BEFORE THE OHIO POWER SITING BOARD

In the Matter of the :
Application of Firelands :
Wind, LLC, for a :
Certificate of :
Environmental :
Compatibility and Public : Case No. 18-1607-EL-BGN
Need to Construct a :
Wind-Powered Electric :
Generation Facility in :
Huron and Erie Counties, :
Ohio. :

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## PROCEEDINGS

before Mr. Jay S. Agranoff and Mr. Michael Williams, Attorney Examiners, Ohio Power Siting Board, conducted via Webex, called at 10:04 a.m. on Monday, October 5, 2020.

## VOLUME I

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APPEARANCES:
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By Ms. Christine M.T. Pirik
Mr. Jonathan R. Secrest
Mr. Terrence O'Donnell
Mr. William Vorys
and Ms. Madeline Fleisher
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and

K\&L Gates LLP
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Mr. Adam N. Tabor
and Mr. Brian Knox
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Columbus, Ohio 43235
On behalf of the Intervenors Alvin and Patricia Didion, Jane Fox, Marvin and Theresa Hay, Patricia Olsen, Sheila and Walt Poffenbaugh, Christina and John Popa, Lori Riedy, Charles Rogers, Kenn Rospert, Dennis and Sharon Schreiner, Donna and William Seaman, Deborah and Kenneth Weisenauer, Gerard Wensink, and Black Swamp Bird Observatory.

Sabin Center for Climate Change Law
By Ms. Hillary W. Aidun
Columbia Law School
435 West 116th Street
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On behalf of the Intervenors Tom Yingling and Kevin Erf.

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APPEARANCES: (Continued)
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    James Joel Sitterly,
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    On behalf of Board of Trustees of Norwich
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        County, Ohio.
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        of Huron County, Ohio.
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    Dave Yost, Ohio Attorney General
    By Mr. Werner L. Margard, III
    and Mr. Robert Eubanks,
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    On behalf of the Staff of the OPSB.
    
## APPEARANCES: (Continued)

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By Mr. Brett A. Kravitz and Ms. Katherine A. Walker, Assistant Attorneys General 2045 Morse Road, Building A-3 Columbus, Ohio 43229

On behalf of the Staff of the ODNR.
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On behalf of the Board of Commissioners of Erie County, Ohio.


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INDEX (Continued)<br>APPLICANT EXHIBITS<br>27 Proof of Second Service of<br>the Accepted, Complete Application on Local Public Officials, Libraries, and Each Owner of Property Crossed and/or Adjacent to the Proposed Facility Site and Proof of Second Publication of the Accepted, Complete Application in the Sandusky Register and the Norwalk Reflector, in Accordance with Ohio Adm. Code 4906-3-09, filed on March 12, 2020<br>28 Proof of Service and Proof of Publication in the Sandusky Register and the Norwalk Reflector that the Procedural Schedule has been Postponed, in Accordance with the ALJ's March 11, 2020, Entry, filed on April 7, 2020<br>29 Proof of Service and Proof 32<br>121<br>of Publication in the<br>Sandusky Register and the<br>Norwalk Reflector that the Procedural Schedule has been Reestablished, in Accordance with the ALJ's July 13, 2020, Entry, filed on July 23, 2020


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ALJ AGRANOFF: If we could please go on the record. The Ohio -- the Ohio Power Siting Board has set for hearing at this time and place, Case No. 18-1607-EL-BGN, which is captioned In the Matter of the Application of Firelands Wind, LLC, for a Certificate of Environmental Compatibility and Public Need to Construct a Wind-Powered Electric Generation Facility in Huron and Erie Counties, Ohio.

Good morning, everybody. My name is Jay Agranoff and with me is Michael Williams and we are the Administrative Law Judges assigned by the Board to hear this case. At this point in time we will take the appearances on behalf of the parties.

On behalf of the Applicant.
MR. SECREST: Good morning, your Honor. On behalf of Applicant Firelands Wind, LLC, Jonathan Secrest, Christine M.T. Pirik, Terrence O'Donnell, William Vorys, and Madeline Fleisher, all with the law firm Dickinson Wright, 150 East Gay Street, Suite 2400, Columbus, Ohio 43215.

We also, your Honor, have James Lynch and Adam Tabor, who have been admitted pro hac vice, with

K\&L Gates, LLP, 925 Fourth Avenue, Suite 2900, Seattle, Washington.

ALJ AGRANOFF: Thank you, Mr. Secrest.
MR. SECREST: Thank you, your Honor.
ALJ AGRANOFF: On behalf of the City of Willard.

MS. HEYMAN: Yes. Heather Heyman on behalf of the City of Willard.

ALJ AGRANOFF: Thank you.
On behalf of Norwich and Richmond Townships.

MR. STEPHENS: Yes. This is Assistant Prosecutor Jacob Stephens of the Huron County Prosecutor's Office on behalf of both Norwich and Richmond Townships.

ALJ AGRANOFF: Thank you.
On behalf of Erie County. Ms. Esposito.
MS. ESPOSITO: Good morning. This is
Alexandria Esposito on behalf of Erie County.
ALJ AGRANOFF: Thank you.
On behalf of Huron County.
MR. STRICKLER: Good morning, your
Honors. Randal Stickler from the Huron County Prosecutor's Office on behalf of the Huron County Board of Commissioners.

ALJ AGRANOFF: Thank you.
On behalf of the Ohio Department of Natural Resources.

MS. WALKER: Good morning. This is Katherine Walker, Ohio Attorney General's Office, on behalf of ODNR.

ALJ AGRANOFF: Thank you very much.
On behalf of the Board Staff.
MR. MARGARD: Thank you, your Honor. On behalf of the Staff of the Ohio Power Siting Board, Dave Yost, Ohio Attorney General, John Jones, Section Chief, Public Utilities Section, by Assistant Attorneys General, Werner L. Margard and Robert A. Eubanks, 30 East Broad Street, 16th Floor, I think, Columbus, Ohio.

ALJ AGRANOFF: Thank you, Mr. Margard.
On behalf of Mr. Yingling and Mr. Erf.
MS. AIDUN: Hillary Aidun at the Sabin Center for Climate Change Law, 435 West 116th Street, New York, New York 100027.

ALJ AGRANOFF: Thank you very much.
On behalf of the Black Swamp Bird
Observatory.
MR. VAN KLEY: This is Jack Van Kley on behalf of the Black Swamp Bird Observatory and also
on behalf of the local residents, with Van Kley and Walker at 132 Northwoods Boulevard, Suite C-1, Columbus, Ohio 43235.

ALJ AGRANOFF: Thank you, Mr. Van Kley.
Are there any of the pro se residents that were granted intervention in this particular matter that are currently on the line that are able to represent that they are participating in this particular proceeding?

I do understand that it is possible that they may be an attendee and if that is the case, then at this moment they are unable to actually have the capability of speaking. But if you can please send a chat message so that we are aware of the fact that you need to be promoted to a panelist status, we will be able to do that. Thank you.

I would point out that this is an adjudicatory hearing that is taking place pursuant to the parameters set forth in the Entries of July 13, August 21, and September 3 of this year. Due to the COVID-19 emergency that remains in effect, pursuant to Executive Order 2020-01(D), issued by the Governor of the State of Ohio, and consistent with Amended Substitute House Bill 197, this hearing is being held through Webex which enables parties to participate by
video conference while also affording public access to the hearing by telephone or video -- video via the internet.

Before we get started with the first witness, I would like to address some preliminary issues.

First, if counsel or witnesses experience any technical difficulties while testifying, or they have any difficulties with the ability to see or hear what is going on in this particular proceeding, they need to indicate as such by either the chat function or by letting us know by calling the Board's offices, and the phone number for that is 614-466-6843, and again you can also utilize the chat function to immediately -- immediately let us know that you are experiencing a particular problem with being able to participate in today's proceeding.

One thing that you should realize when using the chat function is that the chats are being recorded and should not be considered private. The chats are also not part of the official record in this case.

For those of you that are watching or listening as an attendee, as I indicated before, you will be able to observe the hearing. Your
microphones will be muted.
Now, as we did this morning and we will do for subsequent days of this hearing, there will be a 15 minute tech session prior to each day that individuals that will be testifying for particular days of the proceeding will be able to join and get some background information as to how the Webex platform should be utilized. So please let your witnesses know for the subsequent days that that availability will be provided to them to the extent that they want to get a little bit more comfort with the Webex technology.

Now let's talk a little bit about how this hearing is going to be conducted today. In many respects it's going to be no different than the way a typical normal hearing would take place at the Board. However, due to the remote nature of the hearing, here are some general ground rules and reminders for the hearing.

First, to avoid unnecessary background noise, I would ask that counsel keep their microphones on mute unless they are speaking or are prepared to speak as quickly as possible for the purposes of raising objections during cross-examination of a particular witness.

The microphones of the witnesses shall be kept on mute until it is their time to testify. With respect to the video, counsel should leave cameras on at all times except during breaks. You can also turn your video off if you need to step away from the hearing when your co-counsel is taking the lead. Just remember to turn your camera back on when you return.

Witnesses will need to turn on their cameras and microphones when they are ready to begin their testimony.

The key thing with respect to how this will run in a very seamless manner will be if we make the court reporter's job as easy as possible. So the key thing to remember is to speak clearly, at a reasonable speed, so that the court reporter can accurately transcribe the hearing.

As a reminder, everyone should do their best to avoid speaking over one another by taking proactive steps, like intentionally allowing for a pause at the end of their questions to witnesses, and generally slowing down in order to allow for connectivity lags and objections from counsel.

During their testimony, witnesses will have access only to the filings in this case as well
as other documents that have been identified as potential exhibits that have already been exchanged amongst the parties and shared with the Bench. Witnesses should not have access or seek other information in other documents. And it's important that the witnesses not attempt to communicate with -through other means with anyone privately during their particular testimony.

Now, one thing that I would like to ascertain at this point in time is whether or not there is going to be a need for a closed record at some point in time during the proceeding. I'm aware of the fact that $I$ believe Ms. Pirik, you had filed an exhibit that will now allow for the safety manuals to have a public version that would be able to be utilized for the purposes of cross-examination in this particular proceeding; is that correct?

MS. PIRIK: Yes, your Honor, we did. And we have not heard that there was additional information needed but Mr. Van Kley may be able to address that.

ALJ AGRANOFF: Mr. Van Kley, could you confirm that what you have is now acceptable for the purposes of having your cross-examination take place on the public record?

MR. VAN KLEY: So far as $I$ can tell currently, that is the case. The versions of the safety manuals that $I$ plan to use are the public versions and I do not currently anticipate the need to use any confidential information.

ALJ AGRANOFF: Okay. Are any other counsel aware of a situation for which we would be required to go into a closed record for the purposes of any cross-examination?

Okay. Hearing none, then we will work off of the assumption that everything that we'll be doing will be indeed on the public record today.

Now, this is going to be a multi-week hearing based on the schedule that has been agreed upon by counsel and the parties. And as that schedule reflects, we will be working on a daily basis through the witnesses that have been identified on the schedule for a specific day.

Now, I do know that we had talked about the fact that beginning on Wednesday, we would begin to, in essence, slot Staff witnesses in at least one a day.

At this point in time, Mr. Margard, has there been a discussion as to specific witnesses and specific days that they would be allocated to?

MR. MARGARD: Yes, your Honor. As we've informed the parties, we anticipate for convenience sake, if nothing else, proceeding with Staff witnesses in alphabetical order, so that would mean Mr. Bellamy, Mr. Conklin, Mr. Conway, et cetera, and we are anticipating being able to follow that sequence.

That said, your Honor, I did learn on Friday, for example, that a number of the Staff witnesses would be unavailable on Tuesday, the 13th, in the morning because of a site visit. Staff, of course, does have their regular duties and responsibilities to conduct during the course of the hearing. And it may be that a witness is unavailable unexpectedly.

We are trying to stay as on top of their availability as possible, and currently we don't anticipate any other instances other than the ones I've previously identified to the parties so we'll -we'll try to make sure we have them available in sequence.

ALJ AGRANOFF: Okay. And if you could then each day prior to when a particular Staff witness is supposed to be testifying, let us know that here is what the upcoming next-day schedule will
be for Staff relative to their witness availability. MR. MARGARD: We will do that, your Honor. And it's our expectation we will have a witness in case some cross-examination either concludes earlier than anticipated or because of unavailability, so we'll always anticipate having a next witness identified as well.

ALJ AGRANOFF: Okay. Greatly appreciated.

