November 1, 2010 - 1:35 p.m. Public Utilities Commission
21 South Fruit Street Suite 10
Concord, New Hampshire

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:
Chairman Thomas B. Getz (Presiding)

Robert Scott, Director
Brook Dupee, Bureau Chief
Richard Boisvert
Stephen Perry, Chief
Charles Hood, Admin. Donald Kent, Admin.
Eric Steltzer
Michael Harrington

SITE EVALUATION SUBCOMMITTEE:
N.H. Public Utilities Comm.

Air Resources Division - DES Dept. of Health \& Human Serv. N.H. Div. of Historical Res. Inland Fisheries - N.H. F\&G Dept. of Transportation Dept. of Resources \& Econ. Dev. Office of Energy \& Planning Public Utilities Commission

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Counsel for the Committee: Michael Iacopino, Esq.

ALSO PRESENT:

Counsel for the Applicant: (Groton Wind, LLC)

Counsel for the Public:

Reptg. the Town of Rumney:

Reptg. the Town of Groton:
Reptg. the Buttolph Group:

Reptg. the Mazur Group:

Susan S. Geiger, Esq. Douglas L. Patch, Esq. (Orr \& Reno)

Peter Roth, Esq.
(Sr. Asst. Atty. General) Evan Mulholland, Esq. (Asst. Atty. General) Michelle Thibodeau Spencer Culp

Bernard Waugh, Esq. (Gardner, Fulton \& Waugh)

Miles Sinclair, Selectman
James Buttolph, Intervenor Cheryl Lewis, Intervenor

Richard Wetterer, Intervenor

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PROOCEEDINGS
CHAIRMAN GETZ: Good afternoon. We're back on the record in SEC Docket 2010-01.

First, let me note -- give an opportunity -- Mr. Sinclair is here from the Town of Groton.

Did you want to make an appearance on behalf of the Town?

MR. SINCLAIR: Just basically say who I am?

CHAIRMAN GETZ: Yes.
MR. SINCLAIR: Miles Sinclair, Board of Selectmen, Town of Groton.

CHAIRMAN GETZ: Thank you.
And is there anything that we need to address before proceeding to the questions from the Subcommittee for Mr. Cherian?
(No verbal response)
CHAIRMAN GETZ: Hearing nothing, then, any questions for Mr. Cherian? Mr. Scott.

INTERROGATORIES BY MR. SCOTT:
Q. Good afternoon.
A. Good afternoon.
Q. My questions revolve around the revised
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interconnection plan.
In your prefiled testimony, you talk about a detailed interconnect study and approval by NEPOOL Reliability Committee. Do you have any idea when we'll have a little bit more definition on the interconnect?
A. On the revised feasiblity study?
Q. Yes.
A. We have been told to expect to have that in late February or mid-March.
Q. And if I could also -- so, similarly, in your testimony on Page 4 of your supplemental, you talk about the proposed alternate route along Route 25. Is that contingent upon that study, or is that independent?
A. No, that's independent of it. The study is with ISO New England and Northeast Utilities on interconnection at the 115 level; and also with that is facilities at the Beebe River substation, and whether an additional three-ring bus, for example, can be installed. The line-route work, those are routes that have been developed by the Co-Op. And so we will continue to work with them on those routes.
Q. If I could, Mr. Cherian, also, so on that proposed
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alternate route, questions were asked earlier by, $I$ think, Public Counsel, about wetlands impacts and permitting and that type of thing. So is that progressing, though? Is that a proposal before those entities now?
A. Well, we have been working with the Co-Op on that route. But as far as have they begun activities on pole sets or anchors or whether there would be any wetlands permits, not that $I$ know of. I mean, it's their poles. Normally they go through that process, but...

MR. SCOTT: Thank you.
CHAIRMAN GETZ: Other questions? Mr.
Harrington.
MR. HARRINGTON: Yeah, just a few questions.

INTERROGATORIES BY MR. HARRINGTON:
Q. So you said the system impact study won't be completed until late February or mid-March?
A. Feasibility study.
Q. Feasibility study. Okay. What about the system impact study then?
A. That would be later on in 2011, partly depending on the feasibility study.
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Q. Okay. And what are we talking about? Towards the end of the year or --
A. Their expectation was more in the summertime for that.
Q. And the SIS would be in the summer then. Okay. Do you have a capacity supply obligation in the forward capacity market?
A. No, not that I'm aware of, although we do intend to bid into it.
Q. Which year do you intend to bid in?
A. I think we just passed the year for 2012 or 2013. So, I think it was the next one coming up.
Q. So, 2014?
A. I believe they just closed for 2013.
Q. And do you know what your qualified capacity will be? Did the ISO assign you a value yet?
A. I don't know. If I hazard a guess, I think for Lempster it was 10 percent, or maybe 8 percent in the summer, eight to 10 in the winter. But I can --
Q. Okay. If you could find that, because you did state earlier that you expect your average capacity to be around 36 percent.
A. Yes.
Q. Why would you -- then we're talking quite a bit less
than that for your capacity supply obligation.
A. It's not up to us. ISO New England determines that. They only will give a certain level of capacity for certain renewables.
Q. And staying on that theme just for a second, what do you -- there's a lot of testimony in here on things that your plan would avoid. You've got your carloads of coal and all this other stuff that aren't going to be burned. That is based on that 36-percent capacity factor?
A. I have to take -- we took an action on it to go back and provide an answer on that, whether that was provided at 100 percent or factored in in that capacity.
Q. And what do you estimate your peak capacity to be? And by that, $I$ mean during peak time. Let's say one to four in the afternoons of weekdays in July and August.
A. For those specific times?
Q. Yeah.
A. I don't have those figures, off the top of my head.

In terms of when our peak capacity would be, we will be at 100 percent many times.
Q. Right. But I'm interested in -- you talk a lot about
displacing a lot of fuels, specifically fossil fuels. And my position, $I$ guess, is that if you perform like other land-based wind projects, your capacity during peak demand periods is going to be substantially lower than the 36 percent that you average. So I'd like to see what do you estimate your peak performance to be. For example: Can you give me what peak performance is at Lempster?
A. Are you asking -- you're asking about what is likely performance during when peak load is?
Q. Yes. Yes. So, from, like I said, one to four, two to four in the afternoons during weekdays.
A. It will vary widely, depending on the wind.

Generally from the fall into early spring we generate high levels of power, and winds are generally good. In the summertimes, it's going to be lower. June, July, August.
Q. That's what I'm trying to find out.
A. June, July, August, during peak afternoon periods in the summer, I would expect that our capacity would be quite a bit lower.

CHAIRMAN GETZ: Do you have a profile
of --
WITNESS CHERIAN: I don't have that.
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I think -- I mean, that's information we do have. It's proprietary, but...

CHAIRMAN GETZ: We could make that -Mr. Harrington, would you like to see that information?

MR. HARRINGTON: Yeah, please.
CHAIRMAN GETZ: Well, let's make that, then, part of the answer that's already coming in as Exhibit 33. So it will be a little more expansive with respect to capacity factors. And to the extent you're seeking confidentiality for that, make that request with the -- well, I assume there will be a request, Ms. Geiger, for confidentiality of that information?

MS. GEIGER: That's correct.
MR. ROTH: Mr. Chairman, if I may interrupt for a second on that issue? My office, Counsel for the Public, has in the past been granted full access to confidential documents that the Committee gets without having to enter into a confidentiality agreement or anything like that with the Applicant. We've had some discussion about that in the past during this case with the Applicant. But so far, what their response has been, "It's
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confidential, we're not going to give it to you," or "It's irrelevant." So I guess I would like to take this opportunity to ask them to go on the record saying that they are going to provide that information to us along the same terms as they provide it to the Committee.

MS. GEIGER: I think, Attorney Roth -correct me if I'm wrong -- but I believe in response to some technical session data requests this summer, we did make some information available to you, to your office, with the understanding that you would maintain it confidential. I think it was wind data. Is that right?

MR. ROTH: Right. And I was just looking at the response. And the written response is, "It's confidential. We're not going to give it to you." And it's constantly --
(Court Reporter interjects.)
CHAIRMAN GETZ: Well, let's address the issue of confidentiality this way: At a break, I'd ask counsel, Mr . Iacopino, to work with the parties. My inclination and understanding of this type of material, it's been -- it is proprietary and probably merits confidential treatment. To the
extent parties are going to get it or not, the attorneys or part of the Department of Justice may need a confidentiality agreement. So I'd just ask Mr. Iacopino to work with all of the parties to see if we get an agreement on a procedure on who gets confidential information and how it will be handled.

MR. ROTH: Thank you.
MR. HARRINGTON: Just a couple more questions.

BY MR. HARRINGTON :
Q. The decommissioning fund agreement that's in your draft agreement provided with Groton, do you have an expected date when that will be finalized?
A. I'm looking at Mr. Sinclair. I would say within 30 days.
Q. Okay. And I'll probably get the name of this department wrong. But there was some filing that was rejected by historical -- anyone help me out here? CHAIRMAN GETZ: Division of Historic Resources.

MR. HARRINGTON: Right.
BY MR. HARRINGTON :
Q. They said that was not complete, and it was returned, basically. When do you expect to have that completed
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with whatever is missing on it and sent back in?
A. I think Dr. Luhman's going to address that since she's the person who's been working on those issues.
Q. Okay. And on the new line, there's going to be, you said, probably no more than 200 feet of new 115 kV line.

Now, you also mentioned something about easements there. Are these new easements or -'cause I thought you were saying they were going to go on existing poles, and then you were talking about H-poles, which probably aren't there if it's a new line. So can you just explain that a little bit?
A. Yes. There's three different aspects of this -there may have been confusion -- discussion of the line. One is a short portion from the site to Route 25 that we're looking into as a result of concerns that were expressed by folks in Rumney and by the Co-Op about coming down Groton Hollow Road.
Q. Excuse me. So you are or are not coming down Groton Hollow Road?
A. We are -- well, our alternative does not go down Groton Hollow Road, the alternative we submitted in the supplemental. That's one portion. Now --
Q. Let's just stick with that for a second.
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A. Yes.
Q. Do you have the easements that you need to run that line? Because if you're not going down the road, I suppose there'd have to be new easements.
A. Yes. They're not completed yet.
Q. Okay. Do you have a date for that or estimate?
A. I would say probably within 60 days.
Q. And then go ahead with the rest of it then.
A. So that's, you know, one portion of the line. And it's, again, at distribution 34.5. Once it gets to Route 25, we are a pole attacher on Co-Op poles from there to Beebe River Substation, or in that area.
Q. So, no easements would be needed there.
A. That's correct.
Q. Okay.
A. Then, either within or with some other land that we would acquire in the area of Beebe River Substation is where we would put the step-up voltage facility. And that would be a piece of land that would abut the existing 115 private-way corridor that runs through the state.
Q. So, that 200 feet you're talking about would be connected from the step-up transformer to the existing 115 line?
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A. Yes, sir.
Q. And that would require new easements as well then, or purchased land?
A. Yes.
Q. And again, those haven't been done yet?
A. No.
Q. Okay. Do you anticipate finalizing the SIS before you do that so --
A. I think we would finalize the feasibility study. And the feasibility study is studying an alternative that had already been studied, so we don't expect to find any surprise there. It's an alternative that was proposed by Northeast Utilities. So, presumably, they're most comfortable with that or more comfortable with that. So I would anticipate that we would move forward with -- once we have the feasibility study, because that's going to determine, hopefully, which of those step-up facilities or ring bus can be located in Beebe River Substation; and if there's not enough room, then where else can we go.
Q. And so you would anticipate -- we're talking here sometime in the early spring then, trying to attain the easements at that time.
A. Yes.
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Q. Now, is that -- you mentioned that was studied before. Is that one of the six proposals that was in the original submittal that came with the prefiled stuff?
A. The original proposed feasibility study was in June of 2008, and it looked at interconnection at 230 kV , at 115, and at 34.5.
Q. Do we have copies of that?
A. Don't know. It's a document with ISO New England and NU and Groton Wind. I don't know if we submitted that.
Q. Well, maybe, if you're saying that that contains the basic idea of what you're going to propose now to be actually done, it would be helpful if we did have a copy of that to at least give us something better to deal with than what we have right now, which is nothing.
A. Well, it's an initial feasibility study to look at the universe of potential ways to interconnect the project. From that, we amended the feasiblity study to focus on the 34.5 kV option. And that's what came out, with a number of five or six different options, five or six different ways to connect at 34.5.
Q. Just one last question. I'm sorry for repeating
this. I didn't write down your answer. The historical, the department of historical sites or whatever, when did you think you were going to be re-filing with them? That was the document --
A. I'm going to let Dr. Luhman answer. I don't think we're re-filing. I think it's a question of formatting of data information.

MR. HARRINGTON: That's all I have.
CHAIRMAN GETZ: Thank you.
Mr. Boisvert.
INTERROGATORIES BY MR. BOISVERT:
Q. In regards to the Route 25 portion, the upgrades there, will the Groton Wind Project be paying for the upgrades? Who has financial responsibility for upgrades on the Route 25 portion?
A. We do.
Q. So you would be paying for it?
A. Yes.
Q. And will you be including that area in additional historic resources surveys?
A. I'll let Dr. Luhman answer that. Again, we're an attacher to Co-Op poles. So I'm not exactly sure how that works. I'll let Dr . Luhman address that when she comes up.
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Q. Okay. And same question at the substation.
A. And the same answer for the substation. I'll let her address that as well. I'm not that well versed in those areas.

CHAIRMAN GETZ: Other questions?
Mr. Hood?
INTERROGATORIES BY MR. HOOD:
Q. I have a follow-up to this morning's talk about the restoration of any of the public roads that went on -- that got damaged during construction or hauling any of the equipment getting these facilities up.

I assume that would be the same for any driveways or things along the side that happened to get damaged as a result of any of this work; you'd put them back to kind of a pre-existing condition if they got damaged as well?
A. Yes. And we're going to have a letter of creditor bond with the Town of Rumney that will be released only upon inspection of roads and acceptance by the road agent in the town when we're done with construction.
Q. And I also had the question -- you're going to be doing some blasting. If you get complaints later on from private owners or anything about they have
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cracks in their foundation or cracks in their driveways now, or interior walls got damaged somehow, how would you plan to respond to those? Or how would you check to see whether you felt your guys were responsible for the damage or not, and how would you, I guess, compensate them for it?
A. Well, we have, first of all, to hire a licensed, experienced blasting company for any blasting, you know, companies that are familiar with and have experience with regulations which require response to any and all complaints, seismology, that type of data. I know we had one or two complaints on the Lempster project, followed up with a formal paper report on each of them. So we're definitely going to address any complaints, if there are any.
Q. Thank you.

