

BEFORE THE OHIO POWER SITING BOARD

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In the Matter of the :
Application of Icebreaker :
Windpower Inc. for a :
Certificate to Construct : Case No. 16-1871-EL-BGN
a Wind-Powered Electric :
Generation Facility in :
Cuyahoga County, Ohio. :

- - -

PROCEEDINGS

before Mr. Nick Walstra and Ms. Megan Addison,
Administrative Law Judges, at the Public Utilities
Commission of Ohio, 180 East Broad Street, Room 11-A,
Columbus, Ohio, called at 9:00 a.m. on Wednesday,
September 26, 2018.

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VOLUME III

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1 Wednesday Morning Session,
2 September 26, 2018.

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4 ALJ ADDISON: We will go ahead and go
5 back on the record and we will dispense taking
6 appearances this morning.

7 Dr. Gordon, I will remind you you are
8 still under oath.

9 THE WITNESS: Yes.

10 ALJ ADDISON: And I believe when we
11 recessed yesterday, we had just completed the
12 cross-examination of Dr. Gordon. Mr. Secrest, do you
13 have any redirect for Dr. Gordon?

14 MR. SECREST: I do, thank you, your
15 Honor.

16 - - -

17 CALEB E. GORDON, PH.D.
18 being previously duly sworn, as prescribed by law,
19 was examined and testified further as follows:

20 REDIRECT EXAMINATION

21 By Mr. Secrest:

22 Q. Good morning, Dr. Gordon.

23 A. Good morning.

24 Q. How many wildlife risk and impact studies
25 have you designed or conducted in your career?

1 A. Designed and conducted on the order of 30
2 or 40. Beyond that, the ones I've evaluated or
3 supervised or structured, well over 100.

4 Q. And does that include risk assessments?

5 A. Yes. I am just talking about risk
6 assessments.

7 Q. Thank you.

8 And have you performed work on behalf of
9 any governmental agency?

10 A. Yes. Especially in the area of offshore
11 wind, wildlife-related research and policy matters, I
12 supervised a number of research contracts for the
13 U.S. Bureau of Ocean Energy Management, what's now
14 called U.S. Bureau of Ocean Energy Management, in the
15 U.S. Department of Interior, all related to advancing
16 knowledge frontiers and developing new tools and
17 technology for offshore wind wildlife studies. That
18 included research on new techniques such as
19 high-resolution imagining, acoustic and thermal
20 monitoring of birds and bats at offshore facilities,
21 research synthesis of risks to offshore birds and
22 offshore wind farms for the Federal Government.

23 Q. We obviously have your résumé attached to
24 your testimony, but other than what you just
25 mentioned with regard to offshore wind, what other

1 experience do you have specifically related to
2 offshore wind?

3 A. To offshore wind.

4 Q. Correct.

5 A. Well, I was the -- the inaugural chair of
6 the Wildlife Issues Task Force for AWEA's Offshore
7 Wind Committee.

8 Q. Who is AWEA?

9 A. The American Wind Energy Association.

10 Q. Thank you.

11 A. And I've been -- while I was at WEST, I
12 was WEST's, informally WEST's offshore group leader.

13 Q. Do you still have the exhibits in front
14 of you from yesterday?

15 A. Yes.

16 Q. Will you please reference Intervenor's
17 Exhibit 9, commonly referred to as the risk
18 assessment.

19 A. Okay.

20 Q. With regard to other risk assessments
21 you've completed or participated in, was the amount
22 of scientific data considered for this risk
23 assessment on par with those prior projects?

24 A. Yes. The amount of scientific data that
25 went into this risk assessment, I would say, is above

1 average relative to other risk assessments I've
2 performed.

3 Q. Would you please turn to page 4 of the
4 risk assessment.

5 A. Yes.

6 Q. What does this depict?

7 A. All right. On page 4 you see two line
8 graphs. Is everybody there too? What these line
9 graphs show is actually one of the most important
10 evidence basis for our risk conclusion regarding
11 waterfowl. These are graphs that were reproduced
12 directly from the Ohio Department of Natural
13 Resources Study of 2011. It was a two-year study of
14 offshore aerial surveys of birds in the U.S. portion
15 of Lake Erie.

16 In that study, they conducted biweekly
17 surveys, over two years, from fall through spring,
18 covering a remarkable amount of miles that transect,
19 recording over three-quarters-of-a-million bird
20 observations. And these are summary graphs. The one
21 on top, Figure 2, is from Year 1. The one on the
22 bottom, Figure 3, is from Year 2. What they show is
23 the total summary relationship of the density of
24 birds with relation to the distance from shoreline.
25 And what you can see in both years is a very, very

1 sharp dropoff in bird abundance as you increase
2 distance from shore.

3 And what you can see is that, in Year 1,
4 that concentration of birds around the shoreline was
5 very, very focused within the first 2 or 3 miles from
6 shore. In Year 2, it was a little more dispersed
7 with reasonably-high concentrations of birds going
8 out as far as 7 miles from shore. But by the time
9 you get to 8 miles from shore, which is the distance
10 that the Icebreaker project is from shore, in both
11 years, what you can see here is that the ODNR
12 recorded very, very low bird -- bird abundances in
13 that portion of the Lake.

14 So when we talk about the birds and the
15 bird importance in the Central Lake Erie Basin, it's
16 important to remember it's not homogenous. What we
17 can see from these graphs, that are built with a
18 tremendous amount of data that includes
19 broad-spectrum data across the whole U.S. portion of
20 the Lake, as well as one part that went right through
21 the Icebreaker project, what we see is a very, very
22 robust and consistent pattern of extremely low
23 abundance of birds, and this is primarily day-active
24 water birds, in the region from 7 miles from shore
25 and out, which is where the project is. That was our

1 basis for saying that there's very, very few birds
2 that actually live in the project site. You can see
3 it right here in -- in a very robust dataset.

4 Q. You referenced ODNR. This graph or table
5 is from a study completed by ODNR?

6 A. Correct. It's from the Morris and Lott
7 2011, which was the final report of the ODNR's aerial
8 survey effort. That's included as an exhibit in my
9 testimony. Which exhibit is that?

10 Q. I direct you to Attachment 4.

11 A. Attachment 4?

12 Q. And while we are discussing it, why don't
13 you turn to Attachment 4, please.

14 A. I was actually looking in the
15 Intervenor's.

16 Q. Understood. You have a lot of documents
17 in front of you.

18 A. This is my Attachment 4. Okay. I'm
19 there.

20 Q. Specifically page 12, please.

21 A. I'm there.

22 Q. The first sentence on page 4 ODNR
23 states --

24 A. Page 4 or page 12.

25 Q. I'm sorry, page 12, thank you.

1 A. Okay.

2 Q. The first sentence, ODNR states "The
3 overall trends for species distribution were similar
4 among years - the further from the shoreline the less
5 birds observed." Do you see that?

6 A. Yes.

7 Q. Do you agree with that assessment?

8 A. I do.

9 Q. If you wouldn't mind referring back to
10 the risk assessment, Intervenor 6.

11 A. Yes.

12 Q. Specifically --

13 ALJ ADDISON: I'm sorry, Mr. Secrest.
14 Did you mean to say Residents Exhibit No. 9 for the
15 risk assessment? I believe you said 6. I want to
16 make sure we are all looking at the same.

17 MR. SECREST: I have it marked as
18 Intervenor 9; is that correct?

19 ALJ ADDISON: That's correct. I believe
20 you said Intervenor 6. Thank you.

21 MR. SECREST: I appreciate it.

22 Q. (By Mr. Secrest) Specifically in the risk
23 assessment, will you please refer to page 22.

24 A. I'm there.

25 Q. What does this graph depict?

1 A. Okay. This is another depiction of data
2 that was one of the most important evidence basis for
3 the conclusions of our risk assessment. Is everybody
4 there?

5 This shows a bar graph with 42 bars.
6 Each one of these bars is one year of study of one
7 wind farm in the Great Lakes region and it's a bird
8 fatality rate estimate. This is a collection of
9 studies that we put together at WEST for the risk
10 assessment. It includes all of the
11 publicly-available studies of bird fatalities that
12 were publicly available at the time of the risk
13 assessment for the Great Lakes region.

14 And what you can see here on the Y-axis
15 is the number of bird fatalities per megawatt per
16 year. And, again, each of the bars is a different
17 study. The only studies that were included in this
18 were studies that used what we would consider robust
19 methods, they use systematic searching, combined with
20 bias correction, to develop what we consider robust
21 and valid fatality rate estimates.

22 What you can see is that in this span of
23 42 studies, the bird fatality rate -- total bird
24 fatality rate of these wind farms ranged from
25 approximately one bird per fatality -- per megawatt

1 per year, up to as high as slightly over 7 birds per
2 megawatt per year.

3 Yesterday, I talked a little bit about
4 the importance of actual proof-in-the-pudding
5 fatality rate data to understand -- to make
6 predictions, rather than exposure-based
7 extrapolations. This was our basis for saying, hey,
8 what could the fatality rates be at this project,
9 knowing what we know about 42 other projects that
10 range from 1 to 7. And so, this was our basis for
11 concluding that the fatality rates at this project
12 will probably be somewhere between 1 and 7 birds per
13 megawatt per year.

14 It's also important to note that most of
15 the bird fatality in this graph is nocturnal migrants
16 when we talk about different kinds of birds. Most of
17 these bird fatalities are composed of nocturnal
18 migrants. The same ones we expect to compose most of
19 the bird fatalities at the Icebreaker wind project.
20 That's another reason why this data, we consider it
21 to be comparable because we are talking about similar
22 birds.

23 Some of the elements in this graph are
24 actually different. For example, this graph because,
25 it's from land-based studies, also includes some

1 amount of raptor fatalities. Almost all wind
2 projects have some amount of raptor fatalities that
3 are included in the total bird fatality rates. At
4 the Icebreaker project, it's actually the only
5 project I've ever worked on where no raptors
6 basically live there. They don't nest there. It has
7 no nesting habitat. It has no wintering habitat.
8 It's the least likely place for them to migrate
9 through. It's the only project I have ever worked on
10 where we actually don't expect any raptors to occur
11 there regularly.

12 So, in comparison with these 42, take
13 away the raptor fatalities. Also, in comparison with
14 these 42, take away the fatalities of the other small
15 birds who live there. For example, birds of farm
16 fields and pastures. Birds like Eastern Meadowlark,
17 Horned Lark, Killdeer, these are birds that live at
18 these land-based fatalities year round and also
19 compose a significant chunk of the fatalities you see
20 here. The Icebreaker project, you don't have any
21 such birds, so also take those away. That's why we
22 say, if anything, the bird fatality rates at
23 Icebreaker might actually be on the low end of this
24 range.

25 But actually when you take the high end

1 of the range or low end of the range, you can see
2 from this graph, if you just take the numbers 1 to 7,
3 multiply that by the number of megawatts in this
4 project, 20.5, that's what gives you a total fatality
5 rate estimate of 20.5 to about 140 birds per year.

6 That is the equivalent of the number of
7 birds killed by from one to three outdoor cats, which
8 is also supported by one of the exhibits -- one of
9 the attachments to my testimony, the
10 recently-published study of bird-related fatalities
11 due to cats in the United States, where the estimate
12 is approximately 40 or 50 birds killed per year per
13 outdoor cat. All right?

14 That is why I say that the total
15 fatality, bird fatality rates of this project are
16 vanishingly small. They are so small, they are much,
17 much smaller than any -- any of the risk assessments
18 I've ever performed in my career because mostly I've
19 looked at commercial-scale, large projects. This is
20 the first project -- demonstration-scale project I've
21 ever worked on.

22 So, really, the bird risks are
23 considerably smaller to the point where it's -- I
24 think this is important because we're having a lot of
25 risk-related discussions and what should be the

1 mitigation measures taken on account of risk. I
2 think it's important for everyone to understand the
3 actual evidence basis for what the risk actually is
4 here and how actually very small it is. And I think
5 this bar graph really show that for birds. It's the
6 basis for us bracketing the prediction between 1 and
7 7 bird fatalities per megawatt per year.

8 Q. Doctor, what is broad-front migration?

9 A. Broad-front migration refers to spatial
10 and temporal pattern of nocturnal bird migration.
11 So -- and the fact that it's more distributed in a
12 broad, broad, spatially-dispersed cloud, rather than
13 in channelized lines. It's the pattern that's
14 described by ornithologies for what we are calling
15 nocturnal migrants or nocturnally-migrating
16 songbirds.

17 One thing most people, laypeople may not
18 realize is that most birds are songbirds, small
19 birds. Most of those in the United States are
20 migrants. Most of our birds are small, migratory
21 birds. And almost all of those migrate at night.
22 They actually migrate in the middle of the night.
23 That's not something everybody is always aware of.

24 So all of our Warblers, all of our
25 Thrashers, all of our Flycatchers, all of our

1 Orioles, Tanagers, all of them migrate in the middle
2 of the night. And the pattern that they follow is
3 described as a broad-front migration. They come
4 through the Great Lakes region and other parts of the
5 country in a fairly uniform pattern. When they are
6 present, they are covering this region like a
7 blanket, flying through in a very spatially-dispersed
8 pattern.

9 Q. And when you say they are covering the
10 region, in spring migration, for example, when
11 migrating songbirds are migrating during spring, are
12 they passing over just the Great Lakes or is it the
13 entire region?

14 A. Yeah. It's really the entire region and
15 you can see this very clearly when you look at NEXRAD
16 images that are filtered and processed to show
17 migration. That's another reason why we consider
18 this bar graph to be a very good basis to predict the
19 fatality rates at Icebreaker because we know, in this
20 region, the nocturnal migrant birds that account for
21 most birds and most wind farm bird fatalities kind of
22 go everywhere in a more or less uniform pattern.

23 That's probably one reason why this bar
24 graph, this distribution is so uniform and so
25 constant across the space and time. It only goes

1 from 1 to 7. That's a fairly, fairly invariant
2 pattern. It's because they are all getting the same
3 waves of migratory birds in the middle of the night
4 in spring and fall as the rest of the region is. It
5 is not like there's some spots that are real distinct
6 corridors and other spots that are vacant of
7 nocturnal migrant birds. It's a very dispersed
8 pattern, uniform pattern. Therefore, it's actually
9 very reasonable to extrapolate from these 42 studies
10 to another study in the region.

11 Q. So with regard to these 42 studies, are
12 any of those offshore wind projects?

13 A. None of them are offshore, but actually
14 some of them are coastal in the Great Lakes.

15 Q. So despite the fact they are not
16 offshore, why are they relevant to your risk
17 assessment?

18 A. Well, again, one of the things we know
19 about nocturnal bird migration is that it's a
20 broad-front migration that comes through the whole
21 region. In that sense, an environment in the middle
22 of Lake Erie is no different than anywhere else. We
23 know these birds come through the whole region. You
24 can see the next NEXRAD, over the Lake and over the
25 land, is fairly uniform, No. 1.

1 No. 2, the environment in which they are
2 migrating and the environment in which their
3 collisions with wind turbines are presumably
4 happening is in the middle of the sky in the middle
5 of the night. And that environment is really no
6 different whether the turbine bases are in the water
7 or on the land, when you think about it.

8 Q. And with regard to these other Great
9 Lakes region studies, you indicated that the
10 fatalities could also include resident songbirds?

11 A. That's correct.

12 Q. With regard to the Icebreaker project,
13 are songbirds using the project site for anything
14 other than migration?

15 A. No. Again, this may be very intuitive,
16 but it shouldn't be overlooked. Because this project
17 site is out 8 miles off the Lake, there are no
18 songbirds who live there. The only time songbirds
19 can go through -- and we agree with everyone who says
20 they do go through their nocturnal migrations in
21 spring and fall. But that's it. They don't live
22 there actually. They are not there -- there is no
23 species of songbirds that are there all summer long
24 or all winter long. And all these 42 studies do have
25 that, and that actually does account for a

1 significant amount of fatalities here. So that's why
2 this basis of "from 1 to 7" is actually a fairly
3 conservative basis, in our view, for predicting what
4 the fatality rates might be at Icebreaker because
5 there are no resident songbirds there and no resident
6 raptors, as I mentioned.

7 Q. So with regard to raptors, do you
8 anticipate raptors using the project site area for
9 anything other than migration?

10 A. No. And even for migration, this is the
11 least likely place for them to use because raptors --
12 fanatic bird watchers like me know that there are
13 certain spots you can go in the Great Lakes. If
14 anybody has been to Whitefish Point, for example,
15 where it's spectacular in fall migration, these birds
16 get channeled in, and you can be standing at the
17 Point and see Great Gray Owls flying by and all kinds
18 of hawks and falcons, because they are very well
19 known to get channelized along the lakeshores and
20 come down through peninsulas and islands where they
21 can minimize their over-water crossing distances. So
22 Whitefish Point Bird Observatory is one example.
23 Point Pelee is another. In fact, Hawk Observatory,
24 Hawk Migration Observatories have been set up at some
25 of these places.

1 But the converse of that is when you look
2 at the widest portions of the lakes, in relative
3 terms, they're a desert for raptor migration.
4 Raptors are not -- some -- the odd bird might cross
5 there. Not that they could never cross there or
6 would never cross there, but it's the least likely
7 place for them to cross and it's a -- the place where
8 the least -- the lowest concentration of raptor
9 migration is expected to occur.

10 And aside from migration, it's nothing.
11 No raptor species, even the ones that hunt for fish,
12 regularly forage or nest in an environment 8 miles
13 from shore. It's well-known. Not controversial. So
14 in the summer, in the winter, we are not expecting
15 any raptors to actually live there. That's unique
16 among the projects I have worked on. In every
17 project I have ever worked on, granted they are
18 land-based projects, we have raptors who live there,
19 and that actually composes a significant chunk of the
20 bird risk. In this project, you just don't have
21 that.

22 Q. Given songbirds don't use the project
23 site for residency, the raptors don't use the project
24 site for residency, do you anticipate that the number
25 of bird fatalities will actually be lower than what's

1 depicted on page 22 of the risk assessment for the 42
2 other Great Lakes region studies?

3 A. We anticipate that the most-likely
4 scenario is it's on the low side of that
5 distribution. But, again, for the risk assessment,
6 we were comfortable relaxing that assumption, in
7 light of some of the uncertainties, to say it could
8 be anywhere in this range. Even though, you're
9 right, the most-likely scenario is it's on the low
10 side of that distribution.

11 Also because when it comes to nocturnal
12 migrant birds, in addition to everything else we've
13 talked about, this is a cold spot for migration.
14 Many nocturnal migrant birds will pass over the site,
15 but we know, from the NEXRAD analysis, it will be
16 fewer than what passes through the average spot in
17 the Great Lakes region.

18 Q. Speaking of NEXRAD, in ornithology, is
19 NEXRAD an acceptable tool for evaluating nocturnal
20 migration?

21 A. Yes. There has been five decades of
22 peer-reviewed published research on this, using
23 NEXRAD, specifically, to understand spatial and
24 temporal patterns of nocturnal migrant bird
25 migration, including well over 100 peer-reviewed

1 public -- published technical publications. It's a
2 well-established tool in ornithology, especially for
3 looking at nocturnal migrant songbirds and similar
4 birds.

5 Q. Thank you, Doctor. If you would please
6 refer to Intervenor 8.

7 A. Which one is that?

8 Q. That is the NEXRAD analysis.

9 MR. STOCK: Tab J.

10 A. J, thanks.

11 ALJ ADDISON: Thank you.

12 A. Got it.

13 Q. Specifically please direct your attention
14 to page 3.

15 A. Got it.

16 Q. You were asked some questions on
17 cross-examination regarding these graphs and
18 comparison areas. What do these tables or graphs
19 depict?

20 A. Okay. On page 3, which is Figure 2 of
21 our NEXRAD analysis report, it's two map figures that
22 depict the locations of our study areas for the
23 NEXRAD analysis.

24 Again, NEXRAD is a form of radar -- we
25 don't rent a unit and go out and collect data. We

1 download free data from the government that comes
2 from our -- the weather radars they use for making
3 weather forecasts. So, in fact, the beauty of this,
4 you can get a ton of data for free, and for this
5 study we got three years of data. You can get it
6 from the past, right? So we actually were able to do
7 a three-year study in the recent past and in this --
8 encapsulated in this report. Three full spring
9 seasons and three full fall seasons.

10 And these gray areas in these figures
11 indicate the specific study areas that we analyzed
12 for which we analyzed the NEXRAD data. Again, using
13 various processing methods, that are well established
14 in ornithology literature, to extract bird migration
15 information from the NEXRAD signal.

16 So what you can see is the study -- the
17 area called the "Project Area," that's the turbine
18 area buffered by 2 miles and turned into the shape of
19 a doughnut slice, and as well as six comparison areas
20 labeled CA1 through 6 that are exactly the same size
21 and shape and distance from the radar sensor which is
22 what you need to do to make them apples-to-apples
23 relative comparisons.

24 Q. Why were these comparison sites selected?

25 A. Well, we -- we asked ourselves what would

1 be the most pertinent types of comparisons to get the
2 relative comparisons of migration activity over the
3 project site compared to elsewhere in the region.
4 And we said, well, shoreline environments are
5 important.

6 In fact, Fish and Wildlife Service has
7 done a bunch of radar studies with marine radar in
8 shoreline environments, so we selected a couple of
9 shoreline sites; that includes CA1 and CA2. Those
10 are shoreline environments in Lake Erie that span
11 both inland from the shore and out over the water
12 from shore. That also was true of CA5. It's
13 shoreline environment in the Eastern Lake Erie basin.
14 Studied the KBUF NEXRAD station in Buffalo.

15 We also wanted to get another offshore
16 site. That's what CA4 is about. That's our offshore
17 comparison site in the Eastern Lake Erie basis.

18 Then we wanted to get a couple of land
19 sites, what's happening inland, and that's what
20 Comparison Areas 3 and 6 are all about. Comparison
21 Area 3 is an inland site about 20 kilometers south of
22 Cleveland. And Comparison Area 8 is an inland site
23 in New York, about 20 miles -- 20 kilometers
24 northeast of Buffalo.

25 Q. Dr. Gordon, please refer to page 14.

1 A. Okay. I got it.

2 Q. Thank you.

3 Under the heading "Migration Intensity,"
4 the second sentence states "Overall mean
5 reflectivity, averaged across season, year, and radar
6 elevation, was lowest at the Project Area at KCLE
7 (Figure 6a). Reflectivity was approximately twice as
8 high at the two sample areas at KCLE overlapping the
9 lakeshore (Comparison Areas 1 and 2) and somewhat
10 greater at the inland sample area." In laymen's
11 terms, what does that mean?

12 A. That means that the project area itself
13 was a cold spot of nocturnal migration relative to
14 the other comparison areas. Not that no migration
15 activity occurred. Certainly it did. Again, this is
16 a broad-front migration pattern. At some level, they
17 are going everywhere. But in terms of the relative
18 comparisons, hot spots and cold spots, actually the
19 project site area was -- showed the least bird
20 migration activity of any of our seven areas and that
21 pattern was consistent across years and seasons.

22 Q. And, Doctor, please refer to page 16.

23 A. Okay. I'm there.

24 Q. What do these graphs tell us?

25 A. Okay. These graphs are well worth taking

1 a minute to digest because this is the results that
2 shows the abundance of migratory bird activity at the
3 project site compared with the six comparison areas.

4 The four different bar graphs break it
5 down by season and year. So in the upper left, let's
6 work in the upper left called (a). What you are
7 looking at is overall, this is summarized across
8 season year and elevation. What you can see, the
9 project is the bar graph at the furthest left and
10 that order is always the same for all four of these.
11 The project area is always at the farthest left. You
12 can see it's the shortest bar.

13 The Y-axis, reflectivity, is basically
14 the measure of bird migration activity after it's
15 been processed to separate out other information.
16 This is the index of the signature of bird migration
17 intensity. And you can see, summarized over all
18 years and seasons, the project area is the lowest of
19 the seven.

20 Moving to square (b) in the upper right.
21 It breaks it out by spring versus fall. And you can
22 see that with some -- you know, there is some
23 variation there but, again, the project area was
24 always the lowest in both -- of all seven, in both
25 spring and fall. You can see the Comparison Area 6,

1 in springtime, is sort of comparable to it. But
2 other than that, you can see that this pattern of the
3 project area being a cold spot is consistent across
4 migratory season, spring and fall.

5 Moving down to square (c), that the
6 breakdown of the different angles. The NEXRAD
7 actually has two different beams that we looked at.
8 One of them is at the .0 -- 0.5-degree azimuth. That
9 just reflects the angle that they point out. The 0.5
10 is the one that's closest to pointing across the
11 horizon, only a slight up. And the 1.5 is a little
12 bit higher elevation. So it's detecting birds at
13 higher elevation. We looked at both to get the
14 biggest elevational chunk we could of the sky.

15 What you can see is that there is a lot
16 more birds in the lower one. That lower beam
17 essentially is the one that overlaps the rotor-swept
18 zone and then goes up a couple hundred meters from
19 there. And that's consistent with what we know from
20 a lot of other sources about where nocturnal migrant
21 birds tend to fly, what altitudes they tend to fly.
22 It's usually centered around four- or five-hundred
23 meters above ground. So it's consistent with that.

24 When you look at the part that's even
25 higher, there is fewer birds in the 1.5-degree

1 azimuth. Again, but you can see for both beams and
2 consistent -- there is a consistent pattern of the
3 project site having the fewest birds.

4 Moving to square (d) in the bottom right.
5 That's the breakdown of the three different years we
6 analyzed. And you can see, again, this pattern of
7 project site being a cold spot was consistent across
8 all three years we looked at. It's a remarkable
9 consistency. And when we say the project site is a
10 cold spot of nocturnal migration, it comes from --
11 this is where it comes from. It comes from an
12 analysis of a lot of data, three years of data,
13 spring and fall, and the appearance of a very
14 consistent pattern.

15 I mean, we -- when we looked at that, we
16 thought, boy, you know, the project team really got
17 lucky here, or maybe they were either lucky or real
18 smart but, either way, they picked a good site. This
19 is a cold spot for nocturnal migration activity.

20 Q. Doctor, carrying on to page 23 of the
21 NEXRAD analysis. It starts your summary and
22 conclusion section, but I will direct you to page 24,
23 please. The second full paragraph on page 24.

24 A. Uh-huh.

25 Q. "Diehl et al. (2003) analyzed bird

1 migration in the Great Lakes region using NEXRAD data
2 from three stations (including KCLE and KBUF), and
3 found that bird densities over land were generally
4 greater than over water, consistent with results from
5 KCLE and this study...." Did I read that accurately?

6 A. That's correct.

7 Q. Did the results from your NEXRAD analysis
8 match up with the results from Dr. Diehl's 2003 radar
9 study?

10 A. That's correct. And, in fact, it was
11 Dr. Diehl's study that showed, for the Central Lake
12 Erie Basin and elsewhere in the Great Lakes, the
13 migration bird activity was consistently lower over
14 the water than it was over the land. That was --
15 that was our basis for making exposure-related
16 conclusions in the risk assessment. But we said,
17 hey, we want to know more actually, and that's why we
18 embarked in our own NEXRAD analysis which did confirm
19 and provide even more site-specific evidence for
20 essentially the same pattern that Dr. Diehl found.

21 The Central Lake Erie Basin in particular
22 and the water in general is a cold spot for migration
23 activity. Even though the migration is best
24 described as broad-front and kind of goes everywhere,
25 it's basically as simple as they kind of like to

1 avoid flying over big water if they can, at least
2 some of the birds. But regardless of the explanation
3 why, we can see in the data that this is -- this area
4 is a cold spot.

5 Q. So scientists, other than those employed
6 by WEST, have determined that in the Great Lakes
7 region, specifically Lake Erie, bird densities are
8 greater over land than water.

9 A. That's correct.

10 Q. Doctor, in performing risk analysis, is
11 it a standard practice to collect data regarding the
12 number of birds flying through the rotor-swept zone?

13 A. Yeah. This is an important clarification
14 question because there has been a lot of questioning
15 about data on the number of birds flying through the
16 rotor-swept zone over the project site. And the
17 implication or the assumption or the assertion has
18 been that that kind of data is necessary for risk
19 assessment. In fact, it's not. In fact, anybody who
20 would say that probably is not familiar with standard
21 scientific practice in this field because, in any
22 risk assessment I have ever worked on, we have
23 actually never had that data, nor has it ever been
24 suggested to me that we should have -- should or
25 should have collected such data. It's just not how

1 it's done.

2 What we do is we look at other sources of
3 information on bird distributions, bird habitats, and
4 put a particular emphasis on known -- known patterns
5 of wind turbine collision susceptibility to generate
6 these kind of predictions for risk assessments. It
7 is not necessary, in fact it's not typical, in fact
8 it's very rare and, in my experience, net zero,
9 unprecedented, to have the kind of data that the
10 Intervenor's have suggested is essential for a risk
11 assessment. I've never had such data in any risk
12 assessment I have ever done. And it's not typical
13 standard scientific practice to have such data. As
14 we review, there's other bases to make a prediction
15 on risk to all different groups of birds. The kind
16 of data they are suggesting is essential is not, in
17 fact, essential. In fact, it's not typical. It's
18 very rare to have such data.

19 Q. Intuitively, Doctor, the more birds
20 flying over the project site, the greater the risk.
21 At least that would seem logical; is that so?

22 A. Yeah, this is an important point. The
23 relationship -- in technical terms, we would say the
24 relationship between exposure and risk. Exposure is
25 just being there. Risk is actually getting impacted,

1 right?

2 What -- the most succinct way I can
3 summarize it is that exposure is a necessary, though
4 insufficient, condition for risk. In other words, if
5 you are not there, there's no risk. That's for sure.
6 You kind of need to be there to have risk. But if
7 you are there, you might have risk or you might not
8 have risk. And I could illustrate this with an
9 example I mentioned in my written testimony.

10 Nobody would suggest that thousands of
11 fish are going to die in collisions just because
12 there are thousands of fish in the water. The fish
13 are not just going to knock into the bases of the
14 turbines underwater and die. But they're there,
15 right?

16 Or like the traffic example I said
17 yesterday. Nobody would suggest that thousands of
18 people are going to die on Broad Street in car
19 accidents today because thousands of people are going
20 to drive by. You know, only those people who drive
21 by could get in an accident. Exposure is necessary
22 for there to be some risk, but it doesn't
23 automatically mean there is going to be risk.

24 Therefore, exposure is indicative of
25 risk, it is informative when you are considering

1 risk, but it is certainly not the whole story. And,
2 in fact, it's a mistake to just look at exposure and
3 automatically assume risk. You need to have
4 information about susceptibility.

5 That's why the proof-of-the-pudding
6 results are so important. We need to know what the
7 actual, measured bird fatality rates are in order to
8 essentially calibrate the information we get from
9 exposure. Not that the exposure isn't relevant, it
10 is, it's informative about risk, but it's not the
11 whole story. You need to have that susceptibility
12 piece, too, to make a reasonable observation about
13 risk.

