

STATE OF NEW HAMPSHIRE
SITE EVALUATION COMMITTEE

November 2, 2010 - 1:37 p.m.
Public Utilities Commission
21 South Fruit Street
Suite 10
Concord, New Hampshire

DAY 2
AFTERNOON SESSION ONLY

RE: SEC DOCKET NO. 2010-01
Application of Groton Wind, LLC,
for a Certificate of Site and
Facility for a 48 Megawatt Wind
Energy Facility in Groton,
Grafton County, New Hampshire.
(Hearing on the merits)

PRESENT:	SITE EVALUATION SUBCOMMITTEE:
Chairman Thomas B. Getz (Presiding)	N.H. Public Utilities Comm.
Robert Scott, Director	Air Resources Division - DES
Brook Dupee, Bureau Chief	Dept. of Health & Human Serv.
Richard Boisvert	N.H. Div. of Historical Res.
Stephen Perry, Chief	Inland Fisheries - N.H. F&G
Charles Hood, Admin.	Dept. of Transportation
Donald Kent, Admin.	Dept. of Resources & Economic. Development
Eric Steltzer	Office of Energy & Planning
Michael Harrington	Public Utilities Commission

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Counsel for the Committee: Michael Iacopino, Esq.

COURT REPORTER: Susan J. Robidas, LCR NO. 44

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ALSO PRESENT:

Counsel for the Applicant: Susan S. Geiger, Esq.
(Groton Wind, LLC) Douglas L. Patch, Esq.
(Orr & Reno)

Counsel for the Public: Peter Roth, Esq.
(Sr. Asst. Atty. General)
Michelle Thibodeau

Reptg. the Buttolph Group: Cheryl Lewis, Intervenor

Reptg. the Mazur Group: Dr. Lawrence Mazur

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P R O C E E D I N G S

CHAIRMAN GETZ: Good afternoon. We're back on the record in Site Evaluation Committee Docket 2010-01, and we're ready for the direct examination of Mr. O'Neal.

(WHEREUPON, ROBERT D. O'NEAL was duly sworn and cautioned by the Court Reporter.)

ROBERT D.O'NEAL, SWORN

DIRECT EXAMINATION

BY MR. PATCH:

Q. Please state your name for the record.

A. Robert O'Neal.

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

A. I'm employed by Epsilon Associates, Incorporated. I am a principal at the firm.

Q. And did you submit prefiled testimony in this docket which was included in Volume I of the application which has been marked as Petitioner's Exhibit 1? This was not the supplemental, but your original prefield testimony.

A. Yes, I did.

Q. And you submitted supplemental prefiled testimony which was included in the supplement to the

1 application, Volume I-A, which has been marked as
2 Petitioner's 5; is that correct?

3 A. That's correct.

4 Q. Do you have any corrections to either your prefiled
5 or supplemental prefiled testimony?

6 A. There was one correction that I included in my
7 supplemental testimony. I believe that's already
8 on the record.

9 Q. Okay. And that was a correction to your original,
10 but it was in your supplemental testimony?

11 A. It's contained within my supplemental, yes.

12 Q. And with that correction, if you were asked the
13 same questions contained in those two exhibits
14 today under oath, would your answers be the same?

15 A. Yes, they would.

16 Q. Now, are there any documents with regard to the
17 subject matter of your testimony that have been
18 filed in this docket since your prefiled
19 supplemental testimony was submitted?

20 A. Yes, there have been.

21 Q. And what is that?

22 A. The counsel for the Public noise consultant,
23 Cavanaugh Tocci, Mr. Tocci filed some supplemental
24 testimony on October 2nd.

1 Q. And have you had a chance to review that?

2 A. Yes, I have.

3 Q. And do you have any comments you'd like to provide
4 to the Committee with regard to that submission?

5 A. Sure. Just a few brief comments on the
6 supplemental testimony. Essentially, it was an
7 additional two weeks of sound-level measurements --

8 MR. ROTH: Excuse me, Mr. Chairman. I
9 have to object to this commentary. There was an
10 additional date for submitting additional prefiled
11 testimony, which the Applicant could very well have taken
12 advantage of, but did not. And I submit that it's not
13 appropriate for the witness to be able to make additional
14 direct testimony, having foregone that opportunity last
15 week.

16 CHAIRMAN GETZ: Foregone the
17 opportunity last week?

18 MR. ROTH: Yes. Mr. Tocci's
19 supplemental testimony was made a record on the 22nd.
20 There was at least, you know, an opportunity any day
21 after that and up to the date when the supplemental
22 testimony to answer final agency comments, which,
23 obviously not directly applicable, was certainly an
24 opportunity to make additional direct testimony. And

1 if the -- I submit that the Applicant should have taken
2 advantage of an opportunity before today to submit
3 additional prefiled testimony from this witness so we
4 would have had an opportunity to look at it and think
5 about it before he makes it this afternoon.

6 CHAIRMAN GETZ: Mr. Patch.

7 MR. PATCH: Mr. Chairman, there's
8 nothing in the schedule. The last thing in the schedule
9 was the October 22nd report to be filed by Mr. Tocci,
10 which we had jointly agreed. But there was nothing after
11 that. Our date to file was October 12th. So that was 10
12 days before he was allowed to file. All we're asking for
13 is an opportunity for Mr. O'Neal to be able to comment on
14 what was filed on the 22nd. But, again, there's nothing
15 in the schedule. And I would submit that, even if we had
16 tried to file something, then presumably somebody would
17 have objected saying that wasn't in the schedule for him
18 to file yet one more piece of testimony. So it just
19 seems to me it's consistent with due process for us to be
20 able to comment today and, again, briefly, just on direct
21 testimony with regard to the report that Mr. Tocci
22 submitted on October 22nd.

23 CHAIRMAN GETZ: Well, I guess there's
24 two things. One is that certainly additional

1 supplemental testimony of this nature wasn't contemplated
2 by the schedule. And I think there's a good argument
3 raised that the counsel for the Public or other parties
4 should have an opportunity to prepare cross about
5 whatever is intended by Mr. O'Neal at this point, to the
6 extent that it's intended as direct testimony.

7 So I guess I would say at this point
8 we're not going to admit this additional direct
9 testimony. If the parties can work out something at a
10 break about whatever it was he intended to testify, if
11 there's a chance to talk about it and prepare some cross
12 on it, then we can address that later. But at this
13 point, we're not going to permit the additional direct.

14 MR. PATCH: Okay.

15 MR. ROTH: Thank you.

16 CHAIRMAN GETZ: Is he available for
17 cross then?

18 MR. PATCH: Available for cross.

19 Thank you.

20 CHAIRMAN GETZ: Dr. Mazur.

21 DR. MAZUR: Thank you.

22 CROSS-EXAMINATION

23 BY DR. MAZUR:

24 Q. Hello, Mr. O'Neal.

1 A. Good afternoon.

2 Q. I have two questions from Intervenor Richard
3 Wetterer to ask. One you've heard already I think
4 at the first tech session, and then a second one,
5 and then I'll launch into my questions.

6 The first question from Richard is: Why were
7 there no dBC measurements for sound which might
8 have been more sensitive to low frequency than the
9 dBA that was used?

10 A. Can you please clarify? Do you mean for the
11 modeling that was done for the proposed wind farm?

12 Q. I guess so.

13 A. Okay. I'll assume that's what you're asking then.

14 I guess there's a couple reasons for that.
15 Generally, the standards and the criteria are based
16 on AWEA, which is how the human ear responds to
17 sound. That's reason No. 1. No. 2 is in the work
18 that we've done in the past with wind farms in
19 general, C-weighted sound, which is a way of
20 measuring the lower-frequency octave bands, has not
21 been an issue for turbines sited in a place like
22 this, where there's a pretty large setback.

23 Q. For the sake of obsessive completeness, could you
24 not, though, have gone that extra measure to have

1 done the C scale?

2 A. You could argue that a lot of things could be
3 measured in addition. Our experience is that
4 C weight is not necessary for, again, large
5 distances like this. We measured C weight at other
6 places. And even at relatively close distances,
7 C weighting has not been shown to be a significant
8 issue.

9 Q. If the Committee decided to ask you to be kind
10 enough to do the C-weighted measurements, could you
11 do them at this late date?

12 A. Well, again, the wind farm doesn't exist. So we
13 can't go out and measure C weighting from the wind
14 farm because it's not there.

15 Q. Thank you. That probably is a good introduction to
16 Richard Wetterer's second question about
17 pre-construction and post-construction. The
18 question is: Other sites, according to Richard's
19 review of, I don't know, probably literature
20 online, shows discrepancies between pre- and
21 post-construction regarding sound studies. And in
22 particular, he wonders whether you could comment on
23 the discrepancies, as well as nighttime air
24 stratification concerns.

1 A. I mean, what you're asking is very speculative.
2 I'm not sure what pre-construction and
3 post-construction studies Mr. Wetterer is
4 specifically referring to, so I can't comment on
5 that. I mean, I can comment on, for example, the
6 Lempster, New Hampshire post-construction studies
7 that were done. And they found reasonably good
8 agreement between modeling and modeling.

9 Q. What about this concern about nighttime air
10 stratification concerns?

11 A. I'm trying to interpret what that means. I assume
12 he's talking about nighttime inversions,
13 temperature inversions. And the software that's
14 used to do these noise propagations assumes a
15 temperature inversion is within the standard in the
16 software. So I would suggest to you that that
17 aspect is taken into account.

18 Q. Okay. Thank you. And now on to my questions,
19 please.

20 Are you familiar with Mazur Exhibit 12, the
21 letter that I received on June 17th from Dr.
22 Birnbaum at the National Institute of Health?

23 A. I believe I recall, but it be helpful to have it in
24 front of me if I could.

1 MR. PATCH: Mr. Chairman, I was going
2 to suggest that if Mr. Mazur has specific questions about
3 some of the exhibits that they have, if he could present
4 that to the witness, I think that would be helpful.

5 BY MR. MAZUR:

6 Q. Okay. Let me just point out, about 20 minutes ago
7 I offered to give this letter to --

8 CHAIRMAN GETZ: Off the record.

9 (Discussion off the record)

10 CHAIRMAN GETZ: All right. We're back
11 on the record.

12 BY MR. MAZUR:

13 A. Okay. I have looked at Exhibit 12.

14 Q. Okay. Why would Dr. Birnbaum, speaking on behalf
15 of the National Institute of Environmental Health
16 Services and National Toxicology Program, as
17 directed by Dr. Francis Collins, Director of
18 National Institutes of Health, part of the United
19 States Government's Department of Health and Human
20 Services, answer an inquiry of mine by referencing
21 the need for research on wind turbine syndrome to
22 protect the residents of Baker River Valley?

23 A. That's not what it says.

24 Q. Well, what would your interpretation be?

1 A. I'm just reading her e-mail. They're not currently
2 supporting research on the specific topic. It may
3 well be that it would be appropriately considered
4 under future funding opportunities, et cetera. I
5 guess I'm not sure what the question is.

6 Q. Well, my question is -- their introductory sentence
7 at the very beginning of the letter, they say,
8 "...regarding the need for research on wind turbine
9 syndrome to protect the residents of Baker River
10 Valley," and then later on say that it would be
11 appropriately -- excuse me -- "A recent interagency
12 working group led by NIH calls for research on the
13 health effects of both mitigation and adaptation
14 activities in response to climate change." When
15 they're talking about "mitigation and adaptation
16 activities," I assume that they're referencing such
17 things as wind power.

18 Why would this person reference that subject
19 in response to me, unless there was a real concern?

20 A. As I read the first sentence of this e-mail, it
21 appears to me that they are responding to your
22 e-mail, and your e-mail was regarding research on
23 wind turbine syndrome. That's the response that
24 the e-mail is, it's to your inquiry.

1 Q. And in the middle of the paragraph below, "A recent
2 interagency working group led by NIH calls for
3 research on health effects of both mitigation and
4 adaptation activities in response to climate
5 change." What is that in reference to if not
6 mitigating technology such as wind turbines?

7 A. I can't comment on that. I have no idea what it's
8 in reference to.

9 Q. Okay. I don't want to be perceived as badgering
10 the witness.

11 A. Thank you.

12 Q. Do you believe that there might be health hazard
13 risks from proximity of human beings to wind
14 turbine installations?

15 A. The short answer is no. Would you like me to
16 explain?

17 Q. Please.

18 A. Okay. When properly sited, such as a project like
19 this -- I'm going to comment really on the project
20 that we're talking about right now. With setbacks
21 such as we see here from the Groton Wind Farm,
22 sound is not a health issue at this wind farm, nor
23 will it be. There are a lot of other -- I'm not a
24 medical doctor. There have been a lot of other

1 medical doctors and experts who've taken a look at
2 the literature that's out there. We've referenced
3 some of them in the documentation, such as the
4 "Wind Turbine Sound and Health Effects, an Expert
5 Panel Review" report, which is part of the record.
6 The state health officer for the state of Maine has
7 gone on the record to say she does not believe
8 there are health impacts from sound from wind
9 turbines.

10 Q. Would you acknowledge that there is discrepancy
11 between respected scientists and clinicians
12 regarding this issue of possible health hazard
13 issues secondary to wind turbine?

14 A. Well, there's certainly a lot discussion out there
15 amongst different groups that I think is very well
16 known. Most of what's out there claiming that
17 there are health impacts has not been
18 peer-reviewed. I look at something such as there's
19 a discussion about vibroacoustic disease which
20 people throw out a lot from some folks in Portugal.
21 That research is done on airplane workers who work
22 10 hours a day in very close proximity to engines
23 at very, very high sound levels. And while that
24 may be interesting in and of itself, it's totally

1 irrelevant to a wind farm.