CHAIRMAN GETZ: Dr. Kent.
INTERROGATORIES BY DR. KENT:
Q. Earlier this morning, Mr. Cherian, you spoke about bringing Rumney emergency personnel to Lempster. Was that for observation by the Rumney people, or was that a workshop of some kind or training?
A. Maybe a little bit of both. It coincided with an annual review with the Town of Lempster Fire
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Department, all right, because over a couple years you have a couple different personnel. And so we invited Rumney Fire and EMS up there to participate at the same time. And it was a review of equipment, safety procedures, the operations of maintenance of the building, review of all the fire safety and safety manuals, going inside of one of the turbines and some follow-up documentation.
Q. Was that visit at that time or shortly thereafter -did that lead to an agreement with Rumney on emergency issues?
A. I think it was independent of the agreement. But I had offered, some time back, to Rumney Fire to come up to Lempster and do a review for themselves. So it may have contributed to it, but it was independent of the agreement.
Q. So at this point, Rumney is comfortable with the emergency procedures?
A. Yes, I believe so.
Q. The interconnection, $I$ am curious about the impetus.

What was the reason for moving?
A. For moving the route?
Q. Yes, coming off the project property.
A. Two reasons. It was not what we wanted to do, but
there was two major reasons for that. We've had a lot of meetings in the Town of Rumney. And both residents in Rumney, as well as the board of selectmen, have indicated a strong preference to not run lines down Quincy Road, which was our original proposal. So, you know, we've heard those complaints.

Another important part of it is New Hampshire Electric Co-Op, which owns the poles along Groton Hollow Road, was unable to find full documentation for easements for those poles and anchors. They found some, but not all. So there was, I guess, murky history of those poles, since they predated the creation of the Co-Op. They had, therefore, also recommended we acquire easements to come off the property to get to Route 25 and had originally contacted a few landowners to inquire about their interest in easements and passed that information on to us. So those two reasons are the reasons for the change in the proposed route.
Q. Did I understand that you said the new poles were not your responsibility, but New England Co-Op's?
A. Once we get to Route 25, we will be attaching onto Co-Op poles.
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Q. But what's on your property, they're your poles.
A. Yes, sir.
Q. Correct. So you'd be responsible for any environmental, historic work?
A. Yes, we would.
Q. So we will be seeing that material at some point?
A. Yes. It is possible that those poles would later become Co-Op property, but it's not something we're proposing at this time.
Q. Are you replacing culverts on Groton Hill Road -Groton Hollow Road? Excuse me.
A. Not on the public portion, no.
Q. So the work you're doing in response to DES is up on the private section of that road?
A. Yes.
Q. Okay. Thank you. And on Groton Hollow Road, do you anticipate having to trim any limbs on trees to get your heavy loads through?
A. No, we don't anticipate that now.
Q. Thank you.

CHAIRMAN GETZ: Dr. Boisvert.
INTERROGATORIES BY DR. BOISVERT:
Q. Quick follow-up regarding questions about damage on the private property. I'm a little unclear in your
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response. You said you'd hire experts in blasting and so forth. And there's also the question I've heard at the public hearing about just the vibrations from passing trucks and so forth. If there is a claim made for damage to private property, what will the response be?
A. I'll give you, I guess, an example from the Lempster project and the state regulations, as I understand them. One is that there was a blasting plan that's required that gets approved by the state. And I believe it's required to be submitted to the Town of Groton under a draft agreement. Second is advanced notice that we have to put into the newspapers of the blasting contractor, to inform people in the area of blasting and what the whistle tones are going to be. Those also include in those announcements phone numbers where someone can call. When a complaint is filed or somebody calls, then the blasting contractor has an obligation within a certain number of hours to respond with a site visit to that person's house and inspect and eventually write a report.
Q. But my question is, if there is damage, what will happen?
A. They are responsible to pay damages if there is
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damage.
Q. So it's the subcontractor that carries the burden.
A. Yes. It's something we impose in the contract.
Q. You say a certain number of hours. Is this like 12 hours, 48 hours?
A. I don't know what the state regulation is, right offhand. But it requires that it can't be, you know, a month later or something like that. There's an initial response requirement. I can say 48 hours, but I don't know exactly. I have to look up the regulation.
Q. Okay.

CHAIRMAN GETZ: Other questions?
Mr. Steltzer.
INTERROGATORIES BY MR. STELTZER:
Q. Yes, you mentioned that in your background that you are the project manager for Iberdrola Renewable in New England. How many projects have you overseen in that position?
A. I've been with Iberdrola for three years, and I've worked on the Lempster project and this one. And we have some early-stage projects elsewhere in New England.
Q. And prior to your time there, what -- could you just
elaborate a little bit more on your experience in developing other wind projects.
A. Prior to working for Iberdrola, I worked for an engineering company in Manchester and worked on a number of wind projects in New England. I worked on wind projects in Texas. And I worked on a number of hydro projects, some in Oregon and California and a number of other states.
Q. Based on your experience there, could you shed some light to the Subcommittee about the potential risk there is of fire from wind turbines?
A. Well, I can tell you that we have, I think, some 1,000 wind turbines in operation in the U.S. And, you know, safety of our equipment and personnel is, you know, the most important element of running a wind farm for us. From my knowledge, there is minimal risk of fire because of the number of back-up systems, redundant safety systems. I think for more detailed information, I think our witness, Mr. Devlin, tomorrow can give you more information, since he's the head of operations for us for all of our wind farms.
Q. Regarding the comments by -- about the oil and how much oil is contained within these turbines, do you
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have information on either the quantity or what type of oil it is? It's my understanding that it might potentially be a mineral-type oil.
A. I know that at least one of those answers is in the original application, as far as the quantity. I think we can look that up while here. It is a transformer oil that is --

WITNESS CHERIAN: Thank you.
A. Quoting from Volume 1 of the application, Section E.6.b, "The only potentially hazardous materials on the site include approximately 155 gallons of hydraulic and lubricating oils stored in the south... approximately 116 gallons stored in the grounding transformer..."
Q. And that is per turbine then?
A. Yes.
Q. And what safety measures have you done to incorporate it into the project to ensure that that oil is contained in case any sort of spill occurs?
A. The project is required to have a federal permit, under EPA. It's the Spill Prevention, Control and Countermeasure, or SPCC plan. That's required to be submitted to the EPA, as we have one for the Lempster project. SPCC plan will describe what are the risks, \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
what are the hazardous materials, what are the management approaches, what are the vectors for contamination if there was a spill, and what are the secondary containment measures, and what are the emergency-response arrangements that are in place. So the SPCC plan, as described in the application will be submitted to the EPA as part of the facility. In your experience with past projects that you've developed, have there been conditions that you've put into an agreement with other municipalities about additional support for fire suppression in case there were to be a fire?
A. Not in my experience. There's never been a need. One is that the systems are internationally certified. They come with their own fire-suppression systems and alarm systems and back-up systems. And there's not that much of a threat or risk they bring. So I'm not familiar with any requirement to have additional equipment provided.
Q. To your knowledge, do those international standards meet the building codes for -- that are being enforced in the state of New Hampshire for fire suppression?
A. I don't know the answer to that, off the top of my \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
head. I do know that we've had -- and I think Mr. Devlin will speak more to this tomorrow. But we did have some gentleman from the New Hampshire Fire Marshal's Office at Lempster recently for a review of the safety and fire systems there, as well as for the safety certification and design certification documents. And I think Mr. Devlin will speak to that more tomorrow.
Q. Okay. Thank you.

CHAIRMAN GETZ: Thank you. Mr. Dupee, did you have questions?

MR. DUPEE: Just one question.
INTERROGATORIES BY MR. DUPEE:
Q. Can you tell me why you chose to go -- downgrade a $34-1 / 2 \mathrm{kV}$ line to 112,115 ?
A. It was not by choice. We wanted to go by 34.5 because we know that the cables can do it. We've had other projects that size. And it would be less expensive. 34.5 had been reviewed initially by Public Service of New Hampshire and found to be feasible. In fact, there were some five or six alternatives that were described by them of different ways to interconnect 34.5 to either Ashland or Beebe substations.
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Subsequent to that, we were informed that PSNH had done some additional internal studies, and they had concerns that interconnecting 48 megawatts at 34.5 as a direct interconnection -- they had concerns about that, putting that much power that's variable into a distribution substation.

So we spent some number of months trying to identify and discuss and address those concerns, and ultimately made the decision to just refile per their recommendation to connect at 113.
Q. Thank you.

CHAIRMAN GETZ: Mr. Scott.
INTERROGATORIES BY MR. SCOTT:
Q. Hello, again.
A. Hello.
Q. Obviously, the Site Evaluation Committee has some experience, as obviously you do, with the Lempster Wind Farm; and as such, a lot of the Subcommittee has sat through those hearings also.

On the Lempster Wind Farm, would you consider that a success, as far as the company --
A. Yes. Absolutely.
Q. With that, are there any -- obviously, I assume, just like anything else, you do something once, you have \{SEC 2010-01\}[DAY 1 AFTERNOON SESSION]\{11-01-10\}
lessons learned and then you move forward and incorporate those.

Is there anything different that you expect to see moving forward, assuming you move ahead with this project, as far as construction or operation?
A. Different than Lempster?
Q. Yes.
A. Well, Lempster we were able to build in one year, working through the winter. And I'm not sure we'll be able to do that for this project, just given by the size and some portion of the roads that are more complex. We have an existing main stem road that's at this project that's a logging road. So that helps. But it being two ridges instead of one, it makes for a longer construction timeline.

I think there's a number of lessons from Lempster that's going to help when we build, if we build Groton. And a lot of that is because Lempster was the first wind farm built in the state, so there was not a lot of contractor experience. I think some of the time and technical expertise we invested in our local contractors in Lempster are going to help us on this project.

I think besides that, you know, we've gone
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through this process before with DOT on hauling permits, on working with local fire departments. So, you know, I think we have established a reputation and a working project that has been a success that has helped us on this. For example: By bringing the fire marshal and the Rumney Fire Department up there, that's been a benefit. We think it's a learning model that's helped us during Groton.
Q. If memory serves me, the Committee spent a lot of time on noise issues during the hearings for Lempster. Has that been an issue? Has noise been an issue at Lempster?
A. No, it hasn't.
Q. And similarly, I'm looking at the Groton -- the proposed Groton agreement. I understand it's not done yet. And there's some conditions regarding noise at residences and that type of thing. I can give you a cite if you want.
A. No, I have it here.
Q. But my short question would be, if -- what happens if the noise criteria there are exceeded? I don't really see that in your proposed agreement. What are the ramifications?
A. I believe the agreement requires us to respond to
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complaints, report them to the board of selectmen. I assume they will ask that this agreement become part of our permit, which would mean it would be a state requirement; so the Committee could get involved at any time in a complaint about noise or any other issue.
Q. And again, I'm looking at Page 9 at the bottom, Section 11. Thank you.

CHAIRMAN GETZ: Thank you. Other questions? Mr. Steltzer.

MR. STELTZER: Yeah, one other question along those lines.

INTERROGATORIES BY MR. STELTZER:
Q. Am I correct in understanding that the proximity of residents on the Groton project has more homes that are closer compared to the Lempster project?
A. No, it's not correct. The closest home in the Lempster project I think is about 1300 feet, and the closest in Groton is I think more than twice that. I think it's 2700 feet.
Q. And some of my question was around the sheer quantity of residents around the project and whether there were more homes in the Groton project that were in closer proximity than the Lempster project, not just
an individual home.
A. I guess if you looked at, you know, a 5-mile radius, there's more people that live within 5 miles of a turbine in Groton than within 5 miles of a turbine in Lempster.
Q. Thank you.

CHAIRMAN GETZ: Mr. Scott.
INTERROGATORIES BY MR. SCOTT:
Q. Sorry. I promise this is my last one.

Also during the Lempster hearings, we talked quite a bit about the possibility of ice throws and that type of thing. Again, I'm looking at the proposed Groton agreement. You do have a requirement for fencing, $I$ believe, and gating. Are there any -in your experience with the Lempster wind farm, have there been issues with ice throws? If so, the distances of ice throws --
A. There have not been issues with ice throws that I've heard of. In any ice storm, there's ice sloughs off of the blades. The Town of Lempster asked us to install signs, because there are people that go around the gates and take sleds up, whatever. But I've not heard of any issues or any problems.
Q. Thank you.
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## CHAIRMAN GETZ: Dr. Boisvert.

INTERROGATORIES BY MR. BOISVERT:
Q. Real quickly. When I asked you about the damage to private property, you answered in regard to blasting. I just realized you didn't address the question regarding vibration from trucks and similar kinds of potential damage to private property.
A. I guess I haven't heard of situations like that. But, you know, I'll add to that to clarify.

If there was damage to a person's house as a direct result of vibrations from trucks working on our project, then we would mitigate or compensate for that. Groton Hollow Road is used on a daily basis by heavy trucks, logging trucks. And there used to be gravel trucks came through there as well. So I think we'll be adding, certainly, to that volume for a short period of time.

CHAIRMAN GETZ: Other questions? Mr. Iacopino.

MR. IACOPINO: Thank you.
INTERROGATORIES BY MR. IACOPINO:
Q. Mr. Cherian, I just want to follow up on one of the questions you were asked before from the other side of the room.
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Have you had to modify -- in Lempster, have you had to make any of the modifications with air conditioning or whole-house fans that are part of the conditions of that certificate?
A. No, we haven't.
Q. Okay. And in Lempster, does the Lempster facility comply with the National Fire Code, NFPA 850, which, as I understand it, governs generation of electricity?
A. I don't know that fire code myself. I think that's a question for Mr . Devlin tomorrow.
Q. Okay. The other question $I$ have is about the proposed alternate route that is now contained in your supplemental prefiled testimony at Page 4.

