

In The Matter Of:
LIVINGSTON COUNTY ZONING BOARD OF APPEALS

April 29, 2015

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1 LIVINGSTON COUNTY ZONING BOARD OF APPEALS
 2 CASE SU-7-14
 3 PLEASANT RIDGE WIND ENERGY PROJECT
 4 April 29, 2015
 5 6:30 PM
 6 Livingston County Historic Courthouse
 7 112 West Madison Street
 8 Pontiac, Illinois

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1 (Commencing at 6:33 p.m.)
 2 **CHAIRMAN CORNALE:** All right, if we can go
 3 ahead and make our way to our seats, we'll go ahead
 4 and get started this evening. Chuck, roll call
 5 please.
 6 **MR. SCHOPP:** Good evening. This is the
 7 April 29th, 2015, continuation hearing of Livingston
 8 County Zoning Board of Appeals review of Livingston
 9 County Zoning Case SU-7-14, Pleasant Ridge Energy,
 10 LLC, Pleasant Ridge Wind Energy project. Michael
 11 Cornale.
 12 **CHAIRMAN CORNALE:** Here.
 13 **MR. SCHOPP:** John Vitzthum.
 14 **MR. VITZTHUM:** Here.
 15 **MR. SCHOPP:** Richard Kiefer. Diana
 16 Iverson. Howard Zimmerman. Joan Huisman.
 17 **MS. HUISMAN:** Here.
 18 **MR. SCHOPP:** And Gibs Nielsen.
 19 **CHAIRMAN CORNALE:** All right. I'll
 20 welcome everybody to our 30th night of these
 21 hearings. We're doing good, we're winding down
 22 here, we're in a good spot. Mr. Blakeman has a few
 23 comments he'd like to make. I'll go ahead and turn
 24 the mic over to him.

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1 **MR. BLAKEMAN:** Okay, I've been advised in
 2 a nice way that I need to be more dynamic in my
 3 speaking so that everybody can hear me, so can all
 4 the people in the back row hear me now?
 5 **AUDIENCE VOICE:** Yes.
 6 **MR. BLAKEMAN:** Okay. All right, you were
 7 advised Monday night that the rebuttal, surrebuttal
 8 procedures, list of interested parties entitled to
 9 make closing statements and a list of exhibits would
 10 be put on the county website and available on
 11 Tuesday. I was advised earlier this afternoon that
 12 attempts to upload these material were made, but the
 13 county website was full and out of memory. I wonder
 14 why.
 15 The county attempted to expand the
 16 website, was able to do so, and I think the
 17 materials became available at about three o'clock
 18 this afternoon. I have brought extra copies of the
 19 rules and the evidence -- or excuse me, a list of
 20 closing arguing people, and they'll be available at
 21 break or at the end of the hearing tonight if you'd
 22 like to pick one up.
 23 All right, I also have a comment about the
 24 lawyer objections. First of all, lawyer objections

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1 should be directed to the attention of the chair not
 2 to each other. And I would ask that, again,
 3 whatever objection you have, say it to the -- make
 4 it to the chair, and I would ask that the lawyers
 5 allow each other to complete their objections so
 6 that we all have an understanding of what is being
 7 said, what is being objected to.
 8 **CHAIRMAN CORNALE:** All right. Real quick
 9 this evening before we get going with rebuttal,
 10 we're going to take care of a few things that we had
 11 left over. The first -- the first issue we had, we
 12 heard some conversation last meeting about the
 13 Maier, Marcus Maier testimony. Given that
 14 conversation and conversation with counsel for our
 15 side, we are prepared to rule on that particular
 16 testimony.
 17 I'll read from this. The applicant has
 18 requested that all testimony and exhibits that were
 19 submitted by Marcus Maier on March 18, 2015, be
 20 stricken. The exhibits in question are UCLC
 21 Exhibits No. 130, 131 and 132. And the Zoning Board
 22 of Appeals reserved ruling on the testimony and
 23 exhibits permitted[sic] by this witness. UCLC
 24 Exhibits No. 131 and 132 will not be admitted into

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1 the record of proceedings and any reference to these
 2 exhibits in the record will be stricken.
 3 Furthermore, certain pages of UCLC Exhibit No. 130
 4 will not be admitted into the record, specifically
 5 pages or slides 12, 13, 14, 15, 16, 17, 19, 20, 21,
 6 28 and 36. And any testimony involving the
 7 information set forth on these pages or slides will
 8 be stricken. The remainder of UCLC Exhibit No. 130
 9 will be admitted into the record for consideration
 10 by the ZBA. All right, that should take care of the
 11 Maier testimony.
 12 With regard to a motion to reconsider
 13 filed by the UCLC, Mr. Luetkehans, he asked us to
 14 reconsider some evidence that was presented by
 15 Dassow, specifically Exhibit 6, and Slagel Exhibit
 16 8 -- excuse me, Exhibit 4. Mr. Blazer, you did not
 17 respond to this particular motion; is that correct?
 18 **MR. BLAZER:** I did not respond in writing,
 19 no, Mr. Chairman.
 20 **CHAIRMAN CORNALE:** Okay, for the sake of
 21 time, why don't you -- are you prepared to maybe
 22 give me a minute or two response to that or do you
 23 have any --
 24 **MR. BLAZER:** I will in just a second as

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1 soon as I can find my notes on that one.
 2 **CHAIRMAN CORNALE:** Okay, I guess while
 3 you're looking for notes, Mr. Luetkehans, is there
 4 anything that you would like me to consider
 5 regarding that in your two minute summary on this
 6 motion?
 7 **MR. LUETKEHANS:** No, Mr. Chairman, we have
 8 submitted everything.
 9 **CHAIRMAN CORNALE:** All right.
 10 **MR. BLAZER:** The -- I think one of them
 11 was Ms. Dassow's Exhibit 7 which was an exchange of
 12 emails between her and some folks at -- where? --
 13 at some Life Flight organization, and I had two
 14 copies of that.
 15 Number one, it was purported when this was
 16 presented that this was a follow-up to the -- this
 17 is a portion of Pleasant Ridge Exhibit 19 which was
 18 testified to quite a long time ago, and it was a
 19 package of communications from Invenergy to various
 20 emergency services providers with our draft
 21 emergency response plan requesting comments to that
 22 plan. The particular one to OSF St. Francis Life
 23 Flight was dated October 9, 2014, it's part of our
 24 Exhibit 19, and it was to Mr. Steven Cornillaud,

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1 C-O-R-N-I-L-L-A-U-D, director of operations at OSF
 2 St. Francis. None of the communications in Dassow
 3 Exhibit 7 are between her and Mr. Cornillaud.
 4 They're between her and other people. So that's the
 5 first issue.
 6 The second issue is the email that starts,
 7 this email thread is dated October 28th and Ms.
 8 Dassow says "...a third massive wind farm in our
 9 county and there are three other potential projects
 10 in the works," and none of that's in this record.
 11 So for those reasons, I would think Dassow 7 isn't
 12 appropriate.
 13 The other one was the exchange of emails,
 14 and I apologize, I don't remember the Slagel exhibit
 15 number for that, but it was an exchange of emails
 16 purported to be between Mr. Slagel, John Slagel, and
 17 Mr. Shindeldecker in Michigan and --
 18 **MR. JOHN SLAGEL:** Facebook messages.
 19 **MR. BLAZER:** Facebook messages, excuse me.
 20 I'm not on Facebook so I don't know what you call
 21 them, but in any event, there was an exchange of
 22 communications between Mr. Slagel and Mr. -- or
 23 purportedly between the two of them. Mr. Luetkehans
 24 has moved to reconsider your grant of my objection

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1 to those communications, but right at the very
 2 beginning after I objected, Mr. Slagel says, "I'm
 3 willing to skip these Facebook posts if that's fine
 4 with you guys," so he waived any -- any objection to
 5 my objection.
 6 Number two. The basis for your granting
 7 my objection was less about whether or not Mr.
 8 Shineldecker is going to testify. The basis for
 9 your sustaining my objection was: Is Mr.
 10 Shineldecker a doctor himself? Mr. Slagel: That I
 11 have no clue. I pointed out the record reflects
 12 that he's a 53-year-old industrial designer. And
 13 you said: All right, so he can't self-diagnose with
 14 authority. That was the basis for your granting my
 15 objection. That's all I have to say.
 16 **CHAIRMAN CORNALE:** Okay.
 17 **MR. JOHN SLAGEL:** I have something to say
 18 about it, but I...
 19 **CHAIRMAN CORNALE:** All right. We have
 20 looked through this obviously, this motion to
 21 reconsider, and I guess directed -- all right. I
 22 think with regard to these, I think we have set
 23 precedence in these hearings, so I, there again,
 24 looked at counsel and asked them to consider this as

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1 precedence has been set. They have prepared for me
 2 a statement. We'll go through it.
 3 Attorney for UCLC has filed a motion to
 4 reconsider involving Megan Dassow Exhibit No. 7 and
 5 certain pages of John Slagel Exhibit No. 4. The
 6 Dassow exhibit involved an email conversation
 7 concerning the impact of wind farms on Life Flight.
 8 Excluded from the John Slagel exhibit were pages 6
 9 and 7 involving Facebook comments and a photograph
 10 and a Facebook conversation above the heading of
 11 summary on page 8 of the exhibit involving Cary
 12 Shineldecker. The motion to reconsider and allow
 13 admission of Megan Dassow Exhibit No. 7 and pages 6,
 14 7 and a portion of page 8 of the John Slagel exhibit
 15 is denied.
 16 With regard to the remaining Megan Dassow
 17 exhibits, Exhibit No. 1 is not admitted and
 18 excluded, but Exhibits No. 2, 3, 4, 5, 6 and 8 are
 19 admitted into the record. Certain pages of Megan
 20 Dassow Exhibit No. 9 will not be admitted into the
 21 record, specifically pages 5, 6, 7, 8, 15 and 17,
 22 and any testimony involving the information set
 23 forth in these pages will be stricken. The
 24 remainder of Megan Dassow Exhibit No. 9 will be

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1 admitted into the record for consideration by our
 2 board.
 3 Concerning the remaining John Slagel
 4 exhibits, Exhibits No. 2, 3, 3A, 5 and 8 are
 5 admitted into the record for consideration by our
 6 board. Except for the pages set forth above which
 7 are excluded, the remainder of John Slagel Exhibit
 8 No. 4 is admitted into the record.
 9 All right.
 10 **MR. BLAKEMAN:** A comment concerning John
 11 Slagel's Exhibit No. 4. For purposes of the
 12 response, the pages -- or the exhibit did not have
 13 numbers on them, but for purposes of the response,
 14 the exhibit has been numbered pages 1 through 8 to
 15 correspond so that we can be -- we can specifically
 16 indicate where or which pages are excluded.
 17 **MR. JOHN SLAGEL:** Is the title page number
 18 1?
 19 **MR. BLAKEMAN:** What?
 20 **MR. JOHN SLAGEL:** Title page would be
 21 number 1?
 22 **MR. BLAKEMAN:** Yes.
 23 **CHAIRMAN CORNALE:** For those that didn't
 24 hear, the title page to the John Slagel exhibit, the

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1 first page of that is 1.
 2 All right, I believe that's everything we
 3 need to take care of housekeeping-wise. With
 4 that --
 5 **MR. LUETKEHANS:** If I may for the record?
 6 **CHAIRMAN CORNALE:** Yes.
 7 **MR. LUETKEHANS:** I assume that the
 8 remainder of the motion to reconsider, which is to
 9 strike Exhibits -- Pleasant Ridge Exhibits 2, 5, and
 10 I believe there was one other, I'm going off memory,
 11 is denied. Is that fact? So we're allowing CoBank
 12 hearsay but not Ms. Dassow's hearsay. Okay, thank
 13 you.
 14 **MR. BLAZER:** One final thing as a
 15 follow-up if I may, Mr. Chairman.
 16 **CHAIRMAN CORNALE:** Go ahead.
 17 **MR. BLAZER:** Since you granted my motion
 18 with respect to UCLC 131, which is the letter from
 19 Mr. Ambrose, I would renew my objection to that same
 20 letter that was in Mr. Hartke's presentation. I had
 21 objected to it at the time that he presented it.
 22 You had at that time overruled it. Now that you
 23 have granted my motion to strike that letter, I
 24 think it's inappropriate to allow it to remain in

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1 the record from Mr. Hartke who again basically did
 2 the same thing that Mr. Maier tried to do, get the
 3 Ambrose letter in when Mr. Ambrose is not
 4 testifying.
 5 **CHAIRMAN CORNALE:** All right. I'm going
 6 to deny that on the basis that, for the Hartke
 7 situation, that was the specific farm that was
 8 purported to -- or that was spoke about in that
 9 letter that he lived by. He had firsthand knowledge
 10 of that particular wind farm, the California Ridge
 11 wind project.
 12 All right. With that, we'll go ahead and
 13 I guess take off where we left off.
 14 **MR. BLAZER:** Just so we're clear on what
 15 we just did with Maier, and I may have to go through
 16 this with Mr. Hankard at the break, as we discussed
 17 on Monday, obviously I had to prepare to respond to
 18 all of Maier. We didn't know what you were going to
 19 grant and deny. He's probably still prepared to do
 20 that. I think we're going to leave that for the
 21 tail end of his presentation, so maybe at a break we
 22 can put our heads together and figure out what he
 23 needs to respond to and what he doesn't now that you
 24 ruled on that motion, if that's okay with you.

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1 **CHAIRMAN CORNALE:** Okay, that's fine.
 2 I'll tell you what. Here's the written language of
 3 that that I read.
 4 **MR. BLAZER:** Thank you.
 5 **CHAIRMAN CORNALE:** You're welcome to that.
 6 That way you can -- if it would be easier, I mean
 7 you left at a natural break, would you like to have
 8 somebody else come up and have Mr. Hankard review
 9 that? Whatever works.
 10 **MR. BLAZER:** No, I think we're -- we can
 11 keep going, that's fine, because there's a natural
 12 break for him responding to Maier --
 13 **CHAIRMAN CORNALE:** Very good.
 14 **MR. BLAZER:** -- so I think we'll be okay.
 15 **CHAIRMAN CORNALE:** Okay.
 16 **MR. BLAZER:** Give me just a second. If I
 17 may proceed?
 18 (Mr. Michael Hankard recalled as rebuttal
 19 witness.)
 20 **BY MR. BLAZER:**
 21 Q. Just a reminder you're still under oath.
 22 A. Thank you.
 23 Q. All right, let's go back to the Cape
 24 Bridgewater study. We left off with you talking

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1 about examples of absence of correlation between
 2 wind turbine operations and these reported
 3 sensations that the study is talking about. Is
 4 there additional information in the study that in
 5 your opinion confirms an absence of that
 6 correlation?
 7 **A. Yes. To be honest, the study is, the way
 8 I view it, is riddled with a lack of correlation.
 9 I'm kind of shocked that people are using that word.
 10 That usually has a statistical connotation where
 11 you've actually done an analysis of the data set and
 12 the trend is what you expected. That's correlation.
 13 That is not what Cape Bridgewater did in any way,
 14 shape or form.
 15 And that study was unique in that it
 16 started with the diaries of the residents. Instead
 17 of going out and measuring noise levels and saying,
 18 well, do these levels meet a certain threshold, they
 19 started with the diaries of the residents, and
 20 that's an old pursuit, I have no problem with that,
 21 and they tried to correlate those diaries when these
 22 people felt these sensations, and they can correlate
 23 them with vibration, with noise, and with the
 24 operational data of the turbines: were they**

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1 running, were they not running?
 2 You know, page 75 of the study says that
 3 there's no correlation of the results versus the
 4 sensation or vibration and limited correlation to
 5 noise. So right away he's saying with regard to
 6 dB(A), dB(C), 1000 hertz, any of that stuff, there
 7 was no correlation with what these people reported
 8 feeling and with what he measured.
 9 So then he looked at the power output of
 10 the wind turbines. Were they on when these people
 11 felt sick and off when they didn't? Or I shouldn't
 12 use the word sick but sensation. Page 212, when
 13 plotting the power output of the wind farm, from the
 14 initial assessment could not correlate the
 15 measurement of my results with observations except
 16 for showing with changes in power output at the wind
 17 farm was associated with higher sensation. So, in
 18 other words, it didn't really match when the
 19 turbines were on and off, but they thought that they
 20 noticed a pattern of when the turbines changed
 21 operation people reported a higher sensation.
 22 So then he tries to determine if that
 23 theory of his is correct. So he goes on to say that
 24 they think that there's higher sensation when the

1 turbines are seeking to start or there's change or
2 when the wind speed is 12 meters per second or
3 greater. I submit to you that's like a whole range,
4 that's everything. We've seen people report
5 sensations when the turbines were off, and he's
6 saying when they seek to start, when they're going
7 up and then when they're up. I mean it's all over
8 the map.

9 So, again, to try to -- he goes and he
10 takes these diaries, and there were 522 entries, and
11 he says that 194, so roughly half, fell into the
12 wind farm operation sensation hypothesis. So right
13 off the bat, only half of his data even falls into
14 the theory. That's not a lot of correlation when
15 half of your data doesn't make sense.

16 Then he says that -- so then he boiled it
17 down and he said let's look at just the 81 times
18 when people reported a five, when they were -- they
19 had strong sensations. 50 of those he said he
20 couldn't use because of equipment issues, it was too
21 windy or the turbines weren't operating. In other
22 words, he got a bunch of fives when the turbines
23 weren't operating. That does not speak to me to be
24 correlation in any way, shape or form.

1 off and people reported a five. That is not
2 correlation. I don't know -- I don't know what he
3 means by correlation. And finally, at one of the
4 houses that was not a sensitive person, you know, on
5 May 8th at noon they reported a five. The plant was
6 off.

7 So to answer your question, I do not see
8 any signs of correlation in the Cape Bridgewater
9 study.

10 Q. Thank you. You're aware that certain
11 others, and they were introduced by Mr. Hayes, Hayes
12 Exhibits 2 and 3, are letters which purport to be
13 congratulatory letters from Rand, Ambrose, Schomer,
14 Hessler. What's your response to those?

15 A. Yeah, I read these. So a number of
16 acousticians, many of which I know personally, wrote
17 to Mr. Cooper and congratulated him. Now Mr. Rand
18 says, and he uses the word correlation, "The
19 correlation of sensation to wind turbine tone level
20 brings wind turbine acoustics right to the door of
21 medical science." I don't know if Rob looked at the
22 data, I really don't, because where he thinks that
23 there's correlation, for all the reasons I just
24 explained to you, I have no idea. I really don't.

1 So he winds up with 31 ultimate diary
2 entries off of 522 that he then looks at. And he
3 takes the infrasound sonic level, I believe that's
4 what Cooper is saying, that it's about the
5 infrasound. It's not about 1000 hertz, it's not
6 about dB(A), it's about this thing he calls WTS,
7 wind turbine signature, which is the infrasonic
8 level, and he plots those.

9 And the thing about it is those levels are
10 below -- if you remember back to my presentation,
11 there's a standard threshold of hearing measurement,
12 and a researcher named Salt has theorized that there
13 could be another way for this infrasound to get to
14 us, and his threshold is 20 or 30 decibels below the
15 standard threshold. Well, these levels in Cape
16 Bridgewater are another 20 below that. I mean
17 they're 50 dB below the hearing threshold. It's
18 just hard for me to understand how that is
19 correlation.

20 And so in kind of wrapping up, I went
21 over, dug into the charts in the back, and I can
22 give you -- I gave you some cases, some examples the
23 other night. May 5th at 2:00 p.m. and May 8th at
24 4:00 a.m., these were all times when the plant was

1 Dr. Schomer and George Hessler, again
2 these are people I know, they say the results that
3 there are a cause-and-effect relationship between
4 turbine power output and a subject's response,
5 Cooper basically said, no, there wasn't. He said --
6 he said there was no -- we tried to correlate the
7 response to the turbine output power and they
8 couldn't find a pattern; turbines that were off many
9 times when these people reported a five. That is
10 not a cause-and-effect the way I see it.

11 Finally, there was an acoustician from
12 Canada I believe called -- Thorne is his last name,
13 says "The most intriguing part of the study is a set
14 of conclusions dealing with a pattern of high
15 sensitivity experienced by the residents with the
16 wind farm in operation." Again, a pattern. There
17 is -- there's no pattern, so I -- I don't know if
18 we're reading the same report.

19 Q. What about Mr. Ambrose?

20 A. Mr. Ambrose made no specific comments. It
21 was just kind of along the lines of congratulations,
22 it was a big report and you did a good job. It was
23 nothing specific.

