well as
 5 everyone else.

6 Q. My understanding of the setbacks, they
 7 were based upon existing property lines and existing
 8 structures, not on future property lines and future
 9 structures. Am I incorrect in that?

10 A. No. But I can also say this. You're
 11 going to have a number of landowners who might have
 12 because of the zoning where the wind turbine is, that
 13 piece of ground is impacted. You still have a number
 14 of farmers who have other pieces of ground that would
 15 be in the project, out of the project, not impacted
 16 by that particular zone. He'd still have the ability
 17 to sell that to someone else if he wished.

18 What I think I'm saying in this
 19 particular sentence is that the pressure on the
 20 number of farmers having to eventually sell part of
 21 their ground to make ends meet is lessened because
 22 basically of the effect of the lease agreement, the
 23 effect of the development project.

24 And we talk with farmers across the board
 25 with regard to that. One reason they see is that the

1 ground will remain open and rural. You will still be
2 able to do farming underneath it. You're
3 contributing to the tax base and different things for
4 the community. You're contributing basically to the
5 electric generation, renewable generation, and not
6 having to do undue sacrificing of ground and changing
7 a number of things on their farm.

8 Q. Let me ask you a question concerning the
9 tax base. You brought it up later in your testimony,
10 also on page 6, answer 12, specifically Senate Bill
11 221.

12 Can you provide for me the location in
13 the Ohio Revised Code that gives authority to the
14 county to levy and collect taxes from the Company?

15 MR. SETTINERI: I object to that.

16 EXAMINER FARKAS: To the extent he knows,
17 he can answer the question.

18 A. As I said, I'm not an attorney. I cannot
19 tell you exactly where it is in the Revised Code.
20 But with passage of Senate Bill 232 last year, you
21 have what are called PILOT, payments in lieu of tax,
22 which means this. It is the responsibility of the
23 developer. The developer basically who is developing
24 a project in that particular area has the ability
25 basically to apply to the director of the Ohio

1 Department of Development and show that this
2 particular project is a renewable energy generation
3 project.

4 If it meets the requirements as specified
5 in the Senate Bill 232, which are now part of Ohio
6 law, he can deem this as a renewable energy project.
7 That Company can then go to the county commissioners
8 where that particular project is located and also ask
9 them to do one of two things. Take a look at the
10 prerequisite requirements. Take a look at also the
11 approval from the Ohio Department of Development,
12 State level.

13 And the county commissioners can make a
14 decision basically that, yes, this is a renewable
15 energy project, and, consequently, their taxes would
16 be what are called payment in lieu of taxes. That
17 will be paid partially to the schools, the county,
18 the township, and also be divided under protocols
19 determined by state law, as well as the county
20 auditor.

21 He also has another option that depending
22 on how many renewable energy projects could be in the
23 county, the county commissioners can also declare the
24 entire county a rural energy development zone and go
25 through the same process.

1 Under the passage of Senate Bill
2 232 those provisions basically have been stated in
3 detail in Ohio law and now become practice this year.

4 Q. I know that you were involved in the
5 formation of the thought behind that Senate bill. I
6 wondered if you could tell me, this entity is not a
7 the utility. Are they still subject to that tax?

8 A. Yes, they are. This is called utility
9 infrastructure. Please correct me if I am wrong.
10 When you talk about utility infrastructure in the
11 state, if this basically is generating electricity at
12 the megawatt level, which it is, if it is also
13 delivering electricity into the transmission grid,
14 which it is, and also it is delivering electricity
15 under long-term power purchase agreements, which it
16 is, it is considered utility infrastructure and
17 consequently can be taxed accordingly. It can also
18 be seen eligible for a PILOT payment.

19 Q. Continuing on question 8, down at the
20 bottom of page 3, "Chief among the reasons for the
21 loss of prime farmland is that the revenue generated
22 from agriculture does not match that of dense
23 housing, commercial property or manufacturing
24 development."

25 What evidence do you have of that?

1 A. In talking with farmers, talking through
2 our policy development process, they have problems
3 and concerns with regard to that. Many farms, many
4 families have to take a look at this at an individual
5 level to make ends meet, to other investments on the
6 farm to continue a farming enterprise. They have to
7 take a look at what other sources do we have for
8 immediate income flow, and selling property is an
9 option they have to explore.

10 Q. Have those dynamics changed somewhat with
11 the crash of the stock market and the decline in the
12 housing boom? Is it, perhaps, more profitable to
13 continue to farm than to the develop?

14 A. I'm not an economist with regard to that.
15 But I can say over the last 25 years with the
16 organization, when you're talking about the
17 agricultural economy, it goes in ebbs and flows.
18 There are highs. There are lows. There are a number
19 of cycles that we all have take a look at. And many
20 folks have to take a look long term, 10, 20, 30 years
21 down the line with regard to income flow.

22 Q. If you give me just a minute, I do have
23 another question. Question 11, your answer
24 concerning the Great Lakes Wind Consortium, can I ask
25 you to provide that to back that up?

1 A. I can get a copy of the material with
2 regard to that. That was several years ago. A
3 number of those pieces with regard to the study and
4 different things are probably their property, and you
5 would have to get that information from them.

6 MR. SETTINERI: I also note the time for
7 discovery is past.

8 MR. HEFFNER: Pardon me, I didn't hear
9 him.

10 MR. SETTINERI: Sorry. I would note the
11 time for discovery has passed.

12 EXAMINER FARKAS: Is that something you
13 would object to providing to him at this point?

14 MR. SETTINERI: It depends, your Honor,
15 in terms of not knowing the effort it would take for
16 the Farm Bureau to do that, not knowing the content.

17 EXAMINER FARKAS: What effort it would
18 take to provide this?

19 THE WITNESS: The information came
20 basically from Windustry. It was data they collected
21 doing studies and surveys with farmers in other
22 states in asking them basically what were the prices
23 they were seeing with regard to effective lease
24 agreements. It's their property and their material
25 they showed basically during a PowerPoint

1 presentation during a particular presentation in
2 Columbus. It was their property and their material.

3 Q. (By Mr. Heffner) Is this testimony from
4 your recollection?

5 A. This testimony is from my recollection,
6 yes, and from my notes.

7 MR. HEFFNER: Can I ask it be struck as
8 hearsay?

9 EXAMINER FARKAS: You can certainly ask
10 that.

11 Do you have any response to that?

12 MR. SETTINERI: Yes, your Honor. The
13 witness has stated it's from his personal
14 recollection. He was present. He viewed the
15 materials, and also based on his own experience with
16 the Farm Bureau.

17 EXAMINER FARKAS: I am going to strike
18 the answer in 11 as hearsay.

19 MR. SETTINERI: I'm sorry, what portion?

20 EXAMINER FARKAS: The answer A.11 on
21 page 5 starting with "At" through "trends" -- well, I
22 will strike that. I'm only going to go to "year."

23 "Farmers in Ohio have worked closely with
24 wind developers, and have negotiated land lease rates
25 that reflect current energy market trends," I will

1 leave that in.

2 Q. (By Mr. Heffner) Mr. Arnold, in your
3 experience on this project area, did farmers
4 generally receive offers from more than one wind
5 company, as they did with gas lease developers?

6 A. I don't know with regard to that.

7 Q. Concerning your answer on No. 12 on
8 page 6, No. 4, towards the end it says, "helps meet
9 the national energy goal of less dependence on
10 foreign oil." Does your experience in energy provide
11 any statistics on how much foreign oil is used in the
12 production of the electricity?

13 A. Mine does not, but that's a matter of
14 record. Basically you can get the energy information
15 form the US Department of Energy.

16 Q. What would you expect that percentage to
17 be?

18 A. Here in Ohio I do not know personally. I
19 know when you take basically a look, natural gas
20 fuels is used to generate electricity in some areas
21 of the United States.

22 Q. My expectation is that a person with your
23 credentials and experience would have a round number
24 to answer that question, and as you used it as one of
25 reasons why the Farm Bureau supports wind

1 development, I would hope you could give me some idea
2 of how much oil, foreign oil, is used in production
3 of electricity in Ohio. Isn't Ohio predominantly
4 coal, natural gas, hydro, nuclear?

5 A. It's predominantly coal here in Ohio,
6 that is correct.

7 Q. So do you stick by your statement there,
8 that this will help reduce our dependence on foreign
9 oil?

10 A. Under Farm Bureau's policy, yes.

11 Q. Could you explain to me how that's
12 accomplished?

13 A. When you take a look with regard to oil,
14 yes, there's quite a bit of fuel and oil used for
15 electric generation and basically used for
16 transportation. You see there are a number of folks
17 taking a look at using other types of fuel, such as
18 electricity for electric cars, buses, equipment.

19 With regard to that, there's going to be
20 a need basically for additional generation. We also
21 see the number of coal plants in the Appalachian
22 plateau being retired. If you look at the 30-year
23 trend, there will need to be a more diversified
24 portfolio, wind, solar, biomass, fuel cell, a number
25 of technologies working together to generate

1 electricity and power for transportation, to replace
2 foreign oil. Oil or natural gas in some way, shape,
3 or form can be used in general circumstances for
4 different things.

5 When you talk about a diversified energy
6 portfolio, a number of different policies, a number
7 of different techniques, a number of different
8 technologies will be used, a number of different
9 fuels will be created, some with electricity, some
10 with others, some that need electricity to create a
11 liquid fuel in some shape or form.

12 The focus will need to be to create that
13 toolbox to work with a number of folks, redo
14 technology as we see fit going down the line to reach
15 those particular ends.

16 Q. You were involved in this probably, I
17 would expect, back in the '70s and '80s also.

18 A. Not in the '70s and '80s, sir. I was
19 basically -- when I started -- I have been with the
20 Ohio Farm Bureau for 27 years, started basically
21 working in that capacity in the late '80s and early
22 '90s.

23 Q. May I ask what you were doing in the late
24 '70s, '80s for a living?

25 A. In the '70s I was basically in high

1 school.

2 Q. Okay.

3 A. Also in college and also taught school
4 before coming to the Ohio Farm Bureau.

5 Q. When you were in high school and college
6 and a school teacher, did you ever have the
7 opportunity to discuss with your teachers or your
8 students the future that lies in electric
9 transportation?

10 MR. SETTINERI: I object to the line of
11 questioning.

12 EXAMINER FARKAS: I'll sustain that.

13 Q. These things that you discussed about
14 transportation, are those imminent, or are those
15 lying out somewhere in the future?

16 A. Depending on who you talk to, depending
17 on the government leaders you work with, some are
18 imminent and some are in the future. Some people see
19 a 30-year trend basically as very long term,
20 something we don't have to worry about. Some people
21 in the industry see 30 years as imminent, and we need
22 to start working on some of these things now.

23 Q. In answer to Mr. Biglin's question, I
24 only wrote a brief part of it, where you mentioned
25 remaining open and rural. Is the general trend of

1 the project area now toward residential/commercial
2 development, or is residency declining?

3 A. In the area?

4 Q. Yes.

5 A. I don't know with regard to that. I'm
6 sure it was covered basically in the report. That
7 trend you're going to have to look over the next 30
8 years or so. There will be decisions that have to be
9 made with regard to that.

10 Based on the data we have today from
11 meetings with farmers and different things, this
12 particular project does give this particular area
13 another opportunity to generate taxes for the benefit
14 of schools, counties townships, provide resources to
15 the community. It does lessen the pressure on
16 farmers having to sell some of their property for
17 other type of development.

18 And many farmers want to keep the ground
19 open and rural, and it allows the farmer an option to
20 do a number of things simultaneously. And those have
21 all been expressed to me across the state, as well as
22 in meetings with in the area with farmers

23 Q. Would it be reasonable to say that the
24 many people that have not signed ground into the
25 project would also like to see the ground open and

1 rural?

2 A. I would say so, yes, and that's basically
3 been a policy or a process for many people who live
4 in that rural area as well as other rural areas
5 across the state.

6 Q. Last question, that wheel machine to be
7 used here for trenching that the Farm Bureau
8 recommends rather than the plow --

9 MR. SETTINERI: I'll object in terms of
10 mischaracterizing the testimony.

11 MR. HEFFNER: I'm sorry, I missed that
12 because of the air conditioning. I'm not hearing.

13 MR. SETTINERI: He said you are
14 mischaracterizing the testimony.

15 MR. HEFFNER: I thought he said the wheel
16 machine was recommended for the work.

17 A. There are several different machines used
18 with the tiling, for that type of land improvement.
19 Depending basically on the vernacular of the
20 contractor, you have a basically a plow. You could
21 also have a wheel machine. You could also have a
22 chain machine.

23 I think what the focus needs to be here
24 is that you have some piece of equipment that
25 actually makes a very open, very defined trench where

1 tile lines can be readily identified, and that's the
2 recommendation of the type of technology, the type of
3 machinery you should use in installation of those
4 lines in this process.

5 Q. That's what we are discussing now, the
6 installation of lines, correct?

7 A. (Witness nods head.)

8 Q. But there is -- it's great that the Farm
9 Bureau recommends that, but is there anything within
10 the Staff Report, the Stipulation, the agreement that
11 says you shall use these machines rather than the
12 plow? I'm not aware of anything in there --

13 A. In other cases that's been brought up,
14 and that agreement is basically struck in discussion
15 in that particular process, and agreements have been
16 made to use that type of technology, and we probably
17 will see that type of discussion here again, and that
18 recommendation will probably be made again.

19 MR. HEFFNER: Thank you.

20 EXAMINER FARKAS: Ms. Rietschlin.

21 - - -

22 CROSS-EXAMINATION

23 By Ms. Rietschlin:

24 Q. Hello, how are you?

25 A. Hello.

1 MS. RIETSCHLIN: Let's see here, I have
2 some excerpts from the Ohio Farm Bureau Federation
3 2011 State Policies. Would I be allowed to use that
4 in questioning him?

5 EXAMINER FARKAS: As I've said, ask the
6 question and we will see if anybody objects.

7 MS. RIETSCHLIN: Okay.

8 Q. On question 2 in your testimony, item 5,
9 one of your tasks is "helping farmers and rural
10 residents work with local government leaders and
11 energy service providers as a project is developed."

12 You don't differentiate between the
13 farmers who are leaseholders or not. Can you tell me
14 how you have helped the rural residents of the
15 project area as this project was developed?

16 A. In this particular area over the last
17 three years with regard to my experience in different
18 things with regard to wind energy development and
19 working basically through the Ohio Wind Working
20 Group, Department of Development, my experience
21 working with other farmers, residents, and government
22 leaders in the process of working with Power Siting
23 Board and Public Utilities Commission.

24 In this particular project alone I've had
25 meetings with both the Crawford and Richland County

1 governments where as part of the regular meetings I
2 briefed them and brought them up to speed on wind
3 development in Ohio and other areas; worked with the
4 Ohio Power Siting Board in other processes; also
5 talking with county engineers about the effect of
6 maintenance agreements.

7 I've also had meetings with basically the
8 service providers who want to get to know farmers
9 better, have questions with regard to what are
10 subsurface field tiles, what are wheel machines, what
11 are plows, what are concerns that farmers have with
12 this type of energy development in their particular
13 community; groups they can start to talk to, start
14 relationships with, get to know them better, and have
15 their concerns voiced, starting some dialogue there.

16 With the County Farm Bureau, you have a
17 County Farm Bureau policy development process every
18 year where farmers have concerns and different things
19 with regard to particular issues. We contribute to
20 that process. They have a Policy Development
21 Committee, a Policy Action Team that looks at a
22 number of those recommendations. Those are voted on
23 at the County Farm Bureau annual meeting. They are
24 forwarded on to the State to create the policies you
25 are talking about with regard to that.

1 And there's also other meetings with
2 farmers and rural residents upon request; wind energy
3 development briefings to talk about how you -- things
4 you need to take a look at, things you need to
5 negotiate in an effective lease agreement, attorneys
6 that may be of help with regard to that; questions
7 you need to ask the developer with regard to the
8 process; and how can we work together with farm
9 groups to discuss these particular things bringing a
10 project forward in an area.

11 Q. So if a particular resident is not a part
12 of any of those groups, what sort of outreach did you
13 have for them if they're located inside the project
14 area?

15 A. The County Farm Bureau had education and
16 outreach meetings.

17 Q. When did they have those?

18 A. They had those several times over the
19 last two to three years.

20 Q. In what setting would those meetings have
21 occurred?

22 A. Some of the those meetings have been
23 basically with the County Farm Bureau itself or its
24 members. I remember also working early in Crawford
25 County with an economic development group to do a

1 wind energy briefing for the general public.

2 I've also done the same thing with the
3 Wind Working Group in Richland County as with regard
4 to briefing them, also giving them information and
5 materials.

6 Much of my work is basically upon request
7 from either the County Farm Bureau or specific groups
8 in the area who want me to do a briefing for them to
9 give them additional information they need to see.

10 Q. So you really didn't -- you knew that the
11 project area was a certain perimeter, and you knew
12 that Farm Bureau members were there, but you really
13 didn't reach out to them individually, like in letter
14 or postcard or any sort of --

15 A. I'm afraid we did.

16 Q. And in what manner was that?

17 A. Well, members should get basically an
18 annual meeting notice, and over the last few years,
19 there has been policy development done there, and
20 they're given an opportunity to discuss those at the
21 annual meetings.

22 And also during the process I believe
23 both the Crawford and Richland County Farm Bureau
24 sent postcards to members of record telling them the
25 policy development process was going on, inviting

1 them basically to come to one or two of those
2 meetings.

3 Granted, I know that some of this might
4 be third class mail and made it into file 13, but
5 that information and material was sent to members of
6 record.

7 Q. How many Farm Bureau members are there in
8 Crawford County? Do you know kind of roundabout
9 numbers?

10 A. If you take a look in the Stipulation and
11 Recommendation, the numbers -- not off the top of my
12 head right now, but I can get that for you.
13 Basically talking a little over 1,000 members or
14 1,000 families.

15 Q. In Crawford County?

16 A. (Witness nods head.)

17 Q. How many are in the project area?

18 A. In the townships where the project is,
19 there are 333 member families, both in Richland and
20 in Crawford Townships, that are in the townships that
21 basically have this project going through.

22 EXAMINER FARKAS: You said Richland and
23 Crawford Township.

24 THE WITNESS: I'm sorry, Richland and
25 Crawford County.

1 A. Taking a look at basically the names of
2 the townships that are part of this particular
3 process with regard to legal things here and taking a
4 look at the names of those, there are 333 member
5 families in those townships.

6 Q. Question No. 5, the second sentence or
7 third sentence, says that the Ohio Farm Bureau is
8 concerned with the quality of life. Could you
9 elaborate on that what you mean by that?

10 A. Quality of life issues, when we talk
11 about those, have to do with regard to everything
12 from farming economics, basically being able to plant
13 crops, being able to have a business, being able to
14 farm with regard to that; also making sure there is
15 funding basically for effective schools, tax base;
16 also making sure there is funding and support for
17 fire departments, community services, those type of
18 things. Those are quality of life issues.

19 Q. In question No. 7 you say the purpose of
20 your testimony is "to explain to the Board how the
21 Applicant's proposed wind farm will impact farm
22 families in Ohio."

23 Did you mean to include rural residents
24 as well as farm families, or did you just want to
25 separate farm families from rural residents?

1 A. I would have to say this. When you talk
2 about farm families in Ohio they are principally
3 farmers, but there's also rural residents in that
4 particular area, so it would have to be both farm and
5 rural residents.

6 Q. In question 9, the second paragraph,
7 "When the Ohio General Assembly took up the debate on
8 the regulation of wind towers, Ohio Farm Bureau
9 supported House Bill 562 which delegated the
10 authority to the Ohio Power Siting Board."

11 Did you participate in writing any of the
12 regulations or specifications or the language?

13 A. I participated basically in the
14 discussion with regard to crafting the language for
15 House Bill 562 with Senator Seitz. And I also,
16 through the process when the bill was passed into the
17 law, as well as any organization or person had the
18 opportunity to do so when there was a notice
19 basically of rules being made in this particular
20 process, I had the opportunity basically and
21 submitted information and materials with regard to
22 those rules, comments basically by the Ohio Farm
23 Bureau Federation based on policy and how those rules
24 should be written, adjusted, and propagated. Some of
25 those particular recommendations went through and

1 were used; others were not.

2 Q. Can we go back for a second to how you
3 might have contacted the residents in the area. If
4 there were 330, give or take, Farm Bureau members in
5 this particular project area, would it have been
6 beneficial to send out a postcard or a letter that
7 said, "Hey, a wind farm is coming," something other
8 than just say you were having a county meeting where
9 you were discussing regulations?

10 I mean, it seems like a 500, 400
11 million dollar project is significant to a tiny
12 township area, and you guys could have given all the
13 residents a heads-up. Could you have done that? Do
14 you think you should have done that?

15 A. Those discussions basically are under the
16 decisions of the Richland and Crawford County Farm
17 Bureau. They also took a look at that particular
18 time in their local newspapers, you saw quite a bit
19 of information and material where they made news.
20 People understood and appreciated this was
21 particularly coming to the area.

22 Us sending out a letter saying, "Hey,
23 this wind farm is coming," and different things would
24 probably be a repeat or redundant with regard to
25 that.

1 I know people were invited to
2 participate, as they are every year, in the policy
3 development process. A number of those people did.
4 A number of people with concerns wanted to see
5 language or policy with regard to the wind farm. The
6 committee took a look at a lot of that, and at the
7 annual meeting the members basically -- and every
8 member had the opportunity to come to the annual
9 meeting -- also commented on that. They were voted
10 on at the annual meeting.

11 It became the policy of both the Richland
12 and Crawford County Farm Bureaus and was forwarded on
13 to the Ohio Farm Bureau where the process was
14 repeated. The stated policy we are talking about, we
15 had a Policy Development Committee of farmers,
16 residents, leaders that created that. There are 30
17 members of the State Board, and select County Farm
18 Bureau leaders were involved in that particular
19 process, and their delegate body of over 300 members
20 took a look at that line by line and page by page and
21 consequently approved that policy at the last annual
22 meeting in December.

23 That process is going on now, and in that
24 particular process other comments with regard to wind
25 energy development are still being considered this

1 year, and that process continues. And so that
2 document is not a static document. It's dynamic, and
3 it changes with regard to the policy and the needs
4 and concerns of people as this progresses.

5 Q. In question 9 on page 5, you're
6 discussing the wind tower regulation and the setback,
7 and the first complete sentence on the top of
8 page 5 you say, "We are comfortable with standard
9 setbacks established." What do you mean by
10 "comfortable"?

11 A. When you take a look at the minimum
12 setbacks created by State law and House Bill 562 as
13 well as the laws propagated by the Ohio Power Siting
14 Board, given the current technology we have, we feel
15 basically that those particular rules and regulations
16 propagated set very good minimum standards.

17 They are also dynamic and not necessarily
18 static, which means this. There are formulas
19 basically in place. As you see technology develop,
20 as you see technology possibly getting larger, those
21 particular formulas also recognize that, which means
22 minimum setbacks are going to change or be adjusted
23 as new pieces of technology come basically into the
24 marketplace.

25 Q. I have a question that's in the Ohio Farm

1 Bureau Policies with regards to Property Rights and
2 Responsibilities. I have a copy of that. Would you
3 like to see that?

4 A. Yes, I would like to see it.

5 Q. It's on page 4-1.

6 EXAMINER FARKAS: Is that attached to
7 your testimony?

8 MS. RIETSCHLIN: It is, but I brought
9 another copy so you don't have to hobble through all
10 your papers.

11 This is a very large document so I only
12 took a subsection out. Since this is kind of a green
13 industry, I thought conserving paper would be
14 appropriate.

15 EXAMINER FARKAS: Off the record.

16 (Discussion off record.)

17 EXAMINER FARKAS: Back on the record.

18 Q. Mr. Arnold, are you familiar with the
19 Ohio Farm Bureau Federation's 2011 State Policies?

20 A. Most of it, yes.

21 Q. Yes, it is a cumbersome document.

22 A. It's a large document, yes.

23 Q. On section 4 --

24 EXAMINER FARKAS: Can you give a page
25 reference?

1 MS. RIETSCHLIN: Yes, I will.

2 Q. It starts on page 4-1 and goes to 4-2,
3 Property Rights and Responsibilities.

4 A. Where are you at in this?

5 EXAMINER FARKAS: At the bottom of the
6 page there's a 4-1. Keep looking through the pages.

7 THE WITNESS: Oh, okay.

8 A. Are you talking about line No. 43?

9 Q. I'm just starting with the Property
10 Rights and Responsibilities section.

11 A. Can you show me where it is?

12 Q. Yes, I would be happy to. It starts
13 right there and goes to this page.

14 A. All right.

15 MR. SETTINERI: Your Honor, I would also
16 like to request with regard to the exact section you
17 ask questions to make sure he is familiar with those
18 sections.

19 MS. RIETSCHLIN: Okay. Do you want him
20 to take the time to read them?

21 MR. SETTINERI: I would like to know
22 whether he is familiar with them.

23 EXAMINER FARKAS: Before you ask the
24 question, you should preface your question by asking
25 him to look at the section and ask him if he's

1 familiar with it and then ask him the question.