With respect to how we will proceed on a daily basis. Today obviously we began at 10 o'clock. For each subsequent day of this hearing, it's our expectation that we are going to begin at 9 o'clock each day in order to help assure that we stay on schedule as previously agreed upon by the parties.

We'll take a one-hour lunch break, and basically as to when that particular lunch hour will begin, we're going to, you know, wait and see each day as to when an ideal breaking point will be and we'll take that break accordingly once we identified that particular point in time.

With respect to the order of cross-examination of witnesses, since it appears that the only parties who have not agreed with the proposed Stipulation are Mr. Van Kley's local
residents and the Black Swamp Observatory, therefore with respect to the Company witnesses that have been identified in this case, Mr. Van Kley will be the only counsel that would be engaging in cross-examination of those particular witnesses.

And then with respect to the other witnesses in this particular case, we'll -- we'll allow the -- obviously with respect to the Black Swamp Observatory witnesses, the local residents, all of the other parties would have the opportunity to cross-examine those particular witnesses.

Is that clear as to how we are going to proceed relative to cross-examination?

As I had discussed with the court reporter, Ms. Gibson, before we actually went formally on the record, it would probably make sense that the following day if you could please send all of the admitted exhibits to the court reporter so that she then would have the most current and accurate listing of all those exhibits and be able to keep them tracked in the most efficient manner. If you could e-mail those exhibits to her at kspencer@aando.com. So that's the letter A, then $\mathrm{A}-\mathrm{N}-\mathrm{D}$, the letter O , .com.

Before we actually begin with the
testimony that is scheduled for today and that is Mr. Pedder, I believe is the sole witness that we have on our schedule for today's proceeding, I wanted to kind of clean up any pending matters that we currently had that was in need of ruling. So we will deal with that at this point in time.

And specifically I know that Ms. Pirik, you had sent and docketed a letter on the -- let's see the date -- the 24 th of September where I believe you were basically trying to account for the filing of the redacted safety manuals to then incorporate that filing in the context of the pending motions that we have for protective treatment. Is that correct? I think, Ms. Pirik, you have to turn your mic on.

MS. PIRIK: Yes, your Honor.
ALJ AGRANOFF: Okay. And I just wanted to make sure that your records and what $I$ had in front of me matched just so that we didn't have any unresolved motions after this particular filing. I know that you referenced the January 31, July 10, September 12 motions of 2019 that pertain to the safety manuals. And then you also had an October 4, 2019, and I couldn't find the October 4 motion but I had November 26, 2019, and a February 11, 2020. Do
you have those filings as well that pertain to the safety manuals? If you have to go back and check, that's perfectly fine. We can deal with this at a later point in time.

MS. PIRIK: I think that might be a good idea just so that I can, you know, look at everything and then give you a better response.

ALJ AGRANOFF: Okay. That would be perfect. Yeah, if you can just check, I think there was -- again, I couldn't find the October 4, 2019, but again, November 26, 2019, and February 11, 2020, I think had turbine safety manual issues raised in them.

And then with respect to the financial information that had previously been requested protective treatment, I assume those requests are still in need of ruling as well?

MS. PIRIK: Yes, your Honor.
ALJ AGRANOFF: Okay. And just so that we make sure that we're not missing anything, I had January 31, 2019, that dealt with the financial issues as well as the February 11, 2020. So if you could confirm on your end that that is what you have as well, that would be helpful.

MS. PIRIK: We will do that. Thank you.

ALJ AGRANOFF: Thank you.
And then the only other pending motion that I saw was the motion for pro hac vice relative to Mr. Brian Knox.

MS. PIRIK: That's correct, your Honor.
ALJ AGRANOFF: And I think that was filed on July 1 of 2020. And with respect to that particular motion, it shall be granted and Mr. Knox can participate in this proceeding.

MS. PIRIK: Thank you, your Honor.
ALJ AGRANOFF: You're welcome.
Okay. Is there anything else before we begin with today's testimony that any counsel or Mr. Williams that you believe we need to speak about?

ALJ WILLIAMS: I think you did a very thorough job of getting us started, Jay.

ALJ AGRANOFF: Thank you. And with that I'll turn it over to you.

MR. SECREST: Thank you, your Honors. If I may pose a question. John Secrest on behalf of the Applicant. We obviously have direct testimony prefiled and we've accounted for cross-examination exhibits through the prehearing order and exchange of those exhibits. How does the Bench want to deal with the potential redirect exhibits? Frankly, I don't
know what, if any, those will be until cross-examination has been completed or during the course of cross-examination. So what's the process the Bench would like for us to, one, introduce those and, two, get those in the hands of everybody including the court reporter?

ALJ WILLIAMS: Have they been distributed already?

MR. SECREST: No, they have not, your Honor.

ALJ AGRANOFF: Why don't we wait until we get to that first point where that particular issue may become relevant and at that juncture we can then ascertain the best way to deal with that on a going-forward basis.

MR. SECREST: Fair enough. Thank you, your Honor.

ALJ WILLIAMS: Any other preliminary
matters?
Okay. With that, we will invite the Applicant to call their first witness.

MR. SECREST: Thank you, your Honor. May the Applicant call Nate Pedder to the stand.

ALJ WILLIAMS: Good morning, Mr. Pedder.
THE WITNESS: Good morning.

ALJ WILLIAMS: Can you hear me?
THE WITNESS: Yep.
ALJ WILLIAMS: Fantastic. Would you
raiser your right hand, please.
(Witness sworn.)
ALJ WILLIAMS: Please begin on direct.
MR. SECREST: Thank you, your Honor.
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NATHAN PEDDER
being first duly sworn, as prescribed by law, was examined and testified as follows:

DIRECT EXAMINATION
By Mr. Secrest:
Q. Mr. Pedder, would you please state your full name for the record.
A. Nathan Pedder.
Q. And by whom are you employed?
A. Apex Clean Energy.
Q. What is your business address?
A. I believe it would be 301 Fourth Street, Suite 210, Charlottesville, Virginia.
Q. Thank you, Mr. Pedder. Do you have in front of you what has been marked as Exhibit 31?
A. I do.
Q. Is that a true and accurate copy of your
prefiled direct testimony?
A. Yes.
Q. Do you have any changes or revisions to that testimony?
A. No.

MR. SECREST: Your Honor, Mr. Pedder is sponsoring Exhibits 1 through 30 as well as 82. Would you like those marked now or should I do that at the end of his examination?

ALJ WILLIAMS: Go ahead and mark them now.

MR. SECREST: Your Honors, we've marked as Exhibit 1, the Application filed on January 31, 2019.

Exhibit 2 is the Supplement to the Application filed on March 18, 2019.

Exhibit 3 is the Second Supplement to the Application.

Exhibit 4 is the Third Supplement to the Application.

Exhibit 5 is the Revised Fourth Supplement to the Application.

Exhibit 6 is Application part 8 of 17, filed January 24, 2020 .

Exhibit 7 is Response to First Set of

Interrogatories.
Exhibit 8, Response to Second Set of Interrogatories.

Exhibit 9, Response to Third Set of Interrogatories.

Exhibit 10, Response to Fourth Set of Interrogatories.

Exhibit 11, Response to Fifth Set of Interrogatories.

Exhibit 12, Response to Sixth Set of Interrogatories.

Exhibit 13, Response to Seventh Set of Interrogatories.

Exhibit 14, Supplemental Response to Sixth Set of Interrogatories.

Exhibit 15, Supplemental Response to Seventh Set of Interrogatories.

Exhibit 16, Response to Eighth Set of Interrogatories.

Exhibit 17, Second Supplemental Response to Seventh Set of Interrogatories.

Exhibit 18, Certificate of Service of the November 15, 2018, Public Information Meeting, notice on property owners and entities.

Exhibit 19, Proof of Publication of

November 15, 2018, Public Information Meeting in the "Sandusky Register" and the "Norwalk Reflector." Exhibit 20 is Certificate of Service of the April 3, 2019, Second Public Information Meeting, notice on property owners and entities.

Exhibit 21, Proof of Publication of April 3, 2019, Second Public Information Meeting in the "Sandusky Register" and "Norwalk Reflector."

Exhibit 22, Certificate of Service of the accepted, complete application on local public officials and libraries.

Exhibit 23, Second Certificate of Service of the accepted, complete application on local public officials and libraries.

Exhibit 24, Third Certificate of Service of the accepted, complete application on local public officials and libraries.

Exhibit 25, Supplement to Third Certificate of Service of the accepted, complete application on local public officials and libraries.

Exhibit 26, Proof of Service of the accepted, complete application on all local public officials, libraries, and each owner of property crossed and/or adjacent to the proposed facility site, and Proof of Publication of the accepted,
complete application in the "Sandusky Register" and the "Norwalk Reflector."

Exhibit 27, Proof of the Second Service of the accepted, complete application on all local public officials, libraries, and each owner of property crossed and/or adjacent to the proposed facility's site, and Proof of Second Publication of the accepted, complete application in the "Sandusky Register" and "Norwalk Reflector."

Exhibit 28, Proof of Service and Proof of Publication in the "Sandusky Register" and "Norwalk Reflector" that the procedural schedule has been postponed, in accordance with the Administrative Law Judge's March 11, 2020, Entry.

Exhibit 29, Proof of Service and Proof of Publication in the "Sandusky Register" and "Norwalk Reflector" that the procedural schedule has been reestablished, in accordance with the ALJ's July 13, 2020, Entry.

Exhibit 30, Proof of Second Service and Proof of Second Publication in the "Sandusky Register" and "Norwalk Reflector" that the procedural schedule has been reestablished, in accordance with the ALJ's July 13, 2020, Entry.

Exhibit 31 is the Prefiled Testimony --

Direct Testimony of Nate Pedder.
And lastly, Exhibit 82 is the nonconfidential GE, Nordex, Siemens Gamesa, and Vestas Safety Manuals filed September 24, 2020. May I have all referenced exhibits marked, your Honor?

ALJ WILLIAMS: So marked. Thank you, Counsel.
(EXHIBITS MARKED FOR IDENTIFICATION.)
MR. SECREST: Thank you, your Honor.
With that, I tender Mr. Pedder for cross-examination, your Honor.

ALJ WILLIAMS: Thank you, Counsel.
MR. SECREST: Thank you.
ALJ WILLIAMS: Mr. Van Kley.
MR. VAN KLEY: Thank you, your Honor. - - -

CROSS-EXAMINATION
By Mr. Van Kley:
Q. Good morning, Mr. Pedder. My name is Jack Van Kley. I represent the local residents and the Black Swamp Bird Observatory.

Why don't we start off your
cross-examination by talking a little bit about your experience and background. If you could turn to the
résumé that you have attached to your written direct testimony in Applicant Exhibit 31, I think that would help move our discussion along.
A. I am there.
Q. Okay. So looking at your experience starting after you graduated from college, it looks like your first position was as a project developer for Apex Clean Energy; is that correct?
A. That's correct.
Q. Okay. And you were in that position from January 2016, to December 2018, correct?
A. Correct.
Q. What were your duties in that position?
A. My duties in that position were primarily project development work so $I$ was working locally with land leasing and permitting efforts on a number of projects as well as coordinating efforts among a variety of subject-matter experts both internal and external to Apex.
Q. Did any of that work involve wind projects?
A. Yes.
Q. Okay. Which wind projects did you work on during that period of time?
A. During that period of time, $I$ worked on

Timbermill Wind, as well as Dakota Range I, II -yeah, Dakota Range I and II, and then briefly on the Bowman Wind Project.
Q. Then you became a development manager for Apex Clean Energy; is that correct?
A. Correct.
Q. And you've been in that position since January of 2019?
A. Correct.
Q. What have been your -- what have been your duties in that position?
A. Largely the same as the previous role, just more management responsibility and individual ownership of projects.
Q. Did any of that work involve wind projects?
A. It did.
Q. Okay. And during the period of time that you were the development manager, did you work on any wind projects other than the ones you've already named with respect to your position as a project developer?
A. Yes.
Q. And what were the names of those projects?
A. Would have been Honey Creek Wind, and then this project, the Emerson Creek Project, and then I assisted on the Heritage Wind Project and the -- yeah, that's it.
Q. When did you start working on the Emerson Creek wind project?
A. Would have been -- let's see. I'm trying -- I think it's been about two years. So it would have been early or mid 2018, I believe. I actually think, now looking at my résumé, I think I have those dates wrong.