24 Q. You're aware that Mr. Ambrose talked about

1 how dB(C) criteria should be applied and the
2 difference between dB(C) and dB(A)?
3 **A. Yes, he has purported that dB(C) and that
4 delta should be analyzed.**

5 Q. And what did Cooper say about that in the
6 Cape Bridgewater study?

7 **A. That -- that he found absolutely no
8 correlation between his results and dB(C) levels,
9 nor did he find any correlation between his results
10 and the difference between (C) and (A).**

11 Q. And was there a discussion in the report
12 about increases in the dB(A) Leq minus L95 level?
13 First of all, if you could explain what that means?

14 **A. Yeah, that's getting a little specific.
15 It has to do with how much there's a change in sound
16 level.**

17 Q. And when Cooper says those levels are not
18 associated with the wind farm but are due to
19 extraneous events, what does that mean?

20 **A. Extraneous events in his case would be
21 primarily the wind.**

22 Q. Not the turbines.

23 **A. Not the turbines, right.**

24 Q. And that was Cooper's language.

1 **windows open or not, and you can get in percent of
2 time of that, but their ultimate response is that
3 it's a 15 decibel reduction from outside to inside,
4 and that's with the windows open. When you start
5 looking at windows closed, it gets up about 20 to
6 21. Does that answer your question.**

7 Q. It does. So -- and going back -- I guess
8 I misrepresented something. Going back to the Cape
9 Bridgewater study for a moment, did Cooper address
10 the levels that he was finding indoors?

11 **A. Yeah, I touched on that Monday night. One
12 of the problems he has, it was so quiet inside that
13 his equipment couldn't get down that low. I mean
14 they were measuring levels into the 20s and
15 sometimes in the high teens dB(A), which is
16 extremely quiet.**

17 Q. And as far as those WHO standards are
18 concerned, you're aware that they identify 30 dB(A)
19 as the level below which there are no substantial
20 biological effects?

21 **A. Yes, that is the -- that is the exact WHO
22 language.**

23 Q. Okay. Are there any authorities that have
24 addressed this point about the outdoor levels versus

1 **A. Correct.**

2 Q. All right, I think we're finally done with
3 Cape Bridgewater. You're aware that Dr. Punch,
4 Jerry Punch, when he testified talked about the WHO,
5 World Health Organization, outdoor-to-indoor
6 corrections?

7 **A. Yes.**

8 Q. All right. First of all, can you explain
9 what those outdoor-to-indoor corrections by the
10 World Health Organization are?

11 **A. Okay, so, you know, we measure -- we tend
12 to measure turbine noise outside. Yes, some studies
13 like Cooper's get access to the houses inside, but
14 the regulatory requirements in Illinois are outside
15 criteria, so we tend to measure outside. But then
16 when you want to talk about sleep disturbance,
17 obviously people are inside, so you have to correct
18 the levels to go from outside to inside. And it's a
19 fairly complicated process that involves the
20 frequency of the source and the house and a number
21 of other things.**

22 **But the World Health Organization boiled
23 it down and summarized it for us, and their summary
24 is it depends on whether or not you have your**

1 the indoor levels that Mr. Punch talked about and
2 that obviously Cooper talks about?

3 **A. Well, yeah, the subject of the outside to
4 inside levels comes up quite often on projects for
5 the very reason that the WHO inside sleep
6 disturbance threshold needs to be dealt with, needs
7 to be addressed, so it comes up quite a bit. And it
8 came up recently in Ontario. There was a case
9 where, again it's kind of complicated, and Mr.
10 McMurtry got into quoting the inside/outside levels
11 and got it mixed up. He didn't understand that he
12 was referring to outside levels talking about inside
13 levels.**

14 Q. Is the Ontario decision you're referring
15 to Pleasant Ridge Exhibit 287, the decision in the
16 Platinum Produce matter?

17 **A. Yes, 287, that's correct.**

18 Q. And you're aware that Mr. McMurtry was one
19 of the people that Mr. Punch relied on?

20 **A. I believe he did, yes.**

21 Q. Okay. All right. And do you have in your
22 notes there what the Ontario tribunal said about Mr.
23 McMurtry's misunderstanding of the outside versus
24 inside levels?

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1 **MR. LUETKEHANS:** Objection, relevance.
 2 This is way beyond the scope of rebuttal. 287 was
 3 not allowed in, was not allowed to be discussed, and
 4 now we're going to go into specifics of a decision
 5 that was not allowed in in the response period?
 6 **MR. BLAZER:** Well, if I could respond to
 7 that, Mr. Chairman, very briefly? I'll wait until
 8 you're done talking.
 9 **CHAIRMAN CORNALE:** Yeah, go ahead.
 10 **MR. BLAZER:** Okay, two things. Number
 11 one, the issue of inside-to-outside was discussed by
 12 both Mr. Punch and it's addressed in the Cape
 13 Bridgewater report. Number two, the issue of Dr.
 14 McMurtry was likewise raised by Mr. Punch. He
 15 relied on him extensively both in his testimony and
 16 in his presentation.
 17 This opinion goes directly to the fact
 18 that part of the problem with the McMurtry was that
 19 he had outside levels confused with inside levels.
 20 So it is rebuttal. It's responding to evidence that
 21 was raised by several -- by at least two opposition
 22 witnesses, Mr. -- actually by the same one because
 23 Punch is the one who talked about Cape Bridgewater,
 24 so he talked about Cape Bridgewater and he talked

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1 about McMurtry.
 2 **MR. LUETKEHANS:** Can I respond to that
 3 please? Mr. McMurtry -- Dr. Punch's statements
 4 about Mr. McMurtry related specifically to a report
 5 that he did that was not in Ontario. This is
 6 improper impeachment of Mr. McMurtry who isn't here
 7 that somehow in some other case he was disagreed
 8 with. We can bring in all the cases he was agreed
 9 with, but that's --
 10 **MR. BLAZER:** Where's your --
 11 **MR. LUETKEHANS:** You know, can I finish
 12 please?
 13 **MR. BLAZER:** Sorry, I apologize.
 14 **MR. LUETKEHANS:** But that's not relevant
 15 either. None of it is relevant. It's not proper
 16 impeachment. It's not proper anything. That's not
 17 the issue before this board.
 18 **CHAIRMAN CORNALE:** All right. If we
 19 didn't allow the 287 Pleasant Ridge exhibit in, we
 20 obviously can't refer to it at this point. So any
 21 reference to McMurtry within that 287 will not be
 22 allowed, so I'll allow his objection.
 23 **BY MR. BLAZER:**
 24 Q. Let's switch to a different topic then,

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1 Mr. Hankard. Does the Cape Bridgewater report say
 2 anything on the issue of potential changes in
 3 regulations?
 4 **A. Yeah, it does. You know, again these**
 5 **reports like Cape Bridgewater, they're scientific**
 6 **studies, and people seem to want to take them much**
 7 **further than even their own authors.**
 8 **MR. LUETKEHANS:** Objection as to what
 9 other people want to do. That's not what we're here
 10 for. If he wants to testify as to something that
 11 was said, that's fine, but that's not what people --
 12 I don't even know what "people" means.
 13 **CHAIRMAN CORNALE:** All right, we'll allow
 14 the objection again.
 15 Q. What does the -- what does Mr. Cooper say
 16 about potential changes in regulation?
 17 **A. That his report should not be used as a**
 18 **basis for any change in regulation.**
 19 Q. All right. And that's from the executive
 20 summary page Romanette vi and at page 219?
 21 **A. Yes.**
 22 Q. Okay. Now, you are aware that some folks
 23 in this proceeding have suggested that compliance
 24 with statutory noise limits does not necessarily

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1 mean that there won't be health impacts from wind
 2 turbines, correct?
 3 **A. Yes.**
 4 **MR. LUETKEHANS:** You know what, I
 5 apologize, Mike. I didn't hear the end of the
 6 sentence, I apologize.
 7 **MR. BLAZER:** Sure, I'll read it again.
 8 It's in my notes.
 9 **MR. LUETKEHANS:** Thank you.
 10 Q. You're aware that some people in this
 11 proceeding have suggested that compliance with
 12 statutory noise limits does not mean that there
 13 won't be health impacts from wind turbines.
 14 **A. Yes, I have heard of that.**
 15 Q. All right. Have there been any studies
 16 done, particularly recently, that address the
 17 relationship between noise regulations and health?
 18 **A. Yes, yes. And so a group of researchers,**
 19 **primarily from my interest level is Geoff Leventhall**
 20 **from the United Kingdom, considered one of the best**
 21 **acousticians worldwide, particularly with respect to**
 22 **wind turbines, and he participated in a study**
 23 **recently that was published in the Frontiers in**
 24 **Public Health, and what they did is they looked at**

1 the question of --

2 Q. Hang on a second, let me hand it out.

3 A. Sure.

4 Q. For the record, what I've handed out is
5 marked as Pleasant Ridge Exhibit 325.

6 A. So they wanted to know are the current
7 regulations, the ones that regulate audible sound,
8 like the Illinois Pollution Control Board limits or
9 dB(A) limits that are in place across the country,
10 are those limits sufficient to protect against the
11 noise that is produced by wind turbines? In other
12 words, is there anything special about wind turbine
13 noise that is somehow not captured by today's
14 regulations?

15 So they went over worldwide regulations
16 for audible sound, infrasound, low frequency sound,
17 inside, outside. And case and time and time again,
18 they conclude that if you limit -- actually what
19 they said, if you limit dB(A), which is what is
20 essentially limited here by the Illinois Pollution
21 Control Board regulations, then you protect for low
22 frequency noise and infrasound. There's, you know,
23 no special attribute about wind turbine sound that
24 it somehow is not protected by the existing

1 just noise level measurements.

2 MR. BLAZER: The first thing we're talking
3 about here is whether or not we comply with the IPCB
4 noise levels and, secondly, that whether compliance
5 with those noise levels is protective of human
6 health. That is what this study addresses.

7 MR. LUETKEHANS: And is Mr. -- I guess I
8 would ask the board is Mr. Hankard somehow
9 testifying as a human health expert, which I don't
10 believe he is.

11 CHAIRMAN CORNALE: All right. Mr.
12 Hankard, just as I quickly look through this, can
13 you show me where I would find 1000 hertz 41 dB as
14 the highest level in any of these studies?

15 A. This study does not point out 1000 hertz.
16 Illinois is a little unique in regulating on an
17 octave band basis. Most countries or states limit
18 on a dB(A) basis.

19 CHAIRMAN CORNALE: Okay, stop there.

20 MR. LUETKEHANS: I'll withdraw my
21 objection. I just withdrew it.

22 CHAIRMAN CORNALE: Okay.

23 MR. LUETKEHANS: He just pointed out the
24 difference. I don't need it.

1 regulations.

2 MR. LUETKEHANS: Objection. Just glancing
3 at this, there is nothing in here about -- there are
4 certain -- it relates to USA Oregon and USA
5 Massachusetts, New Hampshire and Maine, and no --
6 and it talks about other countries. At no point in
7 here does it talk about the State of Illinois and
8 its regulations. We would ask that this be -- that
9 the testimony be stricken and that this exhibit not
10 be allowed.

11 MR. BLAZER: If I may. I think Mr.
12 Hankard just answered that, but if I can ask him a
13 question which will answer it, if I may, Mr.
14 Chairman.

15 CHAIRMAN CORNALE: (Nods head).

16 Q. Does this study address noise levels that
17 are equivalent to the levels that are in Illinois?

18 MR. LUETKEHANS: Same objection. It's not
19 an issue of levels. It's an issue of what are the
20 Illinois Pollution Control Board regulations --

21 MR. BLAZER: Right, which --

22 MR. LUETKEHANS: -- and are not --

23 MR. BLAZER: Sorry.

24 MR. LUETKEHANS: And are not limited to

1 CHAIRMAN CORNALE: Mr. Hankard, go ahead
2 and continue.

3 BY MR. BLAZER:

4 Q. Go ahead. Well, let me ask you one
5 question. What is the equivalent dB level as
6 established by the Illinois noise regs?

7 A. The way it works out again, as we know
8 from talking in these proceedings, that it's this
9 1000 hertz band that kind of limits us, and so the
10 end result of that is that the turbines in Illinois
11 can produce about 45 dB(A). That's the -- that's
12 really what it boils down to.

13 Q. And does this study address 45 dB(A)?

14 A. Yes, this study addresses the dB(A) limits
15 and their -- again, their ability to provide a
16 reasonable regulation of wind turbine noise.

17 Q. Turning to Mr. Hayes for a moment, on
18 slide 13 of Mr. Hayes's presentation, which is his
19 Exhibit 6 -- I'm sorry, I'm blocking the
20 microphone -- he said another reason to vote no is
21 the fact that the predicted ISO model's decibel
22 values do not include sound increases due to
23 amplitude modulation and resonance. Does the
24 Berger-Leventhall study address that issue?

1 **A. It does. With regard to amplitude**
 2 **modulation, which that's a fancy word for the level**
 3 **goes up and down a little bit, modulation means to**
 4 **change, and what -- this Berger-Leventhall study,**
 5 **this Pleasant Ridge 235[sic], makes a very**
 6 **interesting point. It says until noise is audible,**
 7 **the change in the level doesn't matter. You can't**
 8 **hear it, so you don't know if it's fluctuating. And**
 9 **I think that's a very important point.**

10 **So, yes, turbines have a small amount of**
 11 **amplitude modulation, but if it's -- if we're**
 12 **talking about infrasound and it's inaudible, that's**
 13 **immaterial.**

14 **Q. All right. Let's turn to a different**
 15 **topic. Someone introduced UCLC Exhibit 28, which is**
 16 **-- was a submittal by a Mr. Lamancusa,**
 17 **L-A-M-A-N-C-U-S-A, in the Highland Wind proceeding**
 18 **in Wisconsin. You're familiar with that?**

19 **A. Very.**

20 **Q. Okay. Were you involved in that**
 21 **proceeding?**

22 **A. I was. Yeah, I was the acoustical**
 23 **consultant in charge of, much as I am here, the**
 24 **prediction of noise and statement of compliance with**

1 **principals. I really have no idea what that means.**
 2 **ISO 9613 was developed by engineers and**
 3 **acousticians, it was done to national and**
 4 **international standards, and it's all about science,**
 5 **so I don't know where Mr. Lamancusa was going on**
 6 **that one.**

7 **And he asserts again that the ISO model**
 8 **does not predict appropriately. Again, with our**
 9 **validation of California Ridge data, we've shown**
 10 **that it does a very good job of predicting what**
 11 **we're going to find in the field.**

12 **One of -- Mr. Lamancusa actually cites a**
 13 **paper that I have cited in the Highland proceeding.**
 14 **It's by a man named Mr. Kaliski and Mr. Duncan, and**
 15 **Mr. Lamancusa says that he claims that Kaliski and**
 16 **Duncan say that the ISO model underpredicts, but**
 17 **here's a quote from that very study. "We found the**
 18 **best fit between modelled and monitored sound levels**
 19 **for this case --" which is a wind turbine project**
 20 **"-- occurs when using ISO with no ground**
 21 **attenuation," which is exactly what we did. So for**
 22 **many of those reasons I do not agree with Mr.**
 23 **Lamancusa.**

24 **Q. And at the end of the day, did the**

1 **the regulations.**

2 **Q. All right. And do you agree with Mr.**
 3 **Lamancusa's statements in that exhibit?**

4 **A. No, I did not agree with anything that Mr.**
 5 **Lamancusa brought to the table during that**
 6 **proceeding. I mean, first of all, his resume states**
 7 **that his sum total experience of being around or**
 8 **measuring wind turbines consists of one day. I've**
 9 **been around these things and measuring them months**
 10 **at a time, weeks at a time, over the course of**
 11 **years. So it seems a little bit like that his**
 12 **experience isn't up to what some of the things he**
 13 **said.**

14 **For example, he -- he tries to make the**
 15 **case that wind turbines emit sound and it propagates**
 16 **out differently than other sources. And by the very**
 17 **virtue of the fact that our ISO model, which assumes**
 18 **it's a normal source, matches quite well with our**
 19 **measurements, just goes to show you that he's not**
 20 **right about that. It's just -- it's just**
 21 **misinformation.**

22 **He -- and I quote page 8 of his -- of the**
 23 **document, Exhibit 28. He says that ISO 9613 does**
 24 **not calculate noise levels based on scientific**

1 **Wisconsin Public Service Commission issue the permit**
 2 **that was requested based on your study?**

3 **A. Yes, they did.**

4 **Q. All right. I have the Harrison paper**
 5 **next. I guess we can skip that one. That was UCLC**
 6 **132.**

7 **So let's go to John Slagel's presentation.**
 8 **Have you reviewed Slagel Exhibits 3, 3A and 5?**

9 **A. Yes, I have.**

10 **Q. Okay. And do you agree with Mr. Slagel's**
 11 **opinions?**

12 **A. I don't -- I don't agree with his**
 13 **opinions. He created an ISO model himself. He says**
 14 **he is a programmer and I don't deny that in the**
 15 **least. He says it wasn't that hard. It is just**
 16 **some math, so someone who's inclined as such can do**
 17 **this, I have no problem with that. But he says that**
 18 **he took his model and predicted at the houses on**
 19 **Pleasant Ridge, as we did, and he said, "Well, I was**
 20 **within a dB, so we matched perfectly." Well, he**
 21 **then goes on to really split hairs about tenths and**
 22 **hundredths of a dB. So you can't be "hope I'm**
 23 **accurate to a dB" and then I'm going to go split**
 24 **hairs. You can't do that.**

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1 **He also claimed that he predicted 39 dB at**
 2 **the Hartke residence over on Cal Ridge. My model**
 3 **predicted a 41, so I don't know -- you know, he**
 4 **uses -- he said he used Google. We use very**
 5 **accurate GIS data. You know, I don't know the**
 6 **reasons for the differences, but there are**
 7 **reasonably significant differences between the model**
 8 **that he came up with and the model that we came up**
 9 **with.**

10 **And I would like to reiterate, we**
 11 **double-checked the results of our model against two**
 12 **other models, so we did a very professional level of**
 13 **quality assurance in my opinion.**

14 Q. Have you also examined what he referred to
 15 as his contour plots?

16 **A. Yes, I have.**

17 Q. Okay. And your modelling is what's called
 18 point modelling; is that correct?

19 **A. Yeah, we -- that's correct, we predict at**
 20 **individual points in space.**

21 Q. All right. And which is more accurate,
 22 contour modelling or point modelling?

23 **A. Well, point modelling is, because a**
 24 **contour model is really predicting a bunch of**

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1 **points, but then you have to kind of -- to draw the**
 2 **line in between, you have to interpolate. So for me**
 3 **I prefer to rely on the point model versus contour.**

4 Q. All right. Let's go to the Illinois land
 5 standards. I have a series of collated exhibits.
 6 Let's start with Pleasant Ridge Exhibit 226.
 7 There's been a lot of discussion at this hearing
 8 about the specific levels at particular bands. Is
 9 this the regulation that establishes those levels
 10 both for daytime and nighttime?

11 **A. Yes, it is.**

12 Q. Okay. And where do you measure to
 13 determine compliance with that regulation?

14 **A. The point of reception or the point where**
 15 **you have to analyze to determine compliance is --**
 16 **well, it says it right here, "on any Class A land,"**
 17 **so it's -- you know, you want to analyze on the**
 18 **Class A land.**

19 Q. The next exhibit is Pleasant Ridge 235 and
 20 this -- I should say for the record, I'm sorry, 226
 21 is 35 Illinois Administrative Code 901.102.
 22 Pleasant Ridge 235, you recognize this
 23 one?

24 **A. Yes.**

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1 Q. All right. And this is 35 Illinois
 2 Administrative Code 900.101, the definitions?

3 **A. Correct.**

4 Q. And you will see if you go to the third
 5 page, there's a definition for LBCS, the land-based
 6 classification standards, which designates land use
 7 functions by means of numeric codes?

8 **A. Right.**

9 Q. And that -- that's the LBCS or those are
 10 the classes that are referred to in Exhibit 226?

11 **A. Right, right.**

12 Q. The next exhibit is Pleasant Ridge 236,
 13 and that's, for the record, 35 Illinois
 14 Administrative Code 901.101, classification of land
 15 according to use. And this regulation is
 16 specifically the one that implements those
 17 land-based classification designations with respect
 18 to the specific noise levels in Exhibit 226?

19 **A. Could you repeat that whole thing?**

20 **MR. BLAZER:** June, could you?
 21 (Requested portion of the deposition was
 22 read by the court reporter.)

23 **A. The answer to that is yes.**

24 Q. Okay. And then finally, Pleasant Ridge

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1 Exhibit 225, 35 Illinois Administrative Code
 2 901.Appendix B. What is that?

3 **A. This is a listing of all the land use**
 4 **classification codes.**

5 Q. All right. And based on these regulations
 6 that we've just gone through, in Illinois are the
 7 noise limits property line based or land use based?

8 **MR. LUETKEHANS:** Objection. He's not an
 9 attorney.

10 **MR. BLAZER:** He doesn't have to be an
 11 attorney. He's the acoustician who implements these
 12 regulations.