2 MS. RIETSCHLIN: Okay.

3 Q. (By Ms. Rietschlin) Mr. Arnold, are you
4 familiar with the section on the Property Rights and
5 Responsibilities?

6 A. Yes, I am.

7 Q. On page 4-2, line 6, for No. 5, bullet
8 No. 5, you talk about wellhead protection in cases
9 of -- this is when entities use private property for
10 utility expansion.

11 A. Okay.

12 Q. You know, one of the issues with many of
13 us in this area is the water wells, and my question
14 to you would be, how would you advise the
15 nonparticipating residents to make sure that their
16 wells aren't affected?

17 A. Good question. How I've done that before
18 when that question has been raised in a meeting, I
19 tell them they need to establish an effective
20 baseline now before construction begins. They need
21 to work basically with the local water, soil, and
22 conservation district. You need to have a certified
23 hydrologist come out. A certified hydrologist can
24 come out and gauge and measure the performance of
25 their wells with regard to gallons per minute.

1 If they do see an abrupt change in their
2 well production, then they have basically a baseline
3 where they can start talking and use processes
4 already established in law, for instance, the process
5 for repair, remediation, and complaint in this
6 process, start that process and go through the
7 process, and also file their claim to have just and
8 fair compensation for remediation and repair.

9 Q. Is there a significant cost in having
10 your well identified and surveyed?

11 A. There are costs with regard to that, and,
12 yes, the landowner is going to have to bear some of
13 those costs.

14 Q. Including the nonparticipating residents?

15 A. That's correct.

16 Q. Do you have any idea what those costs
17 would be?

18 A. No, I do not.

19 Q. In bullet No. 3 on this same page, it
20 says one of your platforms is to "compensate farmers
21 and other landowners for property taken, and right of
22 way/easements, inconvenience suffered, and for damage
23 that may occur to them and to nearby property
24 owners."

25 I understand the Black Fork Wind Farm is

1 not taking property like a highway process. In this
2 case, though, what could be the kind of inconvenience
3 that neighbors could suffer or, I'll call them,
4 nonparticipating residents?

5 MR. SETTINERI: I object to the form of
6 question. I ask that it be rephrased. I don't
7 understand the question.

8 EXAMINER FARKAS: Do you want to rephrase
9 it? Are you asking for an example of an
10 inconvenience that might be experienced by a
11 nonparticipating landowner?

12 MS. RIETSCHLIN: Yes, that's exactly what
13 I'm trying to formulate.

14 EXAMINER FARKAS: Can you give an example
15 of an inconvenience that perhaps might be suffered by
16 a nonparticipating landowner as a result of the wind
17 turbines?

18 THE WITNESS: In cases where I've seen
19 basically before, if you are talking about basically
20 a site or a possibility of the noise, it's always
21 been part of this particular process where those
22 folks can still file a complaint and go through the
23 process and work with the Ohio Power Siting Board to
24 have that remedied.

25 We basically advocate following those

1 steps, and, as I said before, in a number of Staff
2 reports and different things, screening needs to be
3 done in some way, shape, or form, or if something
4 needs to be done to mitigate the process, that can be
5 investigated.

6 You do not have to be a particular
7 leaseholder to contact the Company and work with them
8 to take a look, investigate, and possibly come up
9 with a remedy to that particular issue. That's being
10 a good neighbor.

11 MS. RIETSCHLIN: That's all the questions
12 I have.

13 EXAMINER FARKAS: Ms. Price.

14 MS. PRICE: Yes.

15 - - -

16 CROSS-EXAMINATION

17 By Ms. Price:

18 Q. Your job is to protect the farmers as
19 much as possible or to advise them to the best of
20 your ability?

21 A. My job basically is to facilitate getting
22 them information so they can make rational decisions
23 with regard to what they would like to do.

24 Q. And you said there's 333 families in this
25 area in the project area?

1 A. There are from my figures in the
2 townships where this project is. In Richland and
3 Crawford Counties there are 333 member families.

4 Q. How many of those families have signed
5 leases?

6 A. I don't know with regard to that.

7 Q. A percentage?

8 A. I don't know with regard to that.

9 Q. So you don't know if there's more signed
10 than not signed, or the opposite, more not signed?

11 A. We would have to take a look at it
12 basically and survey each member with regard to if
13 they signed a lease or not.

14 Q. Okay. When you were talking about CAUV
15 taxes in this project area, you take farmland that
16 pays CAUV taxes right now, what's the current percent
17 they're paying on an acre of property for farmland?

18 A. That has to be evaluated, and it's
19 evaluated every three years. I do not have the
20 figures directly for Crawford or Richland County.
21 You have to ask the county auditor for that
22 information.

23 Q. But you don't know what the percent is
24 right now?

25 A. No, I do not.

1 Q. Was there a meeting two years ago with
2 the Huron and Crawford County Farm Bureau both
3 together over at the Crawford County Fairgrounds to
4 discuss that?

5 A. To discuss current agricultural use
6 valuation?

7 Q. Yes.

8 A. Yes, there possibly was. Larry
9 Gearhardt, our legal counsel, was there in that
10 particular meeting, and I believe the county auditors
11 were there. They talked about the formula used by
12 Ohio law to determine CAUV, the valuation process
13 that's used.

14 The county auditors also answered
15 questions and also gave farmers basically the
16 opportunity to take a look at following the process
17 and what process they needed to follow if they felt
18 basically the taxes on their property needed
19 adjustment or had questions, concerns with regard to
20 that and what process they would go through with the
21 county auditor's office to correct that.

22 Q. And you were not at that meeting?

23 A. I was not at that meeting.

24 Q. Okay. Comparing taxes from a nonfarm to
25 a farm, you cannot -- can you state that a nonfarming

1 acre compared to a farming acre the CAUV would be at
2 least 50 percent less tax on that acre?

3 A. I don't know with regard to that. You
4 are going to have to ask your county auditor for
5 that. That varies across the state with regard to
6 real estate tax appraisals, appraising of ground, of
7 values, the record of real estate sold. All that is
8 basically variable depending on individual counties,
9 and you have to refer to him for that data.

10 Q. This CAUV tax goes up and down
11 according -- actually, as housing value and tax goes
12 up and down, the CAUV goes up and down, so it kind of
13 weighs out?

14 A. I'm afraid not. If I understand the
15 rules correctly, and your county auditor can go
16 through the process with you, there's a set formula
17 in Ohio law that establishes basically CAUV. You
18 look at a number of factors. You look at soil type.
19 You look at the production of that particular type of
20 soil for corn, wheat, beans, typical agricultural
21 commodities.

22 You also take a look at commodity prices
23 over a three- to six-year trend and come up with a
24 trend line and come up with a possible figure or
25 number on what the potential is for that particular

1 piece of ground, that property, to produce
2 agricultural commodities and have them sold into the
3 market. That's where you take a look at CAUV.

4 Q. Do you agree that a residential property
5 compared to agricultural property, the taxes are more
6 on residential than a piece of farmland?

7 A. I don't know with regard to that.

8 Q. Most residential properties have a
9 residence on it, so if you can compare a residential
10 property, one acre with a house, and it is compared
11 to a one acre piece of farmland, which would pay more
12 taxes?

13 MR. SETTINERI: Object, that's been
14 answered.

15 EXAMINER FARKAS: I'll allow the answer.

16 A. From what I understand from our policy
17 development process, from what I understand talking
18 with farmers, when you talk about their tax bill,
19 their tax bill is more than just a piece of
20 residential ground or housing plot. It's the entire
21 farm, and their tax bill they feel is much larger on
22 their land holdings than just a person that has a
23 house and plot.

24 Q. Much more than as a house and only an
25 acre to four acres as compared to a farmer with

1 hundreds of acres?

2 A. That is correct.

3 Q. In the project area would you say there
4 are more residential homes that are nonfarming
5 residents than there are farming residents?

6 A. I don't have access to that type of
7 census data.

8 Q. Kay. In question No. 8 of your testimony
9 on page 4, can you tell me what "dense housing" is?
10 "...prime farmland is that the revenue generated from
11 the agricultural does not match that of dense
12 housing." Can you explain that?

13 A. "Dense housing" is a relative term, and
14 consequently we probably would be having a number of
15 houses per acre instead of just having one.

16 Q. Okay. How long have you been attending
17 meetings to gather information or provide information
18 for the farmers about wind projects, about wind
19 generation?

20 A. Between eight and ten years.

21 Q. When the CAUV, if a farmer has a wind
22 turbine put on their property and the base of it is
23 only a 40-foot radius or diameter, do they have to
24 take the full acre out of the CAUV? They can't just
25 take that portion out; they have to take the full

1 acre, right?

2 A. The portion taken out basically is
3 detailed in the lease agreement between the farmer
4 and the company, and consequently that's what the
5 reference point is. Most of the companies, you're
6 talking basically what you would call a two-acre
7 footprint.

8 Q. But with the CAUV, when you have farmland
9 in the CAUV, anytime you take out a piece for a
10 house, a wind turbine, anything, they do not take out
11 30 by 40; they go by one-acre increments, right?

12 A. They would go by increments set by your
13 county auditor.

14 Q. Crawford County has set one acre
15 increments, right?

16 A. I don't know what your county auditor has
17 set.

18 Q. Okay. Can we say that in order to put
19 this wind turbine on your farm, you have to take out
20 one acre --

21 A. Okay.

22 Q. -- just to keep from arguing about it?
23 If that farmer today was raising corn on that one
24 acre, can you say roughly what the income from that
25 one acre would be this year?

1 A. No, I cannot, because it has to do with
2 the number of inputs that that farmer has, with
3 regard to fertilizer, with regard to fuel, with a
4 number of things with regard to that.

5 Q. In question No. 10 you have that in "2009
6 the average gross cash receipts for of sale of crops
7 and livestock per farm in Crawford County was
8 \$182,957," and "Note, that these are gross income
9 figures. Farm expenses has to be paid; and actual
10 farm income is going to be less."

11 Has it already not been stated this year
12 that the farmers are taking off -- I don't know what
13 the term is -- more bushel of corn per acre than they
14 have in the past?

15 A. I don't know with regard to that or where
16 you have gotten that particular reference, but I will
17 tell you this. The data basically where this has
18 been taken from is in regard to the USDA Census of
19 Agriculture that has basically been created by the
20 USDA National Agricultural Statistics Service. They
21 have done census work with farmers to gather a
22 tremendous amount of data with regard to their
23 inputs, their costs, prices basically for production
24 and sale of their particular commodities.

25 That information, material basically is

1 available. It's a matter of public record, and that
2 information which was taken is a matter of public
3 record based on data that they have collected.

4 Q. The farm that you said was \$182,957, was
5 that a livestock or a crop farm?

6 A. There are a number of farms in Crawford
7 County, and that basically is an average taking a
8 look at all farms and all enterprises.

9 Q. But most of the farms in Crawford County
10 are agricultural; they're not livestock.

11 A. Could you repeat the question? All farms
12 are agricultural.

13 Q. Yes. But most in Crawford County don't
14 have livestock.

15 A. I don't know with regard to that. I know
16 there's a number of farms there. I know with regard
17 to the Census of Agriculture, basically data was
18 taken on all different types of farming enterprises,
19 those with livestock, those basically with general
20 crops, those doing specialty crops.

21 Q. When you testified that, "Note, that
22 these are gross income figures," farm expenses hasn't
23 been taken off these, should we also add in subsidies
24 from the government the farmers get as part of this
25 income?

1 A. What subsidies are you talking about?

2 Q. For their crops. I mean, if there's a
3 program that if they state what crops they're
4 planting and how many acres and stuff, is there not
5 subsidies they can earn?

6 A. There a number of different farm programs
7 farmers can participate in. Each one of those
8 programs is an individual farmer's decision. Some
9 basically apply and are in a number of programs. The
10 USDA Census of Agriculture, when they go through that
11 particular process, that particular data was also
12 considered.

13 Q. Okay. Question 11, as far as I've heard,
14 the farmers' contracts have been confidential as to
15 not to speak about the amount of money that they get.

16 EXAMINER FARKAS: That portion of his
17 testimony and answer was struck.

18 MS. PRICE: It was struck?

19 EXAMINER FARKAS: The only portion of the
20 testimony starts with, "Farmers in Ohio" to the end
21 of the sentence, "trends."

22 MS. PRICE: That part is still in, from
23 "Farmers" on?

24 EXAMINER FULLIN: Yes, the last sentence
25 is still part of record but the other part is not.

1 MS. PRICE: Okay.

2 Q. Okay. At this point it's the farmers
3 that own the ground that's needed for the wind farms
4 to generate electricity through wind farms, right?

5 A. Yes.

6 Q. These same farmers, do they use electric
7 to run their equipment on --

8 A. Yes, they do.

9 Q. -- that they farm with, their tractors,
10 their buggies, the trailers to bring in the grain,
11 the field equipment?

12 A. Farmers use electricity in the normal
13 course of their operations on a daily basis, yes.

14 Q. What way?

15 A. A number of things, basically lighting,
16 heat, HVAC, ventilation, air conditioning, feed
17 grinding, crop conditioning; a number of particular
18 activities related to agricultural, basically
19 electricity is a fuel of choice.

20 Q. Do farmers use more electricity than gas
21 or propane to dry their corn and beans with, their
22 crops?

23 A. You're just talking about one function,
24 crop drying?

25 Q. Yes.

1 A. Just with crop drying, probably with
2 regard to fuel, you would use propane and natural gas
3 with regard to that.

4 Q. Why would it that be?

5 A. It is more efficient and effective for
6 crop drying to use that than it is electricity. And
7 please understand, that's one function basically on a
8 farming operation.

9 Q. That's one function that could use
10 electricity, but due to costs and other reasons, they
11 use propane and natural gas.

12 A. That, and also taking a look at
13 infrastructure there, when you take a look at crop
14 dryers, many of the crop dryers for sale with
15 companies utilize a petroleum derivative fuel.
16 Electricity, I'm sure that's being taken a look at.
17 Again, you are talking about one particular piece of
18 technology on a farm, one function.

19 Q. In Crawford County, in the project area
20 right now, are the farmers not at this present time
21 hooking up to natural gas for their dryers?

22 A. I don't know with regard to that. I know
23 this. That some farmers, if natural gas is available
24 for that particular function, would probably welcome
25 using natural gas for crop conditioning and crop

1 drying activities.

2 Q. Okay. Gary Energetics sold their project
3 to Element Power that is now Black Fork, LLC. Did
4 you attend the public meeting that Gary Energetics
5 had in Mansfield?

6 MR. SETTINERI: I'll object as to
7 relevancy. Gary Energetics had nothing to do with
8 this proceeding, it's a different docket proceeding.

9 EXAMINER FARKAS: How is it relevant?

10 MS. PRICE: That he spoke to farmers over
11 there telling them wind energy was good. Okay, I'll
12 withdraw that.

13 Q. Element Power held public meetings. Have
14 you attended those public meetings?

15 A. What public meetings are you talking
16 about?

17 Q. The ones through the Ohio Power Siting
18 Board they've had to do for this Application.

19 A. Are you talking about the open public
20 hearing at Shelby High School?

21 Q. Yes; and the meeting before that. They
22 had an open house at the Shelby High School.

23 A. Those meetings I did not attend.

24 Q. Neither one of them?

25 A. No.

1 Q. You did not attend a private meeting
2 before the public hearing meeting in Shelby?

3 A. What private meeting?

4 Q. At the YMCA, the private meeting they had
5 at the YMCA before the public meeting.

6 A. No, I did not.

7 Q. Do you attend the meetings they have had
8 privately with the farmers?

9 A. No, I do not.

10 Q. Can you tell me roughly how many acres of
11 farmland there is in Ohio?

12 A. Off the top of my head, no, I cannot.

13 Q. Then you can't answer this either.

14 You have been with the Farm Bureau in
15 your present position for how many years?

16 A. I've been with Farm Bureau for 27 years,
17 and I've stated basically in my testimony, I've been
18 in this particular job position I believe since 1995.

19 Q. One last question. This Certificate of
20 Service, that's attached to your testimony, Mr. Chad
21 Endsley is on the Certificate of Service list, Ohio
22 Farm Bureau Federation, Chad A. Endsley, but not you.
23 Is there a reason why Mr. Endsley is not attending?

24 A. Mr. Endsley is one of our legal counsel,
25 and he's representing farmers and rural residents at

1 other hearings here in Columbus over the last several
2 days.

3 Q. So he feels safe that you're
4 knowledgeable enough to take --

5 MR. SETTINERI: I'll object, your Honor.

6 EXAMINER FARKAS: I will sustain the
7 objection.

8 MS. PRICE: Thank you.

9 EXAMINER FARKAS: Just for the record,
10 you're not an attorney; is that correct?

11 THE WITNESS: That is correct.

12 EXAMINER FARKAS: When I asked for an
13 appearance on his behalf of the Farm Bureau, you made
14 an appearance, but you were making an appearance as
15 the director of energy, utility, and policy?

16 THE WITNESS: That's correct. That's why
17 I named my particular titles, sir, and I'm not
18 sitting at the table of attorneys.

19 EXAMINER FARKAS: Your attorney
20 representing the Farm Bureau is not here?

21 THE WITNESS: At this stage no.

22 EXAMINER FARKAS: Mr. Price, questions?

23 Wait, I have one other question, sorry.

24 This is a clarification question. On
25 page 6 of your testimony, answer 12 you list reasons,

1 you have 1, 2, 3, 4, and it goes to 6.

2 THE WITNESS: That's a typographical
3 error.

4 EXAMINER FARKAS: It should be 5?

5 THE WITNESS: That's correct.

6 EXAMINER FARKAS: Mr. Price, go ahead.

7 - - -

8 CROSS-EXAMINATION

9 By Mr. Price:

10 Q. If one of these big farmers goes under,
11 what happens to the windmills? Who takes
12 responsibility for the windmills then? Who gets the
13 credit? Who gets the payment? Where does that go?

14 A. When you say "a big farm," are you --

15 Q. I'll rephrase it.

16 A. If you say "a big farm," you are talking
17 about a farmer person?

18 Q. Like a 100-acre farmer, if he goes under
19 and say he has two windmills, the payment and
20 responsibility of that windmill, what happens to it?

21 A. The responsibility of the windmill
22 through the lease agreement on the property is the
23 responsibility basically of the developer and the
24 Company, number one. So the maintaining and
25 operation of that will still be maintained by the

1 Company and not the farmer.

2 Also, two, if that farmer is going
3 bankrupt, following common bankruptcy law, that's
4 considered an asset, and those particular assets with
5 regard to their administration will go to a trustee,
6 and any income, rental, royalty, or otherwise, will
7 also be part of that to be utilized basically for
8 settlement of that bankruptcy.

9 Q. Okay. So if I buy a farm like that, I
10 would be purchasing the windmills, too?

11 A. You would basically be party to the lease
12 agreement, which is on basically that farm. These
13 lease agreements, as I understand correctly, are
14 transferable. So as a farmer basically sells the
15 property or that property is inherited by his son or
16 grandson, or whatever, and unless it's specified
17 other in the bill of sale, that lease agreement is
18 attached to that, and that person becomes the party
19 in the lease agreement going forward.

20 Q. I take it you've been working with these
21 windmill companies quite awhile?

22 A. I have been helping farmers address
23 issues and working with wind energy development
24 companies.

25 Q. Okay.

1 A. I do not work for a windmill company or
2 wind energy developer. I work for farmers.

3 Q. But you don't help them out with
4 questions or anything? They take care of their own
5 self, I take it?

6 A. I give farmers quite a bit of information
7 and materials so they can make their own management
8 decisions.

9 Q. You never went out to eat with these guys
10 or nothing, went on long trips or anything?

11 A. I haven't gone on any long trips. I have
12 had lunch or dinner with several of them to discuss
13 issues, but I have not received anything beyond that.

14 EXAMINER FARKAS: Just for the record,
15 when you say "them," who are you referring to?

16 THE WITNESS: Wind developers, in
17 general.

18 A. Beyond that, they have not paid for any
19 trips or anything. I have received no remuneration
20 or no compensation or whatever with regard to
21 activities I do for the Ohio Farm Bureau.

22 Q. Have you been out on the wind farms?

23 A. Yes, I have.

24 Q. Any farmers out there have any complaints
25 or anything with what's going on? Everything goes as

1 it is supposed to?

2 A. Farmers always have concerns with regard
3 to wind energy developments. Your wind energy
4 development process is not unique. We've had a
5 number of other programs go through the Ohio Power
6 Siting Board. I have filed motions to intervene in
7 those particular cases representing Farm Bureau
8 members in those particular processes.

9 We have advised and helped farmers gain
10 adequate information and gain legal counsel to create
11 effective lease agreements; given them information
12 and materials with regard to what they need to
13 discuss to ensure effective community development;
14 also working with their friends and neighbors that
15 have concerns with wind energy development.

16 Our focus is helping communities create
17 working groups where you can have education,
18 outreach, and discuss how can we bring a project
19 forward which basically benefits more than just that
20 farmer and that wind energy development company with
21 a lease agreement on farm ground.

22 MR. PRICE: Thank you.

23 EXAMINER FARKAS: Any redirect?

24 MR. SETTINERI: A couple questions, your
25 Honor.

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REDIRECT EXAMINATION

By Mr. Settineri:

Q. Just for the record, can you clarify, a crop dryer is also referred to as a grain dryer?

A. That's correct.

Q. Are grain dryers common in rural agricultural areas?

A. Grain dryers are common in rural agricultural areas. Many farmers invest so they can do their own crop drying on site. They also take a look at HVAC or heating/air conditioning, ventilation systems for hog operations and poultry, cattle, milking machines, motors. A number of those things, you're using a tremendous amount of electricity, and electricity is a major fuel for those particular functions.

Q. Turning back, you had a few questions on cable trenching. We used a lot of different technology terms. I know the Application references I believe a cable trencher or a cable plow. Are you able to describe those for the record, what are those?

A. Again, when you talk about a cable machine, you're talking about one basically that

1 creates a very definite trench so you can see
2 basically the breaks in the tile with regard to that.

3 One of the misnomers in the industry is
4 this. That depending on who you are, if you are in
5 the industry, basically you have -- there are really
6 two types of the technology. There is a plow unto
7 itself, and there's a wheel machine which creates the
8 trench. We want to make sure and understand and
9 appreciate we are talking about a trenching machine
10 or trenching technology to create a trench.

11 The line is installed, and you can see
12 along the sides of that particular trench basically
13 that the tile has been broken, and you go through the
14 process that is in the rules of the Ohio Power Siting
15 Board, they're stipulated in the Stipulation, on how
16 they are to be repaired.

17 Q. Is the one Application the open trench
18 and the other is a wheel that has less disturbance, I
19 assume?

20 A. Well, when you're talking about different
21 pieces of machinery, a wheel machine, a chain machine
22 do basically the same thing. One uses a chain. One
23 actually uses a wheel that actually digs a trench.

24 When you talk about a plow, it actually
25 goes down in the ground and does not basically create

1 a trench unto itself and goes through and just
2 installs and everything is kept covered. You can't
3 identify or see those particular things.

4 What I believe the Stipulation is saying
5 is chain or wheel, you are talking about a trench.
6 You are talking about an open area where you can
7 readily see the tile being damaged and then going
8 through the process to make sure that they're
9 repaired

10 Q. You're comfortable with the way the
11 Stipulation is drafted with regards to collection and
12 trenching activities, collection line activities?

13 A. That's correct.

14 MR. SETTINERI: No further question, your
15 Honor.

16 EXAMINER FARKAS: Just for the record, in
17 the Stipulation do you know which provision in the
18 Stipulation is that discussed, or your counsel, so we
19 have a reference?

20 MR. SETTINERI: Your Honor, if I may help
21 the Bench.

22 EXAMINER FARKAS: That's fine.

23 MR. SETTINERI: The reference is in the
24 Application to technology. There's no express
25 condition in the Stipulation addressing the

1 technology.

2 EXAMINER FARKAS: Is there one in the
3 Staff Report?

4 MR. SETTINERI: I don't know.

5 EXAMINER FARKAS: That's fine.

6 With respect to any recross on the items
7 that counsel has brought up on redirect, Ms. Davis
8 any questions?

9 MS. DAVIS: No.

10 EXAMINER FARKAS: Mr. Biglin?

11 MR. BIGLIN: Yes, I have one more
12 question, if I may.

13 - - -

14 RECROSS-EXAMINATION

15 By Mr. Biglin:

16 Q. I have one in regards to question No. 9,
17 the answer to question 9, which is on the top of
18 page 5, in regards --

19 EXAMINER FARKAS: Your questions on
20 recross have to be limited to the items brought up by
21 counsel.

22 MR. BIGLIN: Okay. Well, I'm trying to
23 understand what he was asking there then. I don't
24 have the Stipulation.

25 Q. Does the Stipulation have some kind of

1 wording that makes it possible to just use the open
2 trench machine versus the plow?

3 A. That's one thing we take a look at.

4 Q. Is that something that needs to be
5 addressed yet?

6 A. I would say this. I would be checking
7 with regard to that. To make it perfectly clear, in
8 other cases as well, the technology we are basically
9 talking about using is the one that employs an open
10 trench.

