

COMMONWEALTH OF PENNSYLVANIA

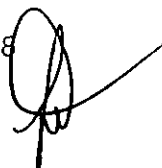
PUBLIC UTILITY COMMISSION

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:
Application of Trans-Allegheny :
Interstate Line Company (TrAILCo) : Docket No.
for approval: 1) for a certificate of : A-110172
public convenience to offer, render, : A-110172F0002
furnish or supply transmission service in : A-110172F0003
the Commonwealth of Pennsylvania; : A-110172F0004
2) authorization and to locate, : G-00071229
construct, operate and maintain certain :
high-voltage electric substation :
facilities; 3) authority to exercise :
power of eminent domain for the :
construction and installation of aerial :
electric transmission facilities along :
the proposed transmission line routes in :
Pennsylvania; 4) approval of an exemption :
from municipal zoning regulations with :
respect to the construction of buildings; :
and 5) approval of certain related :
affiliated interest agreements. :
:
Further Hearing. :
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Pages 3396 through 3579 Hearing Room 1602
State Office Building
Pittsburgh, Pennsylvania

Tuesday, April 1, 2008



Met, pursuant to adjournment, at 9:10 a.m.

BEFORE:
MICHAEL A. NEMEC, Administrative Law Judge
MARK A. HOYER, Administrative Law Judge

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P R O C E E D I N G S

1
2 ADMINISTRATIVE LAW JUDGE MICHAEL A. NEMEC: This
3 morning we have a further hearing in the multiple
4 application case filed by Trans-Allegheny Line Company. The
5 lead docket is A-110172.

6 Do counsel have any preliminary matters?

7 (No response.)

8 JUDGE NEMEC: There being none, Mr. Burns, you may
9 call your first witness.

10 MR. BURNS: Your Honor, we call Dr. Robert Hanham as
11 our first witness.

12 JUDGE NEMEC: Right up here, sir. Please take a
13 seat. Please raise your right hand.

14 Whereupon,

15 ROBERT Q. HANHAM

16 having been duly sworn, testified as follows:

17 JUDGE NEMEC: You may proceed, Mr. Burns.

18 DIRECT EXAMINATION

19 BY MR. BURNS:

20 Q. Dr. Hanham, I've placed in front of you ECC
21 Statement No. 2 with Exhibits RQH-1 through RQH-10.

22 Now, with respect to that Statement No. 2, was that
23 statement prepared by you or under your direction?

24 A. Yes.

25 Q. And if I was to ask you the same questions today

1 that are contained in that statement, would your answers be
2 the same?

3 A. Yes.

4 Q. Do you have any corrections that you would like
5 to make to that statement at this time?

6 A. I don't think so.

7 Q. And so, do you adopt that testimony as part of
8 your testimony for this proceeding?

9 A. Yes, I do.

10 Q. Let me have you turn to Energy Conservation
11 Council of Pennsylvania Surrebuttal Statement No. 2 and
12 attached Exhibits RQH-12 and 13.

13 Is this also testimony that was prepared by you or
14 under your direction?

15 A. Yes.

16 Q. And if I asked you the same questions today,
17 would you have the same answers as contained in that
18 statement?

19 A. Yes.

20 Q. And do you adopt that testimony for this
21 proceeding?

22 A. Do I what?

23 Q. Do you adopt that testimony?

24 A. Yes, I do adopt.

25 MR. BURNS: Your Honor, at this time, I would like to

1 move for the entry of the testimony and exhibits that we
2 just identified. That is ECC Statement No. 2 with attached
3 Exhibits RQH-1 through 10, and ECC Surrebuttal Statement No.
4 2 with attached Exhibits 12 and 13.

5 I just want to note for the record that there does
6 not appear to have been an Exhibit 11 attached to either of
7 these, and I would move for admission of those statements
8 and those exhibits at this time subject to cross-examination
9 and timely motion.

10 JUDGE NEMEC: The statements and exhibits may be so
11 identified.

12 (Whereupon, the documents were
13 marked as ECC Statement No. 2 with
14 Exhibits RQH-1 through RQH-10 and
15 ECC Surrebuttal Statement No. 2
16 with Exhibits RQH-12 and 13 for
17 identification.)

18 JUDGE NEMEC: And ECC Statements 2 and Surrebuttal
19 Statement 2, along with Exhibits RQH-1 through 10 and 12
20 through 13 are admitted subject to cross-examination and
21 later motion and/or objection.

22 (Whereupon, the documents marked as
23 ECC Statement No. 2 with Exhibits
24 RQH-1 through RQH-10 and ECC
25 Surrebuttal Statement No. 2 with

1 Exhibits RQH-12 and 13 were
2 received in evidence.)

3 MR. BURNS: The witness is now available for cross,
4 Your Honor.

5 JUDGE NEMEC: You may cross.

6 MR. SELTZER: Thank you, Your Honor. Just for
7 clarity purposes, Your Honors, I will have a couple of
8 motions with respect to Dr. Hanham at the end of my cross-
9 examination.

10 **CROSS-EXAMINATION**

11 BY MR. SELTZER:

12 Q. Good morning, Dr. Hanham.

13 A. Good morning.

14 Q. Dr. Hanham, you've never been responsible for
15 the construction, operation or design of electric generation
16 facilities, have you?

17 A. Hang on. Before I answer that question, who am
18 I talking to?

19 Q. I apologize. My name is Alan Seltzer. I
20 represent --

21 A. You're Mr. Seltzer. Okay.

22 Q. I represent TrAILCo. We had met back at the
23 public input hearings where you testified, if you recall.

24 A. I remember the face.

25 Q. My apologies. Dr. Hanham, you've never been

1 responsible for the construction, operation and design of
2 electric generating facilities, have you?

3 A. That is correct; I have not.

4 Q. And you've never been responsible for the
5 construction, operation or design of electric transmission
6 facilities, have you?

7 A. That is correct; I have not.

8 Q. Dr. Hanham, you haven't published or
9 participated in any scientific publication addressing
10 electromagnetic fields; is that correct?

11 A. That's correct.

12 Q. Dr. Hanham, let's turn to page 2, lines 19 and
13 20 of your direct testimony.

14 A. Line 2 of what?

15 Q. Of your direct testimony.

16 A. Yeah. Which page?

17 Q. Lines 19 and 20.

18 A. Which page?

19 Q. Page 2.

20 A. Yeah.

21 Q. On page 2 at lines 19 and 20 of your direct
22 testimony, you state that Loudoun County, Virginia is the
23 beneficiary of the proposed power lines; is that correct?

24 A. That's what it says.

25 Q. You haven't prepared any written studies,

1 analyses, reports, or the like to support that conclusion,
2 have you?