2 Q. Haven't read the Portuguese-published papers on
3 civilians living in residences and houses adjacent
4 to the wind turbine projects, 10-year-old children
5 who are developing symptoms of concern? You
6 haven't read any of those papers?

7 A. I'm not sure of the paper you're talking about.
8 There's a very good review and discussion on a lot
9 of the papers in the Expert Panel Review compendium
10 that I just mentioned before.

11 Q. Are you referring to the December 2009 article
12 that's referred to as "the peer review article"?

13 A. It's the December 2009 Expert Panel Review prepared
14 by the American Wind Energy Association and CanWEA.

15 Q. Thank you. On -- my interpretation of that differs
16 from yours. Please correct me if -- what I'm -- in
17 that publication, Chapter 4, Page 2, what they say,
18 if I may read, is that wind turbine syndrome is an
19 unproven hypothesis that has not been confirmed by
20 appropriate research studies, most notably cohort
21 and case control studies, and it is unlikely that
22 such studies will be done.

23 Do you have any idea why it would be unlikely
24 for a wind-supported committee of technicians to

1 say that detailed studies were not likely to be
2 done on this subject?

3 A. As I wasn't part of the expert panel on this, I
4 really can't say what was -- went into their
5 thinking on that.

6 Q. Okay. So when Iberdrola entertains a project
7 proposal on a mountain ridge, such as in Groton,
8 Mount Fletcher and Plymouth Mount Tenney, that
9 would construct turbines emanating sound
10 wavelengths, audible or inaudible, propagating over
11 human beings living in the valley below, it does
12 not take into consideration any possible health
13 hazard risks to that human population.

14 A. I think one thing that's made very clear by the
15 executive summary in this report, I think it's
16 something that people who cite it sometimes -- I'll
17 just try to quote it so I won't misread it. "The
18 sounds emitted by wind turbines are not unique." I
19 think that's an important summary, because, yes,
20 wind turbines emit sound waves, just like logging
21 trucks and traffic on Route 25 and airplanes from
22 Plymouth Airport and a lot of other sounds from the
23 local Wal*Mart. They are not unique in that way.
24 And they do propagate out. And by the time they

1 reach residences, they're at very low and modest
2 levels.

3 Q. Are you familiar at all with Mazur Exhibit 1?

4 A. No, I'm not.

5 Q. Pleased to lend you my only copy.

6 CHAIRMAN GETZ: Are there other
7 copies, Mr. Iacopino?

8 MR. IACOPINO: There was another copy
9 up here with the official versions, but I was not able to
10 locate one before.

11 We have Exhibit 1 through 10 in this
12 folder. We'll just leave them on this table.

13 DR. MAZUR: Thank you.

14 CHAIRMAN GETZ: Thank you.

15 BY MR. MAZUR:

16 Q. Mazur Exhibit 1 is a copy of a July 3rd, 2010
17 publication by Carl V. Phillips, MPP, Ph.D.,
18 regarding analysis of the epidemiology and related
19 evidence on health effects of wind turbines on
20 local residents.

21 And the question is: Do you agree or disagree
22 with his concerns about serious health problems for
23 some people living nearby wind turbine
24 installations? And I would direct you to Page 2

1 and Page 28, his summary and his conclusions which
2 are expressed therein. The question is: Do you
3 agree or disagree with that?

4 MR. PATCH: Mr. Chairman, I'm going to
5 object to the question. The witness is being presented
6 with a document that is 29 pages in length. It was not
7 presented until yesterday when the witness wasn't here,
8 and now he's being asked as to whether he agrees or
9 doesn't agree with it. You know, is he supposed to try
10 to read this while he's on the stand and answer that? I
11 just object. I think it's unreasonable to expect him
12 to -- if there's something, a specific thing in there
13 that he wants to ask him, that might be a different
14 story. But I think it's an unfair and unreasonable
15 question.

16 CHAIRMAN GETZ: I think --

17 MR. PATCH: He could have asked it in
18 a data request. He could have provided it and asked it
19 then.

20 CHAIRMAN GETZ: I think for purposes
21 of cross-examination, it's fair to ask the witness if
22 he's familiar with this document.

23 And then I think, Mr. Mazur, then, of
24 course, if he is not, then I think you need to refer him

1 to a specific conclusion, observation, and ask him if he
2 has an opinion on that. It can't be as broad as "Do you
3 agree with this paper?"

4 DR. MAZUR: May I do very that?

5 BY MR. MAZUR:

6 Q. On Page 28, Mr. O'Neal --

7 CHAIRMAN GETZ: Well, let's establish
8 first, are you familiar with this document?

9 WITNESS O'NEAL: No, I'm not.

10 BY MR. MAZUR:

11 Q. Very first sentence of the conclusion states: "In
12 summary, there is substantial evidence to support
13 the hypothesis that wind turbines have important
14 health effects on local residents." And I would
15 ask you whether you agree or disagree with that
16 statement.

17 A. I guess I find it a very difficult question to
18 answer, given the fact that I haven't read how he
19 got to this conclusion.

20 DR. MAZUR: Is it possible that the
21 Committee would consider adjourning for today to allow
22 Mr. O'Neal to study that document overnight and continue
23 tomorrow morning?

24 CHAIRMAN GETZ: No, that wouldn't be

1 an appropriate procedure.

2 DR. MAZUR: Okay. Allow me to go on
3 with other questions then. Thank you.

4 BY MR. MAZUR:

5 Q. Wavelengths that are generated by turbines might
6 find their way emanating through biological beings,
7 humans and other animals. Are you aware of any
8 effects such sound wavelength propagations through
9 the body of human beings might have ill effects on
10 their person?

11 A. Again, that's -- I guess I view that more as a
12 medical question. I'm not a medical doctor. There
13 is, again, some discussion in the expert panel
14 about medical impacts. The conclusion they came up
15 with is that, again, at the distances we're talking
16 about here, while sound waves travel through the
17 air, they are not a health impact for people.

18 Q. All right. Is there any objective manner in
19 determining what is a safe distance to put between
20 these turbines and human beings?

21 A. In general, it's a site-specific evaluation.
22 Depends on the size of the turbines, where they're
23 sited, where residential folks might be living in
24 relation to the turbines. And so it should be sort

1 of a case-by-case or project-by-project evaluation,
2 and from that you can then compare it to standard
3 accepted criteria.

4 Q. Could you explain to us how Iberdrola objectively
5 determined the safe distance to propose the Groton
6 turbine project up on elevated mountain ridges
7 overlooking a valley below where humans live?

8 A. I can't answer that question because I was not
9 involved in the original siting or layout of the
10 turbine wind farm.

11 Q. Is it possible that nobody really knows the safe
12 distance between turbines and human beings?

13 A. Well, I think I'd answer that the same way I just
14 did: You look at it on a case-by-case basis. I
15 don't know if there's -- there may be any distance
16 that may be safe. I don't know the answer to that.

17 Q. Is it possible that Iberdrola might be negligent in
18 not going the extra distance to try to
19 scientifically determine the minimal safe distance
20 between its installations and humans?

21 MR. PATCH: Mr. Chairman, I'm going to
22 object to that. I just think it's an unfair and
23 unreasonable question. He's asking the witness if he
24 thinks the Applicant is negligent. You know, I mean, the

1 legal meaning of the word "negligent" -- you know, I
2 think he's asking for a legal conclusion, basically, from
3 the witness. I just think the form of the question is
4 unfair and unreasonable.

5 DR. MAZUR: What I'm trying to
6 establish is that I don't believe there are any reliable
7 objective guidelines in determining the absolute
8 hundred-percent safe distance between these installations
9 and humans. And I believe the witness is being rather
10 vague, because objective scientific technique to
11 establish the safe distance just has not been used and --

12 CHAIRMAN GETZ: Well, you're certainly
13 free to make that argument as your closing or through
14 brief. With respect to this particular question, I think
15 it calls for a legal conclusion from the witness. And
16 he's not a lawyer and not an officer of the company, so
17 I'm not going to allow that particular question.

18 BY MR. MAZUR:

19 Q. Mr. O'Neal, what do you make of these alleged case
20 studies that have been done by such field
21 clinicians as Dr. Pierpont and Dr. Nissenbaum
22 regarding some citizens claiming that they are
23 getting sick from the sound wave effects of these
24 wind turbine installations?

1 A. I've certainly heard of the claims, and I've read
2 the book to try to understand her perspective, her
3 point of view. I think, again, there's a nice
4 discussion of that in the AWEA/CanWEA expert
5 report. Dr. Pierpont has a lot of self-selected
6 patients, people who are annoyed with the wind
7 turbines to begin with. And so I guess, in my
8 opinion, that raises some serious questions right
9 off the bat. I don't doubt that some of the people
10 that are participating in her studies or her
11 interviews are bothered or annoyed by the wind
12 turbines. I don't doubt that that is true. I'm
13 not in the position to comment on the validity, the
14 accuracy of any of that to health impacts that
15 they'd be experiencing, though.

16 Q. All right. I think I have one last question. If
17 the National Institutes of Health seems to -- thank
18 you very much -- seems to suggest, at least to this
19 reader, that there is a need to study possible
20 health effects of such technology as wind turbines,
21 and there are no objective, present objective ways
22 of setting the absolute safe minimal distance
23 between these installations and humans, why would
24 halting these undertakings until a later time not

1 be considered worthwhile for the public? I
2 apologize for the long-winded question.

3 A. Well, I mean, I guess I don't get that out of the
4 e-mail that you received back from Dr. Birnbaum.
5 It sounds like they're going to look at health
6 effects related to climate change.

7 Q. Health effects of both mitigation and adaptation
8 activities. I assume by "mitigation" activities
9 they're referring to things like solar panels and
10 wind turbines.

11 A. I don't read that in there. I'm not sure -- I
12 don't know how you got that. "Mitigation and
13 adaptation activities in response to climate
14 change," I don't know what that means. I'm not in
15 a position -- I can't comment on that.

16 Q. I would then leave the interpretation to the Site
17 Evaluation Committee members when they review this
18 at a later point. I thank you very much.

19 CHAIRMAN GETZ: Thank you.

20 Ms. Lewis.

21 CROSS-EXAMINATION

22 BY MS. LEWIS:

23 Q. Good afternoon, Mr. O'Neal.

24 A. Good afternoon.

1 Q. Could I give you a packet of our exhibits, just so
2 you have it on hand?

3 A. That would be helpful.

4 MR. IACOPINO: Ms. Lewis, are you
5 going to refer to Dr. Mazur's at all?

6 CHAIRMAN GETZ: This is off the
7 record.

8 (Discussion off the record.)

9 CHAIRMAN GETZ: Okay. We're back on
10 the record.

11 BY MS. LEWIS:

12 Q. My first question, I would like to direct you to
13 your prefiled direct testimony on Page 3. At the
14 very bottom you were asked if you're familiar with
15 the Groton Wind site, or proposed site. In the
16 last sentence, and I'll quote you, you state, "For
17 general residential locations, we relied on a map
18 prepared by another consultant, VHB, which
19 identified all residences within at least 1 mile of
20 each wind turbine in any direction." Is that an
21 accurate statement now?

22 (Witness reviews document.)

23 A. It's still true, as far as I believe.

24 Q. So did you actually see that map?

1 A. Yes, I did.

2 Q. And it identifies all residences?

3 A. That was the purpose of the map, yes.

4 MS. LEWIS: Okay. I guess for the
5 record, I do have a question regarding that. The
6 Applicant has repeatedly told us that they do not have a
7 map that consists of residences, that it only consists of
8 structures. And, in fact, on Friday, this was a major
9 debate that was discussed. And I guess, for the record,
10 I don't know how to go from here. But I would like to
11 put that on the record, that this is information that we
12 have repeatedly requested, and we still have not received
13 it.

14 CHAIRMAN GETZ: So your position is
15 that you asked in discovery for a map showing all
16 residences?

17 MS. LEWIS: Correct. And we have
18 repeatedly been told that no such map exists, that
19 there's only a map that locates structures, which include
20 businesses, sheds or anything else that is viewed by the
21 GIS mapping.

22 CHAIRMAN GETZ: And I take it that,
23 Mr. O'Neal, you can't respond to that issue? Or can you?

24 WITNESS O'NEAL: I have a response.

1 I'm not sure it's the one she may be looking for.

2 The map that we used that's referred
3 to in my prefiled direct is the same map that is
4 included in the technical studies that are in the
5 application. So those structures are shown as blue
6 squares, for example, in the maps -- in the figures.

7 CHAIRMAN GETZ: Ms. Geiger, can you
8 address whether there's a conflict here between the use
9 of terms or the expanse of the studies?

10 MS. GEIGER: I'll venture a guess. My
11 understanding is that the map that Mr. O'Neal is talking
12 about is a map that includes residences, as well as other
13 structures. My understanding is that our inability to
14 provide Ms. Lewis with a map that she's looking for is
15 the fact that that particular map, we have no way of
16 distinguishing between a house and another structure
17 that's shown on that map. So the map is only inclusive,
18 in that it shows residences as well as other structures.
19 I'm not sure -- I don't want to speak for the witness. I
20 would hazard a guess that he used the word "residences"
21 in his prefiled testimony perhaps inappropriately. But
22 I'll let him speak to that and let him tell you what he
23 thought he was looking at when he looked at that map.

24 CHAIRMAN GETZ: I think I may

1 understand the issue at this point. But, I mean -- so
2 you were looking for, Ms. Lewis, or requested a map that
3 shows only residences; is that correct?

4 MS. LEWIS: Well, yes. In addition,
5 we were looking for the number of residences within a
6 specific radius of the proposed wind farm.