11 Q. Okay. The trenching machine virtually
12 cuts the soil, incorporates the topsoil with whatever
13 depth the soil is going, and disperses it outside the
14 trench, and we have an open trench we can look into?

15 A. That's correct.

16 MR. BIGLIN: Thank you.

17 THE WITNESS: You're welcome.

18 MR. HEFFNER: I have a procedural
19 question. It's too late, I don't know why for sure,
20 but it's too late to add any language in the
21 Stipulation; am I correct?

22 EXAMINER FARKAS: At this point in time
23 parties can request to be part of the Stipulation,
24 and if there is an agreement to add additions to the
25 Stipulation, then that becomes part of Stipulation.

1 MR. HEFFNER: During the course of this
2 hearing, will or may other parties sign the
3 Stipulation and therefore be unavailable for
4 testimony and cross-examination?

5 EXAMINER FARKAS: At any particular time
6 during this hearing process, or even after the
7 hearing is concluded, any party who has not signed
8 onto the Stipulation can do so. They can do it today
9 if they wanted to do it, if they deemed that was what
10 they wanted to do, or tomorrow or the next day.
11 There's no limitation on any party that they can't
12 sign a Stipulation now that the hearing has begun.

13 MR. HEFFNER: In the event that they do,
14 both the testimony and the cross-examination are
15 withdrawn?

16 EXAMINER FARKAS: That would have to be
17 decided by the parties who were creating the
18 Stipulation, whether or not that as part -- for
19 example, if you wanted to sign on to the Stipulation,
20 other parties may say, in order to do that, you
21 withdraw your testimony, and if that was acceptable
22 to you, that's what you would do.

23 MR. HEFFNER: If I were not a party to
24 that Stipulation, would my cross-examination remain?

25 EXAMINER FARKAS: If you're not a party

1 to the Stipulation, any cross-examination that you do
2 during the hearing remains part of the hearing
3 process.

4 MR. HEFFNER: Thank you very much.

5 EXAMINER FARKAS: You do not have any
6 recross then?

7 MR. HEFFNER: I don't. Thank you.

8 EXAMINER FARKAS: Ms. Rietschlin?

9 MS. RIETSCHLIN: No, I do not. Thank
10 you.

11 EXAMINER FARKAS: Ms. Price?

12 MS. PRICE: Yes.

13 - - -

14 RECROSS-EXAMINATION

15 By Ms. Price:

16 Q. When we were talking about dryers for
17 drying the crops, do you have a rough estimate of how
18 many farmers in Crawford County run these dryers?

19 A. No, I do not.

20 Q. Do you have a rough estimate of how many
21 hog farmers or whatever that use the electric for
22 cross-ventilation in Crawford County?

23 A. No, I don't, but you can probably get
24 some of that data from the Census of Agriculture.

25 MS. PRICE: Thank you. That will be it.

1 EXAMINER FARKAS: Mr. Price.

2 - - -

3 RECROSS-EXAMINATION

4 By Mr. Price:

5 Q. I have never seen any windmills around
6 the farmers' houses for personal use. Is there any
7 reason the farmers don't do that?

8 MR. SETTINERI: I object as outside the
9 scope of redirect.

10 EXAMINER FARKAS: It is outside the scope
11 of redirect. On recross it's an opportunity to ask
12 questions that are limited to the areas that redirect
13 was undertaken by counsel, and those were the areas
14 of crop dryer/grain dryer and cable trenching
15 questions. It was really those two areas.

16 Q. One more question. Like under tractors
17 and stuff, under the green energy program, are they
18 getting to pollution things on that? Has the Farm
19 Bureau ever talked about the pollution of farmers?

20 MR. SETTINERI: I'll object your Honor.

21 MR. PRICE: I give up.

22 EXAMINER FARKAS: Don't give up. I'm
23 just sustaining his objection with respect to that
24 question. Do you have any other questions regarding
25 his redirect?

1 MR. DAVIS: Nope.

2 EXAMINER FARKAS: You're excused then.

3 MR. SETTINERI: Your Honors, at this time
4 we move for the admission of Company Exhibit 14, the
5 Direct Testimony of Dale Arnold.

6 EXAMINER FARKAS: Are there any
7 objection?

8 Hearing none, it will be admitted.

9 (EXHIBIT ADMITTED INTO EVIDENCE.)

10 (Recess taken.)

11 EXAMINER FARKAS: You may call your next
12 witness.

13 MR. SETTINERI: Thank you, your Honors.
14 First we would like to mark two exhibits. I would
15 like to mark as Company Exhibit 15, the Direct
16 Testimony of Jay Haley.

17 EXAMINER FARKAS: So marked.

18 MR. SETTINERI: Secondly, we would like
19 to mark as Company Exhibit 16 the Supplemental
20 Testimony of Jay Haley.

21 EXAMINER FARKAS: So marked.

22 (EXHIBITS MARKED FOR IDENTIFICATION.)

23 MR. SETTINERI: At this time we would
24 like to call Mr. Haley to the stand.

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JAY HALEY,
being first duly sworn, as prescribed by law, was
examined and testified as follows:
DIRECT EXAMINATION
By Mr. Settineri:
Q. Can you please state your name and
business address for the record, please?
A. Jay Haley with the EAPC Wind Energy.
3100 Demers Avenue, Grand Forks, North Dakota, 58201.
Q. And you have in front of you what has
been marked as Company Exhibit 15 and Company
Exhibit 16?
A. Yes, I do.
Q. Can you please identify for me those
exhibits?
A. I have in front of me my direct testimony
and also my supplemental testimony.
Q. Is Company Exhibit 15 marked as your
direct testimony?
A. Yes, it is.
Q. And Company Exhibit 16, is that your
supplemental testimony?
A. Yes, it is.
Q. Starting with Company Exhibit 15, do you
have any changes or revisions to that testimony?

1 A. No.

2 Q. If I were to ask you any questions in
3 that testimony, would your answers the same?

4 A. Yes.

5 Q. Turning to Company Exhibit 16, your
6 supplemental testimony, do you have any changes or
7 revisions to that testimony?

8 A. No, I do not.

9 Q. If I asked you the questions today in
10 that testimony, would your answers be the same?

11 A. Yes.

12 MR. SETTINERI: Your Honors, the witness
13 is available for cross-examination.

14 EXAMINER FARKAS: Thank you. Does the
15 Staff have any questions?

16 MR. REILLY: We do not your Honor.

17 EXAMINER FARKAS: Mr. Price, any
18 questions.

19 MR. PRICE: No.

20 EXAMINER FARKAS: Ms. Price, any
21 questions?

22 CROSS-EXAMINATION

23 By Ms. Price:

24 Q. In your studies for the light flicker,
25 what three wind turbine models were used?

1 A. There was a Siemens 2.3-101. There was a
2 GE 1.6-100; and the third was a Vestas V100-100.

3 Q. And in previous testimony we heard that
4 they may use a 3 megawatt. Now, how would that
5 incorporate into the study you have already done?

6 A. It does not.

7 Q. It does not. So the study would have to
8 be redone?

9 A. That would be correct.

10 Q. Okay. Can I ask you, on a 3 megawatt
11 with the -- would it have a bigger generator or
12 bigger blades on it?

13 A. It's hard to say. The blade length could
14 be the same or it could be larger. It just depends
15 on the turbine model. I'm sorry.

16 Q. Thank you. In your analysis, in your
17 study, they sited the wind turbines, told you where
18 they wanted them sited at. Now, in your study how
19 far can they move the turbines in any direction
20 before it makes your study obsolete for that turbine?

21 A. That would depend on each individual
22 turbine. In general, a move of a turbine, the shadow
23 is going to move with the turbine, so the same shadow
24 footprint you see on those maps, if you move the
25 turbine 100 feet, that shadow footprint essentially

1 would move 100 feet with it. So it would be easy for
2 someone to assess whether or not that a new study
3 would need to be done based on a move.

4 Q. The shadow would move with it, but would
5 the light flicker be the same if it was moved
6 100 feet?

7 A. Yes, it would. The light flicker and the
8 shadow are sort of one in the same. In other words,
9 the light flicker is going to occur within that
10 shadow zone that's indicated on those maps.

11 Q. Okay. In question 9 in your answer,
12 nonparticipating residents, where they anticipate
13 shadow flicker they could plant trees to keep the
14 shadow flicker off the side of a residence. You got
15 "plant trees or add window blinds."

16 A. What's your question?

17 Q. You've got that you can plant trees to
18 obviously block the flicker from the residence.

19 A. Yes.

20 Q. How big of trees would you have to plant
21 to -- they're proposing to start construction next
22 year. So if this was how you planned on taking care
23 of the flicker problem, how big of a tree would you
24 have to plant and how close to the residence would
25 you have to plant that tree?

1 A. That's a matter of geometry. I have to
2 look at the location and see what the angle is
3 between the wind turbine and the window or the
4 location that you were trying to block the shadowing
5 from.

6 Q. Okay. If I have a two-story house and my
7 upper story, we'll say, roughly the middle of the
8 window is at 25 feet, how would I stop the shadow
9 flicker from coming through that window with a tree,
10 of what size?

11 A. Well, it would have to be at least as
12 high as the window.

13 Q. When you calculated how much shadow
14 flicker is on a residence, was it like -- if it was
15 like it was going to happen today at 7:00 a.m., would
16 it happen for 15 minutes or just for a minute, and
17 then the next time it happens would it be the same
18 amount of time, roughly? I mean, if it happened 15
19 minutes today and happened again tomorrow, would it
20 be 15 minutes again, unless a cloud came in?

21 A. It varies at every location and the time
22 of day and the duration of flicker. It varies every
23 day, and that's because the sun is constantly
24 changing its azimuth. As the seasons come and go,
25 the sun is rising and falling.

1 But the output from the calculations tell
2 you up to the minute what day, what hour, what minute
3 the shadowing -- pardon me -- the flickering will
4 start to occur and when it will end. So we have
5 calendars that tell us down to the minute exactly
6 when and where that flickering will be occurring,
7 assuming there were no clouds.

8 Q. And that's available to the general
9 public?

10 A. It's in the report.

11 Q. Is the sun the only source that causes
12 light flicker from wind turbines?

13 A. Yes. If the sun is not shining, the
14 turbines do not produce shadow flicker.

15 Q. Full moon on a clear night would not
16 produce any light flicker?

17 A. Not that I'm aware of, no.

18 Q. If somebody was -- a farmer that signed a
19 lease that decided that he would take his chances and
20 build a grain bin, not under but closer to a wind
21 turbine with lights on top to operate by, that would
22 not cast a light?

23 A. I doubt it.

24 Q. You doubt it.

25 A. I doubt it.

1 Q. In question 10, your answer, "the actual
2 hours recorded are usually less," are they ever more?

3 A. Not that I'm aware of.

4 Q. But they have been less?

5 A. Yes.

6 Q. Because it's science, it can't be to the
7 exact?

8 A. Well, because in the cases where they
9 have verified the calculations, the people verifying
10 the calculations maybe weren't 100 percent diligent
11 and maybe missed some of the hours this was
12 flickering or -- it's hard to say.

13 So with regard to the science, you're
14 just talking about geometry. It's the movements of
15 planets. It's the angles between objects, and that's
16 all easily calculable.

17 Q. In your supplemental testimony on
18 question 5, where did you study these three different
19 systems?

20 A. Question 5?

21 Q. Question 5. I'm asking -- you give three
22 different systems of ice monitoring, warning systems.
23 Have you actually studied the three systems and how
24 they work?

25 A. I don't actually say there are only three

1 systems. There's literally more than 30 methods that
2 I've run across on how to detect ice. I'm not an ice
3 sensor engineer, but I am aware of a number of ways
4 that ice is measured or detected.

5 Q. From studies that you have performed or
6 from reading studies other people have performed?

7 A. From literature surveys and review of the
8 marketplace.

9 Q. Okay. Question No. 6 your answer says
10 there is "extremely low risk of ice throw to
11 individuals." Low risk meaning that there's always a
12 chance it could happen?

13 A. Yes.

14 Q. Is there a government agency that watches
15 over that?

16 A. No.

17 Q. Today we have government agencies. I'm
18 asking because the government agencies now tell you
19 to wear seat belts, this and that, an agency for your
20 safety.

21 In your answer to question 7, you got a
22 1 kg ice fragment. Can you give me an example of
23 what size that is?

24 A. A kilogram of ice?

25 Q. Uh-huh.

1 A. It's probably -- in the assumption it's
2 one meter long and maybe that thick, maybe 5 inches
3 thick.

4 Q. 5 inches wide. How thick, just --

5 A. One inch, two inches.

6 Q. So if you -- big enough that if somebody
7 was hit by it or even a partial piece of that --

8 A. Well, 1 kilogram is 2.2 pounds.

9 MS. PRICE: Okay. Thank you.

10 EXAMINER FARKAS: Ms. Rietschlin.

11 - - -

12 CROSS-EXAMINATION

13 By Ms. Rietschlin:

14 Q. My first comment is, in question 6 you
15 refer to Appendix N, but, in fact, I think it's
16 Appendix I that we were provided.

17 A. Direct testimony?

18 EXAMINER FARKAS: In his direct
19 testimony?

20 MS. RIETSCHLIN: Yes.

21 Q. Question 6, it's just a clerical issue.

22 A. What is the question?

23 Q. I'm just saying it's Appendix I and not
24 N?

25 A. Okay.

1 EXAMINER FARKAS: Do you agree with that?

2 THE WITNESS: I have to consult counsel.

3 EXAMINER FARKAS: Why don't we do that so
4 the record is clear.

5 MR. SETTINERI: That's correct, the
6 reference should be to Appendix I.

7 EXAMINER FARKAS: Thank you.

8 Q. In the shadow flicker report on page 8 --

9 A. In the report on page 8?

10 Q. Yes, sir. I'm sorry, in the appendix,
11 Appendix I, page 8.

12 A. Okay.

13 Q. At the bottom of the page, the 4th
14 bullet, the receptors were omnidirectional rather
15 than specific to the face of buildings. Can you tell
16 me what that means?

17 A. Sure. When we model for shadow flicker,
18 we put a computer-simulated sensor on the ground at
19 various locations of interest. We have two types of
20 sensors. One is the omnidirectional, which you can
21 think of as a half sphere or a glass bowl; in other
22 words, it can see the sun coming from anywhere.

23 The other approach that we have is a more
24 precise sensor, which would be unidirectional,
25 meaning you would place it on the facade or the side

1 of a building so it represents a window so that it
2 can only see in the direction of that window.

3 So when we do our preliminary studies, we
4 usually try to be conservative so we take a
5 worst-case approach, which would place this
6 omnidirectional sensor, which is going to actually
7 collect more -- record more occasions of flicker than
8 is real, because in the real case, there would be a
9 window facing only in one direction.

10 MS. RIETSCHLIN: That's all the questions
11 I have.

12 EXAMINER FARKAS: Okay. Mr. Heffner.

13 - - -

14 CROSS-EXAMINATION

15 By Mr. Heffner:

16 Q. I have a few questions. Answer 3,
17 page 1 --

18 EXAMINER FARKAS: Of his direct
19 testimony?

20 MR. HEFFNER: Of the direct testimony.

21 Q. "I was the Director of Engineering and
22 New Product Development for an aerospace company."
23 Are you able to tell me the name of that aerospace
24 Company?

25 A. Ideal Arrowsmith.

1 Q. And an energy research engineer for 10
2 years. In whose employ?

3 A. At the Energy and Environmental Research
4 Center at the University of North Dakota.

5 Q. Thank you. And does your -- is the
6 Company you are a partner at, EAPC, does your Company
7 benefit financially from the support of the software?

8 A. Yes, we do.

9 Q. If it were discredited, would the company
10 suffer economic loss?

11 A. Sure.

12 Q. Concerning question 6 on page 2 of the
13 same testimony, "Please describe the studies that you
14 and your firm undertook on behalf of the Applicant,"
15 who were you contracted by?

16 A. We were under contract with Black Fork
17 Wind Energy.

18 Q. And does your Company have a separate
19 accounts receivable department?

20 A. Yes.

21 Q. Okay. So I suspect you probably wouldn't
22 know when checks were written and whose name was on
23 the check for services.

24 A. Actually, no, I don't.

25 Q. Okay. Going to the supplemental

1 testimony, page 2, question 7, setback formula,
2 condition 45, page 37, the Staff Report originated
3 from this publication. The assessment of the above
4 study was done by some authority and it determined
5 that the formula is warranted. What is that
6 authority that determined that it was warranted? You
7 mention that it's unwarranted. Who is making the
8 assessment that it is warranted?

9 MR. SETTINERI: Objection,
10 mischaracterization of the testimony, no foundation
11 laid that has been approved by anybody.

12 EXAMINER FARKAS: I will sustain the
13 objection. You are going to have to ask questions
14 that provide a basis for that question.

15 Q. The setback formula referenced in
16 condition 45 originated in a publication by Seifert,
17 Westerhellweg and Kroning, 2003, Risk Analysis of ice
18 throw from wind turbines.

19 EXAMINER FARKAS: What is the question?

20 MR. HEFFNER: I think that's my
21 underlying reference.

22 EXAMINER FARKAS: You're asking him if
23 that's what his testimony is?

24 MR. HEFFNER: I'm asking condition 45,
25 page 37, was a condition put forward by Staff.

1 EXAMINER FARKAS: If he knows the answer
2 to that question, I'm let him answer.

3 THE WITNESS: It's my understanding that
4 that came from Staff, yes.

5 Q. Okay. So your argument there is with
6 Staff on whether it's warranted or not warranted?

7 A. It's my opinion.

8 Q. Opinion.

9 A. Actually, what I say here is that that
10 guideline that they're referring to is a rough
11 guideline for initial siting efforts. That's my
12 point.

13 Q. Okay. And on page 3 of the same answer,
14 the estimated probability of being struck, I was
15 unable to draw out of there who made that estimation.

16 A. Which estimation are we talking about?

17 Q. The one in line 3 of page 3 of the
18 supplemental testimony.

19 A. There's a risk assessment, an ice throw
20 risk assessment, there are a number of them that are
21 in the public domain. This is one of them.

22 Q. It is which one?

23 A. It is one that was done for Litchfield
24 County, Connecticut, a project called Colebrook
25 South, clearly indicated in that paragraph.

1 Q. And that study, I guess I'm not knowing
2 which one is being used yet.

3 A. This reference is to the study that was
4 done for the Colebrook South Wind Farm.

5 Q. So the study estimated?

6 A. That's correct.

7 Q. And that chance was once in 100,000
8 years?

9 A. That's correct.

10 Q. And do you have any special background in
11 probability mathematics or theory?

12 A. Yes, I do. I've been an engineer for 25
13 years, and I've performed a number of calculations
14 and uncertainty analyses in other things as a part of
15 my daily consulting work for many years.

16 Q. Then you're familiar with the Poisson
17 Cluster?

18 A. No, I'm not.

19 Q. It was like Mr. Warrington stated the
20 other day, inaccurately, but stated that Shelby,
21 Ohio, has had three 100-year floods --

22 MR. SETTINERI: Objection, no foundation
23 laid for this.

24 MR. HEFFNER: I'm laying the foundation
25 currently.

1 MR. SETTINERI: He said he was unaware of
2 the Poisson Cluster.

3 EXAMINER FARKAS: I'm sustaining your
4 objection.

5 To lay foundation, you have to ask a
6 question.

7 MR. HEFFNER: I asked if he was aware.

8 EXAMINER FARKAS: Yes. And he said he
9 was not aware.

10 MR. HEFFNER: Thank you.

11 Q. Are there times in probability when an
12 unlikely event occurs three or four times in a row
13 even though statistically or from a probability
14 standpoint they should be very widespread?

15 A. Yes.

16 Q. Could that apply to ice throw?

17 A. Yes.

18 MR. HEFFNER: Thank you very much.

19 That's all I have.

20 EXAMINER FARKAS: Mr. Biglin.

21 MR. BIGLIN: Yes.

22 - - -

23 CROSS-EXAMINATION

24 By Mr. Biglin:

25 Q. In regard to the supplemental testimony,

1 in regards to ice throw on No. 5 there, you're
2 agreeing with the condition 44, I guess, using the
3 software to detect ice throw, correct?

4 A. Yes.

5 Q. Is it safe to say that technology on
6 software, regardless of how new, is not 100 percent
7 error-proof in regard to that?

8 A. That is true.

9 Q. Thank you. In regard to the question on
10 7 where you say condition 45 should not be applied on
11 a general basis, and you cite this Seifert,
12 Westerhellweg and Kroning as a formula that's
13 excessive and not warranted; is that correct?

14 A. That's my opinion, yes.

15 Q. Okay. But doesn't that correlate with
16 the same formula GE used in their safety manual?

17 A. Yes, it does.

18 Q. Okay. GE being a large corporation
19 involved in wind turbines all over the world in
20 different climates and different geographies, do you
21 think they have a good call to why they would put
22 that in their safety manual if they didn't think it
23 was warranted?

24 MR. SETTINERI: Your Honor, I object to
25 widespread distribution of GE terminals.

1 EXAMINER FARKAS: I will allow him to
2 answer.

3 A. I can't speak for GE.

4 Q. Well, would you agree this is the same
5 formula, regardless of GE using it, because in the
6 Staff Report it states 150 percent times the sum of
7 the hub height and rotor diameter, and the
8 Application in Appendix E where it is displayed in
9 the GE safety manual, they state one and a half times
10 the hub height and the rotor diameter. Does that
11 appear to be the same formula?

12 A. As I stated in my previous answer, it is
13 the same formula.

14 Q. In the Staff Report on page 37 under Ice
15 Throw --

16 EXAMINER FARKAS: Referring to the Staff
17 Report or the Stipulation?

18 MR. BIGLIN: The Staff Report itself
19 right now.

20 EXAMINER FARKAS: Page 7?

21 MR. BIGLIN: Page 37, the bottom half
22 under Ice Throw.

23 A. Okay, I'm there.

24 Q. Okay. In the last paragraph there Staff
25 refers to GE as the manufacturer of turbine models

1 under consideration by the Applicant, and also goes
 2 on to say that these safety standards are for ice
 3 throw and blade shear for all model -- turbine
 4 models, has recommended use of ice detector and other
 5 measures, if people or objects (occupied structures,
 6 roads) are within a distance of the so-called formula
 7 of 150 percent times the sum of the hub height and
 8 rotor. Further down it gives a figure using your GE
 9 model that's proposed in the Application. If you
 10 would use that formula, it would come out to roughly
 11 989 feet. Do you follow me there?

12 A. Yes, I'm following you.

13 Q. Okay. Behind that it says "from any
 14 structure or roadways." This is in regard to a
 15 couple turbines that are further down in the
 16 paragraph in regards to basically a structure. But
 17 then it goes on in the second-to-last line at the end
 18 of the paragraph to state "from roads and
 19 structures."

20 Do you feel that the distinction between
 21 a structure, even though what this paragraph says,
 22 versus a roadway is significant as far as being
 23 separated?

24 A. If I understand your question, you're
 25 asking me if there's a difference in terms of ice

1 throw risk between a building and a roadway? Is that
2 your question?

3 Q. Yes.

4 A. Okay. Yes, there is a difference in the
5 way that a risk assessment is handled. In the case
6 of a building, it doesn't move. In the case of a
7 roadway, the roadway doesn't move, but it's the cars
8 on the road that you're interested in, and cars spend
9 a finite amount of time within that distance when
10 they're on that road based on the speed they're
11 traveling and how far they are from the turbine, and
12 that is factored into the probability analysis, so
13 the probabilities are different even if at the same
14 distance.

15 Q. Why would you think that this statement
16 pertains to the roads and structures then? Why
17 wouldn't it just say structures?

18 A. I can't speak for the Staff. I wasn't
19 present when they drafted this paragraph.

20 Q. Can I ask you, in your opinion do you
21 think GE with all the data they collected over the
22 years with regards to their wind projects would have
23 any good basis for using this formula?

24 A. I can't speak for GE.

25 Q. In your opinion did you think it would

1 have anything to do with projects where they might
2 have incurred accidents or liability problems in
3 regard to this ice throw?

4 A. I can answer that question, because it is
5 my opinion, and based on my experience and time I've
6 spent in this industry and the research I've done on
7 this issue -- and let me just read you a list of wind
8 turbines I accessed in the last couple days that are
9 in very close proximity to people, buildings, roads,
10 schools, and at this point I am not aware of a single
11 incidence of an ice strike ever happening. I'm
12 personally not aware, nor do I know anyone else that
13 is aware of an ice strike.

14 The most notable example that I'm aware
15 of is a wind turbine in Toronto. Toronto is the
16 largest city in Canada. The wind turbine is a
17 750-kilowatt wind turbine. It was put in in 2002.
18 It is situated within a distance of a major freeway
19 that feeds downtown Toronto such that if it fell
20 over, it would literally block traffic. It's located
21 on an exposition site that has people around it all
22 year long, and they have not had one single incident
23 of any type of an ice throw.

24 I have been to that site and I have
25 talked to the operators and asked them how they

1 operate the turbine and what their strategy is for
2 minimizing or mitigating the ice throw risk, and they
3 don't even have ice sensors. All they do is monitor
4 weather. This is the largest city in Canada.