14 MR. SECREST: Your Honor, may I approach
15 the Bench and the witness?

16 ALJ ADDISON: You may.

17 MR. SECREST: Thank you.

18 Q. (By Mr. Secrest) Dr. Gordon, I have
19 handed you what I have marked as Applicant's Exhibit
20 36. Would you identify --

21 ALJ ADDISON: It will be so marked.
22 You're fine, please continue.

23 (EXHIBIT MARKED FOR IDENTIFICATION.)

24 Q. Could you identify this document, please?

25 A. Yes. This is what we, in the business,

1 sometimes refer to as the WEGs, the Wind Energy
2 Guidelines. This was guidance, voluntary guidance,
3 published by the U.S. Fish and Wildlife Service,
4 intended to provide national-level guidance for
5 managing wildlife impact issues at wind -- land-based
6 energy facilities, that came out in 2012.

7 MR. STOCK: Excuse me, your Honor. May I
8 interpose an objection? This document was not
9 discussed on cross-examination. This is redirect.
10 You can't introduce new material on redirect. This
11 document was not mentioned by anybody.

12 ALJ ADDISON: Mr. Secrest.

13 MR. SECREST: Passage rates and fatality
14 studies were mentioned on cross-examination. This
15 goes directly to that issue.

16 ALJ ADDISON: Thank you. I will allow
17 the question.

18 MR. STOCK: All right.

19 Q. (By Mr. Secrest) Dr. Gordon, will you
20 please turn to page 30.

21 MR. STOCK: Excuse me, can I inquire?
22 Are these in his exhibits attached to his testimony?

23 MR. SECREST: No, they are not.

24 A. Okay. I'm there.

25 Q. I'm looking in the right-hand side of the

1 page, midway through the first full paragraph that
2 starts "In contrast to the diurnal...."

3 A. Yes.

4 Q. About halfway down it states, "While an
5 active area of research, the use of radar for
6 determining passage rates, flight heights and flight
7 directions of nocturnal migrating animals has yet to
8 be shown as a good indicator of collision risk." Did
9 I read that accurately?

10 A. Yes.

11 Q. Is that the Fish and Wildlife's position
12 in these guidelines that pre-construction radar is
13 not a good indicator of risk?

14 A. Yes.

15 Q. And if you look at the bottom of that
16 paragraph, who does the Fish and Wildlife Service
17 cite?

18 A. They cite Mr. Todd Mabee.

19 Q. Thank you. Who is blushing over there.
20 Doctor, on cross-examination, you were
21 directed to Attachment 10 to your testimony. Would
22 you please refer back to that.

23 A. Is that the Archibald?

24 Q. Yes, it is, Doctor.

25 A. Okay. I'm there.

1 Q. You cited to this -- well, first off, why
2 wasn't this study referenced in the risk assessment?

3 A. This study was not referenced in the risk
4 assessment because it postdated the risk assessment.
5 This was published in 2017.

6 Q. And where was it published?

7 A. It was published in the Auk, which is
8 considered the premiere scientific journal of
9 ornithology in the U.S.

10 Q. Why did you cite to this study in your
11 testimony?

12 A. I cited to this study because, in a
13 sense, it contains the holy grail of what's been
14 discussed a lot of times when we think about the
15 nocturnal migrant bird issue which is an altitudinal
16 distribution of migrants in the sky.

17 These authors actually applied a very
18 clever analysis to take NEXRAD radar data and make a
19 composite. I discussed this a little bit in my
20 testimony yesterday when we looked at their actual
21 3-by-3 kilometer study sites along the lakeshore.
22 They made a composite analysis, using NEXRAD data, to
23 generate altitudinal distributions of migrants, how
24 high are the birds flying in their nocturnal
25 migrations in this region, to take a close look at

1 patterns of altitudinal -- altitudinal patterns of
2 migration activity including dawn ascent and other
3 phenomena.

4 Q. And, Doctor, if you specifically refer to
5 page 196 of Attachment A.

6 A. Yes.

7 Q. There are a lot of numbers on this page
8 and, as a lawyer, it's my Achilles heel, so I'm going
9 to ask you. What does Table 1 -- what is the
10 significance of Table 1?

11 A. Okay. Table 1 shows the mean, plus or
12 minus standard error, of the altitude at which the
13 migrants are flying as indicated by the NEXRAD
14 signatures, broken out by the different -- the three
15 different NEXRAD stations they looked at, and also
16 broken out by over land or over water, and also
17 broken out by peak migration which is the middle of
18 the night versus dawn. And so, what you can see, the
19 most-relevant column for us is the KCLE column
20 because that's the column that refers to the Central
21 Lake Erie Basin, the KCLE NEXRAD station.

22 And what you can see is that the
23 most-relevant rows are the height above surface, the
24 first three rows. That shows the average height, in
25 meters, of nocturnal bird migration activity. And

1 what you can see in the KCLE column is that those
2 numbers range, the mean altitude of nocturnal
3 migration activity numbers range from 565 meters to
4 681 meters above the surface of the land or the
5 water.

6 As we discussed, the maximum blade tip
7 height of the turbines at Icebreaker are 146 meters.
8 So what this is showing is that the center of the
9 distributions of where the nocturnal-migrating birds
10 are flying are hundreds of meters above the
11 rotor-swept zone of Icebreaker's turbines in the
12 Central Lake Erie Basin. That is true above the land
13 and above the water. And that is true in the middle
14 of the night and also at dawn.

15 Q. And, Doctor, if you would refer to
16 page 198 of Attachment 10.

17 A. Yes, I am there.

18 Q. What does the graph in the upper
19 left-hand corner depict?

20 A. Okay. Is everybody there? Figure 3.
21 This is what scientists call "box whisker plots."
22 What that is is it shows more than just the means,
23 right? We just talked about the numbers in that
24 table that were just the means; the average, plus or
25 minus standard error. This shows you a little bit

1 more about the distribution of birds. The means are
2 depicted in -- in each one of these bars, kind of
3 floating bars, you have got a line through the
4 middle, a horizontal line through the middle, that's
5 the mean.

6 And again, for the KCLE at the left, you
7 can see that's 500 -- the one on the left, which is
8 dawn, is around -- the mean is around maybe 560 or
9 something. And the one for peak migration in the
10 middle of the night is a little higher, maybe 580,
11 something like that. Those correspond to the numbers
12 in the table we just looked at.

13 But this figure shows you more than that.
14 It also shows the gray part, the thick part there,
15 extend from the 25th to the 75th percentiles of
16 distribution. So this shows you kind of more than
17 just the mean. It shows you the preponderance of
18 more about the distribution. You can see that that,
19 in the case of KCLE, goes anywhere from 400 meters
20 all the way up to over 700 meters, the gray parts.
21 That encompasses from the 25th to the 75th percentile
22 of the distributions.

23 Then you see the thin line extending out
24 even wider. What that shows, that's called the
25 "whiskers." That shows the extreme data points that

1 are -- excluding outliers. So that actually shows
2 the entire distribution excluding outliers. And you
3 can see that even with those, in the case of dawn, it
4 only goes down to about 350 meters. Below that,
5 there's nothing. And in the case of peak migration,
6 it goes down to a little over 200 meters. Below
7 that, there's nothing. That's why we say, when we
8 don't have data from below 114 meters, "We ain't
9 missing much."

10 These distributions show where the birds
11 fly and it's actually consistent with what we already
12 know from a lot of other studies, including a lot of
13 Todd's studies, that these birds typically fly well
14 above the heights of the rotor-swept zone. That's
15 probably the biggest reason why the collision
16 susceptibility is so low; why only 2 or 3 of these
17 birds per megawatt per year die in collisions with
18 wind turbines, because most of them fly over. This
19 shows it specifically in the Central Lake Erie Basin.
20 So it's a great piece of information for this group
21 and for this hearing.

22 Q. Doctor, with regard to Attachment 10 to
23 your testimony, who are the authors of this article?

24 A. The lead author is Kevin Archibald. The
25 next author is Jeff Buler, and then Jaclyn Smolinsky,

1 and Robert Smith.

2 Q. Are all these authors from academia?

3 A. I believe so. I don't know them
4 personally. I'm looking at their institutional
5 addresses here. One is University of Delaware
6 Newark. One of them is University -- another
7 University of Delaware. And one is University of
8 Scranton; Scranton, Pennsylvania. So, yes, I presume
9 they are academic ornithologists.

10 Q. The risk assessment refers to the small
11 scale of the project, but even given the scales, are
12 the risk to both birds and bats low at the project
13 site?

14 A. Certainly the small scale is a key piece
15 of it, but it's not the only piece. Yes, I agree
16 with your statement. Even given the small scale, the
17 risk is low.

18 Q. And, Doctor, if you would, please, refer
19 to Attachment 8 to your testimony.

20 A. I'm there.

21 Q. What does Attachment 8 depict?

22 A. Okay. This is a bar graph, similar to
23 the one we looked at earlier, but it's for bats
24 instead of birds. This is a bar graph where it shows
25 the 55 studies of bat fatality at wind farms in the

1 mid -- in the Great Lakes region that we synthesized
2 and summarized in the 2016 Risk Assessment to
3 generate our conclusions about risk, in this case to
4 bats. Again, in the Y-axis, just like with birds,
5 you can see that the Y-axis is a number of fatalities
6 per megawatt per year.

7 This pattern is similar to the bird
8 pattern in some ways and different in other ways.
9 Again, you can see a distribution of fatality rates
10 with each bar representing one year of study,
11 applying rigorous, in our view, valid scientific
12 methods at one wind farm in one year. In birds, we
13 had 42 of them; in bats, we have 55 of them. So you
14 can see the span of fatality rates that have been
15 recorded. Again, this is the proof-in-the-pudding
16 results we are talking about. This is what bat
17 fatality rates are in this region.

18 You can see that it goes here from, you
19 know, less than one at the far right, less than 1 bat
20 per megawatt per year, all the way up to slightly
21 over 30. So the upper end of the distribution is a
22 little higher than it is for birds. And that's
23 typical of what we've seen all across the country and
24 elsewhere that bat fatality rate can be a little
25 higher than bird fatal rates.

1 And you can see there is a little more
2 variation here. It's a little more -- the bird
3 pattern is more invariant across time and space.
4 Bats, there's a little more variation.

5 But, again, this allowed us to bracket
6 the likely fatality rates. So if we do the same
7 exercise we did for birds, let's go from, you know,
8 about 1 to about 30 bats per megawatt per year,
9 multiply that times the number of megawatts, and
10 that's how we bracketed the likely total fatality
11 rates for bats for this project. And that's why we
12 say it's low because, compared to virtually any wind
13 farm, those fatality rates are lower, in large part
14 because you are only multiplying it times 20, right?
15 It's only a 20-megawatt project.

16 Q. Thank you, Doctor.

17 In your direct testimony you referenced
18 prior experience related to wind farms in the Gulf
19 Coast of Texas as well as the Isthmus of something I
20 can't pronounce. Where is that?

21 A. Yes. The Gulf Coast of Texas and the
22 Isthmus of Tehuantepec, which is the thin part of the
23 J of Mexico, are two areas where I've worked on risk
24 assessments and post-construction carcass-searching
25 studies of birds and bats at wind farms where there's

1 been more concern about nocturnal migrant birds,
2 similar to what we are talking about here.

3 Because, you know -- backing up a step.
4 Most of the projects I work at, there's very little
5 concern about those birds. In the case of this
6 project and also in the case of the Gulf of Mexico,
7 coastal Texas and the Isthmus of Tehuantepec, those
8 are the cases where I have encountered the most
9 concern about nocturnal migrating birds in
10 particular.

11 In the case of those other areas, it's
12 because those are well known to be
13 highly-concentrated migration corridors just because
14 of the topography of the land. Tremendous amounts of
15 birds are passing through the Isthmus of Tehuantepec,
16 Mexico, during twice-a-year migrations. It's much
17 more concentrated than it is in the Great Lakes
18 region or anywhere else in the United States
19 actually. So there has been more concern there.

20 And also the Gulf Coast of Texas. As any
21 bird watcher knows, you save your pennies for when
22 you can come down to coastal Texas in the spring to
23 see the amazing phenomena, the concentration of
24 nocturnal bird migration that happens there in the
25 spring. Particularly the trans-Gulf migrants that

1 fly directly from the Yucatan Peninsula, across to
2 around Houston in the spring, but also the
3 circum-Gulf migrants that come around the horn and
4 don't want to go out over the water. All of them are
5 concentrated along the Texas coast.

6 So there was concern about nocturnal
7 migrant bird impacts, putting wind farms along the
8 Texas coast, which there are some. And we've had the
9 opportunity, at WEST, to do the carcass searching in
10 some of those projects. And I've had the privilege
11 to be involved in projects also in Oaxaca where we
12 have looked at this.

13 And it's relevant because those areas are
14 expecting more concentrated nocturnal migrant bird
15 activity. And what I can say about both of them is
16 some of the information is public, some of it is not.
17 I can't get into a lot of specifics, but what I am
18 comfortable saying is that we've seen fatality
19 rates -- I can't talk about the ones in Mexico but,
20 in Texas, some of that information is publicly
21 available. We've presented on it with the permission
22 of the developers.

23 What we've seen, in very intensive
24 fatality searching for many years, is fatality rates
25 on the order of 3 to 5 birds per megawatt per year.

1 No different than what we see virtually anywhere
2 else. So the hypothesis and the fear and the
3 concern -- well justified before we had data that
4 there might be higher fatality rates of nocturnal
5 migrant birds in particular -- has not materialized.

6 And, in fact, there, we've also got the
7 permission to inform you that a radar-based
8 curtailment regime that was imposed because of the
9 fear, the concerns about migrant bird fatalities, has
10 been discontinued by the Fish and Wildlife Service
11 because essentially their concern has been satisfied,
12 through years of post-construction monitoring, that
13 migrant bird fatality rates are not out of the
14 ordinary and not a cause for concern in those cases.

15 Q. So despite this highly-concentrated
16 corridor of migration, the fatality rates are the
17 same or similar to those 42 Great Lakes region
18 studies you mentioned?

19 A. Correct.

20 Q. Doctor, have you ever performed a risk
21 assessment that concluded the risk to any particular
22 species was high?

23 A. Yes.

24 Q. The risk assessment was completed in
25 2016. Since then, has any new literature, studies,

1 information, come to light that would contradict the
2 conclusions in the risk assessment or cause you to
3 have a different conclusion of the risk assessment?

4 A. No, it has not.

5 Q. Doctor, if you would please refer to
6 Staff Exhibit 2. It's a December 21, 2017, letter.

7 A. December 21, 2017, letter.

8 THE WITNESS: Which tab was that in
9 yours, Mr. Stock?

10 Q. It was not in Mr. Stock's. It should be
11 a standalone.

12 A. Oh, do I have it?

13 Q. It should be up there on the left. I
14 believe, Dr. Gordon, it's this one.

15 MR. STOCK: I think it was included, too,
16 in mine. At U, Tab U. I don't know. Anyway.

17 EXAMINER WALSTRA: Yes, that's correct.

18 MR. STOCK: Excuse me, what's the exhibit
19 number on that?

20 ALJ WALSTRA: Staff Exhibit 2, I believe.

21 MR. STOCK: Using Staff 2, all right.

22 THE WITNESS: And then he had a different
23 exhibit that included some e-mails also.

24 MR. STOCK: That's exactly right.

25 ALJ ADDISON: Correct.

1 MR. STOCK: And that was exhibit?

2 ALJ ADDISON: Please proceed.

3 MR. SECREST: Thank you, Your Honor.

4 Q. (By Mr. Secrest) Doctor, you were asked
5 some questions about this document on
6 cross-examination and you were asked questions
7 related to fixed platform radar. Do you recall
8 those?

9 A. Yes.

10 Q. If you would look at the last paragraph
11 on page 1 of Staff 2, it states "For this pilot
12 project, the Service has requested on multiple
13 occasions that all commercial-available options of
14 avian radar be considered to expeditiously and
15 cost-effectively obtain data that address the three
16 study objective."

17 Based on your recollection of the
18 discussions with Fish and Wildlife Service, was there
19 ever a mention that Icebreaker should spare no cost
20 to obtain data that addresses the three study
21 objectives?

22 A. No. I think the statement of
23 "cost-effectively," in that sentence you just read,
24 indicates that cost effectiveness is a relevant
25 consideration.

1 Q. And you testified yesterday related to
2 the engagement of Dr. Diehl to perform a radar study.
3 Do you recall that?

4 A. Yes.

5 Q. Is it your recollection that Dr. Diehl
6 was engaged to essentially be the arbiter between
7 Icebreaker and Fish and Wildlife Service?

8 A. That's correct.

9 Q. Do you have Intervenors 5 in front of
10 you?

11 THE WITNESS: Do you know which tab that
12 is, Mr. Stock?

13 MR. STOCK: Is that --

14 MR. SECREST: It would be U, I believe.

15 A. We just looked at U.

16 Q. We looked at U. It's labeled U in mine.

17 A. What is it?

18 Q. It's the Diehl Report.

19 A. The Diehl Report.

20 MR. STOCK: The Diehl Report is what,
21 Joint Exhibit 2 and --

22 ALJ ADDISON: Let's go off the record for
23 a minute.

24 (Discussion off the record.)

25 ALJ ADDISON: Let's go back on the

1 record.

2 Mr. Secrest.

3 MR. SECREST: Thank you, your Honor. May
4 I approach the witness?

5 ALJ ADDISON: You may.

6 MR. SECREST: Thank you.

7 MR. STOCK: What's the number, Jon?

8 MR. SECREST: It will be 37.

9 (EXHIBIT MARKED FOR IDENTIFICATION.)

10 Q. (By Mr. Secrest) Dr. Gordon, I have just
11 handed you what I have marked as Applicant's Exhibit
12 37. Would you identify it for the record.

13 A. It's Exhibit 37.

14 Q. 37, yes. Thank you.

15 ALJ ADDISON: Thank you.

16 A. Yes, this is what we are referring to as
17 the Diehl Report. It's the report prepared by one of
18 the world's foremost experts in radar ornithology,
19 Dr. Robert Diehl, of the USGS, which he contributed
20 in December 2017.

21 Q. And your prior testimony was that it was
22 your understanding that Dr. Diehl was to serve as the
23 arbiter between Icebreaker and Fish and Wildlife
24 Service with regard to implementation of a radar
25 study; is that right?

1 A. Yes. And I would add to that. Ohio
2 Department of Natural Resources as well.

3 Q. Okay.

4 A. It was sort of an agreement among those
5 three parties, he was to be the arbiter of the radar
6 issue.

7 Q. And when you say "arbiter," was he to
8 decide the feasibility of vessel-based radar for the
9 project?

10 A. That's exactly right.

11 Q. And is this his work product, to your
12 knowledge, relating to his role as arbiter?

13 A. Yes.

14 Q. If you turn to, back to Staff 2, which is
15 the December 21, 2017 letter, Tab U, as well it's an
16 attachment to an e-mail.

17 A. Yes, I'm there.

18 Q. The first full paragraph on page 3.

19 A. Yes.

20 Q. The second sentence states --

21 A. Wait. I'm sorry. On page 3?

22 Q. That's correct.

23 A. Oh, I was on page 2. The first full
24 paragraph of page 3, second sentence?

25 Q. Well, let's start with the first

1 sentence. "The draft report, while stating concerns
2 about a moving platform and weather, has not fully
3 described the ramifications to a radar study. The
4 recommendation in the report is for data collection
5 to be successful during 80 percent of the time when
6 weather conditions permit." Do you see that?

7 A. Yes, I do.

8 Q. It was your recollection that Dr. Diehl
9 recommended 80 percent of the time only given weather
10 conditions permitting?

11 A. Yes. That is my understanding.

12 Q. And what does that mean?

13 A. That means that if weather conditions
14 permit, that 80 percent should be the goal. However,
15 it does contain the contingency that if weather
16 conditions do not permit, as Mr. Karpinski said,
17 weather factors, out of our control, preclude
18 collection of 80 percent, that lower than 80 percent
19 would also be acceptable.

20 Q. You were asked numerous questions about
21 the Joint Stipulation and the Staff Report. Prior to
22 your engagement on this project, had you ever seen or
23 reviewed an Ohio Power Siting Board Staff Report?

24 A. No, I have not.

25 Q. Prior to your engagement on this project,

1 had you ever reviewed a Joint Stipulation and
2 Recommendation filed in any Ohio Power Siting Board
3 matter?

4 A. No.

5 Q. When negotiations related to the
6 stipulation were taking place, were you still
7 employed by WEST?

8 A. No, I was not.

9 Q. You were no longer project leader during
10 those negotiations?

11 A. That's correct.

12 I would further add I was not involved in
13 those discussions at all. I was retained by WEST as
14 a subcontractor technical expert but, as a role
15 player on the project, that was not included in my
16 role. I was not privy to the discussions about
17 anything to do with the Stipulation or the
18 certificate.

19 Q. So in your direct testimony, when you
20 state that you support the Joint Stipulation, is that
21 based on your conclusions that this project
22 represents a low risk?

23 A. Yes.

24 Q. What is BBCS?

25 A. BBCS stands for Bird and Bat Conservation

1 Strategy. In the record here, it is sometimes
2 referred to as a mitigation plan, but in its original
3 concept, which came out of the U.S. Fish and Wildlife
4 Service and the Wind Energy Guidelines we referred to
5 earlier, it was intended to be more than just a
6 mitigation plan. It was intended to encapsulate all
7 of the pre-construction risk analyses as well as
8 conservation measures and management actions taken by
9 a wind farm to address bird and bat risk issues.

10 Q. Doctor, if you would please turn your
11 attention to Joint Exhibit 1.

12 A. Which one is that?

13 Q. That is the Joint Stipulation and
14 Recommendation.

15 A. Got it.

16 Q. On cross-examination you were asked a
17 number of questions specifically related to
18 Stipulation Condition 19 which is on page 6.

19 A. Yes.

20 Q. Do you recall questions directed to you
21 related to when and how feathering would occur?

22 A. Yes.

23 Q. You are not going to be responsible for
24 operating the wind turbines, are you?

25 A. No.

1 Q. You are not going to be responsible for
2 determining when feathering occurs, are you?

3 A. No.

4 Q. With regard to implementation of
5 mitigation strategies related to the project, do you
6 know, are those addressed in the BBCS?

7 A. Yes.

8 Q. So there is a process set forth in the
9 BBCS to mitigation of the operation of the project;
10 is that your understanding?

11 A. That is correct.

12 Q. There were a number of questions directed
13 to you yesterday, related to the term "significant
14 adverse impact." Do you recall that?

15 A. Yes.

16 Q. Do you have an understanding what that
17 term means? Well --

18 A. Yes.

19 Q. Strike that.

20 Let me ask you this question. If you
21 refer to Joint Exhibit 1, specifically page 7.

22 A. The Stipulation, page 7, yes.

23 Q. Correct. Stipulation Condition 24.

24 A. Yes.

25 Q. Do you see that it defines "significant

1 adverse impact"?

2 A. Yes, I do.

3 Q. Based upon your work on the project, what
4 is your opinion as to the chance of a significant
5 adverse impact actually occurring at the project?

6 A. The chance of an adverse impact occurring
7 at this project, as defined here to be a
8 "biologically significant impact on the population
9 level of any species or the occurrence of a large
10 mortality event as defined in the impact mitigation
11 plan" which is the same as the BBCS, which defines
12 it, incidentally, as the occurrence of 56 bird or bat
13 fatalities in one turbine in any one night, is
14 vanishingly small, vanishingly small.

15 I would further point out that, in fact,
16 such an event, 56 bird fatalities, for example,
17 occurring at one turbine in one night, has never been
18 recorded at any wind farm in the entire world in the
19 history of the wind-energy industries of the world.
20 The only fatality events that have exceeded have had
21 to do with lighting and substations, not collision
22 impacts at turbines. That's part of why I say it's
23 vanishingly small.

24 MR. SECREST: Dr. Gordon, your Honor,
25 thank you. Nothing further.

1 ALJ ADDISON: Thank you very much.

2 MR. STOCK: Please.

3 ALJ ADDISON: Ms. Leppla, any questions?

4 MS. LEPPLA: No. Thank you.

5 ALJ ADDISON: Mr. Stock.

6 MR. STOCK: May I have a moment to
7 organize my materials, please?

8 ALJ ADDISON: You may.

9 MR. STOCK: Thank you.

10 ALJ ADDISON: Let's go off the record for
11 a minute.

12 (Discussion off the record.)

13 ALJ ADDISON: Let's go ahead and go back
14 on the record.

15 Mr. Stock.

16 MR. STOCK: Thank you.

17 - - -

18 RECROSS-EXAMINATION

19 By Mr. Stock:

20 Q. Dr. Gordon, do I understood you to say in
21 your redirect that the identification of the number
22 of birds flying through the rotor-swept zone of this
23 project site -- and I don't mean to misstate your
24 testimony, so correct me if I'm wrong -- was not
25 necessary to inform the collision risk for birds

1 flying -- or, for birds out over Lake Erie; is that
2 correct?

3 A. That's correct.

4 Q. Okay. I understand that's your opinion,
5 but you understand it is the opinion of ODNR that it
6 is necessary to obtain radar data for the entire
7 rotor-swept zone to determine the number of birds
8 flying through the project area, correct?

9 MR. SECREST: Objection, assumes facts
10 not in evidence.

11 ALJ ADDISON: If you could just rephrase
12 your question, Mr. Stock.

13 MR. STOCK: Excuse me a second.

14 ALJ ADDISON: Certainly.

15 Q. (By Mr. Stock) If you would go to Tab G,
16 this is Exhibit 7. You testified, did you not, that
17 you were familiar with this document?

18 A. Yes.

19 Q. If you would look at page 2 again. Does
20 not -- and these are comments from ODNR and U.S. Fish
21 and Wildlife Service, correct?

22 A. Yes.

23 Q. Okay. Do they not state in Paragraph 3b,
24 Roman numeral ii, that "Preferred is radar data from
25 project area - Fish and Wildlife Service and ODNR

1 have been requesting this information since 2008."

2 That's an accurate statement, correct?

3 A. I believe the document speaks for itself.
4 I'll note this is a dated document and both agencies
5 have, in fact, expressed revised positions as
6 reflected by ODNR's -- for example, their
7 recommendation to proceed with the project and issue
8 a certificate of minimal -- of whatever the
9 certificate is called for this project under certain
10 conditions.

11 MR. SIMMONS: Objection. Hearsay
12 statement based on what ODNR's position is.

13 THE WITNESS: I don't think that's
14 hearsay. It's in the Staff Report.

15 ALJ ADDISON: Hold on. There is an
16 objection pending. I'll rule. Don't you worry.

17 MR. SECREST: Dr. Gordon has determined
18 that's not hearsay.

19 ALJ ADDISON: I believe he's already
20 provided his answer, so let's move on.

21 THE WITNESS: Sorry.

22 Q. (By Mr. Stock) At no point has ODNR
23 communicated to Icebreaker, to your knowledge, that
24 it is not going to require radar data from the
25 project site to determine the altitude of birds

1 flying through the project area; is that not correct?

2 A. That's not correct.

3 Q. Okay. Why is it not correct?

4 A. Because we're here, we are talking about
5 my testimony, right? And we are talking about my
6 testimony on this point was regarding the risk
7 assessment. I thought that's what we must be
8 referring to. And in that context, the risk
9 assessment is a ship that has already sailed. The
10 Fish and Wildlife Service and the Ohio Department of
11 Natural Resources have accepted it and accepted the
12 basic conclusions of low risk.

13 When you're talking about the requirement
14 to conduct this radar, we are talking about that in
15 the context of the pre- and post-construction
16 monitoring to be conducted moving forward. That is a
17 different requirement for a different purpose.

18 Q. The question I asked is: Do you have any
19 knowledge that ODNR has ever retreated from its
20 position that a radar unit needs to be placed at the
21 project site to determine the flight activity of
22 birds in the project area?

23 A. Again, the only qualifier I would add to
24 that is that their requirement of such an activity is
25 intended, as included in the Stipulation and the

1 Staff Report, as a requirement for the future. To be
2 done by the Applicant in the future.

3 Q. To place a radar unit at the project
4 site, correct?

5 A. That's my understanding.

6 Q. Okay. And to place it there to determine
7 the altitude of birds flying through the project
8 area, correct?

9 A. That's -- that's one of the scientific
10 objectives, yes.

11 Q. Okay. And to obtain that information to
12 quantify collision risk, correct?

13 A. That's not entirely correct.

14 Q. Okay. Take a look at the Stipulation --
15 excuse me, don't take a look -- well, you can take a
16 look at the Stipulation, but let's take a look at the
17 Staff Report.

18 A. I'm there.

19 Q. 22(b) -- or excuse me, 22(d).

20 A. Condition?

21 Q. Yes, Condition 22(d) on page 48.

22 A. 22(d)?

23 Q. Yes.

24 A. D.

25 Q. D as in dog.

1 A. Yes, I see it.

2 Q. "radar must be able to determine flight
3 altitude of migrants at altitudes near and entirely
4 within the rotor-swept zone at the project site to
5 quantify collision risk." That is still a condition
6 that is being required by Staff, correct?

7 A. You read that correctly. However, we
8 discussed this yesterday. There's a subtle
9 difference because when it says "collision risk"
10 here, as I mentioned earlier in my testimony, that
11 refers to increasing our scientific understanding of
12 collision risk by exploring the as-yet-uncertain
13 relationship between exposure and collisions through
14 the implementation of radar monitoring, together with
15 post-construction fatality monitoring.

16 I want to make it clear that that's
17 distinct from risk in the sense of the risk
18 assessment or risk determination which has already
19 been established with certainty as a basis for the
20 decision to issue a certificate and the conclusion of
21 low risk on the project.

22 Q. Where, in any document, has ODNR agreed
23 that there has been a determination of low collision
24 risk for birds at the project site?

25 A. I don't want to characterize ODNR's

1 position. My understanding is that their position is
2 that the OPSB should issue a certificate for the
3 project under the conditions that they list in their
4 Staff Report.

5 Q. And can you point us to a document where
6 the Fish and Wildlife Service has agreed that this
7 project presents -- excuse me, that radar does not
8 need to be used to determine the flight altitude of
9 migrants to quantify collision risk?

10 A. Again, there's -- there's -- the
11 requirement -- I do understand that's their position
12 as a requirement or recommendation for the pre-
13 versus post-construction comparisons to be done in
14 the future for the project.

15 Q. Now, had Icebreaker placed a marine radar
16 unit out at the project site in 2008, it could
17 already have collected, could it not, data regarding
18 the flight altitude of migrants near and entirely
19 within the rotor-swept zone?

20 MR. SECREST: Objection. I believe that
21 exact question was asked on cross-examination.

22 ALJ ADDISON: I'll allow it. You may
23 answer.

24 A. Yes.

25 Q. Okay. And, to date, Icebreaker has not

1 done that study, correct?

2 A. That's correct.

3 MR. STOCK: I have no further questions.

4 ALJ ADDISON: Thank you, Mr. Stock.

5 Mr. Jones. I apologize. Mr. Simmons.

6 MR. SIMMONS: Thank you.

7 - - -

8 RECROSS-EXAMINATION

9 By Mr. Simmons:

10 Q. You were asked, on redirect, about the
11 December 2017 Fish and Wildlife Service letter. Can
12 you please get that, that's Staff Exhibit 2.