I think I was the project developer through -- I was project developer for two years, so that would have been January 2016 through January 2017 rather than December 2018. And then in January of 2018, I would have become development manager. So the dates are wrong. But starting in 2018, I would have been working on the Timbermill Project and then transitioned to Honey Creek Wind, Emerson Creek Wind, and then briefly helped on the Heritage Wind Project.
Q. Is there any difference in the nature of your duties as a project developer versus the duty you have been undertaking as a development manager?
A. Largely, no.
Q. Now, when you started working on the Emerson Creek wind project, what was the status of the project at that time? Was it just beginning or was it already underway as to its development?
A. It was underway in its development.
Q. Okay. For how long of a period had it been in -- under development by the time you started working on it?
A. I believe it was -- I believe development started on the Emerson Creek project around 2010.
Q. So generally speaking, what work had already been finished on the Emerson Creek wind project by the time you started working on it?
A. By the time I started working on the Emerson Creek wind project, leasing had been underway as well as a variety of studies as well as agency coordination.
Q. Have you been involved at all in negotiating leases with participating landowners for the project?

MR. SECREST: Objection, vague.
ALJ WILLIAMS: I'll let him answer.
A. What do you mean by "negotiating"?
Q. Have -- did you have any discussions with -- with landowners about signing leases for the

Emerson Creek wind project?
A. Yes.
Q. Okay. And what involvement did you have in that regard?
A. I would reach out to landowners and answer questions regarding the project and work with them towards a decision on whether they would sign a lease or not.
Q. Are you familiar with the leases that have been signed by participating landowners?
A. Largely, yes.
Q. To your knowledge did any of those leases prohibit the participating landowners from discussing their leases with other people such as their neighbors?
A. No.
Q. When was the first time that the Emerson wind -- or the Emerson Creek wind project was announced to the public?
A. I don't know a firm date, but I'm aware that we met with county official -- like county commissioners as well as township trustees throughout the early stages of development so I believe that would have probably started perhaps in 2012.
Q. Were those meetings with the local
government officials held as public meetings or private meetings?
A. I believe those were held publicly. I don't have a firm date off the top of my head. I believe some of that information is included in the Application.
Q. Let's talk a little bit about some of the issues that my clients have raised in this proceeding.

MR. VAN KLEY: And for the record, Judge Williams, my cross-examination of Mr. Pedder would be on behalf of both the Black Swamp Bird Observatory and the local residents; although, the Black Swamp Bird Observatory is interested primarily in wildlife issues and not necessarily some of these other issues.
Q. Let's talk a little bit about the issues and I would like to start with a discussion about T.V. reception. Do you have Exhibit No. 1 for the Applicant in front of you?
A. Would that be -- what is the title of that exhibit?
Q. That would be your Exhibit No. 1 which is the narrative portion -- which is the Application.
A. Okay. Yes.
Q. Okay. And once you have that in front of you, go to page 101.
A. Okay.
Q. All right. Actually let's go to page 100 to start with.
A. Okay.
Q. I would like to refer you to the second paragraph on that page.
A. Okay.
Q. And specifically the last sentence states "Based on the 10 percent criteria described above, up to 233 households may be affected to varying degrees." Do you see that?
A. Yes, I do.
Q. Now, Firelands had T.V. reception evaluated by a company called Evans Engineering; is that correct?
A. Yes.
Q. And Evans Engineering did a study to determine how many households would potentially be affected in their T.V. viewing by the turbines; is that correct?
A. That's generally my understanding of the analysis that they conducted, but Ben Evans, from Evans Engineering, will be testifying later and he
will be able to answer those specifics.
Q. Now, did -- after Evans Engineering provided its evaluation to Firelands, did Firelands change any of its turbine layout as a result of the information submitted by Evans Engineering?
A. I cannot recall specifically if we did or did not. I -- no.
Q. Do you have a copy of the Stipulation that has been entered in this case and marked as Joint Exhibit No. 1?
A. I do.
Q. Okay. Great. Would you go to page 9 of that Joint Stipulation, paragraph 38.
A. I'm sorry. Which paragraph did you say?
Q. 38 .
A. Okay.
Q. All right. Now, paragraph 38 talks about some commitments that Firelands would make if there is interference with T.V. reception; is that correct?
A. That would be my understanding of the proposed condition No. 38.
Q. Uh-huh. Has Firelands, in signing this Stipulation or in its Application, made any commitment to pay for installing cable T.V. for any neighbors whose T.V. reception is impaired by the
turbines?
A. I believe that somewhere in the Application, if not specifically, it is stated in this condition, we have made that -- a similar commitment. I don't believe it was specifically for, you know, cable, but it may have been for satellite reception so sort of dish.
Q. The satellite reception that you are talking about is -- is for something other than television; is that correct?
A. No. I believe the cable, it depends on the location as to availability but I believe the commitment was for something to that equivalency so whether it's Dish Network, Comcast, whatever would be available and best suit that location.
Q. Uh-huh. If -- if a neighbor needs to have cable T.V. in order to replace the digital reception that's impaired by the turbines, has Firelands made a commitment to pay the monthly subscription fees for that cable T.V. service?
A. I believe we have and, if not, we commit to that. That would all be covered under the complaint resolution and so, yes, if those issues were to occur, we would -- we have an established complaint resolution process that was included in the

Application.
Q. Let's move on to another issue concerning wildlife. Let's talk first about bald eagles. To your knowledge, has Firelands ever asked participating landowners to inform Firelands about any eagles sighted in the project area?
A. To my knowledge, we have not requested that.
Q. To your knowledge, has Firelands asked the participating landowners to report any eagle nests present in the project area?
A. To my knowledge, we have not requested that.
Q. Has Firelands, to your knowledge, received any information from participating landowners about eagles in the project area?
A. Yes and no.
Q. What about eagle nests? Has Firelands received any information from participating landowners concerning the presence of eagle nests in the project area?
A. Yes and no.
Q. Okay. Would you explain that answer, please?
A. Yes. We had a landowner that approached
us with what he believed was a bald eagle nest and so we sent out wildlife and biology experts to go observe the nest and determine what type of nest it was, and it was determined to be a red-tailed hawk nest.
Q. Can you tell me where that nest was located approximately?
A. Maybe if I had a map in front of me. The exact locations of those would best be left to the wildlife experts. They will be able to discuss the locations of all nests.
Q. So you don't recall by memory where it was located?
A. Not -- not without a map.
Q. Has Firelands had any conversations or other communications with U.S. Fish and Wildlife Service about eagles in 2020?
A. I'm sorry, could you repeat the question? I think I missed that.
Q. Sure. Has Firelands had any communications with the U.S. Fish and Wildlife Service about eagles in 2020?
A. Yes.
Q. What was -- what was the subject matter of these conversations generally speaking?
A. I would probably defer those -- specifics of those conversations to the wildlife experts as they are the most informed on what was involved with those. I believe we may have had a meeting with them in February and discussed some -- some findings and some next steps.
Q. Okay. Did you participate in that discussion with the U.S. Fish and Wildlife Service?
A. I was at maybe half of that meeting. I had to step out. I had a different meeting to go to.
Q. What are the names of Firelands' wildlife experts that have been involved in discussions with U.S. Fish and Wildlife Service about eagles in the year 2020?
A. I'm not sure which specific external consultants were involved directly in those communications. But internally to Apex, Jennie Geiger would have been involved in those conversations.
Q. Do you know if Rhett Good was involved in those conversations?
A. Not off the top of my head.
Q. Okay. How about Chris Farmer, was he involved in those conversations?
A. Not off the top of my head.
Q. Did the conversations occur in -- or conversation occur in 2020, include a discussion about Firelands applying for a take use permit for eagles?
A. I would defer the specifics of those conversations to some of the wildlife experts.
Q. Well, do you know the answer to the question?
A. I believe we would have discussed with them an Eagle Conservation Plan and so I believe that that would involve potentially a take permit. I am not always sure on some of those specifics.
Q. Uh-huh. Do you know whether Firelands has submitted an application for a take use permit for eagles?
A. Not that I'm aware of, no.
Q. Do you know whether Firelands intends to submit such an application?
A. I believe one of the conditions in the Stipulation -- may I refer to the Stipulation to tell you which condition?
Q. Sure.
A. I believe condition No. 31, we commit to apply for an Eagle Take Permit.
Q. At this point in time does Firelands have
any expectation as to when it will be submitting such an application?
A. I believe with that condition, if I may refer to it again, we applied to -- we commit to applying for an Eagle Take Permit from the U.S. Fish and Wildlife prior to the project becoming operational.
Q. And what's your current expectation as to when you think the project would become operational?
A. That will depend largely on the resolution of this hearing and the timing of receiving that certificate.
Q. Would you go back to Applicant Exhibit No. 1, which is your permit application, and you find Exhibit $K$ to that application, that application.
A. Yes. Give me a moment. I don't believe I have binder No. 3. Sorry. Yes, I have -- I believe I have a copy of Exhibit $K$ in front of me.
Q. Okay. Great. Go to Exhibit $K$ which is the U.S. Fish and Wildlife Service and ODNR correspondence.
A. Uh-huh.
Q. And I would like you to find the meeting summary for October 18, 2018, between ODNR and U.S. Fish and Wildlife Service and Firelands.

ALJ WILLIAMS: Attorney Van Kley, I have got these exhibits and $K$ listed 1 through 12 in the advanced file. Do you know what number you are in? THE WITNESS: It would be No. 1. ALJ WILLIAMS: Thank you. MR. VAN KLEY: Yes, yes, Applicant's Exhibit No. 1. For those of you who are looking at the online version at the Power Siting Board website, if you go to part 6 of 17, you will find that Exhibit K. I'll get there and I will tell you what PDF page. It's PDF page 886.

> ALJ WILLIAMS: Okay.
A. Okay. I believe I am -- I am there.
Q. Okay. Great. Did you find -- is there an e-mail from Keith Lott to Rhett Good and Kevin Davis, dated June 9 -- June 9, 2010?
A. I'm sorry. So not the October 18, 2018, meeting summary?
Q. Yes. It's in that summary.
A. I don't see it in that summary. I can look through Exhibit $K$ and see where that is. You said it was from Keith Lott to Rhett Good?
Q. Yes.
A. I believe you are referring to actually -- hold on a second. Let me figure out what
the beginning of this section was. No. 6 of Exhibit K, February 22, September 17? And then from there -John, can you go on mute?

From there I believe it would be probably about 10 pages in. It's after the ODNR report. I am not sure exactly what this is. It looks like a series of pages from ODNR and then the first e-mail there, June 9, 2010, from Keith Lott to Rhett Good, is that what you are referring to?
Q. Yes. You found it, uh-huh.

MR. SECREST: So we are on page 12 of Exhibit 8 of K 6 .

THE WITNESS: That sounds correct to me.
MR. VAN KLEY: I am looking at the online version and it's page 886 of part 6 of 17 parts, and you are correct, I gave you the wrong heading name. It should have been 6, February 22, 2017, Survey Recommendations of ODNR. I believe that's the heading for the documents in which the page that $I$ want to ask you about appears.

ALJ WILLIAMS: I think he is there. Go ahead.
Q. (By Mr. Van Kley) Okay. So referring you to the e-mail of June 9, 2010, from Keith Lott to Rhett Good and Kevin Davis, I am just going to read
the text of that e-mail to you and then $I$ will have a question to you about it.

The e-mail states: "Attached are the Division of Wildlife survey recommendations for the Emerson project. Please review, if you have any questions please feel free to give me a call. As for Seneca Caverns, this is a commercial cave, there may be a few bats that over winter within it. But similar to Ohio Caverns, it is not considered to be a hibernacula. Given that we know there are karst regions within the area, $I$ would suggest contacting leased landowners to inquire about whether there are any caves within the region. If so, I would recommend surveying those to see if they are being used by bats." Did I read that correctly?
A. It appears so.
Q. Okay. So my question to you, and I understand I didn't -- that you were not involved in this project at this time, but to your knowledge, did Firelands ever ask participating landowners to inquire about whether there were any caves in the region?
A. I am unaware.
Q. Do you know whether there are any caves in the project area?
A. I do not believe so.
Q. To your knowledge, has Firelands ever asked the participating landowners to report any bat roosts present in the project area?
A. I do not believe so.
Q. To your knowledge, has Firelands received any information from anyone concerning bat roosts in the project area?