5 I'll just quickly list. There's a Bureau
6 Valley High School in Manlius, Illinois, and they
7 have a 660-kilowatt wind turbine located within
8 175 meters of their football field and their track
9 that was put in within the last five years.

10 Spirit Lake High School in Iowa was put
11 in in 1993. They actually put in two turbines. They
12 have a 250-kilowatt turbine and a 750-kilowatt
13 turbine. Those turbines are located within 243
14 meters of the high school and the playground.

15 We have the Nevada Community School
16 District in Iowa, 1993. They have two machines.
17 They have a 200-kilowatt machine and 250-kilowatt
18 machine. They are located 30 meters and 150 meters
19 behind the grade school.

20 Forest City Community School in Iowa,
21 installed a turbine in 1999. It's a 600-kilowatt
22 turbine. It's located 274 meters from the school.

23 I've got others I could list.

24 Q. Okay, that's fine. Another question on
25 that, and I understand that certain schools or

1 certain municipalities, whatever, decide their own
2 setback regulations where they would like to set one
3 of these turbines. Who assumes the liability in
4 those situations? Is that the school or the city or
5 the municipality that sites it? Do they take on the
6 responsibility of liability for an accident? Because
7 it seems to me like the manufacturer stated in their
8 safety rules a certain formula or course of action
9 precluding themselves from liability. Does it fall
10 to the entity that sites them at such distance?

11 MR. SETTINERI: Your Honor, that calls
12 for a legal conclusion in its entirety.

13 EXAMINER FARKAS: I'll note he's not a
14 legal expert and that any answer he would give
15 wouldn't be a legal answer.

16 Q. All right. So getting back to versus
17 road from a structure, is it your opinion a structure
18 would have residents or people in it; therefore, a
19 greater setback is better than people using public
20 roadways?

21 A. I can only speak to the probabilities,
22 and the way that they're calculated and the --

23 Q. I'm not talking about probabilities.
24 What I'm talking about, is it more important if
25 there's a dwelling there with four, five, six people,

1 or four, five, six people in car going down the
2 public roadway? I don't see the difference in
3 separating the two myself. I don't understand it.

4 EXAMINER FARKAS: Do you understand his
5 question?

6 THE WITNESS: I think so.

7 EXAMINER FARKAS: Okay.

8 A. As I stated earlier, the difference is
9 handled differently in the probability calculation,
10 whether it's a building or a road, and the reason for
11 that was that a building is omnipresent,
12 ever-present, and on a roadway the people are not
13 ever-present. The people are only there as cars are
14 passing through, and the amount of time which then
15 gets into what are the odds they're going to be there
16 when the ice is thrown are different than for a
17 location where you would assume people to be
18 ever-present.

19 Q. In your opinion, it makes no difference
20 whether it's a public roadway, whether it's a
21 four-lane highway, two-lane highway, school buses
22 using it? Does that enter into it?

23 A. Makes no difference in what regard?

24 Q. In regards to how close you locate a wind
25 turbine to the public road in regards to the ice

1 throw. Is it your opinion it's safe to rely on the
2 technology instead of erring on the side of safety,
3 which may be a little greater setback from a roadway?

4 A. I don't know how to answer that question.

5 EXAMINER FARKAS: Let me ask this
6 question. Does the probability change on a private
7 road versus a public two-lane road versus a four-lane
8 highway? Does the probability change at all with
9 respect to those two types of road?

10 THE WITNESS: Yes, it would. The
11 probability would change based on the distance or the
12 location from the turbine, and it would change based
13 on the size of the roadway.

14 EXAMINER FARKAS: Say they were all the
15 same distance from the turbine.

16 THE WITNESS: Then it would only change
17 based on the traffic density.

18 EXAMINER FARKAS: Would the speed of the
19 road have any effect on the probability?

20 THE WITNESS: Yes. The faster the car
21 travels, the less likely to be -- they spend less
22 time in the location of potential strike.

23 EXAMINER FARKAS: And the size of the
24 vehicle, would that have an effect on the
25 probability? A larger vehicle would have a greater

1 probability of being struck versus a small vehicle?

2 THE WITNESS: That's correct.

3 EXAMINER FARKAS: Okay.

4 MR. BIGLIN: I have nothing further.

5 Thank you.

6 EXAMINER FARKAS: Ms. Davis.

7 - - -

8 CROSS-EXAMINATION

9 By Ms. Davis:

10 Q. Referring to your direct testimony on
11 page 3, question No. 9, when you do these studies you
12 referred to, the side study which measures the
13 flicker up against the flat surface, like the side of
14 a house, when you do this, does the first pass assume
15 365 days of sunshine to give you the worst-case
16 scenario, or do you factor in a percent of cloudy
17 days?

18 A. I think you have to define for this
19 record what, for the record, what you mean by the
20 first pass. I'm not sure if we had a first pass.

21 Q. You came up with 17 nonparticipating
22 residents on your first study. Then you said you
23 went back and reevaluated the studies and you got
24 that 17 nonparticipating residences that were going
25 to get well over 30 hours, you got that down to 11.

1 A. Uh-huh.

2 Q. So does your first test that gave the
3 worst-case scenario, does that assume 365 days of
4 sunshine?

5 A. I have to look at that study to see which
6 assumption was used for that case because we ran
7 multiple cases, and I don't want to give you the
8 wrong answer.

9 In that particular study the sunshine
10 probabilities were factored in.

11 Q. So you are factoring in a certain percent
12 of cloudy days?

13 A. That's correct.

14 Q. And that's based on weather reports for
15 our particular area?

16 A. From Toledo, Ohio.

17 Q. From Toledo.

18 A. Yes.

19 Q. You suggest -- I don't know whether this
20 is your suggestion or if this is Staff's
21 suggestion -- to mitigate for these people who are
22 getting well over 30 hours, the first suggestion is
23 to plant trees. Is that your suggestion or Staff's?

24 A. That is a suggestion that came from me,
25 but it is basically an industry -- typical industry

1 approach based on my experience.

2 Q. Do you personally think that this is a
3 viable mitigation?

4 A. Yes, I do.

5 Q. And how do you justify that when you --
6 what kind of trees are you planting?

7 A. They would have to be evergreens
8 typically, something that's going to provide enough
9 density.

10 Q. How are you going to get evergreens big
11 enough within the time frame of a wind project to
12 mitigate that flicker? I mean, I've planted
13 evergreens that were 6-foot tall to begin with, and
14 they would not mitigate flicker for probably ten
15 years.

16 A. I'm not a landscape artist, but I do
17 know -- I've seen where a combination of trees being
18 planted can provide enough shade to --

19 Q. How quickly?

20 A. I can't answer that.

21 Q. And when you do your studies for shadow
22 flicker, how far does the flicker travel?

23 A. The shadow?

24 Q. From the turbine, how far does that
25 travel?

1 A. It depends on the angle of the sun.

2 Q. Of course. But how far does that travel?

3 A. Well, it depends on the angle of the sun.
4 If the angle of the sun was basically as the sun is
5 just rising or if the sun is just setting, then
6 there's a point at which the angle would basically be
7 zero and that shadow would travel off into infinity,
8 right?

9 Q. How far does the flicker travel?

10 A. Infinity. But how far it can be
11 perceived is a function of the distance from the
12 turbine. In other words, if the sun is high in the
13 air, a shadow may only travel 100 feet because it's
14 going to hit the ground and that's it. As the sun
15 gets lower in the sky, the shadow gets longer, it's
16 going to travel farther.

17 Q. What would your worst-case scenario be
18 for detecting a shadow on the ground, not a shadow
19 that going off into infinity somewhere?

20 A. There's a study that was done I believe
21 in Germany where they came up with a determination on
22 how far away from a turbine a shadow has enough
23 intensity, a shadow flicker has enough intensity to
24 be noticeable, and that distance is in the range of
25 1,000 to 2,000 meters, and it's a dependency on the

1 thickness of the blade that's causing the shadow.

2 MS. DAVIS: Okay. I think that's my only
3 questions.

4 EXAMINER FARKAS: Note for record
5 Mr. Warrington is now in the hearing room.

6 Do you have any questions for the
7 witness?

8 MR. WARRINGTON: Yes, I have a question.

9 - - -

10 CROSS-EXAMINATION

11 By Mr. Warrington:

12 Q. The nearest turbine to my home is -- the
13 nearest turbine from the eastern wall of my home is
14 2,700 feet, yet that shadow flicker on the shadow
15 flicker report still sweeps beyond my house across
16 the two-acre pond and across an entire 20-acre
17 pasture field. This appears to be more in the range
18 of 3,500, 4,000 feet from that wind turbine.

19 EXAMINER FARKAS: Mr. Warrington, you
20 cannot testify. You have to ask a question.

21 Q. Does that seem in keeping with the
22 equation for shadow flicker that you're testifying on
23 here this morning?

24 A. I'm really not quite sure what your
25 question is.

1 Q. That I show a shadow flicker coming
2 across my property that appears to be in excess of
3 3,500 feet by -- in the Application. Does that
4 seem --

5 A. We can -- in the simulation we can choose
6 any distance that we want. If we wanted to put
7 infinity in there, we could calculate and record how
8 much shadow flicker would be occurring 47 miles away
9 from the project. But would that be practical or
10 relevant? No.

11 In most cases we tend to try to err on
12 the side of conservatism so that our numbers are
13 defensible. We would rather be accused of being
14 overly conservative rather than cutting corners to
15 make our numbers look better.

16 So typically what you see in these
17 reports are amounts of shadow that are really beyond
18 what will be seen in reality. I don't know if that's
19 what you are referring to, but that's what it sounds
20 like.

21 Q. Would you regard that shadow flicker as
22 an annoyance to the homeowner?

23 A. What shadow?

24 Q. The shadow flicker.

25 A. Yes. That's why we site turbines away

1 from houses, so they don't get shadow flicker.

2 Q. Is there a method of compensation for me
3 for allowing -- I don't recall giving permission for
4 a shadow to move across my entire yard, property,
5 barnyard, and pasture field. Are you able to comment
6 on why I should absorb an annoyance like that without
7 compensation?

8 A. I'm not going to speculate.

9 MR. WARRINGTON: That's all from me.

10 - - -

11 EXAMINATION

12 By Examiner Fullin:

13 Q. I will ask you -- I'll refer to question
14 11 of your direct testimony. Basically I want to
15 compare that where you describe condition 54 as
16 follow-up to your second analysis. When I read
17 condition 54, "that at least 30 days prior to the
18 preconstruction conference, Applicant shall complete
19 a 'realistic' shadow flicker analysis for inhabited
20 nonparticipating receptors already modeled to be in
21 excess of 30 hours per year of shadow flicker and
22 provide results to OPSB Staff."

23 Are we talking about the
24 11 nonparticipating residents there, or are we
25 talking about the 17, or talking about a whole

1 different -- perhaps a whole different number of
2 residences in the condition? Is that referring to
3 11, 17 or some other number?

4 A. My assumption is it would be referring to
5 any residence that had more than 30, which would
6 likely be within the group of 17, but much more
7 likely to be within the group of 11.

8 Q. It wouldn't require a new study; it would
9 either be 11 or 17? I don't understand your
10 testimony about you did an analysis and you found 17.
11 You did a further analysis and found 11, and now we
12 have a condition, from what I understand of your
13 answer, is even more broad than either of your
14 previous analyses.

15 A. I guess what it says is that it would be
16 for any nonparticipating residence.

17 Q. So your testimony about the previous
18 analysis that found 17 and 11 kind of, in my mind,
19 seems irrelevant to the condition applying under
20 54 because neither of those numbers -- you're not
21 saying it's either one of those numbers that's
22 actually going to be the basis for the condition, so
23 it would be a new analysis done to find out how many
24 residences fit within the category covered by the
25 condition similar to the analyses you did in the past

1 that you testified about. How would we know which
2 residents are covered by the condition?

3 A. They're saying that condition 55 imposes
4 mitigation on anyone that's going to experience that,
5 which would have to be after the wind farm is in
6 operation, as I understand it.

7 Q. Well, as I read 54, it's talking about
8 prior to the preconstruction conference, they're
9 going to complete a shadow flicker analysis for a
10 certain group of residences. I'm asking if it's not
11 to residences that you've already analyzed, when is
12 this analysis going to be -- this is going to be kind
13 of a separate analysis from what has already been
14 done and already testified to, as I understand it.

15 MR. REILLY: Your Honor, if I may
16 interpose something here, and sorry about this, but
17 speaking on behalf of the signatory to the
18 Stipulation this witness that does not represent, we
19 would like to -- certainly this witness is free to
20 give his interpretation of this provision, but he is
21 not speaking for Staff.

22 EXAMINER FULLIN: Okay. I was planning
23 on a similar question of Staff when Staff was on, but
24 I want to give him a chance to answer if he can. Are
25 you saying you would prefer I ask the Staff about

1 this?

2 MR. REILLY: Well, I guess --

3 EXAMINER FARKAS: It's the witness for
4 the Company and the Company has signed on the
5 Stipulation.

6 MR. REILLY: But the question is
7 requesting an interpretation of the Stipulation, and
8 all I'm saying, he can speak for the Company if he
9 feels prepared to, but he is not speaking for Staff.

10 EXAMINER FARKAS: That's clear.

11 MR. REILLY: As long as that's clear on
12 the record.

13 EXAMINER FARKAS: Right. He's a Company
14 witness, so he's speaking on behalf of the Company.

15 MR. REILLY: To the extent he can, but
16 he's not speaking for Staff and, presumably, not for
17 any other signatory.

18 EXAMINER FARKAS: Duly noted.

19 Can you answer the question?

20 THE WITNESS: As I stated, I can't speak
21 for Staff.

22 EXAMINER FARKAS: So you can't answer the
23 question?

24 THE WITNESS: No, I really can't.

25 EXAMINER FARKAS: That's fine.

1 Q. (Examiner Fullin) One other area I will
2 ask about. I think I asked earlier another Company
3 witness, but it seems it really falls within the
4 purview of your testimony.

5 So regarding condition 44, again this is
6 a question that may involve interpretation of the
7 Stipulation, which I'm only asking you from your
8 point of view as a Company witness, not the Staff
9 point of view, if you could explain what I asked
10 before, that the condition as it's worded states that
11 the Applicant shall install and utilize an ice
12 warning system that may include one of I think it's
13 four system designs, but it appears from the way it's
14 worded, there's no consequences for installing an ice
15 system that does not include any of the four.

16 So does the Company have a position about
17 whether it would be a good idea to instead of saying
18 "it may include," should it include one of the four?
19 Do you have something to add to the record about
20 that?

21 A. I can't speak to the Company because I
22 don't know what choices they have in mind for ice
23 detection. There are many methods, as I indicated
24 earlier, but it would be my opinion that it would not
25 serve well to limit them but to allow them to do some

1 work to determine for themselves what they think
2 their best choices for sensors are.

3 Q. Okay. Thank you.

4 A. It may or may not be those four.

5 EXAMINER FULLIN: Thank you.

6 EXAMINER FARKAS: Any redirect.

7 MR. SETTINERI: Just one moment, your
8 Honor.

9 We do have a few questions for the
10 witness.

11 - - -

12 REDIRECT EXAMINATION

13 By Mr. Settineri:

14 Q. A few questions related to risk and
15 probability. First of all, are you familiar with how
16 to do an ice throw risk assessment?

17 A. Yes, I am.

18 Q. And when an ice throw risk assessment is
19 done, do you take into account ice detection measures
20 that would be placed on a turbine?

21 A. There are a set of guidelines that are
22 actually referred to in that earlier ciphered paper,
23 but they recommend you do take into account the fact
24 that turbines will be shut down and not in operation
25 under an icing event, as indicated by the ice

1 detectors.

2 Most ice risk assessments I've seen have
3 been done without taking that into account. That
4 means if you had a probability of one in 300,000 of
5 an ice chunk flying 300 meters, that probability does
6 not account for the fact that the turbine may not be
7 in operation, in which case it would be zero.

8 So what you have to do then is factor in
9 what's the probability that that ice detection
10 software would not prevent the turbine from being
11 shut down and throwing that ice chunk, and that
12 typically is not factored in. So I would have to say
13 these probabilities that we have been talking about
14 and that are normally reported in these assessment
15 reports are extreme and conservative.

16 Q. In regards to the questions on Colebrook
17 South phase, in your testimony you have referenced
18 that was a probability of less than once in 100,000
19 years. Do you believe that probability would be
20 similar to what probability would be applied to the
21 Black Fork site?

22 A. In my opinion, the Black Fork site
23 probability would be lower than that, and that is
24 based on the fact that the Colebrook report has 12
25 icing days per year, which is numerically factored

1 into that probability, and the number of icing days
2 at this site is more like eight days per year, which
3 will reduce those probabilities further.

4 Q. And when you say "reduce probabilities,"
5 are you saying that would be more than once -- I
6 should say even less than once in 150,000 or so
7 years, once in 250,000 years, but essentially saying
8 the probability of that occurring is even less?

9 A. The probability becomes even less. It
10 would be instead of once in 300,000 years, it would
11 maybe be one in maybe 350,000 years, as an example.

12 Q. Having considered the probability of this
13 event occurring, do you think it rises to the level
14 of requiring the setback referenced in the Staff
15 Report be applied to occupied structures, roads,
16 property boundaries?

17 A. I think that in my opinion it is the
18 right decision to apply it to occupied residences. I
19 don't believe it is the right decision to apply it
20 globally across the project with regard to roads. I
21 think in that case, given the fact that ice detection
22 systems will be used on all turbines, that those
23 setbacks are excessive.

24 Q. You're familiar with the GE setback
25 manual?

1 A. Yes, I am.

2 Q. There was a question in regards to the
3 setback requirement referenced in that manual. Are
4 you aware whether that setback would apply for GE if
5 there was ice detectors on the turbines?

6 A. I do not believe it would, although I
7 can't speak directly for GE.

8 MR. SETTINERI: No further questions.

9 EXAMINER FARKAS: Staff, any recross?

10 MR. REILLY: No, your Honor.

11 EXAMINER FARKAS: Ms. Davis.

12 MS. DAVIS: No.

13 EXAMINER FARKAS: Mr. Biglin.

14 MR. BIGLIN: Yes.

15 - - -

16 REXCROSS-EXAMINATION

17 By Mr. Biglin:

18 Q. In regards to different softwares, with
19 regard to the ice throw and the conditions, are you
20 familiar, does it have to do with vibration, or is
21 that the method that's used in these softwares to
22 detect if there's ice on there? I'm trying to
23 understand how it kind of would work.

24 MR. SETTINERI: Your Honor, that's beyond
25 the scope of redirect.

1 EXAMINER FARKAS: That's outside the
2 scope of redirect.

3 MR. BIGLIN: It is?

4 EXAMINER FULLIN: Your questions have to
5 be limited to the questions he asked in follow-up.

6 EXAMINER FARKAS: That only applies when
7 we go to redirect.

8 EXAMINER FULLIN: Right, which is where
9 we are at now. Once he gets a second chance to ask
10 questions, after he's done, then you get another
11 chance to ask questions, but you can't come from
12 anywhere. It has to address something that was
13 involved in his questions the second time, the second
14 line of questions.

15 Q. You say you can't speak for what GE might
16 have in their manual or not have in their manual.

17 A. No, I can't.

18 Q. With regards to this question either?

19 A. No, I can't speak for GE.

20 Q. These detectors, you don't know if they
21 work 100 percent or not?

22 A. I don't.

23 Q. Do they have to be set up? I mean,
24 somebody has to set the parameters of scale that it
25 detects of whether it shuts down or not.

1 A. Yes.

2 Q. Calibrated, in other words.

3 A. Yes. There are many different types of
4 sensors, and yes, they would all need to be installed
5 and all need to be attached to the control system.

6 Q. So the percentage of their probability of
7 working would depend on actually how they're
8 calibrated possibly?

9 MR. SETTINERI: Your Honor, I have to
10 object.

11 EXAMINER FARKAS: There was a general
12 question with respect to detection devices. I will
13 allow this and see where it goes.

14 Go ahead.

15 Q. That's my question. The calibration
16 being done by humans or some other -- these can be
17 set up to work in a certain parameter of vibrations
18 depending on how it's calibrated or set up; is that
19 correct?

20 A. Yes, it is.

21 Q. So how well they would work or not work
22 would depend on how sensitive or nonsensitive they
23 would be set up?

24 A. That's correct.

25 Q. Thank you.

1 A. The sensors, it's in the literature, it's
2 well-known that there's really no ice sensor out
3 there that's 100 percent reliable. That's why the
4 manufacturer -- pardon me -- the turbine
5 owner/operators will deploy more than one type of
6 strategy to detect ice.

7 And also, keep in mind, they have these
8 sensors on every turbine, so the likelihood of every
9 sensor on every turbine failing to detect the fact
10 there's icing conditions in the area is extremely
11 remote.

12 But yes, they use vibration sensors which
13 sense the imbalance on the blades. One blade might
14 have more ice on it than another. In the software
15 they will monitor the power curve, and they know the
16 machine should be putting out X amount of power
17 because of the speed the wind is blowing and it is
18 not putting out that much power, and they also know
19 it's in the weather conditions where it might be
20 icing. The software will then put two and two
21 together and force a shutdown or raise a flag.

22 There are many different methods, but the
23 wind farm owner/operators commonly deploy more than
24 one method on their machines because of the fact that
25 no one device is going to have 100 percent

1 reliability.

2 MR. BIGLIN: Thank you.

3 EXAMINER FARKAS: Mr. Heffner.

4 - - -

5 RECROSS-EXAMINATION

6 By Mr. Heffner:

7 Q. Mr. Settineri asked a question concerning
8 the setback requirement. That setback requirement is
9 for ice throw and blade shear. Your probability
10 discussion only relates to ice throw. Is there a
11 probability established for blade shear?

12 MR. SETTINERI: Objection, your Honor.
13 There's no foundation regarding the setback being
14 applied to blade shear.

15 EXAMINER FARKAS: I believe his testimony
16 related to setback related to ice throw, not blade
17 shear.

18 MR. HEFFNER: But when it's discussed in
19 that section of the Application or the Staff Report,
20 they were grouped together.

21 EXAMINER FARKAS: When you first had the
22 opportunity to ask this witness questions, that was
23 the time to ask that question. However, we are now
24 on recross, and your questions have to be limited to
25 what was raised on redirect.

1 MR. HEFFNER: I understand that, but that
2 setback requirement contains both of those things.

3 EXAMINER FARKAS: Well --

4 MR. HEFFNER: The setback requirement was
5 brought up.

6 EXAMINER FARKAS: I understand where
7 you're coming from, but what I'm saying, the redirect
8 question was regarding setback and ice throw only.
9 It does not -- the issue of blade throw did not come
10 up -- blade shear. I'm sorry.

11 EXAMINER FULLIN: If you try to bring it
12 up now, it's beyond the scope of redirect.

13 MR. HEFFNER: I guess that's it then.
14 Thank you.

15 EXAMINER FARKAS: Ms. Rietschlin,
16 questions?

17 - - -

18 RECROSS-EXAMINATION

19 By Ms. Rietschlin:

20 Q. I want to clarify one thing. When you
21 talked about the setback, did I hear you say it
22 should be applied to residences but not to roads?

23 A. Yes.

24 Q. What about school bus stops?

25 A. I guess it would depend on where that

1 school bus stop was.

2 Q. They ordinarily stop at the end of the
3 driveway in the rural area, and children stand at the
4 end of the driveway and wait for school buses. The
5 school buses don't drive up private lanes.

6 A. I think I would consider that to be
7 similar to a roadway. It's a roadway.

8 Q. So that would be a roadway then?

9 A. Yes.

10 MS. RIETSCHLIN: Thank you.

11 EXAMINER FARKAS: Ms. Price.

12 - - -

13 RECROSS-EXAMINATION

14 By Ms. Price:

15 Q. My question, when you read the list of
16 schools that had wind turbines and said there had
17 never been a case of ice throw, isn't it normal that
18 weather conditions that are right for that type of
19 ice buildup that school would be canceled and there
20 wouldn't be anyone hit in those areas?

21 MR. SETTINERI: I believe that is outside
22 the scope of this redirect.

23 EXAMINER FARKAS: I will allow this
24 question.

25 A. I don't know. But from my own personal

1 experience of living for X number of years, I've seen
2 schools open many times. I'm from North Dakota. We
3 go to school rain or shine. So yes, I suspect in
4 Iowa they're probably in school many of those times
5 when there are icing conditions prevalent.

6 MS. PRICE: Thank you.

7 EXAMINER FARKAS: Mr. Price?

8 MR. PRICE: No.

9 EXAMINER FARKAS: Mr. Warrington?

10 MR. WARRINGTON: No questions.

11 EXAMINER FARKAS: You're excused. Thank
12 you for your testimony.

13 MR. SETTINERI: Your Honors, at this time
14 I move into the record Company Exhibit 16, the
15 Supplemental Testimony of Mr. Jay Haley, as well
16 Company Exhibit 15, the Direct Testimony of Jay
17 Haley.

18 EXAMINER FARKAS: Any objection to
19 Exhibits 15 and 16?

20 Hearing none, they will be admitted.

21 (EXHIBITS ADMITTED INTO EVIDENCE.)