13 ALJ ADDISON: Mr. Simmons, would you mind
14 just turning on your mic.

15 MR. SIMMONS: Oh, sorry about that.

16 ALJ ADDISON: Thank you so much.

17 A. December 17 letter?

18 Q. December 21, 2017, letter.

19 MR. SECREST: I think it's U in the book
20 attached to the e-mails.

21 A. Yes, I have it.

22 Q. Are there -- are there costs associated
23 with collecting unreliable data from the use of the
24 barge? Could there be costs associated with that in
25 your opinion?

1 A. I am not sure I understand. You mean
2 financial costs or what kind of costs?

3 Q. Yes. Would there be financial costs
4 associated with using the barge system that collects
5 unreliable data?

6 A. Is your question about the cost or is
7 your question about the reliability? It's sort of
8 complicated.

9 Q. Are there financial costs associated with
10 using the barge that could collect unreliable data?

11 A. I think because of your attachment -- you
12 are asking about costs but you are attaching a part
13 about "unreliable." That doesn't make me feel
14 comfortable answering the question. If you are
15 asking are there costs associated -- associated with
16 using the barge to collect data, the answer is yes,
17 it costs money to employ that system.

18 If you want to ask about the reliability,
19 I think that would be better for another -- a
20 separate question. I am not addressing that in my
21 answer of yes, there are costs.

22 Q. Could you please turn to page 3 of that
23 exhibit, Staff Exhibit 2.

24 A. Yes.

25 Q. Could you please read the second full

1 paragraph beginning with "Additionally."

2 A. Okay. "Additionally, since wind can also
3 be considered a weather parameter, losses of radar
4 data due to a rocking barge could cause large losses
5 of data that would be otherwise recorded from a
6 stable platform. Accepting a radar system that
7 collects data "weather permitting" could lead to
8 using a system that's unsuitable for an effective
9 data collection in the project environment, and lead
10 to costly delays."

11 Q. Do you agree that if there is unreliable
12 data, that it could be -- could lead to costly
13 delays?

14 A. It would depend on the requirements and
15 conditions. Just to add to that, I believe
16 Mr. Karpinski addressed some of the financial
17 implications of what could happen if too much delays
18 was incurred through that sort of eventuality.

19 Q. So you agree there could be costs if the
20 barge system doesn't work.

21 A. I really just want to refer to
22 Mr. Karpinski's testimony. This is not my area.

23 Q. Okay. I was just following up on your
24 response.

25 MR. SIMMONS: I have no further

1 questions.

2 ALJ ADDISON: Thank you.

3 ALJ WALSTRA: Dr. Gordon, I have a couple
4 of questions.

5 - - -

6 EXAMINATION

7 By ALJ Walstra:

8 Q. I believe it was Residents Exhibit 9 on
9 page --

10 A. Which one -- I don't have those marked in
11 that way.

12 Q. Okay. I think that was the risk
13 assessment.

14 MR. STOCK: That's K, tab K.

15 ALJ WALSTRA: Yes, K, thank you.

16 A. Got it.

17 Q. Page 4. It's the two charts.

18 A. Yes.

19 Q. I realize you didn't do this study, but
20 just looking at the Y-axis there. I just notice
21 Year 1, the numbers are 350,000; in Year 2, it's
22 70,000. Is that odd or anything for it to be five
23 times higher in Year 1 than Year 2?

24 A. Interesting. You know, I guess I would
25 attribute that to natural variation, you know. Yeah,

1 that's interesting. I hadn't actually noticed that
2 before, the scale of the axes is different. In both
3 years, the pattern is more or less consistent of
4 concentration nearshore and very low abundances when
5 you get to out past 7 miles.

6 But I guess the way I read that is there
7 is a lot more birds in that close-to-shore band in
8 Year 1 than there was in Year 2 where the maximum is
9 only, yeah, around 70,000.

10 Q. Would you expect them to be consistent,
11 year in, year out, or is there fluctuation where it's
12 five times higher than one year to another?

13 A. I think this reflects year-to-year
14 variability in some of the particular patterns of
15 concentration, but it also reflects year-to-year
16 consistency in the pattern that's relevant to the
17 case which is what's happening out 8 to 10 miles from
18 shore.

19 Q. I also had a question about you
20 referenced the cold spot. I believe that was in
21 Tab J which is Exhibit 8. Looking on page 14.

22 A. Yeah.

23 Q. Was that -- when you say it's a cold
24 spot, do you mean in the Lake or just in reference to
25 the other seven study areas?

1 A. It's really in reference to all -- out of
2 the seven which includes -- it's all around Lake Erie
3 but it includes inland -- two inland comparison
4 sites, three shoreline comparison sites, two in the
5 Central Basin and one in the Eastern Basin, and two
6 offshore sites, one being the project and one being
7 Comparison Area 4.

8 So, I mean, the scope of the inference
9 has to be limited to the scope of the data gathering.
10 So really we can only talk about those -- the
11 relative comparisons across those seven areas. But
12 that spans three years. It spans spring and fall
13 seasons. It spans the Central and Eastern Lake Erie
14 basins. And it spans offshore-, shoreline-, and
15 land-based environments. So among those comparisons,
16 the project area was consistently a cold spot for
17 nocturnal migration activity in both spring and fall.

18 Q. Okay. And based on the fact it was in
19 the Lake, was that surprising to you?

20 A. No. Especially because of the results of
21 the Diehl et al. 2003 study. Diehl had essentially
22 done kind of version of a similar thing, obviously
23 not focused on the project. That was in 2003. It
24 was for an academic publication, but his research
25 question was is there more birds over the land and

1 over the water in the Great Lakes. Really apropos to
2 this project. And what he found, what he says in his
3 paper is we consistently found more birds over the
4 land than over the water. Even though there is a lot
5 of birds flying over both.

6 So I was actually not surprised when we
7 found this because it essentially reinforced what
8 Diehl had already found, but brought it into the
9 specific focus of the project site itself.

10 ALJ WALSTRA: Thank you.

11 MR. STOCK: I have follow-up questions as
12 a result of your questions.

13 ALJ ADDISON: Oh, you don't get that
14 opportunity. I apologize.

15 MR. STOCK: Okay.

16 ALJ ADDISON: And I have just one or two
17 follow-up questions for your redirect.

18 - - -

19 EXAMINATION

20 By ALJ Addison:

21 Q. You mentioned the occurrence of 56 bird
22 or bat fatalities would constitute a significant
23 adverse impact as it's referenced in the Joint
24 Stipulation; is that correct?

25 A. Correct.

1 Q. I just wanted to confirm that's 56 bird
2 and/or bat fatalities, so it could be a mixture of
3 both? It could be over 56 birds, over 56 bats?

4 A. Let's make sure we get it right just for
5 the record. In the Stipulation, and the Bird and Bat
6 Conservation Strategy, once this comes, it is not my
7 primary responsibility, that will be Mr. Good, but my
8 understanding of it is the 56 refers to birds plus
9 bats, as in birds and/or bats; is that correct?

10 Q. We'll ask that question.

11 A. Yeah, yeah. I'm not the ultimate
12 authority on that.

13 MR. SECREST: We are exploring your
14 knowledge.

15 ALJ ADDISON: Thank you for that. Thank
16 you.

17 THE WITNESS: I am glad I can provide
18 some comic relief.

19 ALJ ADDISON: We appreciate it as well.

20 I believe that's my only question I have,
21 so you are excused, Dr. Gordon. Thank you very much.

22 THE WITNESS: Thank you.

23 ALJ ADDISON: Before we entertain the
24 admission -- or motion for admission of certain
25 exhibits that have been marked during Dr. Gordon's

1 cross-examination, I just wanted to confirm we have
2 several exhibits in which the Residents have marked
3 as exhibits that may have otherwise already been
4 included in Icebreaker's application. And I just
5 want to make sure the record is clear, if there is
6 any cross-referencing of exhibits, that we make --
7 put that out in the open to make referencing later
8 for briefing, and anything subsequent to this
9 hearing, a little easier on everyone.

10 So we will go off the record for a
11 moment. I will allow the parties to look at their
12 notes before moving forward.

13 Let's go off the record

14 (Discussion off the record.)

15 ALJ ADDISON: Let's go back on the
16 record.

17 Mr. Secrest.

18 MR. SECREST: Your Honor, are we still
19 trying to sort out exhibits or are you ready for our
20 next witness?

21 EXAMINER ADDISON: I believe you have yet
22 to move for the admission of your particular
23 exhibits. If they were cross-referenced in various
24 portions of your Application, you can note that for
25 the record when you move to admit these exhibits.

1 MR. SECREST: Thank you, your Honor. We
2 would move to admit Exhibit 30, which is Dr. Gordon's
3 testimony, and we introduced 36 and 37 as well.

4 MR. STOCK: Can you identify each of
5 those, Jon, as you go through them?

6 MR. SECREST: Yes. 36 was the U.S. Fish
7 and Wildlife Service Land-Based Wind Energy
8 Guidelines. 37 was the Diehl Report which is
9 Attachment 5 to our Exhibit 6.

10 ALJ ADDISON: Thank you very much.

11 MR. SECREST: Thank you, your Honor.

12 EXAMINER ADDISON: Are there any
13 objections to the admission of Icebreaker Exhibits
14 No. 30, 36, or 37?

15 MR. STOCK: Yes, your Honor. I object to
16 the admission of Exhibit 36. It was not filed as an
17 exhibit in support of the testimony. It was not
18 referenced in cross-examination, in fact, it was not
19 provided to counsel for cross-examination until the
20 inception of redirect. So, for those reasons, I
21 object to its admission. I have no problem with the
22 other exhibits.

23 EXAMINER ADDISON: Thank you.

24 Before moving on to the arguments for
25 Exhibit No. 36, are there any additional objections

1 to Exhibits 30 or 37?

2 MR. SIMMONS: None from the Staff, your
3 Honor.

4 ALJ ADDISON: Thank you. Seeing none,
5 those two exhibits will be admitted.

6 (EXHIBITS ADMITTED INTO EVIDENCE.)

7 ALJ ADDISON: Mr. Secrest, would you like
8 to respond?

9 MR. SECREST: Thank you, your Honor.
10 Just briefly.

11 The topic was addressed in the Wind
12 Energy Guidelines which was the same topic addressed
13 in cross-examination and, obviously, Mr. Stock had an
14 opportunity for recross and could certainly have
15 asked questions related to that document. He chose
16 not to do so.

17 ALJ ADDISON: Thank you.

18 And, Mr. Stock, if you have anything to
19 add, I will let you have the last word.

20 MR. STOCK: Well, yeah. I don't think
21 it's reasonable for it not to be included with the
22 testimony. This was not a recent document. Their
23 testimony and exhibits were due on September 6. It
24 was not provided to us before the hearing this
25 morning and it was not referred to in

1 cross-examination.

2 ALJ ADDISON: Thank you.

3 At this time, I will be admitting
4 Icebreaker Exhibit No. 36 into the record. It's not
5 uncommon for exhibits to be introduced upon redirect.
6 While Mr. Secrest is quite correct, you did have an
7 opportunity for cross-examination, I will note that
8 this is a very vast document and any reference to it
9 in briefing, or otherwise, should be limited for the
10 purpose it was introduced upon redirect. For that, I
11 believe it was one or two questions regarding a -- on
12 page 30, a citation to the third column, so.

13 MR. SECREST: That's correct, your Honor.
14 Thank you.

15 ALJ ADDISON: Thank you. We will limit
16 any references to the document for those reasons.

17 (EXHIBIT ADMITTED INTO EVIDENCE.)

18 ALJ ADDISON: Mr. Stock.

19 MR. STOCK: Our exhibits are Exhibit 7,
20 the February 28, 2017, Fish and Wildlife Service and
21 ODNR recommendations.

22 Exhibit 8 is the January 23, 2017, NEXRAD
23 study.

24 Exhibit 9 is the November 29, 2016,
25 Summary of Risks to Birds and Bats.

1 Exhibit 10 are the pictures of the
2 turbines that we reviewed.

3 Exhibit 11 is comprised of the
4 superimposed rose plots, the Figures 2 and Figures 4
5 from the NEXRAD study that we discussed in
6 Mr. Gordon's testimony.

7 Exhibit 12 is the October 4, 2017, Fish
8 and Wildlife Service letter, relating to the DOE
9 environmental assessment and the reports of, among
10 others, WEST.

11 Exhibit 13 is the e-mail string and we've
12 added to that this morning to append to the back the
13 December 15, 2017, e-mail from Beth Nagusky, to Jeff
14 Gosse and others, including Mr. Gordon, addressed as
15 the "Dear VBR crew."

16 And then 15 --

17 ALJ ADDISON: Did you mean 14?

18 MR. STOCK: Excuse me, 14, 14.

19 ALJ ADDISON: Thank you.

20 MR. STOCK: Is the December 21, 2017,
21 e-mail, Robert Diehl to Beth Nagusky, copying Jeff
22 Gosse with the Diehl Report attached. Is that
23 correct? I think that's correct.

24 ALJ ADDISON: Was the Diehl Report
25 attached to that exhibit, Mr. Stock?

1 MR. STOCK: Yes. It's Tab U, is it not?

2 Oh, okay. Tab V. It's Tab V.

3 MR. HAFFKE: E-mail with the Diehl
4 Report.

5 ALJ ADDISON: Mr. Stock, in order to make
6 sure we are clear as to what is being moved for
7 admission. For Residents Exhibit No. 14, I have an
8 e-mail exchange, date -- the first date on the e-mail
9 exchange is December 22, 2017, as well as the
10 December 21, 2017, letter. And those are the only
11 two documents in Residents Exhibit No. 14 that I --

12 MR. STOCK: All right. Exhibit 14 is
13 the -- yeah, December 22, '17, letter. And the --
14 attached to it is the -- excuse me.

15 Exhibit 14 is the Jeff Gosse, December
16 22, 2017, e-mail, "Beth, Attached is a letter sent to
17 Dr. Diehl." And the attachment is December 21,
18 2017, letter. Is that correct?

19 ALJ ADDISON: That's what we have. Thank
20 you. Thank you for that clarification.

21 MR. STOCK: And then we also have the
22 e-mail string at Tab S -- oh, that's the one with the
23 "Dear VBR crew."

24 ALJ ADDISON: Hold on. Let's go off the
25 record for a minute.

1 (Discussion off the record.)

2 ALJ ADDISON: Let's go back on the
3 record.

4 Mr. Secrest, you have had the opportunity
5 to review the amended page that goes -- goes to the
6 end of the e-mail string identified as Residents
7 Exhibit No. 13, correct?

8 MR. SECREST: That's correct, your Honor.

9 ALJ ADDISON: Thank you.

10 MR. SECREST: Thank you.

11 ALJ ADDISON: Are there any objections to
12 the admission of Residents No. 7, 8, 9, 10, 11, 12,
13 13, or 14?

14 MR. SECREST: Yes, your Honor, with
15 regard to 10 which is at Tab O of the binder. As
16 indicated in questioning by Mr. Stock, the text and
17 lines, the text and lines on both the front and back
18 were added by Counsel; not in our document. And as
19 Dr. Gordon testified with regard to where those lines
20 actually are, he didn't believe they were a
21 reasonable approximation of the height. So we don't
22 believe this is a proper document for introduction
23 considering that it has text and lines added by
24 Counsel.

25 ALJ ADDISON: Thank you. Did you have

1 any other objections to the other exhibits?

2 MR. SECREST: No, your Honor. Thank you.

3 ALJ ADDISON: Thank you.

4 Any other objections to any of the
5 exhibits moved by Residents?

6 MR. SIMMONS: None from Staff, your
7 Honor.

8 MS. LEPPLA: No.

9 EXAMINER ADDISON: Thank you.

10 Then Residents Exhibit 7, 8, 9, 11, 12,
11 13, and 14 will be admitted into the record.

12 (EXHIBITS ADMITTED INTO EVIDENCE.)

13 MR. STOCK: May I address the issue on
14 10?

15 ALJ ADDISON: You may.

16 MR. STOCK: He did testify in the
17 testimony the lines were reasonable approximations
18 within some variation up or down. I think there is
19 proper context for this to provide a reasonable
20 pictorial depiction of what we're talking here as to
21 the radar area that was covered.

22 ALJ ADDISON: Thank you, Mr. Stock.

23 Mr. Secrest, anything to add?

24 MR. SECREST: Well, the picture is fine.
25 It's writing and the approximation. And specifically

1 Dr. Gordon, when looking at page 2, indicated that
2 that looked high, the 124.6 meters. So I don't
3 believe it is a reasonable approximation. But,
4 regardless, the ALJs can make a reasonable
5 approximation based on the height and the pictures
6 contained within the Application. They do not need
7 this document to do so.

8 ALJ ADDISON: Thank you.

9 MR. SECREST: Thank you, your Honor.

10 ALJ ADDISON: At this time, we will admit
11 Residents Exhibit No. 10. My colleague has informed
12 me that Residents Exhibit No. 1 is an identical
13 picture without the markings imposed by Counsel, and
14 we believe Dr. Gordon was able to clarify any
15 concerns that he had with those depictions, and the
16 Board can certainly decide, for itself, what amount
17 of weight to provide to this evidence.

18 (EXHIBIT ADMITTED INTO EVIDENCE.)

19 MR. SECREST: Thank you, your Honor.

20 ALJ ADDISON: Thank you.

21 And Mr. Simmons, just to check, I doubt
22 you will be moving Staff Exhibit 3; is that correct?
23 Is that correct?

24 MR. SIMMONS: That is correct.

25 ALJ ADDISON: Thank you.

1 ALJ WALSTRA: Applicants like to call
2 your next witness?

3 MR. SECREST: Yes, your Honor. Thank
4 you. May we call Rhett Good.

5 (Witness sworn.)

6 ALJ WALSTRA: Thank you. Please take a
7 seat.

8 MR. SECREST: May I approach the witness,
9 your Honor?

10 ALJ WALSTRA: You may.

11 MR. SECREST: Thank you.

12 May I proceed, your Honor?

13 ALJ WALSTRA: Go ahead.

14 MR. SECREST: Thank you.

15 - - -

16 RHETT E. GOOD

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

19 DIRECT TESTIMONY

20 By Mr. Secrest:

21 Q. Would you please state your full name.

22 A. My name is Rhett Eugene Good.

23 Q. Thank you, Mr. Good. And you have before
24 you your prefiled testimony. Are there any changes
25 or revisions necessary to that prefiled testimony?

1 A. No.

2 MR. SECREST: I tender Mr. Good for
3 cross-examination.

4 ALJ WALSTRA: Thank you. And for the
5 record, we will mark that as Exhibit --

6 MR. SECREST: Exhibit 31.

7 ALJ WALSTRA: -- 31, thank you.

8 (EXHIBIT MARKED FOR IDENTIFICATION.)

9 ALJ WALSTRA: Whenever you are -- I will
10 go -- Ms. Leppla, any questions?

11 Go ahead, Mr. Stock.

12 MR. STOCK: Thank you.

13 If I may grab my infamous binders.

14 ALJ WALSTRA: Go ahead. Your mic may
15 have gone off as well.

16 - - -

17 CROSS-EXAMINATION

18 By Mr. Stock:

19 Q. Are we ready? Good morning, Mr. Good.

20 A. Good morning.

21 Q. We've not met. You've seen me. You
22 listened in on the deposition I took of Mr. Gordon,
23 correct?

24 A. That's correct.

25 Q. Okay. You know I represent Intervenors

1 Susan Dempsey and Robert Maloney, Residents of
2 Bratenahl, Ohio on the Lake of -- on the shore of
3 Lake Erie, correct?

4 A. Yes, that's my understanding.

5 Q. Now, what did you do to prepare for your
6 testimony today?

7 A. I read over my testimony. I read over a
8 number of our technical reports and tried to
9 refamiliarize myself with some of the past agency
10 correspondence.

11 Q. Now, the first day of Mr. Gordon's
12 deposition was Monday, July 16. Do you remember
13 that?

14 A. Yeah, I don't remember the exact date,
15 but I do remember the deposition.

16 Q. And do you remember it was a Monday,
17 correct?

18 A. I don't remember.

19 Q. You don't?

20 A. It's been a few months.

21 Q. Okay. You, and others at WEST, met with
22 Mr. Gordon and counsel for LEEDCo to assist in
23 preparation for his deposition, correct?

24 A. We were in meetings with counsel, yes.

25 Q. Okay. And then the deposition was

1 adjourned at the end of the day on Monday, July 16,
2 and continued to Friday, that would be 16, 17, 18,
3 19, 20, correct?

4 A. I remember it continued. I can't
5 remember the exact sequence of days, but I do
6 remember there was a second -- at least -- a second
7 day where you continued to depose Mr. Gordon.

8 Q. In the morning, correct?

9 A. I can't remember if it was in the
10 morning. I do remember there was a second deposition
11 though.

12 Q. And in between the afternoon session, the
13 first session, and the morning session that following
14 Friday, you had additional consultations with
15 Mr. Gordon concerning his deposition, right?

16 A. I had a meeting with counsel. Mr. Gordon
17 was present.

18 Q. Who else, at WEST, was present?

19 A. I believe Mr. Mabee and Mr. Erickson were
20 also present.

21 Q. Both witnesses that are going to appear
22 here, correct?

23 A. That is correct.

24 Q. Okay. You are being paid for the time
25 spent preparing your written testimony in this case,

1 correct?

2 A. Yes, I am.

3 Q. Okay. You are being paid for the time
4 you spent preparing for today's testimony, correct?

5 A. Yes, I am.

6 Q. You are being paid for the time you spend
7 actually testifying today, correct?

8 A. Yes, sir.

9 Q. And you are paid for your -- you have
10 been here every day of the hearing, correct?

11 A. I have been here every day so far.

12 Q. And you are being paid to be here,
13 correct?

14 A. Yes, sir.

15 Q. Okay. Now, if you take a look at Tab Y
16 in your binder there --

17 ALJ WALSTRA: I believe this has
18 previously been marked as Residents Exhibit 9.

19 MR. STOCK: 9, correct.

20 ALJ WALSTRA: For the record.

21 MR. STOCK: Thank you.

22 Q. (By Mr. Stock) This is the November 29,
23 2016 Risk Assessment. You're intimately familiar
24 with this document, correct?

25 A. Yes. I have reviewed this document.

1 Q. Okay. You're not listed as an author,
2 correct?

3 A. That's right. I am not an author on this
4 document. I've reviewed it, but I did not write it.

5 Q. Did you have any substantial involvement
6 in putting it together?

7 A. I reviewed the document. I provided
8 input on portions of it but, you know, I did not
9 write the document.

10 Q. Did you make substantive technical
11 changes to the document?

12 A. Yes.

13 Q. Okay. And can you show us what those
14 would be by scrolling through the document?

15 A. In particular on the bats, the bat
16 portion, I had input on the risk assessment portion
17 of bats.

18 Q. Okay. Did you make any technical changes
19 on the portion relating to birds?

20 A. I don't -- I don't recall making changes
21 to the bird section. Most of my changes that I
22 remember were primarily related to bats.

23 Q. Okay. Now, if you would please turn to
24 Tab BB. This is the January 23, 2017, NEXRAD study
25 which is Exhibit 8, I believe. You're not listed as

1 an author on this work product, are you?

2 A. That's correct, I'm not.

3 Q. Okay. Did you have any substantial
4 involvement in the preparation of this document?

5 A. I did not.

6 Q. Okay. Did you review this document
7 before it was put into final form?

8 A. I don't believe I did, no.

9 Q. Okay. Now, if we go back to Tab Y,
10 Exhibit 9, WEST paid for the study; is that correct?
11 Or excuse me, Icebreaker paid WEST for this study?

12 A. Yes, it was part of our contract to
13 provide a risk assessment.

14 Q. Okay. And it was prepared by fellow WEST
15 employees, Caleb Gordon and Wally Erickson, correct?

16 A. Yes, we've already established that.

17 Q. Okay. And did WEST provide a draft of
18 this report to Icebreaker for review before it was
19 filed in this proceeding?

20 MR. SECREST: Let me just note an
21 objection with regard to questions related to drafts
22 of expert reports. The question regarding his input
23 into that report, I'm fine with, but I think drafts
24 are off limits.

25 ALJ WALSTRA: What was that last?

1 MR. SECREST: I think drafts are off
2 limits.

3 MR. STOCK: May I respond?

4 ALJ WALSTRA: Please.

5 MR. STOCK: I am not asking for copies of
6 the drafts. I am not saying I'm entitled to a copy
7 of the draft. I believe I'm entitled to know who
8 reviewed it and how this work product came to be
9 finalized and submitted to this board.

10 ALJ WALSTRA: I'll allow the question.

11 A. Yeah. I was not an author on this
12 document so I'm not -- I don't remember. I am not
13 even sure if I was copied on e-mails, so I don't
14 know.

15 Q. Okay. Let's take a look at what is at
16 Tab Z.

17 MR. STOCK: And I don't think this has
18 been marked before. Has it? I'll put it out there
19 for input from anyone. Chris Pirik tells me it has
20 not been marked before, so we will mark this
21 Exhibit 15; is that right?

22 ALJ WALSTRA: Yep. So marked.

23 (EXHIBIT MARKED FOR IDENTIFICATION.)

24 MR. STOCK: Thank you.

25 Q. (By Mr. Stock) Your name is on this,

1 correct?

2 A. Yes, it is.

3 Q. Okay. And did you have meaningful
4 involvement in the construction of this work product?

5 A. Yes, that's why I'm listed as a coauthor
6 on this document.

7 Q. Good. How about with respect to this
8 report then. To your knowledge, was this submitted
9 to Icebreaker for review and comment prior to it
10 being submitted to the board?

11 A. Yes. It was. It's common practice for
12 us to provide a draft for client's review. In the
13 end, the ultimate content is our responsibility. So
14 changes to content are -- you know, we decide if the
15 contents change, but those documents -- this document
16 was provided for review.

17 Q. Did Icebreaker, in fact, provide
18 comments?

19 A. Yes.

20 Q. Okay. Were --

21 MR. SECREST: Object to that portion of
22 the question and move to strike.

23 ALJ WALSTRA: On what grounds?

24 MR. SECREST: Again, we are talking about
25 a draft expert report.

1 MR. STOCK: Again, I am not asking for a
2 copy of it and I haven't asked him for the substance
3 of the changes. We're entitled to know how this
4 final work product came to be put together and
5 submitted to the board.

6 ALJ WALSTRA: Overruled.

7 A. Could you repeat the question?

8 Q. Comments were provided by Icebreaker, I
9 think you said, correct?

10 A. Yes, that's correct.

11 Q. All right. In response to those comments
12 from Icebreaker, were changes made to the report?

13 A. Yes. Largely editorial in nature,
14 clarifying the report. But the content and the
15 meaning of the report was not changed.

16 Q. Okay. Thank you.

17 Now, this report that you were an author
18 of, it's not been peer reviewed, correct?

19 A. Not in the sense of outside peer review,
20 no. It has been reviewed by the authors of the
21 document but, no, no peer review.

22 Q. Okay. Has it been reviewed by any
23 scientists not paid by Icebreaker?

24 A. Not that I'm aware of.

25 Q. Okay. Now, let's go to your testimony.

1 And I have it at Tab Y there. It's already been
2 marked as, what was it?

3 MR. SECREST: 31.

4 Q. 31. It's at X. Excuse me. Thank you.
5 It's at Tab X. And I want to direct your attention
6 to Question 39. And the Question reads: "What steps
7 has the Applicant taken to date to minimize risk of
8 this project to birds and bats?" Do you see that?

9 A. I do.

10 Q. Okay. Then you say -- and I want to, I
11 want to go to the second paragraph: "The project has
12 completed a risk assessment (2016 Risk Assessment and
13 2018 Risk Assessment Summary) based on the best
14 available science and site specific data that show
15 the current Project location poses a minimal risk to
16 birds and bats." Do you see that?

17 A. I do.

18 Q. I want to talk for a moment about "best
19 available science." The NEXRAD radar study -- the
20 NEXRAD radar cannot give -- does not provide data on
21 flight altitude of individual birds, correct?

22 A. That's not entirely correct. I believe
23 Dr. Gordon has already testified to that. You know,
24 NEXRAD does provide elevation data for birds. NEXRAD
25 tends to pick up more clouds of birds which are

1 composed of individuals. So it does provide
2 elevation, migration activity -- of migration
3 activity.

4 Q. Would you please turn to Tab BB, this is
5 our Exhibit 8, the NEXRAD study.

6 A. Uh-huh.

7 Q. Page 23. And in the second full
8 paragraph it talks about the limitations of NEXRAD
9 radar. And it reads: "There are several other
10 important limitations to this analysis. It" -- and
11 that's a reference to NEXRAD radar, correct? --
12 "cannot distinguish individual targets." That's
13 true, isn't it?

14 A. That is correct.

15 Q. Okay. So let me ask the question again.
16 Is it not the case that NEXRAD radar cannot track the
17 flight of an individual bird?

18 A. That's correct. It can track the flight
19 of a group of birds that are large enough to be
20 picked up by the radar and those are composed of
21 individuals.

22 Q. It can't tell you how many individuals
23 are in that cloud, correct?

24 A. Some scientists have used NEXRAD to do
25 that sort of thing. We have not in this risk

1 assessment.

2 Q. Okay. And you didn't attempt to do that,
3 correct?

4 A. We did not, no.

5 Q. So NEXRAD data cannot give you the
6 altitude of an individual flying bird, correct?

7 A. No. It can give you the altitude of
8 migration activity in the higher periods of risk but,
9 yeah, it's not a radar system designed to calculate
10 the individual migration of a single individual bird.

11 Q. Okay. Now, you are aware that the Fish
12 and Wildlife Service and ODNR have been requesting
13 and, according to their document, they've been
14 requesting since 2008, for LEEDCo to put a radar
15 system out at the project site, correct?

16 A. Yes.

17 Q. Okay. Now, if LEEDCo had put a radar
18 detection lab or equipment out at the project site
19 using X-band radar, that X-band radar would have
20 enabled the collection of data regarding individual
21 birds flying through the project zone, correct?

22 MR. SECREST: Objection. Outside the
23 scope and foundation with regard to X-band.

24 ALJ WALSTRA: Overruled. The witness can
25 seek clarification if he needs it.

1 A. Well, if this study was completed in
2 2008, it would not have provided that data. The
3 project has moved since that time.

4 Q. Well, my question to you is, if a radar
5 unit -- you're talking about the placement of the
6 radar unit -- or, the placement of the project has
7 moved; is that what you're suggesting?

8 A. That's my understanding, that it's been
9 moved farther offshore since 2008, and your question
10 was regarding if a radar study was completed in 2008.

11 Q. Okay. So when was it moved farther out?

12 A. I honestly don't know the exact year or
13 date it was moved.

14 Q. Prior -- I'm sorry, I didn't mean to cut
15 you off.

16 A. It's my understanding it was moved since
17 that time.

18 Q. Since 2008?

19 A. I believe so but, you know, I -- I am not
20 100-percent sure on that. I know it was moved. I
21 think it was since that time, but I'm not sure.