7 CHAIRMAN GETZ: And this statement,
8 Mr. O'Neal, your position is this map shows all
9 structures; and necessarily since it shows all
10 structures, a subset of that would be all residences.

11 WITNESS O'NEAL: That's correct. That
12 was probably a terminology error on my part. The map
13 provided showed structures or houses. I guess not every
14 one of those is actually a residence, but they're all
15 structures.

16 CHAIRMAN GETZ: But you don't know
17 which ones are residences and which ones are something
18 else.

19 WITNESS O'NEAL: That's correct. I do
20 not.

21 MS. LEWIS: Okay.

22 CHAIRMAN GETZ: All right.

23 MS. LEWIS: Thank you.

24 BY MS. LEWIS:

1 Q. My next question, if you could turn to the public
2 hearing, which is Exhibit No. 3, on Page 56. If
3 you'll go down towards the bottom --

4 MR. HARRINGTON: Could you give the
5 page again, please?

6 MS. LEWIS: Page 56 of Exhibit No. 3.

7 A. I don't believe I have Exhibit 3 in this pile.

8 MS. LEWIS: The very beginning is all
9 No. 1 with a letter. It's further back --

10 CHAIRMAN GETZ: Off the record.

11 (Discussion off the record.)

12 CHAIRMAN GETZ: Let's go back on the
13 record.

14 BY MS. LEWIS:

15 Q. Okay. During the public hearing -- this is towards
16 the bottom, my No. 9 towards the bottom of this
17 page. And you were being asked questions regarding
18 who would be able to hear the wind project. And
19 you answered, "We took a lot of data around the
20 project and looked at some of the quietest
21 nighttime background sound levels that were out
22 there."

23 And I would like to ask you, given Mr. Tocci's
24 sound study that was recently conducted, which came

1 back significantly lower than the levels which you
2 had previously estimated for what you considered
3 the quietest background locations, I wondered if
4 you felt that you chose locations that truly
5 reflected the quietest areas.

6 A. I guess a couple things about that. No. 1, the
7 analysis that we did, we also included looking at
8 wind speed data; so, in other words, during periods
9 of complete calm, the wind turbines are likely not
10 going to be operating. So we didn't consider those
11 time periods, where Mr. Tocci did. So that will
12 tend to lower your sound levels.

13 No. 2, I guess, the response is that the point
14 is not to try to find the quietest locations
15 anywhere in the vicinity of the project. It's to
16 look at locations in different directions around
17 the project that are the nearest residential areas
18 that may be impacted by some of the sound levels
19 from the wind farm. And we felt we did that.

20 And I guess the third comment is, actually, if
21 you look at Mr. Tocci's data in the October 22nd
22 supplemental filing, he actually measured slightly
23 higher sound levels at some of the same locations
24 than we did.

1 Q. Okay. I guess the public hearing, the next page,
2 which is No. 57, towards the top, around Line 20,
3 you state, "There was really just the one area over
4 at Halls Brook Road which showed more than a
5 3-decibel change in the quietest background. And
6 generally, a 3-decibel or less change is...
7 imperceptible."

8 And then if you go to Line 23, you wrote it
9 had -- I'm sorry. You said this showed a change of
10 up to 7 decibels during the quietest hours. So it
11 is likely that those folks would hear the project.

12 Now, when you mention the "quietest hours,"
13 I'm assuming you're meaning the middle of the night
14 when people are sleeping; is that correct?

15 A. That's typically when the quietest hours are, yes.

16 Q. Okay. Therefore, this assumption is also based on
17 the fact that you're assuming these people are
18 sleeping in their houses, in their bedrooms; is
19 that also correct?

20 A. Well, no. No. Actually, these are outdoor sound
21 levels. So that change is outdoors.

22 Q. Okay. But when you say there's a 7-decibel
23 increase in sound, and you're saying that they
24 probably will be able to hear it, you're saying

1 that they're going to hear it wherever they are.

2 A. Well, what I'm saying is that during those very
3 quietest hours, it's likely that it will be audible
4 to someone standing outside at this particular
5 location, which is the Halls Brook Road side.

6 Q. Okay. I'd like to bring you back to your prefiled
7 testimony, on Page 4.

8 A. Okay.

9 Q. I just have one further question regarding your --
10 the locations that you chose to do your sound
11 studies. And I find it a bit interesting that you
12 only chose one location in Rumney, given that
13 there's certainly more houses that are closer
14 overall to this project in Rumney than will be in
15 Groton.

16 And secondly, the location that you did choose
17 in Rumney happens to be Plain Jane's Diner, which,
18 for an operating business which is right on
19 Route 25, they're going to be least impacted by the
20 noise, given that it's a restaurant and there's
21 people talking and trucks that are coming into the
22 parking lot and that type of thing, and so any
23 noise that takes place there from the wind far is
24 not going to have that significant of an impact in

1 comparison to the majority of other location in
2 Rumney.

3 Could you explain a little further why you
4 chose Plain Jane's Diner as a representation of the
5 Town of Rumney, or that area in particular?

6 A. Sure. Like I said, when we look at a project to
7 decide where it makes sense to collect some
8 existing-condition sound level data, we'll look at
9 the layout of the wind farm. You look at the roads
10 typically surrounding the area and where the
11 nearest residences are in the different directions,
12 north, south, east and west of the wind farm. So
13 if you do that -- and I'm right now looking at
14 Figure 5-1, which is part of the Appendix 35, I
15 believe, to the application, the noise report...
16 yeah, Appendix 35.

17 MR. IACOPINO: And 35 is contained in
18 Applicant's Exhibit 4.

19 WITNESS O'NEAL: It just might be
20 helpful to have that figure in front of you to just
21 follow what I'm going to say.

22 MR. IACOPINO: How was the figure
23 identified?

24 WITNESS O'NEAL: It's Figure 5-1.

1 A. Okay. I'll proceed. If you look at the figure,
2 you see Route 25 generally running along the north
3 side of the site in an east to west and then sort
4 of a southeast direction; Halls Brook Road on the
5 western side of the project; Groton Hollow Road
6 running through the center of the project; and then
7 Route 3A on the eastern side; North Groton Road,
8 Groton Town Hall, sort of to the south and
9 southwest of the project.

10 So the attempt here, for example, to answer
11 Ms. Lewis's question on Plain Jane's Diner, if you
12 look along Route 25, you'll see a lot of blue
13 squares. Again, these are generally residences or
14 houses, I guess perhaps a few businesses along
15 there as well. But we know for a fact that there
16 are quite a few houses along Route 25, as we
17 field-verified that. So, the thinking on Plain
18 Jane's Diner was to capture the sound levels that
19 those folks hear along Route 25. Because whether
20 you measure at Plain Jane's or the house next door
21 really doesn't matter a whole lot, in terms of the
22 ambient sound levels; they're going to be the same.
23 So that's a Rumney location.

24 The closest residences really in the middle of

1 the project are along Groton Hollow Road. You can
2 see quite a few residences there. So we took a --
3 measured a location, Location No. 2, labeled as
4 "Groton Hollow," right on the Rumney/Groton town
5 line. And that represents the background for any
6 of those folks living well off Route 25. So,
7 they're along Groton Hollow Road.

8 Now, technically, we put it right inside the
9 gate; so, it's over the Rumney line in Groton. But
10 that was more for security reasons than anything
11 else, and so we'd be on land that the Applicant had
12 permission to be on. But that really is
13 representing folks in Rumney. That's representing
14 the people along Groton Hollow Road in Rumney.

15 And then Halls Brook Road is the same
16 thinking. That location to the west represents a
17 couple of houses along Halls Brook Road. So,
18 really -- and these are the closest people to the
19 wind farm. And Tenney Mountain to the east, again,
20 there's some slope-side condominiums over at Tenney
21 Mountain; hence, that location was chosen.

22 I could go on with the rest of them, but I'll
23 stop there and see if that perhaps answers your
24 question.

1 BY MS. LEWIS:

2 Q. Okay. I just -- just more for follow-up to all
3 this, did you take into account the impact of the
4 sound over the valley area? And in listening to
5 your response, I certainly understand. But there
6 weren't any homes or locations taken on the other
7 side of the Baker River. And I'm wondering if you
8 considered that, the aspect of the river and the
9 valley area and a potential echoing, or the fact
10 that at night it may be much quieter on the other
11 side of the river, even though it's very close to
12 the project area and to Route 25. But just the
13 fact that it's across the river, it can be quieter
14 there.

15 A. Well, in terms of the hills and the topography, all
16 that was certainly taken into account in the
17 sound-level modeling exercise, where we input the
18 topography from USGS digital elevation data into
19 the model. So whether it's a high elevation or a
20 low elevation, that is all taken into account in
21 the future prediction of the sound levels.

22 Q. Okay. I'd like to switch gears a little bit to
23 your supplemental prefiled testimony, on Page 3.

24 A. Okay.

1 Q. Roughly about halfway down, you're discussing Mr.
2 Tocci's testimony regarding infrasound. And you
3 state in your quote of Mr. Tocci, that he writes,
4 "It is very interesting, but stops short of
5 suggesting a measurable infrasound guideline below
6 which little or no effect can be expected." And
7 after you quote that, you basically disregard his
8 testimony about the infrasound after that.

9 And my question would be, given that the
10 research is in the works regarding infrasound --
11 and, as you know, Alec Salt's study recently came
12 out stating that there is certainly a potential of
13 wind turbines having an impact -- the infrasound of
14 wind turbines having an impact on the middle ear --
15 and because this ongoing research is still being
16 conducted, just because there's not a measurable
17 point or a measurable guideline because this all is
18 new in what's coming out, why would you totally
19 dismiss the whole aspect of infrasound?

20 A. Well, I don't dismiss the aspect of infrasound. We
21 talk about it quite a bit in some of the testimony.
22 Infrasound, a low-frequency noise or sound, is
23 certainly a topic that's come up a lot with wind
24 farms. And the conclusion is that, again, at the

1 distances for a properly sited project such as
2 this, the distances we're talking about, infrasound
3 is very modest. I mean, there's infrasound in this
4 room right now from the HVAC system. So there's
5 infrasound everywhere. The issue is: Is it at a
6 high enough level to cause, you know, a health
7 concern? And, you know, our conclusion is that the
8 answer is no, clearly not. In fact, Mr. Tocci, I
9 think, concurs with that in his supplemental
10 testimony on Page 18, where he suggested that
11 turbine infrasound will also be acceptable at the
12 receptor locations.

13 Q. Okay. My next question concerns something you had
14 mentioned earlier in your testimony to Dr. Mazur,
15 and that's the 2009 study that just came out from
16 AWEA and CanWEA, the joint panel study. And I'd
17 like you to take a look at Exhibit 12.

18 MR. IACOPINO: Which Exhibit 12?

19 MS. LEWIS: I'm sorry. Buttolph
20 Exhibit No. 12.

21 A. Okay.

22 BY MS. LEWIS:

23 Q. Okay. The second paragraph of CanWEA, it states
24 they were established in 1984, and they represent

1 the wind energy community, organizations and
2 individuals who are directly involved in the
3 development and application of wind energy,
4 technology, products and services. And the next
5 one, the next page is AWEA. And if you look at
6 their mission, the mission of the American Wind
7 Energy Association is to promote wind power growth
8 through advocacy, communication and education. It
9 appears that these organizations that funded this
10 study are trade organizations for the wind
11 industry. Would you agree?

12 A. Yes.

13 Q. Would you agree that there's a potential bias
14 there, given the fact that they are funding a panel
15 study?

16 A. I could certainly see how on the outside it could
17 appear that way. I actually spoke to one of the
18 seven authors of the study, Dr. McMurtry -- I'm
19 sorry -- McCunney about that, and he said that they
20 were not told what to do. In other words, they
21 were doing an independent research study, and they
22 were not influenced at all by the organizations. I
23 mean, I'm just telling you what he told me.

24 I think something else to keep in mind is that

1 they're not the only organizations to reach these
2 conclusions. The Ministry for Ontario, Canada came
3 out this summer with a very similar conclusion.
4 They're not an organization that's funded by the
5 wind industry. Similarly, the Health Office for
6 the State of Maine, Dr. Mills, came to the same
7 conclusion in the summer of 2009. So, Maine is
8 very well experienced in wind energy up there. So
9 it's not just the wind organizations I guess is
10 what I'm saying.

11 Q. Now that you bring up Maine and the health person
12 there, have you followed up on Maine, that there is
13 quite a bit of controversy about that person that
14 has specifically spoken about that?

15 A. No, I haven't.

16 Q. Okay. There has been a huge amount of controversy
17 in her direct relationship to the wind industry --

18 MR. PATCH: Mr. Chairman, I think this
19 is testimony that she's giving at this point in time
20 rather than a question. I can understand the question to
21 begin with to the witness, but she seems to be following
22 up with testimony.

23 CHAIRMAN GETZ: And we'll give it the
24 weight that it's due under the circumstances.

1 MS. LEWIS: Thank you.

2 BY MS. LEWIS:

3 Q. I guess I would like to follow up a little more on
4 Maine and your familiarity with that. Obviously,
5 Maine does have a lot more wind farms than New
6 Hampshire does at this current time. Are you
7 familiar with any wind farms in Maine that have had
8 sound issues?

9 A. I certainly heard about a few of them, yes.

10 Q. Are you familiar with Mars Hill or Vinalhaven?

11 A. I've heard of both of them, yes.

12 Q. And you had testified earlier regarding Nina
13 Pierpont's book and stated that in the panel study,
14 that their assessment of her book was that it was
15 more an annoyance issue by people that were more
16 annoyed about the whole situation of the wind farm,
17 and that may have led to their health issues, so to
18 speak.