MR. SECREST: Objection, vague as to
"anyone."
MR. VAN KLEY: "Anyone" means any person.
That's what $I$ am asking about.
ALJ WILLIAMS: I will let him answer and explain.
A. Not that I'm aware of.
Q. Has Firelands had any conversations or other communications with U.S. Fish and Wildlife Service about bats in the year 2020?
A. Specifically about bats, I am not sure. I believe we would have included an overview of that in our discussion with them earlier this year, but $I$ can't be sure. I would leave that to the experts to be able to talk about that.
Q. Does Firelands have any plans to apply for a takings permit for Indiana bats for its

project?
A. As far as -- as far as impacts in our plans, I would leave that to the experts to be able to talk about that. I'm not aware.
Q. And who are those experts that would have that knowledge?
A. I believe Rhett Good would be the one primarily speaking on that.
Q. Do you believe Mr. -- do you believe that Mr. Good would know about whether Firelands has the intent to apply for a takings permit for the Indiana bat?
A. Yes. I believe he would be aware.
Q. Does Firelands have the intent to conduct post-construction monitoring for bird or bat fatalities at the Emerson Creek wind project after it is in operation?
A. I believe that post-construction monitoring -- may I look at the Stipulation?
Q. Yes, you may.
A. I believe post-construction monitoring is considered in the Stipulation. Give me a moment. I believe it's in here. I am not exactly sure where. I would refer to Rhett Good and Chris Farmer. I believe they will best be able to answer questions on
plans for post-construction monitoring.
Q. Uh-huh. Does Firelands plan to make its mortality data available to the public?
A. I am unaware if we will or will not. We will be following the rules and regulations of U.S. Fish and Wildlife and ODNR and OPSB applicable.
Q. Uh-huh. Well, if -- if ODNR and U.S. Fish and Wildlife do not prohibit the release of this information to the public, is it Firelands' intent to make that data public?
A. So I -- if they are not requiring it to be public, I suspect not.
Q. Let's move on to a different topic. Let's talk about turbine foundations. Would you describe for me the size of the foundations that will be built for the turbines.
A. Sure. The foundations planned for the turbines are spread footer foundations and so those will be about somewhere in the range of 60 to 80 feet probably in diameter. They'll extend about 10 feet below the surface.

As a spread footer foundation starts closer to directly underneath the turbine, they will be closer to the surface level, and then by the time they get out to the edge of that foundation, $I$
believe they'll be, I want to say somewhere in the range of 6 feet below the surface.

Generally a spread footer foundation starts closer to the surface -- I suppose the court reporter won't be pleased if I talk with my hands -and slopes down towards the outer edge of that diameter.
Q. Has Firelands commissioned any field work that has identified the depth to the groundwater table in the areas where it wants to put its turbines?
A. I believe so.
Q. Can you tell me how far below the surface of the ground it has been found that the groundwater table exists?
A. I could probably tell you approximately.
Q. Okay. What's the shallowest that -- to your recollection that groundwater has been found below the surface?
A. It's my recollection it would be somewhere in the 5 to 10 foot depth. As for specifics on that, $I$ would defer to Witnesses Alfred Williams and Ralph Corzatt.
Q. In situations where a turbine foundation is being dug and groundwater is encountered, what is
the typical procedure that is followed by a wind company in order to address that groundwater?
A. I believe pumping is used to remove water.
Q. So the hole is dewatered?
A. That's my general understanding.
Q. Are you aware of any sinkholes in the project area?
A. Yes.
Q. How many are you aware of?
A. I am not aware of a specific number.
Q. Have you personally seen any of these sinkholes in the project area?
A. No.
Q. How did you become aware of those sinkholes?
A. I have been made aware by citizens in and near the project area.
Q. Now, Firelands has conducted borings in the project area at some of the turbine sites; is that correct?
A. The majority of those turbine sites, correct.
Q. And have those borings discovered the existence of bedrock at an elevation less than 10
feet from the surface at any of those locations?
A. I'm not sure. That -- the results of those borings, the bedrock depth, would be a question best left to Witness Alfred Williams.
Q. Are you aware of any plans that Firelands has to conduct blasting of bedrock in order to install any of its turbines?
A. We have no plans for that at this time.
Q. Has Firelands ruled out the use of blasting for that purpose?
A. I do not believe so. Can you hear me?
Q. Yes.
A. Did you hear my answer on that?
Q. I did, yes, thank you.

MR. SECREST: Thank you.
Q. All right. Let's go to page 8 of your written direct testimony which was marked as Applicant Exhibit 31.
A. Okay.
Q. I would like you to go to the fourth bullet point on that page which discusses shadow flicker.
A. Yes.
Q. All right. And looking through the testimonies that have been filed for other people who
are going to be testifying for Firelands in this hearing, I don't see that any of the other witnesses have submitted any testimony about shadow flicker. Am I right about that or am I mistaken?
A. You are correct.
Q. Okay. All right. So I want to ask you some questions about shadow flicker then.
A. Okay.
Q. All right. First of all, let's get a little bit of background about your experience with shadow flicker. Have you ever performed personally a shadow flicker study?
A. Not personally, no.
Q. Do you have any formal training in the analysis or evaluation of shadow flicker?
A. Personally, no.
Q. Okay. Have you ever done a model to evaluate the amount of shadow flicker that a source of flicker would produce?
A. Personally, no.
Q. Do you know why it's called a flicker?
A. I believe it would refer to the alteration of shadow to sunlight when a receptor has a turbine that is spinning between it and the sun.
Q. Uh-huh. So it creates an appearance of a
flickering light; is that accurate to say?
A. Yes.
Q. And shadow flicker can go through
windowpanes; is that correct?
A. Yes.
Q. Or if a person is outdoors, a person could experience shadow flicker from a source nearby?
A. Correct.
Q. Have you personally ever lived in a property affected by shadow flicker from a wind turbine?
A. Personally, no.
Q. So you have no personal experience about how it feels to be subjected to shadow flicker?
A. I have been near a turbine and have experienced shadow flicker.
Q. But not -- you haven't experienced it at a location where you are living?
A. Correct.
Q. Would you go to -- back to the Application, to the narrative part of the Application, page 86.
A. Just give me -- give me a moment here. I'm sorry. You said page 86?
Q. I did, yes. But it looks like I gave you
the wrong page number. Just a second.
All right. I should have referred you to page 90 where the discussion about shadow flicker starts.
A. Okay.
Q. All right. Starting on page 90 , we have a discussion in the Application about shadow flicker, correct?
A. Yes.
Q. Now, going to page 91, I would like to refer you to the second bullet point on that page.
A. Yes.
Q. And it refers to the latitude and longitude coordinates of 1,495 potential sensitive receptors located within the 10 -rotor diameter, 1,500 meter. Do you see that?
A. Uh-huh.
Q. Okay. Yes, right?
A. Yes.
Q. Okay. Yeah. All right. So let me first ask you whether you know how far shadow flicker from a wind turbine will travel.
A. Shadow flicker from a wind turbine dissipates over distance. I would have to refer to the study to know that exact distance. But I believe
beyond roughly 10 -rotor diameters there -- it's negligible. But as you get further from the turbine, I believe those impacts dissipate due to atmospheric conditions.
Q. Did Firelands model their shadow flicker, the shadow flicker that potentially could go beyond 1,500 meters from the turbine?
A. I would have to refer to the study itself as well as any updated study materials.
Q. All right. Why don't you go to the study itself then which is also part of the Application. And I believe that would be Exhibit $H$ of the Application that is marked as Applicant Exhibit 1.
A. Yep. Give me one second.
Q. We will give everybody else the time to find it as well.
A. Okay.
Q. All right. Do you see anything in that -- first of all, let's just identify the report. Exhibit H, entitled "Shadow Flicker Report" is the report that was prepared for Apex Clean Energy for the Emerson Creek wind project, correct?
A. For the January 31, 2019, submission, correct.
Q. Uh-huh. And is the information in the

Application, starting on page 90 of the narrative, based on information in Exhibit H?
A. I believe so, yes.
Q. Is there anything in Exhibit $H$ indicating that any shadow flicker beyond 1,500 meters got modeled?
A. I believe Figure 3 shows the shadow flicker wings in that exhibit, and it shows the distance at which shadow flicker is expected to extend beyond the turbines, and so it appears that modeling of the shadow flicker extends to the extent of the shadow flicker.
Q. Okay. Tell me again where you found that information.
A. Figure 3.
Q. In Exhibit H?
A. Yes.
Q. Okay. On what page is Figure 3?
A. It does not have a page number. Give me one second and I can ballpark it for you. The report ends on page 18 and then it's the third figure and the figure begins right after that, so it would be 22, I believe.
Q. Is this a map of the project area?
A. Yes.
Q. Okay. All right. And so tell me again where you see information on Figure 3 about the distance at which the modeling was occurred -- was conducted.
A. Figure 3 shows the expected shadow flicker wings, and so it shows the extent at which impacts are anticipated. And so you can see at the bottom, the legend shows what each of those results are, and so you can generally see where those wings extend to.
Q. Okay. Going back to the narrative of the Application marked as Applicant's Exhibit No. 1, go to page 92.
A. Okay.
Q. All right. And according to the information here, the wind project, as modeled at the time that this information was obtained, showed that 112 sensitive receptors may be affected for more than 30 hours of shadow flicker per year, correct?
A. Correct.
Q. And what's the definition of a "receptor" as used on this page?
A. A receptor is, I believe, a residence or any type of occupied dwelling.
Q. And according to the modeling done at the
time that this report was written, 55 of the 112 receptors were nonparticipants; is that right?
A. That appears so, correct.
Q. Have other modeling reports been submitted for this wind project as part of the Application or Supplemental Applications?
A. Are you asking --

MR. SECREST: Objection. Relating to shadow flicker?

MR. VAN KLEY: Yes.
A. Yes.
Q. Okay. How many other modelings have been submitted as part of the record for shadow flicker in this case?
A. I believe there was one memo regarding shadow flicker, or it may have just been a paragraph, and then there was additionally one more study.
Q. Uh-huh. What do you mean by the one paragraph? Can you explain that a little bit more?
A. I believe when submitting the -- one of the Application's supplements that included the Vestas V150 nameplate capacity upgrades as well as the Nordex N149 nameplate capacity upgrades, a -either a paragraph or memo was included to explain that no dimensions on those turbines had changed so
that no shadow flicker results had changed.
Q. Okay. So other than that one paragraph about shadow flicker, there's only one other additional shadow flicker report submitted as part of the Application in this case?
A. That $I$ can remember at this time.
Q. Okay. And to the best of your recollection, did the additional shadow flicker report supercede the report that we've been discussing on pages 90 through 92 of the original application, or was it a supplemental?
A. I believe it was supplemental.
Q. Uh-huh. So the information about shadow flicker modeling that we see in the narrative of the Application on pages 90 through 92 of Applicant's Exhibit 1 is still applicable to the project; is that correct?
A. For these turbines, correct.
Q. Yeah. And later Firelands added additional shadow flicker information concerning additional turbine models that were being considered; is that correct?
A. Correct.
Q. So our discussion then about the shadow flicker study discussed on pages 90 through 92 of the
narrative of the Application marked as Applicant's Exhibit No. 1, let me ask you a few more questions about that study.
A. Okay.
Q. In coming up with the number of potential minutes of exposure to shadow flicker for the receptors, were trees considered in that modeling to block any of the shadow flicker?
A. No. No blockage from trees or other buildings or other types of vegetation or structures were considered in that study.
Q. Uh-huh. Referring you to page 92 of the narrative of the Application, I want you to go to the second paragraph on that page.
A. Uh-huh.
Q. And look for a sentence that starts on the fourth line of that paragraph starting with the words "A receptor."
A. Yes.
Q. That sentence reads as follows: "A receptor in this 'greenhouse' model is defined as a one square meter area located one meter above ground; actual house dimensions are not taken into consideration." Do you see that sentence?
A. Correct.
$\square$
Q. Is it your understanding that all of the shadow flicker studies performed for the Emerson Creek wind project have defined the receptor in this manner?
A. Yes, I believe all -- all of the shadow flicker studies that were conducted used this conservative estimate for homes.
Q. So does this assumption mean that the receptor was assumed to be only 1 square meter in size?
A. I believe 1 cubic meter, yes.
Q. Let's go to page 94 of the Application marked as Applicant's Exhibit No. 1.
A. Yes. Page 49?
Q. Yeah. Actually let's go to page 95.
A. Okay. I'm there as well.
Q. All right. Allow me to refer you to the last sentence on the bottom of that page starting with the word "Furthermore."
A. Yep.
Q. It states: "Furthermore, as indicated above, the Applicant will implement the necessary mitigation measures through operational design, following the realistic shadow flicker analysis using the specific turbine array for construction, to reach
shadow flicker compliance of 30 hours per year at all nonparticipating receptors."
A. Correct.
Q. Let me ask you first to identify the potential mitigation measures that Firelands may undertake in order to reduce exposure to a shadow flicker of 30 -- to no more than 30 hours per year.
A. Those operational measures would involve some measure of curtailing, likely, as necessary, and so if the final shadow flicker analysis were to find a nonparticipating residence to be in exceedance of that -- the model to be in exceedance of that 30 hours per year, then we are aware, through the modeled results, what times those impacts would most likely occur and so we would be able to be aware -since this analysis considered the turbines to be continuously operating from sunrise to sunset, we would be aware when we are operating what time it is that we would be most likely to impact any residents. And then as for -- if we were to be exceeding that 30 hours per year, we would curtail so we would no longer be operating that turbine to create a flicker for that residence.
Q. Looking at the table numbered 08-4 starting on page 93 of --
A. Yes.
Q. -- the narrative of the Application, I see there that the right-hand column identifies the approximate time of the day at which a receptor would potentially be affected by flicker; is that correct?
A. Yes. Those times are, I believe, represented as a range since that will differ depending on the month of the year and location of the sun throughout the year.
Q. So Firelands can tell, based on its modeling, what time of the day a potential receptor may be affected by flicker; is that correct?
A. The modeling shows that, correct.
Q. Can you think of any good reason why Firelands should not be required to simply shut off a turbine that is causing shadow flicker to be cast on a nonparticipating landowner's home?