From hearing the conversation here today, I'm sort of getting the impression that that's becoming the preferred route. Which route is the preferred route from the Applicant? To go down Groton Hollow Road or to use this alternate route that is off of Groton Hollow Road?
A. We would prefer to go down Groton Hollow Road because it would be cheaper and easier. It's existing poles. They might have to be replaced, but it's an existing right-of-way. The alternative is at the strong
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suggestion of numerous people in Rumney and New Hampshire Co-Op.
Q. Do you believe the alternate route is consistent with Section 2.10 of the agreement with the Town of Rumney? I'll give you a copy right here.
A. Yes.
Q. The way that $I$ read that, it sort of requires you to come off of Groton Hollow Road.
A. It does appear like that. And Mr. Waugh's not here anymore. The purpose of that section is the Town wanted to express -- wanted to have in the agreement that they opposed our proposed use of Quincy Road. It certainly was not to encourage us to come down Groton Hollow Road. Because we held a meeting with the board of selectmen and the residents of Groton Hollow Road, and that issue, among others, was discussed.
Q. Why didn't this just say that the power lines will not go down Quincy Road then?
A. They had asked us for a statement that says power lines will not go on Quincy Road. But until the Co-Op is done the work, the line planning, there could be reasons for -- technical reasons that becomes infeasible. So we didn't want to be in a
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position where we had a certificate, potentially, and no way to get the power to the substation because of one route or the other being considered infeasible. The Co-Op originally came up with at least seven or eight different proposed routes that they developed, Quincy Road being one of them, Route 25 being another one. So we kind of went from one of their six or seven alternatives to another -- or includes another.
Q. Switch gears a little bit with you here. What exactly were the studies that Public Service did that caused them to come back to you and say that you -that they did not want you to interconnect with 34.5 kV ?
A. They are internal studies that we have not -- that have not been made available to us. All we were told is that there was concern about that amount of power at that voltage and that it was -- it exceeded the most -- the highest amount that they had interconnected, 34.5.
Q. And when is the first time that Public Service expressed any reservations about connecting at 34.5 kV ?
A. They first -- well, they expressed a preference for 115 sometime over the summer, all right. So it had \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
been studied. And they produced their report, which I think is in the application, in September, which identified four or five ways in which we could connect at 34.5. And $I$ don't know the exact date when that came out, all right. We did spend a number of months trying to work with PSNH. And at some point we informally got involved with the Public Utility Commission to try and understand what were the technical concerns, because we had planned and submitted to interconnect at 34.5 and were led to believe it was technically feasible. So it was a concern of ours as well. But those studies we were told were internal studies, and we do not have copies of them.
Q. Are you aware of any other reason, other than these internal studies that you've not had access to, that Public Service has expressed any reluctance to connect at $35-$ - 34.5 ?
A. No.
Q. Who did you -- you say you met with folks from the Public Utilities Commission. Was that just in an informal manner, or was that in the context of some formal docket?
A. It was informal. And our goal was to obtain a copy
of the study or studies. Normally, if technical concerns are raised, parties will evaluate those concerns and see whether they can be addressed through additional equipment or upgrades, or whether they are insurmountable. So we didn't feel we had the ability to evaluate those concerns because it was just stated as, no, you cannot do this, when previously it was judged to be feasible.
Q. Let me ask you this: The step-up transformer that you would have to construct to interconnect at 115 kV , can you please tell the Committee the size and the dimensions of that type of structure?
A. I don't have it, off the top of my head. That might be one I can follow up, as far as what it might look like. It depends on whether it includes a three-ring bus or just the voltage step-up. There's two different pieces of the interconnection.
Q. Do you know what the size of each of those might be?
A. I don't. I would guess if the two of them were together, as far as the footprint, it would be, you know, an acre or so footprint. Then you add in, typically, fencing and gravel or grass around it.
Q. And when you say "an acre," is there an actual building inside this footprint, or are these just big
pieces of equipment?
A. Oh, it's pieces of equipment. There's no building. CHAIRMAN GETZ: Mr. Iacopino, do you suggest an exhibit for --

MR. IACOPINO: Yeah, I would. If the Committee would like to obtain the size and dimensions of the proposed step-up transformer facility, I think that would be a good request for the Committee to make.

CHAIRMAN GETZ: Then let's hold Exhibit 35. And also include with that some specifications with respect to the H-frame poles and other information about the 115 kV line.
(Applicant's Exhibit 35 reserved.) So, other questions, Mr. Iacopino?

MR. IACOPINO: I have one other line of questioning, Mr. Chairman.

BY MR. IACOPINO:
Q. I want to go back now to the alternate route, the alternate to Groton Hollow Road to get down to Route 25.

How many landowners would be involved in obtaining easements to run that particular route?
A. Two .
Q. Do you know who they are?
A. Yes.
Q. Are they people who are already involved in the project?
A. No.
Q. How many total landowners are you involved with for the entire project site?
A. Including those potential easements?
Q. No, just -- actually, let me limit it to the already defined site, not the alternate route.
A. Three.
Q. Okay. Who are they?
A. The three landowners are: Green Acre Woodlands, then Yankee Forest and the Smith Family.
Q. And who are the two landowners, if you choose to go the alternate route and not go down Groton Hollow Road?
A. Well, since the easements are not completed, I'd rather, you know, keep that information confidential.
Q. Okay. But you provided us with a diagram that shows where it's going to go. I mean, the ownership of land is public record.
A. One is a family called Sheehan, and the other family name is Langford.
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Q. And have you already commenced speaking with them about the possibility of obtaining easements?
A. Yes.
Q. If you have to interconnect at 115 kV , if that turns out to be what your studies wind up showing and what Public Service requires, other than obtaining easements if you need to go the alternate route, and identifying the exact geographic location of your step-up transformer, is there any other major construction work or permitting work that needs to be done?
A. No.
Q. Have you entered into negotiations with any owners of property for the possible location of your step-up transformer?
A. Yes.
Q. And has -- I just want to back up a minute.

Has Public Service totally ruled out
interconnecting at the Beebe station at 115?
A. At 115?
Q. Yes.
A. No.
Q. Okay. So it's still possible that you might just use their site.
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A. That's right.
Q. Are you getting resistance on that idea from Public Service?
A. Initially, they did not think there was enough room. In the last conference call that was held, they seemed more open to the idea. Part of the current feasibility study is to evaluate the Beebe Substation.
Q. At the beginning of this proceeding, the Chairman laid out some possible things that this Committee could do, given the fact that your interconnection and the actual group of your, whether it be distribution or transmission line, seems to be in some question, given the re-filing of a request for a feasibility study. Does the Applicant have a particular preference as to which of those options it would like to see the Committee undertake?
A. Well, I think and hope we will demonstrate through the course of this week that we provided as much information as we're able to at this time. The interconnection process is always iterative. It rarely is a hundred-percent nailed down, and often there's major portions of it that are still being negotiated. The Lempster interconnection agreement
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was six or eight months after the Committee approved the project, and there was a lot of details that were discussed, including details on substation upgrades, after the certificate was completed. And that's just a reflection that ISO New England moves at their own pace. And there was a lot of other studies.

We would have preferred to not have to re-file the feasibility study, because we not only wasted the money we paid for the earlier one, but it set us back quite a bit on the schedule. And we had gone forward and submitted our application on 34.5 because reports that we saw said that was feasible. So, you know, it's been difficult for us as well. However, a 115 interconnect has been studied already. It's considered to be feasible. Doesn't mean that the full facility study and the SIS is done yet. But that was encouraged by Northeast Utilities/PSNH, so that makes us optimistic that that could be done. I don't feel that there's inadequate information because -- except for adjustment in the route of 20 poles or so. The route is essentially the same to get to the Beebe area, and it is still going to be an attachment onto current utility poles.

Our purpose in adjusting the route to get to

Route 25 was, again, not our preference, but it's to be responsive to a lot of comments received from folks in Rumney, from expectations and demands from the Rumney Board of Selectmen and from -- and from guidance from the Co-Op, who are the ones that initiated easement discussion with other landowners. But let me ask you this question, though, from the Committee's standpoint: How is it that you would recommend that the Committee study the impacts, whether they be environmental, historic sites, or any other of the statutory impacts that the Committee is required to study, when we don't really know whether you will be using this alternate route that -- even though it only requires 20 poles, it goes through untouched, all greenfield. It's all new construction; correct? How would you suggest that the Committee exercise its duty to study the environmental and other impacts of that route, as well as the environmental and other impacts, including historic sites and whatnot, for the new step-up transformer station that you may be required to build? How can the Committee do that without knowing where these things are going to be? And what would be your recommendation to the Committee on how
to deal with that, understanding their statutory obligation?
A. Well, 1 think in terms of the new poles along easements, we have the responsibility to provide that information to the Committee on what wetlands or wildlife impacts there may be, if any, and what, if any, cultural or historic resources may exist there. In terms of the substation, the voltage step-up facility, we're not going to be the owner of that. So it's a little bit -- I don't know the ins and outs of the regulation on it. We will be paying for its construction, but we probably will not be overseeing its construction, and we will probably not own it. We will be -- we'll have to pay for the construction of it for Northeast Utilities. And I would assume that local permitting would be used for wetlands or zoning or what have you. But it's not our facility to own.
Q. So I take it by your answer, you feel that your -that this application is still ready for complete review by the Site Evaluation Committee?
A. Yes, sir.
Q. I don't have any further questions.

CHAIRMAN GETZ: Other questions?
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(No verbal response)
CHAIRMAN GETZ: I have a couple of follow-ups, Mr. Cherian.

## INTERROGATORIES BY CHAIRMAN GETZ:

Q. First, Mr. Roth asked you some questions about the agreement with the Town of Rumney, and specifically Section 7.5. Do you have that?
A. Yes.
Q. And the section says, "Construction and repair work on Groton Hollow Road shall not result in the widening of the existing traveled way of said road." But then there's a proviso about "may authorize such temporary measures." And perhaps he was pursuing what may be an ambiguity in the language, whether it means it shall not result in the temporary widening of the -- or it may be permissible to have a temporary widening, but may not result in a permanent widening.

But two things: One, as I understood you to say, you didn't expect even there to be a temporary widening?
A. That's right.
Q. And there was a question about potential fill, I believe. Is that the gravel fill? Is that your
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recollection from the questions?
A. I think that was an example. I think he asked what would be a temporary -- what would be a temporary change.
Q. Okay. Did you have any particular location in mind --
A. No.
Q. -- where there might be --
A. We don't anticipate any work on the road at all. The question, as I remember it, was what would be -- what is a temporary -- what is a temporary measure? What would that mean? And I said an example we could give that we had at Lempster was a gravel fill on the inside of a turn on a public road that was there temporarily during construction and then taken out.
Q. And that would be more than might support the integrity of the road itself, but it would actually be raising the road potentially, as a hypothetical?
A. No. The example I gave was on a corner that's off the travel route. Because of the length of trucks that cut across that corner, is to fill a corner with gravel, but not to change the roadbed itself.

One of the requirements in here is to have a
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third-party engineering firm evaluate the condition of the road as it is. They could find that there were some culverts ready to fail, and so we would end up having to address those, you know, if they're further impacted. That's part of the agreement with the Town of Rumney, is to evaluate the road in its current condition and then after construction is done.
Q. Okay. And then the other thing was responding to Mr . Iacopino about the 34.5 kV to 115 kV issue with PSNH. You indicated that you had met with the Public Utilities Commission. And let's clarify that. You didn't meet with the any of the three commissioners; is that correct?
A. Yes, I'll clarify that. Correct. We met with Public Utility Commission Staff --
Q. In the Electric Division?
A. -- and the Public Utility Commission Attorney in the Electric Division, yes, just to ask them to serve as facilitators because we -- for communication between Groton Wind and Public Service New Hampshire on this issue of interconnection at 34.5. We did not file a complaint. It was to get kind of third-party assistance.
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Okay. All right. Any further questions from the Subcommittee?
(No verbal response)
CHAIRMAN GETZ: Hearing nothing, then any redirect? Ms. Geiger.

MS. GEIGER: Yes. Mr. chairman, could I just have a moment with the witness to confer? Thank you.
(Discussion between Attorney Geiger and the witness.)

MS. GEIGER: Mr. Chairman, I think I have just a couple questions for Mr. Cherian, and they're prompted largely by questions from the Bench, from Dr. Boisvert. And I believe, if I'm remembering correctly, he had some questions about activities and was concerned about impacting private property.

REDIRECT EXAMINATION
BY MS. GEIGER:
Q. And so what I'd like you to do, Mr. Cherian, is, I believe in response to one of those questions you indicated that there was some logging activity that was occurring in and around the project site; is that correct?
A. The area's been commercially logged for a number of
generations, and it's pretty extensively logged now. If $I$ can use the aerial map, this is the area that's under lease. Green Acre Woodlands is a commercial forester, and they've been logging this area for a number of years. Yankee Forest is also a commercial forester. Smith Family is privately owned, but they also log.

It also may be worth noting, some of these fairly substantial cuts --

CHAIRMAN GETZ: Well, let's step back for a second. Let's get on the record what exhibit this is, and then I think you're going to need to give some better narrative description of where you're pointing to on the map, because otherwise it will be impossible to reconstruct from the transcript what you were speaking about.
A. Okay. This is Exhibit 8?
Q. Correct.
A. Looking at the project site, in the middle area of the map, the area that is leased by the project -it's contained on a number of other graphics in the application. The aerial shows a number of sections that have been logged over the years, and there's currently logging activity on an active basis that \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
goes on throughout the project site. The primary road listed as Groton Hollow Road is a private road in the town of Groton, runs up the middle of the project site. It is a private logging road that Green Acre Woodlands uses to pull logs and chips out of the site. They run semi trucks up and down here on a regular basis.

The second thing I pointed out was looking to the southwest portion of the aerial photo. It is a couple of -- a huge area of clear-cut that was recently logged. There's also another area in the northwest section that's been clear-cut in the last year or so, just to give you an idea of land use. I think one or two other things I'll point out in the northern end of the map, near the area where Groton Hollow Road meets Route 25, there are a number of large, active rock and gravel quarries, as well as a pretty substantially sized RV park. To the southeast, primarily east, is the Tenney Mountain Ski Area.

I think the idea was to provide a little more data on some of the land uses in the area.

MS. GEIGER: Thank you. I don't have anything further.
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CHAIRMAN GETZ: Okay. Any questions from the Subcommittee?
(No verbal response)
CHAIRMAN GETZ: All right. Hearing nothing, then you're excused, Mr. Cherian. Thank you.

WITNESS CHERIAN: Thank you.
(WHEREUPON, the witness was excused.)
CHAIRMAN GETZ: I guess what I'd like to do now is move on to -- Mr. Hecklau?

MS. GEIGER: Correct.
CHAIRMAN GETZ: From the witness list, it indicated that there did not appear to be a large amount of cross-examination for Mr. Hecklau. So my intention would be to go through his direct and his cross-examination and then take a recess and then go on to Dr. Luhman.

MS. GEIGER: The Applicant would call John Hecklau to the stand.
(WHEREUPON, John Hecklau was duly sworn and cautioned by the Court Reporter.)