22 EXAMINER FARKAS: We will break for lunch
23 now, 12:47 and come back at 2:00 o'clock.

24 (At 12:47 p.m. a lunch recess was taken
25 until 2:00 p.m.)

1 Wednesday Afternoon Session,
2 October 12, 2011.

3 - - -

4 EXAMINER FARKAS: You may call your next
5 witness.

6 MR. SETTINERI: Thank you, your Honors,
7 at this time we would like to mark two exhibits. The
8 first, Company Exhibit 17, is the Direct Testimony of
9 Kenneth Kaliski.

10 EXAMINER FARKAS: So marked.

11 MR. SETTINERI: The second is Company
12 Exhibit 18, the Supplemental Testimony of Kenneth
13 Kaliski.

14 EXAMINER FARKAS: So marked.

15 (EXHIBITS MARKED FOR IDENTIFICATION.)

16 MR. SETTINERI: At this time I like to
17 call Mr. Kaliski to the stand.

18 - - -

19 KENNETH KALISKI,
20 being first duly sworn, as prescribed by law, was
21 examined and testified as follows:

22 DIRECT EXAMINATION

23 By Mr. Settineri:

24 Q. Good afternoon.

25 A. Hello.

1 Q. Would you please state your name and
2 business address for the record please?

3 A. My name is Kenneth Kaliski, and I work at
4 Resource Systems Group. 55 Railroad Row, White River
5 Junction, Vermont.

6 Q. Do you have in front of you what has been
7 marked as Company Exhibit 17 and Company Exhibit 18?

8 A. Yes.

9 Q. Can you please identify Company
10 Exhibit 17 for the record, please.

11 A. Company Exhibit 17 is the Direct
12 Testimony of Kenneth Kaliski.

13 Q. And can you please identify for the
14 record Company Exhibit 18, please?

15 A. Company Exhibit 18 is the Supplemental
16 Testimony of Kenneth Kaliski.

17 Q. Starting with Company Exhibit 17, your
18 direct testimony, do you have any revisions or
19 changes to the testimony today?

20 A. No, I do not.

21 Q. If I asked you the questions in that
22 testimony, would your answers be the same?

23 A. Yes, they would.

24 Q. And turning to Exhibit 18, your
25 supplemental testimony, do you have changes or

1 revisions to that testimony?

2 A. No, I don't.

3 Q. If I asked you the questions in that
4 testimony today, would your answers be the same?

5 A. Yes.

6 MR. SETTINERI: Your Honors, the witness
7 is available for cross-examination.

8 EXAMINER FARKAS: Staff, any questions?

9 MR. PARRAM: We do not.

10 EXAMINER FARKAS: Mr. Warrington.

11 - - -

12 CROSS-EXAMINATION

13 By Mr. Warrington:

14 Q. Good afternoon.

15 A. Hello.

16 Q. Earlier in your testimony or near the
17 beginning of your testimony, the second page, you are
18 just citing some of your previous experiences, wind
19 projects in 1993 and also a project in Maine. Can
20 you remember the name of that project in particular?

21 A. We have been involved in several projects
22 in Maine, Spruce, Saddleback, Oakfield, Highland are
23 the four.

24 Q. Okay. Has there been any community
25 complaints about noise from those wind projects, to

1 your knowledge?

2 A. No. None of those have been built.

3 Q. Okay, none have been built. All right.

4 A. There is a fifth one, Freedom, Maine. We
5 were just hired to look at issues and complaints, but
6 we didn't do any of the preconstruction work.

7 Q. As you have been working on the Black
8 Fork Wind Energy Project, in question 6 you state in
9 your testimony that you have been working on noise
10 analysis of the project since 2009 and in June 2009
11 you set up meters.

12 A. Yes.

13 Q. Did your study conclude in 2009?

14 A. No.

15 Q. Okay. So there has been subsequent
16 additions and changes to the study?

17 A. That's when we started doing the sound
18 monitoring in June, and then the report is dated
19 March 2011. We've done supplemental studies as
20 necessary since then, continually working on the
21 project.

22 Q. Is there a record of these data entries?
23 I think that my question kind of gets --

24 EXAMINER FARKAS: You have to speak up so
25 they can hear you on that side of the room.

1 MR. WARRINGTON: That's okay. I'll just
2 move on from this.

3 EXAMINER FARKAS: Okay.

4 Q. In the Application, I'm looking at figure
5 25 on page 22 of section H, it's 7.2 Masking.

6 A. Is it page 22?

7 Q. Yes, in section H.

8 EXAMINER FARKAS: Are you in the
9 Application or the appendix?

10 MR. WARRINGTON: I think it is actually
11 the appendix. I'm sorry, the larger of the two
12 books. Pardon me.

13 EXAMINER FARKAS: Can you give me the
14 reference again, too, section H?

15 MR. WARRINGTON: Tab H, page 22. It's in
16 the middle of the page, 7.2 Masking, and there is a
17 figure 25.

18 A. Yes.

19 Q. I have a question, that this regression
20 line is using L90 sound levels rather than LEQ, and I
21 would like for you to explain why this is used, L90.
22 It's for clarification. I have some ambiguity as to
23 whether our average nighttime would more accurately
24 be maybe in the 20 -- in the range of the 20s rather
25 than in the 40s.

1 EXAMINER FARKAS: You don't have to
2 explain the question. Just ask the question.

3 MR. WARRINGTON: Okay.

4 A. So figure 25 shows the L90 and Appendix A
5 shows both the L90 and LEQ for the site. In this
6 case we just found that this is the only one which
7 actually had a statistically significant
8 relationship. That's why it's in this figure. I
9 don't know -- I don't believe we found a
10 statistically significant relationship with the LEQ.

11 Q. I just have a question. As you go from
12 question 9 into question 10, question 10 is what
13 mitigation do you recommend, and then it seems to
14 abruptly switch to issues of construction noise
15 rather than actually the noise that will be
16 experienced on an operational basis for the project.

17 Can you explain why in the answer to
18 those mitigation issues it turns into what seems to
19 me an unrelated discussion about construction noises?

20 A. Right. Well, the operational issues are
21 really addressed in question 11 where we talk about
22 if we find that the sound levels are excessive from
23 operations what can be done, and that's where the
24 discussion turns into noise-reduced operations.

25 But, in general, assuming that the

1 standards can be met in operations, these are the
2 recommendations that we're making. That would be
3 answer 10. So answer 11 would just fall into place
4 if the operational noise levels are high.

5 Q. All right. For question 11, I have a
6 question about the noise-reduced operating mode. If
7 you can answer, what is the response time to place
8 these turbines after a complaint is lodged? Is it a
9 month, a week? Do you have any -- are you able to --

10 A. Is this related to noise-reduced
11 operations or the response to a complaint?

12 Q. A complaint is raised, and then there's a
13 noise-reduced operating mode. I guess I would be
14 curious if this reduced-operating mode, you know, is
15 that -- what would be the speediness or the slowness
16 of that response?

17 A. I guess there the two parts of question.
18 One is how are complaints resolved there. In the
19 Stipulation, a complaint resolution protocol would be
20 developed prior to operating the project, and that
21 would determine how fast a response is made.

22 Part of the response in that complaint
23 resolution protocol would be, if necessary,
24 evaluating what the sound levels are, and if the
25 sound levels are too high, if they exceed the

1 standards, then we would have to implement some sort
2 of mitigation, like the noise-reduced operation.

3 So if noise-reduced operation is
4 implemented, it's basically a software approach that
5 affects the controllers of the wind turbines. So
6 when certain meteorological or time-of-day conditions
7 are met, then the turbines immediately go into this
8 noise-reduced operation. So it's an automatic
9 control, essentially operated immediately when it's
10 activated.

11 EXAMINER FULLIN: Once the software is in
12 place?

13 THE WITNESS: Well, the software is
14 pretty much always in place. You set certain
15 parameters. Say you want to put in a noise-reduced
16 operation from 7:00 p.m. to 7:00 a.m. or when the
17 winds are out of the west greater than 7 meters per
18 second. You can set that up in the software, and
19 when those conditions are met, it kicks in the
20 noise-reduced operation.

21 Q. (By Mr. Warrington) And you are speaking
22 for the project with this answer?

23 MR. SETTINERI: Objection in terms of the
24 form of the question. He's testifying on behalf of
25 the Applicant in this proceeding, would be the

1 appropriate question.

2 EXAMINER FARKAS: Do you understand the
3 objection?

4 MR. WARRINGTON: Yes.

5 EXAMINER FARKAS: Just for clarification
6 purposes, in the noise-reduced operating mode, the
7 type of things you're talking about in the second
8 sentence, the turbine torque would be the speed of
9 the blades spinning?

10 THE WITNESS: Well, the result of
11 noise-reduced operation is to change the speed of the
12 blades.

13 EXAMINER FARKAS: Okay.

14 THE WITNESS: You would do that by
15 changing the pitch or the torque operating --
16 resistant force operating upon the --

17 EXAMINER FARKAS: Almost like gears,
18 gearing down how fast the blades are spinning.

19 THE WITNESS: I'm not sure exactly how
20 they do it, but that's basically the way it works.

21 EXAMINER FARKAS: And blade pitch would
22 be the angle of the blades?

23 THE WITNESS: Yes.

24 EXAMINER FARKAS: Okay. Thank you.

25 Q. (By Mr. Warrington) This I don't need

1 scientific accuracy, but I'm just wondering as a
2 sound expert if you could estimate for me the sound
3 of the fans and the registers that we're hearing in
4 this room, just as a ballpark?

5 A. I would guess that would be around 45.

6 Q. This is around 45?

7 A. I would say so. I mean, ballpark, say 40
8 to 50, but based on my experience with other types of
9 rooms, that's what I would say, somewhere around
10 there.

11 EXAMINER FARKAS: That's based on where
12 you're sitting?

13 THE WITNESS: Yes.

14 EXAMINER FARKAS: If you were sitting
15 further away or the other side, it would be
16 different?

17 THE WITNESS: Yes. Where I was sitting
18 before, it was louder, closer to 50.

19 MR. WARRINGTON: I appreciate that.

20 Q. This is not specific to question 15, but
21 in that general part of the testimony. Can you just
22 explain on behalf of those of us here, the
23 participants, your method for arriving at the
24 43 decibel nighttime level as well as 53 decibel
25 noise averages?

1 A. Yes, sure. So we selected eight sites
2 around the project, and we selected them to be
3 representative of the different types of areas where
4 people would be living in different soundscapes, and
5 we set sound level meters up for two weeks in each
6 location, and we simply took the daytime and
7 nighttime LEQ, which is the equivalent average sound
8 level over the entire monitoring period.

9 And then so we have a nighttime sound
10 level for each period. Those are shown in table 3 on
11 page 9 of the appendix H. Then we did an arithmetic
12 average of the nighttime LEQs for each site, except
13 we excluded one site which had a very high LEQ, which
14 was essentially an outlier, and came up with
15 43 decibels as the average. We did the same thing
16 for the daytime.

17 Q. This is just an agree or disagree. Is it
18 true to say that the wind turbine complex will, under
19 many circumstances, create the loudest noise in the
20 project area, and that noise being produced on a
21 constant basis? Would you agree or disagree in
22 spirit?

23 A. I'm not sure what you mean by constant.
24 It's -- the modeling that we do models the maximum
25 level under downwind conditions, so that's certainly

1 not going to be a constant. It's not constant.
 2 We're modeling, say, 45 decibels at a location.
 3 That's not a constant level. It's a one-hour maximum
 4 level, and depending on the wind direction, the wind
 5 speed, the time of day, those levels would be lower
 6 most of the time.

7 Q. All right. To eliminate my
 8 editorializing, I won't ask any more, but I might
 9 have a different question.

10 Answer 16 on your testimony, answer 16,
 11 question 16, actually, at the end of the adjustment
 12 to the standard, you just simple strike out that this
 13 condition by the Board will be made ready for review
 14 and acceptance.

15 Would you agree or disagree that really
 16 rather takes the teeth out of this standard and makes
 17 it just an option? Would you agree or disagree with
 18 that statement?

19 A. Well, the reason it was taken out is
 20 because so long as the project met the standard, we
 21 felt that the Staff wouldn't have to accept the
 22 turbine type or make or model. Of course, it would
 23 still have to meet the standard.

24 Q. Thank you. Question 18, we're talking
 25 about there are objections made in your testimony to

1 sort of a moving standard, a movable standard.

2 A. Yes.

3 Q. Do I understand you correctly to say that
4 the Ohio Power Siting Board Staff have not produced a
5 definitive standard for this project by your
6 responses in question 18?

7 MR. PETRICOFF: Your Honors, I object in
8 regards to the form of the question in that is he
9 referencing the Stipulation, or is he referencing the
10 Staff Report?

11 EXAMINER FARKAS: Are you referencing the
12 Staff Report or the Stipulation?

13 MR. WARRINGTON: Both.

14 EXAMINER FARKAS: I will overrule the
15 objection.

16 THE WITNESS: So this question is?

17 EXAMINER FARKAS: Do you want the
18 question to be read?

19 THE WITNESS: I'm okay.

20 A. This question addresses essentially the
21 first Stipulation, and what it was meaning to say is
22 that as it was written, it presented essentially a
23 moving target because there was no fixed standard.

24 The Stipulation currently does have a
25 fixed standard, and so this comment would not apply

1 to the current Stipulation.

2 EXAMINER FULLIN: Let me ask, when you
3 talk about the first Stipulation and current
4 Stipulation, are you talking about the condition in
5 the Staff Report, is that what you are referring to
6 as the first?

7 THE WITNESS: Yes.

8 EXAMINER FULLIN: What is submitted as
9 the signed Stipulation is the current?

10 THE WITNESS: Yes. That's correct.
11 Answer 18 does not address the signed Stipulation.

12 Q. (By Mr. Warrington) The Ohio
13 Administrative Code Section 4906-17-08, how does your
14 report in the Black Fork Wind Energy Application
15 satisfy land usage in terms of residential purposes,
16 residential uses? Do you feel that is addressed in
17 your noise report?

18 A. I'm sorry, I'm not familiar with the
19 statute.

20 Q. It is the social and ecological data. It
21 has a number of requirements about public safety,
22 ecological impact, operation. Land uses specifically
23 is the section.

24 "Provide a map of 1:24,000 scale
25 indicating general land uses depicted as areas on the

1 map, within a five-mile radius of the facility."

2 EXAMINER FULLIN: Are you reading from
3 the Administrative Code?

4 MR. WARRINGTON: Yes.

5 EXAMINER FULLIN: I make a suggestion
6 that you show him and ask him if he is familiar with
7 it and go from there in terms of asking him
8 questions.

9 MR. WARRINGTON: All right.

10 Q. The main question is where in your report
11 are there land uses for residential concerning --

12 EXAMINER FARKAS: Let him look at it.

13 THE WITNESS: This is the first I've seen
14 it.

15 MR. SETTINERI: I object in terms of
16 asking him to interpret the Ohio Administrative Code.

17 EXAMINER FARKAS: I'll sustain the
18 objection.

19 Q. The question was just if you refer to a
20 place in your report.

21 A. We don't provide a map plan.

22 Q. One last thing. In your report can you
23 demonstrate whether you have included or not included
24 a 3-decibel uncertainty factor? It's just a yes or
25 no.

1 A. Where we included a 3 decibel uncertainty
2 factor?

3 Q. Do you or do not include a 3-decibel
4 uncertainty factor?

5 A. We include uncertainty in our modeling,
6 but we don't quantify the amount. We include a
7 quantifiable amount for uncertainty on the turbine
8 specifications, and that's shown in the appendix,
9 different for each turbine.

10 MR. WARRINGTON: Thank you. That's all
11 my questions.

12 EXAMINER FARKAS: Mr. Price.

13 MR. PRICE: No questions.

14 EXAMINER FARKAS: Ms. Price.

15 - - -

16 CROSS-EXAMINATION

17 By Ms. Price:

18 Q. Hello. Can you explain on the noise, I'm
19 not sure what the differences are, on question 16 in
20 letter (b) there's A-weighted and C-weighted sound
21 pressure or power levels.

22 A. Can you just repeat where you're looking
23 at again?

24 Q. Question 16 in your direct testimony.

25 A. Yes.

1 Q. And in your answer to the (b) portion of
2 it, can you explain the different levels?

3 A. Yes. On answer 16 there is reference to
4 an A- and C-weighted sound pressure power level.
5 A-weightings and C-weightings are designed to weight
6 the sound that we hear by -- to do -- to mimic our
7 ear weights, different frequencies, and our ear at
8 very low sound levels or medium sound levels
9 discounts a lot of the low frequency noise around us.
10 That's the A-weighting.

11 And C-weighting is designed for very high
12 energy sounds, like blasts, because when we hear very
13 loud sounds, we don't discount the low frequency as
14 much as we do when the sounds are quieter. For very
15 loud signs, like blasting noise or gunshots, we tend
16 to use C-weighting that doesn't discount the low
17 frequencies as much.

18 Q. Okay. No. (c), the tonal audibility.

19 A. Yes. Tonal audibility is simply how well
20 we can distinguish individual tones in a sound. So,
21 for example, a backup alarm is very tonal. We can
22 hear that one specific frequency, but the fan noise
23 in this room is a broad band. It doesn't contain any
24 specific tones. It is more of a flat spectrum or
25 even spectrum of sound.

1 Q. Okay. When you did the study on the
2 noise, did you only do the study for when the wind
3 turbines are new, or did you do a study for when the
4 wind turbines are 5, 10, 15, 20 years old and have
5 wear and tear on them?

6 A. Yes. We based our study on the
7 manufacturer's guarantee with a margin of error that
8 they provide. So I don't know what the sound level
9 will be in five or ten years, but -- I don't know
10 what the actual warranty is or how long that extends
11 with the wind turbine.

12 But I can say that issues that increase
13 the sound levels from wind turbines over time, such
14 as blade wear and gearbox deterioration are things
15 that also affect the power output for a wind turbine,
16 so those are the types of things that are addressed
17 in the normal operations -- the normal maintenance of
18 wind turbines.

19 Q. So you have never been out into a wind
20 farm that is say, 5, 10, 15 years old and done any
21 type of noise study then?

22 A. I haven't done any measurements
23 responding to complaints that are related to the
24 deterioration of wind turbines.

25 Q. Okay. When you did your study, question

1 7 and your answer, you listed three models, the 100,
2 the 1.6 and the 2.3. If they were to use a 3.0,
3 would that make a difference in the noise study?

4 A. It may. You know, each turbine has its
5 own particular characteristics, not only the overall
6 A-weighted sound level, they have different spectral
7 characteristics of a turbine. If it was a different
8 turbine, we would want to model it, even if it was
9 the same overall sound levels.

10 Q. Okay. Question 9, in your answer you
11 state that the V100 turbine was the one that best met
12 the standards, the noise standards.

13 A. Yes.

14 Q. Is that because the generator in it is
15 smaller or the blades on it are smaller, or just the
16 way the manufacturer made that turbine?

17 A. I don't know why the V100 has lower sound
18 emissions and different spectral characteristics.
19 You know, we're given the parameters from the
20 manufacturer, and then we model to the parameters
21 that they give us. But it does have a lower overall
22 sound output.

23 Q. In your studies you were given a
24 site-specific for each wind turbine. How far can
25 those turbines be moved in any direction before your

1 study would have to be redone?

2 A. So to give you a sense of how sound level
3 changes over distance, you know, roughly speaking for
4 every halving of the distance to a receptor, you get
5 a 6-decibel change. So say a turbine was at
6 2,000 feet and it's moved 1,000 feet, you would
7 expect roughly a 6-decibel increase in sound level.

8 So using that, to get a negligible
9 increase or decrease it would probably be in the
10 order of 100 feet or so. But we would have to take a
11 look at what else was around and how close that
12 turbine was to the nearest residence to make the
13 final determination. But according to the
14 Stipulation, we're required to provide a final sound
15 map for the final configuration.

16 Q. Before or after the Application is
17 approved?

18 A. After the Application is approved by the
19 Siting Board to confirm that it meets the standards
20 that the Board sets.

21 Q. So that's after the Application is
22 approved and then your report will go to the Staff to
23 be approved then?

24 A. That is my understanding of it.

25 Q. If I'm outside gardening, sitting

1 reading, whatever, would I be able to tell a big
2 difference between a 6-decibel like, from 45 to 51?
3 Would I be able to tell that difference?

4 A. Yes. The just-noticeable change is about
5 3 decibels, so above 3 you would be able to notice a
6 difference.

7 Q. In the a complaint, to mitigate a
8 complaint, if I called and complained that, say, last
9 night the wind picked up and one of the turbines over
10 there was just going like mad, and, I don't know, for
11 some reason the noise was just awful.

12 A. Okay.

13 Q. How will they come out and -- they won't
14 come out at that time. They will come out another
15 day, but at the same time as if I say that happened
16 at 7:00 o'clock at night, they'll come out
17 7:00 o'clock at night within so many days, how will
18 they be able to tell what I was hearing?

19 MR. SETTINERI: Your Honors, I'll object
20 to the extent the question speculates that the
21 complaint will not be looked at at the same time as
22 the complaint. With that said, the rest of the
23 question is okay.

24 EXAMINER FARKAS: I would sustain the
25 objection. I will ask, when an individual wants to

1 complain about noise, what would be the procedure
2 that -- what would happen after they called the
3 Company or went to the office or reported the
4 problem? What would the steps be?

5 THE WITNESS: Let me preface by saying we
6 drafted a resolution protocol but we haven't worked
7 with Staff to finalize it, but there are generally
8 certain steps that one would follow. One is that the
9 Company would document the operating conditions for
10 all of the turbines at the time of the complaint, so
11 they know what was going on when this was occurring.

12 If possible, they would also come out if
13 there was somebody nearby to listen. In not, then
14 they would come out some other time to investigate
15 what's going on. If there's an obvious maintenance
16 issue, that can be addressed straightforwardly, then
17 they would just go and address that maintenance
18 issue.

19 If it's more complicated, they may want
20 to do some sound monitoring to see what's going on to
21 try to correlate what's going on with the turbine
22 with the sound levels being experienced. There may
23 be a process whereby you may be asked to log your
24 impressions of sound over a period of time so we can
25 try to get a sense of when these things are

1 occurring, or they may want to go out and do the
2 sound monitoring right away. There's a number of
3 approaches that can be taken to identify what's
4 causing the complaints when the complaints occur and
5 what might be done to address it.

6 Q. (By Ms. Price) Okay. Back when you said
7 you were doing the study, you placed monitors in
8 eight different locations within the project.

9 A. Yes.

10 Q. At those same eight locations would the
11 Applicant be able to install a permanent noise
12 monitoring fixture so when a complaint was called in,
13 that that -- one of those eight monitors would have
14 the information on it?

15 A. You know, is it possible? Yes, it's
16 possible. Is it costly? Yes, it's very costly.
17 Continuous sound monitoring is very costly.

18 Q. Is there a monitor out there that can be
19 set at a certain level and when it goes over that,
20 it's just time stamped then? When the complaint is
21 lodged, they could send someone out to see if that
22 monitor is time stamped?

23 A. Yes. In terms of responding to
24 individual complaints, there are several monitoring
25 approaches you can take. One is to leave the sound

1 level monitor at the complaint location for a certain
2 period of time, two weeks, three weeks. You can even
3 have the complainant control the monitor with a
4 switch and turn it on when there's a problem or have
5 it trigger when it exceeds certain levels, and then
6 actually not only does it record the levels, but it
7 records the sound, you know in a wave file, FTE file
8 so you can listen later on and see is that a wind
9 turbine or that's a dog barking. There are several
10 approaches that can be taken to monitoring equipment
11 that would trigger a response.

12 Q. Would all this be extremely expensive, or
13 what price range are you talking about for
14 monitoring?

15 A. The continuous monitoring, 24/7, over the
16 life of project is very expensive. Roughly speaking,
17 \$40,000 to set up each site, maybe 50, let's say 40
18 to 50 thousand for each site, plus the operating
19 costs for a year. So for monitoring individual
20 complaints it would be, you know, considerably less
21 than that.

22 Q. Would this monitor be able to have an
23 alarm system somewhat like the ice throw system that
24 it would trigger a signal to them to let them know
25 that there was a problem with the noise so they could

1 kind of use that as their own insurance that the
2 signal is coming in, we have a problem coming up with
3 one of our turbines?

4 A. You know, the problem with that approach
5 is that the sound exceeds 48 decibels in a lot at
6 these areas. A car passes by and the sound goes up.
7 You're mowing your lawn, you get the birds, also
8 sorts of things will exceed that 48-decibel level, so
9 your monitor would be going off practically every
10 day, if not many times a day.

11 Q. So it wouldn't even pay for me to go buy
12 my own personal monitoring system to show them
13 what -- I mean, I understand that if I really wanted
14 to, I could hold it next to the dog, the car,
15 whatever, but there's just nothing out there that a
16 nonparticipating owner can have to back up what
17 they're saying is true?

18 A. I mean, you can have that sound monitor
19 you just showed me. I'm not sure of the question.
20 There are sound level meters you can buy.