19 As far as Vinalhaven, are you familiar with
20 the fact that nearly 100 percent of the residents
21 there were in full support of the wind farm prior
22 to it being built?

23 A. All I can tell you is what I read in the papers,
24 probably like everybody else.

1 Q. But did you read that?

2 A. I read that, yeah.

3 Q. And you have heard that there are issues there?

4 You have read that there are issues there regarding
5 sound?

6 A. Yes, I have.

7 Q. Okay. And those people that previously had been in
8 support of that wind farm are also ones that have
9 now had major issues with the sound?

10 A. I have heard that, yes.

11 Q. Okay. And therefore, their sound issues or health
12 issues are not "an annoyance factor," as has been
13 termed by the panel study.

14 A. I'm not knowledgeable enough on Vinalhaven to
15 really comment. I don't know what the setbacks are
16 at Vinalhaven, for example. So I'm not sure what
17 your next question is.

18 Q. I'd like to go back to your supplemental prefiled
19 of Mr. Tocci, Page 3. And at the top, he discusses
20 Location No. 7 --

21 A. I'm sorry. Is this my supplemental testimony?

22 Q. No, Mr. Tocci's supplemental testimony, Page 3.

23 A. Oh, okay.

24 CHAIRMAN GETZ: Hold on a second so

1 everyone has it.

2 MS. LEWIS: Okay.

3 MR. HARRINGTON: Public Counsel, do
4 you have a number?

5 MR. ROTH: It's Public Counsel No. 2.

6 CHAIRMAN GETZ: Oh, it's also as an
7 exhibit in that package?

8 MR. ROTH: Yes.

9 CHAIRMAN GETZ: Oh, okay. Okay.
10 Please proceed.

11 BY MS. LEWIS:

12 Q. Okay. Do you agree with the statement that campers
13 do not obtain the same level of sound isolation
14 afforded residential structures?

15 A. Well, I guess if you want to compare the
16 attenuation of a tent versus attenuation of a
17 house, clearly a house is going to give you more,
18 yes.

19 Q. So you would agree they're more impacted by sound.

20 A. No, I wouldn't say that. I'm saying a tent is not
21 going to reduce sound the way a house will.

22 Q. And would you agree with Mr. Tocci's statement that
23 the existing quiet environment of a campground is
24 an important attribute that attracts those wishing

1 a quiet woodland experience?

2 A. In my opinion, that's an opinion. I've been to
3 campgrounds, like at Yosemite, where it's a
4 three-ring circus; there's a lot of activity and so
5 forth going on. So I think it varies.

6 Q. Okay. But if a campground is specifically geared
7 towards a quiet evening, and that's the type of
8 campers they're trying to attract, would you agree
9 that that is an issue?

10 A. That what's an issue?

11 Q. Having a quiet evening and ability to sleep.

12 A. Well, then, in that case, I'm sure a quiet
13 environment is important, yes.

14 Q. Okay. If you could go further to Page 9 on his
15 prefiled testimony --

16 A. Okay.

17 Q. -- if you look down to the letter D, where it
18 states that the baseline sound levels for the
19 campground through these sound studies turned out
20 to be 24.8 dBA, and then it goes on to say that
21 this is the result of very low sound levels
22 typically occurring between midnight and 3 a.m.
23 And then if I could have you just go to Page 11,
24 the table, it shows this baseline or ambient level

1 of 24.8 compared directly with other studies
2 showing the Groton Wind Farm will have a baseline
3 sound level at the campground of 36 to 38 decibels,
4 yielding a change in the ambient of 12 to
5 13 decibels. Mr. Tocci goes on to say on Page 12,
6 which also correlates with your previous testimony,
7 that a 5-decibel change has no impact, under 10
8 decibels has a minor impact, and everything over an
9 increase of 10 decibels from the ambient level to
10 the new baseline level of Groton Wind Farm will be
11 a significant impact.

12 How would you respond to this, given your
13 comments from supplemental testimony on Page 6?

14 A. I just want to take a second to look at what you're
15 referring to on Page 6.

16 (Witness reviews document.)

17 A. A couple thoughts on what you said here. I guess,
18 first of all, the sound-level measurements
19 collected by Mr. Tocci show -- using his
20 methodology, he comes up with approximately 25
21 decibels as a background. We may not
22 necessarily -- we may agree to disagree on exactly
23 how to get that number. But I guess what I would
24 refer people back to is Page 7 of the Tocci

1 supplemental testimony which shows you the
2 two-weeks' worth of sound-level data at the
3 campground in a graph form, Figure 1-D. And there
4 are actually some periods during the middle of the
5 night where the sound levels do get down there into
6 the 20s. It's also a time of night where there's
7 no wind, calm winds. So it's very debateable
8 whether the wind turbines would ever be operating
9 during these low sound events. That being as it
10 may, you can also see most of the time the sound
11 levels are in the 30s and even the 40s, sometimes
12 even during the nighttime. So there's a lot of
13 times where the sound levels are much higher than
14 24.8.

15 The other important fact in this is -- and now
16 this may have been because my contour map was hard
17 to read, and I apologize if it was. But the
18 estimate in Table 1 here on Page 11 of Mr. Tocci's
19 supplemental testimony has a mistake in it which
20 dramatically changes the conclusions, I would
21 argue.

22 The estimated sound level from the project, he
23 has 36 to 38 decibels. It's really more like 31
24 decibels. We can go to the report and look at the

1 actual figure that shows that, if the Committee
2 would like. But this number is quite a bit too
3 high. If you take the correct number of
4 approximately 31 decibels, add it to their
5 conservatively low background of 24.8, you come up
6 with a number of approximately 32 decibels for the
7 new total, which will be an increase of about 7
8 decibels, okay, not the 12 to 13, the significant
9 impact under Mr. Tocci's scheme.

10 Q. Could you just explain, I guess in general terms,
11 where you believe that mistake took place?

12 A. Sure. Sure. Well, the -- you need to look at the
13 sound report, which again is Appendix 35 in the
14 application. Once you find that, you need to go to
15 Figure 7-1. I'm not sure how I'm going to do this
16 without pointing to something.

17 WITNESS O'NEAL: You want me to try to
18 explain in words?

19 CHAIRMAN GETZ: Please.

20 WITNESS O'NEAL: Okay.

21 A. If folks are looking at Figure 7-1 -- if you don't
22 have it in color, that's a problem. If you have it
23 in color, that's helpful.

24 If you look at Figure 7-1, you find Route 25

1 and you see Diner, No. 3 on there. That's Plain
2 Jane's Diner. If you move a little southeast of
3 the Diner, you see sort of a bright white cutout
4 along Route 25, on the south side of Route 25.
5 Those are the Plymouth Polar Caves. If you go
6 north of Route 25, now you're approaching the
7 campground owned by Ms. Lewis. And it's a little
8 tough to see in this figure, but you can kind of
9 see the Baker River meandering there on the north
10 side. So her -- the campsite we're talking about
11 is on the north side of the Baker River.

12 The point is, it's between the light blue and
13 the dark blue contours. These are the 30- and the
14 35-decibel contours; therefore, it has to be less
15 than 35 decibels.

16 For perspective, we modeled an exact number at
17 Plain Jane's Diner, and that was 31.7 --

18 CHAIRMAN GETZ: Perhaps, maybe you can
19 point on the map what you're -- I know you're trying to
20 do it as a narrative, but your pointing may also help us
21 pinpoint it more precisely.

22 WITNESS O'NEAL: Sure. I'll try to
23 speak loudly. This is the Figure 7-1 that I'm looking
24 at. Folks looking at the same one?

1 A. This is Plain Jane's Diner right here. This is the
2 Polar Caves that I was talking about, this white
3 cutout right here, south of Route 25. You can see
4 the Baker River coming relatively close to Route 25
5 right at this location, okay. This is the
6 campground area right here. Ms. Lewis has a beach
7 that you can kind of see in white next to the Baker
8 River. That's the beach right there.

9 CHAIRMAN GETZ: So the campground is
10 basically across the road from the Polar Caves.

11 WITNESS O'NEAL: It's across the road
12 from the Polar Caves and then across the river. It's on
13 the north side of the Baker River as well. The
14 Campground No. 31 where Mr. Tocci collected his data is
15 approximately where my finger is here on the map, on the
16 north side of the river.

17 CHAIRMAN GETZ: All right. I think
18 that helps for the members to zero in on what you're
19 talking about.

20 WITNESS O'NEAL: Okay. This location,
21 if you try to translate that to the modeling map in the
22 application, is between the 30-decibel contour and the
23 35-decibel contour, the two blue contours on this map.
24 So it's approximately 31, 32 decibels, worst case, at the

1 campground is what I'm saying.

2 And actually, this was the modeling
3 done before Turbine E1 was removed. We have an addendum
4 that's in the record that was part of the application,
5 dated March 4th, 2010, where that was acknowledged. And
6 the sound levels from the project actually go down a
7 little bit, because the closest turbine, Turbine E1
8 which was up here, the closest turbine to the campground
9 in this case is now gone. So the sound levels actually
10 go down a little bit more than what's shown in the
11 modeling exercise.

12 CHAIRMAN GETZ: All right. Thank you.

13 BY MS. LEWIS:

14 Q. Okay. If I could follow-up a little bit with that?
15 Could you tell me what your margin for error is for
16 the sound-level modeling?

17 A. The standard -- and this is not a standard we make
18 up. It's called the ISO 9613 Propagation
19 Standard -- generally has a plus or minus of 2 to 3
20 decibels, somewhere in that vicinity.

21 Q. So, given what you've just stated, rather than Mr.
22 Tocci's 36 decibels, if we start at your 32, then,
23 with the margin of error, we're still talking 34 to
24 35 decibels; is that correct?

1 A. Well, I'm saying that the model says it's about 31
2 there. So if you want to take plus or minus 2,
3 then you're at 33. Sure.

4 Q. Okay. So we're still about 10 decibels higher, as
5 far as the change from the ambient level at the
6 campground to what the level will be with the wind
7 farm.

8 A. It will be a plus 8 under that example.

9 Q. Okay. Given a plus 8, that still puts it at having
10 an impact -- is that correct -- particularly with
11 tenters not having a wall between them and the
12 outside noise?

13 A. What I'm going to say is, if you're talking about a
14 level of 32 or 33 decibels, that's very quiet.
15 That's very low.

16 Q. I understand that. But given that the ambient is
17 only 25, they're used to a very low or very quiet
18 background. And my understanding in everything
19 I've read, including your prefiled testimony, is
20 that it's the change that can have a significant
21 impact, sometimes irregardless of what the overall
22 decibel reading is, but more in tune to what the
23 actual change is.

24 A. Well, I guess, again, I'm going to come back to the

1 sound level of 25 I would suggest is perhaps
2 unrealistically low for concurrent operation of the
3 turbines, coupled with the fact that these data
4 were collected pretty much after the campground is
5 shut down for the year. This is in mid to late --
6 early to mid-October. It doesn't include a lot of
7 the summertime, perhaps, insect activity which may
8 have actually raised the sound levels. That was
9 not included in here.

10 Q. Actually, I'm glad you brought that up, because
11 that was my next question. On Page 7 of your
12 supplemental testimony --

13 A. Okay.

14 Q. All set?

15 A. Yes.

16 Q. Lines 8 and 9, you state that the measurements of
17 the sound study done at my campground are of
18 limited or no relevance due to the fact that it is
19 the end of my camping season or after close.

20 However, I would like personally to have the
21 record show that the sound studies were implemented
22 on October 4th. And although it is true we close
23 to the general public on October 11th, which is
24 Columbus Day, we remain open for our seasonal

1 campers. In addition, we allow rock climbers who
2 are just there to throw their tents --

3 MR. PATCH: Mr. Chairman, I don't know
4 if this is testimony or a question. I mean, she's going
5 to have a chance to testify later in the week. But it
6 sounds like she's inserting testimony at this point.

7 CHAIRMAN GETZ: Well, perhaps you
8 could phrase it this way: Ask the witness, would he be
9 willing to accept, subject to check, that you are still
10 open on a part-time basis, and would that affect his
11 opinion in any regard.

12 MS. LEWIS: Okay.

13 CHAIRMAN GETZ: Would you be willing
14 to accept that, subject to check, that the campground is
15 still open on a part-time basis?

16 WITNESS O'NEAL: If she says that,
17 then certainly I believe that.

18 CHAIRMAN GETZ: And does it affect
19 your opinion in any respect?

20 WITNESS O'NEAL: Well, it still would
21 affect my opinion to some degree, because the campground,
22 I'm sure, is -- well, the campground, I suspect, is more
23 active in the summertime. And we didn't include sort of
24 the typical summertime sounds in Mr. Tocci's background.

1 BY MS. LEWIS:

2 Q. What would you consider the "typical" summer
3 sounds?

4 A. Well, insect noise would be one thing that may be
5 kind of limited in October.

6 Q. And anything else or...

7 A. That's all I can think of right now.

8 Q. I guess, given this information that we were still
9 open, do you still stand by the fact that you
10 believe this sound testing results were not
11 relevant, or the data was not relevant?

12 A. Well, if you say that you were actually open after
13 Columbus Day, then, no, there's some relevance
14 there.

15 Q. Okay. My next question is, again, on your
16 supplemental testimony on Page 6. And in that you
17 refer to my prefiled testimony in which I have
18 recommended or hoped that the SEC impose a noise
19 limit at night of 30 decibels. Given that
20 Iberdrola has agreed to comply with a nighttime
21 limit of 30 decibels for interior bedrooms at the
22 Deerfield, Vermont wind farm, and in light of the
23 fact that my tenters are literally in their
24 bedrooms, why do you believe that the 30 decibels

1 is unsupported and unreasonable, as you state in
2 your testimony?