DIRECT EXAMINATION
BY MS. GEIGER:
Q. Mr. Hecklau, could you please state your name for the \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION] \{11-01-10\}
record and spell your last name.
A. My name is John Hecklau. Last name, $\mathrm{H}-\mathrm{E}-\mathrm{C}-\mathrm{K}-\mathrm{L}-\mathrm{A}-\mathrm{U}$.
Q. Mr. Hecklau, by whom are you employed and in what capacity?
A. I'm employed by Environmental Design and Research. My official title is currently executive vice-president of EDR Environmental Services, LLC, which is part of a group of companies referred to as EDR. In that capacity, I oversee our environmental services division. And we look primarily at environmental impact permitting, natural resource management-type issues. We've worked on various transmission and power generation projects, oh, for the past $20-$ plus years, including 15 commercial wind power projects in New York State, six of which are up and operating now, and several projects out of New York State, including the Cape Wind Project in Massachusetts, the Mountaineer Project in West Virginia, and the Meyersdale project in Pennsylvania.
Q. And Mr. Hecklau, have you ever testified before the New Hampshire Site Evaluation Committee before?
A. I have not, although I have provided testimony on visual impacts to the New York State Public Service Commission and to the Rhode Island Energy Facility
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Siting Board.
Q. And are you the same John Hecklau who submitted prefiled testimony that was included with the application that was filed in this docket?
A. I am.
Q. And do you have any corrections or updates to your prefiled testimony?
A. Just a couple minor ones.

On the second page, this reflects a reorganization of our companies. Where it indicates that I'm the environmental division manager with Environmental Design \& Research, P.C. on Line 8 on Page 2, that should now indicate my new title, which is executive vice-president of EDR Environmental Services, LLC, which, along with Environmental Design \& Research Landscape Architecture and Engineering, P.C. make up the EDR companies. EDR is how they refer to it.

And then, similarly on page -- or excuse me -Line 21 on that same page, where I indicate I'm the environmental division manager, $I$ would replace that by saying executive vice-president of EDR Environmental Services, LLC.
Q. And Mr. Hecklau, with those corrections, if I were to
[WITNESS: JOHN HECKLAU]
ask you the same questions today under oath as those that are contained in your prefiled direct testimony, would your answers be the same?
A. They would.
Q. Thank you.

MS. GEIGER: The witness is available for cross-examination.

CHAIRMAN GETZ: Thank you.
Mr. Sinclair, do you have any
questions for the witness?
MR. SINCLAIR: None.
CHAIRMAN GETZ: Mr. Wetterer?
MR. WETTERER: Yes.
CROSS-EXAMINATION
BY MR. WETTERER:
Q. You're responsible for the photographic simulations that we've seen showing how the turbines will look --
A. Yes, sir.
Q. -- and the terrain. And we can assume that those are accurate?
A. Yes, sir.
Q. They appear to be quite large from a number of locations. When the -- if the turbines are actually built, we will not see them larger than in your
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simulations?
A. The simulations are, in our experience, are very accurate when compared to a simulated view compared to an actual built project. Having said that, your eye always perceives things differently than a photograph. So they're as accurate as we can make a photographic simulation.
Q. And also, of course, something that's moving catches your eye more than something that is static also.
A. Correct. Though, as I indicated in the visual impact assessment, movement with wind turbines is generally perceived as a positive by most people who view them.
Q. I have some charts that I have taken from the application. I'm not sure what page they came from. But they have site lines drawn down to show areas where things will be visible from.
A. Sure.
Q. And I'm looking at them, and they don't appear to show the turbines at the correct height. There's a scale on the side here that shows lines at 100-foot intervals.
A. Right.
Q. And the turbines appear to be 250 feet high.

CHAIRMAN GETZ: Well, yeah, let's see
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if we can identify --

BY MR. WETTERER:
Q. These lines are 100 feet apart and --

CHAIRMAN GETZ: Mr. Wetterer, if we could hold for a second? I just want to make sure we get this all on the record.

Do you recognize these documents? And cite us to the records so we can look at them as well.

WITNESS HECKLAU: Yes, sir. They're cross-sections that $I$ believe were figures within the impact assessment, which was Appendix 24 to the application, I believe.

BY MR. WETTERER:
Q. This is another view that shows the turbines, including the blade, showing at about 300 feet high. In actuality, they show --
(Court Reporter interjects.)
Q. They show the turbines as being approximately 300 feet high, whereas in reality they're close to 400 feet high. So that would change the site views to include a larger area that the turbines are viewed from, can be seen from.

CHAIRMAN GETZ: Well, we need to take
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a second so we can identify exactly where you're getting these documents from, and then we can take a look at them ourselves.

MR. WETTERER: Okay.
WITNESS HECKLAU: Yeah, these are -the figures that the gentleman is referring to are the cross-sections which were Figure 9 in the visual impact assessment that was included as Appendix 24.

MR. IACOPINO: And just for the record, this would be in Applicant's Exhibit 3, which is the third volume of the application.

WITNESS HECKLAU: Yeah, I have to concede. Those do look like they're presented at 300 feet rather than 400 feet.

CHAIRMAN GETZ: Well, let's hold on for a second because we have yet to find these documents. So we're looking at Figure 9, sheet -- is there a sheet number? Is that right?

MR. IACOPINO: Mr. Hecklau, do you know what sheet number --

WITNESS HECKLAU: The ones that were presented to me don't have a sheet number on them, but I can figure that out. One would have been Sheet 2 of 5 .
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MR. ROTH: They're approximately Page 60 through 63 of this report.

CHAIRMAN GETZ: And so if we're looking at Sheet 2 of 5, that's correct, Mr. Hecklau?

WITNESS HECKLAU: Yeah.
CHAIRMAN GETZ: And --
WITNESS HECKIAU: And the other one looks like -- wait, that's 2 of 5. And the other one looks like... it's 5 of 5.

CHAIRMAN GETZ: And if I understand correctly, say on Sheet 2 of 5 , would it be on the -to the left of the middle there's a -- it looks to be two turbines at the -- near a peak?

WITNESS HECKLAU: Correct.
CHAIRMAN GETZ: And it looks like view lines going down and to the right; is that correct?

WITNESS HECKLAU: That's correct.
CHAIRMAN GETZ: And then, is the point that Mr. Wetterer is making is that the heights from the viewpoint are actually greater than they appear to be on the map -- or on your profile?

WITNESS HECKLAU: Yeah, I think the point -- just to kind of put the figure in perspective, there is a vertical exaggeration on the \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
figure to try to emphasize the -- or to make it clear, you know, where visibility might exist. That's why the topography appears exaggerated on the vertical scale.

But the point that the gentleman was making is that if you look at the vertical scale on the left, it's ticked off in hundred-foot increments. And if you go from the base of one of the turbines to the tip, it appears to be that they were drawn at the 300-foot height as opposed to closer to a 400-foot height, which was the proposed one. I believe he's correct.

BY MR. WETTERER:
Q. So my question would be in terms of that, that your photographic simulations, are they done to simulate towers that are 300 feet or 400 feet high?
A. No, they're 400 feet high.
Q. Because it would make a big difference, in terms of where they're visible from.
A. Yeah. The simulations are based on an actual model of the project that's built, and built to the dimensions that the project developer's given us. So those would show turbines with a blade tip height of 399 feet.
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This is a separate exercise, these cross-sections, which are primarily meant to show along a selected line of sight where openings in the forest canopy or where topography would block out views. So, despite the fact that the height of the turbines isn't illustrated accurately, the places where the visibility will occur as indicated in this figure are still basically accurate. They are the gaps in the vegetation that exist on the site lines.
Q. If you draw lines from the tip of the turbine blade at 400 feet and connect to the topography, you would actually be able to see the turbines at a closer -like some of the diagrams show that the turbines would only be visible from the -- it would be the -facing kind of west, they'd be on the north side of Route 25.
A. $\mathrm{Hmm}-\mathrm{hmm}$.
Q. But actually, you'd be able to see them from the south side of Route 25 if they were drawn to the correct scale --
A. Yeah. Again --
Q. -- and the lines drawn down?
A. -- if you're talking about the simulations, I can tell you with assurance that those simulations - \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
those turbines in the simulations are 400 feet tall.
Q. Well, I'm talking about the cross-sections now. So the cross-sections as they are drawn show that the turbines would not be visible from as large an area as they actually would be if they were drawn to the correct scale.
A. That may be true in places. But if you look at the figures themselves and look at the sight-line projections, you see what's primarily limiting the views are stands of forest vegetation. And it's those gaps in the forest vegetation where the visibility is indicated. Some of those may be larger if it was a taller turbine illustrated in the cross-section.

MR. WETTERER: Okay. I think that's all the questions I have.

CHAIRMAN GETZ: Thank you. Ms. Lewis? MS. LEWIS: I just have a few, please. CROSS-EXAMINATION

BY MS. LEWIS:
Q. I wondered if you had done any studies on the actual number of homes, because the studies were all done in percentages, and there is an awful lot of farmland or national forest land that's uninhabited. I wondered
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if you had any solid numbers on residences and how many will be able to view the turbines?
A. We don't have that kind of information. But we did provide -- we did provide a figure in response to one of the early discovery requests that overlaid U.S. Census Bureau population blocks on top of the topographic viewshed. And I believe that's a part of the record. And that shows, in general terms, how the viewshed interacts with places where there's a higher density of residents.
Q. I had a question on Page 101 of Appendix 24, if you could turn to that. The Viewpoint No. 180, you have written in your narrative that you believe it has a lower viewer sensitivity at this location, which that large picture is of, view No. 180. And I wondered, because that view is coming into a rotary, wouldn't this be a surprising contrast? And why would you consider it to have a lower sensitivity at that location?
A. I think the contrast is, you know -- the result of the analysis is that the contrast is strong. That's what the numerical scoring showed. But in terms of viewer sensitivity, that's usually thinking in terms of viewers who are in a location to enjoy the view or
to not have the view interrupted by a new facility. So in a park or a residential setting, you generally consider viewers to have higher sensitivity than in a heavily used road corridor, where not only is the expectation of scenery may be lower, but the focus is on the road and driving rather than, you know, the adjacent scenery.
Q. I guess, since you mention that, because your focus is on the road, isn't that going to create somewhat of a problem when you just go into that rotary, and all of a sudden those turbines are right there? That can be a difficult rotary, anyway. And I would just think that may be a major safety issue.
A. I can't really address highway safety. But I do know that this question came up when we were in the field at one point, and it was pointed out that in this direction, which is really the only direction on the rotary where you can see the turbines, I believe that the right-of-way is granted to the travelers in this direction and that the individuals in the right-of-way have to yield. So, not to say that that eliminates the concern, but $I$ think it lessens it.
Q. I just had a question on the various locations where the pictures were taken.
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How did you decide where on the property itself to take the picture from?
A. Well, our standard practice is that we confine our photography to publicly accessible vantage points. We don't go onto private property. We look at a study area, typically anywhere from 5 to 10 miles in size around the turbines. So the logistics of getting permission to access private property would be a problem. And also from a visual standpoint, it's public resources, typically, those with some acknowledged significance that are the focus of the analysis. So, typically our views would be from roadside vantage points or other places that we could get to without going onto private property.
Q. Okay. And my last question is on Page 104, No. 5. You specifically talk about a rural community, as well as vacationers, and their impact on the nighttime skies. And you mention a few different things that will have more of a significant adverse effect. And in particular, you state a rural community; No. 2, vacationers; and also those that currently experience very dark nighttime skies. And to be quite honest, we fit into all three of those. And therefore, $I$ wondered what type of mitigation has \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
been considered in such a rural community like ours, and the fact that we do have very dark nighttime skies that we enjoy.
A. Yeah. I think the primary mitigation that you can propose with nighttime lighting is to minimize -- go for the absolute minimum number of lit turbines that the FAA requires. And that's something that is sort of -- you know, that's something you can't ignore. You have to light these structures in accordance with the FAA guidelines. So, on this project, there's 11 turbines out of 24 that I believe are proposed to be lit. So that's probably the primary thing you can do. Beyond that, there are some lighting fixtures that have a more directed narrow beam. I don't know if that's proposed on this project or not, but I do know that that's something that is proposed on some projects.

MS. LEWIS: Okay. Thank you.
CHAIRMAN GETZ: Thank you. Mr. Roth.
MR. ROTH: Thank you.
CROSS-EXAMINATION
BY MR. ROTH:
Q. Following up on one of Mr . Wetterer's questions, when he asked you about the difference between the
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cross-section height that was provided for the turbines, you said that it's still basically accurate. And by my figuring, you're off by as much as 25 percent. If you've got a 400-foot structure, and you're only accounting for 300, isn't that, I mean, mathematically where you're at? And how can you say that when you're off by as much as 25 percent you're still basically accurate? That just doesn't sound right to me.
A. Well, I think the basis for my saying that -- and first of all, I'm not trying to pretend this wasn't a mistake. It was. But if you look at those figures and you just visually look at what difference it would make on those lines of sight if you went up another hundred feet, what I'm saying is basically you will be looking at more or less the same areas of visibility. And I think it reflects the fact that you're already up at a height, where if you've got a break in the vegetation you have the opportunity to see the turbines. I think the additional height, as I said, has the potential to increase that. But I think the basic areas where visibility is indicated in these figures, you know, would be the same if it was at a 400-foot height. And we can --
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Q. Well, let me ask you about that a little further.
A. Sure.
Q. In your report, you indicated that -- and forgive me if I'm being a little bit loose with how I define these. But as I understand it, you said, based on your analysis, without taking into account vegetation, in 49 percent of the project area, however you define that, the turbines would be visible. Is that -- did I summarize that correctly?
A. Yeah, it was about -- that was the viewshed analysis.
Q. Right.
A. And that was about right, yeah. It's about the --
Q. And in many instances, I think, as I understood it, that would be a blade tip -- simply a blade tip visible somewhere; right?
A. It could be. The viewshed analysis is based on the maximum height of the turbine, on the blades extended at the 12:00 position. So --
Q. Correct. Okay. Now, if -- when you did your viewshed analysis and, for example, all of these nice charts and graphics, did you use the cross-section analysis that --
A. No.
Q. -- which you now tell us was a mistake?
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A. No. There's basically three different analyses that are done, each done independently of the other. The viewshed analysis is largely a GIS exercise. And the data that's put into the software that does that analysis is not reflected in any way on the cross-section. The cross-section is a hand-drawn representation --
Q. I understand. I'm actually thinking about this the other way. Was the cross-section information fed into your GIS --
A. No.
Q. -- to produce your GIS results?
A. No, sir.
Q. Okay. That's all. That's all I need on that. Going back to the question that Ms. Lewis asked about the rotary. And maybe this is just -- are you from New Hampshire?
A. No, I'm not.
Q. Okay. I think people in New Hampshire understand that when you approach a rotary, the vehicles in the rotary have the right-of-way, not the vehicles approaching the rotary. And is there something different about this rotary that you're aware of?
A. I'd have to turn to Ed, who's more of a local person.
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## WITNESS HECKLAU: But I know when we

 were out there for our site visit with the Town of Plymouth, I thought somebody pointed that out --CHAIRMAN GETZ: Well, let's not start having any cross-talk here.
A. That's my basis for having made that statement.
Q. So you don't know the answer, whether --
A. I don't know the answer definitively.
Q. Okay.
A. I mean, we could check -- I could check on that and get, you know, a more definitive answer.
Q. Okay. And you mentioned technology described as a directed narrow beam.
A. Yes, sir.
Q. Is this something that the FAA would approve for installation on a structure like this, as far as you know?
A. Yes.
Q. Okay. All right. Now, back to what $I$ was planning to ask you.
A. Okay.
Q. Now I'd like to turn your attention to Appendix -- or Appellant's [sic] Exhibit 5, which is in appendix -which includes in there Appendix 42 , which is a map
of the interconnection route.
MR. IACOPINO: It's the supplemental volume of the application. It should be bound in a white binder, and it's Appendix 42 contained in that volume. And that's been marked as Applicant's 5.