13 **MR. LUETKEHANS:** He's now giving a legal
 14 opinion?

15 **CHAIRMAN CORNALE:** You can answer this. I
 16 would like you to please.

17 **A. I can. I mean it's part of my job on**
 18 **every project that I work on.**

19 **CHAIRMAN CORNALE:** All right, so we'll
 20 deny that. Go ahead.

21 **A. So, yeah, it is up to an acoustician to**
 22 **determine where they're going to predict noise**
 23 **levels to determine compliance. In Illinois, you**
 24 **need to predict on the receiving property for the**

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1 **Class A land use.**
 2 Q. Not at the property line.
 3 **A. It's not at the property line, no. It's**
 4 **at the Class A land use.**
 5 Q. All right. And going back to Pleasant
 6 Ridge 225, the list of LBCS codes.
 7 **A. Yes.**
 8 Q. What is the code for a single family
 9 residence?
 10 **A. That's 1100, private household.**
 11 Q. All right. Are there any guidance
 12 documents from the land-based classification system
 13 regarding multiple uses of a parcel of property?
 14 **A. Yes. Again, it's my job to understand**
 15 **these, how these regulations are implemented, and**
 16 **one thing that I rely on is this LBCS, land-based**
 17 **classification system working paper, and they get**
 18 **into how a single parcel of land can have multiple**
 19 **uses under the land-based classification code, so --**
 20 Q. Okay, sorry to interrupt you, but is that
 21 Pleasant Ridge 352, LBCS accessory uses?
 22 **A. If it's the same White Paper, then --**
 23 Q. Yes, the White Paper.
 24 **A. -- yes.**

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1 Q. Okay.
 2 **A. So -- and, in fact, they specifically get**
 3 **into farms and talking about how part of the land**
 4 **can be agricultural and part of the land can be a**
 5 **residence, and it's clear that the application of**
 6 **this was such that you can have multiple uses on one**
 7 **piece of property.**
 8 Q. And has the Illinois Pollution Control
 9 Board whose regulations we're dealing with itself
 10 provided any guidance on the issue of multiple uses
 11 and where you have them?
 12 **A. Yeah, and that would be Pleasant Ridge**
 13 **228, which is the Knox-Turris case, and they got**
 14 **into this very issue. It has --**
 15 Q. Hang on one second, let me circulate this.
 16 **MR. BLAZER:** Okay, Tom?
 17 Q. All right, we're going to talk about
 18 Knox-Turris. Turris is T-U-R-I-S-S. Knox is
 19 K-N-O-X.
 20 **A. So this was a case where they had an**
 21 **industrial source, in this case, coal.**
 22 **MR. LUETKEHANS:** Mr. Hankard, I don't mean
 23 to interrupt, but, June, it's actually T-U-R-R-I-S
 24 not one R and two S's.

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1 **MR. BLAZER:** Did I say it the other way?
 2 I'm sorry.
 3 **A. An industrial source of noise, a coal**
 4 **mining operation, and a neighboring person**
 5 **complained about the noise, and measurements were**
 6 **made at the residence and then they were made at a**
 7 **pond that was on the property. And the noise levels**
 8 **at the pond exceeded the limit, but the noise levels**
 9 **at the residence did not. And the crux of this**
 10 **ruling was that the pond is not a house and it's not**
 11 **Class A, so therefore -- I said it exceeded code,**
 12 **but it didn't. There is no code. It's**
 13 **unclassified. It doesn't have a limit. But at the**
 14 **residence, which is Class A and has a limit, the**
 15 **coal company met the limit.**
 16 **So that is really what this -- and this**
 17 **just backs up what this White Paper said, which is**
 18 **you have multiple uses on one property, and you have**
 19 **to deal with them as they are classified under the**
 20 **LBCS.**
 21 **MR. BLAZER:** Mr. Chairman, this is -- I'm
 22 at a natural break. We're almost at 7:30. I don't
 23 know if you want to break now or have me keep going?
 24 **CHAIRMAN CORNALE:** Yeah, why don't we take

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1 a ten minute break. So I got 7:27. Try to get
 2 going again at 7:37.
 3 (Recess at 7:27 p.m. to 7:38 p.m.)
 4 **CHAIRMAN CORNALE:** All right, if we can go
 5 ahead and get in our seats and get going. All
 6 right, Mr. Blazer, when you're ready, you can go
 7 ahead and begin.
 8 **MR. BLAZER:** Thank you, Mr. Chairman.
 9 **BY MR. BLAZER:**
 10 Q. Mr. Hankard, have you looked at the
 11 specific modelling results for some of the folks
 12 that have actually testified in this proceeding?
 13 **A. Yes, I have.**
 14 Q. Let's start with George Busch. What are
 15 the readings on that? Which receptors and what are
 16 the readings?
 17 **A. Right, I believe the Busch residence is**
 18 **our receptor R582, and the predicted level there is**
 19 **39.1 at the residence. So, you know, at that**
 20 **residence, we're a full 2 decibels below the limit.**
 21 Q. How about Nancy Homerding, receptor 011?
 22 **A. Right. That's our receptor 11, and at the**
 23 **1000 hertz band we're at 40.2 at the house.**
 24 Q. And then how about Matthew Kaisner?

1 A. That one was 40.6 at the house.

2 Q. And how about Don Slagel?

3 A. The Slagel residence was 41.0 at the
4 house.

5 Q. Okay. All right, so let's -- since the
6 Ambrose letter is out, I'll put it, we'll refer to
7 the discussion of the Ambrose letter in Mr. Hartke's
8 presentation. And you've reviewed the Ambrose
9 letter, correct?

10 A. I have.

11 Q. And what's your response to the Ambrose
12 letter?

13 A. Steve came out and made all kinds of -- I
14 guess I'll be specific.

15 Q. Before you start, Mr. Hankard, are you
16 aware that Mr. Hartke testified that Mr. Ambrose
17 actually never visited the California Ridge project?

18 A. I am aware of that, yes.

19 Q. All right, then could you continue please?

20 A. One of Steve Ambrose's big points against
21 my Cal Ridge study is that we did long-term
22 unattended monitoring, so we were not there at all
23 times, and that's true. And he claims that the
24 Illinois Pollution Control Board measurements are

1 all these tools to enable us to do what the Illinois
2 Pollution Control Board regulations are asking us to
3 do.

4 You know, and back to the fact that Paul
5 Schomer was -- Steve again had a lot of criticisms
6 of my report, and I think his concluding remarks
7 were that it shouldn't be used as a basis for
8 anything. But this report was done with Paul
9 Schomer who is the chairman of the standards
10 committee for the Acoustical Society of America. I
11 mean if there's anybody that knows how to do
12 something per a standard, it's the guy that has
13 written many of the standards that my industry
14 relies on.

15 Steve states that, quote, measurements
16 were not made during mandatory operational
17 curtailment or harvest months. We were painfully
18 clear about this in the report. There was -- the
19 project was under curtailment, but it was for bats,
20 mitigating for bats, and the way they do that is the
21 turbines don't operate in light wind. So instead of
22 cutting in when the wind gets to 3 and a half meters
23 per second, they let the wind get a little stronger.
24 So none of the curtailment had anything to do with

1 supposed to be made with an observer present. But
2 again, wind turbine projects, if you look at Cape
3 Bridgewater, there's a quote in there that says a
4 majority of the conclusions in this report were
5 based on the results of unattended monitoring. It's
6 just the nature of the beast. It's not practical
7 for an acoustical consultant to remain on-site for
8 weeks and months at a time.

9 And that said, we use the tools of our
10 trade today to be there while not being there, if
11 you will. For example, we record audio, so if we
12 are reviewing the data and there's a certain hour
13 that there's something that we want to know about,
14 we can -- we can listen. We have frequency spectra,
15 so that's like a fingerprint, and it tells us -- we
16 can tell when it's traffic and we can tell when it's
17 wind and we can tell when it's wind turbines. And
18 then we also measured every ten seconds, that was
19 something that Paul Schomer was very specific about,
20 so that you can see the time change, so when a car
21 passes by, you can see it and you can eliminate it
22 from the data.

23 So, no, we were not there at all times. I
24 was there every couple of weeks. But again, we have

1 the full operation of the plant, which is what we
2 were concerned with, so that's just a red herring.
3 Steve, he's just trying to confuse matters on that.

4 MR. LUETKEHANS: Objection as to what Mr.
5 Ambrose may or may not be doing. That's
6 inappropriate testimony.

7 CHAIRMAN CORNALE: We'll allow that
8 objection, so if you can strike that from the
9 record, any reference to what you feel Mr. Ambrose
10 is doing in the report.

11 A. Fair enough. You know, Steve also
12 criticizes for not making measurements during
13 harvest months. First of all -- well, maybe he
14 didn't say we didn't do measurements, but we didn't
15 utilize measurements, and it's true. In October,
16 out there you have distant farming equipment that is
17 making the same type of sound in terms of frequency
18 as the turbines, and it becomes difficult, if not
19 impossible, to separate the two. And it wasn't like
20 we packed up and went home and said, ah, you know,
21 we can't separate the two. No, we kept measuring.
22 Again, we measured in August, September, didn't get
23 enough data, measured in October, we had trouble
24 with the harvesting, so we kept going until we got

1 enough data to make a scientific judgment, and
2 that's why we do that.

3 Steve says ineffective interpretation of
4 audio recordings. First of all, I want to -- we
5 have very high quality equipment. These audio
6 recordings are better quality than a CD, and the
7 playback systems that we use are very sophisticated.
8 And I think what he's referring to is in there I
9 had -- in full disclosure, I had noted that there
10 was one hour that we couldn't tell what was going
11 on, and I put that note in the report to be honest
12 that there was this one hour where we couldn't tell
13 what was going on, and so Steve jumps on that and
14 says that we did ineffective interpretation of audio
15 recordings. That's just not at all the truth.

16 Steve says, and I quote, highly subjective
17 methodology was used to select noise levels -- noise
18 level measurements for analysis. Highly subjective?
19 No, not at all. It was the standard tools of the
20 acoustics trade. If you see a car pass by in the
21 time signature, that's not a wind turbine, don't
22 analyze that. That is not subjective. With the
23 harvest, it was a frequency issue. We could tell
24 there was these little spikes in the frequency plot

1 this study for the data that we reported. There was
2 no cheating. I don't know if that's being
3 insinuated. But the turbines at Cal Ridge were
4 operating at full power when we did that study.

5 That is all I have to say about what
6 Ambrose said of our Cal Ridge study. Let me
7 summarize by saying that I stand very much behind
8 what we did at Cal Ridge, and everything that Steve
9 said in rebuttal of my work I don't think has any
10 basis whatsoever.

11 Q. All right. Then one final subject. I
12 hope we did this right on the break, it's the Maier
13 presentation, what we think is left of it in this
14 record.

15 MR. BLAZER: And for the record, Mr.
16 Chairman, what we've done is he has the Maier
17 presentation up there, he circled certain pages that
18 he's prepared to respond to, and we compared them to
19 the list that you handed me, so I think we're going
20 to cover the ones that are in that he's prepared to
21 address.

22 Q. So you may proceed, Mr. Hankard.

23 A. All right. Well, with regard to the Maier
24 presentation, so right now I'm on page 11, and he

1 when a combine or a grain dryer was operating.
2 That's not subjective. We know that that's what it
3 is and that's why we didn't use that data.

4 Steve says, quote, four months of noise
5 level data had to be reduced to tables and charts
6 with poor audio quality data. Again, yes, tables
7 and charts is what engineers produce, so yes, we
8 produce tables and charts, just like Cape
9 Bridgewater produced hundreds. You have to reduce
10 the data. That's what -- that's our job.

11 And again, poor, poor audio quality and
12 data. I don't know why he makes a statement like
13 that when we list the exact equipment we used and
14 it's extremely high quality.

15 So Steve gets into making statements about
16 how he says you produce less electric power and
17 noise at full RPMs, and he was criticizing us for
18 not publishing the fact that the turbines were at
19 full power; instead, we chose to publish the fact
20 that they were spinning as fast as they could. But
21 as turbine engineers will tell you, the two are
22 inextricably related. The faster they spin, the
23 more power they produce. And the turbines at Cal
24 Ridge were operating at full capacity when we did

1 says that the applicant did not provide 1000 hertz
2 band, narrowband dB -- or excuse me, 1000 hertz 1 dB
3 narrowband noise contours. No, we didn't. We're
4 not required to. And again, I don't believe that
5 contours are as accurate as what we did.

6 He says here that there's no room for
7 error, and he goes into on other pages -- let's see
8 here. For example, page 25 is titled "Why the lack
9 of safety margins?" I hope I've explained to you,
10 but let me reiterate, that we do have a safety
11 margin. We know that -- we compared our levels to
12 what we did at Cal Ridge and we expect to be a solid
13 2 dB under the limit.

14 So to say that we have no safety margin is
15 not at all true. We absolutely have safety margins,
16 to say nothing of the very conservative nature in
17 which we went about our predictions which I have
18 gone over in my presentation.

19 One other point that this presentation
20 brought up was the LNTE blades, and he makes the
21 claim that they are not tested I believe, and that's
22 just not true. General Electric who manufactures
23 this equipment is required to test this equipment
24 per the IEC 61400 standards, just like they do every

1 other wind turbine, just like every other
2 manufacturer does to all their equipment. So these
3 LNTE turbines have been tested and the data that we
4 use in our model is from those tests and it was done
5 per this international standard. So I'm not sure
6 why they say that the LNTE blades have not been
7 tested.

8 He also in the presentation of course gets
9 into the issue of property line compliance and that
10 we're supposed to measure at the property line. For
11 all the reasons that I've spoke about previously,
12 that's not my opinion at all.

13 I believe those are the only points that I
14 had there.

15 MR. BLAZER: And with that, Mr. Chairman,
16 that's all I have.

17 CHAIRMAN CORNALE: Very good, thank you.
18 All right, at this point, do we have any questions
19 for Mr. Hankard? ZBA, do we have any questions?
20 John, have any questions?

21 MR. VITZTHUM: I've got one question for
22 you.

23 CHAIRMAN CORNALE: All right.
24 QUESTIONS BY

1 have to separate those two.

2 Q. Okay, so that's all the regulation says is
3 the wind turbine.

4 A. It is, yes, the source in question, which
5 is, in this case, the wind turbine. So it's the
6 separation of the data. That in October we could
7 not properly separate the two, because harvest
8 equipment and wind turbines actually produce noise
9 in the same frequency range, so Steve was
10 criticizing that aspect of our report.

11 Q. So if a person lives next to a busy road
12 and they get so much noise year-round or whatever,
13 the fact that the windmill comes in and makes that
14 noise that much louder, nobody cares.

15 A. I don't -- I don't know that nobody cares,
16 but the IPCB, the Illinois Pollution Control Board
17 regulation, is for the source in question.

18 Q. Yeah, but I mean if the person is living
19 there and they have something making a certain
20 amount of noise that keeps them right below that
21 threshold and you bring something else in that
22 pushes it above it, nobody cares because you got to
23 sort the two out, and as long as one is -- you're
24 not combining them together.

1 MR. VITZTHUM:

2 Q. When you talked about I think it was the
3 Ambrose, is that --

4 CHAIRMAN CORNALE: Use the microphone,
5 John.

6 MR. VITZTHUM: All right, how do you turn
7 that durn thing on?

8 BY MR. VITZTHUM:

9 Q. You talked about I think it was Ambrose?

10 A. Yes.

11 Q. And he asked about in the fall of the
12 years you didn't take them. So what's the
13 difference if they're running in the fall? I mean
14 you measure the sound. What -- do they just say you
15 have to have the windmill noise and that? I mean,
16 they're going to live with this other sound plus the
17 windmills, so why can't they measure that?

18 A. So when we go out to measure wind turbines
19 or any other source for that matter and put a
20 microphone out in the environment, that's picking up
21 the sound from everything: traffic, trains, wind,
22 windmills, wind turbines, harvesting equipment,
23 everything. So then -- but the regulation says that
24 the wind turbine noise shall not exceed X, so we

1 A. Well, if you can separate the two, then
2 that's what you do. And again, you're looking at
3 the level of turbine-only aspect of your data.

4 Q. But still, if you combine two of them
5 together, they could amount to more than that, but
6 they're telling you you don't have to worry about
7 that, each one stands on its own, but if you combine
8 the two and it goes over, nobody cares.

9 A. Well, in fact, the regulation actually
10 says you have to separate the two. It lays out
11 procedures for doing just this very sort of thing.
12 It envisioned that, that you're going to have to
13 separate out sources that you aren't concerning
14 yourself with with the source that you are
15 concerning yourself with.

16 Q. Okay, but then -- so you're sorting them
17 out and they both add up to right below the
18 threshold, yours does and Joe Blow's does, but the
19 person living there has to live with combined which
20 could be more than that, right?

21 A. Yes. I mean, in fact, when cars go by on
22 the road, they're -- you know, the level can go up
23 to 70, and the cars in the end are far louder on a
24 per instance basis.

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1 **MR. VITZTHUM:** Okay.
 2 **CHAIRMAN CORNALE:** ZBA, do we have any
 3 other questions?
 4 **MS. HUISMAN:** I do.
 5 **CHAIRMAN CORNALE:** All right.
 6 **QUESTIONS BY**
 7 **MS. HUISMAN:**
 8 Q. Mr. Hankard, can you go to Pleasant Ridge
 9 Exhibit 226 please? It's 901.102, sound emitted to
 10 Class A land.
 11 **A. Yeah. 226?**
 12 Q. Uh-huh.
 13 **A. Yes, I have it.**
 14 Q. In both A and B, I noted that the last, I
 15 guess, two lines of the -- two and a half lines of
 16 the section say "when measured at any point within
 17 such receiving Class A land, provided, however, no
 18 measurements of sound pressure level shall be made
 19 less than 25 feet from such property-line-noise-
 20 source."
 21 So my concern is I understand that a
 22 parcel could have multiple uses. I read this to say
 23 that that measurement cannot be taken closer than 25
 24 feet from the -- to the property line or parcel

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1 line. So you're not going to be at the outer edge
 2 of the property, but where does it say that this has
 3 to be at the foundation of the residence if we're
 4 talking about Class A land?
 5 And I have been trying to read through
 6 your White Paper to find that and I'm not to the
 7 point where I've read it yet. Could you point me --
 8 **A. Right.**
 9 Q. -- to that?
 10 **A. Well, the White Paper is not specific to**
 11 **Illinois Pollution Control Board regulations, so you**
 12 **may not find that in there. And then on the 25**
 13 **feet, it says that you're not supposed to -- don't**
 14 **want to measure less than 25 feet from the source.**
 15 **Not from the property line, from the property line**
 16 **source. And what that is is that if you have a --**
 17 **let's say you have a farmer and he wants to plow**
 18 **right up to his property line. If you didn't have**
 19 **that 25 foot allowance in there, then someone could**
 20 **say, hey, you're over the limit. They're required**
 21 **to step back 25 feet. So that's really kind of a**
 22 **different issue.**
 23 Q. This says though "within such receiving
 24 Class A land."