22 Q. Okay. Certainly since before the
23 Application was filed that's before the Power Siting
24 Board, correct?

25 A. Can you clarify your question?

1 Q. Right. The project site, as depicted in
2 the Application, is where it is currently proposed to
3 be placed, correct?

4 A. Yes, sir.

5 Q. So the decision to place it where it is
6 currently proposed to be placed had to occur sometime
7 before the Application was filed, correct?

8 A. Yes, sir.

9 Q. All right. So let's talk about that
10 site.

11 A. Which site?

12 Q. The current site.

13 A. The current site, okay.

14 Q. Thank you. And, yeah, if at any time you
15 don't understand a question, let me know.

16 Let's talk about the current site. You
17 understand that Fish and Wildlife and ODNR have been
18 asking for a radar unit to be placed at the project
19 site to collect data on bird use of the project area,
20 correct?

21 A. Yes, that is correct.

22 Q. All right. Now, if a radar unit had been
23 placed out at the project site with an X-band radar
24 unit on it, taking vertical measurements of data,
25 that X-band radar unit could provide information on

1 specific individual birds flying through the project
2 area, correct?

3 A. It's my understanding that that is a
4 possibility, yes.

5 Q. Okay. And, in fact, X rad -- X-band
6 radar, excuse me, on a radar unit at the site, would
7 be able to give altitude data for individual targets,
8 correct?

9 A. Depending on how the radar is operated
10 but, in theory, it could, yes.

11 Q. Okay. And would that not be better
12 science to determine whether or not individual birds
13 are flying through the radar -- or, the project area?

14 MR. SECREST: Objection, foundation.
15 Better science for what? To answer what?

16 MR. STOCK: I just told him what. Birds
17 flying through -- detect birds flying through the
18 project area.

19 ALJ WALSTRA: Overruled.

20 A. So could you repeat your question?

21 Q. Yes.

22 Would not an X-band radar unit, operating
23 from the project site, be better science for
24 determining the -- the number of birds passing
25 through the project area than NEXRAD radar from the

1 KCLE station?

2 A. Well, I think you're missing an important
3 point and that is the whole point of a risk
4 assessment is to determine what is the risk, you
5 know, of the project to birds and bats. So in that
6 sense of -- I think the question you would be better
7 served to ask what is the better tool to assess risk
8 at this site. But to answer your question, I will
9 say --

10 Q. Please do. At least humor me and answer
11 my questions, okay?

12 A. When you use the term "science," it could
13 have bunch of different meanings, right? So in some
14 respect in science, if you are interested in
15 interannual variability, it would be a much more
16 robust study to go back to the last 10 years of
17 NEXRAD data and use the methods used by other
18 scientists to actually do some back-calculations to
19 find out how many targets would fly through the
20 project area.

21 You know, if you are focused on coming up
22 with a single, you know, single season estimate of
23 the number of potential targets that go through the
24 rotor-swept zone -- and when you say "targets," it's
25 my understanding there are assumptions there, whether

1 that's a bird, that's a bat, that's an insect, but if
2 that's your -- if that's your goal, well, then, doing
3 an on-site study would be probably a better approach.
4 But I guess I'm unclear on what you mean "science."

5 Q. Well, I'm using your word from your
6 testimony. And I'm exploring what that means. I
7 think you answered my question that the placement of
8 a radar unit at the project site using vertical
9 X-band radar can give you information regarding the
10 flight of individual birds through the project area,
11 correct?

12 A. I mean, it can -- it can give you that
13 under a set of assumptions. It also records bats and
14 insects.

15 Q. Sure. And that applies to all radar,
16 correct?

17 A. That is correct.

18 Q. Okay. Now, with respect to the altitude
19 of individual birds flying through the project area,
20 had Icebreaker placed an X-band radar unit at the
21 project area with -- sited vertically, that X-band
22 radar can also give you data on the altitude of
23 individual birds flying through the project area,
24 correct?

25 A. Yes. That is one of the capabilities of

1 X-band radar is to measure the altitude of the
2 targets but, again, whether that's a bird or bat or
3 an insect, there are a set of assumptions there.

4 Q. Again, and they are not unique to X-band,
5 the same assumptions and filtering has to apply to
6 NEXRAD radar, correct?

7 A. Yes, that is correct.

8 Q. Okay. Now, with respect to NEXRAD radar,
9 that's -- the KCLE NEXRAD radar unit is 14 miles
10 away, right?

11 A. That's my understanding.

12 Q. Okay. And you've been here for all the
13 testimony and hopefully we can agree upon this, that
14 in the project area, NEXRAD radar from that tower,
15 14 miles away, does not go any lower than 11 meters,
16 correct?

17 A. You know, I have other experts on my team
18 that are testifying to how the elevation was
19 calculated. It's my understanding that that is
20 approximately correct.

21 Q. Okay. So that --

22 A. Excuse me, sorry. With the caveats that
23 I believe Caleb explained, the radar waves can --
24 they are not -- it's not a laser. They are waves.
25 You know there likely are some birds, you know,

1 monitored below that, below that elevation, but that
2 was the assumption in the report to be conservative.

3 Q. Okay. Let's go back to the X-band radar
4 unit, out at the site, pointed vertically. If a bird
5 flies through the rotor-swept zone at 50 meters above
6 the Lake, the X-band radar can obtain data regarding
7 the flight of that bird at that altitude through the
8 rotor-swept zone, correct?

9 A. I think that would be a better question
10 for the radar experts that are going to be testifying
11 later. I am not a radar expert. I understand it has
12 that capability, but I would recommend you ask our
13 experts that question.

14 Q. Well, you are the coauthor of the 2018
15 assessment summary, correct?

16 A. Yes, sir, I am.

17 Q. And the -- as the coauthor in that
18 summary, you -- you analyze or reference the NEXRAD
19 report that was put together by Mr. Nations and
20 Mr. Gordon for this project, correct?

21 A. Yes, I summarize that report.

22 Q. Okay. So they use NEXRAD radar for that
23 report, correct?

24 A. That is my understanding, yes.

25 Q. Okay. And in your answer to Question

1 No. 39, you say that the completed risk assessment,
2 both the 2016 and the 2018, of which you are a
3 coauthor, and which includes information from the
4 2017 NEXRAD report, is based on the best-available
5 science, don't you?

6 A. That was a very long question. Can
7 you -- can you repeat that question, maybe focus it a
8 bit more?

9 Q. I can ask her to read it back.

10 ALJ WALSTRA: Please, Karen.

11 A. I mean, if your question is did we --

12 Q. Wait, wait, wait.

13 MR. SECREST: Yeah, if you don't
14 understand the question, please.

15 EXAMINER WALSTRA: She'll read it back.

16 (Record read.)

17 A. Yes, I do believe it's based on the
18 best-available science because I believe NEXRAD is
19 the most-appropriate tool for this site to assess
20 risk. Yes, I've said that.

21 Q. Okay. So let's now talk about the
22 attributes of the NEXRAD day dar -- radar, excuse me,
23 the data from the KCLE site, 14 miles away. You've
24 acknowledged that if there was an X-band unit out at
25 the project site, pointed vertically, it could record

1 the flight of a bird, at 50 meters over the water,
2 through the rotor-swept zone. Are we agreed so far?

3 A. So you're asking me can an X-band radar
4 detect a target at 50 meters above the water?

5 Q. Yes, flying over the project area.

6 A. My understanding of that is, yes.

7 Q. Okay.

8 A. But I'm not a radar expert, and Mr. Mabee
9 will be testifying to that later.

10 Q. Okay. We're exploring your conclusion of
11 best science.

12 Now, let's talk about the radar pulse,
13 the NEXRAD radar pulse from the KCLE tower, 14 miles
14 away. It cannot track if that bird is flying through
15 the rotor-swept zone at 50 meters above the water,
16 which we've agreed an X-band unit out at the project
17 could pick up, that NEXRAD radar from the KCLE unit
18 cannot pick up the flight of that bird; is that
19 correct?

20 A. You know, at 50 meters within the project
21 area, you know, if that's the narrow focus of your
22 question, then no. A target would not be picked up
23 at 50 meters. I believe Dr. Gordon did testify,
24 though, that most bird migration does not occur at
25 that elevation and there are some peer-reviewed

1 published studies that establish closer to the
2 project. I mean, we are talking best-available
3 science here, right? If we are going to -- if we are
4 going to bring in science, we should be able to bring
5 in all science here.

6 But he's also testified that using
7 NEXRAD, you know, that can detect those lower
8 elevations in Lake Erie, you know, there's clear
9 evidence that birds are, you know, we're not missing
10 much of the migration in that a zone.

11 Q. I want to make sure I get the kernel of
12 the response from your answer. Did -- did you agree
13 with me that the NEXRAD radar, emitted from the KCLE
14 unit, 14 miles off the shore, could not track the
15 flight of a single bird flying through the project
16 area at 50 meters? That's correct, is it not?

17 A. Earlier, you -- you said this line of
18 questioning was related to the best-available science
19 that we used. So I guess my answer is, you know,
20 that sort of data is not picked up by NEXRAD. That
21 is not needed for the risk assessment.

22 Q. Okay.

23 A. And is not the best-available science.

24 Q. Okay. Has ODNR anywhere told you or, to
25 your knowledge, anyone else at Icebreaker that it

1 does not need to be able to track the flight of a
2 single bird at 50 meters flying through the project
3 area?

4 A. Who -- you asked who said that?

5 Q. Has ODNR?

6 A. Oh, has ODNR. Has ODNR -- can you repeat
7 the question?

8 Q. Yeah, I'll redo that.

9 Has ODNR ever communicated to you or, to
10 your knowledge, anyone at Icebreaker, that for the
11 pre-construction radar study to be performed by
12 Icebreaker, it does not need to be able to track the
13 flight of a bird at 50 meters through the rotor-swept
14 zone?

15 A. I don't believe we were ever that
16 specific with the ODNR. I never was asked the
17 question "Can a bird be tracked at 50 meters" by the
18 ODNR.

19 Q. Okay. Let's look at the Stipulation.
20 And this is Icebreaker's Stipulation.

21 MR. SECREST: Among others.

22 MR. STOCK: Yeah. We'll give you primary
23 credit.

24 MS. LEPPLA: I object to that, your
25 Honor.

1 A. Do I have a copy of those stipulations
2 here before me?

3 Q. Yes, you should. Let me take a look at
4 the list here.

5 MR. SECREST: May I approach the witness,
6 your Honor?

7 MR. HAFFKE: Look at the small binder.

8 MR. STOCK: Is it the very small binder?

9 ALJ WALSTRA: In your binder, it's double
10 F.

11 THE WITNESS: Oh, is it double F?

12 MR. STOCK: Double F in mine. That will
13 make it easier. Thank you.

14 THE WITNESS: Thank you.

15 MR. STOCK: I appreciate your help.

16 THE WITNESS: Thank you.

17 ALJ WALSTRA: But it is Joint Exhibit 1.

18 MR. STOCK: Yes.

19 Q. (By Mr. Stock) So page 7, Condition
20 22(d), it reads: "Radar must be able to determine
21 flight altitude of migrants at altitudes near and
22 entirely within the rotor-swept zone at the project
23 site to quantify collision risk." Do you see that?

24 A. I do see that.

25 Q. Isn't that a condition that the

1 pre-construction radar study that is done, it says
2 must be able to determine the flight altitude of
3 migrants within the rotor-swept zone.

4 A. It does say it must be able to determine
5 that.

6 Q. All right.

7 A. Now, your question was, was I ever asked,
8 by the ODNR, to, you know, can the target be tracked
9 at 50 meters. We were never asked that question.

10 Q. Okay. So do you understand Condition
11 22 -- well, let's talk about the bird flying at
12 50 meters. That would be a migrant passing through
13 the rotor-swept zone at the project site, correct?

14 A. Yes, 50 meters is within the rotor-swept
15 zone.

16 Q. Okay. So pursuant to 22(d), that
17 condition, Icebreaker is required to have radar that
18 must be able to track that bird flying at 50 meters
19 through the rotor-swept zone at the project area,
20 correct?

21 A. The MOU that the project has signed has
22 committed the project to complete a pre-construction
23 radar survey that will include data from the
24 rotor-swept zone.

25 Q. And my -- you were hung up earlier on the

1 bird flying at 50 meters, so I want to clarify
2 whether or not this condition covers that bird, we
3 love, flying through at 50 meters. Pursuant to this
4 condition, mustn't the radar be able to determine the
5 flight altitude of that bird flying through at
6 50 meters through the rotor-swept zone at the project
7 site?

8 A. Yes. So that is my understanding. Todd
9 Mabee is our expert on radar. He'll be testifying to
10 the radar protocol implementation, but that is my
11 understanding.

12 Q. Okay. Thank you.

13 MR. STOCK: Excuse me a moment. I am
14 trying to organize my cross-examination and shorten
15 it up as much as I can so it's not repetitive.

16 Thank you. I found it. I'm sorry.

17 Q. The risk assessment is at Tab Y, so let's
18 go to that, the 2016 Risk Assessment.

19 ALJ WALSTRA: Exhibit 9.

20 Q. Exhibit 9, excuse me, Tab Y. And I want
21 to turn your attention to page 1, but then
22 simultaneously I would like you to take a look at
23 your direct testimony at Question 14 and that would
24 be page 7. Do you have both of those open?

25 A. I do.

1 Q. Okay. Great. Thank you.

2 Now, in paragraph 14, the question is
3 "What degree of confidence do you have in the 2016
4 Risk Assessment, as summarized within the 2018 Risk
5 Assessment Summary?" And you state you have "a high
6 degree of scientific certainty in the 2016 Risk
7 Assessment, as summarized within the 2018 Risk
8 Assessment Summary." Do you see that?

9 A. I do.

10 Q. And then it reads: "The 2016 Risk
11 Assessment concluded that the project poses low risk
12 of adverse impacts to birds and bats. This
13 conclusion stemmed largely from two principal
14 observations: 1) the project is small in scale,
15 consisting of six turbines; and 2) site-specific and
16 other studies have documented that the level of use
17 of this area by birds and bats is low compared to
18 bird and bat use of terrestrial or nearshore
19 environments." Do you see that?

20 A. I do see that.

21 Q. Okay. Now, take a look at page 1, first
22 paragraph. And at the top it reads: "WEST has
23 completed a review and summary of baseline data and
24 other publicly available data on bird and bat use and
25 other information of the Project's environment for

1 the purpose of" -- it says "or," it probably should
2 be "of -- "evaluating the level of risk posed by the
3 proposed project to birds and bats. The overall
4 conclusion of this analysis is that the Project poses
5 low risk of adverse impacts to birds and bats. This
6 conclusion stems largely from two principal
7 observations: 1) the Project is small in scale,
8 consisting of six turbines; 2) the level of use of
9 this area by birds and bats is low compared to bird
10 and bat use of terrestrial or nearshore
11 environments." Do you see that?

12 A. Yes, I do.

13 Q. Okay. So your answer --

14 MR. SECREST: I'm sorry --

15 ALJ WALSTRA: I don't know that I see
16 that.

17 MR. SECREST: On page 1?

18 MR. STOCK: I'm sorry. It's page small
19 i. It looks like a 1.

20 MR. SECREST: Thank you.

21 MR. STOCK: I guess I need glasses and I
22 don't have them. It looked like a 1 to me. First
23 paragraph under the Executive Summary. I apologize.

24 ALJ WALSTRA: Thank you.

25 Q. (By Mr. Stock) It reads in that first

1 paragraph: The overall conclusion of this analysis
2 is that the Project poses low risk of adverse impacts
3 to birds and bats." Are we on the same page at this
4 point?

5 A. Yes, yeah, yeah.

6 Q. All right. "This conclusion stems
7 largely from two principal observations: 1) the
8 Project is small in scale, consisting of six
9 turbines; 2) the level of use of this area by birds
10 and bats is low compared to bird and bat use of
11 terrestrial or nearshore environments."

12 And that's essentially what your
13 testimony is there, starting with this conclusion,
14 stems largely from, correct?

15 A. Yes.

16 Q. Okay. Now, the level of use of this area
17 is low compared to bird and bat use of terrestrial or
18 nearshore environments. If we go to the NEXRAD radar
19 summary -- or study, which is BB, Exhibit 8, and you
20 go to page 3, you reviewed this document in
21 connection with coauthoring the 2018 summary,
22 correct? Risk summary?

23 A. Yes.

24 Q. Okay. And that was one of the new pieces
25 of information that you added for the 2018 summary of

1 the 2016 risk summary, correct?

2 A. That's correct.

3 Q. Okay. Now, on page 3 at the top, there
4 is a radar depiction with various wedges or quadrants
5 that are shown and then there is the shoreline,
6 correct?

7 A. Yes.

8 Q. Okay. And in your answer you talk about
9 the level of use of this area by birds and bats, that
10 is the project area, is low compared to bird and bat
11 use of terrestrial or nearshore environments. Two of
12 those areas upon which that conclusion is based, or
13 data derived from to base that conclusion, are the
14 Comparison Area 1 and Comparison Area 2, correct?

15 A. That is one piece of information I used
16 to make that statement.

17 Q. Okay. Now, when birds are migrating
18 north during spring migration, is the southern shore
19 of Lake Erie something that's known as a stopover
20 area?

21 A. It is my understanding, yes, birds will
22 stop over and rest before they continue their
23 migration.

24 Q. Okay. And in addition, if birds are
25 coming north -- and we're talking about nocturnal

1 migrants, okay, for these questions. We'll talk
2 about nocturnal migrants. So you understand that the
3 southern shore is used as a stopover area for
4 nocturnal migrants before then taking off at dusk,
5 the next night, to cross Lake Erie, correct?

6 A. Yes, that's well known.

7 Q. Okay. It's also well known, if birds are
8 migrating north during the spring migration at night,
9 and light begins to appear, dawn begins to appear, if
10 the birds have just begun to go out over the Lake,
11 you will sometimes get reorientation of those birds
12 who -- which will turn back and go and land in the
13 stopover area on the southern shore, correct?

14 A. Yeah, it's called dawn ascent.

15 Q. There you go.

16 A. If a bird is over the Lake they will --
17 they will rise higher to find the nearest stopover.

18 Q. Okay. So there will be a fair amount of
19 activity among birds, occurring along the southern
20 short stopover area, during spring migration,
21 correct?

22 A. Yeah, we've already established that
23 birds stop over on the lakeshore before they migrate.

24 Q. Okay. And significant -- well,
25 substantial numbers of birds, after having stopped

1 over on the south shore, will then take off at dusk
2 and night to fly north over Lake Erie, correct?

3 A. Yes, as -- a portion of them will.

4 Q. Okay. Now, many of the birds that are
5 migrating over Lake Erie are Neotropical birds that
6 have been migrating all the way from South America,
7 correct, or Central America, correct?

8 A. A portion of them will have -- yeah,
9 originate from South America.

10 Q. Okay. And many of those migrants will
11 fly over the Gulf of Mexico, correct?

12 A. A portion of them will.

13 Q. Yeah. And how much longer is the flight
14 over the Gulf of Mexico compared to flying over Lake
15 Erie?

16 A. I don't have that calculation in front of
17 me. I imagine -- I don't know.

18 Q. Some multiple, correct?

19 A. It's some distance. I don't -- I don't
20 know that answer off the top of my head.

21 Q. Okay. Substantially longer distance than
22 crossing over Lake Erie, you would agree with that,
23 correct?

24 A. It depends on where they originate but,
25 most likely, in a lot of instances, you're correct.

1 Q. Okay. Thank you.

2 Now, let's go to Tab E, double E.

3 ALJ WALSTRA: I believe this was Exhibit
4 11.

5 MR. STOCK: Thank you.

6 Q. (By Mr. Stock) You've seen this exhibit
7 before, haven't you?

8 A. Yes, I have.

9 Q. It was an exhibit at Mr. Gordon's
10 deposition, correct?

11 A. Well, I believe so. I believe this is
12 a -- this is part of the actual NEXRAD report that
13 you pulled out.

14 Q. Well, actually it's a combination. You
15 were on the phone during the deposition. It's a
16 combination of the Figures 2 and 4 from the NEXRAD
17 report, superimposing 2 over 4, so that the shoreline
18 is added to the migration rose plots.

19 A. Oh, okay. Can you explain what other
20 portions you modified on this?

21 MR. SECREST: Let me just move to strike.
22 Counsel can ask questions about it, but he's
23 testifying to what it is. He can certainly ask
24 Mr. Good if he understands what it is. Mr. Good has
25 never seen this document before as it's presented. I

1 ask that the questions be directed to him as opposed
2 to telling him what it is.

3 ALJ WALSTRA: You can ask questions.

4 MR. STOCK: Fair enough. Fair enough.
5 I'll restate it.

6 Q. (By Mr. Stock) You sat in on both
7 sessions of Mr. Gordon's deposition, correct?

8 A. I listened, yes.

9 Q. Okay. By phone.

10 A. Yes.

11 Q. That's correct. You also read the
12 deposition transcript, didn't you?

13 A. I did not.

14 Q. You did not? Okay. Did -- well, did you
15 hear him testify -- let's go to Exhibit -- or Tab BB,
16 Exhibit 8, the NEXRAD -- the WEST NEXRAD radar study,
17 page 3. Do you see we've already talked about this
18 in Figure 2, the quadrant at the top that has a small
19 a. You see that there, correct?

20 A. Figure 2, small a. Yes, I see that.

21 Q. With the quadrant CA1, CA2, CA3.

22 A. Yes.

23 Q. Right? Okay. Now, let's go back to page
24 12, Figure 4, Quadrant (a). You've got KCLE, Fall,
25 0.5 degrees. Quadrant (b), KCLE, Spring, 0.5

1 degrees. (c) and (d). Do you see those?

2 A. I do see those.

3 Q. All right. And having reviewed this
4 report in connection with your coauthoring the 2018
5 summary, you're familiar with what these rose plots
6 depict, aren't you?

7 A. Yeah. My understanding of those -- I am
8 familiar, and I believe there is a reason why we did
9 not superimpose the geographic location of the
10 project and the shoreline on those rose plots because
11 that would be an inappropriate interpretation of the
12 data. The rose plots are not a specific geographical
13 representation in terms of an XY coordinate. They
14 simply represent the direction of any target that was
15 recorded. They do not indicate a bird is flying over
16 the project area.

17 Q. Well, let's go to my Exhibit 11. And I
18 have superimposed Figure 2 over Figure 4.

19 MR. SECREST: Again, move to strike. He
20 can ask the witness if that's what it appears to be
21 and if it appears to be accurate.

22 MR. STOCK: I am -- I wasn't done.

23 ALJ WALSTRA: Go on.

24 Q. Do you see, in Figure 11, any distortion
25 of the material that is depicted in Figure 2 and

1 Figure 4?

2 A. You are referring to your modified
3 figure?

4 Q. Yes, Exhibit 11, EE.

5 A. EE, okay. What do you mean by
6 "distortion"?

7 Q. Have I changed the axis of the
8 information on either Figure 2 or Figure 4?

9 A. Well, you have changed the information.
10 You've added coordinates to a rose plot and that is
11 not an appropriate interpretation of the data.

12 Q. Where have I added that?

13 A. Well, I see the rose plot; and I see
14 coordinates on your figure and, you know, that is not
15 an appropriate interpretation of the data as
16 Dr. Gordon explained.

17 Q. Well, look at Figure 12.

18 MR. SECREST: I'm sorry, Figure 4,
19 page 12?

20 MR. STOCK: Figure 4, page 12, thank you,
21 Jon.

22 MR. SECREST: Thank you.

23 Q. Figure 4, page 12, are those numbers,
24 those coordinates, not in Figure 4?

25 A. There are no UTM coordinates in Figure 4.

1 There are directions, you know, from 0 to 360
2 degrees, but there are no XY coordinates in that
3 figure.

4 Q. Okay. And then Figure 2, did I add any
5 information that's not in Figure 2?

6 A. You have added information that is not in
7 Figure 2. You have superimposed the rose plot on the
8 geographic map where our study areas were and that is
9 not an appropriate interpretation of a rose plot. A
10 rose plot, as Dr. Gordon explained, simply
11 illustrates the direction of any target. It does
12 not -- it's inappropriate to use it to suggest that
13 the largest number of targets migrated directly
14 through the project area. It's a -- it's not an
15 appropriate way to interpret the data.

16 Q. Well, let me ask this: Is the depiction
17 of the shoreline, which you left out of Figure 4, as
18 it appears in Exhibit 11, inappropriate as to its
19 orientation with respect to the KCLE radar unit?

20 A. My understanding is that, you know, as
21 far as relative direction, the rose plot, I mean, it
22 should be correct relative to the location of the
23 radar unit. But, again, it's a misinterpretation of
24 rose plots that impose an XY coordinate on top of
25 that.

1 Q. So what does the blue wedge represent
2 from the Figure 4 rose plot?

3 A. You know, again, we have experts who
4 actually authored this study, who can better answer
5 that question. My understanding is it represents the
6 proportion targets -- relative proportion of targets.
7 So it's not an absolute number. It's a relative
8 proportion of targets that ended up migrating in that
9 direction.

10 Q. Okay. And so, the bigger a wedge is,
11 what does that mean?

12 A. It means relative to all targets --
13 again, I am not an expert in this, but my
14 understanding is relative to the other targets, more
15 targets were -- fell in that category than other
16 targets.

17 Q. Okay. Now, you keep saying you are not
18 an expert, but this report was relied upon you as a
19 coauthor in your 2018 summary, correct?

20 A. That's right, along with Dr. Gordon who
21 authored this report.

22 Q. Okay. But you're a coauthor of the 2018
23 report, correct?

24 A. I am. I guess when I say I am not an
25 expert, you know, I did not complete these

1 calculations. I'm simply representing my
2 understanding of them.

3 Q. And representing in your testimony that
4 they represent the best science, correct?

5 A. Yes. I do believe the use of NEXRAD is
6 the best-available science for completing the risk
7 assessment and that is because if you -- if you just
8 focus on coming up with the strict number of birds in
9 a small defined area, the number is meaningless in
10 isolation. So, you know, our risk assessment relied
11 on a relative measure, and so we relied on
12 publicly-available data and the NEXRAD data to look
13 at relatively are there more birds over the Lake than
14 areas on shore. And the publicly-reviewed data, as
15 well as our data, suggests the answer is it's lower.
16 So that was the best available data we used.

17 But coming up with a number in isolation,
18 it's like what do you do with it, right? There's no
19 meaning to it. You have got to have some sort of
20 context if you want to complete a true risk
21 assessment.

22 Q. Okay. Thank you.

23 Now, let's go back to Tab Y, Exhibit 9,
24 the November 29, 2016, Risk Assessment. And, again,
25 this was one of the documents you were summarizing as

1 coauthor of the 2018 summary, correct?

2 A. I am a coauthor on this, yes, on this
3 document -- well --

4 Q. The 2018 summary?

5 A. The 2018 summary, yes. Not on -- it's
6 not Y in mine. It's another tab.

7 Q. Right. But what your report did, the
8 2018 summary, was summarize, among other data and
9 analyses, both this 2016 Risk Assessment and the 2017
10 NEXRAD study, correct?

11 A. It relied, in part, on the NEXRAD study.

12 Q. Okay. And it summarized, in part, this
13 report, correct?

14 A. Yes, it did.

15 Q. Okay. Thank you.

16 Now, if you look at page 1, and I have
17 looked carefully and it is page 1, not small i, the
18 first -- I guess the second full paragraph,
19 "Beginning in 2008, LEEDCo conducted a variety of
20 Project-specific bird and bat baseline studies for
21 the purpose of providing information on the risks
22 posed to birds and bats by the proposed Project to
23 support the risk determinations and permitting
24 processes required by state and federal authority."
25 Do you see that?

1 A. I do.

2 Q. So the information that was sought on the
3 risk posed to birds and bats was to support risk
4 determinations. Now, what is meant by "risk
5 determinations"?

6 A. So a risk determination is a combination
7 of a number of factors that help you determine are
8 the project impacts going to be low, are they going
9 to be high.

10 Q. What sort of risk, though, are we talking
11 about here?

12 A. What sort of risk?

13 Q. Collision risk?

14 A. So there are a couple of potential
15 impacts and ODNR identifies concern. One is
16 displacement impacts, and two are collision impacts.

17 Q. Okay. Then it references these studies
18 Geo-Marine, Inc., 2008, and Svedlow et al., 2012. Do
19 you see that?

20 A. Yes, I do see that.

21 Q. Okay. Now, let's go to Tab CC. And this
22 would be Exhibit 16.

23 ALJ WALSTRA: 16?

24 MR. STOCK: 16.

25 ALJ WALSTRA: So marked.

1 (EXHIBIT MARKED FOR IDENTIFICATION.)

2 MR. STOCK: Thank you.

3 Q. (By Mr. Stock) This is the 2012 Svedlow
4 study that was referenced on page 1 of the 2016 Risk
5 Assessment, correct?

6 A. I believe that is the correct citation.

7 Q. Okay. Now, if you take a look at page
8 small i, what Tetra Tech did is they put a radar unit
9 out on the City of Cleveland water intake crib; is
10 that correct?

11 A. That -- I believe that's what the report
12 says, yes.

13 Q. First paragraph, small i, yeah. They
14 used -- if you go down to "Radar Survey" -- a dual
15 radar MERLIN Avian Radar System. Now, the water crib
16 is what, 3 miles out in -- off the shore,
17 approximately?

18 A. Approximately.

19 Q. All right. So that makes it how many
20 miles closer to the site than the NEXRAD radar?

21 A. Good question.

22 Q. Do you know how far inland the NEXRAD
23 radar device is?

24 A. What -- you meant -- I believe it's
25 14 miles from the project site.

1 Q. And so --

2 A. I don't have a map to see if those are in
3 direct line or, you know.

4 Q. And so, the crib is about, what, 4 miles
5 from the project site?

6 A. Well, if it's 3 miles offshore, it's got
7 to be at least 5 miles.

8 Q. So it's 5. All right. NEXRAD's 9 miles
9 further away; is that right?

10 A. Again, I would need to look at a map and
11 measure that.

12 Q. That's fine. All right. Fair enough.
13 Now, the dual radar -- and I'm on page 5, first
14 paragraph, the dual radar system they used was an
15 S-band horizontal scanning radar, correct? First
16 paragraph under "Radar Survey," small i.

17 A. That is what the paragraph says, yes.

18 Q. And that's a unit that sends the beam
19 around in a circle horizontally, correct?

20 A. You know what? That would be a good
21 question for Todd Mabee.

22 Q. Okay. And the -- it also has an X-band
23 vertical scanning radar, correct? "Radar Survey,"
24 first sentence there.

25 A. That is what it says, yes.

1 Q. Okay. All right. You have no reason to
2 believe that's not accurate, correct?

3 A. That's my understanding.

4 Q. Okay. Now, if you look at the top of
5 page ii, it reads: "Only clear air radar data were
6 used to calculate target passage rate(s) [TPR(s)],
7 target flight direction, and target flight height."
8 Do you see that?

9 A. It does say that, yes.

10 Q. Okay. An X-band radar operating
11 vertically can, in fact, provide data regarding all
12 of those elements, correct?