BY MR. ROTH:
Q. Is it fair to say that you haven't seen this document before today?
A. I've seen a map like this that the Applicant sent to me just within the last week.
Q. Just within the last week?
A. Yeah.
Q. Okay. And is it fair to say that you haven't conducted any visual impact assessment about any part of that route since you first saw it?
A. That's correct.
Q. Okay. Now, in your report you discounted the impact of electrical system by saying that the poles are essentially the same height as the trees or shorter; correct? Do you remember that?
A. I think you mean -- are you referring to the on-site electrical lines or the line that would run off site?
Q. Well, you tell me. It's your report.
A. Well, our report only looked at the on-site
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## facilities --

Q. Okay.
A. -- the turbines, the buried and above-ground lines on site down to the switchyard on Groton Hollow Road.
Q. All right. Now, so we're talking about the on-site electrical poles.
A. Okay.
Q. Correct? Is that what your report deals with? Did I _-
A. If you can cite a place where it says that, I'd like to see it. I just can't recall that I actually mentioned that.
Q. Actually, you know, while I kept reasonably good notes about what $I$ was referring to, $I$ don't have a cite for it.

Well, is it your understanding that the visual impact of on-site poles would be diminished because of the presence of trees?
A. Yes.
Q. Okay. So that's -- now, when you were doing that analysis, did you -- and, you know, looking at it from perhaps, you know, the visual points, where you're over there in Rumney or on Route 25 and you're looking up at the project, did you conduct any \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
modeling or any analysis for your report or otherwise to determine whether cuts and fills and clearings required for electrical lines or access roads or crane pads or culverts or any of that kind of stuff would have a visual impact on the surrounding landscape?
A. Yes .
Q. You did?
A. Yeah. In fact, there are -- I think it says in the Methodology section, that where things like roads and clearing associated with them would be visible, it was shown in the simulations. So there are a couple simulations where, if you look, you can see there are cleared areas around the base of the turbines, or there's shadow lines where forest vegetation has been cleared.
Q. Okay. Now, maybe I'm going down the wrong road here, because I just -- I'll do the best I can. But if you look at Table 2 of your report, which is Appendix 24, and that's Applicant's Exhibit...

MR. IACOPINO: Three.
MR. ROTH: That would be the initial volume with the appendices. So is that 3 ?

MR. IACOPINO: Appendix 24 is
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contained in Applicant's Exhibit No. 3.
MR. ROTH: Okay. Thank you.
MR. HARRINGTON: Do you have a page number on that?

WITNESS HECKLAU: I'd say 51 maybe.
MR. ROTH: Fifty-one.
BY MR. ROTH:
Q. Now, this is your viewshed results summary. And isn't it true that none of these results of your viewshed results summary refer to anything but turbines that are visible?
A. Correct.
Q. Okay. So, where -- I mean, maybe this is an open-ended question. Dangerous, of course. Where's the results of the visual impact of clearings and cuts that are visible from below?
A. The only place where that's shown would be in the simulations, to the extent that those are visible.
Q. Okay. So in your generalized -- in your general analysis of the visual impact, whether it's significant or insignificant, you only considered whether a view of a turbine was actually there.
A. That's right.
Q. Okay.
A. Because the turbines are by far the significant visual component here. Anything -- any pole that might project above the tree tops would be very minor in comparison. So the focus was the turbines.
Q. But would you consider a large cut for a road an interruption in an otherwise open forest? I mean, you've seen these -- this map here, for example. I know it's not totally fair. But let's see. This is Appendix -- or Appellant's [sic] Exhibit 8. It's the map right behind you there, if you want to look at it. Now, that's an aerial.
A. Yeah.
Q. But you look at Mr. Bardsley's clear-cut there. You know, that's pretty graphic. That's kind of a -would you call that a significant visual impact?
A. Well, in an aerial view, yes. But --
Q. What if you were driving past it?
A. Well, I guess where $I$ was going to go with that is that, you know, $I$ drove all around it. And from anywhere that I could get to and document photographically what the view towards the site look at, you would have no idea that that clear-cut's there. So the fact that it's there and it's visible in the aerial doesn't necessarily mean it's visible \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
from ground level. And if you'd like to look at the simulations --
Q. No, I actually wouldn't. I'm just trying to make a point with cross-examining you. I'm not really trying to figure out that part of it. But what $I$ want to know is whether in your assessment of the visual impacts, where you essentially handle turbines only -- I think we got the answer -- you didn't include the visual impacts of road cuts, because I think as you testified, or your testimony is, they don't matter because they're not really a big deal. Isn't that what you said?
A. No, that's not what I said. I said we showed that kind of clearing in the simulations wherever it would be visible. So what $I$ was going to suggest is there are a couple examples I could point to, if you'd like to see that.
Q. No. I've asked the question and I've got my answer. Okay. Now I want to bring your attention to Public Counsel Exhibits 12 and 13, which -- I don't mean to be rude. I just want to get through my questions and get to the answers. Your time for explanation was in your testimony. And I'm sure others will give you opportunity to explain yourself.

Now, looking at these two, let's start with Public Counsel Exhibit 12. Do you recall at the technical session where we talked about Loon Lake, and you agreed to go out and do -- I thought we had original -- the original idea was for you to go out on the lake if you could. And apparently you weren't able to do that. But you did this view -- these viewshed analyses, which are 12 and 13; correct?
A. Correct.
Q. And can you tell us what Loon Lake is and where it is in proximate location to the project?
A. What it is? I'm not sure what you mean by "what it is."
Q. Well, where is this in relation to the project? And if you could find it on that map behind you, all the better. But I don't think you will. I recall that at the tech session we all had a terrible time trying to find it. But...
A. Well, if you look at the viewshed map -- I'll just turn to this one as an example. Within the visual impact assessment Loon Lake is labeled, and it's to the northeast of the project site, sort of between Route 25 and Route 3. And I can give you a distance if you'd like.
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Q. Yeah. Approximately how far?
A. Okay. Let me just check this one table.
(Witness reviews document.)
A. Okay. In Appendix -- let me just get this correct. Table A, which is Appendix A of the VIA, it indicates that Loon Lake is approximately 2.3 miles from the nearest proposed turbine.
Q. Okay. Now, as I understand these two viewshed analyses -- and you prepared these; correct?
A. Correct.
Q. Okay. One is topography only, and that's Public Counsel Exhibit 12; and the other is vegetation and topography, and that's Exhibit 13. And it's my understanding that topography only is what the viewshed would be if you don't take into account trees.
A. Trees, structures, anything above the surface of the earth.
Q. Okay. And that the vegetation and topography includes some accounting for those features; correct?
A. Yes. It basically is based on the same digital elevation model as the topo viewshed, to which is added forest cover as mapped by the USGS National Land Cover data set.
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Q. So it does include some accounting for trees?
A. Yes, sir.
Q. Okay. And if -- in your legend -- you have a legend. The little legend describes what the colors schemes are. And can you tell us what orange means?
A. Well, the legend indicates that that's the number of turbines that are potentially visible, based on this analysis.
Q. Okay.
A. And orange would indicate in the range of 19 to 24.
Q. Okay. And based on your study of this area, would you say that this is more like 19 or more like 24?
A. Impossible for me to say.
Q. But a substantial number of the turbines in the entire project will be visible from the surface of Loon Lake; isn't that correct?
A. Within the area that's colored orange, yes.
Q. Okay. I notice that you did an initial testimony, and then you didn't do any supplemental testimony; is that correct?
A. Correct.
Q. Is there some reason that you felt it wasn't important to do supplemental testimony to describe this phenomena, to describe the fact that Loon Lake \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
will be significantly impacted by the view of turbines?
A. Well, what's shown here is no different than what was in the visual impact assessment that was the basis of my original testimony. It's just a focused look at that same area.
Q. And how did you -- how did you -- what did you conclude about Loon Lake? That this would be a significant impact or not?
A. It's identified as an area in the Results sections, identified as an area where the project would be visible.
Q. But that didn't answer my question. The question was, would you identify this as a significant impact on Loon Lake?
A. If you're asking if the project will be visible, yes. The viewshed analysis, we try to keep it very factual: Is it potentially visible or isn't it? If it is, how many turbines will you see?

When you get into the realm of significance, that's more in terms of the simulations and what the simulations show. And we were not able to access Loon Lake because there's no publicly available means of access. So we could not do a simulation from
there.
Q. And you didn't go out onto Loon Lake to get a look and see what it might look like.
A. I did not.
Q. Okay. Now, in your testimony on Page 12, you evaluated the simulations, as you said, as your methodology to come up with a overall contrast. And you graded it as moderate, and you said 6 of the 11 simulations received a contrast rating of less than 2. What were the other 5 contrast ratings?
A. Let's see. I'd have to go back to the visual impact assessment and look at that for you.
(Witness reviews document.)
A. No, I haven't spelled those out. I'd have to go back and look at the contrast ratings forms to get you those numbers. They were all 2.4 or less. That I know.

MR. ROTH: Okay. Can I ask that that be provided at a later date?

CHAIRMAN GETZ: Certainly. We'll hold
Exhibit No. 36. And this will be for -- this is in response to questions on -- regarding Page 12 of Mr . Hecklau's testimony and the -- you're looking for, Mr. Roth, the simulations that received a contrast
rating of greater than two?
MR. ROTH: No. His testimony, he said that 6 of the 11 simulations received a contrast rating of less than 2 . I just want to know what the other five simulations' contrast ratings were.
(Applicant's Exhibit 36 reserved.)
BY MR. ROTH:
Q. Now, you also said in this testimony that -- you said an appreciable contrast was noted in near mid-ground views -- i.e., under 2 miles -- where turbines span the field of view and/or the turbines appear out of context/character with the landscape -- i.e., in undeveloped forested areas.

Now, I know you said that Loon Lake was 2.3 miles. But where you have perhaps as much as the entire project visible from the surface of -- the entire surface of the lake in virtually either scenario, would you consider that to be an appreciable contrast if you did a simulation?
A. It could be. And again, I'd be speculating without having a simulation in front of me.
Q. Okay. And other mid-ground views would the town of Rumney be a mid-ground view?
A. I think it depends on where within the town.
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Q. As I recall, on the tour we came up from the Main Street approaching Route 25, along there.
A. There was a simulation from that location, yes.
Q. Okay. Now, on Page 13 of your testimony you spoke about the lighting on the turbines. And you, again, I think, discounted the lighting issue because you said, quote, The fact that the project will only be visible from 4 percent of the entire study area... Now, I guess, I -- isn't the real figure, when you -- 49 percent when you're discounting for the vegetation because you have lights? Don't the lights work their way past the vegetation?
A. I mean, it's conceivable. But I mean, in most cases, you're not looking through just bare branches. Where we have mapped forest vegetation, it's contiguous forest. So whether it's lights or turbines themselves, it's significantly masked by that forest canopy.
Q. But that's not true this time of year, is it, nor up until, you know, late April probably?
A. Well, I mean, bare branches, when you're looking through more than just a few, are pretty significant, in terms of what they can screen. I mean, could you catch bits and pieces of light? You could. But if
you're looking at -- the rule of thumb we use is that, if you're looking through more than 200 feet of bare branches, you're essentially looking through -it's essentially a solid screen.
Q. But we don't know how much, whether you're looking through 200 feet of bare branches or only one tree; right?
A. No.
Q. Okay. Thank you.

CHAIRMAN GETZ: Okay. Thank you. Questions from the Subcommittee? Mr. Harrington. INTERROGATORIES BY MR. HARRINGTON:
Q. Yeah. I guess I wanted to get back to the charts we spoke of earlier, line-of-sight cross-sections, the ones I guess weren't drawn correctly. See if I'm reading these properly. The one that's labeled "Figure 9, Sheet 2 of 5," which I'd give you a page number, but it doesn't appear to have one -- it's after Page 58 if that helps you.
A. Yeah.
Q. Looking across at Stetson [sic] Lake, it looks like right now, probably somewhere in the vicinity of three quarters of the lake would have the views blocked. And it looks like it's -- I guess you're showing vegetation there or something --
A. Correct.
Q. -- on the left-hand side of the lake. But if you were to push that tower up from where it's sitting at now, at about 300 feet, another hundred feet up, that would open up quite a bit more of the lake to viewing the top of the blades, wouldn't it?
A. Correct.
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Q. Okay. So there would be a change there on Stetson Lake. Okay. Stinson.

Okay. Going to Table 2 on Page 51 of the report, this is the viewshed results summary. Total acres, visible acres, and then you have a list of percentages there ranging from a low of 9-1/2 to a high of 54 percent. Now, are those -- those percentages, do those represent the percentage of area in a 10 -mile radius where something is visible, other than the one that says zero?
A. That's right. The visible acres in the second column, that percentage is what that represents, in terms of the total acreages within this study area.
Q. So, for example, what we're saying then is that within a 10 -mile radius, 10.6 percent of the area would see 1 to 6 turbines.
A. That's correct. If this -- in this one, though, that would be if there were no trees under consideration, just bare earth.
Q. This is without trees altogether.
A. Right. Yeah.
Q. Okay. And then if you go back to the beginning of the report, just trying to see if I'm reading this correctly, on Page Roman 4 under the Executive
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Summary Section --
A. Yes, sir.
Q. -- here it's saying that -- I'm just trying to get these numbers straight. It says, "Viewshed analysis indicates that approximately half of the 10-mile radius study area surrounding the proposed turbine site will be screened from view by topography alone." And that's what we were referring to back in that other chart?
A. That's right.
Q. And then, considering the screening of forest vegetation, the analysis indicates that no turbines should be visible in 96 percent of the study area. So, were you referring to -- just had this discussion, $I$ guess, on this a little bit. So that means -- is that a July statement, or is that a December statement? Or does it matter?
A. The viewshed isn't really a good representation of either. I mean, it doesn't fully represent either leaf on or leaf off. But, I mean, it would be -- I think it would be relatively accurate with either one because we're only dealing with large blocks of mapped forest. Keep in mind that the forest vegetation that's thrown into the analysis doesn't
include street trees, yard trees, hedge rows, things like that. It's large blocks that the USGS has mapped as forest. So, to the extent there might be more visibility through bare branches, you know, it's maybe less representative in the winter. But I think it's a good representation, regardless of season.
Q. Okay. And on the next page there, Page 5 of Roman $V$, on the very top it says, "Cross-section analysis indicates that the project will be visible between 1.6 and 7.6 percent of the area along the selected lines of sight."