MR. SECREST: Objection, vague.
ALJ WILLIAMS: I want to go ahead and uphold the objection. Do you want to clarify that, Attorney Van Kley?

MR. VAN KLEY: I think it's pretty clear. I am asking if there is any good reason why Firelands can't shut off its turbines if they're casting shadow flicker on a nonparticipating neighbor's house.

ALJ WILLIAMS: You can answer if you are able to.

THE WITNESS: I'm sorry, could you repeat that question?

MR. VAN KLEY: Yeah.
Q. (By Mr. Van Kley) Can you think of any good reason why Firelands could not shut off a turbine that is casting a shadow flicker on the house of a nonparticipating neighbor?

MR. SECREST: Objection, same objection, your Honor, vague as to shut off, time period and total and Mr. Van Kley's definition of "good reason."

ALJ WILLIAMS: I am going to go ahead and uphold the objection. Attorney Van Kley, can you ask the question with some more specificity and clarify to the extent you're asking for a determination of what might be "good reason."

MR. VAN KLEY: I'm sorry, your Honor. What was the last part of that?

ALJ WILLIAMS: To specify the nature of the shutoff you are contemplating or asking about, as well as how you are defining "any good reason."
Q. (By Mr. Van Kley) Well, let me -- let me break this down a little bit. Is Firelands -- would Firelands be able to shut off a turbine at a time
where it would otherwise expect that turbine to cast shadow flicker on the house of a nonparticipating neighbor?
A. I believe so, yes.
Q. Okay. Can you think of any reasons why it would be infeasible for Firelands to do so at a time where it would otherwise expect the turbine to cast that shadow flicker on a nonparticipating neighbor's house?
A. I believe we seek to operate the project in adherence to the rules and regulations of the Power Siting Board which state that we must remain below 30 hours per year at receptors.
Q. But my question is whether it's -- it's infeasible to shut it off at any time or at all times where it would otherwise be casting shadows on a nonparticipating landowner's house.

MR. SECREST: Object to the extent it calls for speculation.

ALJ WILLIAMS: To the extent you are aware of how curtailing the rotors when they might impact any nonparticipating parties of the project area, I am going to allow you to answer that question.
A. I'm sorry. Could you repeat the question?

ALJ WILLIAMS: Could you read it back, Karen.
(Record read.)
A. To the extent I'm aware, our operations team has the ability to curtail turbines.

MR. VAN KLEY: Okay. Your Honor, seeing that it's almost noon and this would be a great breaking point, I would request --

ALJ WILLIAMS: I was going to let you finish shadow flicker, and $I$ was going to suggest the same thing, Attorney Van Kley. We are of the same mindset. My gut here is that had we started at 9:00, we would probably take lunch around 12:30, so I am inclined to take maybe a 10 -minute break and come back until 1:30 or so. If you guys want to take an early lunch, we will take an hour now and come back and break midafternoon. That's fine as well.

You are the one kind of leading the charge here, Attorney Van Kley. What's your preference? Do you want to go 10 minutes and come back, or do you want to break for lunch now?

MR. VAN KLEY: I would rather break for lunch right now because based on the answers to questions on shadow flicker, I have a little
reorganization to do.
ALJ WILLIAMS: That's more than fair, so.
MR. VAN KLEY: So I would -- I would prefer to take a lunch break right now. I can tell you that -- that the cross-examination is going faster than $I$ expected, which is a rarity in these cases, but I'm expecting to finish with this witness probably well before 5:00.

ALJ WILLIAMS: Any thoughts to moving into the next witness today, or do you feel comfortable just going with Mr. Pedder today and that would be -- that seems reasonable.

MR. VAN KLEY: Yeah. I feel comfortable with the pace if we finish Mr. Pedder today, I think we can stay on schedule with the other witnesses.

ALJ WILLIAMS: Okay.
MR. VAN KLEY: Some of the other
witnesses I'm now expecting may go a little faster than $I$ projected as well, so $I$ think that if we finish Mr. Pedder today, we can adjourn for the day and not jeopardize our schedule.

ALJ WILLIAMS: I appreciate that, and I appreciate the interest of the other parties as well, so I will invite anyone else to go off mute and interject, but the Bench is currently taking lunch
now from 12:00 to 1:00, coming back on the record at 1 o'clock, and we'll probably build in an afternoon break sometime in the range of $2: 30$ or $3: 00$ depending on how we are proceeding.

Anybody have any objections or need for clarification of that? Seeing a couple of head shakes no. I don't see anybody coming off mute to stand down there, so with that we will go ahead and take a break now. It's 12 o'clock eastern. We'll resume at 1 o'clock.

We are off the record, Karen. Thank you. (Thereupon, at 11:59 a.m., a lunch recess was taken.)

| ALJ AGRANOFF: Please proceed. <br> - - - <br> NATHAN PEDDER <br> being previously duly sworn, as prescribed by law, was examined and testified further as follows: <br> CROSS-EXAMINATION (Continued) <br> By Mr. Van Kley: <br> Q. All right. Mr. Pedder, we're still talking about shadow flicker and I would like to take some time to finish up that discussion now. Would you please go to Applicant's Exhibit No. 4. <br> A. What would the title of that be? <br> Q. That is the Third Supplement to <br> Application, filed on July 10, 2019. <br> ALJ AGRANOFF: Hold on for one second. I do not have the third supplement in front of me but I will momentarily. <br> MR. SECREST: Your Honor, I do. May I hand it to the witness? <br> Thank you. <br> ALJ AGRANOFF: Mr. Van Kley, that was the July 10, 2019, filing? |  |  |  |
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about an update to the shadow flicker discussion in the Application stating that no changes were occurring in the modeling as a result of some -- the addition of some turbine models, correct?
A. Correct. This -- this supplement covered change of nameplate capacity for the generators on those turbines but not the turbine dimensions.
Q. So what you're saying is that the -- the models that are referenced in this exhibit are the -have the same dimensions as models that were previously subject to the shadow flicker model, correct?
A. Yes. So the fourth supplement covers the Nordex N149 at the 4.8 megawatt nameplate capacity, 5.5 and 5.7 megawatt nameplate capacities, as well as the V150 at the 5.6-megawatt nameplate capacity. Those nameplate capacities for those generators were not in the original application so that's what this supplement covers but the change in generator nameplate capacity does not change any of the physical dimensions of a turbine and so the shadow flicker model results in the original application are the same for these turbines.
Q. All right. You can set that document aside. And now go to Applicant's Exhibit No. 5 which
is the Revised Fourth Supplement to the Application, filed on October 4, 2019.

ALJ AGRANOFF: One moment, Mr. Van Kley, while I retrieve that.

MR. SECREST: May I hand the witness a copy?

ALJ WILLIAMS: Go ahead. Please feel
free. Thanks.
MR. SECREST: Certainly. Thank you. EXAMINER AGRANOFF: Okay. I've got the binder.
Q. (By Mr. Van Kley) All right. Mr. Pedder, are you at that document?
A. Was there a specific document in here you wanted me to be at?
Q. Yes. I would like you to first go to the fourth page of the document.
A. I assume you mean the fourth page of the PDF, the second page -- the page that says page 2 ?
Q. Actually it's the sixth page of the PDF document and then it is a table of turbine models.
"Attachment 1" is at the top of the page.
A. Okay. Attachment 1, thank you. Yes.
Q. So do you see a list of turbine models on the page you are looking at?
A. I do, yes.
Q. Okay. And this table shows the identification of turbine models that were listed in the original application filed on January 31, 2019; is that correct?
A. It does, correct.
Q. And then it also shows which turbine models were identified in the third supplement to the application on July 10, 2019, correct?
A. Correct.
Q. And those models, the turbine models were in addition to -- to the Vestas V150 and the Siemens Gamesa SG 145 that were listed in the original application, correct?
A. The Nordex N149 4.5-megawatt was also listed in the original application but so --
Q. That's no longer under consideration in your third supplement, right?
A. Correct.
Q. Uh-huh. So at the time of the third supplement then, you had six turbine models under consideration, correct?
A. Correct.
Q. And then the table also shows two additional models being added to those under
consideration in the fourth supplement of October 4, 2019, correct?
A. Correct.
Q. Uh-huh. Now, are the -- are the eight turbine models listed there, that is all of the models in the original application, third supplement, and the fourth supplement, other than the one crossed out, those eight models are the ones currently under consideration?
A. Yes.
Q. All right. And if there is some way where you can kind of keep your finger in that page or mark it somehow, we are going to come back to this page a little later.
A. Okay.
Q. But I have a few more questions then about this exhibit which $I$ would like to ask you about. So now go to the start of the shadow flicker report that is in Exhibit No. 5. For those of you using a PDF, it would be the ninety-third page of the PDF, and let me see --
A. It's Attachment 3.
Q. It is, yes.

ALJ AGRANOFF: And just so that $I$ am clear, Mr. Van Kley, we're still talking about the

Revised Fourth Supplement to the Application?
MR. VAN KLEY: Yes, we are, and that's marked as Applicant Exhibit No. 5.

ALJ AGRANOFF: Okay. Thank you.
Q. (By Mr. Van Kley) All right. So referring you to Attachment 3 of Applicant Exhibit No. 5, that is the first page of -- or that is another shadow flicker modeling report, correct?
A. Correct.
Q. And this shadow flicker modeling report applies to the new -- the two new GE models of turbine that were added in the fourth supplement; is that correct?
A. Correct.
Q. This report does not contain any modeling results for the turbine models that had previously been the subject of shadow flicker modeling in the Application, right?
A. Wait a second. Let me confirm that. I believe that is correct.
Q. This -- this modeling report in Attachment 3 evaluates the shadow flicker from the two GE turbine models that are on the first page of Attachment 3, correct?
A. I'm sorry. Could you say that again?
Q. Yeah. Go to page 1 of the report that's in Attachment 3. You will see your name at the top of it and then it's from Lindsey Donahoe and it's dated September 9, 2019.
A. Yes.
Q. Okay. You are on that page then?
A. Yep.
Q. Okay. And then you see two turbine models listed in Table 1 in that page, correct?
A. Correct.
Q. And this shadow flicker report pertains to the potential shadow flicker from those two GE turbine models, correct?
A. Correct.
Q. And the modeling of the shadow flicker reported in Attachment 3 used the same procedures that the shadow flicker monitoring in the original application had used, correct?
A. Same methodology, correct.
Q. Now, go to page 9 of Attachment 3 of Applicant's Exhibit No. 1. For those of who you are looking online, that is PDF page 102. And do you see a page there that has a conclusion in it?
A. Yes.
Q. Okay. The conclusion reads as follows:
"In summary, as a result of modeling the proposed 87 turbine locations, WindPRO predicted that 50 non-participating receptors will receive more than 30 hours of shadow flicker per year. The cumulative shadow flicker analysis predicted that 16 non-participating receptors would experience over 30 hours per year of shadow flicker due to cumulative effects of the Project and the proposed Republic Wind Farm." Do you see that language?
A. Yep.
Q. Okay. So at least with respect to the two General Electric turbine models being evaluated in this report, those models would expose -- both turbine models would expose 50 nonparticipating receptors to potentially more than 30 hours of shadow flicker per year; is that correct?
A. The model shows modeling for worst-case scenario and so under a worst case scenario that is true including all of the conservative assumptions included in this report, but the Stipulation includes a condition regarding ensuring that all nonparticipating receptors remain below 30 hours per year. And so no homes would go beyond that 30 hours per year limit.
Q. Uh-huh. At this point in time, Firelands
has not produced a shadow flicker model that shows that no nonparticipating receptor would be exposed to more than -- more than 30 hours of shadow flicker per year, correct?
A. Sorry. Could you repeat that question? I think I missed a little bit in the middle there.
Q. Sure. At this -- at this point in time, Firelands has not produced a shadow flicker modeling report showing that there will be no nonparticipating receptors exposed to 30 hours or more of shadow flicker per year, correct?
A. That will be included as part of the Stipulation as part of the pre-construction shadow flicker model that will be shared with OPSB Staff.
Q. Back to my question. It is correct that, at this point in time, Firelands has not done that.
A. Yes.
Q. Going back to the conclusion on page 9 of Attachment 3 of Applicant's Exhibit No. 5, the second sentence that $I$ read to you states that it is "predicted that 16 non-participating receptors would experience over 30 hours per year of shadow flicker due to cumulative effects of the Project and the proposed Republic Wind Farm."