3 A. That it is the final destination you mean?

4 Q. to support the conclusion that Loudoun County,
5 Virginia is the beneficiary of the proposed TrAIL project?

6 A. No. I'm just relying on TrAILCo witnesses for
7 that.

8 Q. And which direction, to your knowledge, will
9 power flow out of the proposed 502 Junction substation in
10 Pennsylvania?

11 A. I don't know.

12 Q. Let's take a look again at page 2, lines 22 to
13 25 of your direct testimony.

14 A. Okay.

15 Q. Therein, you state that Greene and Washington
16 Counties will suffer substantially greater pollution from
17 the increased power generation, greater health risks as a
18 result of both pollution and the proximity of the power
19 lines and lower property values; is that correct?

20 A. Yeah, that's what it says.

21 Q. You haven't prepared any written studies,
22 analyses or reports to support that conclusion, have you?

23 A. Yes. In my direct testimony, there's evidence,
24 there's data supporting the fact that Greene and Washington
25 Counties are unduly polluted in comparison, say, with

1 Loudoun.

2 Q. Other than what you provided in your testimony
3 in support of that proposition that we just referenced on
4 those lines, have you provided any written studies, analyses
5 or reports to support that position?

6 A. No.

7 Q. Let's turn to page 9 of your direct testimony at
8 lines 20 to 22. On page 9, lines 20 to 22 of your direct
9 testimony, you testified that many residences are located
10 very near the proposed transmission line and that many
11 residents will be forced to live, play or work next to or
12 under the line; correct?

13 A. Correct.

14 Q. You can't identify the number and the addresses
15 of the residences you claim that are located very near the
16 power line, can you?

17 A. I can some.

18 Q. Go ahead.

19 A. I can do some.

20 Q. Did you provide those to us in response to
21 interrogatories?

22 A. No.

23 Q. You were asked in interrogatories for that
24 information?

25 A. I don't remember that.

1 Q. Do you want to refer back to any of your
2 interrogatories to verify that?

3 A. We can do that, if you'd like, sure.

4 MR. SELTZER: Your Honors, I would like to have
5 marked, if I could, at this time ECC response to TrAILCo
6 Interrogatory Set VI, No. 22. I believe this should be
7 TrAILCo Cross-Examination Exhibit No. 5.

8 JUDGE NEMEC: Yes. It may be so identified.

9 (Whereupon, the document was marked
10 as TrAILCo Cross-Examination
11 Exhibit No. 5 for identification.)

12 MR. SELTZER: Mr. Ogden is handing those out at the
13 moment.

14 (Pause.)

15 BY MR. SELTZER:

16 Q. Dr. Hanham, do you have in front of you a
17 document that has just been marked as TrAILCo Cross-
18 Examination Exhibit No. 5?

19 A. No, I don't. I do now. I do now, yeah.

20 Q. And that document is labeled in the upper left-
21 hand corner, "ECC Response to TrAILCo No. VI"?

22 A. Right.

23 Q. Interrogatory Set VI. And the question then
24 reads, No. 22, "At page 9, lines 20 to 22 of your direct
25 testimony, you testify that many residences are located very

1 near the proposed transmission line and that many residents
2 will be forced to live, play or work next to or under the
3 line."

4 A. Yeah, that's right.

5 Q. Is that correct?

6 A. That is correct.

7 Q. And subparagraph (a) underneath that says as
8 follows: "Identify the many residences by number and
9 address which you testify are located very near the power
10 line." Do you see that?

11 A. Yeah.

12 Q. Would you agree with me that your answer does
13 not provide by number and address the residences that you so
14 identify or talk about generally on page 9, lines 20 to 22
15 of your direct testimony?

16 A. Okay. There are two ways I could answer that,
17 but --

18 Q. Why don't we start with a yes or a no.

19 A. Don't get aggressive with me, Mr. Seltzer.
20 There are two ways I could answer that. One is probably
21 best left unsaid, but it would be obviously ridiculously
22 inappropriate for me to identify every single person in this
23 situation.

24 I know of many people who are in this situation.

25 MR. SELTZER: Your Honor, I would move to strike that

1 response as being completely unresponsive. I simply asked
2 Dr. Hanham whether or not in response to this interrogatory,
3 Cross-Examination Exhibit No. 5, he, in fact, identified,
4 per our request, by number and address the properties he
5 considers to be located very near the power line.

6 JUDGE NEMEC: Well, you have his answer. Your motion
7 will be taken under advisement, and we'll consider that when
8 we review the transcript.

9 You may continue.

10 BY MR. SELTZER:

11 Q. Dr. Hanham, let's turn to page 10, lines 14 and
12 15 of your direct testimony. On page 10, lines 14 to 25 and
13 again on page 11, lines 1 and 2 of your direct testimony,
14 you testify about a California Department of Health Services
15 review of EMF health effects published in 2002; is that
16 correct?

17 A. Yeah.

18 Q. You didn't participate in that study or report?

19 A. No, I didn't.

20 Q. In fact, you haven't participated in any
21 epidemiological studies related to health issues associated
22 with the EMFs; is that correct?

23 A. That's not the point, Mr. Seltzer. The reason
24 I'm here is not to testify about having conducted EMF
25 research, but to testify about the way in which that has

1 been reviewed, the research literature on that subject has
2 been reviewed. It's as plain and simple as that.

3 I'm not here to testify about actual subject matter
4 of EMF research, but the way in which it has been reviewed,
5 the literature has been reviewed. It's that simple.

6 MR. SELTZER: Your Honor, I would once again move to
7 strike that answer. I simply asked a question related to
8 whether Dr. Hanham has participated in any epidemiological
9 studies related to health issues associated with EMFs. The
10 answer could be yes or no.

11 JUDGE NEMEC: I believe he said that he has not, but
12 he's explaining that he doesn't feel that that's the purpose
13 of his testimony. I understand that. Your motion is
14 denied.

15 BY MR. SELTZER:

16 Q. Other than this case, you haven't testified in
17 any court or regulatory proceeding on any subject matters
18 addressed in this proceeding in the last ten years; is that
19 correct?

20 A. That is correct. I have never been anywhere
21 near a situation like this. It's very uncomfortable for me.
22 I have to tell you this. It's very uncomfortable for me to
23 be in this situation. It is totally alien.

24 So, the answer to that is I've never been anywhere
25 near anything like this before.

1 MR. SELTZER: Thank you, Dr. Hanham. That's all we
2 have Your Honors.

3 MR. BURNS: Could we have five minutes, Your Honor?

4 JUDGE NEMEC: A five-minute break.

5 (Recess.)