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1 **A. Right. And again, that gets back to the**
 2 **fact that a barn is not a Class A land, a driveway**
 3 **is not a Class A land.**
 4 Q. Okay. So how do we determine where 25
 5 feet from Class A to Class B land when you have a
 6 multiple -- when you have a property that's a
 7 multiple use, that has multiple uses?
 8 **A. Well, again --**
 9 Q. That's what I'm trying to figure out by
 10 all the documentation that you all provided, and I'm
 11 not finding where I -- because I'm struggling with
 12 the fact that you measure the sound at the
 13 foundation of a home.
 14 **A. Versus?**
 15 Q. Versus how far out from the foundation of
 16 the home do you go? If you're not going to the
 17 property line of the property, then what kind of --
 18 what kind of --
 19 **A. Well, again, I just keep --**
 20 Q. -- area do you have?
 21 **A. -- coming back to the fact that the land**
 22 **use classification code that defines Class A land in**
 23 **this case is a household. To me, that's the house,**
 24 **and so that's where we put --**

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1 Q. Well, what do you do --
 2 **A. -- our point.**
 3 Q. -- with the pieces in between the house
 4 and the barn and the pond and the X and the Y and
 5 the Z?
 6 **A. Those are not classified. They're**
 7 **unclassified.**
 8 Q. They're unclassified.
 9 **A. They're unclassified.**
 10 Q. So if I'm sitting on my patio or off the
 11 edge of my patio and that is unclassified, so if the
 12 measurement -- because the wind turbine is on that
 13 side of my house and the measurement is higher than
 14 41 dB, it does not matter.
 15 **A. Well --**
 16 Q. There's no -- there's no buffer.
 17 **A. Well, let me help you understand the order**
 18 **of magnitude here. If you were to go from the**
 19 **center of the house and go out, let's say, 50 feet**
 20 **in any direction, which would encompass any standard**
 21 **house and patio and what have you, at most on this**
 22 **project the noise level will increase by .3**
 23 **decibels. But oftentimes it's -- you've got**
 24 **turbines in different directions, so if you move**

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1 closer to one, you move further away from the other.
 2 **So in reality it's going to be about maybe a tenth**
 3 **or a 2 decibel change.**
 4 Q. I'm just looking at your list when we have
 5 residences that have -- that are at 41.0, so if
 6 there's no buffer --
 7 **A. Well, again --**
 8 Q. -- you can be pointing at something, that
 9 doesn't necessarily mean that has to be at the
 10 foundation of the home, and the statute I'm reading
 11 doesn't lead me to think that, and if it's in this
 12 case, I haven't gotten through the whole entire case
 13 yet either.
 14 **A. Well, first, getting back to what you**
 15 **said, we do have a buffer, we do have a 2 decibel**
 16 **buffer. So to say that we don't have any is not**
 17 **completely true. And all I can say is I keep going**
 18 **back to household, house.**
 19 Q. Buffer, 2 decibel buffer from what?
 20 **A. From the fact that when we compare what we**
 21 **got on California Ridge, the model was showing 2**
 22 **decibels high. So a 41 on our model I expect to be**
 23 **39 in reality.**
 24 Q. Have you measured -- have you got actual

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1 readings at any other wind facility than Cal Ridge?
 2 **A. Oh, yes, many.**
 3 Q. And how did your actual compare to your
 4 predictions?
 5 **A. We don't often predict it back to the**
 6 **model because in those cases our -- our job is to**
 7 **prove compliance or lack thereof with the**
 8 **regulation.**
 9 Q. See where I'm going with this? I'm trying
 10 to figure out if this model in our prediction is
 11 going to meet what the -- what our ordinance says.
 12 So if there's --
 13 **A. There are a number of pieces of literature**
 14 **out there, including that Kaliski-Duncan paper that**
 15 **I mentioned before, that consistently show that if**
 16 **you use the ISO model the way we have with zero**
 17 **ground, you will not exceed the level that you**
 18 **expect. That is what the science is showing us.**
 19 **It's what it's showing me on my projects and it's**
 20 **what it's shown other researchers.**
 21 MS. HUISMAN: Okay, that's it for now.
 22 QUESTIONS BY
 23 CHAIRMAN CORNALE:
 24 Q. All right. I guess just back to this, I'm

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1 still not -- I'm still not clear with regard to her
 2 question. Explain to me what you feel that last two
 3 lines mean.
 4 **A. The 25 feet?**
 5 Q. In its entirety. Break that down for me
 6 and --
 7 **A. The part beginning with "except as**
 8 **provided?"**
 9 Q. Yeah, towards the end of it, but we can go
 10 through the whole thing if that would be better.
 11 **A. Okay. So no person shall cause the**
 12 **emission of sound -- so the turbines cause emissions**
 13 **of sound -- that when it propagates off of the**
 14 **property in which the turbines are located and**
 15 **impinges upon a Class A land, then it shall not**
 16 **exceed the limits when measured at any point within**
 17 **such Class A land, provided no measurement of sound**
 18 **shall be made at less than 25 feet from the property**
 19 **source. So you can't -- you never want to assess**
 20 **anything that's within 25 feet of the turbines, so**
 21 **to me that last part is moot in this matter.**
 22 MS. HUISMAN: Okay, I got another question
 23 on that then.
 24 QUESTIONS BY

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1 **MS. HUISMAN:**
 2 Q. Are you saying that the receiving Class A
 3 land is the property with the turbine?
 4 **A. I'm sorry, again?**
 5 Q. What are you saying that that Class A --
 6 receiving Class A land is?
 7 **A. Again, receiving Class A land is the**
 8 **household.**
 9 Q. And you're saying that the last part after
 10 the comma is that "no measurement of sound shall be
 11 made less than 25 feet from such
 12 property-line-noise-source," meaning the turbine.
 13 **A. Correct.**
 14 Q. How do you measure an impact on a Class A
 15 receiving land? Do you -- and then you talk going
 16 back to that no measurement of sound. It's saying
 17 that you're measuring at a Class A receiving land
 18 and then you're going backwards to say it has to be
 19 within a certain distance of the emitting source?
 20 **A. No, I mean -- please don't be confused by**
 21 **this 25 feet thing. That grows out of the fact that**
 22 **when we go out into a -- onto a project, that**
 23 **they're asking you never to get as close as 25 feet**
 24 **to the source, and we're not on this project, so**

1 **it's really not relevant. I urge --**

2 Q. As long as you -- well, okay, you can't
3 probably answer it.

4 **MS. HUISMAN:** Okay.

5 **QUESTIONS BY**

6 **CHAIRMAN CORNALE:**

7 Q. All right, so I'm trying to envision all
8 this in my mind. So let's say we have a turbine in
9 the middle of a farm field, okay, very common, and
10 there's a road, a service road that goes to it.
11 What's the road classification?

12 **A. I'd have to look through the codes, but I**
13 **don't believe it is classified, the road is**
14 **classified. That would be my guess, but I'd have to**
15 **-- that's subject to check.**

16 Q. Okay. So would that be inclusive of that
17 -- would you consider the road to be part of the
18 parcel that's associated with the noise source?

19 **A. So if a turbine is on a hunk of**
20 **agricultural land and you're saying what is it --**
21 **yeah, I mean that road is a part of that property,**
22 **but neither of them are classified according to --**

23 Q. Okay, and this says 25 feet from the
24 property line of the noise source.

1 **effect, again based on the use of the land that it**
2 **hits. The noise on your property is your business.**

3 Q. So why did they enter "the property line"
4 into that discussion?

5 **A. I was not, you know, part of the**
6 **discussions on the terminology when this was**
7 **developed --**

8 Q. Right.

9 **A. -- so I don't know what they --**

10 Q. But is it -- would you agree that a noise
11 source is different than the property line
12 associated with the noise source?

13 **A. Yes, but that doesn't -- I mean when they**
14 **say property-line-noise-source, they're still just**
15 **talking about a noise source.**

16 **CHAIRMAN CORNALE:** Joan, does that help
17 you any? I'm still really -- interestingly, as you
18 handed this out, the both of us highlighted the same
19 part, so we're really trying to get a better
20 understanding of this.

21 I'll tell you what. We'll move on to some
22 other questions. Maybe more will come out and we'll
23 talk about it a little bit more.

24 Units of local government --

1 **A. But again, it's saying that no measurement**
2 **shall be made essentially closer than 25 feet.**
3 **That's what you're...**

4 **MR. BLAZER:** Mr. Chairman, if I may, you
5 misread that. It doesn't say from the property line
6 of the noise source. You stuck an "of" in there.
7 It says from such property-line-noise-source.

8 **A. Yeah, from the source.**

9 Q. I don't understand how property line ends
10 up in a noise source. It's either a noise source or
11 it's property line. We need to -- we need to
12 clarify how this works because, as far as I'm
13 concerned then, the noise source has a property
14 line. It might be at the end of the lane if it's
15 the closest point from that turbine to the next
16 receptor. We need to determine how we're analyzing
17 this, and I feel we're -- I don't know. I'm -- you
18 haven't sold me on your idea yet either. Sorry.

19 **A. No, that's okay. I think that the**
20 **terminology of property-line-noise-source is clearly**
21 **confusing. It was not perhaps the best choice of**
22 **words. But in my opinion, it means a source --**
23 **you're on a piece of property, and once it goes off**
24 **of your property, now you have to determine its**

1 **A. If I may?**

2 **CHAIRMAN CORNALE:** Yeah.

3 **A. There is a definition here of**
4 **property-line-noise-source in the definitions in**
5 **Pleasant Ridge 235. So it is any equipment or a**
6 **facility, or combination thereof, which operates**
7 **with any land -- within any land used as specified**
8 **by the code. Such equipment or facility may be**
9 **capable of emitting sound beyond the property line**
10 **on which it's operated. And I think that is their**
11 **notion.**

12 **Again, their terminology might not have**
13 **been great, but it's a source, it's a piece of**
14 **equipment, it's nothing more, nothing less, and**
15 **it -- when it operates, its sound, once it leaves**
16 **the property on which it's located, then it becomes**
17 **a concern. And it's not a concern on your property.**
18 **You don't, you know, get annoyed by the noise that**
19 **you make. That's not the issue. The issue is how**
20 **does it affect neighboring land uses.**

21 **I mean there are specific noise codes in**
22 **this country that do indeed talk about property**
23 **lines as the place where you have to determine the**
24 **impact. This is not one of them in my opinion.**

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1 **CHAIRMAN CORNALE:** All right. School
2 boards, local governments, any questions from them?
3 Mr. Luetkehans.
4 **MR. LUETKEHANS:** Yes.
5 **QUESTIONS BY**
6 **MR. LUETKEHANS:**
7 Q. Let's start with 25 foot. That's not
8 where I was going to start, but let's start there
9 anyway. The 25 foot, in essence, is a buffer if the
10 noise source is exactly at the property line,
11 correct? You have to go back 25 feet before you can
12 start measuring.
13 **A. That is --**
14 Q. Is that the point?
15 **A. That is correct.**
16 Q. Okay, so that implies to me that if the --
17 if the noise emission is not at the property line,
18 you could be measuring directly at the property
19 line, correct, or within that 25 feet, correct?
20 **A. If it was -- yes, you could measure there,**
21 **sure.**
22 Q. And there would be nothing wrong with
23 that.
24 **A. Well, yeah, I mean you're free to measure**

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1 **anywhere you want, but if it's not Class A land,**
2 **then there's no limit to associate that measurement**
3 **with.**
4 Q. Understood, but we'll get into what Class
5 A land is because there's a bunch of case law in
6 there and we'll talk about those. But let's start
7 back, you said you read some of the cases the
8 Illinois Pollution Control Board has come out with,
9 correct? You read Knox, probably read other ones
10 over the years, correct?
11 **A. Yes.**
12 Q. Okay. You're also familiar, I assume,
13 with the regulations that the Illinois Pollution
14 Control Board has passed over the last 30, 40 years
15 regarding these particular sections?
16 **A. Could you be more specific?**
17 Q. Well, I will, but that's just a general
18 question right now. I mean you've read the
19 regulations they've passed over the years, correct?
20 They pass regulations to discuss these particular
21 sections, correct?
22 **A. Again, if you could be more specific, I**
23 **would really --**
24 Q. Okay. Well --

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1 **A. -- appreciate that.**
2 Q. -- you know what?
3 **MR. LUETKEHANS:** Tom, I apologize, could
4 you give one of those to Mr. Hankard? I'm sorry, I
5 forgot to keep one.
6 **BY MR. LUETKEHANS:**
7 Q. Showing you what has been marked as UCLC
8 Exhibit 154, have you ever seen this?
9 **A. No.**
10 Q. So you've never seen this regulation?
11 **A. No, sir.**
12 Q. So as a professional acoustician, you've
13 never actually looked at the In the Matter of Noise
14 Pollution Control Regulations passed by the board in
15 1973 that specifically gives --
16 **MR. BLAZER:** Objection, objection.
17 **MR. LUETKEHANS:** Well, I'm asking --
18 **MR. BLAZER:** The witness has already said
19 he's never seen this and now he's repeating it
20 trying to read into the record something that --
21 **MR. LUETKEHANS:** Well, I'll just ask --
22 **MR. BLAZER:** Excuse me, I wasn't finished.
23 **MR. LUETKEHANS:** I'm just going to --
24 **MR. BLAZER:** I wasn't finished.

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1 **MR. LUETKEHANS:** I'm not asking the
2 question anymore. I would put UC -- I would ask
3 that UCLC Exhibit 154 be admitted into evidence as a
4 regulation of the Illinois Pollution Control Board.
5 **MR. BLAZER:** First of all, it's not a
6 regulation, it's an opinion. It hasn't been
7 authenticated by anyone. This witness has already
8 said he's never seen it before. So there's no basis
9 for putting it into the record.
10 **MR. LUETKEHANS:** Let's -- wait a second,
11 this is like a -- this is an opinion that's a
12 published opinion of the Illinois Pollution Control
13 Board. To say somehow that I need someone to
14 authenticate it, it's like authenticating a case.
15 **MR. BLAZER:** Except that in this case he
16 did authenticate the case. He's already testified
17 that he's never seen this before.
18 **MR. LUETKEHANS:** I don't need to
19 authenticate cases. That's very clear.
20 **MR. BLAZER:** Well --
21 **CHAIRMAN CORNALE:** All right, that's
22 enough. We're going to admit this and we're going
23 to take notes.
24 **BY MR. LUETKEHANS:**

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1 Q. Okay. Now that UCLC Exhibit 154 is in
 2 evidence -- well, strike that. Administrative Code
 3 901.102 which I think -- and I apologize because I
 4 had different exhibits before I had all these ready,
 5 but I think it's Pleasant Ridge 226, correct?
 6 **A. Correct, 901.102 is Exhibit 226.**
 7 Q. Okay. And that's at least part of the
 8 noise emission standards that we've been
 9 discussing --
 10 **A. Yes.**
 11 Q. -- correct? And, in fact, 35 Ill. App. --
 12 it's Pleasant Ridge Exhibit 226 is where we find the
 13 nighttime limits for sound emitted to Class A land,
 14 correct?
 15 **A. No, these are the daytime limits I**
 16 **believe.**
 17 Q. Well, A is the daytime and B is the
 18 nighttime, correct?
 19 **A. Oh, sorry, I didn't see the back, yes.**
 20 Q. Same section --
 21 **A. Yes.**
 22 Q. -- we've already been talking about for a
 23 while. And those limits, again, are -- for Class A
 24 land are 41 decibels at night at 1000 hertz and 47

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1 decibels at 500 hertz, correct?
 2 **A. Yes.**
 3 Q. Okay. Would you agree with me that the
 4 classification of land is based on the use not the
 5 zoning?
 6 **A. Yes, I do agree with that.**
 7 Q. You would agree with that?
 8 **A. That it's based on the use not the zoning,**
 9 **correct.**
 10 Q. So if property in unincorporated
 11 Livingston County which may be zoned agricultural,
 12 as I think all the property is in unincorporated
 13 Livingston County, is used as strictly a residence,
 14 it's Class A land, correct?
 15 **A. Class A land is a household, yes.**
 16 Q. Only the household in your mind, nothing
 17 else.
 18 **A. That's what the regulation says, yes.**
 19 Q. Well, you show me in here where it says
 20 only the household and maybe we can shorten all this
 21 because I'll be shocked as hell.
 22 **A. Well, because if you look at --**
 23 **MR. BLAZER:** Mr. Chairman, I think that's
 24 completely inappropriate, and I'd ask that you

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1 instruct counsel to refrain from comments like that.
 2 **CHAIRMAN CORNALE:** Mr. Luetkehans, I do --
 3 Q. Let me rephrase the question, I apologize,
 4 I'll withdraw it, but can you show me anywhere in
 5 these regulations where it talks about the household
 6 rather than the word land anywhere in here?
 7 **A. The limits that we are discussing, the 41**
 8 **and the 47 dB(A), those pertain to only Class A**
 9 **land.**
 10 Q. Agreed.
 11 **A. If you look at the list of class -- of**
 12 **Class A lands, you have household and then you have**
 13 **a number of other things like maybe a clinic or a**
 14 **hospital or -- but there's nothing else that speaks**
 15 **of anything other than -- with regard to residential**
 16 **land use, there's nothing else that speaks to**
 17 **anything other than household.**
 18 Q. Pleasant Ridge Exhibit 225 is Exhibit B to
 19 these standards, correct?
 20 **A. 225 you're referring to?**
 21 Q. Uh-huh.
 22 **A. I have 225, yes.**
 23 Q. And that's Exhibit B to the standards.
 24 **A. Appendix B?**

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1 Q. Yes.
 2 **A. Yes.**
 3 Q. Okay, and it says land-based
 4 classification standards, correct?
 5 **A. Yes.**
 6 Q. Does it say building-based classification
 7 standards?
 8 **A. No, it says land-based classification**
 9 **standards.**
 10 Q. Thank you. And, in fact, let's go to -- I
 11 apologize for the delay. I have this -- trying to
 12 get the page numbers right or the exhibit numbers
 13 right with the change.
 14 Okay, let's go to UCLC Exhibit 154 again.
 15 **A. Okay.**
 16 Q. Okay. And Rule 201 which can be found on
 17 page 19 of the exhibit.
 18 **A. Okay.**
 19 Q. Starts off Classification of Land
 20 According to Use. Do you see that?
 21 **A. Yes.**
 22 Q. Does it say classification of structure
 23 according to use?
 24 **A. No, we just agreed it said classification**

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1 **of land.**
 2 Q. Okay. And then if I keep going on, in the
 3 second paragraph it says beginning, "The
 4 classification of land is dependent on the actual
 5 use being made of the land rather than on
 6 anticipated or planned use such as could occur if
 7 the classification were based on zoning." Correct?
 8 **A. Correct.**
 9 Q. Okay. So again, they're talking about the
 10 actual use being made of the land, correct?
 11 **A. Yes.**
 12 Q. Okay. Then it goes on the next paragraph,
 13 "Actual land use is an appropriate basis in that
 14 regulation in that the regulation is designed to
 15 protect people where they actually live and work,
 16 rather than protecting vacant property in
 17 anticipation of people living there and working
 18 there." Do you see that?
 19 **A. Yes.**
 20 Q. Okay. Let's go to --
 21 **MR. LUETKEHANS:** I would ask that UCLC
 22 Exhibit 153 be admitted into evidence, and that is
 23 the decision of the Illinois Pollution Control
 24 Board, Hoffman versus City of Columbia. And in a

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1 you're talking about because 154 is an opinion not a
 2 regulation.
 3 **MR. LUETKEHANS:** Okay, we let in an
 4 opinion.
 5 **CHAIRMAN CORNALE:** All right, I'm going
 6 to -- I'm going to just simply ask this. This is
 7 the rebuttal portion with questions that follow the
 8 rebuttal not your opportunity for surrebuttal. Do
 9 you have any questions of something that he's
 10 rebutted that this particular case would --
 11 **MR. LUETKEHANS:** Yes.
 12 **CHAIRMAN CORNALE:** -- require this
 13 question to be --
 14 **MR. LUETKEHANS:** Yes.
 15 **CHAIRMAN CORNALE:** Would require the
 16 information?
 17 **MR. LUETKEHANS:** And we'll get to it,
 18 yeah, with regards to his opinion on land use, that
 19 it's not land use -- that it's not the property line
 20 but the building. This goes to that issue. All
 21 these cases go to exactly something he has been
 22 talking about for the past hour and 15 minutes.
 23 **CHAIRMAN CORNALE:** All right, I'm going to
 24 take this under advisement as far as allowing Mr. --

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1 second I can read the cite into the record. And
 2 that is at 1996 Westlaw 633343, again an Illinois
 3 Pollution Control Board case, and I would ask that
 4 be admitted into evidence.
 5 **MR. BLAZER:** Based on what foundation, Mr.
 6 Chairman?
 7 **MR. LUETKEHANS:** Again, it's a case.
 8 **MR. BLAZER:** I would point out, Mr.
 9 Chairman, that Mr. Luetkehans objected to our effort
 10 to put in the Knox case.
 11 **MR. LUETKEHANS:** And I was overruled, just
 12 to make the record clear.
 13 **MR. BLAZER:** You certainly were. But
 14 again, Mr. Hankard testified that he was familiar
 15 with the Knox case. We still don't have any
 16 indication that he knows anything about this
 17 particular case.
 18 **MR. LUETKEHANS:** It's a case.
 19 **MR. BLAZER:** It sure is.
 20 **MR. LUETKEHANS:** We've let in a regulation
 21 that he never knew of. We sure as heck can let in a
 22 case and ask him if he's ever read it, seen it
 23 and quoted it.
 24 **MR. BLAZER:** I don't know what regulation

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1 I'll let you go a little bit here and we'll see if
 2 we can get there.
 3 **BY MR. LUETKEHANS:**
 4 Q. Okay. Showing you what is marked as UCLC
 5 Exhibit 153, going to page 10 of that decision, if
 6 you would please.
 7 **A. Yes.**
 8 Q. It states at the beginning of paragraph --
 9 the fourth paragraph on there, "We find that the
 10 actual use of the property dictates the
 11 classification, rather than the zoning or who or
 12 what entity is conducting the activity." Correct?
 13 **A. Yes.**
 14 Q. Okay, going back to UCLC Exhibit 154,
 15 again still in Rule 201 on page 19, it says at the
 16 beginning, "It is important to recognize that land
 17 use is not necessarily co-extensive with land
 18 ownership. A good example of this is a farmer's
 19 piece of property. The portion of land used as
 20 farmland would be classified as C use." We all
 21 agree to that, correct?
 22 **A. Yes. Well, no, farmland I believe is**
 23 **unclassified.**
 24 Q. Farmland is C, right?