21 Q. Okay. Can you tell me, I have three wind
22 turbines to be put into the east of where I live that
23 they're giving me my noise levels off of. Is there a
24 difference if the wind blows from the north, east,
25 south, or west into those turbines as to how much --

1 I mean, if you took the exact wind speed and brought
2 it from the north and then you brought it from the
3 south and then you brought it from the west, would
4 it -- would all those directions still register the
5 same at my house?

6 A. No. Sound levels are directional, so
7 downwind would be the worst case. Crosswind would be
8 the best case.

9 Q. So when the weatherman says there's a
10 down pressure --

11 A. No, downwind, meaning if the wind is
12 blowing from the turbine to your home, that gives you
13 the highest sound levels, whereas if the wind was a
14 cross wind or going perpendicular to that direction
15 would be lowest, and then if you were upwind, it
16 would be somewhere in between if the wind was blowing
17 from your house to the turbines.

18 MS. PRICE: Thank you very much.

19 EXAMINER FARKAS: Ms. Rietschlin.

20 - - -

21 CROSS-EXAMINATION

22 By Ms. Rietschlin:

23 Q. Good afternoon. I don't have very many
24 questions because I don't understand what you did.
25 But I would like to ask, and maybe you're not the

1 right person, but do you know at the top of this
2 turbine, is that whole apparatus able to turn?

3 A. Yes, it turns into the direction of the
4 wind. If you had binoculars and looked on top of the
5 nacelle, you will see an anemometer with a wind vane.
6 So the turbine is constantly trying to figure out
7 where the wind is blowing from and point itself into
8 the direction of the wind.

9 Q. So the noise that comes off this is more
10 in front or behind, if that makes sense?

11 EXAMINER FARKAS: Is the front of the
12 turbine, the front-most part of the turbine, the
13 front part of the nacelle, let's say? Is that facing
14 the wind or is -- I think that's what she's asking.

15 THE WITNESS: Okay.

16 A. Yes, the front part of the turbine rotor
17 is facing the wind.

18 EXAMINER FARKAS: So liken to a propeller
19 on an airplane?

20 Q. If I stand in front of it or stand myself
21 behind, the sound is different; isn't that true with
22 one of these?

23 A. Yes. Yes.

24 EXAMINER FARKAS: Do you have a diagram?

25 THE WITNESS: I'm going to try to

1 describe this. If you have a wind turbine and north
2 of the wind turbine -- say the wind is coming from
3 the north, and this is where your rotor would be
4 facing the wind. The sound levels would generally be
5 higher downwind to the south because the wind, or
6 really the wind shear would change in wind by height,
7 tends to bend the sound down towards the ground on
8 the downwind side of the wind turbine.

9 Q. So like, for instance, in our area the
10 prevailing winds are coming from the west, so does
11 that mean turbines would mostly be adjusted facing
12 the wind then?

13 A. I believe I have a chart of the
14 prevailing winds.

15 MR. SETTINERI: Your Honor, in case other
16 questions arise of the diagram, there is actually --
17 on the front of Exhibit 1 there is a picture of the
18 wind turbines.

19 EXAMINER FARKAS: Okay, that might help.

20 A. I thought there was a diagram of the
21 prevailing wind in the report.

22 Q. Well, I pretty well know because I hang
23 my laundry out, and I know which way it usually blows
24 and I know the way the snow blows.

25 A. Can you repeat the question?

1 Q. Yeah. If our prevailing winds are from
2 the west, does that mean that the blades will mostly
3 be facing the west?

4 A. Yes.

5 Q. So the sound is going to come over top
6 and kind of trail down like that towards the ground?

7 A. The sound would tend to bend down towards
8 the ground to the east if the winds are from the
9 west. It would tend to bend down toward the ground
10 to the east and bend up toward the sky on the
11 westerly side.

12 Q. Okay. Does the speed of the wind affect
13 how the sound travels?

14 A. It's more of a function of the difference
15 in speed as you go up in height, what's called wind
16 shear. And so the greater the shear, the greater the
17 difference in wind, the more sound bends towards the
18 ground.

19 MS. RIETSCHLIN: All right. Thank you.

20 EXAMINER FARKAS: Mr. Heffner.

21 - - -

22 CROSS-EXAMINATION

23 By Mr. Heffner:

24 Q. Hello, Mr. Kaliski.

25 A. Hello.

1 Q. I did think of a couple of questions. I
2 have five minutes. That's plenty.

3 What should I call the entire unit when
4 you're talking about the wind turbine? Can I just
5 say wind turbine and that includes the tower, the
6 nacelle, the generator, the rotor, the blades?

7 A. That would be fine. Now I know what
8 you're talking about when you discuss a wind turbine.

9 Q. I'm talking about the whole thing. Did
10 your study take into account the confluence of sound
11 from all wind installations or wind turbine sources
12 acting upon a receptor simultaneously?

13 A. Yes. That's one of the conservative
14 approaches that we take. We assume that, number one,
15 all turbines are operating at 100 percent of capacity
16 and that each receptor is downwind of each turbine,
17 which we know is not going to be the case because,
18 you know, you might have turbines around a particular
19 receptor, we are assuming that the wind is blowing
20 toward each receptor at the same time. Then we're
21 adding up all the impacts from each turbine.

22 Q. Do you have any dynamic -- do they come
23 together at different times and different phases and
24 sometimes the sound grows, sometimes it diminishes
25 based upon the wind direction and the three different

1 ones doing different things at relatively the same
2 speed?

3 A. Well, these turbines are -- I believe all
4 the ones under consideration are variable speed
5 turbines, so they will vary their speeds. So it's
6 unlikely that if they do sync up, that they'll sync
7 up for very long. So you may get situations where,
8 you know, a couple of turbines have a blade passage
9 at the same time, but that's not expected to occur
10 for any length of time.

11 Q. Concerning your answer where you discuss
12 the halving of the distance would make a 6-decibel
13 change in sound, would -- I'm a little slow in the
14 math. Is it reasonable then to say if a turbine were
15 1,000 meters away and you moved it to 500 meters
16 away, under the same circumstances, no other things
17 being variable, that the level of sound would
18 increase by four times?

19 A. No. If you are going from 1,000 to
20 500 feet, it would increase by 6 decibels.

21 Q. I'm looking at that square proportion
22 where distance traveled for every just parallax, it
23 grows. What was one square centimeter in sound
24 wavelength and pressure, by the time it gets out
25 twice that distance, it becomes 4.

1 A. Okay.

2 Q. So it's diminished.

3 A. I don't know how to explain this. The
4 sound pressure I think you're referring to is sort of
5 the logarithmic properties of sound, and, in other
6 words, as you -- sound essentially expands like a
7 sphere. So if you look at a sphere at one distance,
8 that sound power is distributed around the sphere,
9 and as you double the distance, you're essentially
10 squaring the size of sphere, so the power per unit
11 area is declining by a factor of 10.

12 So in terms of pressure, a 6-decibel
13 decrease is a decline of pressure by about 20, sound
14 power by -- sound pressure -- sound power by 20
15 times. A 3-decibel increase is 10 times a change in
16 power.

17 Q. And reversing that, halving the distance,
18 as you described it, could you tell me -- I think you
19 just described to me when you move further away. Can
20 you describe to me the inverse, when you move closer?

21 A. Yes. Again, it's the same. As you
22 double the distance, you get a 6-decibel reduction.
23 If you half the distance, you get a 6-decibel
24 increase. So for every halving, you get another
25 6 decibels. For every doubling, you get another

1 6-decibel.

2 Q. Thank you. Now, it may not be
3 appropriate to ask a question about dead air. I
4 guess there are too many complicated things in it for
5 me to understand, but a sound wave is -- we typically
6 experience it like a wave on the pond. When I'm
7 reading my little book, it shows the wave on the
8 pond.

9 A. Yes.

10 Q. Is that in fact what a sound wave looks
11 like, or does it also -- since it's radiating from
12 that point in all directions around in a series of
13 overlaying ripples, as they say, that actually turn
14 into spheres and converge at a certain point, which
15 is considered wavelength, that wavelength, is it just
16 there's the center, there's the center, there's the
17 center? Or is there also one going this way, there's
18 the center, there's the center, an infinite number of
19 circles and wave lengths that all arrive at that
20 point instantaneously, which we call wavelength in
21 sound; is that correct?

22 A. It's not -- it's not exactly correct.
23 You're not getting that curvature of sound like you
24 would have in ripples of a pond. That's what the
25 amplitude looks like.

1 Q. Okay.

2 A. What sound does is called rarefaction
3 where it compresses the air and then there's pockets
4 of low pressure and high pressure so it's moving like
5 this. As energy is moving, there's these pockets of
6 low and high pressure, pressured air. So it's not
7 really a curve like ripples in a pond.

8 But if I have a sound level meter and
9 measuring that pressure, the pressure amplitude would
10 go up and down at a fixed point. Does that help?

11 Q. It does. Is there anything you could do
12 to help me understand that in three dimensions rather
13 than, you know, we are going to take and cut a plane
14 through it like that and look at the edges? Is there
15 anything that you can describe to help me understand
16 that in three dimensions? The air pressure is
17 changing. I can't visualize that.

18 A. Okay. Let's take a simple case of a
19 bursting balloon. It's pretty much when the balloon
20 pops, you get a burst of air which compresses the
21 air, and that compression moves at the speed of
22 sound.

23 So when I take a sound level meter and
24 just have it sitting in space, when that compression
25 wave hits, it's going to show a rise in sound, and

1 then when the rarefaction or the sound pressure
2 decreases, it will show the lowering of sound, but
3 that's at a fixed point

4 But that high pressure wave front
5 continues on as sort of one dimension but with one
6 dimension in a sphere around the balloon. It doesn't
7 squiggle like the pond.

8 Q. Okay.

9 A. It's a pressure wave or high pressure
10 front.

11 Q. Okay, thank you.

12 A. I hope that helps.

13 MR. HEFFNER: Thank you. That's all I
14 have. Thank you.

15 EXAMINER FARKAS: Mr. Biglin.

16 - - -

17 CROSS-EXAMINATION

18 By Mr. Biglin:

19 Q. In your direct testimony under question
20 No. 7 where you determine I guess it's the current
21 sound levels in the area, it says to determine a
22 Black Fork level, "the level for Black Fork, sound
23 monitoring was conducted at eight locations within
24 the project area. Daytime and nighttime sound levels
25 were calculated."

1 Could you clarify for me, it says project
2 area versus project boundaries? I mean, do you
3 understand my question?

4 A. I don't have a distinction between the
5 two, between the project area and the project
6 boundary.

7 Q. Okay. Well, so you couldn't tell me out
8 of the eight monitoring devices, which I think in
9 your study is pages A through H, or something to that
10 effect, A through H --

11 A. Yes.

12 Q. -- you don't know how many are actually
13 in the project boundary? By that I mean in the map
14 in the Staff Report or in the Application that shows
15 the actual boundaries that the 91 turbines would be
16 in?

17 A. If you can point to me where that is.

18 Q. The easiest would be to find it here, and
19 I think it's around page 7 or 8.

20 EXAMINER FARKAS: You are referring to
21 the Staff Report?

22 MR. BIGLIN: Staff report page 9.

23 EXAMINER FARKAS: Do you have a copy of
24 the Staff Report?

25 THE WITNESS: Yes.

1 Q. Page 9 the black line where all the
2 turbine locations are proposed, do you have that map?

3 A. Yes.

4 Q. Okay. According to that map, that is the
5 project boundary. Now, you referred to a project
6 area. Is that one in the same?

7 A. No. No.

8 Q. Or is it different?

9 A. It's different.

10 Q. It's different?

11 A. Yes.

12 Q. Okay. My next question, of the eight
13 monitoring devices, how many are actually within the
14 proposed boundary of the 91 turbines versus just the
15 so-called project area?

16 A. I haven't done that analysis. I could --
17 I don't know if you want me to try to do it on the
18 fly, but I haven't done that analysis.

19 EXAMINER FARKAS: Is there another map
20 you could refer to that would show -- is that area
21 you're referring to as the project boundary -- what
22 was the other term you used?

23 THE WITNESS: Project area.

24 EXAMINER FARKAS: Is the project area
25 larger than the project boundary?

1 THE WITNESS: Yes. Well, I don't know
2 what it is in size, but clearly some of the monitors
3 that we used are outside of the project boundary
4 that's shown on page 9 of the Staff Report.

5 EXAMINER FARKAS: You don't know how
6 many?

7 THE WITNESS: That's right. I would
8 clearly say that H is outside and A may be outside.
9 I'm not sure.

10 EXAMINER FARKAS: Okay.

11 Q. (By Mr. Biglin) My next question is why
12 was there some of those outside the project boundary?
13 Do you know that reason?

14 A. Well, the project has changed over time,
15 and when we did the monitoring back in the beginning
16 of the project, the project had a larger footprint
17 and some of those turbines were moved subsequently.

18 Q. You say the earlier study or the earlier
19 project. Are you referring to the Black Fork Wind
20 Project that was withdrawn before this Application?

21 A. Well, we did do work on that project,
22 yes.

23 Q. Okay.

24 A. But I'm just saying at the time when we
25 did the monitoring, which was 2009, this would be --

1 the project boundaries -- I have to be careful what
2 terminology I use -- but the footprint of the project
3 was larger.

4 Q. So that information was incorporated into
5 this current Application?

6 A. What information are you talking about?

7 Q. The information you collected from '09.
8 You mentioned starting in '09 on this.

9 A. Yes.

10 Q. That's from the previous Application, the
11 previous so-called project? That's all included
12 within this application's reports?

13 A. Well, portions of the work we had done
14 for the previous Application are included in this
15 report, which is primarily the monitoring that we
16 did. The modeling is all for the current project.

17 Q. Okay. So I guess what I'm saying, the
18 eight monitors then were originally within the
19 project boundaries of the previous Application or
20 not?

21 A. Well, I don't want to use a specific term
22 that I can't -- I don't have a copy of the project
23 boundary map in front of me to confirm that, but it
24 was essentially within, I'll call it, the footprint
25 of the project or the project area.

1 Q. Your best estimate at that time all eight
2 were probably within that initial boundary? You
3 don't know? It was initially 112 converted down to
4 91, thus the dynamics of the project boundary
5 changing, the way I see it. Did you notice any of
6 that in your studies?

7 A. I guess certain turbines were removed,
8 and that shrunk the boundary of the project.

9 Q. Okay. Well, do you think it's fair to
10 include monitoring devices from the previous studies
11 done on previous applications if the project boundary
12 is not the same?

13 A. Well, I still think that the monitoring
14 locations that we had are still representative of
15 areas within the actual boundary, so the soundscapes
16 are similar, even though the actual location might be
17 different. So take H for example. H is in --

18 Q. You say H?

19 A. If you look at page 11 of the sound
20 report in appendix H, which shows the monitoring
21 location, figure 5 shows the monitoring locations,
22 and take H, for example, which is clearly outside of
23 the project boundary as the Staff Report of
24 Investigation shows. You know, that's located in a
25 fairly remote rural farmland, which is representative

1 of areas within the project that are of similar
2 soundscape.

3 So I even grew monitoring regions around
4 each of the monitoring locations, so H does still
5 represent areas within the project boundary, although
6 the physical location is outside the boundary.

7 A is another one that might be outside of
8 the project boundary but it's still in an area that's
9 representative of soundscapes within the project
10 boundary.

11 Q. May I ask you, site H is listed as
12 located at 5224 Settlement East Road in Shelby. I
13 happen to live about a mile from there. Are you
14 familiar with that location?

15 A. Yes.

16 Q. You are. Are you aware there's a
17 construction company by the name of Finn Construction
18 that owns that property?

19 MR. SETTINERI: Objection to regards to
20 the property. There's no foundation what property we
21 are talking about.

22 MR. BIGLIN: The property at that
23 address.

24 EXAMINER FARKAS: Do you want to clarify?

25 Q. Are you aware of what that location there

1 is, whether it's residence or a business or what it
2 indicates?

3 A. Well, it's a combination. There's
4 certainly a farm there and there's a residence.

5 Q. Well, there is a person that lives there,
6 but there is also a business residence of a
7 construction company. Are you aware of that?

8 A. I don't know anything about a
9 construction company.

10 Q. I just thought you might have been out
11 there and noticed that there's a lot of equipment and
12 stuff around there. Okay.

13 Also to the east of that maybe -- I don't
14 even know -- a quarter of mile, if that far, maybe
15 several hundred yards is a railroad track crossing.
16 Are you aware of that?

17 A. Yes.

18 Q. Okay. Well, then why would you conclude
19 that should be taken of any value in the current
20 project boundary?

21 A. Because it's representative of remote
22 farmland. There's -- there are other railroad tracks
23 that go through here. In fact, at the time of the
24 monitoring, the road was closed I believe to the east
25 of there, so there wasn't even traffic passing by

1 that house. So I still think it's a good indication
2 of what goes on in that type of area.

3 Q. I guess I'm unclear why you would include
4 any monitoring devices outside the current
5 Application project boundary?

6 EXAMINER FARKAS: Your Honor, I object.
7 This has been asked and answered.

8 MR. HEFFNER: I'm sorry, I'm not hearing
9 what Mr. Settineri is saying.

10 EXAMINER FARKAS: He's objecting that has
11 been asked and answered. I'm sustaining the
12 objection.

13 Let me ask this question. Is it your
14 testimony that the monitoring sites that were
15 originally used in your study are satisfactory to
16 provide a sampling of noise levels in the project
17 area?

18 THE WITNESS: Yes, I am.

19 EXAMINER FARKAS: Even though some of
20 those sites may not be located in the present project
21 area as shown on page 9 of the Staff Report?

22 THE WITNESS: That's right.

23 Q. (By Mr. Biglin) My next question, I'm
24 unclear what boundary constitutes the project area.
25 Is it five miles out or two miles? Is that in here

1 somewhere?

2 A. No. We didn't quantify what the
3 definition of project area is.

4 Q. You feel that wasn't necessary? I mean,
5 you allude to that project area in doing the study,
6 but you could just go out however far you wanted to
7 go from the proposed boundary of the project? I just
8 don't quite understand that.

9 A. Again, we didn't quantify it. We didn't
10 set a definition of what the project area is. It was
11 qualitative. We used it to define the area around
12 the project.

13 Q. I guess my question, how would you
14 conclude just how far out you would put these? I
15 don't understand what your protocol would be or
16 formulation or what constitutes a certain distance
17 from the nearest possible turbine or how you figure,
18 okay, I go out here a mile, that's enough, or two
19 miles? Can you explain to me how you come up with
20 that method?

21 MR. SETTINERI: Your Honor, I have to
22 object. We have been over this multiple times. The
23 answer has been given in regards to placement of the
24 monitors.

25 EXAMINER FARKAS: I'll allow the

1 question.

2 A. So we took the map of where the turbines
3 are. We took essentially what you see here on figure
4 5 of appendix H and broke those out into
5 representative areas.

6 So we looked at different roadways, which
7 is really the biggest contributor to background sound
8 in the area. So you can see sort of sectioned off in
9 these dark brown lines different essentially
10 representative areas. One goes -- I don't know which
11 highway that is.

12 For example, the biggest one goes along
13 Route 598 starting from the bottom left-hand corner
14 and going up towards the middle of the page. Monitor
15 B, for example, is located on Route 98, which starts
16 at sort of the middle of the left-hand side towards
17 the top and moves up toward the top, looking at areas
18 around those roads and then finding a location within
19 those areas that we could monitor, place our monitor,
20 again to be representative of the soundscapes people
21 would be experiencing along those locations.

22 Q. I'm sorry if I seem like I don't
23 understand this, but I'm just trying to find out is
24 there a certain distance from -- did somebody
25 proposing the Application says, This is my project

1 boundary. I want you to do a study?

2 What is the average that you have to go
3 out past there? Is there anything? Is there
4 anything set in stone on that or what you feel needs
5 to be done?

6 A. No, there's nothing set in stone.

7 Q. It's your discretion, I guess?

8 A. Yes.

9 MR. BIGLIN: Okay. Thank you. That's
10 all I have.

11 EXAMINER FARKAS: Ms. Davis.

12 - - -

13 CROSS-EXAMINATION

14 By Ms. Davis:

15 Q. You have some exhibits attached to your
16 testimony.

17 MS. DAVIS: Are those open for any
18 clarification?

19 EXAMINER FARKAS: Yes.

20 Q. On Exhibit B on the first page under
21 Abstract, you refer to different types of noise
22 standards. Could you please explain the difference
23 between quantitative not-to-exceed and standards
24 relative to background?

25 A. So I think you're looking at the first

1 sentence of the abstract, two main classes,
2 not-to-exceed and relative increase above ambient
3 levels?

4 Q. You also refer to quantitative in the
5 next -- like there's three different kinds. Are
6 quantitative and not-to-exceed the same thing?

7 A. Can you point to me where the
8 quantitative is?

9 EXAMINER FARKAS: In the introduction,
10 second sentence, it says, "a quantitative standard,"
11 and the third sentence as "a not-to-exceed standard."
12 I think she's just asking for clarification of those
13 two terms.

14 A. So to clarify, quantitative standard is a
15 standard with a number in it. And just as an
16 example, some municipalities just say there shall be
17 no excessive noise, and that's a qualitative
18 standard. So when I say "quantitative," it just
19 means it can be quantified.

20 And then there's two types of standards
21 that can be quantified. One is not to exceed, just
22 says you can't exceed a certain level; and another is
23 a relative standard which is based on some background
24 sound level or something else.

25 Q. Okay. And in your conclusion to this

1 same exhibit, you say, "Standards that are based
2 relative to some background sound level are not
3 appropriate for the following reasons."

4 EXAMINER FARKAS: Could you give us a
5 reference point for that?

6 MS. DAVIS: In the conclusion of
7 Exhibit B, page 4, but they're not numbered.

8 EXAMINER FARKAS: Okay. Do you have the
9 reference?

10 THE WITNESS: Yes.

11 A. In Conclusions in bullet 4?

12 Q. No. It's up in the top paragraph under
13 Conclusions. It says, "Standards that are based
14 relative to some background sound level are not
15 appropriate for the following reasons."

16 A. Yes.

17 Q. Isn't that what we're doing?

18 A. You have sort of a hybrid approach here
19 because you're fixing the standard. It's the
20 standard that is based on a background sound level,
21 but then it's fixed so that it can't change over
22 time, and that addresses a lot of problems I've
23 outlined here.

24 Q. Okay. So your problem in the beginning
25 was that it was just saying background plus 5, which

1 means the level at my house would be different than
2 her house, would be different than somebody out on
3 598?

4 A. Yes.

5 Q. So what you did was average all of these
6 and came up with a fixed number; is that correct?

7 A. Yes. That fixed number is applicable for
8 the life of the project.

9 Q. So that means that in a place that's
10 really, really quiet, like I think everybody here
11 lives in, we have been averaged with some people who
12 live on the highway, and now we're going to be
13 expected to go from like maybe a 30-decibel level
14 that we're used to to 48; is that correct?

15 MR. SETTINERI: Your Honor, I object to
16 lack of foundation.

17 EXAMINER FARKAS: I think she is
18 proposing a hypothetical. I'll overrule your
19 objection and allow the answer.

20 Do you want to repeat that?

21 THE WITNESS: Why don't you do that?

22 Q. By doing the average you have done to get
23 to a fixed number, you have taken a lot of quiet
24 places, averaged them in with some not really noisy
25 places but considerably noisier than we're used to,

1 and we're going to go from a sound level that -- I'm
2 just throwing this number out as an example -- but I
3 think if you look at the modeling that was done the,
4 places where most of us live have an ambient level of
5 around 30 at night and some go even lower than that.
6 So you're averaging that, and I'm coming up to a
7 level of 48. Is that correct?

8 A. Okay. So just to clarify, the average
9 was 43 we got for nighttime and the lowest nighttime
10 LEQ was 38, so it wasn't a big difference between the
11 lowest -- the average of lowest site and the average
12 of the entire -- all of the areas, in part because we
13 discounted that one site which had such a high sound
14 level.

15 Q. You're referencing back in your direct
16 testimony question No. 7. I don't know what page it
17 is, but question No. 7, but you reference these other
18 three projects, Timber Road, Horizon and Blue Creek
19 where the Siting Board has established that
20 precedence of a standard nighttime noise plus 5. Can
21 you tell me what kind of noise levels you came up for
22 those three projects?

23 A. I was not involved in permitting those
24 projects.

25 Q. What are you referencing then in your

1 statement here?

2 A. I'm referencing the permit that was given
3 to those projects.

4 Q. And they didn't specify in the permits
5 what the levels were; they just put ambient plus 5?

6 A. Oh, no, they did. I'm sorry, I
7 misinterpreted the question. You said the level that
8 I came up with. I thought you meant I did the study.

9 Q. I may have phrased it that way. Do you
10 know what the levels of sound for these three
11 projects that you are using as a standard or the
12 Board has accepted as a standard, do you know what
13 levels they came up with?

14 A. You know, I don't remember what they are
15 for each one. I do know at least one essentially
16 came up with a 43-decibel background as well and used
17 the 48-decibel standard, but I don't remember which
18 one, and I don't remember what the other two were.