6 JUDGE NEMEC: Back on the record.

7 Go ahead.

8 MR. BURNS: Your Honor, we have no questions for the
9 witness, no redirect.

10 JUDGE NEMEC: Okay. Thank you very much, sir.
11 You're excused.

12
13 (Witness excused.)

14 MR. SELTZER: Your Honor, just so that I can -- at
15 this point I don't know whether it's necessary for the
16 witness to be there, but I'd like to proceed at any point
17 relative to our motions.

18 JUDGE NEMEC: You may leave, sir. You're excused.
19 You may discuss your motions.

20 MR. SELTZER: Thank you, Your Honor. Your Honor,
21 with respect to Dr. Hanham's exhibits, there are two sets of
22 objections that we have. Let me just start with the one
23 that is directly appended to his testimony at this point in
24 the proceeding, and that is an objection to ECC Exhibit
25 RQH-4.

1 As Your Honors will recall, this particular exhibit,
2 which has been referred to previously as the Wolper
3 statement, is a document that was addressed in Your Honor's
4 February 2nd, 2008 order addressing various public input
5 hearing documents in the order called Interim Order
6 Establishing Guidelines for Litigation of the Case.

7 As you recall, the Wolper statement has had a bit of
8 a circuitous view and appearance in this proceeding. It was
9 originally introduced by not Mr. Wolper, who has never
10 discussed it or introduced it. It was introduced by Mr.
11 Philip Coleman. It was the subject of one of TrAILCo's
12 motions to strike with respect to its presence during the
13 public input hearings.

14 Your Honors in the February 2nd, 2008 order at pages
15 7 and 8 discussed that in some detail, indicated that you
16 thought it was confusing and contradictory, but ultimately,
17 decided that it was worthwhile withholding any ruling until
18 Dr. Hanham's appearance, because you did note that that
19 Exhibit RQH-4 was indeed appended to his testimony.

20 In our view, the fact that Dr. Hanham has attached it
21 to his testimony doesn't relieve the fact that it continues
22 to constitute hearsay. It is something that is in 99.8
23 percent not discussed or addressed at all in Dr. Hanham's
24 testimony. That document is a free-wheeling, sprawling
25 document addressing a variety of issues, none of which have

1 been supported ever by the signed person, the person who
2 signed that, Mr. Wolper.

3 A review of Dr. Hanham's testimony indicates that the
4 Wolper report, RQH-4, is mentioned twice, both with respect
5 to factual information, including at one point reference to
6 that document for information that Dr. Hanham acknowledges
7 was available in the West Virginia siting application.

8 In our view, this document is far beyond what is
9 necessary for anyone to be utilizing. It is clearly being
10 offered for the truth of the matter. The company has never
11 had opportunity to examine in detail on it. It is highly
12 inappropriate for it to come into this record. It is
13 contradictory and confusing on the substance as Your Honors
14 have recognized in the February 2nd, 2008 order; and for
15 those reasons, we would respectfully object to its
16 admission.

17 JUDGE NEMEC: Your objection is noted. We'll take it
18 under advisement and consider it when we review Dr. Hanham's
19 prepared testimony. As you've noted, we already made some
20 comments regarding our doubts about the value of the
21 document.

22 Mr. Burns, do you have a response?

23 MR. BURNS: Yes, Your Honor. First of all, the
24 Sierra Club submitted testimony and comments at the public
25 input hearings, the very first public input hearing. It was

1 submitted on behalf of 27,000 Pennsylvania members of the
2 Sierra Club and their families. It was never objected to --

3 JUDGE NEMEC: I'm going to interrupt you, Mr. Burns.
4 If the person who had prepared the document was there and
5 sponsored it and could give some support for comments
6 contained therein, I might have a different view of it, but,
7 again, we made it clear what we thought about it, and --

8 MR. BURNS: Well --

9 JUDGE NEMEC: Go ahead.

10 MR. BURNS: Your Honor, we have a week-and-a-half
11 more of hearings. If you think it's necessary to have
12 someone from the Sierra Club come in -- and let me tell you
13 why this is unfair, Your Honor. I think it's important for
14 the Public Utility Commission to know what 27,000 members of
15 the Sierra Club think.

16 You know, whatever weight you give to it is the
17 weight you would give to it, but I think it's important that
18 the Public Utility Commission knows where the Sierra Club
19 and its 27,000 members stand on this issue. Now, you may
20 not give much weight to what their conclusions are, you
21 know, but Dr. Hanham did not rely in great part on this, but
22 it's certainly one of the things that experts reasonably
23 rely upon.

24 Of course, Mr. Seltzer did not ask him any questions
25 about that. I'd be glad to put Dr. Hanham back on the

1 stand, if you think it's appropriate, and Mr Seltzer or I
2 can ask him whether it's the type of document that's
3 reasonably relied upon by experts. But I think putting all
4 that aside, we still also have -- we have an opportunity to
5 cure this.

6 If you believe it's necessary to get Mr. Wolper or
7 some of the primary authors of this back into this
8 proceeding, we can call them back. It's just not fair to
9 Sierra Club to have gone to all this effort and then be told
10 after the public input hearings are closed that they have no
11 opportunity to cure.

12 So, I would be willing to contact them and see if
13 someone is willing to come in just for purposes of getting
14 it admitted as part of the public input process.

15 JUDGE NEMEC: Mr. Burns, I don't know where to start.
16 The Sierra Club has had ample opportunity and notice. They
17 were free to intervene in this proceeding, to participate
18 fully. If they have tens of thousands of members, they,
19 obviously -- I mean, I get these gargantuan mailings from
20 them on a monthly basis. They spend a whole lot of money on
21 fund-raising and whatever.

22 If they were so interested in this proceeding, they
23 should be here. They're not. This has been going on since,
24 what, last spring, the spring of 2007. I'm sorry. It's too
25 late. It's not my job to solicit people to come into this

1 proceeding. My job is to give notice and an opportunity.
2 That notice has been given. The opportunity has been given.
3 They're not here. I'll stop my sermon.

4 MR. BURNS: Your Honor, the only thing I would add is
5 that they're submitting testimony as the public input
6 process. I understand the Sierra Club needs national
7 approval to intervene in litigations. I'm just saying that
8 this should be part of the public input process, and it does
9 no harm to allow it in. But to not allow their comments to
10 even be considered I think is just a disservice, and they
11 obviously went to a lot of work to put that together, and
12 you may give it little weight, but I think it's certainly
13 part of the public input process.

14 JUDGE NEMEC: Mr. Burns, I agree with your last
15 statement. It has been given some consideration already.
16 It may be given more. We'll review it in the context of Dr.
17 Hanham's testimony. It has not been rejected out of hand.
18 It has actually been given more weight than normally would
19 be accorded something like this. It is a very broad-brushed
20 document. I don't think that it was -- people may have put
21 a lot of time into it, but I don't know how much thought
22 they put into it, because it was not focused on the issues
23 in this case, and that's what I need.