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1 **A. Yeah. Yes.**
 2 Q. Okay. "While the farmstead itself would
 3 be classified as A use." Did I read that correctly?
 4 **A. It does say that.**
 5 Q. And it's the farmstead, correct?
 6 **A. Yes, it says that.**
 7 Q. Doesn't say the farmhouse. It says the
 8 farmstead, correct?
 9 **A. It does say that, yes.**
 10 Q. Okay. Let's go back to Pleasant Ridge
 11 Exhibit 226, which I think was entered a few months
 12 ago or was entered -- I don't know. It was already
 13 entered.
 14 In fact, it says, does it not, in
 15 subsection B dealing with nighttime noise emissions
 16 that, quote --
 17 **A. If you could hang on just a sec. Okay,**
 18 **I'm sorry, 226, I'm with you.**
 19 Q. Yeah, 901.102.
 20 **A. Yes.**
 21 Q. Okay, that's the IPCB, Illinois Pollution
 22 Control Board regulations, correct?
 23 **A. Yes.**
 24 Q. The ones we've been talking about. And it

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1 says, quote, no person shall cause or allow the
 2 emission of sound during daytime levels from any
 3 property-line-noise-source located on any Class A, B
 4 or C land to any receiving Class A land which
 5 exceeds any allowable octave band sound pressure
 6 level specified in the following table, when
 7 measured at any point, at any point within such
 8 receiving Class A land, correct?
 9 **A. Correct.**
 10 Q. At any point within the land, correct?
 11 **A. Yes, that's what it says.**
 12 Q. Okay. And your models you decided were
 13 not based on the land. They're based on the middle
 14 of the house or where are they? I never quite
 15 understood that.
 16 **A. Yeah, the center of the house.**
 17 Q. Okay, so at the center of the house, if we
 18 move 50 feet out, we could have .3 decibel change,
 19 correct, you said?
 20 **A. At most, yes.**
 21 Q. Okay. How about 500 feet out?
 22 **A. It's going to depend on the distance to**
 23 **the nearest turbine, distance to other turbines.**
 24 Q. Okay, but we could have more than .3

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1 there, correct?
 2 **A. Yes.**
 3 Q. And at 200 feet, we could have more than
 4 .3 as well, correct?
 5 **A. Yes.**
 6 Q. Okay. And your models are based on the
 7 residence location even if the entire property is
 8 used for residential purposes, correct?
 9 **A. What do you mean by used for residential**
 10 **purposes?**
 11 Q. Well, you talked about you reviewed Mr.
 12 Kaisner's testimony, right?
 13 **A. We looked at his property.**
 14 Q. Okay, and his property was at 41.0,
 15 correct, or his residence was at 41 --
 16 **A. I don't think that was Kaisner. That was**
 17 **a different one.**
 18 Q. That was the Kaisner.
 19 **A. If it was?**
 20 Q. I'm sorry, correct, it was the Don Slagel.
 21 **A. Correct.**
 22 Q. Okay, Kaisner was at 40.6, I apologize.
 23 **A. Okay.**
 24 Q. And Kaisners -- the evidence is that the

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1 Kaisners only use their land for residence. They
 2 don't farm it, correct? Do you remember that or did
 3 you see that?
 4 **A. I do not -- I was not here on that day,**
 5 **that evening --**
 6 Q. Okay.
 7 **A. -- of the testimony.**
 8 Q. Mr. Blazer didn't bother to show you that
 9 one, correct?
 10 **MR. BLAZER:** Objection.
 11 **MR. LUETKEHANS:** Withdrawn.
 12 Q. In fact, your models are not based on the
 13 actual areas of mixed use lands, such as that
 14 portion of the land use for things other than
 15 farmland, correct? It's just based on where the
 16 residence is, nothing more.
 17 **A. We predicted at the center of each**
 18 **residence, yes.**
 19 Q. Okay. In fact, you treated all these
 20 types of properties the same, whether entirely
 21 residential use or a mixed use, by modelling up to
 22 the actual residence itself, correct?
 23 **A. Like I said, I don't know how many**
 24 **different ways to say that all we did was predict at**

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1 **the house.**
 2 Q. Okay. I think during cross-examination by
 3 Mr. Slagel and I know today you talked about the
 4 Knox case, right?
 5 **A. Yes.**
 6 Q. And I think you said, quote, so the Class
 7 A land, a residential property, would be around --
 8 the area around a house not the entire extent of the
 9 platted land. Do you recall that?
 10 **A. I don't recall that. That was during my**
 11 **testimony?**
 12 Q. Yes. You don't recall that?
 13 **A. No.**
 14 Q. Okay, one second please. Okay, let's go
 15 -- let's ask if you recall this question being --
 16 being asked this question and giving this answer.
 17 **MR. LUETKEHANS:** Counsel, it's January
 18 21st, 2015, starting at line -- or page 1324, line
 19 21. Mike, tell me when you're there, I'm not trying
 20 to rush you.
 21 **MR. BLAZER:** Give me one second.
 22 **MR. LUETKEHANS:** Take your time.
 23 **MR. BLAZER:** 1324 line 21?
 24 **MR. LUETKEHANS:** Yes, the one that starts

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1 "okay."
 2 **MR. BLAZER:** Yes.
 3 Q. Okay. The question is: Okay. And more
 4 so, we can actually read the 901.102B which says,
 5 quote, when measured at any point within such
 6 receiving Class A land, provided, however, that no
 7 measurement of sound pressure level should be made
 8 less than 25 feet from such property-line-noise-source.
 9 So talking again about the grass versus patio, it
 10 seems to me a Class A land is the entire Class A
 11 property that your house is on. So I'd like to hear
 12 more about what you're saying in case study in
 13 Illinois that -- Answer: Right, that the Pollution
 14 Control Board has taken up this very issue in the
 15 past and they have determined that it is -- that the
 16 use of the land is not the property line per se. So
 17 the Class A land, a residential property, would be
 18 the area around a house not the entire extent of the
 19 platted land.
 20 Do you remember being asked that question
 21 and giving that answer?
 22 **A. If you just read -- I do not recall it**
 23 **specifically, but if you just read it from the**
 24 **transcript, then I'm not going to deny that it was**

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1 **said.**
 2 Q. Okay. And the case you were talking about
 3 was the Knox versus Turriss case, Turriss Coal,
 4 correct?
 5 **A. I believe that that's what I was referring**
 6 **to.**
 7 Q. Okay. Do you have that? I think it was
 8 -- I don't remember, I apologize. It's Exhibit,
 9 Pleasant Ridge Exhibit 228.
 10 **A. Which is what again?**
 11 Q. Which is the Knox County -- the Knox
 12 versus Turriss Coal Company case.
 13 **A. Oh, okay. Yes, I'm sorry. Yes, I have it**
 14 **here.**
 15 Q. Okay. Is it your opinion that if noise
 16 emissions do not exceed the limits in Section
 17 901.102 that they cannot still violate the Illinois
 18 Pollution Control Board standards?
 19 **A. Like I said, that seems like a circular**
 20 **reference. I mean these are the standards, so if we**
 21 **don't exceed the standards, then we don't exceed the**
 22 **standards.**
 23 Q. So in your mind these are the only
 24 standards that you have to meet.

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1 **A. These are the only numerical standards.**
 2 Q. Okay, but they're not the only standards,
 3 correct?
 4 **A. There is other language I think.**
 5 Q. In fact, there's case law and Illinois
 6 Pollution Control Board opinions that have found
 7 that where someone is below the standards or someone
 8 hasn't proven that they're above the -- that the
 9 property's above the standards, that they still
 10 found a violation of the Illinois Pollution Control
 11 Board regulations, correct?
 12 **A. I'm not aware of it. Do have a specific?**
 13 Q. Okay. Well, let's go with this. Let's
 14 start, go back to the Knox County -- Knox case.
 15 Sorry, I keep wanting to say Knox County. Page 12
 16 of that decision.
 17 On I guess it's the third full paragraph,
 18 it says, does it not, that the board has previously
 19 found that the compliance with the numerical noise
 20 standards does not present an absolute bar to
 21 finding of violation of the general nuisance noise
 22 prohibitions. Do you see that?
 23 **A. I do.**
 24 Q. And the next paragraph goes on to state

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1 that the board has determined that noise interfering
 2 with sleep and use of yard, and then they cite the
 3 Hoffman decision, and trucking operation noise
 4 impacting sleep, watching television and conversing,
 5 they cite Thomas versus Carry Companies of Illinois,
 6 does constitute an interference. Here, the noise
 7 impacts the sleep of the complainants. Do you see
 8 that?
 9 **A. I do.**
 10 Q. Okay. So the PCB, in essence, has stated
 11 that it's still possible that even if you do not
 12 meet the standards or rise -- the noise does not
 13 rise to the level of 41, let's say, at nighttime,
 14 that it still can interfere with your enjoyment of
 15 life, correct?
 16 **A. Well, in this specific one, they're**
 17 **talking about interference with sleep.**
 18 Q. Okay. Well, let's go down to the fifth,
 19 the two paragraphs -- the next paragraph.
 20 **MR. BLAZER:** What page are we on?
 21 **MR. LUETKEHANS:** Page 12, at least of the
 22 one I have.
 23 **MR. BLAZER:** The one you have?
 24 **MR. LUETKEHANS:** Well, I'm hoping it's the

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1 same one.
 2 Q. Can you find what I'm talking about? You
 3 know where I'm at.
 4 **A. Yeah, we're on 12.**
 5 Q. Yeah, I just printed it off Westlaw. The
 6 board finds that the noise emissions from the school
 7 do interfere with the complainants' enjoyment of
 8 life. Do you see that?
 9 **MR. BLAZER:** Just if I may interrupt, I'm
 10 sorry, Phil, but this isn't -- Exhibit 228 I think
 11 may have different page numbers than the one you're
 12 reading from.
 13 **MR. LUETKEHANS:** Well, he's got the right
 14 page, so --
 15 **MR. BLAZER:** I'm not sure.
 16 **MR. LUETKEHANS:** -- he knows where I'm at.
 17 **CHAIRMAN CORNALE:** All right.
 18 **A. It's page 12 of 228.**
 19 **MR. BLAZER:** Okay.
 20 **MR. LUETKEHANS:** It's right above
 21 unreasonable interference, the heading unreasonable
 22 interference.
 23 **BY MR. LUETKEHANS:**
 24 Q. Okay, you saw that? I read that correctly

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1 from that decision?
 2 **A. Yes.**
 3 Q. And that's the decision you were relying
 4 on earlier?
 5 **A. The Knox.**
 6 Q. Okay.
 7 **A. Yes.**
 8 Q. This may be duplicative so I apologize,
 9 but I don't really -- I'm not sure the standards are
 10 set up the same way, but I think you're going to be
 11 able to see them, so I don't think it's going to
 12 matter for you.
 13 I'm handing you what has been marked UCLC
 14 Exhibit 156, and I think you handed out parts of
 15 Part 900 of the Illinois Pollution Control Board
 16 regs, but this is all of 900.
 17 **A. Okay.**
 18 Q. Okay. And you've seen that before,
 19 correct?
 20 **A. Yes.**
 21 Q. Okay. Section 900.102 states -- are you
 22 there for me?
 23 **A. Not at 102 yet, no.**
 24 Q. Okay, take your time. Let me know when

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1 you're there. I think it's about the eighth page in
 2 or something like that. I may be off a page or two
 3 but --
 4 **A. 102, I have it here.**
 5 Q. Okay. Section 900.102 states, quote, no
 6 person shall cause or allow the emission of sound
 7 beyond the boundaries of his property as property is
 8 defined in Section 25 of the Act, so as to cause
 9 noise pollution in Illinois. Is that a correct
 10 statement?
 11 **A. Yes.**
 12 Q. Okay. And again, they're talking about
 13 property not structures, correct?
 14 **A. Well, they're saying beyond the property**
 15 **on which the source was located.**
 16 Q. Okay, but they're talking about the
 17 property line.
 18 **A. Yeah, beyond the boundary of the property,**
 19 **you know, on which the source is located.**
 20 Q. Okay, Section 900.101 actually defines
 21 noise pollution, correct? I think it's about the
 22 fifth page in.
 23 **A. Yes.**
 24 Q. Okay. And it's defined noise pollution

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1 as, quote, the emission of sound that unreasonably
 2 interferes with the enjoyment of life or with any
 3 lawful business or activity, end quote, doesn't it?
 4 **A. Yes.**
 5 Q. Okay, this is UCLC Exhibit 159 that I've
 6 handed you. I assume you recognize this.
 7 **A. Yes.**
 8 Q. This is, again, 35 Illinois Administration
 9 Code 910.104. Do you see that?
 10 **A. I do.**
 11 Q. And you recognize this document as part of
 12 the Illinois Pollution Control Board regs, correct?
 13 **A. Yes.**
 14 Q. And again, it specifically says, does it
 15 not, that, quote, sound pressure level measurements
 16 are not required to establish a violation of 35
 17 Illinois Administration Code 900.102, correct?
 18 **A. It does say that.**
 19 Q. Okay, and that's the interference with
 20 property -- with life, with enjoyment of life,
 21 correct?
 22 **A. Unreasonably interferes with the enjoyment**
 23 **of life or with any lawful business or activity.**
 24 Q. Okay. You said a few minutes ago you're a

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1 member of the Acoustical Society of America,
 2 correct?
 3 **A. Yes.**
 4 Q. And that, we all agree, is one of the most
 5 respected acoustic organizations in the country.
 6 **A. It is.**
 7 Q. And you've talked a lot today about the
 8 Cal Ridge project and the tests you performed out
 9 there, correct?
 10 **A. Yes.**
 11 Q. And you used Paul Schomer to assist you on
 12 this project, correct?
 13 **A. Yeah, it was more of a collaboration,**
 14 **sure.**
 15 Q. Okay. And you think -- I think you said
 16 on November 18th, because he's a 40 year veteran in
 17 the field and very respected, and I think you kind
 18 of implied that again tonight, correct?
 19 **A. Yes.**
 20 Q. He is also, as you said, the standards
 21 director at the Acoustical Society of America,
 22 correct?
 23 **A. I believe he is presently that, yes.**
 24 Q. And that's a pretty good job.

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1 **A. Yeah.**
 2 Q. And who hired him to work on Cal Ridge?
 3 Who made the decision to bring him out I guess is
 4 the better question?
 5 **A. I don't know who made that decision. We**
 6 **were both working for Jeep and Blazer I believe.**
 7 Q. So Jeep and Blazer hired both of you.
 8 **A. Yes, Jeep and Blazer hired Mr. Schomer.**
 9 Q. Did they hire you?
 10 **A. Dr. Schomer. Yes.**
 11 Q. Okay, did you recommend that Jeep and
 12 Blazer bring Mr. Schomer onto that project?
 13 **A. I don't think I recommended it.**
 14 Q. You didn't have a problem with it.
 15 **A. Absolutely not.**
 16 Q. Okay. And he was also hired -- to your
 17 knowledge, he was also hired here in Livingston
 18 County to work for the applicant, correct?
 19 **A. On this project?**
 20 Q. Yeah.
 21 **A. I think he was retained for his**
 22 **assistance, yes.**
 23 Q. Okay. We have not heard him come in to
 24 testify, have we?

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1 **A. No.**
 2 Q. Okay. You have in front of Hayes Exhibit
 3 No. 2, correct?
 4 **A. Is that Exhibit 130?**
 5 Q. No. It's Hayes Exhibit No. 2. It's the
 6 -- you actually referred to it. You quoted from it.
 7 It's the stuff on the Cape Bridgewater study. It's
 8 the opinions of Ambrose and Schomer and Rand --
 9 **A. Oh.**
 10 Q. -- and Hessler.
 11 **A. Oh, okay, I know what you're referring to.**
 12 Q. Okay.
 13 **A. I don't have it in front of me but --**
 14 Q. Well, take your time, get it. You still
 15 have it, correct, or did Mr. Blazer take it back?
 16 **A. I don't have a copy of it with me.**
 17 **MR. BLAZER:** I'll check and see.
 18 Q. You know what, I think I have an extra
 19 copy. Here, I apologize. Okay. Showing you what
 20 has previously been marked as Hayes Exhibit 2, the
 21 last page, the first full paragraph, Schomer states
 22 about the Cape Bridgewater study, does he not, that,
 23 quote, this study finds that these six people sense
 24 the operation of the turbines via other pathways

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1 than hearing or seeing, and that the adverse
 2 reactions to the operations of the large wind
 3 turbines correlates directly with the power output
 4 of the wind turbines and fairly large changes in
 5 power output. Did I quote that correctly?
 6 **A. You quoted that correctly, yes.**
 7 Q. Okay. The next paragraph goes on to
 8 state, does it not, that, quote, attempts may be
 9 made to obfuscate these simple points with such
 10 arguments as it cannot be proved that infrasound is
 11 the cause of discomfort, but that again is a
 12 specious argument. The important point here is that
 13 something is coming from the wind turbines to affect
 14 these people, and that something increases or
 15 decreases as the power output of the turbine
 16 increases or decreases. Denying infrasound as the
 17 agent accomplishes nothing. It really does not
 18 matter what the pathway is, whether it's infrasound
 19 or some new forms of rays or electromagnetic field
 20 coming off the turbine -- off turbines.
 21 Schomer, your well-respected acoustician,
 22 said this as well, correct?
 23 **A. He made these statements, yes.**
 24 Q. Okay, and he then goes on to state in the

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1 next paragraph, quote, some may ask, this is only
 2 people, only six people -- I'm sorry, can't read my
 3 own typing or can't type actually -- why is it so
 4 important? The answer is that up until now wind
 5 farm operators have said there are no known
 6 cause-and-effect relations between wind farm
 7 emissions -- doesn't say noise -- and the response
 8 of people living in the vicinity of the wind farm
 9 other than those related to visual and/or audible
 10 stimuli, and these lead to some flicker, which is
 11 treated, and some annoyance with noise. This study
 12 proves that there are other pathways that affect
 13 some people, at least six, end quote.
 14 Again, your well-respected colleague said
 15 this as well, didn't he?
 16 **A. Yes.**
 17 Q. You know and you've talked about Hartke
 18 tonight, and you said -- and we know he's
 19 complaining that the California Ridge wind turbines
 20 affect him, correct? That's his complaint.
 21 **A. I'm sorry, I missed that.**
 22 Q. I'm sorry, it was a little quick and not
 23 very clear. You know that one of Mr. Hartke's
 24 complaints of the California Ridge wind turbines is

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1 that they affect his sleep, correct?
 2 **MR. BLAZER:** Mr. Chairman -- I'm sorry,
 3 Phil, were you done with your question?
 4 **MR. LUETKEHANS:** I am.
 5 **MR. BLAZER:** Okay. I'll object. Mr.
 6 Hankard didn't say anything about Mr. Hartke. It's
 7 beyond the scope of --
 8 **MR. LUETKEHANS:** He talked severely,
 9 significantly about the Cal Ridge study, which was
 10 done primarily at the Hartke property line.
 11 **MR. BLAZER:** He didn't say a word about
 12 Mr. Hartke in rebuttal.
 13 **AUDIENCE VOICE:** Yes, he did.
 14 **MR. LUETKEHANS:** But he said a lot about
 15 Cal Ridge. In fact, I think he did say Hartke.
 16 **AUDIENCE VOICE:** Yes, he did.
 17 **MR. LUETKEHANS:** Let me find my notes.
 18 **MR. BLAZER:** I said Hartke when I
 19 introduced the Ambrose letter that I asked him to
 20 respond to because it's in the Hartke presentation.
 21 He was exclusively discussing the Ambrose letter.
 22 **CHAIRMAN CORNALE:** All right. We don't
 23 recall Mr. Hankard's direct reference to Hartke.
 24 **MR. LUETKEHANS:** Okay.