3 A. Well, I think you look at the existing sound levels
4 in the area already, and the majority of the time
5 they're already over 30 decibels.

6 Q. But aren't -- the recent studies that were done,
7 isn't that based on an average or --

8 A. Well, the number of 24.8 decibels in Mr. Tocci's
9 supplemental testimony is really taking the
10 quietest of the quietest. It's the quietest
11 10 percent of the quietest 10-minute averages. So,
12 in other words, for two weeks there were 10-minute
13 samples taken. So you've got roughly 2,000
14 samples. And so that 24.8 is really the quietest
15 200 samples out of the 2,000, okay.

16 Q. But wouldn't that be appropriate to recognize the
17 fact that at nighttime, that's literally a much
18 different situation than during the day; therefore,
19 to get those figures to reflect what the sound is,
20 you really need the lowest sound levels that there
21 are on an average basis? Isn't that exactly what
22 Mr. Tocci did do?

23 A. That is what he did. However, as I said, you're
24 trying to set a floor, a background, using data

1 collected during a time that the wind farm probably
2 won't even operate because the winds are calm
3 during those times. So I guess I would
4 respectfully disagree with that part of it.

5 Q. Are you stating, then, that the wind farm is not,
6 for the most part, going to be operating at night
7 at all?

8 A. No. No, that's not what I'm saying. I'm saying if
9 you look at the two weeks of data on Page 7 of Mr.
10 Tocci's testimony, the graph, it shows pretty
11 clearly that those hours in the middle of the night
12 when the sound levels did drop to those low
13 20s-type levels, there was no wind. When it was
14 windy in general, the sound levels went up. Or
15 when the Baker River was at a higher flow, the
16 sound levels went up. Things like that.

17 Q. Okay. My next question would be, then, if that's
18 true, given the fact that I'm busiest in the middle
19 of the summer, isn't the summertime when there's
20 the least amount of noise, so that this would be a
21 good representation of what the numbers should be,
22 based on the fact that in July and August, if
23 there's a heat wave, there's very little wind? So
24 those numbers are very reflective of what it would

1 be in the summertime. Maybe not so much in the
2 wintertime, but certainly in the summer.

3 A. Right. But if I hear you right, what you're trying
4 to say is that, here's a background and you can't
5 go over it. I'm collecting it during a time when
6 the wind's not blowing. And that would not be
7 appropriate, trying to apply that to a time when
8 it's windy.

9 Q. But how about applying it to when it's not windy or
10 less windy?

11 A. Well, I think, you know, you also need to look at
12 sort of what precedent has been, too, in terms of
13 what the SEC did with Lempster, for example, where
14 they put -- they have an absolute limit of 45 in
15 that case. And trying to do some kind of increment
16 over background and trying to put it at a level
17 that's already very low, I think it's going to be
18 very difficult, as a practical matter, to even try
19 to enforce, because --

20 Q. Difficult for who? The wind farm?

21 A. For anybody. For anybody. You look at the
22 existing sound levels here, and, as I just said,
23 most of the time the sound levels are already over
24 30 decibels at the campground.

1 Q. Not in the middle of the night. Am I correct?

2 (Witness reviews document.)

3 A. Sometimes during the middle of night they are below
4 30. That is true.

5 Q. Most of the time between 12 and 3 in the middle of
6 the night.

7 (Witness reviews document.)

8 A. Well, we could debate this, I think. If you look
9 at the last five days of the study, it never went
10 below 30 decibels, day or night.

11 Q. But I'm saying overall, based on the study --

12 CHAIRMAN GETZ: Well, I think at this
13 juncture there appears to be dispute between how the
14 chart should be read. And we can interpret it for our
15 own purposes.

16 MS. LEWIS: Okay. That's all my
17 questions. Thank you.

18 CHAIRMAN GETZ: Okay. Thank you. I'd
19 say at this point I'm -- well, Mr. Roth, do you have an
20 estimate of how much cross-examination you may have?

21 MR. ROTH: Fifteen minutes.

22 CHAIRMAN GETZ: Okay. Then let's
23 proceed with your cross-examination then.

24 MR. ROTH: Thank you.

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CROSS-EXAMINATION

BY MR. ROTH:

Q. Good afternoon.

A. Good afternoon.

Q. Welcome.

A. Thank you.

Q. I was listening to the cross-examination by Ms. Lewis, and I wanted to ask you a few questions to follow up on that. And then I've got others that I've been acting as though I know what I'm thinking about when I was preparing. I will confess that I approached this subject something like how I approach algebra, and so it's difficult for me. And as the old saying goes, if I were any good at math, I would have gone to medical school; instead, I became a lawyer.

But you had indicated that the figures for the campground that Mr. Tocci obtained in the average -- well, first I want to ask you about the computation methodology.

Now, Mr. Tocci chose, as you say, the quietest 10 percent, the 90th-percentile approach. And in your methodology, you did sort of an overall average of everything.

1 Would you agree that Mr. Tocci's approach is a
2 legitimate approach to use when you're concerned
3 with community noise, and is a conservatively based
4 approach to make sure that the public interest and
5 the public health and safety are protected?

6 A. Well, I'd certainly agree that it's a conservative
7 approach, yes. But I think -- I guess one of the
8 difficulties I have is that you're including data
9 to set a background when the turbines are not
10 operating.

11 Q. We'll get to that.

12 A. Okay.

13 Q. But in terms of the overall approach, it's an
14 accepted engineering approach to do it the way Mr.
15 Tocci did?

16 A. You can protect -- no, I don't necessarily agree
17 with that. You can protect public health and
18 safety as well with a bright-line limit as well.

19 Q. But you've sort of answered a question I didn't
20 ask. The question I asked was, do you agree that
21 Mr. Tocci's approach is an accepted engineering
22 approach? He didn't just make this up and nobody's
23 ever heard of it before; correct?

24 A. To my knowledge, I think they're the only firm that

1 does it that way. That doesn't mean it's a wrong
2 way. But it's one way to do it.

3 Q. Okay. Now, in your approach, you do an average of
4 all of the points of data; correct?

5 A. No. No. We look -- we looked at sound levels that
6 could have occurred when the wind farm was
7 operating and took the lowest of whatever that was.

8 Q. The lowest of -- but an average of these lowest?

9 A. Let me take a minute and look at the table in my
10 report. That may be the best way to answer your
11 question.

12 (Witness reviews document.)

13 A. Okay. So I guess I'm looking at Table 6-1 and
14 Table 8-1 in Appendix 35 of the application, which
15 is the noise report.

16 MR. IACOPINO: 6-1 and which?

17 WITNESS O'NEAL: Table 6-1 and
18 Table 8-1.

19 MR. HARRINGTON: Of?

20 WITNESS O'NEAL: In Appendix 35 of the
21 application.

22 MR. IACOPINO: That appendix is
23 contained in Volume IV of the application. It's also
24 marked as Applicant's Exhibit 4.

1 A. So, to answer your question, what we did was we
2 took all the possible sound levels that could have
3 occurred when the wind farm was operating, and we
4 took the median and the average of those data
5 points. That's what's in Table 6-1. So, yes, that
6 part is an average. But then, to compare the delta
7 or background which is in Table 8-1, we just picked
8 the lowest of any of these values to use as the
9 background value.

10 Q. So, the lower of median or average.

11 A. Correct.

12 Q. Okay. And at times when the wind speed at the met
13 tower was 9.3 meters per seconds or higher?

14 A. Correct.

15 Q. And when you do it this way, do you, in general --
16 and I'm not asking for all cases. But in general,
17 do you come up with higher background sound levels
18 than using Mr. Tocci's approach?

19 A. You generally would come up with a little higher
20 number, because you actually include some of the
21 periods when the winds are calm. And traditionally
22 when that happens, the sound levels are lower.

23 Q. Okay. Now, do you have any way of knowing whether
24 there's a direct correlation between the wind speed

1 at the met tower and the sound levels, the actual
2 sound levels at the receptors?

3 A. Not a direct correlation in this case, no.

4 Q. Now, you mentioned earlier that you had -- I
5 thought that the model was designed for assuming an
6 inversion. Correct?

7 A. Yes.

8 Q. And as I understand that -- and perhaps I'm wrong
9 about this -- isn't that assuming that the wind is
10 doing a nice clip at the turbine level and that
11 things are fairly still at the receptor level? Is
12 that -- is my understanding about that correct?

13 A. It assumes a 1- to 5-meter-per-second wind speed
14 down at ground level for the standard. So, a light
15 to moderate wind, if you will.

16 Q. Okay. So the inversion assumes not that the wind
17 is blowing 9.3 meters per second at the receptor
18 level. There's an adjustment for that in this
19 inversion model; correct?

20 A. The 9.3 meters per second is only used because
21 that's the loudest sound level from the turbines,
22 per the manufacturer's data.

23 Q. I understand. But the inversion concept adjusts
24 the assumed wind speed at the receptor level

1 downward. Is that --

2 A. Right. It assumes that every receptor is downwind
3 of every turbine.

4 Q. Well, I understand that, too. But let's go back to
5 the inversion. My original concept was, the
6 inversion idea is that the wind may be blowing at
7 the turbine level, but it might be relatively calm
8 at the receptor level. Is that basic idea what you
9 are including in your model?

10 A. That's the basic idea. I just wouldn't use the
11 word "calm." I'd use "light." Light winds. How's
12 that?

13 Q. Okay. Now, you -- in response to Ms. Lewis's
14 questions, you indicated that the low levels
15 measured at the campground were because there was
16 no wind. And the question that I have is where --
17 whose wind were we talking about? Where was the
18 wind being measured at that time? Was the wind
19 being measured at the campground, or was the wind
20 being measured somewhere else?

21 A. In this case, I'm relying on Mr. Tocci's data
22 collection. He references the Plymouth Airport
23 wind data.

24 Q. Okay. And is the Plymouth Airport abutting

1 Ms. Lewis's campground?

2 A. It's about a mile and a quarter away.

3 Q. Mile and a quarter away. So we don't really know
4 what the actual wind was at the campground.

5 A. We didn't collect the data, so I don't know.

6 Q. Okay. Now, you mentioned that the last five days
7 of Mr. Tocci's study at the campground, the
8 background noise was over 30 all the time; is that
9 correct?

10 A. That's correct.

11 Q. Now, my recollection of that period of time was
12 that the weather was rather unpleasant, windy and
13 rainy. Is that reflected in the over-30
14 measurements for that five-day period of time?

15 A. There was precipitation at the beginning of that
16 period, certainly. It rained. There was just that
17 one day, I guess. It didn't rain the rest of the
18 period, according to his data.

19 Q. And did his data show that it was windy?

20 A. It was windy for most of the time.

21 Q. All right. I want to ask you a question or two
22 about Vinalhaven.

23 Now, I know you say what you know is what you
24 read in the papers. But do you -- would it be your

1 assumption that when Vinalhaven was sited, there
2 was somebody like you who rendered an opinion that
3 the model showed that there would be no adverse
4 impact on the residents of those communities?

5 A. You're asking me a question I don't think I can
6 answer. I assume that they did a sound study for
7 the project.

8 Q. Okay.

9 A. But I haven't read a report. I don't know what
10 their conclusions were.

11 Q. And would you assume that they also made the
12 conclusion that the project was properly sited?

13 A. I really can't speculate. I'm sorry.

14 Q. Would you be surprised to learn that, in that
15 certification, or whatever process they have, that
16 there was a 45-decibel nighttime and a 55-decibel
17 daytime limit imposed?

18 A. I did not know that.

19 Q. Okay. I want to ask you a little bit about hearing
20 or health effects. And this is very limited.

21 You had indicated to -- in your response to
22 Dr. Mazur that at the distances of these residences
23 to the turbines you wouldn't anticipate any health
24 effects. And I look at your -- at the table on

1 7 -- 7-1. And you can see your contours around
2 each of the turbine locations. And the decibel
3 level at each of those turbine locations or at
4 those first contours is 55 decibels; correct?

5 (Witness reviews document.)

6 A. Right near the base of the turbine. That's
7 correct. Yes.

8 Q. Okay. And would you expect that, if you were
9 standing right under a spinning turbine at
10 9.3 meters per second, that it would be a little
11 bit higher than that?

12 A. Well, I've stood under these at full speed, and
13 it's generally -- I would say, mid-50s is about
14 right.

15 Q. Okay. Mid-50s. Maybe 60, even?

16 A. Could be 55, could be 58, could be 59, could be 60.

17 Q. According to like the EPA reports and WHO, at what
18 point does a person start to experience sort of
19 hearing loss and other physical harms from wind
20 farm noise?

21 A. Well --

22 Q. Or I'm sorry. Not wind farm noise. Noise in
23 general.

24 A. Oh, okay.

1 Q. Sorry.

2 A. Well, certainly the OSHA standard for hearing
3 protection to prevent hearing loss is 85 decibels.
4 If you're exposed to that for more than eight
5 hours, you need to wear hearing protection.

6 Q. Okay. Now, as I understand it, in a 2010 Noise-Con
7 paper, you talked about measurements of infrasound
8 that you took at another project. Does that sound
9 correct to you?

10 A. That is correct.

11 Q. Okay. And how confident that the measurements that
12 you took at that other project are representative
13 of this project?

14 A. I believe I said this in my prefiled somewhere.
15 They were different turbines, but the same sort of
16 utility scale turbines. In other words, we tested
17 GE and Siemens turbines for this paper. And this
18 is like a Gamesa turbine. So it's a different
19 manufacturer. But I wouldn't expect a large
20 variation; and therefore, the conclusions from our
21 measurements at the -- that are presented in the
22 paper would be the same.