24 I mean, we need all the help we can get in terms of
25 resolving the issues, and to come out with all sorts of

1 matters that are well beyond our authority to even deal
2 with, let alone have an impact on this case, I'm sorry; it's
3 not helpful. It just gives us more stuff to read, and
4 whatever.

5 In any event, anything else?

6 MR. BURNS: Your Honor, we've tried to focus our
7 presentations and the experts we've presented here, and I
8 think --

9 JUDGE NEMEC: And I think you've done a very good
10 job.

11 MR. BURNS: And I think I agree with you, but at
12 least the fact that the Sierra Club submitted this and the
13 number of people who have backed their position, I think
14 that in and of itself is something that I think is important
15 on the record. But that's all I have.

16 MR. SELTZER: Your Honor, if I could shift gears to
17 the second motion.

18 JUDGE NEMEC: Go ahead.

19 MR. SELTZER: Your Honor, the second motion also has
20 its genesis in the February 2nd, 2008 order, specifically
21 with respect to page 13, paragraph 16. As you will recall,
22 Dr. Hanham testified during the public input process as
23 well, and on page 13, paragraph 16 of your order, you
24 referenced those pages.

25 TRAILCo had objected to a number of documents at that

1 time that he submitted through that process, and on page 14
2 of your order, you specifically held that these additional
3 objections would be held in abeyance pending Dr. Hanham's
4 appearance.

5 Of the articles and the information that we had
6 objected to, the only ones that I would like to address in
7 this motion and renew at this time pursuant to that order
8 relates to five exhibits that were introduced in that public
9 input hearing related to distributed generation issues.
10 It's on paragraph 16, the fourth line on the order, where
11 you describe them.

12 Dr. Hanham's testimony as submitted for the
13 evidentiary -- technical evidentiary hearings makes no
14 mention of distributed generation at all, and, therefore, we
15 would respectfully renew our objection and ask that those
16 several exhibits that were purported to be introduced in the
17 public input hearing not be admitted.

18 JUDGE NEMEC: Any response?

19 MR. BURNS: I would agree Dr. Hanham has not
20 testified about distributed generation, and that was just
21 his public input testimony and something that wasn't
22 necessarily offered for the truth of the matter contained in
23 those articles. It was just articles that he referred to
24 that -- he's not offering them for the truth of the matter
25 asserted, but they are articles that, you know, allowed him

1 to form his preliminary conclusions.

2 I think we've allowed similar things like that to be
3 on the record. I'm not articulating myself very well here,
4 but I believe it's not being offered for the truth of the
5 matter asserted, and I think you can give whatever weight
6 you wish to it. But I would agree he hasn't testified as an
7 expert on those particular issues, Your Honor.

8 JUDGE NEMEC: I'm going to treat this motion the same
9 way. We'll take it under advisement when we prepare the
10 recommended decision, but I promise you we will deal with
11 both motions in our recommended decision. I just don't have
12 those five exhibits here. I want to review them again along
13 with his testimony at the public input hearing.

14 MR. SELTZER: Your Honor, we have nothing further in
15 connection with Dr. Hanham.

16 JUDGE NEMEC: Okay. Mr. Burns, you may call your
17 next witness.

18 MR. BURNS: I would call Dr. Richard Hoch, Your
19 Honor.

20 JUDGE NEMEC: Sir, please raise your right hand.

21 **Whereupon,**

22 **RICHARD J. HOCH**
23 **having been duly sworn, testified as follows:**

24 JUDGE NEMEC: You may proceed, Mr. Burns.

25 **DIRECT EXAMINATION**

1 BY MR. BURNS:

2 Q. Dr. Hoch, I've placed in front of you ECC
3 Statement No. 3 with attached Exhibits RJH-1 through 5. Is
4 that testimony that was prepared by you or under your
5 supervision?

6 A. All of them, Mr. Burns, together?

7 Q. I'm just asking about Statement No. 3 for now.

8 A. No. 3; yes, this is my direct testimony.

9 Q. And if I was to ask you the same questions today
10 as set forth in ECC Statement No. 3, your direct testimony,
11 would your answers be the same?

12 A. My conclusions would be the same, yes. My
13 answers may vary slightly, but my conclusions would be the
14 same.

15 JUDGE NEMEC: Sir, I want you to speak into the
16 microphone.

17 THE WITNESS: Certainly. I'm sorry.

18 JUDGE NEMEC: Thank you.

19 BY MR. BURNS:

20 Q. Is ECC Statement No. 3 and the attached
21 exhibits, are you adopting that as your testimony for this
22 proceeding?

23 A. I am, sir, yes.

24 Q. And you believe that the statements are true and
25 accurate to the best of your knowledge, information and

1 belief; correct?

2 A. Correct.

3 Q. Are there any corrections you want to make to
4 ECC Statement No. 3?

5 A. No, sir.

6 Q. Also in front of you is ECC Surrebuttal
7 Statement No. 3, which was prepared by you. Is that also
8 testimony you submitted in this proceeding?

9 A. Surrebuttal Statement No. 3, yes, this is my
10 testimony.

11 Q. And are those answers true and correct to the
12 best of your knowledge, information and belief?

13 A. I believe so, yes.

14 Q. And do you adopt that testimony for this
15 proceeding?

16 A. I do.

17 MR. BURNS: I would like to move into the record ECC
18 Statement No. 3 and ECC Surrebuttal Statement No. 3, along
19 with Exhibits RJH-1 through 5.

20 THE WITNESS: Can I make a statement about RJH-1, my
21 CV, as a matter of housekeeping?

22 BY MR. BURNS:

23 Q. Yes. Do you want to make a correction or a
24 change.

25 A. There is a correction that I'd like to make as a

1 matter of housekeeping.

2 Q. Tell us where you're at first.

3 A. Certainly. On page 2 under publications, the
4 first one says, "Submitted to Applied Geography." I have
5 not yet submitted that article for publication; just as a
6 note. But it has nothing to do with my testimony.

7 Q. And did you believe when you prepared this CV
8 that it was going to be submitted?

9 A. It is prepared to be submitted. I just have not
10 done it. As a matter of fact, it's because I've been so
11 consumed with the preparation of these rebuttals.

12 Q. Do you have any other corrections to either of
13 your statements that you'd like to make?

14 A. No, I do not.

15 Q. Or any of the attached exhibits?

16 A. No, sir.

17 MR. BURNS: Your Honor, I would like to move for the
18 admission of ECC Statement No. 3 with attached Exhibits
19 RJH-1 through 5 and ECC Surrebuttal Statement No. 3.