13 A. Which elements are you talking about?

14 Q. Target passage rates, X-band radar,
15 vertical X-band radar, can provide information
16 regarding target passage rates through the area it's
17 being scanned, correct?

18 A. You know, I think those are good
19 questions for Todd Mabee. He is going to be
20 testifying later on radars specifically. I am not a
21 radar expert. I believe it can; but, you know, I
22 believe that would be a better question for Todd
23 Mabee.

24 Q. Okay. So you have no basis to dispute
25 that, correct?

1 A. Well, as I said, Todd Mabee will be
2 testifying on radar later.

3 Q. All right. Well, you testified as to the
4 use of best science for the conclusions from the
5 risks and this is a report that is referred to in one
6 of the documents you relied upon, the 2016
7 assessment, so that's why I am testing your
8 knowledge. The target flight direction, X-band
9 radar, vertically, can provide that information,
10 correct?

11 A. You know, again, I would -- I am not an
12 expert. I have others on my team who are testifying
13 regarding radar. I -- you know, I am not qualified
14 to testify on that answer.

15 Q. Okay. And target flight height, I think
16 you did agree earlier that X-band radar can give
17 you -- can give us data on the flight -- the height
18 of a flight of a single bird, right?

19 A. That is my understanding.

20 Q. Okay. And that's all I can ask of you to
21 give us, your understanding.

22 Now, if you will go down to the first,
23 second, third paragraph. It reads above the chart:
24 "During periods of the highest activity in spring
25 (i.e. highest TPR) most targets flew below the

1 rotor-swept zone during the dawn period. During the
2 fall the highest TPRs were recorded at night, and
3 targets flew generally above the RSZ. The table
4 below provides TPRs, mean flight heights, and median
5 flight heights for each biological period (dawn" --
6 it should be -- "day, dusk, and night) by season,
7 during the offshore radar surveys." Do you see that?

8 A. I do see that.

9 Q. Okay. And then there's a chart below
10 with data. Do you see that?

11 A. Yes, I do.

12 Q. And it shows at dawn, the number of
13 targets, TPR, target passage rate, at dawn was 959
14 below the radar-swept zone, correct?

15 A. Well, you know, it is my recollection
16 that Fish and Wildlife Service reviewed this study,
17 they had questions regarding it, and they really
18 questioned the results, especially in this period.
19 The report does say that, but I believe there is a
20 lot of questions regarding veracity and accuracy of
21 this study.

22 Q. All right. Do you have any basis to
23 dispute that they recorded 959 pass -- the target
24 passage rate of 959 below the radar-swept zone at
25 dawn?

1 A. I can't really comment.

2 MR. SECREST: Other than what he just
3 testified? He just testified to a reason not to
4 believe it.

5 ALJ WALSTRA: You can answer the
6 question.

7 A. I can't really comment on that other than
8 I know, you know, Caleb Gordon did review this study
9 as part of the risk assessment, and I believe the
10 Fish and Wildlife Services also reviewed the study,
11 and they both found there were some issues and
12 reasons to question the veracity of the study which
13 is why we are here, which is why we committed to
14 doing another radar study.

15 Q. You would agree with me that for spring,
16 the vast majority, dawn, day, dusk, and night, as
17 depicted on here, show the target passage rates to be
18 substantially higher than the target passage rates
19 above the rotor-swept zone, correct?

20 A. Again, I am not qualified to testify on
21 this. You know, I believe Caleb Gordon has reviewed
22 this report in detail. My recollection is there were
23 lots of issues with the spring data collection; and,
24 again, I'm not -- I am not here to say this is right
25 or wrong. I think that line of questioning might be

1 better for Caleb.

2 Q. But is it correct that it depicts -- I
3 understand you're telling me you think there might be
4 something wrong with the data, but does it not
5 depict, as presented, substantially greater numbers
6 of target passage rates below or within the
7 rotor-swept zone than above the rotor-swept zone for
8 spring?

9 MR. SECREST: Objection to
10 characterization "within the rotor-swept zone." The
11 document speaks for itself.

12 ALJ WALSTRA: The witness can clarify.

13 A. I mean, given the questions, you know,
14 I've heard from Fish and Wildlife Service and Caleb
15 on this study, I can't testify whether it's correct
16 or not.

17 Q. I didn't ask if it was correct. I asked
18 you to confirm that's what these numbers depict.

19 A. It does say this in the table. Although,
20 I will -- well, both the Fish and Wildlife Service
21 and Caleb have indicated there -- there are real
22 questions of the accuracy of this study.

23 Q. Okay.

24 EXAMINER WALSTRA: Can we go off the
25 record?

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(Discussion off the record.)
(Thereupon, at 12:46 p.m., a lunch recess
was taken.)

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1 Wednesday Afternoon Session,
2 September 26, 2018.

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4 ALJ WALSTRA: We will go back on the
5 record.

6 I remind you that you are still under
7 oath.

8 And you may continue, Mr. Stock.

9 MR. STOCK: I have no further
10 cross-examination.

11 ALJ WALSTRA: That works for me.

12 Mr. Simmons, are you covering this?

13 MR. SIMMONS: Yes, thank you, your Honor.

14 - - -

15 CROSS-EXAMINATION

16 By Mr. Simmons:

17 Q. Mr. Good, I would remind you you are
18 still under oath.

19 You work for WEST, correct?

20 A. That's correct. Yes, that's correct.

21 Q. And how long have you been with WEST?

22 A. It's been 20 years now.

23 Q. And how long were you -- have you been
24 involved on the Icebreaker project?

25 A. For the last two years I've been with

1 Icebreaker.

2 Q. And for just that two-year period, could
3 you generally describe your duties at WEST?

4 A. Sure. Duties at WEST or on the project?

5 Q. At WEST generally.

6 A. Oh, at WEST generally. I'm a senior
7 manager. I'm a branch manager. I am also a project
8 manager. So as a project manager, I'm responsible
9 for making sure projects are carried out per the
10 scope and budget, per agency expectations. I'm
11 responsible for reviewing my employee's reports,
12 hiring, responsible for -- yeah, that basically
13 encompasses most of my duties.

14 Q. And in particular involved -- what were
15 your duties with respect to the Icebreaker project?

16 A. So for Icebreaker, I was -- I was
17 originally brought in as a technical adviser, expert,
18 given my history in Ohio. I have 10 years'
19 experience working on wind-energy projects in Ohio,
20 completing pre-construction risk assessments and
21 post-construction mortality work.

22 Once Caleb Gordon left WEST, I was asked
23 to become the project manager on the project. So,
24 ever since then, I've been more involved, you know,
25 direct in the efforts, trying to meet agency

1 expectations.

2 Q. And could you please describe your
3 involvement with the avian and bat memoranda --
4 Memorandum of Understanding, the MOU, with ODNR?

5 A. Sure. So I participated in some of the
6 project meetings in which the MOU was discussed and
7 negotiated. I was part of development of some of the
8 study protocols that were used and completed under
9 the MOU.

10 Q. And currently -- I would like to talk a
11 little bit about the post-collision monitoring
12 technology. And currently that has not been selected
13 by the Applicant; is that correct?

14 A. That's correct. The plan and technology
15 has not been selected to date.

16 Q. And I believe, as is documented in the
17 MOU, the Applicant intends to further work on that
18 technology with the goal of having a proven plan in
19 the future; is that correct?

20 A. Yeah, that's right. The intent of the
21 MOU was to work collaboratively with the ODNR, work
22 closely, you know, review protocols and technologies
23 with the ODNR. You know, currently the ultimate
24 purpose was to not necessarily commit to technology
25 right now, given that we've got three years before

1 construction starts. There is a lot of effort being
2 placed right now toward developing offshore
3 collision-monitoring technologies. So the idea is to
4 hold off to make sure we took advantage of the latest
5 technologies that were available.

6 Q. So is it fair to say that the intent of
7 both parties was always the understanding that that
8 could be developed at some point in the future?

9 A. Well, the intent was, and as described in
10 the MOU, that we would come to agreement on a
11 post-construction monitoring protocol and have
12 written approval from the ODNR 60 days prior to
13 construction. And so the MOU actually requires us to
14 have a written letter saying you guys approve of our
15 post-construction monitoring plan 60 days before
16 construction starts.

17 So, again, our intent, we saw this as a
18 real collaborative process. We want to make sure
19 what we're proposing you are comfortable with and
20 everybody is on the same page.

21 Q. And currently what is the anticipated
22 date for start of construction?

23 A. I believe the latest, potentially start
24 in two-thousand, I want to say, twenty-one, but you
25 might want to check that. I think we got at least

1 three years before construction starts.

2 Q. Mr. Good, I would like to direct your
3 attention to Joint Exhibit 1. This is the
4 proposed -- or, excuse me, the Stipulation filed by a
5 number of parties including the Applicant. Just a
6 second. Let me find that.

7 MR. STOCK: There's a copy in the binder
8 at Tab FF.

9 MR. SECREST: Or it's D in the smallest
10 binder.

11 THE WITNESS: FF.

12 MR. STOCK: In your binder.

13 THE WITNESS: Okay. Yeah, I have it.

14 ALJ WALSTRA: Thank you.

15 Q. (By Mr. Simmons) And specifically I would
16 like to direct -- to direct your attention to page 6
17 and proposed Condition 19.

18 A. Okay.

19 Q. Are you familiar with this condition?

20 A. I am, yes.

21 Q. And is it a fair summary of this
22 condition that the Applicant could submit its plan to
23 ODNR -- specifically, the post-construction avian and
24 bat collision monitoring plan, that that could be
25 submitted up -- you've already testified that that

1 could be submitted up to 60 days prior to
2 construction, for the MOU, correct?

3 A. Well, to be clear, the MOU says we -- so
4 we would submit it well before 60 days. The MOU says
5 we have got to have a signed letter from -- the
6 project has to have a signed letter from ODNR saying
7 you guys approve of the monitoring plan, so it would
8 actually be submitted well before 60 days.

9 Q. And, in fact, it could be submitted any
10 time between now and that date, correct?

11 A. Yes, yes.

12 Q. And after it's submitted, it could be
13 approved as sufficient by ODNR and Staff at any time
14 after that according to condition 19 in the Joint
15 Stipulation?

16 A. Well, this is where -- it's interesting.
17 The MOU and this condition are seemingly at odds.
18 And I think the intention of the project has always
19 been we want to work collaborative with you guys but,
20 I mean, we've always been working under the
21 assumption we would have an approved
22 post-construction monitoring protocol going into
23 construction. And to comply with the MOU, it's
24 pretty clear we have to have an approved plan before
25 60 days, before the project even starts construction.

1 Q. Does Condition 19, in the Joint
2 Stipulation, provide a pathway for approval after the
3 start of construction?

4 A. Well, you know, 19 says that, but there
5 is also another condition in the Stipulation, I
6 believe it's 15 that says we have to -- I say "we" --
7 the project has to comply with the MOU. The MOU says
8 we have to have an approved post-construction
9 monitoring plan in writing, from you, 60 days before
10 construction. So there was never -- I believe the
11 entire project team has always been under the
12 assumption we were going to have an approved plan,
13 before construction even starts, to comply with the
14 MOU and Condition 15.

15 Q. But, as written, Condition 19 does allow
16 for approval after construction, correct?

17 A. Well, I don't think we can look at it in
18 isolation so, I mean, it does say that in isolation,
19 but Condition 15 also says we have got to comply with
20 the MOU that says we need to have a written letter
21 from you, 60 days prior to construction, that you
22 approve of our post-construction monitoring plan.

23 Q. Does that include a demonstration that
24 the plan is sufficient?

25 A. I can look up the exact actual wording

1 for you.

2 Q. And for the record, are you looking at
3 the Memorandum of Understanding that is attached to
4 your testimony?

5 A. Yes, I am. So in Condition C, it says
6 "Prior to the date of construction as identified by
7 applicant pursuant to OAC."

8 Q. For the record what page are you on?

9 A. Oh, I'm sorry. This is page 2 of the
10 MOU. Condition C, it says "Prior to the date of
11 construction as identified by the Applicant pursuant
12 to OAC Section 4906-3-13(B), post-construction
13 protocols in the Plan will be finalized and approved
14 through written communication with the ODNR."

15 Q. And what you've just referred to, that
16 means the proto -- the protocols would be finalized
17 and approved, correct?

18 A. That's right. Although it's always been
19 our assumption and intention that approval of the
20 plan that you are comfortable with the technologies
21 as described and are ready for implementation.

22 Q. Is there a difference, in your opinion
23 between, describing the technology versus proving the
24 technology?

25 A. I think that's an interesting question.

1 So, I mean, you are referring to the actual plan
2 or -- when you ask that question?

3 Q. I'm asking you if there is a difference
4 between the plan describing the technology and the
5 technology actually being demonstrated.

6 A. Well, you know, our intent has always
7 been, once we put a plan in front of you, we are
8 comfortable that it will -- it will do what we say it
9 will do. So the intent was always to come you to
10 with a plan that everyone is comfortable with and
11 ready for implementation.

12 Q. And if that plan is deemed sufficient, is
13 there anything precluding ODNR and Staff from
14 approving that prior to construction?

15 A. Approving the post-construction
16 monitoring plan prior to construction? Well, in
17 the -- I will say in the -- in the original
18 stipulations it was unclear, given the wording that
19 suggested that it needed to be validated. Let me
20 bring up -- do I have a copy of the original
21 stipulation?

22 ALJ WALSTRA: When you say "stipulation"
23 are you referring to the Staff Report?

24 THE WITNESS: Yeah, yeah, the Staff
25 Report.

1 MR. SECREST: It's Staff Exhibit 1.

2 There should be at least one up there.

3 Q. I believe it's on page 47 if that helps
4 you. Yes.

5 A. Yes. So, Condition 19 says "Turbines
6 shall be feathered completely from dusk to dawn from
7 March 1 through January 1 until the Applicant has
8 demonstrated that the post-construction avian bat and
9 collision monitoring plan is sufficient, as
10 determined by ODNR in consultation with Staff. The
11 ODNR may approve modifications to turbine operation
12 for testing purposes."

13 So there is -- there is nowhere in that
14 condition that makes it clear that the plan could be
15 approved prior to construction. It just -- actually,
16 it does suggest, from my read, we would have to
17 demonstrate it works at the project site. And then
18 once you are comfortable, after demonstration at the
19 project site, then the turbines can operate normally.

20 Q. Is there any language in there that
21 precludes the -- a determination that it's sufficient
22 before construction?

23 A. Well, the language, to me, is unclear on
24 that. When I read this, it says demonstrated that
25 the post-construction monitoring plan is sufficient.

1 You know, it basically -- I think the confusing part
2 is the first sentence is turbines shall be feathered
3 completely from dusk to dawn until the Applicant has
4 demonstrated that the post-construction monitoring
5 plan is sufficient. So, to me, that suggests you're
6 asking for validation at the site.

7 Q. Are there any -- strike that.

8 Would you agree that, as currently
9 drafted, both the Joint Stipulation and Staff -- and
10 the Staff Report Condition 19, both of them, allow
11 for the determination to be made after operation
12 begins?

13 A. Well, I think you can't look at those in
14 isolation because Condition 19 says the MOU requires
15 an approved post-construction monitoring plan prior
16 to construction. So, I mean, it does say that, but
17 we can't look at that in isolation.

18 Q. I would like to direct your attention to
19 Condition 19. Could you please read the final
20 sentence of that -- this is in the Joint Stipulation.
21 Can you please read the final sentence that begins
22 with "Because this project...."

23 A. Condition 19. Oh, in the Applicant --

24 Q. In the proposed -- or in the Joint
25 Stipulation.

1 A. In the Joint Stipulation, okay.

2 "Because this project is the first of its
3 kind in Lake Erie, if the ODNR and Staff find that
4 the plan is not sufficient, the ODNR and Staff may
5 require turbines to be feathered up to 30 minutes
6 prior to sunset to 30 minutes after sunrise during
7 peak spring and fall migration periods when cloud
8 ceilings are low."

9 Q. And what's the meaning of that in your
10 opinion?

11 A. It suggests that, you know, if in theory
12 if the project were to go forward without an approved
13 plan, then they could operate during the day but not,
14 you know, not during the night during peak migration
15 periods when cloud ceilings are low.

16 However, in order to comply with all of
17 the conditions as outlined, we have to have an
18 approved post-construction monitoring plan 60 days
19 prior to construction; and the intent of the project
20 has always been we want to have an agreement prior to
21 construction.

22 Q. All right. In the interest of time, I am
23 going to direct your attention to solely Condition
24 19. And we are going to set the other conditions
25 aside. As it's written in Condition 19, does

1 "feathered" mean completely non-operational?

2 A. "Feathered" would mean that the blades
3 are not turned into the wind. It's not
4 operational in terms -- my understanding of that term
5 it is not operational in terms of it's not generating
6 electricity. I believe the turbines can pinwheel but
7 at a very low rate of speed, probably 1 to 2 RPMs,
8 that would be nonlethal. But they're not locked, is
9 my understanding. I believe that is not good for the
10 turbine from an engineering point of view.

11 Q. I would like to ask you to turn in your
12 prefiled testimony to page 28 and it's actually your
13 response to Question 54 that begins on 27. But I
14 would like to direct your attention to the top of
15 page 28. And I believe, for context, this is in your
16 response to 19. Could you read the final sentence of
17 your response to Question 54?

18 A. Yes.

19 "Icebreaker has also committed to
20 feathering turbine blades below manufacturer cut-in
21 speed during the fall migration period to reduce
22 potential bat mortality."

23 Q. Is the feathering you mentioned there
24 different from the feathering that's mentioned in
25 Joint Stipulation Condition 19?

1 A. Yes. So in Joint -- in 19, you know, the
2 turbine -- if the wind was above 3.0 meters per
3 second, the turbine would not -- the blades wouldn't
4 turn into the wind and they wouldn't operate under
5 No. 19.

6 The feathering we are talking about here
7 means they are feathered, so they are not turning
8 into the wind, they are not spinning at a high enough
9 rate of speed to kill a bird or bat. Until the wind
10 reaches 3.0 meters per second. And then, you know,
11 once it reaches 3.0 meters per second, my
12 understanding is the blades then turn into the wind
13 and begin turning faster. But until that time, you
14 know, until that wind reaches 3.0, there's -- they
15 are pinwheeling but at a nonlethal speed.

16 Q. And how are the migratory seasons -- how
17 are -- the terms "peak spring and fall migration
18 periods," what are those periods? Again, in the
19 context of Condition 19 of the Joint Stipulation.

20 A. Sure. Well, my -- you know, we have --
21 we've taken a first draft of defining peak migration
22 seasons within the bird and bat migration -- Bird and
23 Bat Conservation Strategy. In that -- in that
24 document, you know, we've defined peak migration
25 periods, I believe it's the month of April in the

1 spring and the month of September in the fall.
2 However, you know, in the end that would -- you know,
3 that's a first draft that we have not received
4 comments from the ODNR. You know, the intent, under
5 the MOU, is to work collaboratively with the MOU --
6 collaboratively with ODNR to come up with a plan we
7 all agree on prior to construction.

8 Q. But, right now, you are envisioning that
9 to be the months of April and September?

10 A. Yes. That is what we've -- what we've
11 identified. But, again, that would be something that
12 would need to be decided on, obviously, with ODNR and
13 the Applicant.

14 Q. And that -- would you agree that that's a
15 significantly shorter period than the full migratory
16 seasons for spring and fall?

17 A. It's shorter as the seasons as defined
18 by, you know, Fish and Wildlife Service radar
19 protocol. It does encompass the peak migration times
20 for birds and bats, primarily for birds and also for
21 bats.

22 Q. You mentioned the seasons as defined by
23 Fish and Wildlife. Are you familiar with what those
24 are?

25 A. I believe they start in early, early

1 spring, like March, and run through June; and then it
2 picks up in August and runs through mid-November.

3 Q. And, again, going back to Condition 19.
4 They would only be feathered when the cloud ceilings
5 are low; is that correct?

6 A. That's right. So the periods of highest
7 risk, we believe, are during the peak migration,
8 whenever cloud ceilings are low enough to compress
9 migration in that rotor-swept zone area.

10 Q. And do you know what the elevation would
11 be, to define low cloud ceilings?

12 A. Given, that's something that, you know,
13 we are waiting on comment from the ODNR. We've
14 submitted a BBCS to the ODNR. We have taken a stab
15 at defining that as 150 meters which would roughly,
16 you know, be equal to the tip of the blade, the
17 tallest portion where the blade tip could reach.

18 Q. Did you review any meter --
19 meteorological data to have an idea of how often that
20 would occur during the months of April and September
21 in a typical year?

22 A. I have not. I believe the project team
23 has. And I can't remember exactly. I believe it was
24 five days. I am having trouble remembering if that
25 was five days per season or five days total. But

1 that was a rough number. That number could vary
2 depending on the season. If it's a really cold and
3 rainy season, that could be more. It could be less
4 if it's incredibly dry.

5 Q. And is it an "all or nothing" on a given
6 evening or could it be part -- or strike that.

7 In a specific nighttime period, from dusk
8 until dawn, would that -- would it be an "all or
9 nothing" determination if there is a low cloud
10 ceiling, they would be automatically feathered for
11 the entire time or could that be intermittent
12 throughout the nighttime hours?

13 A. Well, as written, you know, it says Staff
14 may require turbines be feathered 30 minutes prior to
15 sunset and up to 30 minutes after sunrise. Which
16 suggests it could be less. I believe those details
17 still need to be worked out. This is -- you know, I
18 believe this is something that, you know, we need to
19 work out in -- in the -- what's now called the
20 Indiana Bat Mitigation Plan which we originally
21 called BBCS. It would be developed cooperatively
22 with the ODNR, but ultimately that would be the, you
23 know, the ODNR, I believe, defining that period.

24 Q. And would you envision ODNR making that
25 determination, on day-by-day circumstances, based on

1 the actual weather conditions?

2 MR. SECREST: Objection, speculation.

3 MR. SIMMONS: Your Honor, he is offering
4 testimony in support of this proposed condition and,
5 through cross-examination, I'm permitted to ask him
6 what the intent of this proposed language would be.

7 ALJ WALSTRA: Overruled.

8 A. It's a good question and I think that's
9 something that still needs to be, you know, the
10 logistics need to be worked out between the ODNR and
11 the Applicant. I think there is a couple of ways it
12 could be done. It could be done based on a forecast,
13 cloud ceilings could occur sometime during the night,
14 going to feather the whole night. It could be more
15 of a real-time aspect where data is pulled from
16 either on-site weather data with ceilometer, or it
17 could be pulled from, you know, nearby airport
18 stations.

19 But in the end, you know, the important
20 part would be, you know, turbines need to be
21 feathered during those low cloud ceilings. The
22 logistics behind it, I think those are two options
23 that we need to work those out with the DNR.

24 Q. Mr. Good, touching back to the
25 post-collision monitoring technology itself. What is

1 the purpose of that?

2 A. The purpose is to document collisions at
3 the site, to determine if bird and bat mortality are
4 resulting in significant adverse impacts, if
5 mortality is much higher than predicted or lower than
6 predicted, prior to construction.

7 Q. And without that technology, could
8 impacts be assessed?

9 A. No. But, again, you know, the project's
10 intent is to have post-construction monitoring
11 installed as soon as possible. Our intent is to have
12 a group plan with you guys, prior to construction,
13 and have that on as soon as possible after commission
14 of the turbines. And when I say "our," I guess I do
15 need to clarify. I don't make those decisions.
16 Icebreaker is the ultimate decider in that, but that
17 is the intent of the stipulations.

18 Q. Could you please turn in the Joint
19 Exhibit 1, the propose -- the Stipulation with
20 proposed conditions, could you turn to page 24 -- or,
21 excuse me, page 7, Condition 24.

22 A. Yes, I have it here.

23 Q. And specifically could you read the
24 parenthetical about the definition of significant
25 adverse impacts?

1 A. Certainly. So it says "biologically
2 significant impact on the population level of any
3 species or the occurrence of a large mortality event
4 as defined in the impact mitigation plan."

5 Q. And could you please describe, in your
6 opinion, what a "biologically significant impact on
7 the population level of any species" means?

8 A. Ultimately this -- this determination
9 would be up to the ODNR. There's a number of ways
10 the ODNR could go about it, but basically the impact
11 would need to be large enough to, you know,
12 potentially impact the population trajectory, the
13 viability. There's a number of tools that could be
14 used to do that. But that's -- that would be the
15 intent.

16 And the reason that was -- that was
17 offered in here is I'm not aware of anywhere where
18 there is a definition of a significant adverse
19 impact. And without a definition, it leads to all
20 kinds of uncertainty. You know, within the
21 post-construction monitoring protocol for land-based
22 projects, it's suggested an acceptable level of
23 impact is one standard deviation above the state mean
24 or the regional mean which could potentially be a
25 problem for any project.

1 So, for example, bird mortality is pretty
2 narrow and it's pretty low. Anywhere from 1 to 7.
3 When you have a narrow range of mortalities, one
4 standard deviation in a small number. A bat per
5 turbine, a bird per turbine. A bird per turbine, I
6 should say. So that could lead to a situation where
7 a project is slightly above the regional average,
8 still within the range of other projects in the
9 region, but is saddled with a significant adverse
10 impact determination when, in theory, that could be
11 a -- you know, the impacts could be going to a very
12 common species and there would be no concern about
13 the effects of the project on those species.

14 So that -- that is why the, you know, the
15 idea of some sort of criteria to make this a bit more
16 clear that, you know, if the project has a slightly
17 higher than regional average estimate, that there
18 wouldn't be a significant adverse -- it makes it
19 clear, for everybody, what actually is a significant
20 adverse impact.

21 Q. And, again, just focusing on
22 population-level effects. Do you have a percentage
23 of the population loss that would equate to a
24 significant -- significant adverse impact?

25 A. Well, that would need to be determined by

1 the DNR and it really depends on the species, you
2 know, their population parameters, how quickly they
3 reproduce, what's their background mortality rate,
4 what their current population trajectory is, so it's
5 a difficult question to answer in general. I believe
6 it should be more of a species-specific analysis.

7 Q. And would you agree that for some
8 species, that could be a very large number of
9 individual deaths, but still not have a
10 biologically-significant impact on the population
11 level?

12 A. For common species, it conceivably could.
13 Although, I think you also have to keep in mind there
14 are other voluntary adaptive management measures the
15 Applicant has committed to. For example, if there is
16 a large mortality event, you know, the Applicant has
17 committed to trying to document those and halting
18 turbine operations. And, in the end, the definition
19 of "significant adverse impact" is up to the ODNR.
20 But, you know, conceivably, it could.

21 And I will also mention, you know, I
22 think in wildlife management we are all, you know, we
23 are all trained that, you know, there's a certain
24 level of mortality that occurs in all populations.
25 Some of it doesn't affect population trajectories and

1 at some point it does. But, you know, for example,
2 the ODNR does manage a lot of game species using the
3 same principles.

4 Q. And I believe you referenced that in your
5 written testimony in response to Question 67. And I
6 am on page 32 for the record. Turning to game
7 species. Deer, is that a game species?

8 A. Deer is, yes.

9 Q. Would it be likely that 100 would have an
10 impact on a population level?

11 MR. SECREST: Objection. Speculation.

12 ALJ WALSTRA: He can answer if he knows.

13 A. It is unlikely. Well, it depends on the
14 game species and how wanton the hunter is. If he is
15 following the rules as established by the ODNR, then
16 no.

17 Q. And more probably it would be the result
18 of a cumulative effect of all the hunters in that
19 situation, correct?

20 A. Yes, yes, that is exactly how the DNR
21 looks at it.

22 Q. Now, turning that to this project site.
23 If there's a population-level increase in a
24 particular species, that could be caused by a variety
25 of sources, not just the facility, correct?

1 A. That's a very good point. For example,
2 birds, you know, songbirds, which are the species of
3 concern in large part for this project, are killed by
4 a number of different sources. You know, I believe
5 everyone is familiar, on orders of magnitude, more
6 birds are killed by tall buildings, cats,
7 communication towers.

8 Q. So if there were a population-level
9 decrease in species X, there would be no way to
10 attribute that solely to a facility, correct?

11 A. There certainly would be. If the project
12 has a robust, escalated mortality occurring at the
13 site -- for example, for birds, there are, you know,
14 Partners in Flight comes up with bird population
15 estimates across the entire continent. So there are
16 tools available in certain cases.

17 But I agree, you know, if I were the DNR
18 and I were trying to come up with a definition of
19 "significant adverse impact," I would probably want
20 to look at, you know, the cumulative as well as the
21 project-site impacts.

22 But I believe other sources of mortality
23 need to be part of that equation. For example,
24 mortality at this site. Is it anywhere close to what
25 tall buildings are resulting in, for example, for

1 songbirds.

2 Q. I would like to turn your attention to
3 the second part of that definition and that's a large
4 mortality event. And I believe you described that in
5 page 69 -- or your response to Question 69 in your
6 written testimony; is that correct?

7 A. Yes, that's correct.

8 Q. And am I summarizing your answer
9 correctly that the large mortality event would be
10 based on the collision detection system noting
11 individual strikes?

12 A. In large part, yes, although I believe in
13 the BBSC if, for example, there was an incidental
14 report, you know, of a large number of birds, that
15 would also -- I believe there is an adaptive
16 management response for it as well. But, in large
17 part, during operation, it is based on the collision
18 monitoring system.

19 Q. In the Joint Stipulation 24, that would
20 apply to "species covered under the Avian and Bat MOU
21 and the Fisheries and Aquatic Resources MOU."
22 Correct? And I was reading from Condition 24 of
23 Joint Exhibit 1.

24 A. Yes, that's correct.

25 Q. I would like to direct your attention

1 back to your written testimony. And specifically on
2 page 29 in your response to Question 58. Do you
3 propose, in that testimony, replacing the term "wild
4 animals" with "birds and bats"? Do you see that in
5 your written testimony?

6 A. Yes, that's correct.

7 Q. Are you proposing "birds and bats"
8 instead of the language that I read from Condition 24
9 of the Joint Stipulation?

10 A. You know, that's -- that's a good
11 question. I guess in -- I should clarify. So in my
12 response in my question I mention the species that I
13 am working with. So I'm really working with birds
14 and bats. Ed Verhamme is going to be giving
15 testimony on fish. So no, I am not. I am just
16 referring to the species that I've been tasked to
17 work with. I am not proposing a revision to that
18 stipulation.

19 Q. And you say in your testimony that you
20 are not familiar with a legal definition of "wild
21 animals," correct?

22 A. That's correct.

23 Q. And you propose in your written testimony
24 that that could be -- a biological definition of
25 "wild animals" could include "birds, bats, fish,

1 mosquitoes, moths and mussels," correct?

2 A. That's my biological interpretation of
3 the term.

4 Q. And that was in response to the question,
5 could Staff Report Condition 25 include such
6 creatures as mosquitoes, moths, and zebra mussels,
7 correct?

8 A. Yes, it was. Yeah. The intent was to
9 reduce uncertainty for potential financiers. So it's
10 clear those species will be managed at the site based
11 on concerns expressed by the agencies.