23 Q. Did the turbines, the GE and Siemens turbines in
24 your research, were they the same power rating as

1 the ones being proposed for Groton?

2 A. The GE turbine is a 1.5-megawatt turbine. The
3 Siemens is a 2.3-megawatt turbine. And, of course,
4 the Gamesa one here is a 2.0-megawatt.

5 Q. Now, if you took those measurements there on
6 different turbines -- and it's good that you found
7 that the infrasound wasn't an issue. Certainly if
8 you did a measurement like that for this project,
9 it would only -- at least in your assumption, it
10 would only conclude that it was fine. But why not
11 do it and provide that level of assurance and
12 comfort to everybody?

13 A. Again, if you read the paper, we did these at
14 1,000 feet, a good reference distance. And so at
15 the distances we're talking about -- and that
16 was -- again, this is more of a research,
17 scientific project. So the distances we're talking
18 about here of 2700 feet to the nearest residence,
19 for example, and much further to the other
20 residences, given the conclusions that we've gotten
21 from the research, it didn't seem necessary at all
22 to do that.

23 Q. Do you know of anybody else who's done a 1,000-foot
24 measurement for a Gamesa 2-megawatt turbine?

1 A. For an operating wind farm you mean?

2 Q. Yes.

3 A. I'm not aware of that.

4 Q. Okay. Now, in your supplemental testimony, you
5 indicated that the worst-case sound levels for this
6 project, which assumes that every house is always
7 located directly downwind of all of the turbines
8 simultaneously, the worst case is going to be 40
9 decibels, and that that's a conservative approach
10 in your model; correct?

11 A. Correct.

12 Q. And given that conservatism and worst-case
13 scenario, why wouldn't the 40-decibel approach or
14 limit be appropriate for this facility?

15 A. Well, actually, because's there is one house that's
16 41 decibels. I think the prefiled said generally
17 less than 40. But elsewhere in the direct prefiled
18 there was one house at 41.

19 Q. Was that an actual residence, or was it a structure
20 that we don't know what it is?

21 A. From my understanding, it's an actual residence.

22 Q. Okay. And then, I guess, the obvious question is:
23 Okay, how about 41?

24 A. Well, I think if you ask any modeler -- and Ms.

1 Lewis actually asked this. There's some
2 uncertainty with any model. These are not exact.
3 They're reasonably good estimates, given what we
4 know today. So I think you need to put some
5 allowance in there. And some allowance, even at
6 45, you've got a very decent standard.

7 Q. Okay. Now, in doing your modeling at the worst
8 case, simultaneous, everything approach, did you
9 use a ground effect in the model?

10 A. We used a very limited ground effect. We used
11 what's called the alternative method. So you don't
12 take full credit for the ground absorption.

13 Q. Okay. And what's the impact of that? If you were
14 to take no ground effect, would you have higher
15 levels of sound?

16 A. There was a very good paper published by Kaliski
17 and Duncan recently which did an analysis of that,
18 and they found that the method that we used was
19 generally about within 4 percent of what they
20 measured. So, within 4 percent of actual
21 measurements, we're talking about tenths of
22 decibels here. So, yes, it's reasonably well.

23 Q. Okay. And obviously on the other end, if you used
24 a lot of ground effect, it would reduce the noise?

1 A. It would unrealistically reduce the noise by too
2 much.

3 Q. Now, I recall this from Lempster when you were
4 working for us. There was a lot of discussion
5 about ground effect and ground attenuation. And
6 what do you think, as a sort of a practical, you
7 know, common-sense approach ought to be the right
8 approach, in terms of ground effect?

9 A. I think certainly trying to take full credit for
10 ground effect, which is simply a switch in the
11 model, is not realistic. So you've got to be
12 careful about that. I think the approach that we
13 used and that other modelers used, either taking no
14 credit or this limited alternative method which
15 takes very little credit, is a reasonable way to
16 go.

17 Q. Okay. Now I want to talk about the question that
18 Ms. Lewis asked. For a while when she was asking
19 questions, I was thinking about just giving up,
20 because she really covered a lot of things very
21 well.

22 But the problem of sound is not just a
23 question of the level of the noise or the sound,
24 but it's compared to the background; correct?

1 A. Well, that --

2 Q. What you're used to.

3 A. That's probably more an issue whether -- it's
4 audibility. Can you hear it or not.

5 Q. And in your testimony -- or I don't know if it's
6 your testimony or your report -- you had a nice
7 little bar chart showing the different sound levels
8 at different places. And the 30-decibel level was
9 sort of a quiet bedroom at night.

10 A. Correct.

11 Q. Now, would you agree with me that a small increase
12 in sound level of some kind of sound that's not
13 consistent with your background is going to have an
14 annoyance factor that perhaps is greater than an
15 increase in the background of a greater measure?

16 A. There's been a lot of studies that have looked at
17 that question, particularly with wind farms. And
18 what folks seem to be learning in their research is
19 that, if people are annoyed by a source of sound,
20 wind farms or something else, they're going to --
21 whether they're annoyed by it just from a verbal
22 perspective, even, they're going to be annoyed by
23 probably any level of sound, even a smaller change
24 in sound levels. So it's not just sound that's at

1 work when someone makes a judgment of annoyance or
2 not.

3 Q. I'll give you an example. I have a next-door
4 neighbor who has a very small terrier. I like to
5 listen to music at home. So I can turn the music
6 up pretty loud, and I can still hear that terrier
7 yapping next door. Now, even though the terrier's
8 yap is not particularly loud, it cuts through
9 everything. How do you attribute -- what's -- do I
10 just not like dogs? Or is it that there was
11 something about that particular -- the sound that's
12 cutting through and interrupting what I'm doing?

13 A. In that example, it could be two things: One, you
14 know the terrier's there, and maybe you're
15 listening for it a little bit more; or there's some
16 different octave bands, a frequency thing that's
17 going on with the dog, that you're picking up that
18 frequency over the sound of whatever music you're
19 playing.

20 Q. So, could a situation like that arise, where you
21 have a person who's used to listening to the clock
22 ticking in their living room while they're going to
23 sleep at night, and then on top of that is a
24 relatively low level of sound of the wind turbine?

1 A. I mean, anything is possible. I guess, again, the
2 message here is that these levels are very low.

3 Q. Hmm-hmm. Now, in his testimony, Mr. Tocci said
4 that those who live in this area specifically for
5 its quiet character might be annoyed by the wind
6 farm noise. Do you remember that statement?

7 A. Could you tell me where that is, please?

8 Q. Page 14 of Mr. Tocci's supplemental testimony.

9 (Witness reviews document.)

10 A. I see where you are, yes.

11 Q. Okay. People who live in the area because of its
12 quiet character are going to be annoyed by a new
13 sound; correct?

14 A. Well, he says those who live in this area
15 specifically for its quiet character may be annoyed
16 by Groton Farm wind sound.

17 Q. Yeah. Do you agree with that statement?

18 A. Well, as I said, there may be folks who don't want
19 the wind farm, don't like it, don't like the look,
20 and they're going to be annoyed by it. If they
21 hear it, they may be annoyed by it. That's
22 certainly possible.

23 Q. Okay. Now, Mr. Tocci also testified that the
24 Groton Hollow background that you measured, and I

1 think he measured as well, is heavily influenced by
2 the running of water in the brook. Do you remember
3 that statement?

4 A. Yes.

5 Q. Do you expect that to be true if the brook were
6 frozen?

7 A. Well, if the brook is totally frozen, there's no
8 water flowing through it, then that sound goes
9 away.

10 Q. You weren't here yesterday. But Mr. Cherian
11 testified that, of course, the turbines are most
12 productive and most in operation and busy producing
13 power in the winter months. And is that your
14 understanding of how these projects work?

15 A. It really depends on windrose for the particular
16 site, which I have not seen. And I wasn't here
17 yesterday.

18 Q. Okay. Would you accept that Mr. Cherian said that
19 yesterday?

20 A. I believe whatever Mr. Cherian says.

21 Q. Okay. Good. I'm sure he's happy to hear that,
22 too.

23 Now, I think you had expressed a desire to
24 comment upon Mr. Tocci's testimony, and I cut off

1 your opportunity to do that. And I think you've
2 had a number of opportunities in my
3 cross-examination and Ms. Lewis's cross-examination
4 to mention things. And I think, you know, what I
5 would suggest and offer is that your observations
6 about Mr. Tocci's interpretive error on the contour
7 was correct, and he caught that himself and was
8 fixing that. Is there anything else that you want
9 to say about it or that we haven't already asked
10 you about?

11 A. In terms of that table of analysis?

12 Q. Anything. You were going to make some remarks in
13 general. Have you pretty much covered it all
14 already?

15 A. I mean, that was certainly one of the things I was
16 going to mention.

17 Two other sort of small points I think, which
18 I think Mr. Tocci said it in his testimony, so I'm
19 not going to belabor it. But it turns out that his
20 two weeks of sound measurements at the Halls Brook
21 Road and the Groton Hollow Road turned out to be
22 similar or even a little higher than the sound data
23 that we collected, even using his sort of
24 conservative calculation methodology.

1 Q. Okay. And I think what I would say, when he looked
2 at these locations -- one, two, three, four, five
3 and six -- they were all pretty consistent with
4 your own work. And that's good news. Minor or no
5 noise impact. The model computed wind farm level
6 less than 40. That's good news; right?

7 A. Yeah.

8 Q. But Ms. Lewis's campground presents a separate
9 problem, doesn't it?

10 A. I really don't think it presents a separate
11 problem, no.

12 Q. Okay. Thank you.

13 CHAIRMAN GETZ: Okay. Let's take a
14 15-minute recess, and then we'll pick up with questions
15 from the Subcommittee.

16 (Whereupon a recess was taken at 3:33
17 p.m. and the hearing resumed at 3:59
18 p.m.)

19 CHAIRMAN GETZ: All right. We're back
20 on the record and turning to the Subcommittee's questions
21 for Mr. O'Neal.

22 Questions from the Subcommittee? Mr.
23 Harrington.

24

1 INTERROGATORIES BY MR. HARRINGTON:

2 Q. I got a few questions and a couple of comments.
3 Just for the sake of clarity, I always like to do
4 this because it seems like there's been some
5 confusion in the past.

6 When you talk about different decibel levels,
7 can you explain how a decibel scale works?

8 A. Sure. Decibel scales are logarithmic. So if you
9 take two sounds of equal value, say a 30-decibel
10 sound and a 30-decibel sound, you add them
11 together, it's a 3-decibel change. So, 30 plus 30
12 is 33. If you have decibels that are 10 or more --
13 sources that are 10 or more decibels apart, like a
14 60-decibel sound and 40-decibel sound, and you add
15 them together, you still get 60. You don't get
16 100. So the louder one dominates, essentially.

17 Q. Okay. I just want to make sure we're clear on
18 that, because there seems to be some...

19 And for the sake of a reference point, what
20 would you estimate that the decibel level in the
21 room would be now?

22 A. Actually, I brought a sound-level meter with me
23 this morning just to check it and see if that
24 question ever came up. It's about -- if we're all

1 real quiet and silent and don't say anything, it's
2 about 45 decibels.

3 Q. Without any conversation going on.

4 A. With nothing going on.

5 Q. Forty-five decibels. Okay.

6 Now, I had a couple more specific questions.
7 One of the questions -- and I'm not sure of the
8 exact location. But I thought the closest house
9 was somewhere in the vicinity of 2400 feet or so.
10 Is that about right?

11 A. Twenty-seven hundred feet.

12 Q. Twenty-seven hundred feet. Do we -- I noticed that
13 was not one of the places that was picked. And the
14 Halls Brook Road was 3700 feet or 1,000 feet
15 further away, and that was leaving the change of 7
16 decibels. What would the change -- do you have any
17 estimate of what the change would have been at the
18 closer house?

19 A. The closer house would be the one due north of
20 Turbines N1 and N2. Those measurement locations,
21 like the one we picked at Halls Brook Road, are
22 meant to be representative of more than one house.
23 So we can use that measurement data for Halls Brook
24 to apply to that house that's 2700 feet away. So

1 in that case, just give me one moment and I can
2 make an estimate of that for you.

3 Q. I just -- I realize these are trying to be
4 indicative of multiple houses. But wouldn't you
5 normally pick the closest one because that's going
6 to be the one with the highest potential? Is there
7 something about the geography of the layout there
8 that it won't see the higher noise level?

9 A. Well, that's a great question. In this particular
10 case, that closest one was not accessible to us.
11 We couldn't get there.

12 Q. You needed to get permission?

13 A. Right. Right.

14 Q. All right. That's a good reason why you didn't do
15 it.

16 A. Right. No, we will not trespass. So we use a
17 representative location.

18 Let me see. Halls Brook, 39. The background
19 at Halls Brook we came up with was 39 decibels.
20 The turbine impact is 41. So, 39 plus 41 is
21 approximately 42, 42-1/2. So, be about a 3-decibel
22 change, 3-1/2-decibel change over background.

23 Q. Okay. So less than it would be at Halls Brook
24 then. What I thought you said is it would be

1 changed up to 7 decibels; right? Am I reading that
2 wrong or...

3 A. Wait a minute. Did I look at the wrong number?
4 Halls Brook. I did look at the wrong number. My
5 apologies. The background of Halls Brook, 33.
6 Turbine impact of -- turbine sound level, 41. So,
7 41 plus 33 is about 42. So, be about plus 9 in
8 that case, that one house.

9 Q. So it's approaching that scale we talked about,
10 significant increase in sound.

11 A. Well, that's not a scale that I talked about.

12 Q. Right. But there was --

13 A. Mr. Tocci talked about that, yes.

14 Q. Going to that, is that an accepted scale or --

15 A. The idea is that once you get to 10 decibels or
16 more, our ears will typically perceive that. You
17 know, it's a noticeable difference when it's a 10
18 or more change.