20 JUDGE NEMEC: They may all be so identified, and ECC
21 Statement 3 and Surrebuttal Statement 3 and associated
22 Exhibits RJH-1 through 5 are admitted subject to cross-
23 examination and later motion and/or objection.

24 (Whereupon, the documents were
25 marked as ECC Statement No. 3 with

1 Exhibits RJH-1 through RJH-5 and
2 ECC Surrebuttal Statement No. 3
3 for identification and received in
4 evidence.)

5 MR. BURNS: The witness is available for cross, Your
6 Honor.

7 JUDGE NEMEC: You may cross.

8 MR. SELTZER: Thank you, Your Honor.

9 CROSS-EXAMINATION

10 BY MR. SELTZER:

11 Q. Good morning, Dr. Hoch. My name is Alan Seltzer
12 representing TrAILCo.

13 A. Good morning, Mr. Seltzer.

14 Q. Nice to see you. Let's turn, if we could, to
15 your surrebuttal testimony first on page 2, lines 21 to 24.
16 On that page and lines, you're offering the opinion that the
17 PUC in this proceeding should require TrAIL to essentially
18 mirror the National Environmental Policy Act's environmental
19 impact statement process; is that correct?

20 A. Excuse me. I was on page 1.

21 Q. Page 2, lines 21 to 24.

22 A. Can you repeat the question?

23 Q. My question was, on page 2, lines 21 to 24 of
24 your surrebuttal testimony, you essentially offer the
25 opinion that the Pennsylvania Public Utility Commission

1 should require TrAILCo in this proceeding to mirror the
2 National Environmental Policy Act's environmental impact
3 statement process; is that correct?

4 A. What I'm asking for or recommending is that they
5 adopt an environmental impact assessment process, which is
6 different than the EIS document, and that the NEPA style is
7 the gold standard that they should look to as an accepted
8 model.

9 Now, whether that model is implemented, that is not
10 my -- whether the EIS or the NEPA is triggered is not in my
11 testimony.

12 Q. And did you review the Pennsylvania Commission's
13 siting regulations in connection with the preparation of
14 this testimony?

15 A. Yes, I have.

16 Q. And to your knowledge, is there any reference in
17 those regulations to the National Energy Policy Act, the
18 National Energy Policy Act environmental impact statements,
19 or the environmental impact assessment analysis to which you
20 just made reference in those regulations?

21 A. No. I find the regulations to be very vague.

22 Q. Let's take a look at page 3, lines 4 and 5 of
23 your supplemental testimony.

24 JUDGE NEMEC: The surrebuttal testimony?

25 MR. SELTZER: I'm sorry. I mean surrebuttal.

1 THE WITNESS: Page 3, sir?

2 BY MR. SELTZER:

3 Q. Page 3, lines 4 and 5.

4 A. Yes.

5 Q. I apologize. I wanted to refer you to your
6 direct testimony. Page 3, lines 4 and 5, of your direct
7 testimony. On page 3, lines 4 and 5, of your direct
8 testimony, you testify that the GIS system should never be
9 the sole modeling approach or tool.

10 A. I'm sorry, Mr. Seltzer, I'm in the wrong place.

11 Q. Page 3 --

12 A. Direct testimony.

13 Q. -- of your direct testimony, lines 4 and 5.

14 A. Page 3, lines 4 and 5, doesn't refer to GIS at
15 all where I'm at.

16 Q. Well, I'm looking at your ECC Statement No. 3,
17 page 3, lines 4 and 5, where you state, "It is a generally
18 accepted maxim in Geographic Information Science that the
19 GIS should never be the sole modeling approach or tool."

20 A. I'm sorry. Yes, I'm with you now.

21 Q. I'm just asking you to confirm that's what
22 indeed you said on those pages.

23 MR. BURNS: It's page 4, Mr. Seltzer.

24 MR. SELTZER: Well, it's page 3 on mine. I
25 apologize.

1 JUDGE NEMEC: Mine is page 3 also.

2 THE WITNESS: I have page 3, yes. "I strive to
3 encourage proper planning techniques, especially when
4 applying Geographic Information Systems." Is that what
5 you're referring to, Mr. Seltzer?

6 BY MR. SELTZER:

7 Q. No. What I just --

8 A. Well, I'm trying to find what you're saying,
9 sir.

10 Q. No, no, no. Obviously, we're working off of
11 different things here.

12 A. I have page 4, "What is GIS?" "GIS is merely a
13 tool to assist" -- is that what you're referring to?

14 Q. On my page 3 of your direct testimony, at lines
15 4 and 5, let me just read the sentence as it appears so that
16 we can try to get ourselves organized.

17 A. Thank you.

18 Q. "It is a generally accepted maxim in Geographic
19 Information Science that GIS should never be the sole
20 modeling approach or tool."

21 A. Yes, sir. That is on page 4 of my testimony,
22 but I'm with you.

23 MR. SELTZER: Needless to say, we're going to have to
24 work carefully if we have different versions of this
25 document. Perhaps we should go off the record to sort this

1 out now.

2 JUDGE NEMEC: Yes, let's go off the record.

3 (Discussion off the record.)

4 JUDGE NEMEC: Back on the record.

5 MR. SELTZER: I think we'll do the best we can here
6 given the off-the-record discussion about some of the
7 numbering.

8 BY MR. SELTZER:

9 Q. I think we found on the testimony version you
10 have, which appears to be on page 4 -- I'm not sure it now
11 corresponds to the same numbers that I have -- the general
12 statement that you're making to the effect that GIS should
13 never be the sole modeling approach or tool. Do you see
14 that? Do you agree that's what you're saying?

15 A. Yes, I do.

16 Q. Is it your testimony in this proceeding that GIS
17 was indeed the sole tool or modeling used by TrAILCo in its
18 route selection evaluation process?

19 A. I think we need to define GIS a little bit more,
20 Mr. Seltzer.

21 Q. I'm just taking it the same way you did,
22 Geographic Information Science or System. I'm using your
23 term and just asking you, as you define --

24 A. Science is different than system. GI science
25 would be with a small "c" and GIS is an "s" with the system,

1 so there is a distinction between the two.

2 Q. And using your term, is it your testimony that
3 TrAILCo used GIS, Geographic Information Science --

4 A. System.

5 Q. -- System, as the sole tool in its route
6 selection and evaluation process?

7 A. I would agree that they relied on GIS for much
8 of their environmental impact analysis, especially referring
9 to hydrology, wetlands and other land cover impacts, yes.

10 Q. Yes, it was the sole tool?

11 A. I do not know if it was the sole tool, but their
12 model approach that they dictate in the beginning of their
13 LRE states that they used GIS databases, and databases --
14 the data used in the GIS is not the same as a GIS. The GIS
15 is the system, the data is the input.