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1 **BY MR. LUETKEHANS:**
 2 Q. You performed noise emissions in your Cal
 3 Ridge study near Ted Hartke's home, correct?
 4 **A. We measured the noise emissions, yes.**
 5 Q. Correct. And that measurement was done at
 6 the property line, correct?
 7 **A. It was not done explicitly at the property**
 8 **line. It was done at a piece of available land that**
 9 **kind of replicated the same distances between our**
 10 **measurement location and the turbines versus Mr.**
 11 **Hartke's house and the turbines.**
 12 Q. Oh, so you replicated the distance. You
 13 didn't come up to the edge of somebody's else
 14 property and measure there. You just replicated the
 15 distance from there, correct?
 16 **A. Well, we weren't allowed to go on the**
 17 **Hartke property, so then the challenge became where**
 18 **can we measure that we have the land available to us**
 19 **where the measurement will be indicative of what**
 20 **will happen at the Hartke residence. In fact, the**
 21 **two locations that we chose were slightly closer to**
 22 **the turbines than the Hartke residence itself.**
 23 Q. But you made a judgment as to which
 24 property that would be because you couldn't get --

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1 because you weren't at the property line.
 2 **A. Yes, we made a judgment in the field.**
 3 Q. Okay.
 4 **A. Absolutely.**
 5 Q. And for how long did you measure at those
 6 locations?
 7 **A. Started in August and finished on November**
 8 **20th. I believe it was about four and a half**
 9 **months.**
 10 Q. And I think you testified that you
 11 measured for 24 hours a day, seven days a week.
 12 **A. Yes.**
 13 Q. And you read the monitors you set up about
 14 every two or three weeks.
 15 **A. Every -- more like every two weeks, yes.**
 16 Q. Okay. And how many noise emission
 17 monitors did you set up in Cal Ridge at this time?
 18 **A. We set up two that were representative of**
 19 **the Hartke residence and the Myles residence, we set**
 20 **up one closer to a turbine, and then we actually set**
 21 **up two others that had some more distant turbines.**
 22 Q. So how many, I'm sorry? Is that five?
 23 **A. Five.**
 24 Q. I apologize. I was reading and not

Page 3891

1 counting.
 2 **A. That's all right.**
 3 Q. So, in essence, you didn't visually watch
 4 because it was impossible.
 5 **A. Yes, you can't visually watch at night**
 6 **obviously.**
 7 Q. Did you -- the statement came up about the
 8 IPCB regulations and Mr. Ambrose's statement that
 9 you did not measure in compliance with the IPCB
 10 regulations because you weren't there the entire
 11 time visually. You remember that, right?
 12 **A. Yes.**
 13 Q. In your -- did you measure in strict
 14 compliance with the IPCB regulations? That's my
 15 question.
 16 **A. Yes.**
 17 Q. Okay. Showing you what has been marked as
 18 UCLC Exhibit 150, this is the Charter Hall
 19 Homeowners Association versus Overland
 20 Transportation Systems case, a decision by the
 21 Illinois Pollution Control Board 1998, Westlaw
 22 714214. Have you ever seen this case?
 23 **A. No, I don't believe I have.**
 24 Q. I keep finding cases you haven't seen, I

Page 3892

1 apologize.
 2 **MR. LUETKEHANS:** However, I would ask that
 3 this be entered into evidence as a case of the
 4 Illinois Pollution Control Board.
 5 **MR. BLAZER:** Again, Mr. Chairman, beyond
 6 the scope of rebuttal, and this person -- he just
 7 testified he never read it.
 8 **MR. LUETKEHANS:** Well, it's not beyond the
 9 scope of rebuttal, let's get that straight, because
 10 I haven't asked a question, just whether he's seen
 11 it, and the next question will clearly not be beyond
 12 the scope. And second, as we said, it's a case, a
 13 case from the Pollution Control Board that he's
 14 supposed to be an expert on.
 15 **CHAIRMAN CORNALE:** All right, we're going
 16 to go ahead and allow UCLC Exhibit 150.
 17 **BY MR. LUETKEHANS:**
 18 Q. Okay, let's bring your attention to page
 19 13 of the decision if you would. First full
 20 paragraph. And we're going to talk about the last
 21 three sentences, the sentence that starts "Part
 22 951."
 23 **A. Okay.**
 24 Q. It says "Part 951 requires, among other

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1 things, that the person taking sound measurements be
 2 present while measurements are being taken to look
 3 and listen for extraneous sound sources and varying
 4 wind conditions that may affect the data. See 35
 5 Ill. Adm. Code 951.105(c)(7)." It goes on to say,
 6 "Mr. Harmon left the site while the measurements
 7 were being taken. Accordingly, he did not comply
 8 with this provision of Part 951." Did I quote that
 9 correctly?
 10 **A. Yes.**
 11 Q. So like Mr. Harmon, you weren't there when
 12 the measurements were being taken, correct?
 13 **A. Not while all the measurements were being**
 14 **taken, but there were times when we were there.**
 15 Q. And there were times that Mr. Harmon was
 16 at these locations too. But what were the decibel
 17 nighttime levels that you measured outside of
 18 Hartke's house at your locations? You said it was
 19 39?
 20 **A. 39.**
 21 Q. Okay. How many properties are above that
 22 limit per your modelling at the receptor here, do
 23 you know?
 24 **A. We went over this the other day. There**

Page 3894

1 were five at 41 and I think you mentioned there were
 2 ten between 40 and 41, so --
 3 Q. Well, it's 40.5 and 40.9, but I mean you
 4 would agree with me, I think, if we went through the
 5 list, it's a significant number. In fact, I think
 6 it's almost all the receptors on Part 16B -- or on
 7 Exhibit 16B or a majority of them at least.
 8 **A. Okay. Could be 10, 20, 30, something of**
 9 **that magnitude.**
 10 Q. Okay. I'm going to show you Pleasant
 11 Ridge Exhibit 16B again, and we'll just go to the --
 12 let's go to the last chart just for reference sake.
 13 And that's the one that's real small, so I
 14 apologize. And 16B, the last chart, shows 108
 15 receptors, correct?
 16 **A. Yes.**
 17 Q. It's hard for me to tell, but I don't see
 18 any receptors of those 118 under 39 -- oh, I'm
 19 sorry, there's about five of them that are under
 20 39.9, correct?
 21 **A. Yes. As I scan, I see mainly 39s and 40s.**
 22 Q. Okay.
 23 **A. I see one that's under. Your point is**
 24 **made.**

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1 Q. There's a handful that maybe are under,
 2 maybe one, maybe five, I don't know what the number
 3 is, but --
 4 **A. Right.**
 5 Q. -- a great majority over 39, we would
 6 agree to that, correct?
 7 **A. Yes.**
 8 Q. The inability to sleep even where it does
 9 not reach the levels of the nighttime decibel levels
 10 can still be a violation of the Illinois Pollution
 11 Control Board regs, correct?
 12 **A. Would this relate to your noise pollution**
 13 **unreasonably interfering with enjoyment of life?**
 14 Q. Yeah.
 15 **A. If someone claims that they're having that**
 16 **unreasonable interference with their enjoyment of**
 17 **life, then they can make the claim, yes, regardless**
 18 **of the levels, that it's not in compliance.**
 19 Q. Did you model the noise emissions at the
 20 Hartke home running your ISO model?
 21 **A. Yes.**
 22 Q. And what did you come up with?
 23 **A. Again, 41 in the 1000 hertz.**
 24 Q. Was it 41.0 or was it something above 41?

Page 3896

1 **A. I don't remember the decimal numbers.**
 2 Q. Okay. And just for the record so we're
 3 clear, because I'm not sure I was very clear in my
 4 question, that was 41 at 1000 hertz --
 5 **A. Yes.**
 6 Q. -- and at nighttime levels, correct?
 7 **A. Yes. That would stand for all of this,**
 8 **yes.**
 9 Q. And that's my -- that's my fault not yours
 10 by any stretch. Did you model the Hartke house for
 11 the approval of the wind turbines at Cal Ridge or is
 12 this a modelling you did afterwards?
 13 **A. It's primarily a model we did here to**
 14 **validate our Pleasant Ridge model.**
 15 Q. Okay, so you didn't do it for the approval
 16 process, you did it after it was already --
 17 **A. Yeah, I didn't do it for the Cal Ridge**
 18 **approval process. I wasn't involved with that.**
 19 Q. Okay. Showing you what has been marked as
 20 UCLC Exhibit 151, have you ever seen this paper by
 21 Dr. Schomer and John Erdreich and others?
 22 **A. Others, yes, I have.**
 23 Q. Okay. And again, this was by Dr. Schomer
 24 and it's entitled "A theory to explain some

Page 3897

1 physiological effects of the infrasonic emissions at
 2 some wind farm sites," correct?
 3 **A. Yes.**
 4 Q. And it was published in the journal of the
 5 Acoustical Society of America in March of 2015,
 6 correct?
 7 **A. Uh-huh.**
 8 Q. And -- I think she can't take down uh-huh,
 9 so I apologize, if you could just say yes.
 10 **A. Yes, February 2015.**
 11 Q. Okay, I looked at the bottom and it said
 12 March 2015, so I think it was actually published in
 13 March.
 14 **A. Yeah, correct, fair enough.**
 15 Q. Okay, I think we're splitting hairs and
 16 it's silly.
 17 **A. Yes, like tenths of a dB.**
 18 Q. This journal, we would agree, is a
 19 well-respected journal in the field, correct?
 20 **A. Absolutely.**
 21 Q. And it's a -- have you published in this
 22 journal?
 23 **A. In part. Some of the work I did in Oregon**
 24 **was published in the ASA conference proceedings, but**

Page 3898

1 **not the journal itself.**
 2 Q. Okay, we would agree this is not a
 3 pro-wind journal, correct?
 4 **A. No, this has nothing to do with the wind**
 5 **industry.**
 6 Q. And this article was peer-reviewed,
 7 correct, because you can see the different dates it
 8 was submitted and things like that.
 9 **A. Does it have anything about a review on**
 10 **here?**
 11 Q. Well, it says it was received on the top
 12 of the first page 20th of November, 2013; revised
 13 October 1, 2014; accepted February 4, 2015.
 14 **A. It was accepted. Yeah, I don't know if**
 15 **that necessarily means peer-reviewed.**
 16 Q. Okay, you don't know if it wasn't
 17 peer-reviewed though, correct?
 18 **A. I don't see anything about, you know,**
 19 **people reviewing it here or independently verifying**
 20 **any of this.**
 21 Q. Okay. And you don't see that -- well,
 22 we'll leave that alone for now. Dr. Schomer says
 23 there on page 1364, and I think it's actually
 24 highlighted for you because I don't know how to

Page 3899

1 delete the red. First full paragraph. "Most
 2 residents do not hear the wind turbine sounds; noise
 3 annoyance is not an issue. The issue is
 4 physiological responses that result from the very
 5 low frequency infrasound and that appears to trigger
 6 motion sickness mainly in some of those who are
 7 susceptible to it."
 8 Again, this was written by your
 9 well-respected Dr. Schomer, correct?
 10 **A. Yes.**
 11 Q. I apologize for the delay. One last area
 12 to deal with, which is Cape Bridgewater, but I
 13 really want to just make sure my -- I haven't missed
 14 anything in what he said in the last couple of
 15 minutes.
 16 To your knowledge, even though Dr. Schomer
 17 and others have lauded this Cape Bridgewater study,
 18 no one has ever said that the levels, the noise
 19 level in the study -- the noise levels out of those
 20 wind turbines surpassed or are above the noise
 21 emission standards, correct?
 22 **A. On Cape Bridgewater you're talking about**
 23 **now?**
 24 Q. Yes.

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1 **A. Did the levels exceed --**
 2 Q. No, my point -- my question is, and I'm
 3 not trying to interrupt you, but --
 4 **A. No, please. Please clarify.**
 5 Q. If you want, I think I can keep going back
 6 to it. Not do the levels exceed. None of these
 7 papers in Hayes Exhibit 2 say or imply that in their
 8 opinion the noise levels exceeded the nighttime 41
 9 decibels or any other standard that they're aware
 10 of, correct?
 11 **A. I don't believe they did, no.**
 12 Q. Again, Hayes Exhibit 2, you stated that
 13 you did not know if Rand looked at the data,
 14 correct?
 15 **A. Yeah, I don't know how he can come out and**
 16 **say thanks for proving correlation when, in my**
 17 **opinion, there was no correlation to be found**
 18 **anywhere.**
 19 Q. Okay, but that wasn't what my question
 20 was. My question is you said you did not know if
 21 Rand looked at the data. That was your statement,
 22 correct?
 23 **A. No, I don't know if he looked at the data.**
 24 Q. You don't know if he did; you don't know

Page 3901

1 if he didn't.
 2 **A. I don't know how he could have.**
 3 Q. Okay. But you know that someone who you
 4 used to work with and respect still wrote that
 5 letter, correct?
 6 **A. Paul wrote the comments about Cape**
 7 **Bridgewater that he wrote, yes.**
 8 Q. And I'm talking about Rob Rand at this
 9 point. Rob Rand used to work --
 10 **A. Oh, I thought you said someone I**
 11 **respected.**
 12 Q. You don't respect Rob Rand? I think you
 13 said you --
 14 **A. I'm -- I'm losing that respect for Rob**
 15 **after some of the letters he's written to and about**
 16 **me, yes.**
 17 Q. To and about you, is that what you said?
 18 **A. Uh-huh.**
 19 Q. You have to say yes.
 20 **A. Yes.**
 21 Q. Okay. And when you got involved in this
 22 business, you worked for -- you were at the
 23 engineering firm of Mr. Rand and Mr. Ambrose,
 24 correct?

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1 **MR. BLAZER:** Mr. Chairman, we're going way
 2 beyond rebuttal at this point.
 3 **MR. LUETKEHANS:** He's -- this is his
 4 opinion of Rand's opinion, and he mentioned Rand, I
 5 didn't.
 6 **CHAIRMAN CORNALE:** All right. We need to
 7 make sure we stay focused on what he presented in
 8 rebuttal.
 9 **MR. LUETKEHANS:** Which is that he -- he
 10 said he did not know if Rand looked at the data. He
 11 then said -- because he was talking about this
 12 particular letter, and I think then he went on to
 13 say I don't know if I respect him anymore. I think
 14 I have the ability to then ask didn't you used to
 15 work for him or work with him.
 16 **MR. BLAZER:** And then frankly, apart from
 17 the fact that it's beyond the scope of rebuttal,
 18 these questions were already asked back in January.
 19 **MR. LUETKEHANS:** No, they weren't. They
 20 were asked about Schomer not Rand.
 21 **MR. BLAZER:** No, you asked him about when
 22 they worked together at Stone and Webster.
 23 **CHAIRMAN CORNALE:** All right, let's go
 24 ahead and just -- right, it is beyond our scope of

Page 3903

1 rebuttal. You can ask questions specifically to
 2 Rand that Mr. Hankard has alluded to, but we've
 3 already discussed when he worked for him and all
 4 those details.
 5 **BY MR. LUETKEHANS:**
 6 Q. In Hayes Exhibit 2, you disagree with
 7 Schomer's and Hessler's opinion, correct?
 8 **A. Yes.**
 9 Q. Okay. And to your knowledge, do you have
 10 any understanding or belief that they were paid for
 11 those opinions?
 12 **A. I have no knowledge of whether or not they**
 13 **were paid.**
 14 Q. Okay. However, you're being paid for
 15 these opinions here today, correct?
 16 **A. I'm being paid for my work here, yes.**
 17 Q. Okay. And Ambrose said that Cooper did a
 18 good job, isn't that what you said?
 19 **A. These are Ambrose's words you're saying?**
 20 Q. Yeah, that's what I think you said.
 21 **A. Yeah, congratulations. Let's find an**
 22 **actual -- I commend you for pursuing scientific**
 23 **truth, thank you, best wishes. I mean...**
 24 Q. You talked about that criteria are based

Page 3904

1 on outside not inside, correct?
 2 **A. As in the Illinois Pollution Control**
 3 **Board?**
 4 Q. Yes.
 5 **A. Yes.**
 6 Q. And then you talked about there's a 15
 7 decibel difference between indoor versus outdoor
 8 with I think the windows open you said, correct?
 9 **A. Right.**
 10 Q. Okay. The Cooper report and the Schomer,
 11 et cetera, opinion in Hayes 2, they're not based on
 12 dB(A), correct? They're not saying that it's the
 13 dB(A) that's so loud that it's caused this, are
 14 they?
 15 **A. They don't explicitly say it's not about**
 16 **dB(A), but I see, for example, with Rand they're**
 17 **talking about WTS level, which is basically the**
 18 **infrasonic level. So Rand appears to be referring**
 19 **to the infrasonic level.**
 20 Q. But, in fact, Schomer is referring to
 21 everything but infrasound -- well, infrasound
 22 levels, but they're not referring to noise that you
 23 can hear, are they?
 24 **A. Well, Cape Bridgewater didn't measure**

Page 3905

1 **anything that they could hear, so I guess they would**
 2 **have to be.**
 3 Q. So that was the point of Cape Bridgewater,
 4 correct, to measure things below which you could
 5 hear?
 6 **A. No. I mean the very stated reason for**
 7 **Cape Bridgewater was, again, starting with the**
 8 **diaries and trying to find out if anything**
 9 **correlated with the diaries to explain why these**
 10 **people had these sensations.**
 11 Q. And in this case, the determination in
 12 their opinion was stuff that they couldn't hear,
 13 correct? Was something going on that they couldn't
 14 hear causing these, quote, sensations?
 15 **A. Well, Cooper has again theorized that it's**
 16 **this infrasonic level, and the levels they measured**
 17 **were below the hearing threshold, so yes, it's about**
 18 **something that people can't hear.**
 19 Q. As did Schomer in UCLC Exhibit 154,
 20 correct?
 21 **A. 154?**
 22 Q. Yeah, the paper you just read. That's
 23 what he said, right?
 24 **A. Is 154 Hayes Exhibit 2?**

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1 Q. I'm sorry, I gave you the wrong. I've got
 2 so many numbers here. It is --
 3 **A. 151 perhaps?**
 4 Q. I think it's 1 -- yeah, it's 151. I
 5 apologize, that's my mistake.
 6 **A. Well, yeah, and again, you know, the title**
 7 **of Schomer's paper is theory, and he's saying the**
 8 **purpose of the paper is to provide foundation upon**
 9 **which infrasound can be investigated. I mean he's**
 10 **not -- it's just a theory.**
 11 Q. And the Cape Bridgewater study was
 12 investigating that exact same -- a very similar
 13 theory, correct?
 14 **A. Yes, they're both investigating or talking**
 15 **about infrasound.**
 16 Q. You said that the Hayes PowerPoint
 17 discussed amplitude modulation and you said -- or it
 18 was your opinion that amplitude modulation does not
 19 matter because the noise was below -- was actually
 20 infrasound and not dB(A), correct?
 21 **A. Well, what I said and certainly meant to**
 22 **say, and we can check the record, but until you can**
 23 **hear it, you can't tell if it's modulating.**
 24 Q. Okay, but you can still -- but Mr. Hayes

Page 3907

1 was talking about things that you could hear at the
 2 time. He was actually talking about dB(A)s at a
 3 higher level in that PowerPoint, correct?
 4 **A. I don't know if he explicitly said what he**
 5 **was talking about.**
 6 Q. Okay.
 7 **A. He just mentioned amplitude modulation.**
 8 Q. So -- and you just only talked about
 9 infrasound when you were disputing that though,
 10 correct?
 11 **A. That's correct.**
 12 Q. You didn't talk about sounds you could
 13 hear up in the 35, 40 level.
 14 **A. Right.**
 15 Q. Okay. The Wisconsin Public Service
 16 Commission decision, that's currently up on appeal,
 17 correct? It's actually in the court system right
 18 now?
 19 **A. On the Highland Wind project?**
 20 Q. The one you talked about with Lamancusa.
 21 **A. Yes, that's on appeal.**
 22 Q. So that's not a final decision by any
 23 stretch, correct?
 24 **A. Well, the Public Service Commission issued**

Page 3908

1 **their final decision approving the permit, but it's**
 2 **been --**
 3 Q. Okay, but as lawyers, we would not
 4 consider that a final decision.
 5 **A. Well, they issued a final order.**
 6 Q. Okay, which is now being reviewed. You
 7 said you double-checked the Cal Ridge or you
 8 double-checked your models here, excuse me, with two
 9 other models, correct?
 10 **A. Yes.**
 11 Q. Those have not -- those other two
 12 modelling results have not been provided to the
 13 Zoning Board of Appeals, have they?
 14 **A. No, I do not believe so.**
 15 Q. Okay. You talked about the Knox case
 16 which is -- if you can find the exhibit number
 17 faster than I can. Oh, it's 228 I believe, Pleasant
 18 Ridge 228. Is that correct?
 19 **A. You said Knox?**
 20 Q. Yes.
 21 **A. Yes.**
 22 Q. Okay. You talked about the fact that the
 23 Knox case measured at the pond and the pond is not a
 24 house or not Class A, correct?

Page 3909

1 **A. Correct.**
 2 Q. In the Knox case, no one measured at the
 3 yard, did they, on the other side of the pond?
 4 **A. I would have to review to double-check**
 5 **that.**
 6 Q. Okay. Well, that's fine. We'll just cite
 7 this to the board at the appropriate time, so I
 8 don't -- that's fine.
 9 You said you didn't use the measurements
 10 during harvest months or utilize the measurements
 11 during harvest months at Cal Ridge. Do you remember
 12 that?
 13 **A. Yes, I remember that.**
 14 Q. And that was because of harvesting
 15 equipment being used, correct?
 16 **A. Yes, it was because of our inability to**
 17 **separate the turbine noise from the harvest noise.**
 18 Q. Were you having that same problem at
 19 midnight?
 20 **A. Yes.**
 21 Q. They were still -- people were harvesting
 22 at midnight, 2:00, 3:00, 4:00 in the morning?
 23 **A. All night long, yes.**
 24 Q. All night long the entire project being

Page 3910

1 there.