19 Q. Okay. And one of the other issues appears to be
20 the campground, I mean, for the obvious reason:
21 People sleeping in tents instead of in houses with
22 walls and stuff like that.

23 You had said that when the sound studies were
24 done, it was in mid-October. And I'm assuming at

1 that point that at least a good portion of the
2 foliage and most, if not all, of the insects were
3 no longer present. So how much would you estimate
4 that that would have made things quieter than it
5 would have been in the summertime, let's say?

6 A. That's another good question. It's kind of a
7 difficult one for me to answer because myself and
8 my firm didn't conduct that October study. Mr.
9 Tocci did. The leaves were actually still on the
10 trees on October 4th when the survey started. I
11 don't know if they were still on the trees two
12 weeks later when they picked up the equipment.

13 Certainly insect noise, say in July and
14 August, during the middle of the summer, other
15 sources of sound in the campground, you know, RVs
16 going and things like that, I would estimate that
17 would bump up the background, conservatively, maybe
18 5 decibels.

19 Q. So, from the low of 24.8, you would say that if it
20 was the same time in July, it would be closer to...
21 what is that when you add those two up, about?

22 A. It would be 30. Thirty, again, using the same sort
23 of scheme that Mr. Tocci used to calculate
24 background.

1 Q. And on the other hand, when you talked about the
2 lowest reading at the campground I think were
3 24.8 decibels being at times when winds were calm,
4 and you stated that the wind turbines wouldn't be
5 running -- but, in effect, that may not always be
6 true, because we put the wind turbines on the tops
7 of the hills because when it's calm, other places
8 there's wind there. So there might be sometimes
9 when the wind is 3, 4, 5 miles an hour at the
10 campground, but it was 15, 18 miles an hour on the
11 tops, and the turbines would in fact be running,
12 even though it was calm there?

13 A. I would definitely agree with that, yes.

14 Q. So there's no correlation there. Would there be
15 any way you could -- let me put it this way: Has
16 anyone done any analysis to show that, if you're in
17 the situation where at the campground you had the
18 lowest sound level because it corresponded to a
19 very low-level wind, what you'd expect the wind to
20 be at the location of the turbines during that
21 time?

22 A. We have not done that, attempted to do that kind of
23 correlation.

24 Q. So the best we could say now is there'd be times

1 when it might be calm everywhere and the turbines
2 aren't running, but there would be times when it
3 was calm at the campground and the turbines were
4 still running up on the ridge.

5 A. Right. I guess one way look to at it is sort of
6 the scenario that Mr. Tocci presents in his data
7 from the campground would be a worst case. In
8 other words, you know, those sound levels are more
9 representative when the winds are calm down in the
10 campground, as shown by the Plymouth Airport data.
11 And so, if under the worst-case scenario the
12 turbines were spinning up on the ridge, then that
13 would be the worst-case scenario.

14 Q. But I'm just trying to get a feel for this, because
15 you said the maximum noise output is 9.3 meters,
16 which is like almost 30 miles an hour, I guess. So
17 is it realistic to think that it would be calm down
18 in the valley and you have a 30-mile-an-hour wind
19 on the ridge, or is that too much of a delta?

20 A. Actually, 9.3 meters per second is closer to
21 20 miles an hour.

22 Q. Oh, meters per second. I'm sorry.

23 A. Yeah. So we're saying a 20-mile an-hour wind up on
24 the ridge, could it be calm down in the campground

1 in the valley? It's possible. It's possible.
2 Absolutely. Maybe not typical, but it's certainly
3 possible.

4 Q. Okay. I think that's all the questions I had at
5 this time.

6 CHAIRMAN GETZ: Mr. Scott.

7 INTERROGATORIES BY MR. SCOTT:

8 Q. Good afternoon.

9 A. Good afternoon.

10 Q. In your sound report, you make reference to the
11 conditions that the Site Evaluation Committee put
12 on the Lempster Wind Farm, as far as noise, the 45
13 dBA?

14 A. Yes.

15 Q. So I assume from that, you're at least somewhat
16 familiar with the certificate that we issued for
17 Lempster?

18 A. Somewhat familiar.

19 Q. Regarding noise, anyways.

20 A. Correct.

21 Q. Hopefully it's a fair question for you. Do you
22 think that 45 dBA is a reasonable restriction?

23 A. I do. I do. I think based on the work that I've
24 done on other wind farms and other things I've

1 seen, I think that's a reasonable balance between
2 being protective of residents and still allowing,
3 you know, the wind farm to operate at 45. As I
4 said, 45 is about the level in here if we're all
5 quiet. It's also the level recommended by the WHO,
6 as well.

7 Q. Okay.

8 CHAIRMAN GETZ: Mr. Steltzer.

9 MR. STELTZER: Yes.

10 INTERROGATORIES BY MR. STELTZER:

11 Q. I believe it's Exhibit 4, Appendix 35, which is
12 your study.

13 A. Okay.

14 Q. Figure 7.1. Give you a second to get there.

15 A. All set.

16 Q. I want to just get some clarification on a comment
17 I thought I heard you say, which is that the
18 numbers that are represented here were based on the
19 receptors being downwind of the noise.

20 A. That is true.

21 Q. Are you familiar -- do you know what the windrose
22 is for this project?

23 A. To be honest, I have not seen the windrose. And
24 for purposes of doing these types of analyses, not

1 to be flippant, but it doesn't matter, because we
2 assume that every location around the wind farm, it
3 could be downwind at some time or another during
4 the course of the year.

5 Q. And where I'm trying to go on this is, do you
6 have -- has there been any sort of analysis to
7 figure out what percent of the time these -- the
8 turbines would be causing some sort of an effect on
9 receptors, recognizing that if a receptor is
10 upwind, more than likely that sound isn't going to
11 be experienced at the receptor that's upwind then?
12 I don't know if I'm clear on that.

13 A. I think I understand what you're saying. You know,
14 when you look at this Figure 7-1 that's in the
15 report, the way the sound propagation standard that
16 all noise consultants use in these software
17 packages is, you know, every -- the turbine --
18 every turbine is blowing towards the receptor at a
19 given time, which is physically impossible in some
20 cases. You know, you look at this layout, and you
21 know it can't be blowing from the north and from
22 the south at the same time so that all the sound is
23 going to one location. I think to do what you're
24 suggesting or asking for, you'd have to take some

1 kind of annual windrose and then look at sort of
2 directionality of it and understand that some part
3 of the year -- and keep in mind that these are
4 worst cases, worst-case sound levels. So, even if
5 we put the directionality to it, it's not going to
6 get any higher in terms of sound levels. It would
7 get lower in the other directions. The upwind
8 direction would get lower.

9 Q. What I'm trying to get at here is that it's my
10 understanding -- and maybe I'm wrong -- but at this
11 sight, the majority of the wind is coming from the
12 northwest, and that the wind -- that the noise then
13 would be heading down in a -- towards the
14 southeast, essentially. So what I'm trying to get
15 at is, can we figure out what -- just as we know
16 that the turbines won't be making any noise when
17 there's no wind, we also know that the turbines
18 might not be making as much noise when the wind is
19 blowing from the northwest and be affecting the
20 residents in the Baker Valley. So I'm trying to
21 get a sense -- and maybe that's not the case.
22 Maybe the wind is coming from the southwest, and
23 then it would be affecting folks in the Rumney area
24 more. And that's what I'm trying to get at, is to

1 try and figure out what the percent of effect would
2 be based off of the direction of the wind for the
3 project.

4 A. Right. That's a fair question. And again, I'm not
5 the person who's responsible for the meteorological
6 tower at the site. Perhaps Ed Cherian might know
7 the answer to that. Certainly in New Hampshire, in
8 general, northwest is the predominant direction in
9 the winter months. That's, you know,
10 climatologically speaking, that is true. But I
11 can't give you the specific windrose for this site.
12 I'm sorry.

13 Q. Okay. Thank you.

14 CHAIRMAN GETZ: Other questions? Mr.
15 Dupee.

16 MR. DUPEE: Thank you, Mr. Chairman.

17 INTERROGATORIES BY MR. DUPEE:

18 Q. Good afternoon, Mr. O'Neal.

19 A. Good afternoon.

20 MR. PATCH: Mr. Chairman, I'm sorry to
21 interrupt. But in response to the last question that
22 Mr. Steltzer asked, the Applicant would be willing to
23 take a data request and provide more information about
24 the windrose for the site, if you think that would be

1 helpful.

2 MR. STELTZER: Yes. And what I'd be
3 really interested in is not just the data on the windrose
4 and where the wind is coming from, but then to make a
5 connection -- a correlation to that and the sound levels,
6 so that you can have a sense of what percent of the year,
7 or even the season, especially in Ms. Lewis's case -- you
8 know, certainly the summertime is the busier season when
9 people might be more affected -- but to get a sense of
10 how often throughout the year that that impact might
11 occur.

12 CHAIRMAN GETZ: Is that level of
13 detail feasible?

14 MR. CHERIAN: We have windrose.

15 CHAIRMAN GETZ: Well, let's do this:
16 After the hearing closes today, I just would ask counsel,
17 you know, Mr. Patch and Mr. Iacopino, perhaps speaking to
18 Mr. Steltzer to try figure out how much of this detail is
19 available and how much of that we could get into an
20 exhibit. And we would reserve Applicant 42 for this
21 exhibit.

22 (Applicant Exhibit 42 reserved.)

23 MR. ROTH: Mr. Chairman. With such an
24 exhibit, I guess that I would -- counsel for the Public

1 would want to have some opportunity to comment on it or
2 get Mr. Tocci to offer some opinion about it, because
3 it's my understanding in general that the direction of
4 the wind doesn't really matter that much, that the sound
5 is believed to propagate in all directions equally more
6 or less at the same time. And so, to the extent that
7 there is that kind of information, I'm not sure how
8 relevant or important it is, and we'd want to reserve the
9 right to make that kind of a comment about it.

10 CHAIRMAN GETZ: Well, perhaps Mr.
11 Tocci could make that kind of comment tomorrow.

12 MR. ROTH: Right, assuming we have
13 that data, that information available.

14 CHAIRMAN GETZ: Well, it sounds like
15 even in the absence of the data precisely, he'd be able
16 to offer that opinion. But let's deal with that
17 tomorrow.

18 MR. ROTH: Okay.

19 MR. STELTZER: If I may? I think it
20 would be a good question to ask both of the sound
21 experts: How does wind then affect the distribution of
22 noise across the landscape?

23 WITNESS O'NEAL: Want to take a shot
24 at it now?

1 CHAIRMAN GETZ: Yes.

2 MR. STELTZER: Yeah.

3 WITNESS O'NEAL: Like I was saying,
4 the wind directionality and speed will have an influence
5 on the proportion of time a certain sound level is
6 modeled or measured at a different location. I guess
7 what I'm saying is, and I think Mr. Roth correctly
8 stated, that the sound levels won't be any higher than
9 what you see in the report; they're only going to be
10 lower. In other words, because now you're going to start
11 taking downwind and upwind into account, so other
12 locations are going to be -- when they're upwind, the
13 sound levels will be lower.

14 CHAIRMAN GETZ: But I take it, Mr.
15 Steltzer, what your question is headed toward is to try
16 to figure out what percentage of the time during the
17 season or the year that, for instance, Ms. Lewis's
18 campground would be affected?

19 MR. STELTZER: Correct. And I was
20 making an assumption, and maybe it was a poor assumption
21 to think that I won't hear the sound as much if I'm
22 upstream from where the sound is resonating. And that's
23 where, I guess, judging from Mr. Roth's comments, maybe I
24 was making an inappropriate assumption there. And that's

1 where I was going with the second part of the question,
2 you know, is to correct my assumption if I made an
3 incorrect assumption.

4 WITNESS O'NEAL: No. If you're at a
5 location that's upwind, then the sound levels will be
6 lower.

7 MR. STELTZER: Okay. Thank you.

8 CHAIRMAN GETZ: Okay. Then I guess
9 I'd still leave it to counsel to work to see what
10 information would be available to put in Exhibit 42.

11 MR. IACOPINO: We have several things
12 to talk about, and I would ask that all parties stay
13 here, at least all the representatives of the parties
14 stay here after we adjourn for the day.

15 CHAIRMAN GETZ: Other questions. Mr.
16 Dupee.

17 MR. DUPEE: Thank you, again.

18 BY MR. DUPEE:

19 Q. Just a brief question on vibroacoustic disease on
20 Page 8 of your supplemental application. We talked
21 about the conclusions drawn from the AWEA/CanWEA
22 report. You talk about vibroacoustic disease, wind
23 turbine syndrome and visceral vibratory vestibular
24 disturbance as unproven hypotheses, not yet proved

1 by or confirmed by appropriate research studies.

2 So if I go back to the report, Page --
3 Exhibit 52, I go back and look at the section on
4 vibroacoustic disease, which is on Page 4-5, and I
5 would like you to point out to me where it talks
6 about vibroacoustic being an unproven hypothesis.
7 I don't believe I gathered that from the report.
8 If what you meant to say was that there is a dose
9 response, so that jet airplane mechanics and disc
10 jockeys demonstrate these effects, but does not
11 expect to be seen at much lower levels, that
12 would be a good clarification to make.

13 A. Okay. The quote was taken from Page 4-12 in that
14 expert report. And it looks like they list wind
15 turbine syndrome and visceral vibratory vestibular
16 disturbance. They don't list vibroacoustic
17 disease. You are correct.