16 Q. Are field surveys or field reconnaissance part
17 of GIS in your view?

18 A. No.

19 Q. Now, the sum total of all of your prior work and
20 other experience in corridor selection for electric
21 transmission lines, gas pipelines and oil pipelines is shown
22 on your Exhibit RJH-1 attached to your testimony, which is
23 your résumé; is that correct?

24 A. Yes.

25 Q. And other than the correction you made with

1 respect to the correction of the publications, that Exhibit
2 RJH-1 is your résumé and it is correct?

3 A. Yes.

4 Q. Now, just so I'm clear, when I turn to Exhibit
5 RJH-1, specifically in the area of publications where you
6 made your correction earlier, am I correct in understanding
7 that you have no publications that you have written or
8 prepared in any peer review publications on any subject
9 whatsoever; is that correct?

10 A. That's correct.

11 Q. And you've never participated in any line route
12 evaluation study for any electric transmission line project;
13 is that correct?

14 A. Line route evaluation only for corridor
15 transport of roadways, but not electricity.

16 Q. Just give me a moment. Before I move to any
17 reference to the testimony, I think I want to just check it
18 given the situation that we have here.

19 (Pause.)

20 Q. I'm going to try to direct you, by adding one,
21 to page 11 of the document you have in front of you. It
22 would be my page 10, lines 14 to 17, of your direct
23 testimony.

24 A. Direct testimony.

25 Q. It's your direct testimony, my page 10, lines 14

1 to 17, it may be your page 11, and to the spot where you
2 take issue with the lack of treatment in the line route
3 evaluation report prepared by TrAILCo of what you
4 characterize as direct impacts, indirect impacts and
5 cumulative or secondary impacts. Is that correct?

6 JUDGE NEMEC: Is that under the heading, Mr. Seltzer,
7 Environmental Components Missing from the Report?

8 MR. SELTZER: That is correct, Your Honor.

9 THE WITNESS: Is it listed as construction,
10 maintenance, cumulative and secondary impacts?

11 BY MR. SELTZER:

12 Q. That is correct.

13 A. Yes. Then I am on the same page, sir.

14 Q. And those terms as you use them on page 11 of
15 your direct testimony, those concepts and terms have their
16 genesis in the NEPA planning process; is that correct?

17 A. They are in the EIA planning process, which is
18 an international standard, Environmental Impact Assessment,
19 which is done internationally.

20 Q. And as we discussed before, there's no direct
21 reference to that particular process at all in the
22 Pennsylvania siting regulations, to your knowledge; is that
23 correct?

24 A. Not to my knowledge. But there is no
25 restriction from it either. There's nothing restricting the

1 PUC from asking for those types of impacts, and as providing
2 testimony, in my opinion, I am recommending for -- and I'm
3 recommending also to TrAILCo, if they want to have good
4 environmental stewardship, to adopt this method.

5 Q. Dr. Hanham, you're not aware of and you can't
6 produce for me any --

7 JUDGE NEMEC: It's Dr. Hoch. Go ahead.

8 MR. SELTZER: Thank you, Your Honor.

9 BY MR. SELTZER:

10 Q. Dr. Hoch, you're not aware of and cannot produce
11 for me any line route evaluation or comparable analysis
12 completed within the last five years relating to the siting
13 of a high voltage electric transmission line that addresses
14 direct impacts, indirect impacts and cumulative and
15 secondary impacts as you discuss on page 11 of your direct
16 testimony; correct?

17 A. I believe the Wyoming-Jackson's Ferry power line
18 in West Virginia may have done so, but I am not for certain,
19 sir.

20 MR. SELTZER: Your Honor, if I may, I'd like to mark
21 as TrAILCo Cross-Examination Exhibit No. 6 the response of
22 ECC to TrAILCo Set V, No. 10.

23 JUDGE NEMEC: It may be so identified.

24 (Whereupon, the document was marked
25 as TrAILCo Cross-Examination

1 Exhibit No. 6 for identification.)

2 BY MR. SELTZER:

3 Q. Dr. Hoch, do you have in front of you the
4 document that we've just marked as TrAILCo Cross-Examination
5 Exhibit No. 6?

6 A. Yes.

7 Q. Do you recognize that as one of the
8 interrogatory responses you provided to us in connection
9 with TrAILCo Set V, Interrogatory No. 10, in which we asked
10 you to provide copies of any line route evaluation report or
11 comparable analysis completed within the last five years of
12 which you are aware relating to the siting of a high voltage
13 electric transmission line that addresses construction
14 impacts, maintenance impacts, cumulative impacts and
15 secondary impacts, as those terms are used by you, we said
16 page 10, lines 14 to 17, because that was referring to the
17 other version of your testimony. Do you see that answer?
18 Do you see that question?

19 A. Yes, I do.

20 Q. And you did not provide to us any such copies of
21 any analyses completed within the last five years in
22 response to that interrogatory, did you?

23 A. Copies, no, I did not, nor did I mention it
24 here. I mention my opinion and what I think the PUC should
25 adopt.

1 Q. Again, my next question relates to I think again
2 it should be, hopefully, on page 11 of your direct
3 testimony, it's my --

4 MR. BURNS: Excuse me, Alan, before we proceed, I
5 note the interrogatory answer you marked as an exhibit
6 incorporates the answer to another interrogatory. Are you
7 purporting to include that as part of that response, because
8 I think it's incomplete in and of itself without including
9 the --

10 MR. SELTZER: To my knowledge, this is the full
11 answer in Cross-Examination No. 6.

12 MR. BURNS: But the answer incorporates the answer to
13 another interrogatory answer.

14 MR. SELTZER: I understand that.

15 THE WITNESS: In the interrogatory answer that you're
16 referring to, Mr. Seltzer, I do refer to No. 9, and if I
17 could look at No. 9 -- I don't remember what that is.

18 MR. SELTZER: I'm satisfied with the answers that
19 we've gotten with respect to the examination that we've
20 conducted, Mr. Burns.

21 THE WITNESS: Well, in order to be clear, Mr.
22 Seltzer, I'd like to refer -- to make sure that I'm correct
23 in my --

24 BY MR. SELTZER:

25 Q. You're more than welcome to go back and answer

1 my question as to whether or not you provided any copies of
2 line route evaluation studies done within the last five
3 years that you're aware of regarding electric transmission
4 line that analyzed in terms of the terms direct impacts,
5 construction impacts, indirect impacts, cumulative or
6 secondary impacts.