12 MS. LEPPLA: Your Honor, just to clarify.
13 It's Condition 24. I want to clarify.

14 MR. SIMMONS: I apologize.

15 MS. LEPPLA: For the record, to make sure
16 it's clear.

17 THE WITNESS: Thank you.

18 ALJ WALSTRA: Thank you.

19 Q. Is there a mosquito MOU?

20 A. No, there's not. And, you know, that's a
21 good point and that's exactly why we proposed that
22 the language in the Stipulation match what's in the
23 MOU. Because we've been working collaboratively with
24 the ODNR and we plan on continuing that spirit and
25 it's -- so we are all talking about the same species

1 in the future as well as the present.

2 Q. In your two years of working on this
3 project, has ODNR ever suggested that mosquitoes be
4 managed in relation to the site?

5 A. They have not, no. It was just used as a
6 broad example of, you know, it's a term that can
7 include a very broad range of species. So it creates
8 some uncertainty, on the financier's end, on what
9 species can be managed and mandated in the future.

10 Q. Has Fish and Wildlife Service ever
11 suggested that mosquitoes would be managed as part of
12 this project?

13 A. No, sir.

14 Q. Therefore, it's pretty unlikely
15 mosquitoes are going to -- the Company is going to be
16 asked to manage mosquitoes, correct?

17 A. I would say that is highly unlikely;
18 although, it does beg the question, are there insects
19 that, in the future, that ODNR would want to manage
20 in the future.

21 Q. Why is there an exception in Staff -- or
22 excuse me. Strike that.

23 Why is there an exception in Joint
24 Stipulation Condition 24 for federally -- state or
25 federally listed endangered or threatened species?

1 A. I believe -- excuse me. I believe that's
2 because endangered species are already covered under
3 a different stipulation. I believe that's No. 21.

4 THE WITNESS: Oh, thank you.

5 Q. From a practical standpoint, is there any
6 reason they couldn't be covered under both 21 and 24
7 of the Joint Stipulation?

8 A. I believe the MOU even might reference
9 endangered species. I mean, that's a good question.
10 I haven't thought that through.

11 Q. And would you agree the point of Joint
12 Stipulation 24, overall, is to avoid significant
13 adverse impacts regardless of how that term is
14 defined? Would you agree with that?

15 A. Yes.

16 Q. And if we're avoiding significant adverse
17 impacts, wouldn't it make sense to avoid significant
18 adverse impacts to threatened and endangered species?

19 A. Yes. And that is -- I mean, it was not
20 included in this language, at least my understanding
21 is it wasn't included in this language because it's
22 already covered under 21. And so, there was no need
23 to cover it. There was already a provision that
24 basically manages any potential impacts that threaten
25 endangered species. There is a little overlap

1 though, admittedly, because the MOU does require we
2 are going to develop a BBCS. Our draft BBCS does
3 address impacts to threatened and endangered species.

4 Q. Are you familiar with the prefiled
5 testimony of Erin Hazelton and specifically related
6 to the revised Staff Condition 24?

7 A. I have read it, yes. It's right here.

8 Q. And what you're referring, to for the
9 record, that is Staff Exhibit 3.

10 A. That's correct.

11 Q. And I would like to direct you to page 14
12 of her prefiled written testimony. And the language
13 that you indicated you are familiar with, is that the
14 single-spaced language at the top of page 14 of
15 Ms. Hazelton's testimony?

16 A. Yes, that's correct.

17 Q. And does that language allow for a
18 collaborative process, between ODNR and Power Siting
19 Board Staff and the Applicant, whereby the Applicant
20 would submit a proposed mitigation plan?

21 A. It does and it doesn't. So, I mean, the
22 spirit of the MOU was based largely on adaptive
23 management. Adaptive management is an inner process
24 where you implement a management strategy, you
25 monitor it, and then you respond. Is it working? We

1 don't do anything. Is it not working? Let's change
2 it.

3 And under this scenario there is one --
4 there is one change and then -- and then adaptive
5 management is prescribed thereon after. Which, in
6 some ways, almost defeats the purpose of adaptive
7 management. It does -- it does allow for one, you
8 know, one revision in working with the DNR. In that
9 scenario, though, you are correct.

10 And my understanding, though, is, you
11 know, from the financier's point of view, my
12 understanding is it still includes the term
13 "prescribed adaptive management" in a couple of
14 places. That's not something that I'm aware of
15 that's in other wind projects' stipulations and
16 requirements.

17 Q. And we'll address the prescription
18 language in a moment.

19 But does the -- in light of the
20 revision -- the proposed revision to Staff Report
21 Condition 24, does that change your answer in your
22 written testimony to Question 65? And that's on
23 page 31 of your written testimony.

24 A. Yes, it does; although, as I described,
25 there appears to be one chance and there's not an

1 iterative learning process which was the intention
2 under the adaptive management proposed under the MOU.

3 Q. And what happens if the -- under proposed
4 Condition 24 in the Joint Stipulation, what happens
5 if the adaptive management strategy, developed by the
6 Applicant, does not work?

7 A. Right. So if the adaptive management
8 strategy does not work, you know, my understanding of
9 the process would be that the developer would go back
10 to the table with ODNR, the Fish and Wildlife
11 Service, consult with the experts and figure out what
12 the next steps are, based on monitoring protocol, and
13 develop a plan that could be implemented at the site.

14 Q. And during that time, significant adverse
15 impact would be continuing, correct?

16 A. That's hard to speculate on. It really
17 depends what is the adverse impact you're talking
18 about or, you know, there's a -- because there's no
19 definition of "significant adverse impact," there's
20 just a whole range of potential scenarios that we can
21 imagine when we're talking about that.

22 Q. Well, let's look at the language that is
23 being proposed by the Applicant. And that's, you
24 know, we'll take the first definition of "significant
25 adverse impact" which is a population --

1 biologically-significant impact on the population
2 level of any species. Let's say that's been
3 triggered by this project. The Company submits a
4 plan. It doesn't work. The population-level impact
5 continues. The significant adverse impact level
6 continues. Would that just keep going on
7 indefinitely until the company is able to submit a
8 sufficient plan to address that?

9 A. No. I don't believe that's a likely
10 scenario at all. And one of the reasons is, I mean,
11 if that were to happen, you know, the DNR would be
12 clear with the Applicant, and the OPSB, "We are not
13 satisfied with the plan. Significant adverse impacts
14 are occurring."

15 You know, in those scenarios, I mean,
16 Staff could recommend their permit be revoked in
17 those scenarios. So it is not as if the OPSB and
18 ODNR have no recourse if adaptive management doesn't
19 work. But I will say there's a very strong incentive
20 for anyone not to get that letter, right? Nobody
21 wants to jeopardize their project or financing.

22 I don't think that's a likely scenario,
23 especially given the low risk that this project
24 appears to have. But it is good to talk about those
25 sorts of scenarios so everyone is clear on what the

1 recourses are and the plan of action.

2 Q. So if I can summarize your testimony, the
3 difference would be if the significant adverse impact
4 persists under proposed Condition 24 in the Joint
5 Stipulation, instead of prescribing adaptive
6 management to the Applicant, you would prefer ODNR
7 and the Power Siting Board Staff seek to revoke the
8 certificate?

9 A. That is not what I said.

10 Q. Okay. Please --

11 A. You said I would prefer. I did not say
12 that.

13 Q. Well, no. Is that your interpretation?

14 A. No. That's not my interpretation.

15 So my interpretation would be if it's not
16 working, per the MOU, the parties go back to the
17 table and figure it out.

18 In my experience, working on wind
19 projects for 20 years, across hundreds of wind-energy
20 projects, these scenarios are very, very rare. And
21 there are a number of tools, depending on the
22 significant adverse impact, that could be used.

23 But, you know, again, we're talking real
24 theoretics and it really depends on what the
25 significant adverse impact is. Are we talking about

1 a high level of Goldfinch mortality? Are we talking
2 about bat mortality rates that are higher? I mean,
3 these sort of responses and the likelihoods of those
4 things happening, really it's hard to talk in general
5 terms.

6 Q. And going then to Ms. Hazelton's
7 testimony with the proposed revision to Staff
8 Condition 24, if I understand your testimony
9 correctly, if the Applicant acts in good faith,
10 submits an acceptable mitigation plan and that's
11 resolved, there would be no need for prescribed
12 adaptive management; is that correct?

13 A. That's correct, yes.

14 Q. Mr. Good, earlier you described your
15 involvement in this project, correct?

16 A. I did, yes.

17 Q. And did any of your involvement in this
18 project include contacting potential investors to
19 obtain financing on behalf of Icebreaker?

20 A. No, no. That's not part of my duties.

21 Q. And did you contact any investors?

22 A. No, I have not.

23 Q. Or potential investors?

24 A. No, I have not.

25 Q. Has -- has anyone from WEST contacted

1 potential investors?

2 A. No.

3 Q. Are you an expert in the field of finance
4 or economics?

5 A. No, I certainly am not. My role in these
6 projects are primarily limited to the wildlife risk
7 and monitoring and adaptive management.

8 Q. I would like to direct your attention to,
9 in your written testimony, to page 24. And
10 specifically your answer to Question 47. If you
11 could read the first sentence of that response.

12 A. Yes. So the question is: "Why is this
13 provision in Staff Report Condition 19 problematic?"

14 "This condition is problematic because it
15 creates a great deal of uncertainty, both
16 scientifically and for financing."

17 So on the financing piece, you know, it's
18 my understanding that Icebreaker is, you know, has
19 made the statement and they feel certain that it
20 creates so much uncertainty that the project cannot
21 be financed.

22 I am not a financial expert, but I am --
23 I am knowledgeable and I've been involved in hundreds
24 of wind projects where I have knowledge of what
25 conditions have been required in other projects. I

1 guess I am aware of, you know, aspects that are
2 unique here compared to other projects in Ohio and
3 elsewhere. In my 20 years of experience in wind and
4 completing post-construction monitoring, I have never
5 seen a condition like this.

6 Q. Who made the statement, from Icebreaker,
7 regarding financing?

8 A. Dave Karpinski. He's the project lead.

9 Q. Did anyone else, from Icebreaker, make a
10 statement to you about financing?

11 A. Not that I'm aware of.

12 Q. So your knowledge about financing comes
13 from conversations you had with Mr. Karpinski?

14 A. Yes. Well, my knowledge of Icebreaker's
15 view on the finance-ability of the project comes from
16 Dave. Although, I will reiterate in my -- I can see
17 where they're coming from because, in my 20 years of
18 experience on wind projects, I have never seen a
19 condition like this before.

20 Q. How many projects, over \$25 million, have
21 you personally sought financing for?

22 A. I have not sought financing for any
23 projects. If you are referring to renewable energy,
24 no.

25 Q. Any projects over \$25 million?

1 A. No, no. My house didn't quite get to
2 that level.

3 (Laughter all around.)

4 Q. We don't need to discuss the value of
5 your house today.

6 I would like to direct your attention to
7 your testimony on page 26. And you indicate
8 Mr. Karpinski -- and this is in response to Question
9 15. "Mr. Karpinski will address" -- in the text it's
10 "addressed." It should be "address" -- "the impacts
11 of the uncertainty that this may have on the
12 operational and financial side of the project"; is
13 that correct?

14 A. Yes, that's correct.

15 Q. I would like to direct your attention to
16 page 30 of your testimony. And I would like you to
17 read your answer to page 60 -- or Question 63.

18 A. Okay. So Question 63: "What sort of
19 impact on financing would you expect from this Staff
20 Report Condition 24's grant of authority to the
21 agencies to simply 'prescribe' adaptive management
22 without further detail or definition? Why?"

23 "Dave Karpinski will testify to the
24 financial effect of the condition. However, I
25 understand that the ability to prescribe adaptive

1 management could make entities unwilling to finance
2 the project. To date, I am not aware of a definition
3 of significant impact by the OPSB or ODNR; however,
4 the Board and ODNR could recommend decommissioning
5 and removal of turbines if bird and bat mortality
6 rates (bat or bird mortality per turbine) are
7 slightly higher than expected, even if the level of
8 impact would have no measurable impact on bird and
9 bat populations. This possibility could make
10 institutions unwilling to invest money in a project."

11 Q. So you mention, in the first sentence,
12 Mr. Karpinski and his anticipated testimony, correct?

13 A. Yes, I do.

14 Q. So is the remainder your personal opinion
15 regarding the financing or concerns or lack of
16 concerns regarding the project?

17 A. So, I mean, that's a good question. It
18 is my opinion of what would result, what might cause
19 a financier to be concerned. And mainly it's because
20 there is no -- no parameters around what a
21 significant adverse impact is.

22 Q. And you use the term "could make entities
23 unwilling to finance the project." What entities are
24 you referring to?

25 A. Well, I would assume banks and other

1 institutions that actually fund the construction,
2 that own the project, could be unwilling to finance
3 the project in the future. You know, for example, if
4 bird mortality rates are a standard and a half, or
5 two standard deviations above the regional mean, and
6 there is some significant mitigation involved. It
7 creates some uncertainty.

8 Q. And would those entities include federal
9 agencies?

10 A. I -- you know, I am not involved with the
11 financing of the project. I don't know if they are
12 seeking federal financing during the operation of the
13 project or not.

14 Q. And the last line of that sentence, you
15 state "This possibility could make institutions
16 unwilling to invest money in a project." What
17 institutions are you referring to?

18 A. When I use that term, I assume it's banks
19 or other lenders or owners of the project who would
20 actually invest or own the project.

21 Q. Would that apply to any government loans?

22 A. Again, I'm not familiar and I don't know
23 if the project is pursuing government funding. I am
24 assuming not, because most wind-energy projects are
25 not funded by the government.

1 MR. SIMMONS: Your Honor, I would like to
2 move to strike all references, in the prefiled
3 testimony of Mr. Good, relating to financing concerns
4 related to any Staff conditions. Mr. Good has
5 admitted, through this testimony, he is not an
6 expert. He is not being offered as an expert in
7 financing. He doesn't have any experience in
8 financing. He was not involved in any of the
9 financing portions of this project. Any information
10 he's received has come from Mr. Karpinski.

11 MR. SECREST: Thank you, your Honor.

12 That's not entirely accurate. Mr. Good
13 testified that based upon his own experience in
14 hundreds of wind-energy projects, that he was capable
15 of testifying related to what he believes investors
16 are looking for with regard to certainty or, put
17 another way, lack of risk, particularly with regard
18 to the prescribed language.

19 And those were questions directed at him
20 by Mr. Simmons. And he responded based not only on
21 conversations with Mr. Karpinski, but his own
22 personal knowledge.

23 ALJ WALSTRA: I am going to deny the
24 motion to strike. I think he qualifies his answers,
25 somewhat deferring to Mr. Karpinski. And I think he

1 did speak to his own personal experiences with
2 financing. But, otherwise, the Board can give it the
3 weight it wants, it feels it deserves.

4 MR. SIMMONS: Thank you.

5 Q. (By Mr. Simmons) Mr. Good -- actually,
6 could you strike that.

7 MR. SIMMONS: Your Honor, I am very close
8 to being finished. If I could just have a minute to
9 review my notes, I think I only have a couple more
10 minutes.

11 ALJ WALSTRA: Go ahead.

12 We can go off the record.

13 (Discussion off the record.)

14 ALJ WALSTRA: We'll go back on the
15 record.

16 Q. (By Mr. Simmons) Mr. Good, you testified,
17 in regard to your experience, I believe it was 20
18 years of working on various projects.

19 A. Uh-huh.

20 Q. Were you personally involved in obtaining
21 financing for any of those projects?

22 A. I have been involved in discussions with
23 lenders. You know, for example, there would be a
24 project financier who talks to the project developer
25 about the studies they've completed, what -- you

1 know, what the Fish and Wildlife Service and State
2 Agency concerns were, what the results were of the
3 project, you know, what would the cost be if the
4 project had to obtain and take permit.

5 I've also been hired by some financial
6 institutions or financiers to evaluate projects. I
7 guess I wouldn't say financial institutions. I have
8 been hired by some companies looking to buy other
9 projects, basically an investor in that scenario, and
10 evaluate the studies that were completed, evaluate
11 what the conditions the State typically requires of
12 projects, so I have been involved in that capacity in
13 those sorts of discussions.

14 Q. You mentioned, though, you hadn't talked
15 to any financiers on this project or any potential
16 financiers on this project.

17 A. Not on this project, no.

18 Q. So you haven't actually shared the
19 language in the Staff Report with any potential
20 investors, correct?

21 A. Right, right, that's correct.

22 MR. SIMMONS: I have no further
23 questions.

24 ALJ WALSTRA: Thank you.

25 Any redirect?

1 MR. SECREST: Yes, thank you, your Honor.

2 - - -

3 REDIRECT EXAMINATION

4 By Mr. Secrest:

5 Q. Mr. Good, on cross-examination you
6 outlined some of your experience related to
7 wind-energy projects. Specifically what is your
8 experience with wind-energy projects in Ohio?

9 A. I've been working on wind-energy projects
10 in Ohio for the last 10 years, have been involved in
11 16 different projects that have been proposed or are
12 operating. Typically I'm involved in the design and
13 conduct of the pre-construction or post-construction
14 surveys related to birds and bats. I've also been
15 involved in development of permits and development of
16 some adaptive management strategies for -- for wind
17 projects in Ohio.

18 Q. And based upon your work on those 16 Ohio
19 wind-energy projects, are you familiar with Ohio's
20 regulations related to wind energy?

21 A. I am familiar with the wildlife-related
22 regulations.

23 Q. Thank you. Do you regularly work with
24 ODNR?

25 A. We do. So, you know, we follow the

1 advice of the Fish and Wildlife Service Wind Energy
2 Guidelines which say collaborate early and often with
3 state and federal wildlife agencies, so we encourage
4 early coordination on study protocols, assessments of
5 impacts, developments of adaptive management
6 strategies. It does the project applicants, and us,
7 no good to develop these things in isolation.

8 Q. Thank you.

9 And along the lines of collaborating
10 early and often, you had referenced in your testimony
11 the MOU. What is that document?

12 A. So the MOU is an agreement between the
13 ODNR and Icebreaker that outlines how the two
14 entities will collaborate on development of
15 monitoring protocols, how the study results will be
16 reported. It outlines how they will be used in
17 forming adaptive management. It's basically an
18 agreement to help assess impacts and design future
19 adaptive management strategies.

20 MR. SECREST: Thank you, Mr. Good. Your
21 Honor, may I approach the witness and the Bench?

22 ALJ WALSTRA: You may.

23 (EXHIBIT MARKED FOR IDENTIFICATION.)

24 Q. (By Mr. Secrest) Mr. Good, will you
25 identify what I've just handed you marked Applicant

1 Exhibit 38?

2 A. Yes. You've handed me the Memorandum of
3 Understanding Between the ODNR and Icebreaker dated
4 July 12, 2017.

5 MR. SECREST: And for the record, your
6 Honor, the MOU is also attached to Mr. Good's
7 testimony. It is an exhibit to the BBCS which is
8 attached as REG-2.

9 ALJ WALSTRA: Thank you.

10 Q. (By Mr. Secrest) Mr. Good, the first
11 paragraph of Applicant's Exhibit 38 states that
12 "Since August 2016, Icebreaker Windpower Inc. and the
13 Ohio Department of Natural Resources have been
14 working collaboratively to ensure compliance with the
15 requirements in Ohio Revised Code and Ohio
16 Administrative Code." Based on your recollection,
17 how long has Icebreaker and the Ohio Department of
18 Natural Resources been collaborating related to this
19 project?

20 A. I believe that well predates my
21 involvement in the project. I believe some of the
22 first collaboration began in 20 -- I want to say at
23 least 2008. Since we've been involved, we've been
24 meeting with the ODNR very regularly. I would say
25 I've been involved in at least four, three to four

1 in-person meetings and numerous phone calls.

2 Q. And the MOU references collaborating
3 related to developing "pre-, during-, and
4 post-construction monitoring protocols for avian and
5 bat resources located in the vicinity of the
6 Icebreaker Wind six turbine offshore wind
7 demonstration Project located 8 to 10 miles off the
8 shore of Cleveland, Ohio." Is that accurate that
9 ODNR and Icebreaker were working collaboratively
10 during pre-, during-, and post-construction
11 monitoring protocols for birds and bats?

12 A. Yeah, that's correct. So we've bounced
13 ideas off each other a number of times, exchanged
14 ideas on how to go about the monitoring in a way that
15 suits all parties, and the MOU actually specifies the
16 actual protocols that were agreed upon by both
17 parties.

18 Q. And the second paragraph on the first
19 page about halfway down, the sentence states "The
20 goal of assessing these impacts is: 1) to document
21 existing conditions and patterns of use by the
22 species of concern at the Project site." Do you see
23 that?

24 A. I do.

25 Q. To your knowledge, has that goal been

1 accomplished?

2 A. Yes, it has.

3 Q. And the reference to "species of
4 concern," do you know what that's referring to?

5 A. Species of concern, in my understanding,
6 are birds and bats.

7 Q. In your extensive negotiations and
8 discussions with ODNR, have any species, other than
9 birds and bats, been discussed?

10 A. Fish have been brought up but not as part
11 of our protocols, but only birds, bats, and fish.

12 Q. Okay. Thank you.

13 The second stated goal is "to document
14 changing conditions and patterns of use by species of
15 concern and their associated habitants as a result of
16 Project construction and operations at the Project
17 site." I assume that cannot be accomplished until
18 the project is actually built; is that accurate?

19 A. That's correct.

20 Q. The third stated goal is "to develop and
21 implement effective mitigation and adaptive
22 management strategies to minimize avian and bat
23 resource impacts." The bat -- or Bird and Bat
24 Conservation Strategy has been submitted to ODNR; is
25 that right?

1 A. It has been submitted, yes.

2 Q. What is the process following submission
3 to the ODNR, if you know?

4 A. Well, the process is we're awaiting
5 comments. Hopefully we will have a meeting to
6 discuss their initial views on what's been proposed
7 and exchange ideas on how to best address concerns
8 expressed.

9 Q. To your knowledge though, Icebreaker has
10 proposed conditions, and if ODNR says we accept them,
11 you have an operative Bird and Bat Conservation
12 Strategy; is that right?

13 A. Yes, that is my understanding.

14 Q. The fourth stated goal is "to evaluate
15 the feasibility of various monitoring protocols in an
16 offshore setting." Are ODNR and Icebreaker
17 collaboratively working towards that?

18 A. We are, yes. You know, these proposals
19 represent a joint effort on ideas for methods and
20 monitoring.

21 Q. So let's talk a little bit about methods
22 and monitoring. You've been asked some questions on
23 cross-examination related to post-construction
24 collision monitoring. What are the technologies
25 being considered by Icebreaker for post-construction

1 collision monitoring?

2 A. We are currently looking at a number of
3 technologies. Those include some impact detection
4 systems that are designed to detect when a vibration
5 occurs on the blades, and camera systems so the
6 actual collision could be documented, and some sort
7 of assessment of species or at least guild could be
8 made.

9 Those include WTBird which has been
10 implemented and implemented at offshore turbine -- at
11 one offshore turbine in the Netherlands. It includes
12 a similar system we're evaluating developed by
13 Dr. Robert Albertani out of Oregon State. He's done
14 a lot of -- I wouldn't call it lab testing, but it's
15 basically outdoor lab testing. He's developed a
16 similar system, testing how well the system picks up
17 impacts at some turbines at the NREL facility in
18 Colorado.

19 I believe we've evaluated -- or examining
20 the MUSE system which is a radar -- combination of a
21 radar and a camera system. That's currently being
22 implement at the Block Island wind project.

23 We've evaluated a ThermalTracker system
24 developed by, I believe, BRI and Shari Matzner, which
25 is basically a system they developed for offshore

1 projects that uses thermal imagery to document
2 bird/bat use at wind projects.

3 We are -- we've reached out to another
4 developer called B-finder. This is a group out of
5 Poland who is developing another collision-monitoring
6 system for offshore wind turbines. It's kind of an
7 interesting unique system where there's three levels
8 of sensors on the turbines, and it detects objects
9 that fall. And if it hits all three levels, it's
10 counted as a fatality.

11 We've evaluated nets, placing actual nets
12 under turbines. We've evaluated just the use of
13 simple camera systems. So there's a lot of --
14 there's been a lot of research lately on bats and how
15 bats interact with turbines.

16 And actual collisions have been
17 documented with thermal cameras and these cameras
18 show great promise for use offshore for documenting
19 mortalities and they've actual -- we've actually
20 documented and other researchers have actually used
21 these to document actual collisions.

22 I think there are -- there might be a few
23 others. I need to go back to my testimony to remind
24 myself.

25 Q. That's fine. Let me ask you this,

1 Mr. Good, in your testimony you've referenced certain
2 technologies being implemented, so are these -- at
3 least some of these technologies currently being used
4 as opposed to just being theoretical?

5 A. Yes. So, in particular, WTBird has been
6 implemented at I want to say the Egmond aan Zee. I
7 don't know if I am pronouncing that correctly, but
8 it's an offshore wind project in the Netherlands.
9 It's been used to successfully detect bird collisions
10 at that project.

11 I believe the TADS system has also been
12 used at an offshore wind project and that's one that
13 I didn't mention. That's another camera-based
14 system. And then the Block Island is currently
15 implementing the MUSE system at their wind project
16 so.

17 Q. So some of these systems have been
18 deployed in a commercial setting?

19 A. They have, yes.

20 Q. And has Icebreaker sought and obtained
21 money from the Federal Government to test some of
22 these collision-monitoring technologies?

23 A. We have. So we're currently part -- we
24 are leading one proposal and part of two other
25 proposals to obtain DOE funding. The Department of

1 Energy has released a million dollars to further the
2 advancement of collision monitoring technologies.
3 And we put in for a grant as part of that to further
4 test and refine the WTBird system. We're also part
5 of a couple other technology proposals.

6 Q. Thank you.

7 And did you say you understand that the
8 project will likely not start construction until
9 2021?

10 A. I did say that. I was uncertain -- I had
11 trouble remembering the exact start date. I believe
12 it's two to three years from now.

13 Q. Okay. Well, regardless of the exact
14 start date in two to three years from now, are you
15 confident there is going to be collision-monitoring
16 technology to deploy at this project?

17 A. I am confident because the technology is
18 already available. The advancements in camera
19 systems are quite amazing, especially in the field of
20 wildlife research, so cameras have been used to find,
21 you know, things as small as Aleutian Tern nests in
22 really dirty, grassy environments. They've been used
23 to document bat collisions as part of bat-behavior
24 studies.

25 And so, at a minimum, a camera system,

1 you know, has already been shown to be able to detect
2 collisions.

3 Q. Would that include detecting fatalities
4 from barotrauma?

5 A. No, because, in reality, barotrauma is
6 not a likely source of fatalities in bats. That is
7 a -- there was an original article put out by a
8 researcher, I believe 10 years ago, who suggested
9 that one of the major sources of bat mortality was
10 barotrauma which is basically a compression that
11 damages the lungs to the point where an animal would
12 die.

13 However, since then, there has been
14 additional research on this topic, one by the NREL
15 scientists that have actually measured the amount of
16 low pressure on the backside of turbine blades, found
17 it to be 10 times lower than the pressure that would
18 be required to result in barotrauma to mice, which
19 are the closest mammal surrogate they could use.

20 So the reality is at low-end speeds,
21 when -- that's when most bats are killed, the
22 pressure isn't even high enough to cause barotrauma.
23 There is some potential at really high wind speeds,
24 but the research is clear, bats aren't killed at high
25 wind speeds.

1 And since then, there has also been
2 another peer-reviewed study that used more updated
3 methods and used a control sample. So those
4 researchers found that the symptoms of barotrauma in
5 lungs can show up within a couple of hours of an
6 animal dying. And so, you know, the bats, their
7 necropsy, as part of that original study that said
8 barotrauma was a problem, you know, would have all
9 shown signs of hemorrhaging just based on the age of
10 the carcass. This stuff happens within a couple of
11 hours of an animal dying. So that second article
12 showed that the vast, vast majority of fatalities at
13 wind projects are due to collision and not
14 barotrauma.

15 Q. Thank you, Mr. Good.

16 If you look at the second page of the
17 MOU. After the first paragraph which is continued
18 over from the prior page, it says "By and through
19 this MOU, the Parties hereby agree to the following,"
20 and then there's A, B, C, D, E, F, G, H, I, J, K
21 which goes through page 4. Do you see that,
22 Mr. Good?

23 A. I do.

24 Q. Let's look specifically at number C --
25 or, excuse, me, letter C. It states "Prior to the

1 date of construction as identified by the Applicant
2 pursuant to OAC Section 4906-3-13(B),
3 post-construction protocols in the Plan will be
4 finalized and approved through written communication
5 with the ODNR." Did you reference that section in
6 your cross-examination?

7 A. I did, yes.

8 Q. And specifically what do you understand
9 that to mean?

10 A. I understand that to mean similar to
11 other land-based projects -- well, other land-based
12 projects -- similar to land-based projects, a
13 post-construction monitoring protocol will be
14 developed in coordination with the ODNR and the
15 project will receive written approval. And so, we
16 would have an approved monitoring plan and the ODNR
17 would be comfortable with the technologies that have
18 been proposed before the project even goes to
19 construction.

20 Q. And if you would turn to the next page,
21 page 3, letter D, "Annual monitoring reports,
22 including preliminary analyses and summaries of all
23 data collected to date, must be submitted to ODNR at
24 least two weeks prior to the scheduled date of the
25 annual meeting provided for at Paragraph (C) above."

1 Has Icebreaker complied with this section?

2 A. We have. So we have held at least one
3 annual meeting to date and provided all the
4 monitoring reports as required.

5 Q. And continuing on with monitoring, if you
6 would please look down to letter F. Does that
7 require post-construction monitoring reports to be
8 provided to ODNR?

9 A. It does, yes, for all years of study.

10 Q. If you would please turn to page 4, I
11 won't read it to you, but feel free to read it and
12 then tell me what you believe letter H refers to or
13 means.

14 A. Yeah. So Condition H basically says the
15 -- the ODNR, in working cooperatively with the Fish
16 and Wildlife Service and designated technical
17 experts, you know, they will review quarterly,
18 annual, and interim reports. If a significant impact
19 is determined, the ODNR will -- shall immediately
20 notify the Applicant and follow-up with the
21 appropriate agencies and the Applicant to address or
22 remediate the impact.

23 So my understanding of that is, you know,
24 the ODNR and Fish and Wildlife Service will notify
25 the Applicant and they would work with the Applicant

1 to immediately address whatever the significant
2 adverse impact is.

3 Q. And is it your understanding that ODNR
4 will be the one determining if there is a significant
5 impact?

6 A. It is my understanding that the ODNR has
7 that authority. Yes.

8 Q. Thank you.

9 If you turn to Exhibit A of the MOU.
10 It's entitled "Icebreaker Wind, Avian and Bat
11 Monitoring Plan, Lake Erie, Ohio."