18 Q. Thank you.

19 CHAIRMAN GETZ: Other questions? Dr.
20 Boisvert.

21 MR. BOISVERT: Yes.

22 INTERROGATORIES BY MR. BOISVERT:

23 Q. You mentioned, in reference to --

24 (Court Reporter interjects.)

1 Q. I'm sorry. Good afternoon. You mentioned, in
2 reference to not checking out the closest residence
3 for acoustical testing, that you couldn't get
4 there. Is that because you didn't ask permission
5 or you couldn't physically arrive?

6 A. At this point, we did not ask permission. We tried
7 to stay on lands that were accessible through the
8 Applicant.

9 Q. Why? Why wouldn't you ask to put it at the closest
10 residence? I mean, I understand sort of the
11 methodological selection of public places or
12 whatever. But why?

13 A. In the case of this particular layout, the location
14 that was accessible from an access road off Halls
15 Brook Road we felt was reasonably representative.
16 And we went in far enough off Halls Brook Road. We
17 were far enough back to replicate the same distance
18 back from the road that this particular residence
19 was at.

20 Since the wind farm doesn't exist yet, it's
21 not as important to actually be at that person's
22 house. Now, if the Committee puts
23 post-construction testing requirements on the
24 Applicant, and they have to do construction testing

1 afterwards for noise, then absolutely they would
2 have to test at that location. You would
3 definitely want that.

4 Q. So you're using proxies instead of actual locations
5 at residences.

6 A. That's correct. And that's typical and okay in
7 what we're doing here.

8 Q. Hmm. Okay.

9 CHAIRMAN GETZ: Other questions? Dr.
10 Kent.

11 INTERROGATORIES BY DR. KENT:

12 Q. If we have a wind speed of, I think you said it was
13 9.3 meters per second when we max out the noise
14 from the turbines, sound emanations? Was that
15 correct?

16 A. It's actually 9.7 meters per second.

17 Q. Okay. 9.7 meters per second.

18 A. Correct.

19 Q. So if I have a wind speed past the turbine at 9.7,
20 I've optimized the sound emanating from the
21 turbine. And if I have no wind at the Baker River
22 Campground and there's no insects and the river is
23 quiet and there's no noise in the campground, I can
24 sit quietly and I might be able to hear a turbine?

1 A. Under that scenario, it is possible that you would
2 hear the turbines, yes. They would be audible.

3 Q. If I was asleep in my tent, would it likely wake me
4 up?

5 A. Not likely.

6 Q. Are you familiar with any control studies of the
7 effects of wind turbine infrasound and
8 low-frequency sound on human health?

9 A. I can't say I'm familiar with control studies on
10 human health. I'm just pausing for a minute to see
11 if there's anything in the literature that I recall
12 reading. Certainly in terms of audibility and
13 annoyance and vibrations and rattles, those are all
14 things we've studied. And the sound levels,
15 infrasound levels from those, from turbines for
16 those levels are way below any criteria. But I
17 can't say I've seen any control studies.

18 DR. KENT: Thank you.

19 INTERROGATORIES BY CHAIRMAN GETZ:

20 Q. Let me follow up on one part of Dr. Kent's question
21 to make sure I understand kind of the link between
22 the methodology and the actual locations.

23 As I understand your description of the
24 methodology, it assumes that all receptors are

1 always downwind of all turbines.

2 A. That's correct.

3 Q. And Dr. Kent asked you the question about hearing
4 the turbine, the sound, while in the campground. I
5 mean, is that -- is that assuming -- and if I look
6 at your Figure 7-1, that map in exhibit -- or in
7 Appendix 35 to Exhibit 4 I guess it is, earlier
8 you -- and there's three strings. And earlier you
9 said that location E1 is no longer intended to be
10 part of the project. So in trying -- in answering
11 his question, are you assuming -- and let me stuff
12 in one more piece of this.

13 Looking at this, it looks like clearly at the
14 E2 turbine is the closest to the campground, as
15 opposed to W1 or N5.

16 A. Correct.

17 Q. So, are you assuming that the sound is emanating
18 from E2 in answering his question, or -- as a very
19 direct, practical matter, or are you assuming
20 something of a more general nature, that the wind
21 could come from anyplace?

22 A. I was assuming that the wind could be coming from
23 any direction. But the answer is that the sound
24 level that's computed at the campground of

1 approximately 31 to 33 decibels is made up of
2 contributions from every single turbine that's
3 shown in the map here. Now, the practical matter
4 is that Turbine E2 will contribute more than the
5 other ones because the other ones get further and
6 further away. But the software looks at every
7 single turbine and calculates whatever contribution
8 that is.

9 And keep in mind, it's tough to tell from this
10 map. Turbine E2 is more than 8,000 feet away from
11 the campground site. The scale is very small on
12 this map. It's very far.

13 CHAIRMAN GETZ: Okay. Any other
14 questions from the Subcommittee? Mr. Iacopino.

15 INTERROGATORIES BY MR. IACOPINO:

16 Q. Just what's your understanding about the closest
17 residence to -- what's the distance between the
18 closest residence and the closest turbine to that
19 residence?

20 A. Twenty-seven hundred feet.

21 Q. And where is that located on Figure 7-1?

22 A. It's if you look at the string labeled N1, N2, N3,
23 N4 and N5, it's due north of N1 and N2.

24 Q. I'm sorry. There's a little blue square there

1 within the green contour?

2 A. Correct.

3 Q. Let me ask you -- to the southeast of that, to the
4 east of the W string, there are two blue squares,
5 one on either side of Groton Hollow Road. They
6 appear to me to probably be as close, but I'm not
7 sure. Do you know what those structures are?

8 A. Yes. On Page 8-1 in the sound study report, part
9 of Appendix 35, the paragraph in the middle of the
10 page has a brief discussion about that. But
11 essentially, those are not residences, but they're
12 seasonal camps, one of which it says in here "in
13 disrepair, not used."

14 Q. But those are -- at those locations, it can be
15 expected that, at least based on the modeling that
16 you've done, that there will be between 40 -- the
17 sound level will be between 40 and 45 decibels.

18 A. Actually, we did model at those locations. And
19 those two, even though they're not used as
20 residences, they're also 41 dBA. Talked a little
21 bit about it on Page 8-1 there.

22 Q. Something that's -- and maybe this is just an
23 anomaly of your modeling. But some of your contour
24 lines -- for instance, you have sort of a couple

1 little areas just south of the diner, for instance.
2 There appears to be a small contour of purple that
3 would be in the purple contour, anyway. Why does
4 it do that? Likewise, over on the western side you
5 have these little light blue contours just within.

6 A. Right. Those are areas of just slightly lower
7 sound levels. And it's really due to the
8 topography in the area, some shielding going on
9 with the topography. So there's some localized
10 levels that are even quieter between the major
11 contours.

12 Q. And is there a general rule for that? Is it the
13 lower the elevation, the less the sound level will
14 be or --

15 A. There's sort of some shielding that goes on from
16 the elevated locations down to these more valley
17 locations. There is shielding there. We make no
18 attempt to try to smooth these out and make them
19 look pretty. There's just a very fine grid in
20 here, and that's what they calculate out to. But
21 it's mostly based on topography.

22 Q. But I guess my question is, is there a general rule
23 that in those areas where there are dips or hollow,
24 that the sound is likely to be less in those areas,

1 or is it different for each particular area?

2 A. In general, it will be less due to some shielding.
3 There's not the direct line of sight.

4 MR. IACOPINO: I don't have any other
5 questions, Mr. Chairman.

6 CHAIRMAN GETZ: Redirect?

7 MR. PATCH: We have no questions.

8 Thank you.

9 CHAIRMAN GETZ: Ms. Lewis?

10 MS. LEWIS: I wonder if I can make a
11 follow-up question based on Mr. Harrington's questioning
12 regarding the increase in the ambient sound due to, I
13 believe Mr. O'Neal answered regarding insects and moving
14 of RV trailers.

15 CHAIRMAN GETZ: Okay. Go ahead.

16 RECROSS-EXAMINATION

17 BY MS. LEWIS:

18 Q. Is it your belief that the background noise during
19 the summer would increase significantly with the
20 movement of RV trailers?

21 A. I guess what I was thinking of when Mr. Harrington
22 asked me that question was, say July and August,
23 during the middle of the summer versus early to
24 mid-October when these data were collected, I would

1 expect a little bit more insect activity, more
2 everyday RV activity and whatever associated
3 mechanical equipment people have on their RVs, and
4 just more activity. So there will be some slightly
5 higher sound levels from the campground itself due
6 to activity in the summer that, coupled with some
7 insect noise, helps raise up the background levels
8 a little bit.

9 Q. Would it then surprise you that while the actual
10 testing was being conducted, that on two separate
11 occasions, due to flooding that was occurring, that
12 every single camper from the bottom level of that
13 campground was moved, in addition to every picnic
14 table and every fire pit, by both a tractor and
15 numerous pickup trucks? Would that surprise you,
16 that that noise was in the background and reflected
17 in the studies that Mr. Tocci did?

18 A. I guess, can you tell us when that happened?

19 Q. Absolutely.

20 A. What days, what times?

21 Q. It happened -- well, I know for sure it happened
22 the --

23 CHAIRMAN GETZ: Well, I guess I was
24 going to say, can you testify to this, or is this

1 something Mr. Tocci can testify to? Are you aware of the
2 facts of how that interacted with his study? Well, I
3 mean, I'm not going to testify right now. The... well, I
4 guess I do want to get this on the record while
5 Mr. O'Neal is still here. So I guess if you just --
6 might be easier just to continue along the route you're
7 heading down. But I guess you were there with firsthand
8 knowledge --

9 MS. LEWIS: Absolutely.

10 CHAIRMAN GETZ: -- of all of this
11 activity and know what time of day the activity was
12 taking place?

13 MS. LEWIS: Absolutely. In fact, I
14 believe when Mr. O'Neal and Mr. Tocci came to the
15 campground, I explained to them that it looked a bit
16 different because we had just had to bring up everything.
17 So, once the equipment was put in place, we then had to
18 continue to move it back down into the campground. And
19 so that would have taken -- I believe they were there on
20 a Monday, and I believe it was brought back down, for the
21 most part, Wednesday and Thursday of that week. The
22 following week, or the last week that it was there, we
23 again had more of a significant flooding issue that took
24 place. And that was when the so-called Nor'easter, I

1 believe, came through. And if Mr. O'Neal can remember
2 when he took a walk in our campground, we actually
3 flooded up to the horseshoe pit area. So it was quite a
4 significant flood that took place. And that would have
5 been --

6 CHAIRMAN GETZ: Let me try to get back
7 to the point you're trying to establish. I guess you --
8 the question you wanted to ask was based on his assertion
9 about noise from RVs.

10 MS. LEWIS: Right, and --

11 CHAIRMAN GETZ: And you're taking the
12 position that when the testing was done by Mr. Tocci,
13 there was some similar kinds of noise going on because
14 tractors were moving things around?

15 MS. LEWIS: There was actually more
16 noise than normal. I mean, normally we wouldn't be
17 having every single camper being moved and every picnic
18 table and every fire pit need to be moved. So there was
19 certainly much more noise that took place.

20 CHAIRMAN GETZ: Let's get to the
21 question.

22 I guess if you would accept, subject
23 to check, that there was some other activity taking
24 place of a nature similar to RVs while Mr. Tocci was

1 doing his testing, would it affect your opinion?

2 WITNESS O'NEAL: I guess we're talking
3 about two different things. I'll certainly accept
4 whatever Ms. Lewis says. I don't doubt that there was
5 some activity.

6 I guess my whole point to Mr.
7 Harrington was, on a typical week in/week out in the
8 summer versus October, you know, July and August, you
9 know, day in and day out, he asked me what I thought the
10 background might be like. And I said a little bit
11 higher, maybe 5 decibels or so, based on the additional
12 insect activity in the summertime and, you know,
13 constant use of the campground by RVs and folks, you
14 know, every day of the week. I'm just -- maybe I'm
15 wrong. But I'm thinking the first week of October, that
16 there wasn't that level, same level of activity every
17 day of the week. That's all. That's what -- my basis
18 for the answer.

19 CHAIRMAN GETZ: Okay. And then, to
20 the extent that Mr. Tocci had something he can testify
21 with respect to that time period, then we'll deal with
22 that tomorrow.

23 MR. HARRINGTON: Just as a
24 clarification, because we kind of had testimony.

1 And could I ask you: Were they doing
2 all this movement -- was this a 24-hour, you know,
3 continuous operation, or was it done during the day?

4 MS. LEWIS: It varied. In other
5 words, it was part -- part of it was done until 4 a.m.
6 during one of the situations. The other, the second one,
7 was done more in the day, although it did go until fairly
8 late at night, but not throughout the middle of the
9 night.

10 MR. HARRINGTON: Maybe we can get the
11 specifics on that tomorrow then.

12 CHAIRMAN GETZ: Yeah. Any redirect?

13 MR. PATCH: No, thank you.

14 CHAIRMAN GETZ: All right. Then the
15 witness is excused. Thank you.

16 WITNESS O'NEAL: Thank you.

17 (WHEREUPON the witness was excused.)

18 CHAIRMAN GETZ: Okay. Then I guess
19 we'll plan to begin at 9 a.m. tomorrow. We'll start with
20 Mr. Gravel. And then we'll, depending on who's available
21 to cross-examine, we'll alternate between Mr. Gravel and
22 the panel, and then we'll work Mr. Tocci in as we can.

23 Is there anything else we need to
24 address before we close for today?

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(No verbal response)

CHAIRMAN GETZ: All right. Hearing nothing, then we're recessed until tomorrow morning at 9 a.m. Thank you.

(Hearing adjourned at 4:38 p.m.)

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C E R T I F I C A T E

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