2 **A. There were distant harvesting operations**

3 **going on at times 24 hours a day.**

4 Q. How --

5 **A. I was at the site on-site and I witnessed**

6 **this.**

7 Q. How distant?

8 **A. Well, there was -- you know, occasionally**

9 **they would come right up into the field right next**

10 **to the measurement location and occasionally could**

11 **be upwards of a mile away and --**

12 Q. So how often did you measure -- did you

13 notice that at 3:00 in the morning?

14 **A. I don't recall exactly how often it was at**

15 **3:00 in the morning, but it was evident in much of**

16 **the day.**

17 Q. How about between 1:00 and 5:00, 1:00 a.m.

18 and 5:00 a.m.? Were you there at some point when

19 you actually saw people harvesting?

20 **A. Yes.**

21 Q. How often?

22 **A. I was, I was not -- like I said, I was**

23 **there every two weeks or so.**

24 Q. And those two weeks you were there during

Page 3911

1 the -- you were there 24 hours?

2 **A. No.**

3 Q. How often were you there? How long were

4 you there when you just came by in those two weeks,

5 every two weeks?

6 **A. I would come by and download the data,**

7 **which takes hours. I was probably on-site for two**

8 **days.**

9 Q. Two days over how many visits?

10 **A. Oh, there were, you know, four and a half**

11 **months every two weeks.**

12 Q. So nine?

13 **A. At least.**

14 Q. Okay, let's say ten. So 48 hours, you

15 were there 48 hours over a ten week period, but the

16 ten week period doesn't include the harvest, right?

17 Because if you were doing it three and a half

18 months, did you --

19 **A. No, we kept measuring the whole time, we**

20 **never stopped measuring. It's just a question when**

21 **it came time to analyze the data, the data in the**

22 **heart of the harvest season, which was, I don't**

23 **know, early to mid October in 2013 and it largely**

24 **wrapped up by the end of October.**

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1 Q. I think your testimony was that you

2 measured for three and a half months, correct?

3 **A. Three and a half months, September,**

4 **October, November and part of August. Sorry, three**

5 **and a half months.**

6 Q. And of that three and a half months, you

7 were there 48 hours, so let's say three and a half

8 months conservatively would be --

9 **A. Well, 48 hours each time I went, so --**

10 Q. So you were there for 48 straight hours

11 and --

12 **A. Well, not straight hours. I mean you go**

13 **down to the site and download data, you go back to**

14 **the hotel, and you come out at night.**

15 Q. Okay. And so how often were you there in

16 that 48 hour time? How many hours?

17 **A. I was on-site probably 10, 12 hours a day,**

18 **so --**

19 Q. Okay. And how many of those time periods

20 were in the harvest time?

21 **A. I would say three to four.**

22 Q. And how long is the harvest that you

23 deleted?

24 **A. Well, we witnessed it -- you know, again,**

Page 3913

1 **it's by looking at the data and seeing the frequency**

2 **that we know is from harvesting equipment because we**

3 **can tell, because when the harvest equipment drove**

4 **right up to the meters, the levels spiked, so we got**

5 **to see what the signature was there, and then we**

6 **were therefore able to identify that signature in**

7 **other data.**

8 Q. Okay. So you would see that it came up

9 there during that time period and you would get rid

10 of that period, but instead of just getting rid of

11 those areas where you heard it, you got rid of the

12 entire four or five or six weeks?

13 **A. No, we reviewed -- no, all of the data was**

14 **included in the report.**

15 Q. But you discarded how many weeks?

16 **A. We didn't -- we didn't discard anything.**

17 **There was just a period of time, which was probably**

18 **three weeks --**

19 Q. Okay.

20 **A. -- where the levels were clearly**

21 **influenced by harvesting and we couldn't separate it**

22 **from the turbines.**

23 Q. And you tried to separate it, all 24 hours

24 during those three weeks, and couldn't do it or just

Page 3914

1 couldn't do it at certain time periods?
 2 **A. We looked at every single hour of the**
 3 **data.**
 4 Q. So you're telling me that for those three
 5 weeks, 24 hours a day, seven days a week, you
 6 couldn't distinguish or -- you couldn't distinguish
 7 the harvest from the wind turbines?
 8 **A. No, what we did is we took, say, out of**
 9 **those three weeks, maybe -- you know, keep in mind**
 10 **only -- the turbines are only operating a certain**
 11 **amount of the time and it's obvious we're only**
 12 **looking at night. And then the level is not always**
 13 **above the threshold. We were only concerned with**
 14 **those levels that were above the threshold. Those**
 15 **are the -- that's what we were concerned with.**
 16 **And so when we looked at those hours,**
 17 **however many that boiled down to, we couldn't**
 18 **separate the two for that data set.**
 19 Q. Okay. Were there time periods that you
 20 could separate the two during those three weeks?
 21 **A. Yes.**
 22 Q. But you didn't utilize any of those,
 23 correct?
 24 **A. Well, I mean those would be below the**

Page 3915

1 **limits.**
 2 Q. But we don't have that in the report.
 3 **A. All of the data is in the report, every**
 4 **single hour that was measured, every graph of every**
 5 **day.**
 6 Q. You said -- in response to the questions
 7 about Dr. Ambrose's statement, you said Cal Ridge --
 8 he said Cal Ridge had to reduce the data to charts
 9 and graphs or something like that, right?
 10 **A. Yes.**
 11 Q. You said you had to do that.
 12 **A. Yes.**
 13 Q. And that's exactly what the Cape
 14 Bridgewater study did too, correct?
 15 **A. Sure, yes.**
 16 Q. Okay. Let's go to -- let's go to Cape
 17 Bridgewater. You have that handy in front of you?
 18 **A. I do not have the complete document. Do**
 19 **you have a Cape Bridgewater?**
 20 Q. If not, I can give it to you. And all I
 21 have is -- I don't have all the thousands of pages
 22 of exhibits.
 23 **A. Yeah, I just have a few.**
 24 Q. I've got it.

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1 **MR. HAYES:** You want a copy of the report?
 2 **MR. LUETKEHANS:** No, I've got it.
 3 **MR. BLAZER:** I think it got left behind on
 4 Monday.
 5 **MR. LUETKEHANS:** It's okay. It's Hayes
 6 Exhibit No. 1 for the record. And obviously that's
 7 -- I think there were about 12 appendices. That's
 8 just the actual report not all the appendices for
 9 the record. And that's what has been admitted into
 10 evidence, Mr. Hankard, I will say that.
 11 **BY MR. LUETKEHANS:**
 12 Q. You have said that one of the criticisms
 13 you have seen of your methodology is that low
 14 frequency noise travels better than ISO predicts,
 15 correct?
 16 **A. Is that noise from wind turbines**
 17 **propagates differently than noise from other, say,**
 18 **point sources. That's the criticism.**
 19 Q. As it relates to low frequency noise,
 20 correct?
 21 **A. That was not my statement, no, not with**
 22 **relating to infrasound or low frequency per se.**
 23 Q. Well, it was low frequency noise was your
 24 statement, correct? That's okay, I can get it to

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1 you. Somewhere in here I have that transcript, I
 2 apologize. It's gotten a little out of order since
 3 we started here.
 4 **MR. LUETKEHANS:** Counsel, how about if I
 5 just cite you the page and you can tell me if I'm
 6 quoting this wrong?
 7 **MR. BLAZER:** Sure.
 8 **MR. LUETKEHANS:** Transcript November 18,
 9 2014, page 151.
 10 **MR. BLAZER:** November 18. What page?
 11 **MR. LUETKEHANS:** 151.
 12 Q. And the question is in there you have
 13 said --
 14 **MR. BLAZER:** Almost there.
 15 **MR. LUETKEHANS:** Oh, I'm sorry, Mike, I
 16 apologize.
 17 **MR. BLAZER:** No problem. What line are we
 18 at?
 19 **MR. LUETKEHANS:** You know, that's what I
 20 don't have, and if you want, I can --
 21 **MR. BLAZER:** Just start reading and I'll
 22 find it.
 23 **MR. LUETKEHANS:** He said that one of the
 24 criticisms he has seen of his methodology is that

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1 low frequency noise travels better than ISO
 2 predicts. Find that, Mike?
 3 **MR. BLAZER:** That's what I'm looking for.
 4 There it is. "I've seen criticism -- I've seen
 5 criticisms that low frequency noise travels better
 6 than ISO predicts."
 7 **BY MR. LUETKEHANS:**
 8 Q. Was that your testimony, Mr. Hankard?
 9 **A. Yes.**
 10 Q. Okay. I'm assuming Mr. Blazer isn't lying
 11 about it, isn't trying to mess you up. You said in
 12 the first hearing --
 13 **MR. BLAZER:** Do you want me to read the
 14 rest of it or just that?
 15 **MR. LUETKEHANS:** It's up to you. I don't
 16 really care. I mean I know it's a long answer, so I
 17 was just trying to make it shorter.
 18 **MR. BLAZER:** It was just two sentences.
 19 "Again, we're going to compare our results to real
 20 world conditions to test that."
 21 **BY MR. LUETKEHANS:**
 22 Q. Okay. You said in the first hearing that
 23 one advantage you have, quote, when I am working for
 24 Invenergy or another turbine farm developer, I have

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1 access to the data that tells me when the turbines
 2 are operating and when they aren't. If you're an
 3 acoustician working for an opposition group, you
 4 often don't have that data, end quote. Do you
 5 remember saying that?
 6 **A. I do.**
 7 Q. Okay. And they don't have that data
 8 because the wind turbine companies and their experts
 9 don't give it to them all the time, correct?
 10 **A. I -- I mean I don't know why, but either**
 11 **they haven't asked or they're not allowed it, what**
 12 **have you.**
 13 Q. Okay. Cooper, however, had this type of
 14 information for the Cape Bridgewater study, didn't
 15 he?
 16 **A. He did.**
 17 Q. And he wasn't working for an opposition
 18 group, was he?
 19 **A. No, he was working for the turbine**
 20 **operator.**
 21 Q. He was actually working for the turbine
 22 operator when he came up with these conclusions,
 23 correct?
 24 **A. Right.**

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1 Q. And you don't have any information that
 2 this study done by Cooper was not an independent
 3 analysis, do you?
 4 **A. Do I have any reason to believe it wasn't**
 5 **an independent analysis, is that your question?**
 6 Q. Yeah.
 7 **A. Yeah, I have no reason to believe that.**
 8 Q. Okay. And, in fact, Pacific Hydro
 9 provided unlimited access to the wind farm to
 10 undertake measurements that could assist in the
 11 study, correct?
 12 **A. Yes.**
 13 Q. And the study dealt with three houses
 14 located between 650 meters to 600 -- 1600 meters
 15 from the nearest turbine, correct? It's not a
 16 memory test. That's on page 1 of the executive
 17 summary or page i. Romanette i I guess is what I
 18 was once taught.
 19 **A. Yes.**
 20 Q. Okay.
 21 **A. What was the -- 650 to 1600 meters, yes.**
 22 Q. Okay, so we're talking approximately how
 23 many -- 650 meters would be close to 2,000 feet?
 24 **A. Right.**

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1 Q. Okay. And here the closest setback is
 2 about 1600 feet?
 3 **A. On the Pleasant Ridge project?**
 4 Q. Yes.
 5 **A. Yes.**
 6 Q. Okay. And then at the bottom of the
 7 executive summary, page Romanette i, Romanette 1, it
 8 says "Following consultation with residents,
 9 residents were asked to record perceived noise
 10 impacts, vibration impacts and other disturbances,
 11 which for the purpose of this study had been labeled
 12 sensation. Sensation includes headache, pressure in
 13 the head, ears or chest, ringing in the ears, heart
 14 racing or a sensation of headaches." Correct?
 15 **A. Yes.**
 16 Q. Okay. Cooper admits, does he not, that
 17 there were times where other instances of high
 18 severity of disturbance were not fitting the
 19 above -- the four scenarios that you talked about.
 20 **A. Yeah, he says that very thing.**
 21 Q. Okay. So he knew that, he recognized
 22 that, correct?
 23 **A. Yes.**
 24 Q. He's not trying to hide it, correct?

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1 **A. Right.**
 2 Q. Okay. And you talked about this being the
 3 four things -- I think you said something about it's
 4 pretty much the whole gamut of the wind turbine
 5 operation.
 6 **A. Yeah.**
 7 Q. Okay, let's talk about that. So we have
 8 when the turbines were starting, were seeking to
 9 start, correct?
 10 **A. Right.**
 11 Q. We have an increase in power on the order
 12 of 20 percent, correct?
 13 **A. Right.**
 14 Q. Decrease in power on the order of 20
 15 percent.
 16 **A. Right.**
 17 Q. So we have everything between an increase
 18 in power of 20 percent and a decrease in power of 20
 19 percent that's not covered in here, correct? That's
 20 not one of his times he found a sensation, is it?
 21 **A. Could you repeat that?**
 22 Q. Yeah, that's awfully worded and I don't
 23 know if I'll be able to do it any better, but I'll
 24 try. Let's do this. There is a time from when the

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1 turbine starts to increase in power on the order of
 2 20 percent where there is a gap in between there,
 3 correct?
 4 **A. Well, there -- yes, there could be times**
 5 **when it's not going up at the rate of 20 percent**
 6 **or --**
 7 Q. And there's also times when it's not
 8 decreasing at the rate of 20 percent.
 9 **A. Sure.**
 10 Q. Okay. And there's also times when the
 11 turbines were not operating at maximum power and the
 12 wind increased above 12 meters per second, correct?
 13 That's his fourth scenario.
 14 **A. Well, they were operating. You said not.**
 15 **They were operating at maximum power and the wind**
 16 **speed increased.**
 17 Q. Okay, yeah, but there's times when that's
 18 not occurring.
 19 **A. Sure.**
 20 Q. That's my point.
 21 **A. Yeah.**
 22 Q. Okay, so there are clearly times when one
 23 of these four scenarios is not happening, correct,
 24 at a wind turbine?

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1 **A. There could be times, yes.**
 2 Q. Could be or there will be?
 3 **A. I'm sure there will be.**
 4 Q. He goes on on Romanette iv to say at the
 5 top, "By including narrowband analysis in the
 6 description of the acoustic environment, the study
 7 confirms that the infrasound obtained in the wind
 8 farm affected environment to be different to that in
 9 a natural acoustic environment." Correct?
 10 **A. Yes.**
 11 Q. So he's realizing that this is not always
 12 noise in his mind.
 13 **A. Well, what he's realizing is that there**
 14 **are these right at what's called the blade pass**
 15 **frequency and the harmonics, and other researchers**
 16 **are finding this same thing.**
 17 Q. Okay. That are not seen at 39, 40, 41
 18 decibels, correct, in 1000 hertz?
 19 **A. No, this is all between 1 and 5 hertz.**
 20 Q. Perfect. And he goes on to say, Romanette
 21 v again of the executive summary, third full
 22 paragraph, about three-quarters of the way down,
 23 "The reliance upon manufacturer's data does not
 24 always cover the entire spectrum of concern."

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1 That's his opinion, correct?
 2 **A. That's his opinion, yeah.**
 3 Q. Okay. One of your criticisms of Cape
 4 Bridgewater or Dr. Cooper or Mr. Cooper -- I don't
 5 know if he's a doctor, I apologize -- were that the
 6 noise bottomed out inside the home. Noise levels
 7 were so slow or were so low that that's a problem,
 8 correct?
 9 **A. Yeah, a problem in a sense their meters**
 10 **couldn't measure that low.**
 11 Q. Okay. But his study, as we talked about,
 12 isn't commenting -- isn't saying that it's noise
 13 that's causing the problem, correct?
 14 **A. I don't know what his study is saying is**
 15 **causing the problem.**
 16 Q. Okay, but he doesn't say it's noise.
 17 **A. Well, he says they can't correlate it to**
 18 **the measured noise levels.**
 19 Q. Okay, but he's still saying he's finding a
 20 correlation, correct?
 21 **A. He says he finds -- let's use his words.**
 22 **Back to Romanette ii, right above the four**
 23 **conditions under which he thinks could be the issue,**
 24 **"the study found a pattern," that's his word --**

1 Q. So he --

2 A. "-- pattern of high severity with those
3 operating conditions."

4 Q. Okay, and one of the reasons you don't
5 think there's a pattern is because there are times
6 when people are saying they have a high severity of
7 a sensation and it's not -- there's no wind turbine
8 operation, correct?

9 A. Right, as well as times when the plant is
10 changing and they don't report it.

11 Q. Okay, and there are also times when I have
12 a headache, and I've probably given one to about
13 three-quarters of the people in the room tonight,
14 that there's no wind turbine near me, correct?

15 A. Sure.

16 MR. LUETKEHANS: Mr. Hankard, thank you.
17 I have no further questions.

18 CHAIRMAN CORNALE: All right, just real
19 quick, let's see how many, just a show of hands, how
20 many individuals might have some questions for Mr.
21 Hankard in the audience. Okay, let's take five
22 minutes worth of break to give our court reporter a
23 five minute break and we'll get going just as soon
24 as we can after that. We should be able to get

1 Q. And you are basing that, I'm guessing
2 here, you'll have to correct me, on model predicted
3 numbers for the Cal Ridge?

4 A. Correct.

5 Q. And is that data available online or
6 anything that I could look at?

7 MR. BLAZER: If I may, Mr. Hayes, that's
8 one of the -- the Cal Ridge study is in the record,
9 it's one of our exhibits, the entire study.

10 MR. HAYES: Okay, thank you.

11 MR. BLAZER: If you want, after we finish,
12 I can tell you the --

13 MR. HAYES: That's, I just -- you know, in
14 case I wanted to look at it because I'm --

15 BY MR. HAYES:

16 Q. You're basically using an equation that
17 you put numbers into and one of them is certainly
18 going to be distance.

19 A. Yes.

20 Q. And I'm not sure how you can take -- you
21 know, how you -- I mean did you -- how did you
22 determine the locations to use for the predicted
23 numbers you put into your model for the Cal Ridge?
24 The ones that you predicted that you compared to the

1 through everybody and we're still -- Mr. Hankard, we
2 hope to get you out of here tonight.

3 (Recess at 9:30 p.m. to 9:35 p.m.)

4 CHAIRMAN CORNALE: We can go ahead and
5 head back and get going again. I had some questions
6 out there. Mr. Hayes, why don't we take some of
7 your questions first. Elaine has a microphone, so
8 we should be able to hear good tonight.

9 MS. FEHR: They can't hear here even
10 sitting in the front row.

11 CHAIRMAN CORNALE: We sometimes have a
12 hard time too. All right, Mr. Hayes.

13 MR. HAYES: John Hayes. This won't take
14 long. I don't have too much.

15 QUESTIONS BY

16 MR. HAYES:

17 Q. There was -- I'd like to get a little
18 clarification on some things that I'm not fully
19 understanding about the -- the numbers that were
20 calculated by the ISO model for Pleasant Ridge, and
21 you're saying you have faith in those based on the
22 measured values from the Cal Ridge study, am I
23 correct?

24 A. Correct.

1 measured ones, how did you obtain those? That's
2 what I don't understand.

3 A. How did I obtain the distances?

4 Q. Well, just how did you go about making
5 sure they were identical? That the -- you know,
6 you're saying that, you know, because you had a
7 limited location in the Cal Ridge measurement as far
8 as where you measured them, you didn't do the whole
9 wind farm.

10 A. No, we measured two -- three specific
11 points.

12 Q. Right, so that's kind of where I'm
13 wondering how did you go about calculating those
14 predicted ones?

15 A. Well, we can determine the locations of
16 our measurement points using a GPS and getting
17 coordinates and then we know the coordinates of the
18 turbines, so from those two, we can calculate the
19 distances between our measurement points and the
20 turbines.

21 Q. And when you got your numbers, they were
22 extremely close?

23 A. They were -- as we've discussed, they were
24 2 decibels over, sometimes it was 4 decibels over.

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1 Q. But generally less than 1 decibel
 2 difference?
 3 **A. Well, no. I mean, like I said, it was a 2**
 4 **decibel difference.**
 5 Q. Okay, I'm thinking tenths, forgive me.
 6 **A. No.**
 7 Q. No. So you're talking 2 decibels there?
 8 **A. Right.**
 9 Q. Okay. So you didn't basically use the
 10 distance, the distance from those turbines to the
 11 microphones? You basically did that in your
 12 modelling process? Did you replicate that as far as
 13 your model as to where the microphones, prime one
 14 and prime two, were located?
 15 **A. Right.**
 16 Q. Okay. That's kind of what I was wanting
 17 to know. The second thing that I heard you say,
 18 that you thought that using point source for
 19 resonance was more accurate than a contour map?
 20 **A. Right.**
 21 Q. So to make a contour map, say of a wind
 22 farm, would it -- the more points that you would use
 23 in the contour map in your calculation would
 24 probably be a more desirable idea?