12 A. Okay.

13 Q. And specifically page 2, please. I'm
14 looking at the second full paragraph if you're there.

15 A. Yeah, I'm here.

16 Q. Great. Thank you.

17 Looking at the second full paragraph, the
18 last sentence, it states "With regard to radar
19 monitoring, the Plan articulates the IWI" --
20 Icebreaker Wind Incorporated -- "project team's
21 commitment to work with ODNR, OPSB, and other
22 agencies and stakeholders to retain an objective
23 third party radar expert to determine the feasibility
24 and precise design of any pre- and post-construction
25 radar monitoring surveys."

1 Is it your understanding that ODNR, OPSB,
2 and other agencies agreed to retain a third party to
3 determine the feasibility of pre- and
4 post-construction radar monitoring surveys?

5 A. Yes, that is my understanding. They
6 ended up retaining Robb Diehl to complete that
7 analysis.

8 Q. If you look at the following paragraph,
9 and you've been here all week, so I am sure you heard
10 prior testimony regarding the RFI that was issued
11 with regard to vessel-based radar. This paragraph
12 states "As a follow up to the discussions regarding
13 the radar monitoring element, the wildlife agencies
14 and the IWI project team prepared a Request for
15 Information to assess the viability of deploying
16 radar on a large vessel with a four point anchor
17 prior to construction at the project site." Do you
18 recall that the RFI was issued by the wildlife
19 agencies and Icebreaker?

20 A. Yeah. I was not involved in the
21 development, but it is my recollection that the ODNR
22 and Fish and Wildlife Service and Icebreaker agreed
23 on the -- yes, yes, that is -- yes, that is correct.
24 They all agreed on the content of the RFI and sending
25 it out.

1 Q. Thank you.

2 And if you look at the following --
3 excuse me, a couple of sentences down, the sentence
4 starts with "Subsequent." "Subsequent discussions
5 have led to a commitment between the ODNR and
6 Applicant to work with the DOE, USFWS, and one or
7 more objective third-party radar experts to design
8 the exact parameters of any pre- and
9 post-construction radar surveys deemed feasible." Do
10 you see that?

11 A. Yes, I do.

12 Q. Do you recall there were actually two
13 radar experts retained, and Robb Diehl was the
14 second?

15 A. I don't recall a second radar expert. I
16 just recall Robb Diehl being the third-party
17 reviewer.

18 Q. And is this accurate that Robb Diehl,
19 referred to here as third-party expert, was to design
20 the exact parameters of any pre- and
21 post-construction radar surveys?

22 A. Yes, that was my understanding.

23 Q. This Bird and Bat Monitoring Plan is part
24 of the MOU agreed to by ODNR; is that your
25 understanding?

1 A. Yes, it is. They've reviewed it and it's
2 been incorporated for their signature.

3 Q. Okay. On page 3, the second full
4 paragraph, I'm looking at the second-to-last
5 sentence. I'm sorry. I should be more specific.
6 Page 3 of the Bird and Bat Monitoring Plan.

7 A. Okay.

8 Q. "As a pilot project, it may be necessary
9 to explore the use of experimental technologies or
10 methods to collect the data necessary to assess
11 behavioral impacts and mortality." Did I read that
12 accurately?

13 A. You did, yes.

14 Q. Okay. So based upon your understanding
15 of the MOU, did ODNR agree that it may be necessary
16 to use experimental technologies with regard to this
17 project?

18 A. Yes, that was -- I think that was
19 everybody's understanding.

20 Q. Okay. Was it everybody's understanding,
21 to your knowledge, that for certain radar or
22 monitoring protocols, traditional technology just
23 would not work?

24 A. Yes, that's -- that's been a common theme
25 that everybody is aware of. We can't use the same

1 technologies and methods that we've used for many of
2 those projects.

3 Q. And the last full paragraph on page 3,
4 the last sentence, "Prior to the date of construction
5 as identified by the Applicant pursuant to Ohio
6 Administrative Code 4906-3-13(B), post-construction
7 protocols in this Plan must be finalized and, upon
8 timely approval by ODNR in writing, will be
9 incorporated into this document as an amendment." Is
10 that the same requirement we read earlier in the
11 Memorandum of Understanding?

12 A. It is, yes.

13 Q. That doesn't refer to any different
14 post-construction protocols?

15 A. No. That is the -- that's referring to
16 the -- well, that includes the post-construction
17 radar and the -- I believe that -- or is that just
18 the radar? Let me -- I believe that refers to the
19 radar and collision monitoring.

20 Q. Okay. If you turn to page 5 of the Bird
21 and Bat Monitoring plan, please. There is a section
22 titled "Overview of Pre-Construction Bat Monitoring
23 Protocol."

24 A. Yes, I see that.

25 Q. It states "Beginning in 2017, the

1 following methods will be deployed to monitor bat
2 activity at and in the vicinity of the Project site."
3 There is a number of bullet points. Has Icebreaker
4 complied with those bullet points?

5 A. They have, yes.

6 Q. Okay. Thank you.

7 And please turn to page 9, Mr. Good.
8 There is a section titled "Aerial Waterfowl Surveys"
9 and a "Pre-construction" section as well. Again,
10 with various bullet points. And are those tasks that
11 Icebreaker is to complete pre-construction?

12 A. Yes, those are, and they have already
13 been completed.

14 Q. Thank you.

15 And if you turn to page 11, please. The
16 section titled "Overview of Pre- and
17 Post-Construction Radar Monitoring Protocol." Do you
18 see that?

19 A. I do see that.

20 Q. It states "The ODNR, USFWS and IWI have
21 retained an objective third party radar expert
22 (Dr. Robb Diehl, USGS) to determine whether
23 collection of pre-construction radar data at the
24 project site on a vessel is feasible and will achieve
25 the study objectives." Did I read that accurately?

1 A. You did, yes.

2 Q. That does not say Mr. Diehl is merely
3 making a recommendation, does it?

4 A. No, it does not.

5 Q. Although it's in -- at least my copy is
6 in black and white, is that a picture of the barge
7 that would be used for a vessel-based radar or an
8 example of one?

9 A. It is an example of them.

10 Q. Okay. Do you know how big that barge is?

11 A. Oh, I don't know off the top of my head.
12 I do -- my understanding was definitely large enough
13 to house the radar and some other equipment.

14 Q. Will you please refer to Attachment 2 to
15 your testimony. Is this the Bird and Bat
16 Conservation Strategy?

17 A. It is, yes.

18 Q. Thank you. If you would please turn to
19 page 8. Table 2 is titled "Summary of meetings
20 between Icebreaker Windpower, Inc., the U.S. Fish and
21 Wildlife Service, and the Ohio Department of Natural
22 Resources, Wildlife Division, regarding the
23 Icebreaker Wind Project in Cuyahoga County since
24 August 2016."

25 Please just review pages 8, 9, and 10,

1 and 11, and tell me if, to the best of your
2 recollection, that adequately encapsulates the
3 meetings between Icebreaker Windpower, U.S. Fish and
4 Wildlife, and ODNR regarding this project?

5 A. Yes. There is a third page there, yes.

6 Q. At least up until May 18, 2018.

7 A. Yes. Past May 18, I don't know that
8 we've met since then or not.

9 Q. If you please turn to page 12, Section
10 4.2, "Blade-feathering to reduce bat collision
11 impacts." Do you see that?

12 A. I do.

13 Q. And pursuant to this section, has
14 Icebreaker agreed to feather the turbine blades up to
15 3.0 meters per second between July 15 and October 15?

16 A. Yes, they have.

17 Q. You were asked some questions on
18 cross-examination related to Condition 19. And you
19 were specifically asked whether the blade feathering
20 in Stipulation Condition 19 was the same as other
21 blade feathering referenced in your testimony. Do
22 you recall those questions?

23 A. I do.

24 Q. So is the blade feathering, in the BBCS
25 Section 4.2, different than Stipulation Condition 19?

1 A. I am just reminding myself, which one is
2 19?

3 Q. Stipulation Condition 19 states, in part,
4 "the ODNR and Staff may require turbines be feathered
5 up to 30 minutes prior to sunset to 30 minutes after
6 sunrise or in peak spring and fall migration periods
7 when cloud ceilings are low."

8 A. Yes. Okay. So my understanding is this
9 would be in addition to 19.

10 Q. That's right. There is no cloud --
11 low-cloud-ceiling condition in 4.2 of the BBCS, is
12 there?

13 A. That's correct; so this would be in
14 effect regardless of the cloud ceiling.

15 Q. Okay.

16 A. And that's a measure used in many wind
17 projects and proven to reduce bat mortality.

18 Q. And Icebreaker has committed to taking
19 that action, regardless of the cloud ceiling, for 30
20 minutes prior to or post sunset -- excuse me,
21 sunrise?

22 A. Yes, that's correct.

23 Q. If you would, Mr. Good, please turn to
24 page 20 of the BBCS.

25 A. Okay.

1 Q. What does this Table 3 represent?

2 A. This represents our -- our first draft of
3 developing an adaptive management strategy to address
4 the concerns, as we perceive them, expressed by the
5 ODNR and Fish and Wildlife Service.

6 And those include triggers to try and
7 prevent a large mortality event such as feathering
8 blades during low cloud ceilings and peak migration
9 periods.

10 It includes feathering turbine blades if,
11 after the post-construction monitoring technology is
12 installed, they detect a large number of collisions,
13 the turbines are going to be designed to turn off
14 automatically to prevent further mortality on those
15 nights.

16 It addresses potential concentrations of
17 eagles. In the unanticipated event that eagle
18 concentrations are observed near the project,
19 turbines will be feathered to avoid any potential
20 impacts to eagles.

21 And it includes a commitment to
22 coordinate and report any threatened or endangered
23 species or eagles that are found as carcasses at the
24 site.

25 Q. Thank you, Mr. Good. Would -- in your

1 past experience with wind projects, is it typical to
2 have or have proposed a BBCS this far in advance of
3 construction?

4 A. Typically it's not done this far in
5 advance. I think that was part of the commitment of
6 Icebreaker to help address potential concerns,
7 addressed by the Fish and Wildlife Service and ODNR,
8 proactively, but typically it's not developed until
9 closer to construction.

10 Q. Thank you.

11 Please turn to the following page, page
12 21. On cross-examination you were asked some
13 questions about the definition of "low cloud
14 ceilings" as well as the definition of "peak
15 migration." Please refer to Section 6.1.1 and
16 specifically bullet points 2 and 3. Do you see
17 those?

18 A. I do.

19 Q. Looking at that, does that refresh your
20 recollection as to the definition of a "low cloud
21 ceiling" and the definition of "peak migration"?

22 A. It does, yes.

23 So we define "low cloud ceiling" as less
24 than 150 meters as defined by NOAA at the Cleveland
25 Burke Lakefront airport.

1 And we've defined "peak migration"
2 periods as the month of May and September. I believe
3 earlier I said the month of April, so. Yeah, this is
4 correct, May and September.

5 Q. And if you would please turn to the
6 following page -- oh, I'm sorry, first, at the bottom
7 of page 21, 6.1.2 is titled "A large mortality event
8 after post-construction mortality detection
9 technology has been installed." Did I read that
10 accurately?

11 A. That's correct.

12 Q. Okay. Please turn to the following page.
13 The first bullet point on page 22, does that define a
14 large mortality event?

15 A. Yes, it does. So that's our first draft
16 of defining a large mortality event. Basically if
17 over half the predicted mortality is detected in a
18 single night, we'll use that as our definition of a
19 large mortality event. And I'll note that that
20 number, 56 individuals, is quite low compared to some
21 of the most well-known large mortality events in
22 things like communication towers, large buildings
23 which typically number in the thousands. We've used
24 the number of 56 here.

25 Q. Thank you.

1 And if you look at the third bullet point
2 on page 22. If a large mortality event does occur,
3 what is Icebreaker going to do?

4 A. Well, the third bullet says if monitoring
5 or operations staff observe 56 in a 24-hour period,
6 IWP agrees to curtail all turbines until such time as
7 the carcasses can be documented, and conditions have
8 changed through the area. So basically once -- they
9 are going to curtail until the mortality events are
10 passed or the conditions that are causing the
11 mortality event have passed.

12 It says large mortality events are
13 expected to only have potential to occur at night
14 and, if they do occur, it would be limited to
15 nighttime hours. The turbines will be curtailed from
16 the time of the event up to 30 minutes after sunrise.
17 They commit to documenting those events to the ODNR
18 and Fish and Wildlife Service within 24 hours.

19 Q. And, Mr. Good, what does "curtailment"
20 mean?

21 A. Turbines will basically be prevented from
22 operating.

23 Q. So they will be turned off essentially.

24 A. Yes, they will be turned off to prevent
25 any further mortality.

1 Q. And you testified on cross-examination, I
2 didn't we ever really -- I didn't get a clear
3 definition of what "pinwheeling" means.

4 A. Okay. So pin -- when I say "pinwheeling"
5 I mean, you know, the -- when the -- when the turbine
6 is in full operation motion, the blades are pitched
7 perpendicular to the wind so it catches it and runs
8 at the maximum speed it can.

9 Feathering means it's perpendicular to
10 the wind -- perpendicular this way. That means that
11 the blades aren't able to catch the wind, you know,
12 they will rotate but slowly because they are not
13 catching the wind. They are only rotating 1 or
14 2 miles an hour -- or, 1 to 2 rotations are per
15 minute, I should say.

16 Q. Mr. Good, you were asked various
17 questions about Joint Stipulation Condition 24. And
18 you were also asked questions related to
19 Ms. Hazelton's testimony. Do you have Ms. Hazelton's
20 testimony in front of you?

21 A. I do.

22 Q. In fact, it sounded like your testimony,
23 your reference to mosquitoes, which was somewhat
24 being made light of and --

25 MR. SIMMONS: Objection.

1 MR. SECREST: Withdrawn.

2 Q. Do you recall answering questions on
3 cross-examination related to Ms. Hazelton's
4 testimony?

5 A. I do, yes.

6 Q. Do you recall answering questions on
7 cross-examination, directed to you, related to
8 mosquitoes?

9 A. Yes, I do.

10 Q. Okay. And you were asked if you had a
11 definition for "wild animals," and you had testified,
12 correct me if I am wrong, that that term was broad.

13 A. Yes, it is. It is very broad.

14 Q. Okay. Let's look at Staff 3, please,
15 which is Ms. Hazelton's testimony. Now, specifically
16 I'm looking at page 14, line 24. It states "While
17 the definition of wild animals is broad and includes
18 mollusks, crustations, aquatic insects, fish,
19 reptiles, amphibians, wild birds, wild quadrupeds,
20 and all other wild animals, but does not include
21 domestic deer." Do you interpret the "includes" to
22 mean that it's limited to all those various "wild
23 animals" listed in her testimony?

24 A. It actually says "includes all other wild
25 animals."

1 MR. SIMMONS: Your Honor, I am going to
2 object to this. Counsel is asking for his -- his
3 interpretation of the definition of the statute and
4 he's already testified on direct that he's not
5 familiar with the statute.

6 MR. SECREST: I am not asking him about
7 his definition of the statute. He was already --
8 asked that extensively with the mosquito questions.
9 I'm asking about his interpretation of the definition
10 of wild animals as stated by Ms. Hazelton and how
11 broad it is. The insinuation on cross-examination
12 was that --

13 EXAMINER WALSTRA: Overruled.

14 A. Can you repeat the question?

15 Q. Maybe we fought over the question.

16 Ms. Hazelton states "the definition of
17 wild animals is broad and includes" and then she has
18 a list of quite a few animals. Is your
19 interpretation of her testimony, and the use of the
20 word "includes," that she is limiting the definition
21 of wild animals to what she then lists?

22 A. No. So she says "While the definition of
23 wild animals is broad and includes...and all other
24 wild mammals, but does not include domestic deer."
25 It's very broad and does say here that it includes

1 insects. Although, I didn't mean to suggest that I
2 expect ODNR to manage the project to reduce mosquito
3 impacts. I did use that example as just an example
4 of how broad the statute is but, you know, I do
5 respect the DNR and their approach to projects, so I
6 apologize if they felt disrespected by that.

7 Q. So the definition of "wild animals"
8 includes mollusks, crustaceans, aquatic insects,
9 fish, reptiles, amphibians, wild birds, wild
10 quadrupeds, and all other wild mammals. Did you
11 testify before that the only species that you recall
12 having discussed with ODNR were birds, bats, and
13 fish?

14 A. Yes.

15 Q. Okay. You were asked if you have an MOU
16 regarding mosquitoes. Do you have an MOU regarding
17 mollusks, crustaceans, aquatic insects?

18 MR. SIMMONS: Objection. He's testified
19 he's familiar with the birds and bats. There's a
20 Fish and Aquatics MOU. If he doesn't have a
21 foundation to testify what is in that, I would object
22 until foundation is established.

23 EXAMINER WALSTRA: Overruled.

24 A. I'm not aware of one that's specifically
25 focused on mollusks, crustaceans, and aquatic

1 insects. But I have -- to be honest, I have not read
2 the Aquatic MOU.

3 Q. With regard to re -- Ms. Hazelton's
4 testimony and revised Staff Report Condition 24, it
5 states, in the second sentence, "Within 30 days of
6 receiving notification of the significant adverse
7 impact, Applicant will develop and submit a
8 mitigation plan or adaptive management strategy to
9 OPSB Staff and the ODNR for review to confirm
10 compliance with this condition. Temporary adaptive
11 management may be prescribed until the mutually
12 agreed upon plan is implemented."

13 Do you understand that to mean that the
14 Applicant will be required to submit a mitigation
15 plan but, despite submission of that plan, ODNR may
16 implement temporary adaptive management?

17 A. Yeah, I understand that to mean that
18 while the plan is being developed, ODNR may prescribe
19 adaptive management in the interim until they come to
20 an agreement on that plan.

21 Q. Okay. Is there any limit as to what
22 adaptive management ODNR may -- excuse me, Staff may
23 prescribe?

24 A. There is no limit that I'm aware. I
25 believe it could include up to decommissioning and

1 removal of turbines.

2 Q. And it states "Until the mutually agreed
3 upon plan is implemented," is there any time period
4 for ODNR or Staff to review and implement the
5 mutually agreed upon plan?

6 A. There is no -- no required response time
7 by the ODNR in this condition.

8 Q. Okay. So Icebreaker could receive
9 notification of a significant impact, develop and
10 submit a mitigation plan and, while it's waiting for
11 ODNR and Staff to approve that plan, ODNR and Staff
12 could shut down the project and approve the plan
13 whenever time permits?

14 A. Yes. I would expect they would review it
15 but -- as soon as they could but, yeah, it's my
16 understanding there's no -- no defined time frame in
17 which they have to respond.

18 Q. So while this collaborative effort is
19 going on to determine whether or not the mitigation
20 plan is sufficient, ODNR has the ability to prescribe
21 whatever adaptive management it chooses; is that your
22 understanding of this revised Staff Report Condition
23 24?

24 A. Yes, that is my understanding; although
25 Erin did clarify that she expected it to be an

1 iterative process and only prescribing as much as
2 needed to avoid the significant adverse impact, but
3 that could include up to shutting down the project.

4 Q. You were asked questions on
5 cross-examination related to the Tetra Tech radar
6 study. Do you recall that?

7 A. Yes.

8 Q. And I believe that Study has been marked
9 as Intervenor 16. Do you have that in front of you?
10 I'm sorry, Residents 16.

11 EXAMINER WALSTRA: I believe it's CC in
12 the binder.

13 Q. It is CC. Thank you.

14 A. Yes, I have that.

15 Q. Was this study relied upon in completing
16 the risk assessment summary?

17 A. No, it was not. It was reviewed as part
18 of the original risk assessment, but it was not
19 relied upon because there were issues with the data
20 collection. It's my understanding that both Fish and
21 Wildlife Service and Icebreaker reviewed the report
22 and were very concerned about the results, especially
23 during the spring there was some very odd results
24 including very low flight heights that were likely
25 related to mosquitoes and attraction to the crib is

1 my understanding.

2 Q. Are you aware that, in consultation with
3 Icebreaker, Fish and Wildlife Service agreed to
4 discard the results of this study?

5 A. Yes, that's correct. And that's my
6 understanding as well, both parties agreed.

7 Q. Mr. Good, would you please turn to
8 Attachment 4 to your testimony. Will you please
9 identify this document for the record.

10 A. Okay. Attachment 4 is a quarterly status
11 report from the Third Quarter that was submitted as
12 part of the MOU.

13 Q. And what does it show?

14 A. This quarterly report illustrates interim
15 results for the aerial -- the aerial surveys. It
16 actually also includes an additional analysis that
17 was -- included all of the data collected looking at
18 the amount of waterfowl observed relative to the
19 distance to the shoreline, which showed a result very
20 similar to the ODNR in that almost all of the
21 waterfowl -- I would say the majority of the
22 waterfowl were observed close to the shoreline. It's
23 a very consistent result.

24 It also includes a description of the
25 status of the radar monitoring protocol and the BBCS

1 and collision monitoring technology development.

2 Q. And when you say similar to ODNR, what
3 you are referring to?

4 A. So the ODNR, in two years of aerial
5 surveys throughout Lake Erie, found the highest
6 densities of waterfowl to occur between 1 and 7 miles
7 from the shoreline. In one year, it was much closer;
8 in one year, it was much farther away. So, in that
9 respect, the results of our study were very similar
10 in that most waterfowl were observed close to the
11 shoreline and outside of the project area.

12 MR. SECREST: Your Honor, may I approach
13 the witness and the Bench?

14 EXAMINER WALSTRA: You may.

15 MR. SECREST: Thank you.

16 Q. Will you please identify the document I
17 just handed you for the record?

18 A. Sure. You've handed me the "Icebreaker
19 Wind Bat Activity Monitor" report. This is a report
20 that describes the full seasons of monitoring
21 completed under the MOU. I believe it's identified
22 as Exhibit 39.

23 MR. SECREST: Your Honor, may I have it
24 marked as 39, please?

25 ALJ WALSTRA: You may.

1 (EXHIBIT MARKED FOR IDENTIFICATION.)

2 MR. SECREST: Thank you.

3 Q. (By Mr. Secrest) Mr. Good, this is also
4 attached to your testimony as one of the many
5 exhibits in the BBCS. But will you please refer to
6 page 2. Table 1 is titled "Bat species with
7 potential to occur within the Icebreaker Wind Project
8 Bat Survey Area categorized by minimum echolocation
9 call frequency." Do you see that?

10 A. I do.

11 Q. So what does this table mean and
12 demonstrate?

13 A. So this table illustrates the species
14 that have potential to occur within the project area.
15 They're divided into frequencies. In many of our
16 analyses we group bat -- bat calls by frequency to
17 estimate bat activities. So they are grouped by the
18 low -- bats who estimate on a low frequency, the Big
19 Browns, Hoaries, and the Silver-Haireds, and those
20 that echolocate at a higher frequency.

21 Q. Will you please turn to page 4 of
22 Exhibit 39.

23 ALJ WALSTRA: Mr. Secrest, before we dive
24 too much further in this document, do you have
25 significant more redirect?

1 MR. SECREST: Probably 20 minutes, your
2 Honor.

3 ALJ WALSTRA: Okay. Why don't we take a
4 break. We are getting pretty late, and he has been
5 up there, the court reporter has been going a while,
6 so we will go off the record until 4:15.

7 (Recess taken.)

8 ALJ WALSTRA: We are back on the record.

9 Q. (By Mr. Secrest) Mr. Good, do you still
10 have in front of you Applicant's Exhibit 39?

11 A. I do.

12 Q. Would you please refer to page 4.

13 A. I have page 4.

14 Q. Great. Table 2, does that demonstrate
15 the deployment of bat acoustic monitoring devices
16 from March 21 to November 14, 2017?

17 A. Yes, it does.

18 Q. Okay. And were there 10 devices deployed
19 during that time period?

20 A. Yes, there were. There were some
21 duplicates installed at some of the stations to
22 ensure we met the data-collection standards.

23 Q. Okay. And was this bat monitoring
24 activity undertaken in accordance with the terms of
25 the MOU?

1 A. Yes, it was.

2 Q. Okay. So this was in addition to prior
3 bat monitoring activities undertaken by Icebreaker.

4 A. Yes, that is correct.

5 Q. Okay. And if you would please turn to
6 page 30. The last full paragraph states "Gordon and
7 Erickson (2016) assessed risk to bats from the
8 Project based on available data, and predicted that
9 bat fatality rates would be within the broad range of
10 mortality recorded at on-shore wind-energy
11 facilities, and there was a low potential for
12 collision risk of species protected under the
13 endangered species act. The results of this study
14 are consistent with the conclusions of Gordon and
15 Erickson (2016)."

16 And this study, being Applicant 39, is
17 dated February 15, 2018. Has Icebreaker received any
18 information or conducted any studies, since
19 February 15, 2018, to change the assessment that the
20 risk to bats is low?

21 A. No, it has not.

22 Q. If you please turn back to Staff No. 1
23 which is the Staff Report of Investigation.
24 Specifically looking at page 47.

25 A. Okay. I've got the Staff Report only.

1 What page are you on?

2 Q. 47, please.

3 A. Okay.

4 Q. Pursuant to Staff Condition 19, "Turbines
5 shall be feathered completely from dusk to dawn from
6 March 1 through January 1...." When do bats migrate?

7 A. There's typically a spring and a fall
8 migration period. In spring, most migration occurs
9 in April and there's a little bit in March, but
10 typically mainly in April and May. And then in the
11 fall, there can be some late summer movements, but
12 the majority typically occurs late July through the
13 month of September.

14 Q. Okay. So typically bats are not
15 migrating in October?

16 A. The majority of the migration -- there
17 will be a few that come through in October, depending
18 on the year, but the majority of the migration is
19 going to be complete by October.

20 Q. Okay. Is the majority of migration
21 complete by November?

22 A. Yes, yeah. There will -- the vast, vast
23 majority. It would just be a few stragglers on a
24 warm night that could come through.

25 Q. Will the majority of bat migration be

1 complete by December?

2 A. We wouldn't expect any migration in
3 December.

4 Q. And, I'm sorry, when does songbird
5 migration occur?

6 A. It can start as early as March but,
7 again, the majority is going to come through probably
8 late April through the month of May is the peak
9 migration, and then again in the fall it's going to
10 be during the month of September primarily. There
11 are -- you know, those are the peak migration
12 periods.

13 Q. Okay. So the majority of bird migration
14 does not occur in October, November, or December; is
15 that accurate?

16 A. I would say early in October, you know,
17 you can still get some pulses of migration for
18 songbirds. By November, the songbird migration is
19 almost all -- all species have finished migration by
20 December -- definitely by December.

21 Q. Based upon your experience with other
22 Ohio wind projects, are you aware of any feathering
23 requirements similar to Staff Condition 19?

24 A. I am not.

25 Q. And did you say also in reference to

1 Staff Condition 24, even as revised by Ms. Hazelton's
2 testimony, that you're not aware of any other Ohio
3 wind project and the related quote "prescribed
4 language"?

5 A. Yeah. I am not aware of any wind
6 projects in Ohio that have a stipulation that
7 includes prescribed adaptive management for birds or
8 bats.

9 Q. And you said you are familiar with the
10 Ohio Department of Natural Resources' wildlife
11 protocols?

12 A. I am, yes.

13 Q. If you would please turn to Joint
14 Exhibit 1 which is the Joint Stipulation and
15 Recommendation, please, specifically page 6 -- excuse
16 me, page 7. We're back to Stipulation Condition 24.

17 A. All right. Just a second.

18 Q. Sure. Take your time.

19 A. Let me find this thing again.

20 Q. In your binder in front of you, from
21 Mr. Stock, it's FF.

22 MR. STOCK: See, my binders are helpful.

23 THE WITNESS: They are helpful. Thank
24 you.

25 A. Okay.

1 Q. Excellent. Are you at page 7?

2 A. Yes.

3 Q. Stipulation Condition 24 states "If Staff
4 and the ODNR, in consultation with USFWS, determine
5 the project results in a significant impact," excuse
6 me, "significant adverse impact...." Is that
7 reference to "significant adverse impact"
8 species-specific?

9 A. It is not, no. Well, it is in that, you
10 know, the species of focus for this project are birds
11 and bats, but within birds and bats it has not -- it
12 doesn't have a focus. And fish. So among those
13 three taxon, it is not specific to species.

14 Q. Is the intent of "significant adverse
15 impact" to apply a standard, the same standard to all
16 species?

17 A. All species -- the intent of this
18 standard is to provide protection to all species
19 protected under Ohio codes, yes. That are birds,
20 bats, and fish.

21 Q. Thank you. That was a bad question.

22 So, for example, is the same standard, as
23 far as determining what is a significant adverse
24 impact going to be applied to, you know, Black-Winged
25 Gull as would be applied to a Turkey Vulture?

1 A. So the intent of the Stipulation, as I
2 read it, would be to -- it would provide protection
3 to all species but, you know, the definition of what
4 is a "significant adverse impact" would depend on the
5 level of that impact to that species and species
6 population size and parameters. So it would
7 depend -- the treatment of those two species would
8 depend on their population sizes and the health of
9 their populations.

10 Q. And do you believe that this project is
11 likely to result in a significant adverse impact to
12 any species?

13 A. No, I do not, and that's based on the
14 results of our risk assessment which -- which show
15 use of the project is lower than nearshore or onshore
16 environments, and the small size of the project
17 limits any potential impact to -- as a project as
18 whole.

19 Q. And regarding that nearshore and onshore
20 environments; if this project was on land, would the
21 risk to birds and bats be higher?

22 A. Yes, I believe it would. There would be
23 resident birds and bats that would be at risk of
24 collision. And based on results of Diehl and NEXRAD,
25 we would expect migration rates for bats to be

1 higher.

2 Q. And with regard to Condition 24,
3 Stipulation Condition 24, excuse me, as you noted in
4 response to cross-examination, even in Ms. Hazelton's
5 testimony which proposes a revision to 24, the word
6 "prescribe" is in there twice. And you were asked
7 questions, on cross-examination, related to
8 prescribed versus ODNR or Staff instituting some sort
9 of enforcement action. Do you recall those
10 questions?

11 A. I do, yes.

12 Q. Do you know that with an enforcement
13 action, Icebreaker would be afforded due process?

14 A. That is my understanding, yes.

15 Q. Okay. Do you know whether use of the
16 word "prescribed" and whether an adaptive management
17 is prescribed, any due process will be afforded to
18 Icebreaker?

19 A. You know, I'm not -- it's my
20 understanding that, no, there wouldn't be any,
21 but I'm not a -- I am not a lawyer, so I'm not
22 completely familiar with the due process.

23 MR. SECREST: Thank you, Mr. Good.

24 I have nothing further, your Honor.

25 ALJ WALSTRA: Thank you.

1 Additional cross, Mr. Stock?

2 MR. STOCK: Thank you.

3 - - -

4 RECROSS-EXAMINATION

5 By Mr. Stock:

6 Q. You covered a lot of ground. I'll try to
7 move along. Let's talk about insects, mosquitoes,
8 you mentioned, and insects. But the -- I don't know
9 if they are classified as insects. How are Monarch
10 butterflies classified? Would those be considered
11 insects?