7 A. Providing copies of that is a burden on me, sir.
8 Those copies are very large.

9 Q. I just asked you in the interrogatories whether
10 you provided those to us and whether you indicated that
11 anything like that was the case, and you didn't provide
12 anything. That's the --

13 A. I did not provide anything.

14 JUDGE NEMEC: You'll have an opportunity to deal with
15 this, sir, on redirect.

16 THE WITNESS: Okay.

17 BY MR. SELTZER:

18 Q. If we go to, again, my page 10, lines 22 to 26,
19 presumably it's your page 11, you opine that analysis of new
20 roads and the road network should be performed for the
21 general environment and siting study, and the construction
22 maintenance, cumulative and secondary impacts as well; is
23 that correct?

24 A. I believe that is true. That should be
25 conducted.

1 Q. And you're not aware of and cannot produce for
2 me any line route evaluation report or comparable analysis
3 completed within the last five years relating to the study
4 of a high voltage electric transmission line that analyzes
5 the road network and new roads as well as the construction,
6 maintenance, cumulative and secondary impacts as discussed
7 on page 10, lines 22 to 26, or page 11, depending upon which
8 version we're talking about; correct?

9 A. No, sir, I cannot provide any of those
10 documents, but I am here not to express precedent, I am here
11 to express the public interest in land use decisions as a
12 member of the American Institute of Certified Planners and
13 an academic.

14 Q. Turning to page 10, lines 27 and 28, my copy,
15 again, page 11, presumably, of yours, at that page and line
16 numbers of your direct testimony you indicate that
17 groundwater is not mentioned in the LRE; is that correct?

18 A. That's correct.

19 Q. Once again, you're not aware of and cannot
20 produce for me any line route evaluation or comparable
21 analysis completed within the last five years relating to
22 the siting of a high voltage electric transmission line that
23 analyzes groundwater, including the construction,
24 maintenance, cumulative and secondary impacts as discussed
25 on page 10, lines 27 to 28, of your direct testimony;

1 correct?

2 A. I cannot provide any documentation as to that,
3 but my comment there is related to public safety, which is
4 in the Pennsylvania Code as the citing requirements by the
5 PUC, and it does not address the safety issue of this line
6 in terms of groundwater.

7 Q. Let's turn to page 11, lines -- my page and line
8 numbers 6 to 8 of your direct testimony where you discuss
9 agricultural security areas.

10 A. Your page 11?

11 Q. Presumably your page 12.

12 A. My page 12; yes, sir.

13 Q. Where you claim, do you not, that agricultural
14 security areas are not mentioned in the LRE?

15 A. That's correct.

16 Q. Once again, you're not aware of and cannot
17 produce for me any line route evaluation report or
18 comparable analysis completed within the last five years
19 relating to the siting of a high voltage electric
20 transmission line that analyzes agricultural security areas
21 as you discuss on your page 11, lines 6 to 8, or page 12; is
22 that correct?

23 A. I cannot provide any of those documents for a
24 transmission line, but I could provide documents for
25 environmental impact analysis of other types of construction

1 projects that do take that into consideration, sir.

2 Q. Let's turn if we can to your surrebuttal
3 testimony, Dr. Hoch.

4 A. Yes, sir.

5 Q. Did we conclude we're okay on the page numbers
6 there? Because I'm looking at my page 3, lines 3 to 6.
7 Does that correspond --

8 A. What's the question, sir?

9 Q. The question is at that point you're opining
10 that the Pennsylvania Public Utility Commission has apparent
11 authority to require TrAILCo to complete an Environmental
12 Impact Assessment process; is that correct?

13 A. Yes.

14 Q. Now, when you use the words "apparent
15 authority," are those intended to mean something other than
16 real or actual authority?

17 A. From my understanding of the regulations as a
18 land use planner -- and we deal with regulations as part of
19 our profession -- the way I interpret the Pennsylvania Code,
20 that they have authority to require more or to ask for a
21 more detailed study than what is in the Code.

22 Q. Did you read Section 501 of the Pennsylvania
23 Public Utility Code in connection with the preparation of
24 your testimony?

25 A. I don't know the names of the Code, so --

1 Q. I'm looking at line 5 of your testimony where
2 you make reference to 66 Pennsylvania Consolidated Statutes,
3 Section 501.

4 A. Yes.

5 Q. Does that refresh your recollection as to
6 whether in fact you read that section before you --

7 A. Oh, I read before preparing it, but I don't have
8 recollection now while I'm sitting here of what those codes
9 stated. I did that on the internet, PA Code.

10 Q. So you don't know whether or not that section of
11 the Public Utility Code makes any express reference to
12 Environmental Impact Assessment process?

13 A. Are you saying that with capital letters, EIA,
14 sir?

15 Q. Yes.

16 A. No, it does not, that I know of.

17 Q. Turning to page 4, line 17 of your surrebuttal
18 testimony, you state on that page and line number that the
19 PUC should require TrAIL to comply with the principles of
20 environmental justice as specified in Executive Order 12898
21 dated February 11, 1994; is that correct?

22 A. That's correct.

23 Q. And you quote from a portion of that Executive
24 Order on page 4 at lines 6 to 12, is that correct, of the
25 surrebuttal testimony?

1 A. I do.

2 Q. In the area that's quoted, in the section that's
3 quoted, do you see any reference to state agencies?

4 A. No, I do not.

5 Q. To your knowledge, the Pennsylvania Public
6 Utility Commission is not a federal agency, is it?

7 A. Not to my knowledge or anyone else's, sir.

8 Q. Do you remember or do you know who was
9 responsible for implementing the Executive Order that you
10 reference on this page?

11 A. Who was responsible?

12 Q. That's correct.

13 A. The Executive Order was during the Clinton
14 Administration.

15 Q. I understand that. My question to you is
16 whether or not you have any knowledge of who was responsible
17 for implementing this Executive Order?

18 A. Well, he signed it, that's all I know.
19 President Clinton signed that.

20 Q. Do you know which agencies --

21 A. The Environmental Protection Agency.

22 Q. I'm sorry?

23 A. The Environmental Protection Agency, EPA.

24 Q. I'm not sure what question you're answering now.

25 A. You said agencies.

1 Q. No, no, no, no. My original question was do you
2 know who is responsible for implementing the Executive
3 Order? I understand you say you don't know.

4 A. I understand.

5 Q. My next question is which agencies were
6 specifically identified in the Executive Order as comprising
7 the working group to implement it?

8 A. I believe it's the Environmental Protection
9 Agency.

10 Q. And to your knowledge, is the Environmental
11 Protection Agency a federal agency?

12 A. It is.

13 Q. Do you know whether or not the Pennsylvania
14 Public Utility Commission or, indeed, any state Commissions
15 were identified as having any responsibility under that
16 Executive Order for implementing it?