Now, am $I$ correct in assuming that this was done -- these figures were come up with on this cross-section analysis using the wrong height?
A. Yeah, I'm going to have to check on that. But I think that that is a possibility and --
Q. Could you get back to us on what the correct percentages --
A. We could. Absolutely.
Q. -- were, assuming the 400 feet?
A. Yeah, we'll take a look at that and square it away.

MR. HARRINGTON: That was all I had.
Thank you.
CHAIRMAN GETZ: Other questions? Dr.
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Kent.
INTERROGATORIES BY DR. KENT:
Q. Following up on that, do you plan to redraw those line-of-sight figures?
A. We can do that.

CHAIRMAN GETZ: Well, then, let's hold an exhibit for that, which would be Exhibit No. 37.
(Applicant's Exhibit 37 reserved.)
MS. GEIGER: Mr. Chairman, could we have the last record request repeated?

CHAIRMAN GETZ: It would be a redrawing of Exhibit 24 line-of-sight profiles reflecting the correct heights on the -- to the tips of the turbine blades.

MR. HARRINGTON: Figure 9.
MR. IACOPINO: Mr. Chairman, did you want to include in that Mr . Harrington's request to recalculate the percentages as well --

CHAIRMAN GETZ: Yes.
MR. IACOPINO: -- in that same exhibit number?

CHAIRMAN GETZ: Yes.
BY DR. KENT :
Q. Does your expertise extend to human behavioral
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response to wind towers?
A. Only to the extent that I've read articles on public perceptions and public attitudes.
Q. Could you summarize your knowledge of -- I assume we're talking about academic or professional studies of human response to wind tower visibility?
A. Well, yeah. I guess there's really two sources of information that $I$ draw upon. One would be actual studies or surveys that have been done, and others would be just firsthand experience from living in an area where there are quite a few of these up and running, and actually hearing public reaction to the built facilities.
Q. Could you summarize -- I'd like you to summarize two things: Your understanding and then the perception of others as you've read it in reports and studies.
A. My sense is that wind turbines are not like some built facilities that are uniformly perceived as unattractive. There's a wide range of opinion, personal opinion about how people react to wind turbines. What I've read in I'd say pretty much every study I've looked at, and what I've heard on pretty much every project that has been built in my area, is that the majority of the people react more
positively than negatively. And there's some surveys that are cited in the visual impact statement that provide some support, some citations for that.
Q. And you would recommend those citations as places to increase our understanding of response?
A. I think there's more information and more detail than I could provide here on the stand.
Q. Okay. Have you spoken to the municipal or county officials about visibility of the towers and gotten response from them, their feelings?
A. Yeah. We've worked, as I said, on a lot of projects in New York State. And we're actually working right now as consultants to a couple towns who are anticipating hosting a project. And they actually asked us as part of that project to do a survey of municipalities with projects operating within their communities. Now, the focus of that was on municipal concerns that maybe weren't focused on visual. But they did want us to ask about complaints and perceived problems. And there were -- we reached out to 16 communities. That's a total of 16 towns.

That's the total in New York State that host a project. We spoke with representatives from 11 of those communities, generally the town supervisors.

And in every case, their reaction to the project was positive. And amongst the complaints, visual impacts, visual effects were not noted by anyone.
Q. Okay. Do you -- have you met with, say, Groton and Rumney officials or residents and showed them your simulations and gotten their feedback?
A. I've attended several meetings. There was an open house in the town of Groton. There were a couple meetings in association with these proceedings. And I also did a site tour with members of the Town of Plymouth Planning Board. So we have gotten some opportunity to share the simulations with people and, you know, get their feedback.
Q. And the feedback you were getting from, let's start with residents, could you characterize that briefly?
A. The residents that we met with, $I$ think primarily at the town of Groton open house, I would say it's primarily sort of a curiosity response. But I did not have anybody come up to me and say, "That's horrendous." You know, I think there were more people intrigued and viewed these from a positive perspective than those who were negative.
Q. How about Groton and Rumney town officials?
A. I have not spoken with them personally, other than
being able to present the simulations in the course of the site tour that we did as part of this proceeding back in August.
Q. Did you work on the Lempster project?
A. I did not.
Q. Okay. Thank you.
A. You're welcome.

CHAIRMAN GETZ: Other questions?
Mr. Scott.
INTERROGATORIES BY MR. SCOTT:
Q. Back to the line-of-sight profiles, if I may. And maybe the answer is no.

You also looked at shadow flicker and came to some conclusions and had some percentages on there. Will the line-of-sight profile change, have any impact on that?
A. No, sir.
Q. And along the same lines -- and I don't have it in front of me. But basically you said it's nobody -no area would be impacted more than three hours a year or something to that effect?
A. That's correct. It's a total of three receptors, and none of which are predicted to exceed three hours per year.
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Q. And I suppose it's variable, but how does that compare to other projects that you have worked with?
A. It's by far the lowest of any we've ever worked on.
Q. Thank you.

CHAIRMAN GETZ: Mr. Steltzer?
MR. STELTZER: Yes.
INTERROGATORIES BY MR. STELTZER:
Q. Regarding the met towers that are on the ridgelines, how tall are those met towers?
A. I wanted to say they're either 50 meters or 80 meters. I'm not positive.
Q. And how tall is it to the nacelle?
A. Seventy-eight meters up height.
Q. Okay. Regarding the simulations that you made, recognizing that our -- what a person sees includes their peripheral vision, could you identify what percentage the focus is of those simulations towards what a human eye actually takes in?
A. That's a good question. We always use a 50-millimeter equivalent on the lens because, according to our research, that's equivalent to the field of view of -- human eyesight's about 40 degrees. Now, that doesn't take into account that peripheral vision that you refer to. We have on some \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
projects been asked to do panoramic views where we would stitch together multiple simulations to try to capture some of that. And those generally would be more like a 90-degree field of view. But we stay with the 50 millimeters because that's the industry standard. And that's the one, you know, from a focal length, equating to your -- to the human eye is what we understand to be the most accurate.
Q. Would it be accurate to say that when you do include the peripheral view that you have, that the scale in which the turbines might take on the landscape is diminished?
A. Yeah. That's part of the problem, is that, you know, if you stray too far from 50 millimeters and you start going towards wide angle, then you have that situation. If you go the other way and you start going towards the telephoto, you know, you limit that field of view and you accentuate the perceived height.
Q. Next question has to do -- deals with your knowledge of people's perception of turbines that are grouped as compared to single turbines. Do you have any knowledge on that topic?
A. There's been some research done. And people have
looked at how turbines, you know, are perceived in the landscape. I think it's generally recommended that they have some uniformity in terms of layout so that they appear in discrete groups or lines. I think a single turbine in certain settings can sometimes look more awkward than a cluster. Usually the research I've looked at hasn't been looking at single turbines, it's looking at larger installations. So the question there is, you know, what works better? A continuous grid along the line of discrete clusters? And I think the thinking in most cases is that discrete clusters with some spacing or relatively short lines with some spacing between them is what people prefer.
Q. And how would you characterize the layout of the Groton project with that in mind?
A. It's three relatively short strings of turbines. And I think the simulations show that from some perspectives that will look like a line, sort of a uniform line following the land form. In other cases it will look more like a cluster or more small groups.
Q. Okay. Thank you.

CHAIRMAN GETZ: Other questions? Mr.

Iacopino.
INTERROGATORIES BY MR. IACOPINO:
Q. Mr. Hecklau, has the technology in your field yet advanced to where you can create visual simulations using video?
A. Yes. Well, we can animate a still shot -- in other words, make the rotor move in what otherwise is a still photo. Or you can do video, the second being much more complicated.
Q. I just want to draw your attention to the report that was contained in Exhibit 3. You were asked by counsel for the Public about citations for the electrical systems and roadways. And I'll draw your attention to Page 8 of that report. This is Appendix 24 in Applicant's Exhibit 3.
A. Okay.
Q. There are two sections in a row: Section 2.2.2 regarding the electrical system and Section 2.2.3 regarding access roads. Are those the sections you were trying to find before when you were being cross-examined by counsel for the Public?
A. These are the sections that described how we dealt with the visibility of the electrical system and the access roads.
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Q. All right. And, for instance, with respect to the electrical system in Section 2.2.2, you determined that you weren't going to give further evaluation in the study because most of the electrical system was similar to the height of the surrounding trees.
A. Yeah. I think it says -- there was a number of reasons. You know, it indicates here there were minor visual components of the project; they're sited in remote location, and they're similar in height to the surrounding trees. So, all those factors came into that decision.
Q. And similarly with respect to the roadways, what were the factors that you -- that counseled you not to evaluate the roadways in your study?
A. Basically because, again, similar remote location in the forested setting. You know, there's very few viewpoints where you can actually see the road, publicly accessible vantage points where you can actually see the roads. But the final sentence there, there's a parenthetical that says, "although tree clearing associated with the roads is illustrated in any simulation where it would be visible."
Q. And then finally with respect to the cross-sections
that have been referenced. Just to me, it seems as though the actual height that was used might have been a hub height or a nacelle height.
A. It might have been. I apologize. And I'm going to have to look into that. It was a drawing error.
Q. Is there any reason why that might be typical in dealing with cross-section drawings like that?
A. Only if you were trying to show visibility of, say, the FAA lights at the nacelle. So, in that regard, this might be closer, although there's some distance sort of in between the two.

MR. IACOPINO: I have no further questions.

CHAIRMAN GETZ: Anything further from the Subcommittee?
(No verbal response)
CHAIRMAN GETZ: Redirect?
MS. GEIGER: Yes. I'd like Mr.
Hecklau to be able to finish his response to questions that were asked by Public Counsel about visual simulations that may show tree clearing or road clearing.

REDIRECT-EXAMINATION
BY MS. GEIGER:
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Q. And I think you were going to point to something in your report, and I'd like the Committee to understand exactly what you were going to be discussing.
A. Yeah. I mean, all I really wanted to do is, just as an example, point to two simulations where that kind of clearing work was illustrated. And the two are Viewpoints 14 and 126, which in the visual report is... Figure 12 is Viewpoint 14, and Figure 18 is Viewpoint 126. And in both of those you can see that there are areas where the forest has been cleared -or we've tried to illustrate forest clearing and some access road clearing that are shown with shadow lines, just to try to basically support the fact that we did take a look at that, and that the entire project, you know, is considered when we do the visual simulations.
Q. Thank you. Thank you. I don't have any further questions.

CHAIRMAN GETZ: Okay. Then, thank You, Mr. Hecklau. You're excused.
(WHEREUPON, the witness was excused.) CHAIRMAN GETZ: What I'd like to do at this point is take a recess until 4:00, at which time we would resume with Dr . Luhman and try to go as far
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as we can with her cross-examination. So we'll take a recess for a little more than 15 minutes.
(WHEREUPON a recess was taken at
3:46 p.m. and the hearing resumed at
4:07 p.m.)
CHAIRMAN GETZ: Okay. We're back on the record and turning to the testimony of Dr . Luhman.
(WHEREUPON, HOPE LUHMAN was duly sworn and cautioned by the Court Reporter.)

HOPE LUHMAN, SWORN
DIRECT EXAMINATION
BY MR. PATCH:
Q. Could you please state your name.
A. Hope Luhman.
Q. And by whom are you employed, and in what capacity?
A. I'm employed by The Louis Berger Group. I am assistant director for cultural resources.
Q. And are you the same Hope Luhman who submitted prefiled testimony in this document that has been marked as Applicant's Exhibit 1, a portion of Volume 1?
A. Yes.
Q. And did you also submit supplemental prefiled
testimony which is a portion of what's been marked as Exhibit 5?
A. Yes.
Q. And that was your supplemental testimony?
A. Correct.
Q. Now, Dr. Luhman, do you have any corrections or updates to either your prefiled or supplemental prefiled testimony?
A. No.
Q. And if you were asked the same questions today under oath, would your answers be the same?
A. Yes.
Q. Now, since the time of your supplemental prefiled testimony, there was a letter that was filed with the Committee from the Division of Historic Resources; is that correct?
A. That is correct.
Q. And are you familiar with that letter?
A. Yes, I am.

MR. PATCH: Mr. Chairman, I have two more exhibits that I'd like to have marked. I've handed them out, so I think everybody has them. There are -- there's a thick one that says at the top, "New Hampshire Division of Historical Resources, \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}

Page 1 of 24, Area Form." And then there's a thinner one, "Page 1 of 29, Area Form." And so I would ask that the 1 of 24 at the top, that that be marked as Applicant's or Petitioner's 38, I believe is the next number?

CHAIRMAN GETZ: Okay. But I believe it's Page 1 of 124. But we'll mark that --

MR. PATCH: I'm sorry. Yeah.
CHAIRMAN GETZ: -- for identification
as Exhibit 38. And the one that's Page 1 of 129
we'll mark for identification as Exhibit 39.
(The documents, as described, were marked herewith as Applicant's Exhibits 38 and 39.)

MR. PATCH: Thank you.
BY MR. PATCH:
Q. Now, Ms. Luhman, taking into account these two exhibits, I would ask you if you could comment to the Committee on the DHR letter that was submitted on Friday and explain the two exhibits that have just been handed out.

MR. ROTH: Mr. Chairman, I have to object at this point. There was a deadline for submitting supplemental testimony in response to
agency reports; that was last week. I don't think that the DHR's information was any surprise to the witness, and there should have been supplemental testimony filed last week and not an opportunity for the witness to give on-the-stand testimony at this point.

CHAIRMAN GETZ: Response, Mr. Patch?
MR. PATCH: Yeah. Thank you, Mr.
Chairman. I think if you let the witness testify, she will testify that it was a surprise. But I'll let her speak to that. But we actually didn't have a chance to review the letter until the end of the day on Friday. We didn't know it was coming. I don't see how we could have prefiled testimony in time for the hearing today. So it seems like the kind of thing that this process is designed, you know, for us to be able to respond to.

CHAIRMAN GETZ: Well, I'd -- given the letter from DHR and, actually, discussion that took place at the prehearing conference on Friday, I'd like to complete the record to find out what is behind the letter and exactly what these two documents are. So I'm going to overrule the objection and allow some discussion about the letter
and whatever these two exhibits are.
MR. PATCH: Thank you.
BY MR. PATCH:
Q. Do you need the question?
A. Give it to me one more time.
Q. Would you please comment on the letter that was filed on Friday. And take into account the two exhibits that have been handed out, and explain them to the Committee.
A. The Area Form, which is Page 1 of 124 , is the project area form that was submitted in July 2010 to the New Hampshire Division of Historic Resources for their review for the project. It takes into consideration the area of potential effect for architectural resources, which is the viewshed within the 3 -mile radius, and provides answers and photographs associated with the resources essentially within that 3-mile APE.