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1 **A. Right, yeah, you can set that in the**
 2 **software, how many, the density of your points.**
 3 Q. Okay. And, you know, basically you're
 4 using the exact same equation. You're just putting
 5 different numbers into it, but you're calculating a
 6 lot of different decibels on property in the wind
 7 farm.
 8 **A. When you're doing a contour --**
 9 Q. Yes.
 10 **A. -- calculation? Yeah, you're just**
 11 **predicting at points, which are just all kinds of**
 12 **points, and the line gets interpolated between the**
 13 **points.**
 14 Q. Well, maybe I'm splitting hairs. Maybe
 15 we've got a different opinion on the word accuracy.
 16 You know, accuracy is more along the lines to me of
 17 if you're using the same equation, you're going to
 18 have the same accuracy come out. It's going to spit
 19 out a number --
 20 **CHAIRMAN CORNALE:** Mr. Hayes, Mr. Hayes,
 21 remember, rebuttal, not your opinion of accuracy.
 22 Questions regarding that. Focus.
 23 Q. What I was getting to was just that to
 24 your comment that you thought one point was more

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1 accurate than a contour map which is lots of points.
 2 That's what I was just trying to get across, that,
 3 you know, that --
 4 **A. But what you get out of a contour map is**
 5 **the line. It's not the points, it's the line, and**
 6 **the line is an interpolation between the points.**
 7 **That was my point.**
 8 Q. Well, a lot of contour maps are --
 9 sometimes they just show color bands.
 10 **CHAIRMAN CORNALE:** Question, question.
 11 Remember, question.
 12 **MR. HAYES:** Okay, I'm not going to keep
 13 you any longer. I think I'll -- it's I made my
 14 point I think. Okay, thanks.
 15 **CHAIRMAN CORNALE:** It's okay. I'm just
 16 trying to get you to ask questions.
 17 **MR. HAYES:** I understand what you're
 18 saying, and it's not that important to keep you here
 19 late. It's pretty late in the day, so we'll let
 20 someone else ask questions.
 21 **MR. BLAZER:** Mr. Hayes, for the record,
 22 the California Ridge noise report is Pleasant Ridge
 23 Exhibit 48.
 24 **MR. HAYES:** Thank you.

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1 **CHAIRMAN CORNALE:** All right, I think I've
 2 got some other questions. Ambiro, did you have a
 3 few?
 4 **QUESTIONS BY**
 5 **MR. CAVAZOS:**
 6 Q. I guess I had a few questions. I assume
 7 there are -- are there instruments to measure for
 8 infrasound?
 9 **A. Yeah, I mean there's standard microphone**
 10 **sound level meters will measure infrasound provided**
 11 **it is rated to go down low to that level of**
 12 **frequency. Most sound level meters might go from 4**
 13 **to 10 hertz up to 10,000, so you would need to make**
 14 **sure that the microphone that you're using, the**
 15 **meter is rated to go all the way down to, say, a**
 16 **tenth of a hertz. So the equipment is not really**
 17 **any different. It just has to be to that rate.**
 18 Q. Okay. What -- do wind turbines produce
 19 infrasound?
 20 **A. Yes.**
 21 Q. Would those instruments be able to
 22 measure -- I don't know how low they go I guess --
 23 infrasound levels of wind turbines?
 24 **A. Which instruments?**

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1 Q. Whatever instruments you use to measure
 2 infrasound.
 3 **A. On Cal Ridge, the lowest published in the**
 4 **report, those meters that we used only went down to**
 5 **I think 4, so not all the way down to 1 or a half.**
 6 Q. And what do the turbines usually produce?
 7 **A. Well, the turbines will produce sound**
 8 **across the spectrum, all the way from a fraction of**
 9 **a hertz up to 10,000.**
 10 Q. Is it true that infrasound gets louder
 11 indoors, like in a home?
 12 **A. That was a comment made in one of the**
 13 **presentations, I believe they used the term**
 14 **resonance, and no, every study, including Cape**
 15 **Bridgewater, shows that the infrasound levels inside**
 16 **the home are less than outside the home.**
 17 Q. That's infrasound.
 18 **A. Infrasound.**
 19 Q. Okay.
 20 **A. All noise levels but infrasound also.**
 21 Q. Did you also measure for infrasound levels
 22 in California Ridge?
 23 **A. No, that was not a part of our scope.**
 24 Q. Okay. And you mentioned you measured

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1 during certain times of the year, during harvest.
 2 Well, I -- you know what, I'm making a guess. Did
 3 you ever try to measure when there was no harvesting
 4 going on?
 5 **A. Well, certainly. I mean in August and**
 6 **September and November there was little, if any,**
 7 **harvesting going on. It was primarily October.**
 8 Q. Okay. What about in the wintertime? We
 9 had someone testify that it was louder, that the
 10 turbines are louder in the winter. Would that be
 11 accurate?
 12 **A. No, I have no reason to believe that**
 13 **they're louder in the winter. I've got a project**
 14 **where I've been measuring for four years and I don't**
 15 **see any seasonal variation to speak of.**
 16 Q. Okay. And can you measure simultaneously,
 17 you know, with audible or inaudible sound the load
 18 or the power output a wind turbine is producing? I
 19 mean can you have that data be simultaneous I guess?
 20 **A. Yes, that -- that data can be put**
 21 **together, sure.**
 22 Q. And your data at California Ridge, did it
 23 have -- I mean was it -- was the power output at
 24 full power I guess?

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1 **A. Yeah, what we published in the report was**
 2 **the speed of the nearest turbines and then the power**
 3 **output of the whole plant. That's what we put in**
 4 **the report.**
 5 Q. I guess I'm not asking about the speed of
 6 the rotor. I'm asking about the individual power
 7 output.
 8 **A. That was not in the report. The**
 9 **individual turbine power output was not in the**
 10 **report.**
 11 Q. And there's no way to get that now.
 12 **A. Well, it exists.**
 13 Q. Yes.
 14 **A. Okay.**
 15 Q. And also I had a question on measuring.
 16 You mentioned that is it -- I was a little confused.
 17 You measure sounds from the hub height of the
 18 windmill, wind turbine?
 19 **A. No, we didn't measure at hub height. We**
 20 **measured at five feet off the ground.**
 21 Q. I'm sorry, I guess -- I guess what I
 22 meant, what do you measure? You said something
 23 about the hub height.
 24 **A. Wind speed maybe?**

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1 Q. Oh, wind speed, okay.
 2 **A. That's measured at hub height and at**
 3 **ground level.**
 4 Q. Okay, and that would -- would that affect
 5 the decibel level?
 6 **A. Well, I mean the hub height wind speed**
 7 **simply really relates just to how fast the turbine**
 8 **is going to spin and that is what dictates how loud**
 9 **it is.**
 10 Q. Okay, that would probably be -- I guess
 11 what I'm asking is at Pleasant Ridge, I guess the
 12 rotor diameter is a certain size and the hub height
 13 is a certain size. I think these are pretty big
 14 rotors. Would that affect --
 15 **CHAIRMAN CORNALE:** Ambiro, let's be
 16 careful here. This has already been previously
 17 testified to.
 18 **MR. CAVAZOS:** Well, I guess I was -- I
 19 understand.
 20 **CHAIRMAN CORNALE:** So rebuttal and what he
 21 presented during rebuttal.
 22 **MR. CAVAZOS:** Focus, okay.
 23 **BY MR. CAVAZOS:**
 24 Q. And I guess you talked about measuring

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1 different points. I'm in Strawn and I'm sure you
 2 measured -- have you measured current noise levels
 3 at any property, real noise levels?
 4 **A. On Pleasant Ridge?**
 5 Q. Yes.
 6 **A. No.**
 7 Q. Okay. Do you have any idea of what you
 8 think it might be? I guess is that what your model
 9 is trying to show?
 10 **A. No, the model does not -- I mean what's**
 11 **here today is not wind turbines. I mean it's wind**
 12 **and traffic and overhead airplanes, so --**
 13 Q. So it would be zero if you just talk about
 14 the turbines. There's no turbines, correct?
 15 **A. Right. Well, there's no turbine noise.**
 16 **No turbines are present now.**
 17 Q. Okay, and some of them would be 41 on your
 18 model. I guess, in your opinion, is it okay to
 19 impose an increase of 40 decibels on any property?
 20 **A. Well --**
 21 **CHAIRMAN CORNALE:** All right, hold on,
 22 hold on. It's not a fair question.
 23 **MR. CAVAZOS:** Okay, I guess that was my
 24 last question. Thank you.

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1 **CHAIRMAN CORNALE:** All right. All right,
 2 who else had some questions? Mr. Slagel.
 3 **MR. JOHN SLAGEL:** John Slagel. Can I sit
 4 down here?
 5 **CHAIRMAN CORNALE:** Yeah, you're welcome to
 6 sit down. I'm going to remind you, the same as I
 7 reminded the past two questioners, make sure it's
 8 rebuttal based.
 9 **MR. JOHN SLAGEL:** Exactly. Yes, I thought
 10 long and hard about questions I can ask, and I'm
 11 going to ask a lot of this during surrebuttal, so
 12 I'll do that.
 13 **QUESTIONS BY**
 14 **MR. JOHN SLAGEL:**
 15 Q. The first question. You said there's a 15
 16 decibel reduction inside the house, right?
 17 **A. From outside to inside, yes.**
 18 Q. Yeah. At what frequency?
 19 **A. Those are referring to dB(A) levels, so**
 20 **that would be the entire -- kind of the sum of the**
 21 **entire frequency spectrum.**
 22 Q. Okay. And then you said the really only
 23 difference was whether the windows were open or not?
 24 **A. Well, the difference in the published WHO**

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1 **numbers are depending on windows open or closed.**
 2 Q. And with insulation or soundproofing of
 3 the house, would it affect that number and how would
 4 it affect that number?
 5 **A. Yes, absolutely. You know, the thickness**
 6 **of the walls, the amount of insulation, whether or**
 7 **not it's stucco or wood, all these things come into**
 8 **play, double pane windows, et cetera.**
 9 Q. Okay. So at Ted Hartke's house when you
 10 were measuring 45, 46 dB(A) outside on his property
 11 line during the California Ridge study, so you're
 12 saying inside his house would be 30 dB(A) roughly?
 13 **A. Yes, at most.**
 14 **MR. BLAZER:** If I may, Mr. Chairman, first
 15 of all, he didn't testify that he was measuring at
 16 Mr. Hartke's property line.
 17 **CHAIRMAN CORNALE:** That is correct. He
 18 referred to the Hartke model as a similar property
 19 that was not the Hartke residence.
 20 Q. Okay. So another thing you said tonight I
 21 didn't quite get. You said that meeting legislative
 22 levels or IPCB levels doesn't mean -- could you say
 23 that statement you said earlier? I think it was a
 24 Blazer query to you about it and we -- it was

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1 something like just because you meet levels doesn't
 2 mean you're going to have health issues, noise
 3 complaints?
 4 **CHAIRMAN CORNALE:** Mr. Luetkehans asked
 5 that question and it's in the record.
 6 **MR. BLAZER:** I think what he may be
 7 referring to, Mr. Chairman, is the Leventhall-Berger
 8 study that --
 9 **CHAIRMAN CORNALE:** All right, it's in the
 10 record.
 11 **MR. BLAZER:** Yeah, it's already in the
 12 record.
 13 **CHAIRMAN CORNALE:** It's already been asked
 14 and answered.
 15 **BY MR. JOHN SLAGEL:**
 16 Q. I guess what I was going to say is you
 17 were -- you said that there wasn't -- because you
 18 met the IPCB limits -- well, okay, we'll come back
 19 to that.
 20 Okay. On the sound contours, that was one
 21 of your complaints, that my model wasn't accurate I
 22 guess. You said -- and you said it was because of
 23 the interpolating, correct?
 24 **A. Well, I don't know if that's the reason**

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1 **for the differences. It's just that --**
 2 Q. No, I mean you said that the sound levels
 3 were not accurate because of the interpolation?
 4 **A. I'm saying that, yeah, a contour line is**
 5 **an interpolation between two points.**
 6 Q. Okay. Okay, this is my exhibit here that
 7 I submitted earlier.
 8 **CHAIRMAN CORNALE:** What's the number on
 9 that?
 10 **MR. JOHN SLAGEL:** This would be 3A.
 11 **CHAIRMAN CORNALE:** Slagel Exhibit 3A.
 12 Q. This would be like the sound contours here
 13 which show the points, okay? Can you show me where
 14 I drew a line and interpolated on here?
 15 **A. Well, it would be the line that goes**
 16 **between the two different colors.**
 17 Q. Well, there's no line there, there's no
 18 line drawn. These colors are each pixel. I
 19 calculated the values in between --
 20 **MR. BLAZER:** Objection. Now he's
 21 testifying.
 22 Q. Okay, sorry. Yes, good enough. If you
 23 were going to make sound contours, how would you do
 24 it?

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1 **A. I would use a software model that we have**
 2 **that would do I'm assuming what yours did, which is**
 3 **predict a bunch of points and then interpolate**
 4 **between the points.**
 5 Q. And when you say interpolate, you mean
 6 you're to draw the lines on the contour?
 7 **A. Yeah, usually you tell it to draw a 40 dB**
 8 **contour line or 35 or whatever.**
 9 Q. Right. So back to this figure. On this
 10 map right here in the red area, where is the data
 11 interpolated? Like when I calculated this point
 12 here, where did that get interpolated?
 13 **A. I don't know. I'm assuming your program**
 14 **again produced noise levels at a matrix, at a number**
 15 **of different points.**
 16 Q. At every pixel.
 17 **A. Every pixel, okay.**
 18 Q. And there's no interpolation here.
 19 **A. Right, but once you cross from red to**
 20 **yellow, how do you designate where that boundary is?**
 21 Q. It's not designated.
 22 **MR. BLAZER:** Mr. Chairman.
 23 **CHAIRMAN CORNALE:** Mr. Slagel, careful,
 24 you're testifying again.

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1 **MR. JOHN SLAGEL:** All right. Okay.
 2 Anyway...
 3 **BY MR. JOHN SLAGEL:**
 4 Q. Okay. Now you said I calculated one
 5 number as 39 something and you calculated 41.
 6 **A. Right.**
 7 Q. Was that for Hartke's house or for the --
 8 **A. I believe --**
 9 Q. -- location of prime two?
 10 **A. Well, prime two, I believe you said on the**
 11 **California Ridge you predicted 39.**
 12 Q. Right, I predicted 39.16 at the center of
 13 the Hartke residence, and you're saying that should
 14 be 41?
 15 **A. Well, my 41 is at the prime two location.**
 16 Q. Okay, just to go back and -- when you did
 17 your California Ridge compliance study, did you
 18 calculate the ISO prediction at the points of prime
 19 one and prime two?
 20 **A. Yes, that's what I'm referring to when I**
 21 **say I predicted a 41.**
 22 Q. Okay. So you say mine is -- that's 2
 23 decibels lower than yours?
 24 **A. Right.**

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1 Q. Okay. Okay, switch gears real quick here.
 2 So if you say the house is Class A land, correct, is
 3 what you're saying?
 4 **A. Yes.**
 5 Q. And the entire house is Class A at least,
 6 correct?
 7 **A. The household, yes.**
 8 Q. Okay.
 9 **A. The house.**
 10 Q. And so the land outside of your house,
 11 like your yard, your driveway, what class is that?
 12 **A. That's not listed, so I guess it would be**
 13 **unclassified.**
 14 Q. Okay, so then what are the sound
 15 restrictions on that?
 16 **A. There are no safety -- if it's**
 17 **unclassified land, there are no sound restrictions.**
 18 **MR. JOHN SLAGEL:** Okay, that's it.
 19 **CHAIRMAN CORNALE:** All right. Anybody
 20 else in the audience with questions? Anybody else
 21 out there? All right, it's back to us again. Do we
 22 have anything? I had two. I'll be really quick.
 23 **QUESTIONS BY**
 24 **CHAIRMAN CORNALE:**

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1 Q. All right. As I looked at one of these
 2 exhibits, I just -- I just had a general question.
 3 All the limitations were 2 basically, as low as 2
 4 hertz you could measure with your meters. You
 5 referred to 2 hertz as your bottom limit.
 6 **A. 4 I believe.**
 7 Q. Or 4, okay, okay. Correct me if I'm
 8 wrong, the graphs that we've seen or were earlier
 9 previously submitted, be it from you or elsewhere,
 10 with the hertz and the charts, as hertz decrease,
 11 decibels at the same level increase, decrease?
 12 **A. Increase generally, yeah.**
 13 Q. They do, okay, okay. That was my first
 14 question, okay. To the Hartke model scenario that
 15 you built, I remember clearly the Hartke testimony
 16 and he showed a picture of the tree house, and the
 17 reason I ask that is, is the model location of
 18 similar acoustical variety with maybe trees in the
 19 background? Acoustically is it the same
 20 amphitheater setting that he may have or is it a
 21 flat piece of land with no buildings or instruments
 22 to possibly bounce the sound around?
 23 **A. It would in the model you mean?**
 24 Q. Where you're taking measurements from

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1 since you're not on his property.
 2 **A. Well, I mean we had direct line of sight**
 3 **to the nearest turbine, so there was no -- there was**
 4 **nothing that would have reduced the noise, for**
 5 **example, between that turbine and our measurement**
 6 **location. The Hartke residence, I believe there was**
 7 **a stand of trees between that residence, so that**
 8 **might reduce it a little bit, but we generally don't**
 9 **take any account for trees. I mean it's -- it was**
 10 **very, very similar, the locations, in terms of**
 11 **distance, in terms of their view of the turbines,**
 12 **the elevation.**
 13 Q. Okay. Could trees acoustically provide a
 14 background that would -- that would actually hold
 15 sound in or actually bounce sound backwards towards
 16 their residence?
 17 **A. I mean if you have trees between you and a**
 18 **source, generally speaking, it's going to reduce the**
 19 **noise, it's not going to --**
 20 Q. Okay, but let's go in reverse of that.
 21 **A. Could it reflect the noise?**
 22 Q. Yeah.
 23 **A. That's not at all my understanding of the**
 24 **acoustics of this, no. We never -- no. You do not**

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1 **get a reflection of noise on trees.**
 2 Q. Zero factor.
 3 **A. Well, I mean there's never -- it's never**
 4 **zero. I mean I just -- but, you know, the rule of**
 5 **thumb is don't even take the correction. You know,**
 6 **the trees are going to block some of the noise and**
 7 **it's a very small amount, and we just don't even**
 8 **deal with that because trees can have leaves and**
 9 **then lose their leaves.**
 10 **So I mean could there be a minute amount**
 11 **of reflection that could occur? Yes, there could**
 12 **be, but again, we don't take the correction either**
 13 **way.**
 14 Q. Okay.
 15 **CHAIRMAN CORNALE:** All right, any other
 16 questions from the board? County staff? County
 17 counsel? It's ten o'clock. Motion to recess.
 18 **MR. VITZTHUM:** I make --
 19 **CHAIRMAN CORNALE:** And let me, before
 20 we -- while we're still in session, our next meeting
 21 is May 7th, it's at seven o'clock in this location.
 22 6:30 we have a meeting prior. We'll be in the back
 23 room. We'll come forward for the meeting at 7:00.
 24 All right. With that, motion to recess.

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1 **MR. VITZTHUM:** I make that motion.
 2 **CHAIRMAN CORNALE:** Vitzthum motions. Can
 3 I get a second?
 4 **MS. HUISMAN:** Second.
 5 **CHAIRMAN CORNALE:** Huisman seconds. All
 6 in favor?
 7 **ALL MEMBERS:** Aye.
 8 **CHAIRMAN CORNALE:** Opposed?
 9 (Adjourned at 10:01 p.m.)
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1 STATE OF ILLINOIS)
2 COUNTY OF FORD)SS

3
4 I, June Haeme, a Notary Public in and for
5 the County of Ford, State of Illinois, do hereby
6 certify that the following Livingston County Zoning
7 Board of Appeals Case SU-7-14 hearing was taken at
8 the Livingston County Historic Courthouse, 112 West
9 Madison Street, Pontiac, Illinois, on April 29,
10 2015.

11 That the said testimony was taken down in
12 stenograph notes and afterwards reduced to
13 typewriting under my instruction and that the
14 transcript is a true record of the testimony given.

15 I do further certify that I am a
16 disinterested person in this cause of action; that I
17 am not a relative, or otherwise interested in the
18 event of this action, and am not in the employ of
19 the attorneys for either party.

20 IN WITNESS WHEREOF, I have hereunto set my
21 hand and affixed my notarial seal this 12th day of
22 May, 2015.

23
24

JUNE HAEME, CSR
NOTARY PUBLIC

"OFFICIAL SEAL"
June Haeme
Notary Public, State of Illinois
My Commission Expires:
September 27, 2016

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