19 Q. So I take it that by that answer that you
20 feel that the noise level and the standard of 43 plus
21 5 for our project is very normal as wind farm noise
22 goes?

23 A. It's consistent with other projects that
24 have been approved by the OPSB.

25 Q. Apparently at site H when the project

1 was -- when your monitoring was being done, there was
2 some construction going on right there. Are you
3 aware of that?

4 A. No, I'm not.

5 Q. Would that lead to higher than normal
6 levels?

7 A. It would. I don't know what kind of
8 construction it was or where it was, if there was
9 any.

10 Q. The road was being rebuilt over that
11 railroad track.

12 A. I do know that road was closed in that
13 location, but I don't know -- when I was there, I
14 didn't see any construction vehicles so I don't know
15 what kind of construction would have been going on or
16 when they would have been doing it.

17 MS. DAVIS: I think that's all the
18 questions I have.

19 EXAMINER FARKAS: Any redirect?

20 MR. SETTINERI: No, your Honors.

21 EXAMINER FARKAS: Thank you for your
22 testimony.

23 MR. SETTINERI: Your Honors, we would
24 like to move into evidence Company Exhibit 17, the
25 Direct Testimony of Kenneth Kaliski in its entirety,

1 as well as Company Exhibit 18 the Supplemental
2 Testimony of Kenneth Kaliski.

3 EXAMINER FARKAS: Any objection?

4 Hearing none, they both will be admitted.

5 (EXHIBIT ADMITTED INTO EVIDENCE.)

6 EXAMINER FARKAS: Let's go off the
7 record.

8 (Discussion off record.)

9 (Recess taken.)

10 EXAMINER FARKAS: I think on the break
11 you were finding out about your witness,
12 Mr. Schroeder.

13 MR. SETTINERI: Mr. Schroeder is too ill
14 to attend the hearing today, as well as tomorrow. It
15 is my understanding some witnesses have questions.
16 If not, we would offer his testimonies into evidence;
17 otherwise, we will not present him as a witness.

18 EXAMINER FARKAS: Okay. If they do have
19 questions, you are willing to put him on a witness?

20 MR. SETTINERI: No, your Honor. I wanted
21 to confirm on the record whether some of the parties
22 have questions for Mr. Schroeder. If not, then we
23 would ask it be admitted. I want to confirm on the
24 record they do have questions.

25 EXAMINER FARKAS: I believe some parties

1 would have questions.

2 MR. HEFFNER: Yes.

3 MR. SETTINERI: With that, we will be
4 presenting him.

5 EXAMINER FARKAS: Your last witness,
6 Dr. Mundt.

7 MR. SETTINERI: Your Honors, at this time
8 we would like to mark as Exhibit 20 the Direct
9 Testimony of Dr. Diane Mundt.

10 EXAMINER FULLIN: Note that the exhibit
11 is marked Exhibit 20, but is there going to be a 19,
12 or that was to be Mr. Schroeder?

13 MR. SETTINERI: I'm sorry, 19 was
14 admitted yesterday. That was the Direct Testimony of
15 Mr. Yurtis.

16 EXAMINER FULLIN: Okay. Thank you. I
17 remember now that you say it.

18 (EXHIBIT MARKED FOR IDENTIFICATION.)

19 - - -

20 DIANE J. MUNDT,
21 being first duly sworn, as prescribed by law, was
22 examined and testified as follows:

23 DIRECT EXAMINATION

24 By Mr. Settineri:

25 Q. Good afternoon.

1 A. Good afternoon.

2 Q. Can you please state your name and
3 business address?

4 A. Diane Mundt. I work for ENVIRON
5 International Corporation. My address is 20 Custom
6 House Street, Suite 800, Boston, Massachusetts.

7 Q. And you have in front of you what has
8 been marked as Company Exhibit 20?

9 A. Yes.

10 Q. Can you identify that for me?

11 A. Yes. It is my direct testimony.

12 Q. And do you have any changes or revisions
13 to your direct testimony?

14 A. No, I do not.

15 Q. If I asked you the questions that are in
16 your direct testimony, would your answers be the same
17 today?

18 A. Yes, they would.

19 MR. SETTINERI: Your Honors, the witness
20 is available for cross-examination.

21 EXAMINER FARKAS: Staff, any questions?

22 MR. REILLY: No questions.

23 MR. COLLIER: No questions.

24 EXAMINER FARKAS: Start with Ms. Davis.

25 - - -

CROSS-EXAMINATION

By Ms. Davis:

Q. Dr. Mundt, have you ever testified for a wind farm company?

A. No, I have not; however, I have worked on testimony for wind farm companies.

Q. Well, have you had any clinical experience treating patients?

A. No. I'm not a physician. I'm an epidemiologist.

Q. You're not a physician. That was my question. Did you do any study of your own, or did you just review studies that had already been done and go through them and draw conclusions?

A. That's correct, I did not conduct an epidemiological study. I reviewed the available scientific literature.

Q. It says that you studied credible reports. Who determines what was credible?

A. Well, a credible report, in my opinion, is a properly conducted epidemiological study, and in epidemiological terms, there are certain conditions that are generally met. You have an appropriate study population. You have a control group. You have sufficient size. You try to reduce bias to the

1 extent possible, and those are the general criteria
2 we put forward.

3 Q. So that would fit a general protocol you
4 generally use in your studies, correct?

5 A. That's right.

6 Q. Did Black Fork Wind suggest any reports
7 to examine, or were these all up to you?

8 A. No, they did not. This was my review
9 conducted by myself and my staff.

10 Q. Am I correct that your field is used to
11 determine causation of certain diseases?

12 A. Epidemiology is the study of diseases in
13 populations, so whether -- it would matter not what
14 the exposure was or what the outcome was. The same
15 methodological approach would be used regardless of
16 what was being studied.

17 Q. Well, I see that most of your studies
18 have concerned chemicals.

19 A. That's correct.

20 Q. Solvents, perfluorononanoic, surfactants,
21 benzene, trichloroethylene, air pollution, diesel
22 emissions, Agent Orange, formaldehyde, the US asphalt
23 industry, and all these various things seem to lead
24 to something like cancer, leukemia, and that's what
25 your studies were looking for.

1 MR. SETTINERI: Your Honors, I object. I
2 would like to clarify for the record the term
3 "studies." I don't know what question she's
4 referring to, and also the fact that the conclusions
5 drawn in the question that those studies lead to
6 cancer.

7 EXAMINER FARKAS: You want to rephrase
8 your question?

9 Q. In the back of your direct testimony you
10 included a list of presentations and studies that you
11 have performed in citing your experience. These are
12 the specific studies that I am referring to. I can
13 list them individually if I need to.

14 EXAMINER FARKAS: No, you don't have to.
15 If you refer to one of them, you can ask a question
16 about any of them.

17 Q. Well, for instance, "Health Consequences
18 of Service During the Persian Gulf War" concerning --
19 that might not be Agent Orange. "Veterans and Agent
20 Orange," page No. 3 in the back.

21 I guess my question is you seem to
22 evaluate claims of chemicals leading to various
23 cancers or similar types of diseases. Did any of the
24 studies you examined for the project claim to cause a
25 specific disease?

1 A. I'm not sure I'm completely following
2 your question. If you're asking me whether the
3 literature pertaining to health effects of residents
4 near wind turbines involved cancer as an outcome, no
5 they did not.

6 Q. But did any of these studies claim that
7 wind turbines caused a specific disease?

8 A. The studies that I reviewed were studies
9 done of residents who live near wind turbines, farms,
10 facilities, and the researchers that were looking at
11 those individuals were looking at annoyance, noise,
12 and health complaints. They were not looking at
13 cancer outcomes.

14 Q. Okay. So you agree that wind turbines
15 have the potential to cause annoyance; is that
16 correct?

17 MR. PETRICOFF: Object to foundation laid
18 for that question.

19 EXAMINER FARKAS: I'll allow the
20 question.

21 Do you agree with that?

22 A. I think depending on the individual, I
23 think somebody could be annoyed. I also think people
24 who live near wind turbines can not be annoyed.

25 Q. In question No. 7 of your testimony, you

1 determine from the studies that you were reviewing
2 that the outcome was primarily one of annoyance, and
3 you also drew a correlation between the annoyance and
4 a negative perception of wind in general. Is that
5 correct?

6 A. I didn't draw that. I didn't make that
7 conclusion. Authors of studies found among those
8 that were annoyed, they also tended to have a
9 negative perception of the wind turbines as compared
10 to those who were not annoyed.

11 Q. So you do not agree that this annoyance
12 increases with the increase in sound associated with
13 turbines?

14 A. I'm not sure what your question is
15 getting at. The studies that I reviewed looked at
16 annoyance among those who were living near wind
17 turbines and also looked at sound levels. They have
18 found that among those that lived in areas with
19 higher sound levels, they were more annoyed, a
20 smaller percentage. They were also among those who
21 were more negatively impacted, visually impacted by
22 the wind turbines being at their neighbors, but,
23 however, there were no health effects reported
24 differently between the two groups.

25 Q. Question 9, continued over to page 7, you

1 said, "It should be noted that some degree of noise
2 is consistently perceived by residents living near
3 turbines depending on number of turbines, time of
4 day, season, level of background noise, and to a
5 lesser extent, shadow flicker, again, depending on
6 time of day, season, and position of the turbine
7 blades."

8 A. I'm sorry, ma'am, I'm trying to find it.

9 EXAMINER FARKAS: Top of page 7.

10 THE WITNESS: Top of page 7, okay.

11 A. I'm sorry, could you please repeat the
12 question?

13 EXAMINER FARKAS: She is just reading
14 testimony.

15 Q. I guess what I'm trying to determine,
16 this says, "What is your opinion?" The answer I read
17 tells me this is your opinion, but yet you're
18 indicating that you did not find any of this. So is
19 question No. 9, the answer, is this your opinion?

20 A. Yes, this is my opinion. Part of my
21 opinion is based on my own personal observation as an
22 individual who lives near a wind turbine, and so I
23 know that some of these things will vary, and so my
24 personal experience in addition to my professional
25 experience in evaluating the scientific literature

1 forms my opinion.

2 Q. How close do you live to a turbine?

3 A. Less than half a mile.

4 Q. Do you have more than one?

5 A. In my town, yes.

6 Q. No, I mean more than one close to you.

7 A. No. There's one -- the closest one I can
8 see from my home.

9 Q. And you say it's less than half a mile?

10 A. Well, the roads are windy, so if you
11 measured it in your car, it would be on the odometer
12 less than half a mile. As the crow flies, it's
13 probably a quarter of a mile.

14 Q. Do you know how big they are?

15 A. Yes, I do. It's a Vestas industrial
16 turbine. It's a V80, and 1.8-megawatt.

17 Q. Thank you. You do admit in here
18 somewhere that the annoyance, although distracting to
19 some people, doesn't bother other people, but yet it
20 doesn't harm human health.

21 Isn't that because when the conditions
22 are right for this to annoy somebody, it is annoying.
23 When the conditions go away or you leave home or
24 whatever and the conditions go away, the annoyance
25 goes away and so the effects that it has on somebody

1 also go away. So how would you explain that?

2 A. Well, if you're looking at health
3 outcomes associated with proximity to a turbine or
4 noise from a turbine, you would want to do something
5 that had individuals that were with that exposure and
6 without that exposure, and you would want to compare
7 the differences in something more than a
8 self-reported health outcome, and annoyance is not
9 considered a health outcome. It's annoyance. It's
10 subjective.

11 And as with many annoyances or irritants,
12 when you leave them, you're no longer irritated or
13 annoyed, so because it's a subjective thing, not a
14 health outcome, per se, what we want to look at when
15 looking at whether there are effects from a wind
16 turbine that are detrimental to somebody's health
17 have a measurable outcome of those who are and who
18 are not in that exposure area.

19 Q. Is there a reason you were not asked to
20 do a study like this instead of just reviewing other
21 people's work?

22 A. Well, I can't answer that question
23 because that's not what I was asked.

24 Q. But they just asked you to review
25 somebody else's reports?

1 MR. SETTINERI: Object to the extent that
2 is attorney-client privilege.

3 EXAMINER FARKAS: She can't hear you.

4 MR. SETTINERI: I object to the extent
5 it's seeking attorney-client privilege.

6 EXAMINER FARKAS: I will sustain the
7 objection.

8 Q. Are you aware that the military and law
9 enforcement use continuous sound levels to prevent
10 sleep? Sometimes they'll use light to prevent sleep.
11 Are you aware that this is being used?

12 A. I'm sorry, I didn't hear the first part
13 of your question.

14 Q. Are you aware that the military and law
15 enforcement are allowed to use sound, constant sound,
16 loud sounds to prevent sleep, or they often will use
17 continuous light to prevent sleep? Are you aware
18 that is --

19 A. I haven't reviewed that literature, and I
20 wouldn't be able to compare what levels they were
21 using in those studies to what we are talking about
22 here.

23 Q. What do you call effects like constant
24 headaches, possible nausea, vertigo?

25 A. I would call those health complaints.

1 Q. Okay. And the fact that it doesn't cause
2 permanent damage to anybody, does that make it okay?

3 A. I'm not understanding what you mean.

4 Q. Well, I understand that being sick to
5 your stomach or feeling dizzy or having a headache
6 for three days in a row will eventually stop and this
7 causes no permanent harm to you, unless, perhaps,
8 this is something that happens over and over again
9 week after week after week, but it causes no
10 permanent physical harm to a person. So is that
11 considered okay?

12 A. Well, I'm not sure what you mean, is that
13 considered okay. I mean, there's lots of causes for
14 headaches and nausea and many things that people
15 complain of in the population. Whether you're trying
16 to attribute that to proximity of residents near a
17 wind turbine, there simply is not evidence that is
18 true in the peer-reviewed science.

19 MS. DAVIS: That was my last question.

20 EXAMINER FARKAS: Mr. Biglin.

21 MR. BIGLIN: I have none.

22 EXAMINER FARKAS: Mr. Heffner.

23 MR. HEFFNER: I have no questions.

24 EXAMINER FARKAS: Ms. Rietschlin.

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CROSS-EXAMINATION

By Ms. Rietschlin:

Q. Hello, how are you?

A. Okay.

Q. I have a couple questions for you.

A. Sure.

Q. What is the nature of the company you work for, ENVIRON? What do they do?

A. We are a large consulting company that works primarily with environmental and health sciences, types of science, with their concerns, questions, whatever. It's a international company.

Q. Are those mostly government-funded studies or private-funded studies in your company?

A. I'm not sure. Are you asking who our client base is? The company is very large. We're international. Our client base includes government, private industry, nonprofit organizations, trade associations. We answer scientific questions for a variety of science.

Q. You said you live near a turbine. Do you know who the developer was for the one you live near?

A. I do not. Well, oh, wait, I take that back. Besides the town I live in, I mean, the town -- no, I take that back. That's the best I can

1 do.

2 Q. Are you receiving compensation personally
3 for living near a turbine?

4 A. Oh, no, I'm not.

5 Q. You're not a leaseholder?

6 A. No. No.

7 Q. Do you know if any states or
8 municipalities around the nation have done any
9 studies on the effects of a wind farm and the health
10 effects?

11 A. I'm not aware of any epidemiological
12 studies.

13 Q. I mean direct studies, where they go and
14 actually go out and survey people and talk to
15 physicians.

16 A. I'm not sure what you mean by direct
17 study. If you're talking about a house-to-house
18 survey, that's not an epidemiological study. It's a
19 survey.

20 Q. Right. Are you aware if anyone has
21 undertaken any study like that where they actually go
22 house-to-house or patient-to-patient?

23 A. I imagine there are such studies.
24 They're not part of an epidemiological set of studies
25 that would be considered scientific and published in

1 peer-reviewed literature, that sort of -- that
2 determine the scientific basis for making these
3 determinations, associations, so they would not be
4 something I would have reviewed.

5 Q. On page 3 of your testimony, question 6,
6 the third paragraph down, you have a statement,
7 "definition and measurement of exposure; measurement
8 and control of confounding factors." Can you explain
9 that to me, please, "control of confounding factors"?

10 A. Sure. So confounding factors are other
11 factors, exposures that may be associated both with
12 the outcome of interest and the disease that you're
13 looking at.

14 So say, for example, you're looking at
15 risk factors for heart disease. You may look at --
16 you may be interested in one very particular factor
17 for heart disease, say, cigarette smoke, but you want
18 to consider somebody's weight and family history and
19 a whole host of other things that are also known to
20 be a risk for heart disease in order to single out
21 that one particular exposure that's of interest.

22 So when you design a proper
23 epidemiological study, you include not only the
24 exposure that you're interested in, but also
25 information you are interested in, other confounding

1 factors that may bias your results, so when you get
2 your final answer, that you can properly interpret
3 the findings and not have it be biased because it's
4 due to something you haven't thought about.

5 Q. So you designed a study for this, or you
6 just interpreted other people's studies?

7 A. I designed a study for?

8 Q. The wind farm.

9 A. I have not designed a study for the wind
10 farm. I just reviewed the epidemiological
11 literature.

12 Q. You just reviewed the literature?

13 A. That's correct.

14 Q. In the studies you reviewed, was one of
15 the confounding factors whether or not the person was
16 a leaseholder?

17 A. I believe in one of the studies the
18 author did look at whether somebody had a financial
19 interest in the wind turbine being on their property
20 or near their property. I'm not exactly sure of the
21 precise language, but they did find that those who
22 had a turbine near or had some financial interest in
23 it were less annoyed by the presence, and to the
24 contrary, people who didn't like the looks of them
25 were more annoyed.

1 Q. So certainly receiving cash was a
2 positive influence?

3 A. I can't say. I can only interpret the
4 study findings.

5 Q. On page 7, question 10, you state lunch
6 third paragraph, that Pedersen -- is that how you
7 pronounce that?

8 A. I think so.

9 Q. Is that he or she?

10 A. I think it's she.

11 Q. She observed a significant dose-response.
12 Can you explain what that means, because I have no
13 clue?

14 A. Sure. What she found among those who --
15 she had measurements of different sound levels in the
16 area around her study population, and so she
17 categorized the sound levels into I believe five
18 different categories, and the individuals -- she had
19 a selection of individuals within each of those
20 categories, and so she was looking at annoyance,
21 self-reported annoyance, and noise among those living
22 in each of those areas.

23 Q. When you say categories, what do you
24 mean, what categories?

25 A. Well, so, if you're measuring the sound

1 on a continuous scale, she wasn't looking at it as,
2 what we say, a continuous variable. Age is a
3 continuous variable, but if we had categories of age,
4 we may have from 5 to 9, 10 to 15. She was looking
5 at categories.

6 Q. This Pedersen, did she actually perform
7 the field study?

8 A. She conducted the -- actually, she did a
9 study in a number of different countries in the
10 Scandinavian area. Yes, she did. I believe the
11 first one was in Sweden.

12 Q. Page 10, question 11, at the bottom of
13 the page, you have a paragraph there I need you to
14 help me understand again.

15 A. Sure.

16 Q. "Since there is no other relevant
17 literature, it is reasonable to examine scientific
18 findings from research on other similar sources of
19 natural light flicker exposure." What does that
20 mean?

21 A. Well, this is something we often do to
22 understand exposures and outcomes. If we don't have
23 information that's directly related to what we're
24 looking at, here we have very limited literature on
25 shadow flicker and health outcomes, so what we do

1 then is to look at literature that is similar. We
2 look at our literature of shadow flicker and outcomes
3 associated with the shadow flicker.

4 The best we can do in this kind of
5 situation is to look at the kinds of people who have
6 been studied, as they're listed here, that have been
7 exposed to other kinds of blades that are spinning
8 and look at and what kind of outcomes occur among
9 those populations.

10 And what we find, if wind turbine blades
11 move at a far slower speed than any of the reported
12 speeds found in these other studies in other kinds of
13 situations, so we can look at them and say, okay,
14 these blades are going at a certain speed and we do
15 not find certain outcomes, and compare that to what
16 we are doing here and say, well, below a certain
17 speed in these studies where we do have scientific
18 information, there are no effects.

19 So what we find with wind turbines that
20 we are looking at in this particular project, they're
21 moving at far slow slower speeds than any of the
22 related kind of research that I would put into that
23 paragraph to review.

24 Q. Is the speed at the center of the rotor
25 the same as the speed at the tip?

1 A. Wow, I'm not an engineer, but I would say
2 no.

3 Q. So after your interpretation there,
4 you're saying that the conclusions based on studies
5 of the light flicker, there's not a great wealth of
6 studies out there and so you draw conclusions using
7 similar devices or widgets, whatever we want to call
8 them, whether it's a ceiling fan or something like
9 that. Is that what you're saying?

10 A. That's right. And we do this all the
11 time in -- and actually in protecting public health,
12 we look at studies of industries in any kind of
13 situation to understand what that means for lesser
14 exposures to the population. It's -- it's -- it's a
15 common deductive technique.

16 Q. Are you aware that there's a lot of wind
17 farms in Iowa, wind farms in Minnesota, Wisconsin
18 Illinois, so that's quite a few wind farms out there?

19 A. Oh, I know there's wind farms all over
20 the world.

21 Q. Right. So at this point in time people
22 can actually do a field study and they wouldn't have
23 to use deductive method. They could actually start
24 performing field studies to see effects. Would you
25 agree to that?

1 A. Not completely. I think that one of the
2 things that is important is understanding how things
3 change, and so in epidemiology -- just like with an
4 experiment, we want to see what sort of baseline
5 condition there is before we change it. So part of
6 understanding whether there are effects is seeing
7 what people are experiencing before a turbine is in
8 place or before they know turbines are going in place
9 and then look at something afterwards or look at
10 people who live near turbines versus don't live near
11 turbines and do these comparisons.

12 They would have to be fairly large
13 studies because of the kinds of things that
14 purportedly are hypothesized to be connected to
15 living in proximity to turbines. They are very, very
16 common kind of complaints that many of us have, and
17 when talking about confounding factors, it would mean
18 understanding completely all those other things that
19 may be related to whatever we're looking at.

20 MS. RIETSCHLIN: That's all my questions.

21 EXAMINER FARKAS: Ms. Price.

22 - - -

23 CROSS-EXAMINATION

24 By Ms. Price:

25 Q. Hello.

1 A. Hello.

2 Q. If you have your choice between doing a
3 study or reviewing other people's studies, which do
4 you prefer to do?

5 MR. SETTINERI: Your Honor, I object to
6 the form of the question in terms of what is
7 represented by studies.

8 EXAMINER FARKAS: Do you want to define
9 what you mean by studies?

10 Q. I'll rephrase my question. Can you
11 obtain more information from doing a study on people
12 living around wind turbines than reviewing those
13 studies that someone else has done?

14 MR. SETTINERI: Your Honor, the same
15 objection. The question, are you comparing a field
16 survey versus epidemiology or epidemiological study;
17 is that what you are asking?

18 EXAMINER FARKAS: Is that what are you
19 asking?

20 MS. PRICE: Yes.

21 A. In surveying people to see how they feel
22 about wind turbines?

23 Q. No.

24 A. No? I'm sorry, I'm not understanding
25 your question.

1 Q. Okay. You do studies?

2 EXAMINER FARKAS: I think what she is
3 asking, the literature that you review, parts of that
4 literature are studies?

5 THE WITNESS: That's correct.

6 EXAMINER FARKAS: My understanding, she
7 wants to know, is it more beneficial for you to
8 conduct a study or to review studies that have been
9 done if you are considering the same people and
10 you're controlling for the same factors and trying to
11 test for the same results.

12 THE WITNESS: I understand. Not
13 necessarily. I think that in epidemiology we rely on
14 the body of literature if we are trying to look for
15 an association, so conducting one study provides --
16 one properly conducted study provides one bit of
17 information into the body of literature that we use
18 to look at the research question may be.

19 So in terms of looking at health effects
20 from wind turbines, there are several reasonably done
21 studies that are out there that provide us with some
22 information.

23 Now, the other thing to keep in mind as
24 we look at this literature we're talking about -- if
25 we are talking about sound, we are talking about

1 sound at levels that are around us every day, so that
 2 if we're looking at, are there differences in looking
 3 at sounds in the decibel level we are talking about
 4 here versus studies of sounds that are very, very
 5 loud, again, we have the scientific basis for making
 6 these evaluations and comparisons.

7 And so where we have the studies that are
 8 relevant, and we do, they provide us with good
 9 information, and it doesn't show there are any
 10 adverse health effects associated with living with
 11 these turbines at these sound levels we are seeing.

12 Q. But as a doctor living in the area, you
 13 have never thought of doing a study yourself to see
 14 if these are real causes or not?

15 A. No. I have no -- I have no concerns
 16 regarding adverse effects from turbines.

17 Q. You said if a study was done, the
 18 symptoms that people are complaining of, nausea and
 19 stuff, can be caused by so many things that it would
 20 just be hard to do a study to interpret everything
 21 that could be causing these people's problems.

22 A. It would be complicated, and it would
 23 have to be comprehensive in order to get at whatever
 24 the question is that you're trying to answer.

25 Q. Most of your -- the studies you actually

1 do are not complicated?