My question to you here is, whether the

16 nonparticipating receptors referenced in this sentence are different receptors than the 50 predicted to receive more than 30 hours of shadow flicker per year from the Emerson Creek wind project itself?
A. I believe -- my -- I would have to go through each page of the table to be sure but my understanding of that sentence would be that there are 50 specifically because of the Emerson Creek wind modeling and then there would be an additional 16 that would be due to the cumulative effects.
Q. Table 3 of Attachment 3, which starts on page 8, that is a table that provides the cumulative shadow flickers for the two wind projects we've been discussing, right?
A. Correct.
Q. And Table 2 is the table that provides the shadow flicker results for the general flicker coming from only the Emerson Creek wind project, right?
A. I'm sorry. Could you repeat that question as to what Table 2 is?
Q. Yeah. Table 2 contains the results of the shadow flicker modeling limited to the shadow flicker coming from Emerson Creek wind project
itself.
A. It's not a full table of those results. It is a table that is limited to just receptors modeled for greater than 30 hours per year. There would be an additional 1,577 receptors that would not be included in this.
Q. Okay. Very good. So the question I have here then is you see the Receptor ID numbers used in both Tables 2 and 3?
A. Yes.
Q. Were the Receptor ID numbers the same regardless of the analysis, that is, if we found Receptor ID No. 319 in Table 2 and then we found it in Table 3, would the same Receptor ID number, those would be the same receptor?
A. Between Table 2 and Table 3 in Attachment 3?
Q. Yes, uh-huh.
A. Yes.
Q. Okay. So we would be able to cross --cross-reference the Receptor ID numbers in Table 2 and Table 3 to confirm whether or not any of the 16 receptors found to have a cumulative potential exposure to more than 30 from the two projects overlaps with or is different than those receptors
found in Table 2, right?
A. Yes. You can also determine that just by looking at Table 3 since it does include the Emerson Creek-only results. So you can see there are Receptor ID 275 and Receptor ID 923 are the two Receptor IDs that would be in both Table 2 and Table 3.

MR. VAN KLEY: Could we go off the record for just a second?
(Discussion off the record.)
ALJ AGRANOFF: And let's go back on the record at this time.
Q. (By Mr. Van Kley) All right. We are finished with our discussion of shadow flicker so you can put those documents aside for now.

All right. Now, would you go please to Applicant's Exhibit 82 which would be the turbine safety manuals.
A. Yes. I think I may have that in front of me but I suppose we'll find out.
Q. All right. Well, let's figure it out. It should have, on the first page, a cover letter of September 24, 2020, from Dickinson to the Board. Is that the document you are looking at?
A. No. I just have the two manuals, I
believe, that were included as exhibits that you have for cross. So if you have a different document -one second.

MR. SECREST: Mr. Van Kley, I think what Mr. Pedder has is the actual manuals, not the filing on the docket.

MR. VAN KLEY: Okay. I have -- I had marked one of the manuals as LR Exhibit 4 and the other one is my LR Exhibit 5 but those are duplicates of documents included in your Applicant's Exhibit 82. And since that document 82 has already been introduced, I thought I would use that.
Q. (By Mr. Van Kley) Do you have that document in front of you now?
A. Mine is marked as LR Exhibit 4 and 5 but it sounds like that's the exact same, so yes.
Q. Okay. All right. So let's go to --

ALJ AGRANOFF: Mr. Van Kley, what was the date of filing for Applicant Exhibit 82?

MR. VAN KLEY: I don't know and it's not written on my list of exhibits.

MR. SECREST: Your Honor, it was September 24, 2020.

ALJ AGRANOFF: Thank you.
MR. SECREST: You're welcome.

ALJ AGRANOFF: You can go ahead, Mr. Van Kley.
Q. (By Mr. Van Kley) So let's go to the Nordex safety manual. And for those who are looking at the Exhibit 82, the page $I$ am going to go to is PDF page 153.

For Mr. Pedder, since you are using the paper copy, the Nordex safety manual should be LR Exhibit 4 on the document you are looking at and go to page 47 of that manual.
A. Where it says page 47 at the bottom right corner?
Q. Page 47 of 62 in the bottom right-hand corner.
A. Okay.
Q. All right. I would like you to look at the first paragraph that has the word "Danger" on the top.
A. Okay.
Q. And let me read to you what is stated in this paragraph. It states: "Danger. Life-threatening injuries due to falling turbine parts. In case of a fire in the tower, in the nacelle or on the rotor, parts may fall off the WT. Keep a safety distance of 500 meters around the WT.

Do not enter the WT." Do you see that language?
A. I do.
Q. Okay. And "WT," as used in this paragraph, refers to wind turbine, correct?
A. That would be my understanding.
Q. Uh-huh. And the -- the emergency that is being referred to in this language concerns the -concerns a fire in the wind turbine, correct?
A. Yes.
Q. And the -- the warning in this paragraph is that in case of a fire, parts may fall off of the wind turbine?

MR. SECREST: Objection. The document speaks for itself.

ALJ AGRANOFF: Mr. Van Kley, if you could give a little bit more specificity as to what it is that you are asking the witness to opine on.
Q. (By Mr. Van Kley) So the purpose of this warning is to protect people from being hit by parts falling off of the wind turbine, correct?

MR. SECREST: Objection, speculation.
MR. VAN KLEY: I don't think it's speculation. I think it's rather clear from the language.

ALJ AGRANOFF: Why don't you ask the
witness what his understanding of the specific language is intended to represent.

MR. VAN KLEY: All right.
Q. (By Mr. Van Kley) Mr. Pedder, what's your understanding what this language is meant to represent?
A. One second. I just want to make sure I reread it again.

My understanding this is meant to
represent general instructions and information for those operating in or potentially near the wind turbines.
Q. Would you go -- keep your finger here, please, in Applicant's Exhibit 82, but go -- also go to your testimony which is Applicant's Exhibit 31.
A. Give me one second. Okay.
Q. Go to page 9 of your testimony in Applicant's Exhibit 31. And I would like to direct your attention to the first paragraph on the top of that page. In there you refer to a Nordex N149 safety manual. Do you see that?
A. Yes, I believe so.
Q. Is that the same safety manual that we were talking about where we were looking at page 47 of 82 ?
A. It appears so.
Q. Okay. So in your testimony you talk about guidance to ensure that workers are not standing near or within a turbine during a thunderstorm. And then you have a parenthetical saying "see Attachment NP-2." So could we go to NP-2 which I believe would be an attachment to your testimony?
A. Yep. I believe it's right after my résumé.
Q. Okay. Now, is -- are the pages in NP-2 parts of the safety manual that is in Applicant's Exhibit 82 that we've been discussing?
A. I'm sorry. Can you repeat your question?
Q. Yes. In your Exhibit NP-2, you have a two-page letter from Nordex, correct?
A. Correct.
Q. Is this two-page letter contained in the Nordex safety manual that we've been discussing?
A. It is not.
Q. All right. Can you identify the language in the safety manual, the Nordex safety manual, that is being discussed by the Nordex letter that is marked as Exhibit NP-2?
A. I'm sorry. Do you want me to read
through the whole Nordex safety manual to identify the appropriate language?
Q. Well, I was hoping that you would know where to find it. If you need to look through it, we can give you a few moments, if that's enough time. If it takes too long, then we'll move on.

MR. SECREST: I am happy to assist the witness, with your permission, your Honor and Mr. Van Kley.

MR. VAN KLEY: That would be fine with me, Mr. Secrest.

EXAMINER AGRANOFF: Yes. Go ahead.
MR. SECREST: Thank you. Page 46 of our 4 or Applicant's 82.

THE WITNESS: Right where I already was. Thank you. Sorry about the delay.
Q. (By Mr. Van Kley) All right. Could you identify the specific language on that page that is referenced in the Nordex letter identified as NP-2?
A. Give me one moment, please.

ALJ AGRANOFF: Again we are looking at page 46 or page 146?

MR. VAN KLEY: It would be page 46 of 62 in the Nordex safety manual.

ALJ AGRANOFF: Okay.

MR. VAN KLEY: If you are looking at the PDF, it would be PDF page 152.

ALJ AGRANOFF: Thank you. That's what I was looking for.
A. I believe it would be referring to the language under section 9.2.
Q. Okay.
A. At least the first part, yes.
Q. To your knowledge, how many wind-powered facilities does Apex Clean Energy own?
A. Own?
Q. Yes. Own and operate -- let me rephrase the question.

How many wind-powered facilities does Apex Clean Energy operate?
A. I believe we operate around 10 wind -wind farms at this time.
Q. Okay. Are you aware of any incident at any of these wind farms in which a turbine blade has been detached from the turbine tower?
A. I am not aware.
Q. Are you aware of any incidents at wind-powered facilities in Ohio where a blade has been detached from a wind turbine tower?
A. A whole blade, I do not believe so.
Q. Are you aware of any incident where part of a blade has been detached?
A. Yes.
Q. Which incident or incidents are you aware of?
A. I am not sure the specific project that occurred at.
Q. Have you done any evaluation to determine how far a piece of a wind turbine blade can travel upon detachment from a wind turbine tower?
A. I would -- may I refer back to the Application narrative? I believe there may be something in there.
Q. Yes, you may.
A. One second. I'll try not to lose that page in the Nordex manual.

I do not believe a specific analysis for blade shear distance was conducted for this project, but understand that the generally-accepted industry distance for that would be 1.2 times tip height.
Q. What's the source of that standard?
A. I've worked with folks that have done blade shear analysis, and I believe that's the number that's been used primarily.
Q. All right. Are you aware of any
instances at any wind-powered facilities at which blades or pieces of blades have traveled as far as 1,640 feet away from the tower?
A. I'm not aware.
Q. Let's go back to Applicant Exhibit 82, and for Mr. Pedder, the copy you are looking at would be LR Exhibit 5. It would be the General Electric safety manual. For those of you looking at the PDF, that manual starts on PDF page 171 of Applicant's Exhibit 82.
A. I have LR5 in front of me.
Q. Okay. Go to page 42 of that manual.
A. Uh-huh.
Q. And the top of that page should say Section 7.4, Special Dangers - Icing.
A. Yes.
Q. Okay?

ALJ AGRANOFF: Mr. Van Kley, what page is that in the PDF?