12 A. Yes, I believe so.

13 Q. Okay. Do Monarch butterflies migrate
14 over Lake Erie?

15 A. Yes, there are some documentation that
16 butterflies can, depending on the wind conditions, of
17 course, migrate across the Lake.

18 Q. Okay. Are you aware of any threats to
19 the population viability of Monarch butterflies in
20 North America?

21 A. I'm not aware of any threats from
22 wind-power projects. I am aware of habitat loss
23 being a potential issue for Monarch butterflies and
24 pesticide use being an issue, but I am not aware of
25 any -- any impacts from wind to Monarch butterflies.

1 Q. Well, what information has Icebreaker
2 gathered regarding the migration of Monarch
3 butterflies across Lake Erie?

4 MR. SECREST: Objection. I believe this
5 is outside the scope of redirect.

6 MR. STOCK: He talked about insects.

7 MR. SECREST: I know he talked about
8 insects with regard to the definition of "aquatic
9 insects" used by Ms. Hazelton in her testimony.

10 ALJ WALSTRA: I will allow the question.

11 A. So today none -- neither the ODNR or Fish
12 and Wildlife Services raised that as a potential
13 concern.

14 Q. And, of its own, has Icebreaker done any
15 analysis to determine the level or areas of potential
16 Monarch butterfly migration over Lake Erie?

17 A. No, no analysis has been completed, and
18 I'll reiterate, neither the ODNR, nor the Fish and
19 Wildlife Services, raised this as a potential concern
20 for the project.

21 Q. I've heard you say that. Now, is it
22 correct that the Bird and Bat Conservation Strategy
23 does not contain any terms to address issues that may
24 be created with respect to the migration of Monarch
25 butterflies over Lake Erie?

1 A. No. The BBCS does not contain any -- any
2 adaptive management actions for the Monarch
3 butterfly. I am not aware of any concerns that have
4 been raised, by either resource agency, on Monarch
5 butterflies.

6 Q. And without concerns being raised by
7 either ODNR or -- who is the other agency you are
8 referring to?

9 A. The U.S. Fish and Wildlife Service.

10 Q. Okay. Without concerns expressed by
11 them, are there any plans by Icebreaker, of its own
12 initiative, to determine if this project may create
13 risk of fatalities for migrating Monarch butterflies
14 over Lake Erie?

15 MR. SECREST: Objection, assumes facts
16 not in evidence.

17 ALJ WALSTRA: Overruled.

18 A. No. There are no current plans to
19 address those impacts.

20 Q. Thank you.

21 Now, you mentioned on redirect and,
22 again, I am not trying to misquote your testimony, so
23 correct me if I'm wrong, but that based on your
24 significant experience in preparing or being involved
25 in the preparation of bird and bat conservation

1 strategies, that the Bird and Bat Conservation
2 Strategy that is in the process of being developed
3 and finalized in this case is being done at a stage
4 that is much earlier than is typical on other
5 projects. Is that what I heard you to say?

6 A. Yes, yes, that's correct. It's typically
7 much earlier than, in my experience, BBCSs are
8 prepared and submitted to agencies.

9 Q. Well, what was the -- what was the
10 earliest construction date for this project that has
11 ever been identified in a document that you are aware
12 of?

13 A. I couldn't answer that question.

14 Q. So you don't know if an original
15 construction date for this project was ever set for
16 sometime in 2018?

17 A. Again, I couldn't answer that question.
18 I don't know the answer to that question.

19 Q. Well, let's assume that there was a date
20 of proposed construction of the project in 2018, and
21 we're sitting here at the end of September of 2018.
22 Would this still be, in your mind, an early stage in
23 the process to develop a Bird and Bat Conservation
24 Strategy?

25 A. So I think you are asking if the project

1 were to be constructed in 2018, would we still be
2 early? I would say in a lot of cases it would be
3 about the same time that a lot of projects that I'm
4 involved in are developing those sorts of strategies.
5 It'd probably be a similar time frame.

6 Q. Okay. Thank you.

7 Now, I would like you to take a look at
8 Icebreaker Exhibit 38.

9 A. Can you remind me which one?

10 Q. That's the Memorandum of Understanding.
11 It's loose. It's not in one of my beautiful binders,
12 so it might be hard to find.

13 A. All right. I have it, thank you.

14 Q. You have it?

15 A. I do.

16 Q. Thank you.

17 Now, as I read at the top, this document
18 is a memorandum -- Memorandum of Understanding
19 between the Ohio Department of Natural Resources and
20 Icebreaker Windpower. Did I read that correctly at
21 the top?

22 A. Yes, that's correct.

23 Q. And if you go to page 9, there are
24 signatures. Correct?

25 A. Yes, there are.

1 Q. All right. And who are the parties who
2 have signed it?

3 A. James Zehringer.

4 Q. On behalf of whom? I'm sorry.

5 A. I'm sorry. James Zehringer on behalf of
6 the ODNR. Lorry Wagner on behalf of Icebreaker. And
7 Mike Miller on behalf of Division of Wildlife. And
8 Scudder Mackey on behalf of the Office of Coastal
9 Management.

10 Q. Okay. There's no signature line for Fish
11 and Wildlife Service, correct?

12 A. That's correct. This is an agreement
13 between ODNR and Icebreaker.

14 Q. And Fish and Wildlife Service is not a
15 party to it, correct?

16 A. They are not a signatory party, no. They
17 are -- they have been relied upon in reviewing
18 documents as part of the process, but they are not a
19 signatory, no.

20 Q. Okay. I wanted to make that clear.

21 Now, let's go to page 2 of the Avian and
22 Bat Monitoring Plan. And you were asked some
23 questions about this on redirect. In particular, you
24 were directed to the last sentence of the second full
25 paragraph, "With regard to radar monitoring, the Plan

1 articulates the IWI project team's" -- "IWI" is
2 Icebreaker Windpower Inc.; is that correct?

3 A. Yes.

4 Q. -- "commitment to work with ODNR, Ohio
5 Power Siting Board, and other agencies,
6 stakeholder -- other agencies and stakeholders to
7 retain an objective third party radar expert to
8 determine the feasibility and precise design of any
9 pre- and post-construction radar monitoring surveys."
10 Do you see that?

11 A. I do.

12 Q. Who drafted that language?

13 A. It was -- I do not remember. Yeah.

14 Q. So you don't know who drafted that
15 language?

16 A. Someone from the WEST team, but it was
17 not me.

18 Q. Okay.

19 A. It was likely Caleb.

20 Q. Now, were you implying, by the reference
21 to other agencies, that that includes the Fish and
22 Wildlife Service?

23 A. That is my understanding of the intent of
24 the sentence.

25 Q. All right. Did you ever speak to anyone

1 at Fish and Wildlife Service in which -- and have a
2 conversation in which Fish and Wildlife Service
3 indicated that it was in agreement with that
4 language?

5 A. I -- you know, I was not the one from our
6 team talking to the Fish and Wildlife Service during
7 this time, so I -- I can't comment on that. I'm not
8 aware.

9 Q. So when you were testifying earlier about
10 this language, you weren't implying, by your
11 testimony, that you know -- you personally know
12 anything about Fish and Wildlife Service's position
13 with respect to this language; is that correct?

14 A. No. I mean, my understanding is Fish and
15 Wildlife Service was, you know, they agreed to use of
16 the third party because the parties cannot come to
17 agreement on the radar monitoring protocol.

18 Q. Now, you say "your understanding." Is
19 your understanding based on discussions that you
20 personally had with Fish and Wildlife Service?

21 A. No.

22 Q. Okay. That's what I want to clear up.
23 If something -- someone other than an employee of
24 Fish and Wildlife Service told you; is that correct?

25 A. Yes, that's correct.

1 Q. Excuse me a minute while I find another
2 exhibit. Is Caleb Gordon's binder up there?

3 A. Yes.

4 Q. Good. Let's go to Tab S. Tab S is
5 Exhibit 13. And if you go -- hopefully it's stuffed
6 back at the back of that exhibit. I supplied today
7 the first e-mail to the "Dear VBR crew." It's an
8 e-mail from Beth Nagusky to Jeff Gosse dated
9 December 15 of 2017. It also indicates that it's
10 sent to Megan Seymour at Fish and Wildlife Service,
11 Mackey Scudder at DNR, Lorry Wagner, and others,
12 Caleb Gordon, Robert Diehl. I don't see your name on
13 there.

14 A. I don't see anyone's name on this
15 version. All I see is "VBR Crew." It doesn't show
16 who the e-mail was sent to.

17 Q. Do you have the one at the back that has
18 the addressees?

19 THE WITNESS: Okay. Thank you. Okay. I
20 see that now.

21 Q. Okay. It wasn't sent to you, and you
22 weren't copied, right?

23 A. That's right.

24 Q. Now, I think if you turn to the second
25 page of the document you do have in the binder, it

1 should be a December 15 e-mail from Jeff Gosse to
2 Beth Nagusky, with a number of people copied. And if
3 you look there, you are not one of the people copied,
4 correct?

5 A. That's right.

6 Q. Have you seen this before?

7 A. I don't remember seeing it. There's been
8 a lot of documents and e-mails so -- and this was a
9 year ago, but I don't remember seeing this e-mail,
10 no.

11 Q. Okay. Thank you. You can put that
12 aside.

13 Now, on redirect you talked about the
14 Tetra Tech study. Do you recall that?

15 A. I did, yes.

16 Q. Okay. And that is in your binder at CC,
17 Exhibit 16. Did you find that?

18 A. Yes.

19 Q. Why don't you put your hand there and
20 let's page back to Tab Y, Exhibit 9, page 13. Now,
21 the Tetra Tech study did two things, correct? It --
22 they put an X-band radar unit on the Cleveland water
23 crib, correct?

24 A. Yes.

25 Q. They also put some acoustic bat

1 monitoring equipment on the water crib, correct?

2 A. Yes.

3 Q. Now, if you look at page 13 in this
4 report, this Gordon Erickson report, it reads: "The
5 most informative source of information on the level
6 of bat activity likely to occur at Icebreaker Wind is
7 the bat acoustic study conducted by Tetra Tech in
8 2010, as part of Icebreaker's wildlife baseline
9 gathering effort (Svedlow et al. 2012.)" That's a
10 reference to the Tetra Tech study, correct?

11 A. Yeah, to a portion of the study, yeah.
12 The non-radar portions.

13 Q. Right. So WEST liked the bat data that
14 was produced by Tetra Tech in its study from the
15 water crib, correct?

16 A. What do you mean "liked"?

17 Q. You used it.

18 A. We didn't use it as part of the risk
19 assessment. Yeah, we didn't -- we evaluated the
20 radar study, but it's my understanding we didn't use
21 it, because Fish and Wildlife Service and WEST
22 reviewed the results and there were some questions
23 that couldn't be answered by Tetra Tech.

24 Q. Thank you.

25 Now, you often say it's "my

1 understanding" or you have often said that in your
2 testimony. I want to understand your personal
3 knowledge. Did you personally go back and do any
4 evaluation of the radar data that Tetra Tech had
5 collected for that study that is at Tab CC?

6 A. No, Caleb -- Caleb Gordon reviewed it.
7 It's my understanding Jeff Gosse reviewed it as well.

8 Q. Again, "my understanding." That means
9 information from a third party, correct?

10 A. Yes, that's correct.

11 Q. Okay. Now, did you ever talk to Jeff
12 Gosse about this report?

13 A. I have not, no.

14 Q. Okay. So you have no personal
15 information as to what Mr. Gosse's opinion was of
16 this report, correct?

17 A. Well, I believe they've -- they have some
18 written correspondence regarding their views on the
19 report. I don't -- yeah, I have not talked to him
20 though.

21 Q. Okay. Thank you.

22 Now, you mentioned dates of migration at
23 Lake Erie. Is it not true that you understand, one,
24 that migration of birds across Lake Erie is
25 broad-front, as numerous witnesses have discussed,

1 correct?

2 A. Are you talking about the timing or the
3 geographic distribution?

4 Q. The geographic distribution.

5 A. Yeah, throughout the midwest, it's a
6 broad-front line.

7 Q. And that specifically applies as well to
8 birds migrating across Lake Erie, correct?

9 A. Yes, although some birds avoid going over
10 the Lakes. Some do go over the Lake but, you know, I
11 think the NEXRAD data are clear that some avoid going
12 over the Lake.

13 Q. Okay. And migration of
14 nocturnally-migrating birds often occurs in pulses,
15 correct?

16 A. Yes.

17 Q. You understand that term?

18 A. Yes.

19 Q. And what --

20 A. I think you are referring to the timing
21 of migration.

22 Q. Yes, exactly. Would you explain to us
23 what it means when bird migration occurs in pulses of
24 time.

25 A. Yeah. There's -- you know, there are

1 triggers, you know, such as daylight, temperature,
2 that, you know, trigger birds to start migrating from
3 the winter grounds. They tend to migrate to their
4 summer grounds in a hurry and they come through in
5 a -- in bunches and they typically concentrate in
6 some months.

7 Q. And during the migration they'll be, for
8 lack of a better term for "the pulse," like spurts of
9 lots of birds during a time during the evening, and
10 then it may lessen, and then another pulse the next
11 evening or even in the same evening, correct?

12 A. Yeah, although it doesn't all happen in a
13 single night.

14 Q. Right.

15 A. It's spread over a month or more,
16 depending on the groups we're talking about.
17 Different groups migrate at different times of the
18 year.

19 Q. Sure.

20 And with respect to Lake Erie, in the
21 spring you start to get pulses of bird migration
22 north, over the Lake, as early as early October,
23 correct?

24 A. North? No. I mean, birds aren't
25 migrating north in October; they are migrating south.

1 Q. Or, excuse me, I meant April.

2 A. Oh, in April, yes.

3 Q. Okay. Thank you. It's late in the day,
4 and I'm misspeaking.

5 A. I understand.

6 Q. And those pulses for spring migration
7 coming north that start in early April will continue
8 sometimes into early and mid June, correct?

9 A. You know, the species, the passerines and
10 the songbirds that are our main concern here, the
11 vast majority are done in May.

12 Q. But there are still pulses of migrants
13 sometimes into late May and early June, correct?

14 A. It's possible. But, you know, the vast
15 majority are done by then.

16 Q. Okay. And with respect to fall
17 migration, you can start to get pulses of migration
18 south, across Lake Erie, as early as early August?

19 A. Some species begin migrating in August.

20 Q. And those pulses of migration of various
21 species can sometimes continue into late October or
22 early November, correct?

23 A. I'd say the vast majority of the species
24 that have been expressed as concern here, no. The
25 majority of the songbirds are coming through in the

1 month of September. They can bleed into October but
2 there always could be a few stragglers but, you know,
3 the majority are not, no.

4 Q. So are you telling us there are never
5 pulses of migration of birds across Lake Erie into
6 mid and late October?

7 MS. LEPPLA: Objection. That
8 mischaracterizes Mr. Good's testimony.

9 ALJ WALSTRA: I'll allow him to clarify.

10 A. I did not say that, no.

11 Q. Okay.

12 A. You said that.

13 Q. Pardon?

14 A. You said that. I didn't say that.

15 Q. I am trying to clarify exactly what
16 you're telling us. Is it not the case that there are
17 occasions, migration seasons, and it varies from year
18 to year, correct?

19 A. It's -- it's pretty consistent between
20 the years, although there can be, you know, weather
21 systems that hold up migration for periods of days.
22 It's fairly consistent as far as the months during
23 which most migration occurs.

24 Q. And is there not data that shows that
25 there are pulses of migration into mid and late

1 October over Lake Erie?

2 A. It's possible. But, you know, again, the
3 majority are coming through before then.

4 MR. STOCK: Okay. Thank you. That's all
5 I have.

6 ALJ WALSTRA: Mr. Simmons, do you know
7 how much recross you anticipate?

8 MR. SIMMONS: I would estimate 10 to 15
9 minutes.

10 ALJ WALSTRA: Let's go for it.

11 MR. SIMMONS: Thank you.

12 - - -

13 RE CROSS-EXAMINATION

14 By Mr. Simmons:

15 Q. Following up on the question about
16 migratory seasons, could -- what are the migratory
17 seasons for waterfowl?

18 A. Waterfowl probably start, you know,
19 earlier in the spring depending on open-water
20 conditions. Yeah, probably January, March, April,
21 depending on the species and the weather conditions.

22 Q. And what about the fall?

23 A. Again, it depends on conditions up north,
24 right? If they get an early freeze, they'll get
25 pushed down earlier. If it's warmer, they might wait

1 until later. I would say in general, general terms,
2 I would say you start to see migration in September,
3 October. It can get pushed into November,
4 potentially December for those late pushes if it's
5 pretty warm up north. Although, I will say, you
6 know, if you are referring to the adaptive management
7 strategies, those are based on past reads, and
8 waterfowl susceptibility is quite low, as evidenced at
9 other offshore projects and other onshore projects.

10 Q. Again, my question was limited to
11 waterfowl. On recross, you mentioned the --
12 Dr. Diehl and his report and how that came to be.
13 Was Dr. Diehl informed that the barge could come off
14 of Lake Erie during high sea events?

15 A. I was not part of developing the RFI, so
16 I'm not the best person to ask that question. I
17 don't know the answer to that one.

18 Q. Does Dr. Diehl address the barge coming
19 off the Lake in his report?

20 A. He does not, no.

21 Q. Do you know if any of the vendors that
22 are mentioned that you discussed -- or potential
23 vendors, excuse me, were they given information that
24 the barge could come off the Lake?

25 A. Again, I was not in contact with the

1 vendors, so I'm not the best person to answer that
2 question.

3 Q. You mentioned that you were not aware of
4 a feathering condition, like there is in 19, being
5 applied to any of the previous land-based projects
6 that you have been involved in, correct?

7 A. I believe so. Can you remind me? I get
8 these confused. Which one is 19? That's the dawn to
9 dusk until it's demonstrated. Yes, I did make that
10 statement.

11 Q. For those land-based projects, though,
12 the companies weren't trying to develop innovative
13 technology for collision monitoring, were they?

14 A. No. That's correct.

15 Q. Essentially, collision monitoring was
16 fairly standard industry practice for land-based,
17 correct?

18 A. Yeah, although it can vary across the
19 U.S. Within Ohio, there's a standard set of
20 protocols.

21 Q. Could you please turn to, I believe it's
22 Exhibit 38, the MOU. And I would address your
23 attention to page 2 of that document.

24 A. Okay.

25 Q. And you mentioned the language in C, that

1 the plan, according to the terms of the MOU, would
2 need to be finalized and approved by ODNR, and that's
3 referring to the post-construction protocols in the
4 plan; is that correct?

5 A. Yes.

6 Q. And would you agree that there is a
7 distinction between a plan being approved and the
8 technology that's covered by that plan actually
9 working?

10 A. I -- yeah. I guess it's a -- I am trying
11 to understand your question. So our understanding,
12 through this whole process and through the whole MOU
13 development, was that ODNR and Icebreaker would come
14 to an agreement on the technology prior to
15 construction that would be implemented because we
16 want to have the system up and running, you know,
17 Day 1, if possible.

18 Q. But the plan could reference a technology
19 that's not necessarily proven in an aquatic
20 environment, correct?

21 A. Well, our intention is not to put a
22 method in front of you that we don't feel like would
23 work. So I -- you know, would it be unproven? You
24 know, I think any technology we would propose, we're
25 going to prove it in one fashion or the other.

1 Q. But at this time, that technology is
2 currently unproven, as you previously testified,
3 correct?

4 A. I don't believe I testified it was
5 unproven. I testified there are technologies
6 available that have been shown to work in offshore
7 environments. WTBird has been implemented in a
8 turbine in the Netherlands and has documented bird
9 mortality. We are aware of camera technology that
10 has been used onshore that documented bat fatalities.
11 I don't think I ever testified to that degree.

12 Q. Would you turn to page 12 of the Bird and
13 Bat Monitoring Plan which is attached to the MOU.
14 And under "Objectives" -- are you there yet? Excuse
15 me.

16 A. Yes.

17 Q. And does that state, under the
18 "Objectives," the last sentence of the first complete
19 paragraph there, "Although several promising
20 technologies are under active development, no proven
21 effective technologies to perform bird/bat collision
22 monitoring at offshore wind energy facilities are
23 currently available; however, several emerging
24 technologies appear promising." Did I read that
25 accurately?

1 A. You did read that accurately, yeah.

2 Q. And this document was approved in 2017,
3 correct?

4 A. Yes, it was, yes.

5 Q. And in the past 13 months has that
6 changed?

7 A. No, no. So there -- you know, if your
8 definition of "proven" is do I have a report from an
9 offshore wind facility that documents bird and bat
10 fatality rates at an offshore project, no. No, we
11 don't have that, that's correct.

12 Q. So, as of today, there's no proven
13 effective technologies; would you agree with that
14 statement?

15 MR. SECREST: Objection, asked and
16 answered.

17 ALJ WALSTRA: I will allow him to answer.

18 A. When you say "proven," I mean, I would
19 say cameras have been proven to be able to detect
20 collisions. Those are documented in my testimony.
21 So it depends on your definition of "proven." I
22 mean, I have -- we are all in agreement additional
23 testing needs to be done and the protocol needs to be
24 fleshed out before you're comfortable and before
25 Icebreaker is comfortable of implementing a system.

1 I think we are all in agreement there. But I think
2 where -- Icebreaker's intention is to have that -- we
3 have three years to get that done. And the intention
4 is to have that done, you know, prior to
5 construction, per the MOU, so that you can provide
6 us -- write a letter, as described in the MOU, that
7 you concur with the study plan.

8 Q. And for this question we'll put precise
9 dates aside. But would you agree that having a plan
10 and having the technologies proven are not
11 necessarily the same thing?

12 A. I guess I -- I don't necessarily see
13 those as separate. You know, I would hope if we
14 write a plan -- I mean, if we were forced to write a
15 plan today, you know, if I was forced to write a plan
16 right now, yes. But we're not writing a plan right
17 now. We've got two to three years to work this out,
18 test the technology, make sure we're all comfortable
19 with the technology that's being proposed. But I
20 guess I -- I mean, I understand that's the way the
21 ODNR and OPSB envisioned it, but that's not the way
22 we envisioned it when the MOU was developed, and I
23 guess I -- that's my understanding.

24 Q. But is that how you envisioned it today
25 as is addressed in Condition 24 of the Joint

1 Stipulation?

2 MR. SECREST: Objection, vague.

3 ALJ WALSTRA: Overruled.

4 A. You know, I think I answered this
5 previously; but, you know, Condition 24 suggests one
6 thing, the MOU suggests another, and our intention is
7 to have an approved plan prior to construction. That
8 reduces the uncertainty for everybody. And the MOU
9 does require an approved post-construction monitoring
10 plan prior to construction.

11 Now, if that plan, in theory, could
12 include some sort of on-turbine testing, that is --
13 that is one possibility. That is -- that has
14 certainly never been the intention, I think, of the
15 MOU from the very beginning. We were all -- I
16 thought we were all on the same page, that we were
17 all going to have an approved plan prior to
18 construction.

19 MR. SECREST: I'm sorry. I don't mean to
20 interrupt but for clarification you answered a
21 question as to Condition 24. We were -- sorry.

22 MR. SIMMONS: I was just going to address
23 that. Yeah, I did refer to 19.

24 Q. I believe your answer was to 19; is that
25 accurate?

1 A. Yes, sorry. I get these numbers confused
2 so.

3 Q. I think we both did. I apologize for
4 that.

5 A. Okay. Thank you.

6 Q. And certainly I think we all agree that
7 the plan could be submitted after the technology is
8 fully proven; would you agree with that?

9 A. Currently fully proved relative to when?

10 Q. I think we agree that, in theory, when
11 you submit the plan, the technology could be proven,
12 correct?

13 A. Yes. It very well could be proved prior
14 to construction.

15 Q. But what if it's not proven? What if the
16 technology is not proven?

17 A. What are the -- well, I would say it
18 depends on your definition of "proven." And that is
19 part of the -- I think the uncertainty that
20 Icebreaker has expressed concern about what standards
21 are going to be used. I think, you know, the MOU,
22 you know, expresses, you know, the joint
23 understanding that this is new. We are all proposing
24 technologies that haven't been implemented before.

25 But "proven" could mean we can prove it

1 on a land-based turbine. "Proven" could mean we've
2 used it to document collisions onshore, for example,
3 with cameras. "Proven" could mean a lot of different
4 things.

5 Q. So the first sentence of Condition 19 in
6 the Joint Stipulation reads: "The Applicant shall
7 submit a post-construction avian and bat collision
8 monitoring and shall demonstrate that...the plan is
9 sufficient." So doesn't Condition 19, in the Joint
10 Stipulation, view the submission of the plan, and the
11 demonstration of the plan as being sufficient, as two
12 different benchmarks that need to be met?

13 A. And that is completely different than the
14 MOU. The MOU suggests something different and the
15 MOU has an earlier due date, right? It's, you know,
16 I think the language in the MOU is pretty clear. We
17 are going to agree on a plan that everyone is
18 comfortable with prior to construction, and that's
19 the intent of Icebreaker.

20 Q. And would you agree that both Staff
21 Report Condition 19, as well as Joint Stipulation
22 Condition 19, actually allow more flexibility to the
23 Applicant in that the demonstration of sufficiency
24 does not need to occur before construction?

25 A. Well, it's my understanding it won't

1 provide any flexibility. It's my understanding the
2 project wouldn't be built or financed if the
3 condition is -- is in this -- this document. So,
4 from that perspective, it provides no flexibility.

5 Q. What about is that the same for Staff --
6 or Joint Stipulation Condition 19?

7 A. No. Because in the MOU, as we said a
8 hundred times here, we are proposing to have the plan
9 to you prior to construction, and our intent is --
10 you need to provide us with a letter that says, you
11 know, you approve of the plan. Now, in theory, it
12 could include testing prior to -- post-construction.
13 But, as written, the original stipulation is going to
14 make -- I've been told it's going to make the project
15 unfinanceable and, in that case, the project wouldn't
16 even be built.

17 Q. I am asking about the Condition 19 in the
18 Joint Stipulation. Are you considering that would
19 make the project unfinanceable?

20 A. I did not say that. You know, the intent
21 is to have a signed post-construction monitoring
22 plan, from you, prior to construction.

23 Q. I understand that's the intent, but the
24 language in the Joint Stipulation Condition 19
25 envisions the plan being submitted and then

1 subsequently being demonstrated as being sufficient,
2 correct?

3 A. I think -- you know, I think the problem
4 with that, we've described, is you are creating
5 there's no standard for approval and there's no --
6 because of that, it creates enough uncertainty that
7 the project, you know, it's my understanding the
8 project would not be financeable.

9 Q. In relation to Joint Stipulation
10 Condition 19?

11 A. No. In relation to the original one.
12 Now, in relation to the Joint Stipulation 19, no.

13 Q. And specifically that condition says the
14 plan can be demonstrated as sufficient either prior
15 to construction, through lab and field testing, or
16 during operation.

17 A. It does say that, but our understanding
18 of the MOU is different. Our understanding of the
19 MOU is, you know, we have to have an approved plan
20 prior to construction. Our understanding of that is
21 you are comfortable with the plan and you are
22 comfortable that the technology's been proven.

23 Q. So, under your current testimony, the
24 Company would not be able to demonstrate the plan is
25 sufficient during operation?

1 MR. SECREST: Asked and answered numerous
2 times, your Honor.

3 MR. SIMMONS: Your Honor, I am just
4 trying to clarify his testimony. This is their joint
5 proposed language through the Joint Stipulation. I
6 am trying to determine the effect of it.

7 ALJ WALSTRA: I think, at this point, he
8 has answered to the best of his ability. I am going
9 to sustain.

10 MR. SECREST: Thank you.

11 MR. SIMMONS: No further questions.

12 ALJ WALSTRA: Thank you.

13 I skipped over you before, Ms. Leppla.

14 MS. LEPPLA: That's okay. No questions.

15 - - -

16 EXAMINATION

17 By ALJ Walstra:

18 Q. I had a brief question for you. On the
19 Exhibit 38, which is the MOU, page 4, letter H, it
20 says ODNR and Fish and Wildlife will review
21 quarterly, annual, interim, and final reports to
22 determine if there is a significant impact. Is that
23 the only way they would be notified of a potential
24 significant adverse effect?

25 A. No. So we currently propose in the BBCS

1 that, you know, if there is a significant mortality
2 event, they will be notified within 24 hours. If a
3 threatened or endangered species is found, they will
4 be notified within 24 hours so. Was that your
5 question?

6 Q. Yeah, yeah, exactly.

7 A. Okay. Yeah.

8 ALJ WALSTRA: Okay. Thank you. That's
9 all I have. You're all set. Thank you.

10 THE WITNESS: Thank you.

11 ALJ WALSTRA: Mr. Secrest, if you would
12 like to move your exhibits.

13 MR. SECREST: Yes, your Honor. We would
14 like to move for the admission of Applicant's Exhibit
15 31, 38, and 39. 31 is Mr. Good's testimony. 38 is
16 the Memorandum of Understanding. And 39 is the
17 Icebreaker Wind Bat Activity Monitoring.

18 ALJ WALSTRA: And just for
19 cross-reference, 38 and 39 are also attachments.

20 MR. SECREST: That's right. Thank you,
21 your Honor. They are attached at Attachment 2. They
22 are exhibits to Attachment 2 of Mr. Good's testimony.

23 ALJ WALSTRA: Thank you.

24 Any objections?

25 MR. STOCK: No.

1 MR. SIMMONS: No objection.

2 ALJ WALSTRA: Thank you. They will be
3 admitted.

4 (EXHIBITS ADMITTED INTO EVIDENCE.)

5 ALJ WALSTRA: Mr. Stock.

6 MR. STOCK: I move to admit Exhibit 15
7 which is at Tab Z. It is the 2018 Summary of the
8 2016 Risk Summary. And Exhibit 16 which is at Tab CC
9 which is the 20 -- July 11, 2018, Tetra Tech study.

10 ALJ WALSTRA: Thank you.

11 Any objections?

12 MR. SECREST: No, your Honor.

13 MR. SIMMONS: No.

14 ALJ WALSTRA: They will be admitted.

15 (EXHIBITS ADMITTED INTO EVIDENCE.)

16 ALJ WALSTRA: And Staff is still holding
17 off?

18 MR. SIMMONS: Staff is still holding off,
19 yes.

20 ALJ WALSTRA: Unless there is anything
21 else, we are adjourned for the day.

22 (Thereupon, at 5:23 p.m., the hearing was
23 adjourned.)

24 - - -

25

1 CERTIFICATE

2 I do hereby certify that the foregoing is
3 a true and correct transcript of the proceedings
4 taken by me in this matter on Wednesday, September
5 26, 2018, and carefully compared with my original
6 stenographic notes.

7
8
9 Karen Sue Gibson, Registered
10 Merit Reporter.

11 Carolyn M. Burke, Registered
12 Professional Reporter.

13 (KSG-6620)

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Summary: Transcript in the matter of the Icebreaker Windpower, Inc. hearing held on 09/26/18 - Volume III electronically filed by Mr. Ken Spencer on behalf of Armstrong & Okey, Inc. and Gibson, Karen Sue Mrs.