2 A. They're very complicated and take a very
3 long time.

4 Q. How long does one of your studies
5 normally take, roughly?

6 A. It depend on what is being studied. I
7 mean, I've conducted studies that can take anywhere
8 from two years to five or six years or longer.

9 Q. If you have a group of people living in
10 the same area that have lived in the same area for a
11 long amount of time and they suddenly start
12 complaining of the same symptoms, I mean, the nausea,
13 the headaches and stuff, do you go out and look to
14 see if the flu in going around? Do you automatically
15 just check to see if it is the flu, or do you go out
16 and see if it's a host of other things wrong, or do
17 you look at the first main thing that connects them
18 all together?

19 A. I'm not sure. It seems like there a
20 couple questions within the question, if you can
21 refine that.

22 Q. If you came into my neighborhood and 20
23 out of 100 people started complaining of the same
24 symptoms, and the CDC was saying the flu was coming
25 through the area, is the flu the first thing you

1 would check these people for?

2 A. I'm not sure. I would probably want to
3 see people who are living in the area, people who
4 were not living in the area, and try to ascertain any
5 number of things that could be causing the symptoms
6 that they're complaining of inside and outside the
7 area.

8 Q. But you would not check them for the flu
9 first?

10 MR. SETTINERI: Object as to being asked
11 and answered.

12 EXAMINER FARKAS: She answered that
13 question.

14 Q. Are studies ever proven wrong years
15 later?

16 A. Probably. It depends upon what kind of
17 study you are referring to.

18 Q. Recently on the news they said that
19 studies had been done years ago saying that men
20 should have prostate check-ups and with a blood test
21 thing done. Now they're saying -- these studies were
22 saying that prostate cancer was killing men and that
23 they needed to be tested for it on a regular basis.

24 Now they're saying that by men being
25 checked for it on a regular basis and being treated

1 for it, the treatment is actually more harmful than
2 living with prostate cancer.

3 MR. SETTINERI: Objection.

4 EXAMINER FARKAS: I assume it's a
5 hypothetical.

6 MS. PRICE: It was on the news. It's
7 been in newspapers.

8 MR. SETTINERI: Then I object to this
9 question in its entirety, lack of foundation.

10 MS. PRICE: She asked me to give an
11 example.

12 EXAMINER FARKAS: I don't recall the
13 response, but I'll sustain the objection. You need
14 more foundation to ask that question.

15 Q. So a study is done. The facts are
16 written as to whatever is found, and that for the
17 life of that study forever, nothing ever changes with
18 it?

19 A. Well, again, I'm not exactly sure what
20 your question is. I think researchers conduct their
21 studies and publish them in scientific journals.
22 They're subject to peer review before they are
23 published. They're public domain where others can
24 comment or criticize them, conduct further studies to
25 refute them or to support them. It's part of the

1 scientific process of learning.

2 EXAMINER FARKAS: Studies are performed
3 and you get conclusions, the results of that study,
4 if the study is never repeated or changed, the
5 results of that study are there for as long as the
6 study is available for people to look at, right?

7 THE WITNESS: For whatever it is, of
8 course. As long as you know it's published lunch
9 scientific literature, it's there for others to
10 comment and criticize or not.

11 EXAMINER FARKAS: And other researchers
12 can repeat the same scientific studies?

13 THE WITNESS: That's right.

14 EXAMINER FARKAS: And manipulate
15 different variables of those studies?

16 THE WITNESS: Of course. That's what
17 contributes to our knowledge base in the scientific
18 literature.

19 Q. (By Ms. Davis) So as he was saying,
20 studies can be repeated. Have you ever repeated one
21 of your own studies or one of your colleagues'
22 studies?

23 A. I have not repeated one of my own
24 studies. I believe that one of my publications, one
25 of my research studies is a variation adding to the

1 scientific literature on a question related to
2 perfluorononanoic compounds.

3 Q. Do you have a staff that helps you with
4 your studies? I mean, you obviously don't go out and
5 perform all the testing, everything yourself.

6 A. No. I mean, we have a staff, yes, of
7 course.

8 Q. Have you ever had a staff member perform
9 a duty that you sent them out to do, a task, a duty,
10 a test, and when it's come back to you, you
11 questioned it?

12 A. Could you be more specific?

13 Q. Have you ever questioned how one of your
14 employees performed their job?

15 A. Well, that's kind of a broad question. I
16 mean, if you are talking with respect to a scientific
17 study, we design a study protocol that outlines how
18 the study will be conducted. It has directions for
19 how the work will be done lunch field. If there's
20 fieldwork done, if there is data to be abstracted
21 from medical records, there's a protocol that's
22 written and outlined exactly how this will be done.

23 It goes before the institutional review
24 board to be sure that people's rights are not being
25 violated at any level, and when the data are

1 collected, they're collected.

2 Q. The studies you have reviewed for the
3 Applicant, you feel that by reviewing these studies
4 that you would have done everything the same as what
5 they've done?

6 MR. SETTINERI: Is that a question?

7 MS. PRICE: Yes.

8 EXAMINER FARKAS: Are you asking if she
9 would have?

10 MS. PRICE: If she would have performed
11 the studies the same exact way that what was done.

12 A. The researchers who perform these studies
13 had a hypothesis they are trying to answer by doing
14 the study the way they did it. So, I mean, if I had
15 the same research question, would I have done it the
16 same way? I'm not sure.

17 Q. What I'm trying to ask is, you are being
18 asked to read something someone else has done and
19 testify in their absence on that study, right?

20 A. Have I reviewed the scientific literature
21 on this matter? Yes, I have. This is done all the
22 time. You compile the literature that is available
23 lunch scientific press, in the journals, and review
24 it, review it for the quality of the study. You
25 review it for any number of those things I laid out

1 earlier as criteria for a good and reasonable study.
 2 Then you interpret those studies, given what you are
 3 familiar with in respect to the design and the other
 4 factors that are involved.

5 Q. Okay. I don't mean to keep hounding you
 6 on this. It is in my mind and I'm trying to get it
 7 out across my tongue.

8 So there would be no difference from the
 9 person that did the study being here as to having you
 10 here to answer our questions about these studies?

11 A. I can't answer that question.

12 Q. Because you don't know if there's other
 13 things they could have added if they were in here
 14 testifying, other things they could have added as
 15 they came across during their studies?

16 MR. SETTINERI: Your Honor, I object.
 17 It's argumentative. This question has been asked and
 18 answered.

19 EXAMINER FARKAS: I will sustain the
 20 objection.

21 MS. PRICE: That means it's out?

22 EXAMINER FARKAS: It's out. You can try
 23 and ask it another way.

24 MS. PRICE: Another way, I have to think
 25 about that.

1 Q. In your testimony you state there's not
2 enough studies on actual wind turbines. So you have
3 studied -- you've reviewed studies on propellers, on
4 ceiling fans, and things likes that and compared
5 them.

6 MR. SETTINERI: Your Honor, I object to
7 mischaracterizing the testimony. I think that
8 referred to shadow flicker, not wind.

9 MS. PRICE: Okay.

10 Q. You have not done a study on shadow
11 flicker on a wind turbine, but you've reviewed
12 studies of the flicker off a ceiling fan and
13 propellers, right?

14 A. I have not conducted a study of shadow
15 flicker. I've reviewed what's in the scientific
16 literature related to wind turbines, and in addition
17 to that, because that literature is minimal, I've
18 also looked at what I consider relevant scientific
19 literature on other forms of shadow flicker and
20 health outcomes.

21 Q. In any of the studies that you, yourself,
22 have conducted, if something annoys you, let it be
23 the neighbor's dog barking, just as -- it annoys you
24 every time that same thing happens, does your level
25 of annoyance go up?

1 A. Are you talking about me personally?

2 Q. No, in your studies of people.

3 MR. SETTINERI: Again, your Honor, I
4 don't think there's been foundation laid that she's
5 done studies of people.

6 EXAMINER FARKAS: I'll sustain the
7 objection.

8 Rephrase your question.

9 Q. You don't do actual studies yourself on
10 people? If it's not an actual disease -- are you a
11 psychologist?

12 A. No, I'm not.

13 Q. No. You study disease, do you not, lunch
14 health field, mental? What is it, physical,
15 psychological? Which of those do you -- is your
16 specialty?

17 MR. SETTINERI: I'll object. She already
18 testified she's an epidemiologist.

19 EXAMINER FARKAS: She testified she's an
20 epidemiologist.

21 MS. PRICE: In a study of people with
22 diseases, do you question them on what their symptoms
23 are?

24 A. Well, it would depend on what the disease
25 is and what your hypothesis was, so you could ask

1 people just about anything, depending on what it is
2 that you're interested in studying.

3 Q. In your studies, do you have the name of
4 a disease and work back to find out what people may
5 end up with that disease, or do you start with people
6 that possibly have a disease and work towards finding
7 out what that disease is?

8 A. Both.

9 Q. Both ways?

10 A. Yes. Those are two different study
11 designs. One we call cohort studies where we start
12 with people who are exposed and not and move forward
13 to see what happens; or conversely, we can start with
14 people who have a disease and don't have a disease,
15 and we can look at a number of factors that we have
16 hypothesized may be associated with that.

17 Q. You do sometimes --

18 A. I've done both.

19 Q. During those studies you ask people what
20 their symptoms are when working towards finding a
21 disease?

22 A. It depends, because not all -- not all
23 types of studies require asking about symptoms. Many
24 studies include information about diagnostic tests or
25 laboratory measurements. It doesn't necessarily

1 involve symptomatology reporting.

2 Q. When you do a study, you try to take --
3 you talked earlier about a heart patient.

4 A. Heart disease I said.

5 Q. Heart disease, okay. You take people who
6 have heart disease in their family, runs in their
7 family, and take people that don't have heart disease
8 running in their family.

9 A. No, that's not what I said. I said if we
10 are trying to study risk factors for disease and if
11 we are specifically looking at whether smoking was
12 related to heart disease, we would want to consider a
13 number of other factors that have been shown lunch
14 epidemiological literature to be related to heart
15 disease in order to control for or adjust for our
16 analysis of those factors.

17 Q. Okay. In any of your studies, have you
18 ever -- if someone is continuously told, no, do they
19 start believing it?

20 A. I'm sorry, I really don't understand your
21 question.

22 EXAMINER FARKAS: You're not clear on
23 your question. What is your question?

24 Q. If somebody was told -- have you ever
25 studied anybody being put in an environment and they

1 were told that they wouldn't like living in their
2 neighborhood or they wouldn't like their job, and
3 they're told that so many times, that sooner or later
4 they just don't like their neighborhood, their
5 workplace?

6 A. I've never conducted that kind of study.

7 MS. PRICE: Okay, I don't have any more
8 questions.

9 EXAMINER FARKAS: Mr. Price.

10 MR. PRICE: No questions.

11 EXAMINER FARKAS: Mr. Warrington.

12 MR. WARRINGTON: Thank you.

13 - - -

14 CROSS-EXAMINATION

15 By Mr. Warrington:

16 Q. Hello. My name is John Warrington. I
17 live within the project area.

18 A. Hello.

19 Q. I have submitted testimony. Have you
20 read my submitted testimony where I included the
21 executive summary from Nina Pierpont and some
22 comments by Mike McCann, a right-of-way appraiser?
23 Did you apprise yourself of those?

24 A. I did not look at the real estate
25 appraisers. I did read the main part of your

1 testimony.

2 Q. Okay. As a part of your research, this
3 is just based on memory, do you know the names of any
4 websites that chronicle the negative impacts of wind
5 turbine installations? Just as a part of your
6 epidemiological study, are you able to draw from
7 memory any of those websites that might focus upon
8 negative aspects?

9 A. I wouldn't consider websites part of my
10 epidemiological scientific review. Wait for just a
11 second.

12 Q. That's fine.

13 A. We do conduct our searches of the
14 scientific literature using the Internet, so
15 pubmed.com would be where I would go to look for the
16 National Library of Medicine website for scientific
17 literature. We do use the Internet as a tool. But
18 as you're talking about, a website for complaints or
19 other kinds of just public kinds of statements, no,
20 I'm not familiar.

21 Q. I just seen in your testimony about
22 scanning the worldwide web. I scanned the worldwide
23 web about five minutes before I left work today, and
24 I found a document from your corporation that was
25 downloaded from ENVIRON in April 2011.

1 EXAMINER FARKAS: Can you identify the
2 document?

3 EXAMINER FULLIN: I think it would be
4 best to let her see it, and if you use it as a basis
5 for questioning, find out -- let her see it and find
6 out if she has any familiarity with it, first of all.

7 MR. WARRINGTON: Okay. I need some
8 clarification from you on this also.

9 EXAMINER FARKAS: Why don't you give her
10 the document. Let her review it and see if she is
11 familiar and then ask her a question.

12 MR. WARRINGTON: I would like for the
13 record, so the record can hear the question --

14 EXAMINER FARKAS: Mr. Warrington, just
15 present her the document. Let her look at it. Then
16 you can ask her the question.

17 EXAMINER FULLIN: You don't have to point
18 to anything in it. All you have to do is let her
19 look at it and ask her if she has any familiarity
20 with it.

21 MR. WARRINGTON: I wanted to use it to
22 ask some questions.

23 EXAMINER FULLIN: First you have to see
24 if she has a basis on which to testify.

25 THE WITNESS: This is not the name of my

1 Company. It's an abbreviation for this -- I don't
2 know what it is, if it's a journal or what. It's an
3 abbreviation for Environmental Research Letters.

4 EXAMINER FARKAS: Have you ever seen the
5 document before?

6 THE WITNESS: No, I haven't. It's not my
7 company.

8 MR. WARRINGTON: It's a different
9 ENVIRON?

10 THE WITNESS: It's an abbreviation,
11 actually.

12 EXAMINER FARKAS: Okay.

13 MR. WARRINGTON: I was not able to
14 identify it was a different ENVIRON than the one you
15 work for. I apologize.

16 Q. (By Mr. Warrington) I want to ask you a
17 question about question 8. Question 8 mentions a
18 five-year-old National Academy of Sciences report,
19 "Environmental Impacts of Wind-Energy Projects,"
20 2007.

21 Just my question is this. Does that seem
22 current with the expansion of the wind industry, we
23 are using a five-year-old report in your study?

24 A. I'm sorry, the question?

25 Q. Does it seem proper to use such an old

1 study in the current epidemiological --

2 A. I don't consider it old.

3 Q. Five years?

4 A. And I think the National Academy's review
5 was done at the time, and it presents what it
6 presents.

7 Q. Okay. Has your research ever struck upon
8 any recommendations from the World Health
9 Organization as regards to kilometer setbacks of
10 homes and wind turbines? Are you familiar in your
11 research of the World Health Organization?

12 A. Setback determinations are not
13 epidemiological types of decisions. I mean, I'm not
14 involved with reviewing setback data. If you are
15 looking literature pertaining to health effects and
16 wind turbines, I can answer that question.

17 Q. More focused, that was the World Health
18 Organization regarding health issues and wind
19 turbines. Have you included their studies and
20 recommendations, or are you aware of their
21 recommendation also as a part of your -- I think
22 you've already answered no.

23 MR. SETTINERI: I object to the entire
24 question.

25 EXAMINER FARKAS: I'll sustain the

1 objection.

2 Q. A lot of your comments repeat several
3 times it's a matter of a person's attitude or a
4 negative attitude whether they are negatively
5 impacted by wind turbine noise.

6 Just a simple comparison for me. The
7 thing that has really annoyed me when I was trying to
8 sleep is a bee bouncing around the ceiling of my
9 bedroom. Maybe this is too abstract, but do you
10 suggest that if I could make this comparison to wind
11 turbine noise, some people may just not be bothered
12 by an annoying sound, another person?

13 I'm trying to draw a real-life comparison
14 to an attitude of annoyance. Maybe there are people
15 who like bees bouncing around their bedroom, and
16 you're suggesting people who like wind turbines are
17 less annoyed by them.

18 I apologize if that's abstract. I just
19 wish you would maybe elaborate on your often-cited
20 suggestion that attitude creates a possible annoyance
21 of sleep deprivation.

22 MR. SETTINERI: Object. I object to the
23 form of the question. I don't understand the
24 question.

25 EXAMINER FARKAS: I'll allow the answer.

1 A. Well, if it was more of a question, I
2 perhaps could help you out. I mean, I --

3 Q. I just withdraw it. It was too abstract.
4 You mentioned the Pedersen studies a lot
5 from 2007, maybe 2009. And I'm reading from what I
6 thought was your ENVIRON company about a Pedersen
7 study in 2011.

8 EXAMINER FARKAS: Mr. Warrington, just
9 ask the question.

10 MR. WARRINGTON: Ask a question. I'm not
11 the best at a clear question.

12 EXAMINER FARKAS: Do you have a reference
13 in her testimony you are citing for your question?

14 Q. In question 10 we find a lot of --
15 several references to Pedersen 2007; Pedersen, van
16 den Berg 2009; Pedersen, Perrson Waye 2008, several.
17 I'm just seeing it, and I'm finding that Pedersen
18 does not state there are no impacts to health quite
19 as clearly as you do in your conclusion.

20 EXAMINER FARKAS: Is that a question?

21 Q. Would you be aware of comments from
22 Pedersen 2011 that found a statistically significant
23 association between noise level and self-reported
24 sleep disturbances?

25 EXAMINER FARKAS: You just asked the

1 question. You have to let her answer.

2 A. I don't -- can you tell me what study you
3 are referring to, one of the studies I cited lunch my
4 testimony?

5 Q. I guess you have not included Pedersen
6 2011. Are you aware of Pedersen's 2011 report that
7 indicates they do find correlation between wind
8 turbine noise --

9 MR. SETTINERI: Object, lack of
10 foundation.

11 EXAMINER FARKAS: Do you have a copy of
12 the study?

13 MR. WARRINGTON: Yes. I have this study
14 that is from --

15 EXAMINER FARKAS: Give a copy of the
16 study to the witness and ask if she has ever seen it
17 and is familiar with it. She might be able to answer
18 your question.

19 MR. WARRINGTON: Okay. Maybe we should
20 sit side by side for a while.

21 EXAMINER FARKAS: No, that's not how we
22 work.

23 EXAMINER FULLIN: Even when you hand it
24 to her, you can give her space to let her look at it.

25 MR. SETTINERI: Your Honor, this is the

1 same document.

2 EXAMINER FARKAS: Is it the same
3 document?

4 MR. WARRINGTON: Yes, it's the same
5 document.

6 EXAMINER FARKAS: She already said she's
7 not familiar.

8 MR. WARRINGTON: All right. We will just
9 dispatch with some of these.

10 Q. (By Mr. Warrington) Would you agree with
11 this statement -- just disagree or not disagree.
12 This is the cited from --

13 EXAMINER FARKAS: You don't have to give
14 a cite.

15 Q. -- Contemporary Medicine, "Annoyance
16 Issues exist as a precise technical term describing a
17 mental state characterized by distress and aversion,
18 which if maintained, can lead to a deterioration of
19 health and well-being."

20 EXAMINER FARKAS: Do you understand the
21 question?

22 THE WITNESS: He wants to know if I agree
23 or disagree with that statement.

24 EXAMINER FARKAS: Yes, if you understand.

25 A. Well, I mean, I really have no opinion.

1 I would -- I have not studied annoyance and the
2 issues around annoyance, so I would not want to make
3 an out-of-hand opinion on that statement without
4 understanding the basis of annoyance factors.

5 Q. Thank you. Do you believe that the
6 science is closed on the correlation between health
7 and wind turbine placement?

8 A. Science is never closed. There's always
9 room for more information.

10 Q. All right. So then from your question 7,
11 when you say, "Adequate scientific information
12 regarding health effects of noise and shadow flicker
13 from sources other than wind turbines is available
14 and informative," you would agree that maybe an
15 additional study is appropriate?

16 A. What I reviewed to date and knowing what
17 I know about the sound levels and the shadows that
18 are emitted or are part of industrial wind turbines,
19 I do not believe that there are health effects
20 associated.

21 Whether or not that precludes doing
22 additional studies to look at additional questions,
23 it's -- it's -- it's always possible. More
24 information is always valuable. At this point in
25 time, there's no evidence, scientific evidence, for

1 health effects.

2 Q. Are you at all able to, from your
3 definition of scientific, can you describe --

4 A. Epidemiological evidence studies
5 populations that are well-conducted, published in the
6 peer-reviewed literature, as defined earlier on when
7 I was asked the question by somebody else.

8 Q. In my testimony document --

9 EXAMINER FARKAS: I don't want you to
10 refer to your testimony. It's not an exhibit.

11 MR. WARRINGTON: Oh, okay.

12 Q. Would you have an opinion, Dr. Mundt, as
13 to whether confidentiality clauses in wind lease
14 contracts might impact the complaints of health
15 issues, and beyond that, even might be a
16 constitutional issue?

17 A. That is not an epidemiological question.

18 Q. Pardon me?

19 EXAMINER FARKAS: You have to speak up.

20 A. That is not an epidemiological question.
21 I have no opinion on that.

22 Q. In epidemiology you have mentioned that
23 in your testimony that those who do not benefit from
24 the turbines -- I don't want to paraphrase --
25 complain more than those who benefit financially. So

1 my question is could the complaints be limited in
2 nature because of the confidentiality clauses that
3 are part of that compensation?

4 MR. SETTINERI: Your Honor, I have to
5 object to everything before the real question, lack
6 of foundation as to the complaints.

7 EXAMINER FARKAS: I'll allow the
8 question, if you have an opinion.

9 A. I believe that I said one study reported
10 that among those who had financial benefit, there was
11 less annoyance from wind turbine assigned. How that
12 relates to the issue that you're raising here, I
13 really have no opinion on that. I have no idea.

14 MR. WARRINGTON: May I have less than a
15 minute to confer?

16 EXAMINER FULLIN: Sure.

17 (Discussion off the record.)

18 Q. Dr. Mundt, of the numerous studies that
19 are referenced in your testimony, do any of them
20 appear as exhibits in their full context?

21 A. No.

22 MR. WARRINGTON: Then we would like to
23 move to strike her entire testimony because it is
24 hearsay.

25 EXAMINER FARKAS: Okay. Response.

1 MR. SETTINERI: Your Honors, Dr. Mundt
2 has been established as an expert Ph.D. in
3 epidemiology. As an expert, she is entitled to form
4 her opinions by consulting peer-reviewed articles. I
5 strongly oppose that motion.

6 EXAMINER FARKAS: Do you want to respond?

7 MR. WARRINGTON: Her opinion can remain,
8 but any reference to all the studies we feel should
9 be stricken.

10 EXAMINER FARKAS: Okay. Under our
11 hearsay rules, an expert is allowed to reference
12 other articles, so I'm going to deny your motion to
13 strike because she is an expert.

14 MR. WARRINGTON: I'll withdraw my final
15 questions. No further questions from me.

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17 EXAMINATION

18 By Examiner Fullin:

19 Q. I think I have one question. I want to
20 be clear on the record in my mind the connection
21 between your answer to question 8, that all of your
22 opinions are based on critical review and synthesis
23 of the evidence from the available scientific
24 literature.

25 Would it also be true that all of your

1 opinions are based on the peer-reviewed synthesis of
2 the articles listed on your reference list?

3 A. Yes.

4 EXAMINER FULLIN: Thank you.

5 EXAMINER FARKAS: Any redirect?

6 MR. SETTINERI: No, your Honors.

7 EXAMINER FARKAS: You're excused. Thank
8 you for your testimony.

9 MR. SETTINERI: At this time, your
10 Honors, we would move to admit into evidence
11 Exhibit 20, the Direct Testimony of Dr. Diane Mundt.

12 EXAMINER FARKAS: Any objection?

13 MR. HEFFNER: I object on the basis that
14 the studies cited, she is not necessarily an expert
15 on those topics.

16 EXAMINER FARKAS: We already qualified
17 her as an expert so I am denying your motion.

18 MR. HEFFNER: Very good.

19 EXAMINER FARKAS: Any other objection?

20 With no other objection, then the exhibit
21 will be admitted.

22 MR. SETTINERI: Thank you, your Honor.

23 (EXHIBIT ADMITTED INTO EVIDENCE.)

24 MR. SETTINERI: At this time the
25 Applicant rests subject to the right to call rebuttal

1 witnesses.

2 EXAMINER FARKAS: Okay.

3 MR. SETTINERI: Your Honors. we would
4 like to admit one exhibit not admitted, Joint
5 Exhibit 1.

6 EXAMINER FARKAS: That's still pending
7 until Staff's testimony.

8 MR. SETTINERI: Thank you, your Honors.

9 EXAMINER FARKAS: I believe since
10 Mr. Collier isn't here, I think he has the
11 understanding we will start at 9:00 tomorrow. We
12 would extend it a little but, since he is expecting
13 9:00 o'clock, so that's when we will do it. We will
14 adjourn until 9:00 o'clock.

15 (The hearing adjourned at 5:07 p.m.)

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CERTIFICATE

I do hereby certify that the foregoing is a true and correct transcript of the proceedings taken by me in this matter on Wednesday, October 12, 2011, and carefully compared with my original stenographic notes.

Rosemary Foster Anderson,
Professional Reporter and
Notary Public in and for
the State of Ohio.

My commission expires April 5, 2014.
(RFA-8694)

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