MR. VAN KLEY: Let's see.
ALJ WILLIAMS: 212.
ALJ AGRANOFF: Thank you, Judge Williams.
Q. (By Mr. Van Kley) All right. Referring you to the second paragraph on that page, there is a sentence there that states as follows: "If people or
objects near the wind turbine generator system (within the distance R2) could be endangered by pieces of ice thrown off during operation, GE Renewable Energy always recommends the use of ice detection." Do you see that sentence?
A. Yes.
Q. Does R2 refer to the footnote at the bottom of this page which is footnote 2 and then the letter R?
A. Yes. I believe that 2 is supposed to be superscripted.
Q. So the distance referred to in the second paragraph on that page is calculated by using the formula in footnote 2 on the bottom of that page, correct?
A. Yes.
Q. And that formula is 1.5 times hub height plus rotor diameter, correct?
A. Yes.
Q. Now, keep your finger there and go back to that list of turbine models that we earlier discussed in the fourth pair -- the fourth supplement of the Application that is marked as Applicant Exhibit 5.
A. Yep.
Q. And go to the fourth page of the PDF which is that table in Attachment 1.
A. Yes.
Q. Could you tell me which of these turbine models has the highest combination -- or the largest combination of hub height and rotor diameter?
A. That would be the Nordex N149 at 125-meter hub height.
Q. Okay. I see -- I see there are four -or three Vestas -- or three Nordex 149s here. So which one of these models are you referring to, the 4.8 megawatts or 5.5 or 5.7 ?
A. The nameplate capacity would not have any impact on the physical dimensions and so the physical dimensions of all of the Nordex N149 turbines are the same regardless of generator capacity so it would be referring to all three of those turbine models when they are at their 125-meter hub height.
Q. And what is the rotor diameter for that model?
A. 149 meters.
Q. And the 125 in height, that was given in meters as well?
A. Correct. I can approximate it in feet if you would prefer.

MR. SECREST: I would not.
Q. That's quite okay.

Do you know what the minimum setback observed by Firelands between wind turbines and public roads other than state or federal highways use?
A. It would be -- I believe the -- that setback distance as laid out by the regulations in Ohio is, I believe, 1.1 times tip height.
Q. Okay. Would you go to Applicant Exhibit 1 which is the narrative of the Application. And go to page 192 of that document.
A. 192?
Q. Yes.

ALJ AGRANOFF: One moment, Mr. Van Kley.
A. I'm there.

ALJ AGRANOFF: Okay. Please proceed.
Q. All right. Look at the bottom of page 192 of Applicant's Exhibit No. 1. At the bottom of the page you'll see a bullet point.
A. Uh-huh.
Q. And it says there, "The maximum total height of the tallest turbine model under consideration for the Facility is 655 feet, for the Nordex N149 with a 125-meter hub height. Should this
model be selected, the turbine setback to public roads and electric/gas transmission and distribution lines for the proposed Facility would be 720.5 feet (655 feet times 1.1)." Do you see that?
A. Yes.
Q. So if you took -- if you used the formula in footnote 2, on footnote 2 on page 42 of the GE Renewable Energy safety manual, would the results of that formula for the N149, with a 125-meter hub height, exceed 720.5?
A. Hub height plus rotor diameter is greater than tip height and 1.5 is greater than 1.1 , so yes.
Q. On page 42 of the $G E$ safety manual, I would like to refer you to the third paragraph from the bottom which starts with the word "However." And that sentence reads as follows: "However, ice may form on the rotor blades considerably more quickly than the design of the ice detection considers. As a result, there is a residual risk for the reliable detection of ice build-up on the rotor blades." Do you see that?
A. Yes.
Q. Now, what's being referred to here is ice-detection equipment that can be installed on a wind turbine, correct?
A. Yes.
Q. The next paragraph states "The ice detection must be set relatively sensitively, in order to ensure that the time from when ice starts to build up on the rotor blades until the detection sends a message about the build-up of ice is as short as possible." Do you see that?
A. Yes.
Q. In your experience, can ice-detection equipment be set at different settings, some which are more sensitive to the buildup of ice than others?
A. I do not have experience with that, so I'm not sure.
Q. Let's go back to your testimony, Applicant's Exhibit 31, page 9.
A. Am I still going to need the GE safety manual?
Q. No. You can put that to the side.
A. Thank you.

You said page 9 of the testimony?
Q. Yes.
A. Okay.
Q. All right. I would like you to take a look at the second bullet on that page starting with the words "With respect to grid reliability."

fast-enough speed in order for the turbine to produce electricity?
A. Yes.
Q. Uh-huh. And if the wind is blowing too fast, then it can't produce electricity either, right?
A. Correct.
Q. Can the electricity that is produced by a wind turbine be stored prior to usage by the electric grid?

MR. SECREST: Objection as to relevance.
MR. VAN KLEY: Well, it's relevant to his claim that this system is not inconsistent with grid reliability.

MR. SECREST: And PJM made that determination, as did the Staff, in determining the basis for need was not at issue.

MR. VAN KLEY: We are not talking about need. We are talking about grid reliability. We are talking about -- about negative impacts on the grid. And that's -- that's something that's discussed in the witness's testimony where he is sponsoring the system impact study by PJM that's included in the Application.

MR. SECREST: That's exactly true. He is
sponsoring the study and that's what is referred to when his testimony addresses grid reliability that PJM made its determination.

MR. VAN KLEY: Yeah. And I have a right to -- to ask him questions about that report that he is sponsoring.

MR. SECREST: You are on mute, your Honor.

MR. VAN KLEY: I think you are still on mute, your Honor.

MR. SECREST: Your icon says you came off mute, your Honor. However, we cannot hear you.

ALJ WILLIAMS: All right. You guys can hear me?

MR. SECREST: Yes, your Honor.
ALJ WILLIAMS: We are going to allow some of this line of questioning. So this is certainly information that appears to be firsthand knowledge of Witness Pedder so we are going to allow some of this questioning. Attorney Secrest, if it gets more out of bounds, you are welcome to continue stating your objection. We will consider a ruling at that time. Please proceed.

MR. SECREST: Thank you, your Honor.
MR. VAN KLEY: Could we have the last
question read back for the witness, please.
(Record read.)
A. It can.
Q. What does it take -- what device can be used to store that electricity?
A. There are a variety of electricity storage generation types.
Q. Such as batteries?
A. Batteries would be one of those, correct.
Q. Okay. Does Firelands have included in its design, electricity storage devices such as batteries or other devices?
A. Not at this time.
Q. How fast does the wind have to blow for Emerson Creek wind project to produce electricity?
A. 3 meters per second. I believe that's actually on that table of turbines in supplement 4. I believe it's 3 meters per second which is approximately 7 miles per hour.
Q. Do you know what the average wind speed for the project area is?
A. Not precisely, no.
Q. Do you know what percentage of the time that Emerson Creek wind project is expected to produce electricity?
A. I do not off the top of my head, no. MR. VAN KLEY: All right. If you could give me about 5 minutes to check my notes to make sure I've asked everything, then I think we can wrap this up.

ALJ WILLIAMS: Sure. Why don't we go -why don't we double that for you. Why don't we take 10, have enough time to walk away and take care of business. We will reconvene at $2: 15$.

All right. Thank you. We are off the record.
(Recess taken.)
ALJ AGRANOFF: Mr. Van Kley, can you hear me?

MR. VAN KLEY: Yes, I can.
ALJ AGRANOFF: Okay. At this point in time, are you ready to continue with whatever remaining questions you might have?

MR. VAN KLEY: All right. Yes, I do have additional questions.
Q. (By Mr. Van Kley) Mr. Pedder, could you go back to your testimony marked as Applicant's Exhibit 31 and go to page 10, please.
A. Okay.
Q. Go to the second-to-the-last bullet point
on that page.
A. Yes.
Q. It discusses land use plans. And here you've stated that the proposed project adheres to the guidelines laid out in these plans. Do you see that?
A. Yes.
Q. Is there anything in the plans of the local governments that have jurisdiction over the project area pertaining to wind turbines specifically?
A. Not that I'm aware of.
Q. Let's go to page 11 of your testimony.
A. Okay.
Q. Second-to-the-last bullet point.
A. Okay.
Q. In the second sentence of that bullet point it states that Emerson Creek Wind Farm will likely utilize parts and components within the turbines and in its associated facility that will be manufactured in Ohio. Do you see that?
A. Yes.
Q. Has Firelands entered into any contracts with the Ohio manufacturers for individual parts and components?

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A. Not at this time. Not that I am aware of.
Q. Uh-huh. Based on cost, what's the approximate percentage of turbine components in parts that you expect to be manufactured in Ohio for this facility?
A. I am -- I would hesitate to speculate.
Q. Have you been involved in the construction of any other wind projects for Apex?
A. I have not been involved in construction, no.
Q. Have you been involved in the procurement process for any other Apex wind projects?
A. I have not.
Q. With respect to other Apex wind projects that have been constructed, do you know where the turbine blades for those projects have been manufactured?
A. Are you asking for a specific project?
Q. No. Just in general for all of your projects.
A. No, not specifically.
Q. Do you know generally whether those blades have been produced by manufacturers in the United States as opposed to other countries?
A. My understanding is that blades are primarily manufactured here in the United States typically, as local to the project as possible, due to the constraints in transportation of those blades.
Q. What about the components of the wind turbine tower, are those generally available in the United States?
A. I believe tower components are also primarily manufactured stateside. If we're talking specifically the tower itself.
Q. Are there some components of the wind turbines that are not available in the United States?
A. Not available?
Q. Yes.
A. I'm not aware of all of the manufacturing capabilities that exist in the United States.
Q. Go to page -- page 13 of your testimony.
A. Okay.
Q. I would like you to look at the sentence that starts on page 7 and goes through line 9.
A. Okay.
Q. It states in that sentence that the project will create 305 jobs to construct and subsequently to operate and maintain the wind farm with associated annual earnings by those employees of
19.8 million. Do you see that?
A. Yes.
Q. My question is, of that 19.8 million, how much of that -- of those earnings are earned by employees who operate the wind farm?
A. I believe that is a figure -- a number that would be -- that is included in the socioeconomic report and Witness Erica Tauzer will be able to provide the specifics on what that exact figure is.
Q. Do you know what the expected salaries of the persons who are operating -- who are going to operate this facility would be?
A. I do not know the specific salaries. I believe that's also estimated in the socioeconomic report.
Q. Go to the last paragraph on page 13 of your direct testimony marked as Applicant's Exhibit 31.
A. The last paragraph.
Q. The last paragraph, I would like to refer you to the sentence that starts at line 25 , which states "The Project facilitates economic health and growth by expanding the local tax and employment base while avoiding impacts to natural resources." Do you
see that sentence?
A. Yes.
Q. Do you regard a project that kills eagles as avoiding impacts to natural resources?

MR. SECREST: Objection, argumentative and speculative.

MR. VAN KLEY: It's certainly not speculative and it's factual. In the Application it states that eagles will likely be killed.

ALJ AGRANOFF: I'll allow the question if the witness has knowledge.
A. I'm sorry, Mr. Van Kley. Can you repeat that question?
Q. Yeah. Do you regard a project that kills eagles as a project that avoids impacts to natural resources?
A. I believe the impacts to wildlife will be covered by other witnesses but my understanding and my belief is that this project has a minimum adverse environmental impact.
Q. Go back to the question that I asked. If the project kills eagles, does it avoid impacts to natural resources?

MR. SECREST: Again, objection, speculative.

ALJ AGRANOFF: I'll allow the question.
A. I'm sorry, can you repeat the question?
Q. Yeah. If the project kills eagles, does it avoid impacts to natural resources?
A. I'm unsure as to whether or not it would, so I'm not sure how to best answer your question.
Q. Well, my question is straightforward. If -- if the project kills eagles, does it avoid all impacts to natural resources?
A. So it -- assuming in that hypothetical scenario?
Q. Yes.
A. I believe it would still have a minimum adverse environmental impact as long as it is approved and permitted appropriately by U.S. Fish and Wildlife Services and ODNR.
Q. So you're stating that you believe the project would minimize the impact to natural resources, not avoid impacts all together; is that correct?

MR. SECREST: Objection, asked and answered, relevance.

MR. VAN KLEY: I'm just going right back to his statement in his testimony where he says this project will avoid impacts to natural resources. I'm
testing the credibility of that statement.
ALJ AGRANOFF: If the witness can reconcile the statement in your testimony with the potential harm to eagles.
A. As far as potential harm to eagles, I believe that would be covered by a later witness. I'm not trying to be difficult here.
Q. (By Mr. Van Kley) Well, let's try this with a different natural resource. Let's try it with birds. Do you expect that this project will kill at least one bird?
A. I would -- I'm not sure the anticipated impacts on birds. I would defer that to, I believe, Witness Rhett Good.
Q. Uh-huh. Well, based on your -- your familiarity with the information in your own application, isn't it true that it is anticipated that the project will kill at least some birds?
A. I'm sorry. Could you repeat that question?
Q. Yes. Could we have the question reread. (Record read.)
A. I'm not aware of the specifics.
Q. So does that mean you don't know the answer to my question about whether the project is
expected to kill at least some birds?
A. If you're referring to the Application, in a study or correspondence therein, I would want to be able to look at that to know exactly what we're -what we're discussing here.
Q. So based on the conversation that you and I have just had, do you still hold to your statement in your testimony that the project will avoid impacts to natural resources?