Following the submittal of this in July 2010, we received a review comment, I believe it was dated August 23rd, 2010, that -- actually, it was dated August 23rd, 2010, and I believe we received it somewhere around the 28th. After receipt of those initial comments, we reviewed them internally,
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discussed them with the Applicant, and also subsequently discussed them with the United States Army Corps of Engineers, which is the lead federal agency in this particular area of review.

After discussion with the Army Corps of Engineers and other discussions internally with the Applicant and with the DHR, it was decided and agreed upon that we would file a smaller project area form which would consist merely of the text. As you can see from the initial submittal, there are extensive photographs that are provided. These photographs all have to be printed on archival paper, and they have to be noted on the back in a certain format. And so it's a tremendous amount of work. So we decided, in consultation with the DHR and with the Army Corps of Engineers, that we would revise the text to address the concerns that were outlined in the August comment to see if we could basically get this particular text to a format which would be acceptable to all parties, and then we would move forward with revising anything else that would be necessary for the form. So this second form was revised specifically under the guidance of the Army Corps of Engineers.

CHAIRMAN GETZ: Could I stop you --
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[WITNESS: HOPE LUHMAN]

WITNESS LUHMAN: Sure.
CHAIRMAN GETZ: -- to ask a question?
I want to make sure I understand.
WITNESS LUHMAN: Sure.
CHAIRMAN GETZ: So if I'm looking at the letter that was from, I guess from -- well, there's a memorandum from Nadine Peterson to Michael Iacopino, dated October 28th.

WITNESS LUHMAN: Correct.
CHAIRMAN GETZ: And in the third paragraph on that first page there's a -- in the middle it says -- the sentence says, "This document was submitted in July 2010 with substantive deficiencies." This document is the Exhibit 38 that's --

WITNESS LUHMAN: The larger one.
CHAIRMAN GETZ: Okay. All right.
Thank you. I just wanted to make sure what documents we're talking about.

WITNESS LUHMAN: And I do believe that the DHR's review dated August has been provided to the Committee.

Has it not?
MR. PATCH: I'm not sure whether it
has.

WITNESS LUHMAN: Essentially, those comments are summarized on this memorandum and accompanying letter to Erika Mark from Linda Ray Wilson, with the five items on the first page of the letter to Ms. Mark. And essentially, we went through all of these items not only with DHR, but also with the Army Corps of Engineers, prior to the submittal of this October document.

BY MR. PATCH:
Q. And the DHR role -- maybe just explain to the Committee what their role is?
A. In this particular project, because it's being reviewed under Section 106 of the National Historic Preservation Act, the lead federal agency is the United States Army Corp. of Engineers. And they work in consultation with the New Hampshire Division of Historic Resources, who functions as the state historic preservation office.
Q. I believe that you put this into your prefiled testimony. But you have experience working with DHR in other projects in New Hampshire; is that correct?
A. That is correct.
Q. Could you explain to the Committee a little bit of
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your experience and what you did in that experience and how that compares to what you filed with DHR here.
A. For this particular project, because we had worked on both the Lempster project and the Coos project, we modeled this project area form on the Coos project's project area form. So every effort was made -- which was the Granite Reliable project. Every effort was made, since that was a successful submittal, to ensure that, in fact, all the information that had been provided in that particular project area form was provided in the same fashion and manner in this particular project area form.
Q. And the DHR response in that project was what?
A. That project was -- it was successful. The consultation between the Army Corps of Engineers and the DHR was a successful project.

MR. PATCH: Thank you, Mr. Chairman.
I believe that's all the questions I have. The witness is available for cross.

CHAIRMAN GETZ: Okay. Thank you.
Mr. Sinclair?
MR. SINCLAIR: None, thank you.
CHAIRMAN GETZ: Ms. Lewis.
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MS. LEWIS: Thank you.
CROSS-EXAMINATION
BY MS. LEWIS:
Q. My first question pertains to the letter that was sent to the Army Corps, the second page of it and the second paragraph down.

MR. IACOPINO: Ms. Lewis, just for the record, I think that document has been marked as Buttolph Exhibit 29.

MS. LEWIS: Yes, I believe we've submitted it.

BY MS. LEWIS:
Q. The second paragraph down states, "Soon after the July 2010 review of the project area form, the DHR suggested a site visit would be an opportunity to discuss issues out in the field and work with the lead federal agency, the Applicant, and its consultant to come up with an appropriate survey methodology to move the project review forward." And then they go on to say that there was no follow-up response.

Now, based on what you've just testified, are you stating that that suggestion of a site visit never took place?
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A. The site visit never took place. However, I will tell you that there was discussion and consultation between the Army Corps and the DHR and the Applicant, as well as us.
Q. Why did the site visit never take place?
A. I can't really answer that question. That would basically be a question for the Army Corps of Engineers.
Q. But you were willing to do it?
A. Absolutely.
Q. Why do you believe the DHR has returned your document as insufficient?
A. That's a really good question, and it's something that I'm really puzzled by. And I've gone through all of the correspondence that I've received, both as a result of the July 2010 submittal and as a result of this recent submittal. I have reviewed the DHR's guidance on wind farm projects. I have reviewed the project area form guidance. I have reviewed and compared our submittals against the Coos submittal. And I am looking forward to future consultation with the DHR and Army Corps of Engineers to resolve the concerns that have been expressed.
Q. Did you say that there's been some type of
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communication issue over the months?
A. I don't think so at all. I've had no problem whatsoever anytime I've contacted the DHR to have a question or sent them an e-mail, or the same with the Army Corps. So as far as I'm concerned, there's no issue regarding communication.
Q. Okay. Why, regarding that July 2010 review, it wasn't resubmitted until October?
A. That's also a very good question, and I thank you for raising that question. The July 2010 submittal was not reviewed by the DHR, I believe, until the end of July. They did not provide their comments -- their comments are actually dated August 23rd. And I believe we were in receipt of those comments sometime around August 28th. So, then, once you get to August 28th, it now requires us to consult not only with the Applicant, but also with the Army Corps of Engineers. And it was very important to sit down with the USACE and have them review the document and talk about what we had and how we would proceed forward. There was also some communications with DHR as well. So that all took place within that time frame. So if you're at the end of August, to get to the beginning of October, beginning or middle of
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October when we submitted the document to the Applicant, it's not really that long of a period of time.
Q. I'd like to back up a little bit to your supplemental testimony on Page 3.
A. Sure.
Q. On Line 8, you mentioned further survey was necessary in the form of a historic district form for Rumney. Can you explain that?
A. This is based on the findings of Dr. Bedford, who's the architectural historian who did the survey. It was Dr. Bedford's belief that, given the nature of the resources in Rumney, that we were looking at what would constitute a historic district; and so, therefore, it was his recommendation that there be a historic district form done for that particular area.
Q. Okay. Could you explain a little bit further on that? How many homes? Is it a few homes? Is it quite a few?
A. Well, that will have to be determined in consultation with the DHR and the Army Corps of Engineers.

One of the things that the PAF does not do is it's not a complete survey of everything. It basically gives you an understanding of the nature of \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
the resources that are in the particular area, the area of potential effect. And so in this instance, we didn't survey all of Rumney that's in the area of potential effect, because, as the PAF notes, we saw that there were a number of resources there, and they seemed to basically form a cohesive entity. And as a result of that, we felt that the next step would be a historic district form.
Q. And have you done that yet?
A. We would like to, but we are not permitted to do so until this document is reviewed and accepted by DHR and the Army Corps of Engineers.
Q. My next question is more based on your personal opinion. How would you reach the opinion, as you have on Page 4 of your supplemental testimony, that you've reached the opinion that the project will not have an unreasonable impact, given the fact you haven't filled out this form, the other form is still in complete; and yet, you're providing an opinion that you don't feel the project will have an unreasonable impact?
A. Because I have faith in the process. The Section 106 process of the National Historic Preservation Act is a consultative process designed basically to take
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into account the effects of a project on historic properties. And I truly believe in the process. And so $I$ believe that basically it will come to a resolution that will address any issues that could arise.
Q. So you're not really giving an opinion that it won't have an unreasonable impact. You're giving an opinion that if there is an unreasonable impact, that mitigation will be done to address that.
A. In the hypothetical situation that there would be an unreasonable adverse effect, then there would be mitigation that would essentially address the issue.
Q. So that's really your opinion, not that there is not going to be an unreasonable impact --
A. No. My opinion is that $I$ have firm belief in the process, and the process will address the historic properties that are identified, and will do so in the consultative fashion that's set forth in the National Historic Preservation Act.
Q. And my final question is, $I$ wondered if you had done any further research at Polar Caves?
A. At the Polar Caves -- we're aware of the Polar Caves. The field team has visited the Polar Caves. They are mentioned in the PAF. They are not within the
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viewshed, but we have identified it as a tourist attraction that has been there since the ' 20 s.
Q. Has there been any mention throughout your research, as far as the potential impact of blasting on those caves? We do have an exhibit -- I believe it's No. 10 -- that shows the Polar Caves. And it shows some picture and how the caves are very narrow. And there's children going through there constantly throughout the summer. And I think for me as a parent, it's very frightening to think that if there's a huge amount of blasting going on with all those children going in and out of those caves, there's a real significant risk for somebody potentially being hurt or killed. Is that anything that has been looked at?
A. Unfortunately, it's not within my area of review.
Q. Thank you.

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                                    MS. LEWIS: That's it.
                                    CHAIRMAN GETZ: Thank you.
                                    Mr. Roth?
                                    CROSS-EXAMINATION
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BY MR. ROTH:
Q. I'm looking at Buttolph Exhibit 29, as was Ms. Lewis.
And there's a paragraph at the bottom of the
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October 28th letter where it says the July 2010 submission failed to provide documentation necessary to make informed decisions on the next phase of the identification process. More specifically, the form was deficient in the following manner, and then there are five enumerated things there. And then it says that the DHR Determination of Eligibility Committee requested a resubmission of the form to address those deficiencies.

When did the DHR Eligibility Committee request the resubmission?
A. That was in the response we received to the July submittal. I believe it was dated August 23rd, which we received on August 28th.
Q. And did that communication outline these five areas of concern?
A. Yes. They weren't exactly expressed in the exact same fashion, but for the most part, yes.
Q. Now, in your supplemental testimony -- which you filed on October the 12th; correct?
A. I believe so, yes.
Q. On Page 3 of that testimony, 1 believe, if I -- no. Page -- yeah, Page 3, and I guess Page 2, you talk about progress of the Applicant on assessing historic \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION] \{11-01-10\}
sites, and you talk about the PAF form. You didn't mention any of these five deficiencies or the fact that the DHR had asked you to resubmit the form, did you?
A. I didn't mention it in specific, because at that point in time it's still under review. We're still under the review process.
Q. But they did ask you to resubmit the form, and the pointed out five deficiencies. And you didn't include any mention of that in your testimony; correct?
A. No, I did not. It doesn't appear here.
Q. Okay. Is it -- isn't it unusual for the DHR to make a statement like a disproportionate time is being spent on a project and that a project area form is a non-reviewable work product? Is that unusual? Have you ever run into that before?
A. I can't testify whether or not that's unusual for them or not.
Q. Have you ever seen it before?
A. I don't believe so.
Q. Okay. And you've been doing this a long time; right?
A. I think so, yes.
Q. Okay. Now, I guess if I look at it, you know, \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
somewhat simplistically, and I'll admit that's -- if this proceeding were a class, today is sort of, you know, final exam day; the term paper is due. And I have a sense you're kind of in here telling us the dog ate the homework. And how is that an acceptable resolution for the Committee to move forward and to make a determination that the project has or does not have an unreasonable adverse impact on historic and cultural resources?
A. Well, if I may, if the dog ate the homework, then the homework wouldn't exist. And we have the homework. Am I not -- am I misunderstanding your question?
Q. Yeah, I think you are. But I think --
A. I'm sorry if --
Q. -- that was my last question.
A. All right. I'm sorry.

CHAIRMAN GETZ: Questions from the
Subcommittee? Mr. Harrington.
INTERROGATORIES BY MR. HARRINGTON:
Q. I'm just trying to go back to some of the earlier questions to make sure I understand.

What you're saying is that you haven't completed the historical evaluation of the historical significance of the area, but you feel that the
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process, when completed, will adequately address anything that's found? Or am I misstating that?
A. As far as Dr. Bedford's architectural survey is concerned, he feels that he has adequately surveyed the properties within the project area and has made some recommendations to move the process forward.
Q. Okay. So he's identified historical properties.
A. Correct.
Q. And his recommendations are to do what?
A. There are two historic properties that he's recommended be further surveyed. I believe it is in... let me double-check.
Q. Is that one of the documents we got today?
A. No, it's in the -- it's in my prefiled testimony. "It's Bergers' opinion that further survey is necessary for two properties in West Plymouth and further survey in the form of a historic district form for Rumney."
Q. What page is that on?
A. That is on Page 3, Lines 6, 7 and 8 of the prefiled testimony.