MR. SECREST: Objection, argumentative.
ALJ WILLIAMS: I will allow a little bit of latitude, but I think the question is aimed at -the testimony that's been prefiled talks about avoiding impacts to natural resources, and it's the testimony -- whether there is a complete avoidance or is there some limitation regarding the avoidance of the impact on natural resources. So I think that's the question and we're going to allow the witness to answer the question.
A. I think -- thank you for that clarification. I think, you know, for wetlands, for example, $I$ believe we have the potential for like a tenth of an acre of impacts and so that is not a complete avoidance. So I suppose perhaps a more accurate way to state this would have been that the
project facilitates economic health and growth by expanding the local tax and employment base while maintaining a minimum adverse environment -environmental impact to natural resources.

MR. VAN KLEY: Okay. I have no further questions at this time.

ALJ AGRANOFF: Thank you.
Before we get into redirect, is there anything from other counsel that they would like to raise?

MR. MARGARD: Actually, your Honor, Staff has a couple of clarifying questions, if I might.

ALJ AGRANOFF: It would have to be very limited in scope, please.

MR. MARGARD: Oh, absolutely, your Honor.
Thank you.

## CROSS-EXAMINATION

By Mr. Margard:
Q. Mr. Pedder, let me ask you to turn to page 9 of your testimony, please.
A. Okay. I'm there.
Q. You were asked some questions, were you not, about the setbacks in the first paragraph on that page, correct?
A. Yes.
Q. Specifically you were talking about guidance for workers and distance not intended as a setback distance. Does the Company distinguish between temporary and permanent setbacks?
A. As far as the term "setback," no -- I don't believe we would delineate. I believe "setback" would refer specifically to permanent setbacks as far as where a turbine is allowed to be constructed.
Q. And these other distances that you are referring to, the safety distance then would be temporary and circumstantial in nature; is that your understanding?
A. Those are temporary guidance, yes.
Q. And you indicate that you believe that that's what the manual is intended to imply. What's the basis for your understanding of the manual's intent?
A. Attachment NP-2 includes Nordex stating -- actually let me flip to that. For everyone's understanding, I'm -- I flipped over to Attachment NP-2, in the second paragraph the -- it would be "We have become aware that there may be some misunderstanding around the safety guidance published
in our N149 manual regarding lightning. The manual is intended to protect the safety of...turbine mechanics and technicians by advising personnel not to work on turbines...."

I believe also then on the first paragraph of the second page it states that "We have become aware that Nordex work instructions regarding emergency operating conditions are being cited by opponents of wind energy projects in Ohio as they advocate for additional setback regulations. Nordex's safety manuals should not be misinterpreted as guidance for setback distances for wind turbines from homes, roads, and property lines or otherwise. The manual referenced does not specify any emergency clearance area for siting distance from wind turbines." Did that answer your question?

ALJ WILLIAMS: Would you reorient me as to where NP-2 is? I'm sorry.

THE WITNESS: Oh, I'm sorry. I believe this is Applicant Exhibit 31. It's my testimony. It would be the attachment right after my résumé. So my testimony runs for 21 pages, so it would be about three, four pages after that, I believe.

ALJ WILLIAMS: Got it. Thank you.
THE WITNESS: Yep. So the lines I
referenced there, your Honor, were the paragraph on the first page that began with "We have become aware" and then also the paragraph on the second page that also begins with "We have become aware."

ALJ WILLIAMS: PDF 26 and 27. Got it.
Thank you.
Q. (By Mr. Margard) Was this submitted, do you know, as a result of conversations that the Company had with Nordex?
A. Yes. Otherwise I don't believe Nordex would have been aware that this misinterpretation was happening.
Q. And is this consistent with your general understanding of safety manuals for turbine manufacturers?
A. Yes.

MR. MARGARD: That's all I have. Thank you, your Honor.

ALJ AGRANOFF: Thank you.
Mr. Secrest.
MR. SECREST: Thank you, your Honor. May
I have about 5 minutes to confer with counsel?
ALJ AGRANOFF: Certainly.
MR. SECREST: Thank you.
ALJ AGRANOFF: Why don't we -- we'll give
you -- let's give you 10 minutes just so you can -MR. SECREST: I'll take it.

ALJ AGRANOFF: Okay. Come back at 2:50. Let's go off the record. Thank you. (Recess taken.)

ALJ AGRANOFF: Let's go back on the record at this time, please.

And, Mr. Secrest, if you would care to proceed with your redirect.

MR. SECREST: Thank you, your Honor. Appreciate it.

ALJ AGRANOFF: No problem.

REDIRECT EXAMINATION
By Mr. Secrest:
Q. Mr. Pedder, on cross-examination you were asked questions related to ice throw and specifically portions of Exhibit 1, the Application narrative addressing ice throw. Do you recall those questions?
A. I do.
Q. Did the Applicant also have an ice throw analysis conducted as part of the application process?
A. Yes.
Q. And is that contained within Exhibit L of

Exhibit 1, the Application?
A. Yes.
Q. Okay. Generally what was the conclusion and results of the ice throw analysis?
A. I have Exhibit $L$ here in front of me. Generally the results of Exhibit L found that the project is in adherence with the requirements set forth in -- I believe in Ohio code that the project have less than a 0.1 percent chance -- 0.1 percent probability that -- I believe the OPSB safety consideration is 1 percent annually, but the project has an annual impact probability for a 1 kilogram ice fragment to reach a road I believe at 0.1 percent and then at a nonparticipating parcel line that probability is at 0.01 percent.

And so the -- while the maximum distance is discussed in the safety manuals, the probability that that occurs is very low, and as outlined here in Exhibit L as well, this all assumes a breakdown in the control mechanism of the turbine, and so while the turbine is discussed with the GE model should cease operations during ice accumulation, the analysis for impact probability as well as the maximum distance calculations all assume a breakdown of that control mechanism.
Q. Sorry. The conclusions of the ice throw analysis, were those contained on page 4 of Exhibit L?
A. Yes.

MR. SECREST: Okay. Thank you, Mr. Pedder.

Your Honor, no further questions. Thank you.

ALJ AGRANOFF: Thank you.
Based on that very limited redirect, any recross, Mr. Van Kley?

MR. VAN KLEY: No, your Honor.
ALJ AGRANOFF: Okay. Thank you.
Mr. Pedder, I believe you are excused unless -- one moment. Any questions from Judge Williams?

ALJ WILLIAMS: I have no questions.
ALJ AGRANOFF: Okay. I did have one question.

## EXAMINATION

By ALJ Agranoff:
Q. We had testimony where we were continuously talking about receptors.
A. Yes.
Q. How are those receptors actually identified or determined for the purposes of their locations?
A. I believe -- I think that it was outlined somewhere in the Application, but I believe that receptors were identified through both GIS mapping, I believe also aerial photography that I believe Apex conducted to determine receptor locations as well as general updated imagery for the area as well as I believe potentially 911 data.
Q. So those were the different criteria that was utilized for the purposes of selecting receptor sites?
A. Yes, I believe so. Are you asking what would be a receptor or how we identify what had -where the receptors are?
Q. How you selected the receptor sites.
A. I think I answered that question. Did -was there -- is there any other information on that you were looking for?

ALJ AGRANOFF: No. I think that gave me enough information.

Based on that one question, anything further from counsel?

MR. SECREST: No, your Honor.

ALJ AGRANOFF: Thank you, Mr. Pedder. THE WITNESS: Thank you very much.

ALJ AGRANOFF: Mr. Secrest, at this time do you care to move the identified exhibits?

MR. SECREST: Please, your Honor. Applicant would move for the admission of Applicant's Exhibit 1 through 31 as well as 82.

ALJ AGRANOFF: Any objection to the admission of those exhibits?

There being none, the aforementioned exhibits shall be admitted as part of the record at this time.
(EXHIBITS ADMITTED INTO EVIDENCE.)
ALJ AGRANOFF: And again, as we've discussed earlier, if you can please e-mail those exhibits to Armstrong \& Okey tomorrow, that would be appreciated.

Okay. We are certainly ahead of schedule obviously since we expected Mr. Pedder to actually roll over into tomorrow. And if I understand correctly, Mr. Margard, at this moment there are no Staff witnesses prepared to --

MR. MARGARD: Yeah. I am still trying to track folks down. I think I probably have one for you tomorrow, but I need to confirm that. The rest
of my -- it doesn't look like they are available until Wednesday so. But I may have Mr. Bellamy ready tomorrow. I don't have anybody on tap at the moment.

ALJ WILLIAMS: Give people a chance to prepare. Let's get one for tomorrow and let's contemplate three for Wednesday.

MR. MARGARD: How many for Wednesday?
ALJ WILLIAMS: Try three for Wednesday. Give us somewhere in the range of seven or eight hours of testimony if we get to them.

MR. MARGARD: I'll see what $I$ can do.
ALJ WILLIAMS: And I think the plan would be, to the extent we have witnesses who are going to testify that day, to have them all log on 8:45 or so, make sure the technology is working, and then obviously we'll tell them they can go until they are ready to take the stand.

MR. MARGARD: I understand. We are off, yes? Or are we on?

ALJ WILLIAMS: You're on.
ALJ AGRANOFF: We are still on the record.

MR. MARGARD: I wanted to ensure the invitations had been sent to all of the witnesses, so.

ALJ WILLIAMS: The witnesses are expected to log on and register to testify. That's been a change of protocol that went out Friday. So if there is a question regarding that, there should be an e-mail that I think Ms. Fischer issued on Friday.

MR. MARGARD: I think I forwarded that. I just need to confirm that my folks have received it and registered. Thank you.

ALJ WILLIAMS: No problem at all. Any other ancillary matters we can attend to this afternoon that will keep this case moving efficiently?

MR. SECREST: Your Honor, may I inquire? Mr. Van Kley had previously indicated that he thought that his cross-examination estimates would need revision as we've gone along today. That would really be helpful for purposes of our planning and letting our witnesses know when they may be actually testifying. If, Mr. Van Kley, you wouldn't mind actually providing re-estimates for our witnesses.

MR. VAN KLEY: I think, based on my best guesstimates, Good and Farmer should each go for about three hours. That's my guess. So that's the estimate, from five hours to three hours, but I would think at the very least we can finish both of those
witnesses tomorrow. Whereas, we had thought that Farmer would continue -- continue over into Wednesday.

MR. SECREST: Thank you.
ALJ WILLIAMS: Contemplating Witness Bellamy as well tomorrow then?

MR. MARGARD: I'm hoping, yes.
ALJ WILLIAMS: Okay. I just want the parties to be prepared to address questions to that witness if that does occur.

MR. VAN KLEY: Would Mr. Good be your first witness tomorrow then?

MR. SECREST: Yes, he will be.
MR. VAN KLEY: Okay.
ALJ AGRANOFF: And, Mr. Margard, you will have three witnesses identified for Wednesday to the extent that Mr. Bellamy goes tomorrow?

MR. MARGARD: That's my intention, yes, your Honor.

ALJ AGRANOFF: Thank you.
ALJ WILLIAMS: Anything else we can do today?

Ms. Gibson, you can give your hands a rest, $I$ guess. Nice to be running on time or a little ahead of schedule. Jay, do you want to get us
out of here?
ALJ AGRANOFF: We have a game plan for tomorrow. We will begin with Mr. Good and then Mr. Farmer and then possibly Mr. Bellamy, and we will begin at 9:00 a.m.

ALJ WILLIAMS: Let's have the witnesses who are going to testify tomorrow, have them on at or around 8:45 to make sure their technology is working. Any questions, get ahold of us per our prior communications.

I see something in chat. Let me make sure. That's not directed toward me. So okay. Anybody else have any questions?

ALJ AGRANOFF: Appreciate everybody's help today.

ALJ WILLIAMS: We're adjourned. Thank you.
(Thereupon at 3:03 p.m., the hearing was adjourned.)

CERTIFICATE
I do hereby certify that the foregoing is a true and correct transcript of the proceedings taken by me in this matter on Monday, October 5, 2020, and carefully compared with my original stenographic notes.

Karen Sue Gibson, Registered Merit Reporter.

Carolyn M. Burke, Registered Professional Reporter.
(KSG-6968)

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## Case No(s). 18-1607-EL-BGN

Summary: Transcript in the matter of Firelands Wind, LLC hearing held on 10/05/20-Volume I electronically filed by Mr. Ken Spencer on behalf of Armstrong \& Okey, Inc. and Gibson, Karen Sue Mrs.