MR. IACOPINO: Actually, it the supplemental prefiled.
A. Supplemental. I apologize for that error. And it is \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION] \{11-01-10\}
also contained in the project area form.
Q. So, Page 3 of your supplemental?
A. Correct.
Q. Okay. And maybe you can help me out here. What happens then? It says, "Bergers' opinion that further survey is necessary for two properties in West Plymouth and further survey in the form of historic district form for Rumney." Well, what is -I'm just trying to figure out what's going to be done. What hasn't been done yet that needs to be done? What are these further actions?
A. There would be further documentation that would be made of these properties, in terms of filling out some additional forms. And then there would be an effect determination made as to whether or not there's an effect on these properties.
Q. When you say "effect," you're meaning somehow it diminishes the historical significance because you can see a windmill from it? Is that what --
A. For the most part. The DHR has issued an opinion that, if a property is eligible on its architectural merits only -- and in this particular instance for a wind farm, where we're dealing with a viewshed -then there's going to be no effect. However, if
there are other aspects of the property, such as its setting -- and the setting basically is part of the significance of the property -- then there could potentially be an effect.
Q. Okay. So let's walk this a step further. Let's just say there is a setting effect. So, do you say don't build the windmills, or do you just, you know, put a big fat cage on the back of your property so they can't see you?
A. Well, mitigation can take a number of options. You can do things like vegetative screening, if that's going to work. But more often than not, you're looking at some form of creative mitigation, which is in some form of documentation or other item that basically addresses or compensates for the effect.
Q. Sounds like you're talking about paying somebody money.
A. It can take that form. More often than not, it's usually something in the form of an additional report or a study or a document or a series of pamphlets perhaps, or a historic nomination for a particular area. Some other item.
Q. Okay. Going one step further then, because it seems like you have two classifications here. One of them \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
is needs further study, which $I$ guess speaks for itself, and then you may or may not find any impact by the presence of the windmills. But this other one, further survey in the form of historic district form, what exactly does a historic district form -what does that do?
A. It's a much larger look at a collection of properties. Rather than just looking at these properties individually, what a historic district form does is it looks at them as a cohesive collection, that obviously these buildings are in this particular location and it's based on some of historic evolution of this particular community, and these buildings reflect that evolution in the community. So a historic district form essentially brings them all together into one grouping.
Q. So, would this be for the whole town of Rumney or just a selected portion of it?
A. It would really depend on what would be appropriate, based on the nature of the resources.
Q. So if I understand where we're at then, they've done, I guess, what you refer to as Phase 1 of the review; and out of that review, you found that there are two properties in West Plymouth and potentially the whole \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
town of Rumney that needs more analysis to determine what, if anything, needs to be done.
A. That is our opinion.
Q. Okay. So those -- that part of this is not completed.
A. In our thinking, yes. And according to the DHR, we have to step back even further.
Q. Explain to me. I'm not following that.
A. The DHR's comments, if you look at the comments that are on the letter dated October 28th, they provide five comments. The first comment is that the project area form did not meet DHR guidelines. There has been some discussion about the historic context that's been provided in these PAFs. There's some specific requests that were made of the DHR for additional information, and they are provided in Question No. 2, Question No. 3 and Question No. 4. That additional information was provided in the revised submission that was provided in October, the one to which DHR responded to in this letter and said that we still have not addressed those issues.
Q. So you're at a point of disagreement with them. You think you have addressed them, and they're saying you haven't?
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A. That is our opinion. We are still waiting for the Army Corps of Engineers' review of the document. They -- we spoke with them this morning. They also just received this information from DHR late on Friday and had not had the opportunity to review it. We had a teleconference with them this morning to discuss the situation. The Army Corps of Engineers is very amenable to moving the project forward and the process forward, has agreed to host meetings so that we can discuss the issues that are at hand so that we can proceed.
Q. Do they have the final say on this? Are they the final arbitrator?
A. The Army Corps of Engineers is the driver of this process. And, yes, they do have the final say.
Q. Okay. But for right now, where we sit is that their -- the State's position was that you have to basically resubmit everything all over again?
A. Correct.
Q. Okay. I think I understand where we're at. Thank you.

CHAIRMAN GETZ: Other questions? Dr.
Boisvert. Oh, Mr. Scott.
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INTERROGATORIES BY MR. SCOTT:
Q. Hello, Dr. Luhman.
A. Hi .
Q. Just to follow up again. I'm trying to -- with the same line of questioning you just had. I'm still trying to fathom in my mind how do we get to the finish line.

So you've -- in your supplemental testimony, you said you think there's more work to be done. DHR has said you have an incomplete application. You're waiting for the Army Corps of Engineers. In your estimation, what are talking about to get, time-wise, to get across the threshold here so that we can as a Committee say, okay, this is good or not?
A. I'm hesitant to provide a set timeline because I don't know how accurate it would be. It would be my hope that we could do this quickly. I'm very... I'm looking forward to the discussion with the Army Corps of Engineers about the revised PAF' and I'm hoping that we will be able to see some progress in discussions with DHR so that we can achieve resolution and move forward.
Q. Put another way, I suppose, do you expect us to act on this and make a judgment based on what we have so
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far?
A. I personally have faith in the process, and I believe that the consultative process will allow the Army Corps and the DHR to come to an agreement. Because of that faith in the process, because I've seen the process work before, I would have no concerns with the project moving forward in that regard. MR. SCOTT: That's all I have. CHAIRMAN GETZ: Dr. Boisvert.

INTERROGATORIES BY DR. BOISVERT:
Q. The health resources investigations included not only historical structures, but also archeology.
A. Correct.
Q. What was -- how did the review on that come out?
A. Fine.
Q. What is a Phase 1B survey?
A. Phase 1B survey essentially addresses the sensitivity assessment of a project area that was conducted at the Phase 1A level. So the Phase 1A level looks at background research; builts, historic and prehistoric contexts; develops a sensitivity model of the project area, the APE, the area of potential effect for archeological resources; and then makes recommendations about what level of effort would be
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appropriate for any subsurface investigation, if any are considered to be warranted.

Our Phase 1A recommended a rather extensive Phase 1B survey. DHR accepted our Phase 1A survey, and we implemented those recommendations in a Phase 1B survey this fall -- summer/fall.
Q. And the outcome on that?
A. The end of field letter was accepted by the DHR. I held off on producing the Phase 1B report until I knew the DHR accepted our methodology and our findings. And that happened, and, as a result, we are in production with the Phase 1B report.
Q. Okay. It is now part of Section 106 requirements for -- it always has been, but it's not been emphasized -- consultation with tribal entities. Was there consultation with tribal entities regarding this project?
A. There was discussion at meetings with DHR and the Army Corps of Engineers regarding that. The consultation with Native American groups is the responsibility of the lead federal agency. And I believe $I$ have it in my notes from one of the last meetings that we had, that the Army Corps was going to look into that consultation.
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Q. So the consultation has not been initiated, to the best of your knowledge?
A. I have no idea what the state of the consultation is.
Q. Okay. I raise that because it is established in many areas that high points are considered to be sacred places for Native Americans. And the nature of this project is such that it impacts more than one high point.
A. $\mathrm{Hmm}-\mathrm{hmm}$.
Q. And I would like to know that something's being done to address that particular question.
A. It's a fair question.
Q. This is part of the Section 106 process. You did not consider doing it as just part of the process for the SEC?
A. As part of the Section 106 process, I'm precluded from engaging in consultation with Native American groups because, as you know, it has been to be done on a government-to-government basis; so, therefore, it would have to be Army Corps of Engineers to the Native American groups. In our discussions with the DHR and the meeting with the Army Corps of Engineers, that was not brought up.
Q. Okay.
A. And the Army Corps indicated that they would take responsibility for that aspect.
Q. Moving over to the historic structures. As I read this letter -- by the way, I have not seen anything about this except what I've seen in this letter. One of the fundamental conclusions is that you cannot move forward saying whether or not there will be impacts on historical resources until we know that they've been identified. And that process has not yet been completed. Would you say that that's a fair statement?
A. As far as we are concerned, from the work that we have done, we feel that we've identified what needs to be identified. Has that been concurred with by the DHR and Army Corps of Engineers? No.
Q. But you mentioned that a historic district form would be necessary for some part of Rumney. And that hasn't been started. So you'd have to say that your -- you don't have a full handle on historic resources in the town of Rumney.
A. That was our recommendation. I don't know whether or not the DHR or the Army Corps of Engineers will concur with that recommendation or not. That was our opinion.
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Q. But lacking completion of such a survey and district identification, you couldn't say that you know what the resources are exactly and what the impacts might be.
A. The exact nature of the resources in Rumney and the historic district, no, that has not been completed.
Q. And so it would be difficult to generate a mitigation plan without knowing both the identification and nature of the historic resources, because mitigation would need to be tailored to the nature of the resources, according to your earlier statement.
A. In some respects, yes. Sometimes the mitigation can be tailored to the nature of the resources, other times with creative mitigation. As you know, it can be something somewhat different.

The question would also become for the historic district, whether or not we're dealing with an architectural resource, or what is the eligibility determination for those resources and whether or not there is an effect.
Q. That's my point.
A. Yeah.
Q. Without knowing that, you cannot develop a mitigation plan.
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A. Correct.
Q. So the process is not complete.
A. As far as that's concerned, no, it is not.
Q. What do you propose to do to respond to the October 28th letter and memorandum?
A. This morning we had a teleconference with the Army Corps of Engineers. Upon receipt -- or further discussion with the Army Corps about the statements made in the October $28 t h$ or $29 t h$-- October $28 t h$ letter and their review of our recent PAF submittal, we will do whatever it takes to get it done.

DR. BOISVERT: I think that's it. CHAIRMAN GETZ: Dr. Kent.

INTERROGATORIES BY DR. KENT:
Q. You'd expect the 106 process to be completed in days? Weeks? Or months?
A. Months .
Q. Months? Thank you.

CHAIRMAN GETZ: Other questions? Mr. Iacopino.

INTERROGATORIES BY MR. IACOPINO:
Q. I just need some clarification. Exhibit 38, the 124-page document that was submitted today, that was actually submitted to DHR back in July; is that
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correct?
A. Correct.
Q. And then the 39-page -- I'm sorry -- the 29-page exhibit which has been marked as Exhibit 39, that was the resubmission that occurred in October; is that correct?
A. Correct.
Q. And that was on October 21, or thereabouts?
A. I believe so.
Q. Okay. Oh, who was on your conference call this morning?
A. It was Kristin Bolin from Iberdrola, myself, Erika Marks from the Army Corps of Engineers, and her boss, Frank, whose last name I don't recall at the moment. DR. BOISVERT: Deljudice. WITNESS LUHMAN: Thank you. BY MR. IACOPINO:
Q. Was any representatives from the Division of Historic Resources from the State of New Hampshire on the call?
A. No.
Q. You seem to find a safe harbor in the 106 process. You say you believe in the system. If I understand the 106 process, a federal agency is designated as a
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lead agency to ensure that historic sites and historic resources are considered in any permit; is that correct?
A. Correct.
Q. And you're aware that there's a state statute that basically vests the Division of Historic Resources with the same duties on the state level.
A. That's correct.
Q. And that's R.S.A. 227-C.
A. Correct.
Q. And I understand that everybody gets together and consults in this iterative process. But in this particular case, what leads you to believe that you're going to come to a successful resolution, where you're getting letters like this from the -like Exhibit 29 from DHR?
A. The submittal of the PAF is designed precisely as we submitted the Coos submittal. So there has been a successful submittal of PAF prior to this, based on this format that we've used. And all I can do is look at the guidance that's been issued by the DHR, review the wind guidance, review the project area form guidance, look at the work we've done, and look at the comments and know what work we've done to
address those comments, and hope that through continuing consultation that we will revise and address these particular issues.
Q. Okay. So when you say "through continuing consultation," is it your belief that somehow the Army Corps will tell the DHR that they're incorrect in their assessment of this? Is that what you're talking about?
A. No. It's a consultative process, in terms of we've had discussions with the Army Corps about what it is that we've provided. And basically, it's discussions of all parties to move it forward.

MR. IACOPINO: Okay. No further questions.

CHAIRMAN GETZ: Dr. Boisvert.
INTERROGATORIES BY DR. BOISVERT:
Q. To jump back in a little bit, $I$ think it's fair to say that your group and the DHR are about as far as they can get, in terms of agreeing on the results of the work as submitted. I guess I'm asking the same question again. But what is it you anticipate doing to close that gap? It was rejected once. According to the comments in the letter, they saw minimal or almost no changes. What is it you propose to do?

What changes would you anticipate, and how would you carry them out?
A. I think the best thing that we can do is to sit down and talk about the PAF and what changes that we have made. About 20 percent of the document -- the document was increased in size by about 20 percent. So there were additional five pages of text that were provided. The concern about the agricultural context, the Baker River Valley, the census data, all of that was brought into the PAF. I'm really quite puzzled by the comments, and so I'm hoping that through a face-to-face meeting at some point in time in the near future we can sit down and go through the document and deal with the specific issues of where we need to address the concerns to move it forward.
Q. When do you anticipate requesting this meeting?
A. I would hope to do it as soon as possible.
Q. Days? Weeks?
A. I would hope that it would be within days or weeks. CHAIRMAN GETZ: Other questions from the Subcommittee? Redirect?

MR. PATCH: Could I have a minute with the witness?
(Discussion between Attorney Patch and
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[WITNESS: HOPE LUHMAN]
the witness.)
MR. PATCH: We have no questions on redirect. Thank you.

CHAIRMAN GETZ: Okay. Then the witness is excused. Thank you.
(WHEREUPON the witness was excused.)
CHAIRMAN GETZ: All right. So that completes the witnesses for today. Let's take stock of where we are for tomorrow.

The plan is to begin at 10 a.m., recognizing that it is Election Day. And then my understanding of order of witnesses is we'll begin with Mr. Mihalik on financial capability issues, who will be adopting the testimony of Mr. Canales. Then we'll go to Mr. Devlin on managerial and technical capabilities. And at least on what was indicated in the memorandum from the prehearing conference on Friday, it seems like we should have a fair possibility of completing those cross-examinations, perhaps even in the morning session.

After Mr. Devlin, what would be the proposal? Who would come after him?

MS. GEIGER: I believe it's Mr. O'Neal and then Mr. Gravel.
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CHAIRMAN GETZ: Okay. And then the notion is that, in any event, the panel would happen on Wednesday?

MS. GEIGER: Most likely. If we don't finish with Mr. Gravel, we'll obviously take him up on Wednesday morning.

CHAIRMAN GETZ: Okay. Any questions then before we close the hearing for today? Mr. Scott?

MR. SCOTT: Mr. Chairman, I know it's out of order. Can I ask the witness one more question before we go?

CHAIRMAN GETZ: Sure.
WITNESS HECKLAU: I should have gotten up.

MR. SCOTT: I apologize. My last question is, to the extent that earlier testimony that you've heard that there's still some uncertainty over the path of the power lines and facilities, does that have an impact on your analysis?

WITNESS LUHMAN: For any project there can typically be changes and alterations. And at some point in time, if a change or alteration occurs that would require a further review, it would be \{SEC 2010-01\} [DAY 1 AFTERNOON SESSION]\{11-01-10\}
undertaken.
MR. SCOTT: Thank you. CHAIRMAN GETZ: Okay. Anything further?
(No verbal response)
CHAIRMAN GETZ: I think we have an understanding of all the administrative procedural matters, so we'll close the hearing for today, and we'll pick up tomorrow morning at 10:00. Thank you, everyone.
(WHEREUPON, Day 1 AFTERNOON SESSION was adjourned at 4:55 p.m.)

CERTIFICATE
I, Susan J. Robidas, a Licensed Shorthand Court Reporter and Notary Public of the State of New Hampshire, do hereby certify that the foregoing is a true and accurate transcript of my stenographic notes of these proceedings taken at the place and on the date hereinbefore set forth, to the best of my skill and ability under the conditions present at the time.

I further certify that $I$ am neither attorney or counsel for, nor related to or employed by any of the parties to the action; and further, that $I$ am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

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