17 A. I have no knowledge of that.

18 Q. Now, just looking, if we could, at the language
19 that you quoted on page 4 of your surrebuttal testimony,
20 would you agree with me that even as that language may
21 relate to federal agencies, this particular Executive Order
22 by its own terms may or may not be applicable?

23 A. May or may not be?

24 Q. I'm looking specifically at the language that
25 says "To the greatest extent practicable and permitted by

1 law, and consistent with the principles set forth in the
2 report on the National Performance Review." Do those words
3 indicate that indeed if, in fact, it was not practicable to
4 do it, it may not be permitted by law or may not be
5 consistent with the principles of the National Performance
6 Review, the obligation to implement this Executive Order
7 would not be mandatory or required by the express terms that
8 you quote on page 4, lines 6 to 8, of your testimony?

9 A. That portion of my testimony, sir, is in the
10 context of asking what the concept of environmental justice
11 is, and I use that also to define the policy. So there's
12 two different things here, concept and policy.

13 Q. I understand what you're saying, I'm asking you
14 my particular question, and my question is whether or not,
15 by the terms that are specifically quoted on this page,
16 whether or not there is an absolute mandatory obligation for
17 this Executive Order to be implemented or whether or not
18 there are in fact other requirements that may be needed to
19 be met for its implementation by the very terms quoted on
20 your page 4 of your surrebuttal testimony. It's just a yes
21 or no.

22 A. No, sir, but that's --

23 Q. Thank you.

24 A. It's the right thing to do, though, sir.

25 Q. Dr. Hoch, you would agree that the Executive

1 Order per its terms needs to be consistent with the National
2 Performance Review?

3 A. Can you repeat that, sir?

4 Q. Would you agree with me, based upon the language
5 that you have quoted, that the implementation of the
6 Executive Order must be consistent with the National
7 Performance Review?

8 MR. BURNS: Your Honor, I'm going to object. He's
9 asking legal conclusions and the witness obviously hasn't
10 offered any testimony as to legal conclusions about this
11 particular section he's being asked about.

12 JUDGE NEMEC: I disagree with you. Overruled.

13 THE WITNESS: Can you state it once more, sir,
14 please? I'm trying to remember what you're saying.

15 BY MR. SELTZER:

16 Q. My question I believe related to whether or not
17 the implementation of the Executive Order you reference on
18 page 4 of your surrebuttal testimony by its terms must be
19 consistent with the National Performance Review.

20 A. I have no knowledge of that, sir.

21 Q. So you have no knowledge of what happens if
22 there's an inconsistency between the terms of the Executive
23 Order referenced and the National Performance Review?

24 A. That's not my area of expertise.

25 Q. What is the National Performance Review?

1 A. It's the report listed in this definition of the
2 environmental justice statement.

3 Q. Have you ever read the National Performance
4 Review?

5 A. I may have read sections, but no, I'm not
6 familiar with it.

7 Q. Do you know whether or not the National
8 Performance Review has anything whatsoever to do with the
9 operation of any state agencies in the United States?

10 A. I could surmise, but I would say I don't know
11 for sure.

12 Q. To your knowledge, were there any
13 recommendations made in the National Performance Review
14 directed to any state agencies, including the Pennsylvania
15 Public Utility Commission?

16 A. I don't know if a federal action has been
17 enacted for this particular project to require any federal
18 review, so I am not an expert witness in that particular
19 issue.

20 Q. I'm just asking you whether or not you have any
21 knowledge about whether the National Performance Review that
22 is referenced in this particular Executive Order has any
23 applicability, to your knowledge, to any state agencies,
24 including the Pennsylvania Public Utility Commission. If
25 you don't know, that's fine.

1 A. No, I do not know that, sir.

2 Q. Dr. Hoch, can you identify or produce for me any
3 line route evaluation report or comparable analysis
4 conducted in connection with any siting proceeding in any
5 state regulatory process since 1994 that has been directed
6 to comply with the Executive Order addressed on page 4 of
7 your surrebuttal testimony?

8 A. I have no knowledge of that, sir.

9 Q. Would the same be true if I were to make that
10 question applicable to compliance with the National
11 Performance Review?

12 A. That would be true, sir.

13 MR. SELTZER: Thank you, Dr. Hoch.

14 That's all we have, Your Honor.

15 JUDGE NEMEC: Do you want to take a break before
16 redirect?

17 MR. BURNS: Yes, Your Honor.

18 JUDGE NEMEC: Ten minutes enough?

19 MR. BURNS: That's fine.

20 JUDGE NEMEC: Ten-minute break.

21 (Recess.)

22 JUDGE NEMEC: You may proceed, Mr. Burns.

23 **REDIRECT EXAMINATION**

24 BY MR. BURNS:

25 Q. Dr. Hoch, you were asked some questions about

1 environmental justice and you testified a little bit about
2 environmental justice in your written testimony. Do you
3 remember that?

4 A. Yes, I do.

5 Q. Are you offering an opinion as to whether or not
6 environmental justice is required by the Pennsylvania PUC
7 regulations?

8 A. No, I'm not.

9 Q. Not one way or another as to whether it's
10 required or whether it's not required; is that right?

11 A. In my idea of the concept of environmental
12 justice, when I look at the siting requirements, I don't
13 understand how you could adequately address the siting
14 requirements under the regulation without doing some type of
15 socioeconomic profile, which would lead to the concept of
16 environmental justice.

17 Q. Now, you were asked a number of questions about
18 whether or not NEPA, the National Environmental Policy Act,
19 was triggered. Are you offering an opinion as to whether or
20 not NEPA has been triggered and requires an Environmental
21 Impact Statement in this proceeding?

22 A. I have no knowledge of if that's been the case
23 or not.

24 Q. So you're not offering an opinion one way or
25 another as to whether NEPA is or is not required in this

1 particular situation; is that right?

2 A. NEPA, as an official policy, no, I am not.

3 Q. I think it was a little unclear based upon the
4 cross-examination that was -- what are you recommending to
5 the PUC Commission?

6 MR. SELTZER: I'm sorry; is that -- I object to the
7 form of that question. I mean, the redirect needs to be
8 tied to the cross-examination. That's a completely wide-
9 open question and his testimony is what it is with respect
10 to his recommendations. It seems to me this question as to
11 form is completely inappropriate.

12 MR. BURNS: I'll ask a different question.

13 BY MR. BURNS:

14 Q. You were asked a number of different questions
15 about your recommendation that an Environmental Impact
16 Assessment be performed in this case. Do you remember that?

17 A. Yes.

18 Q. Do you believe an Environmental Impact
19 Assessment is required under the Pennsylvania regulations?

20 A. Well, I'm thinking -- I come to this -- I
21 approach this project from an assessment perspective whereas
22 everyone in this room at these tables look at it from a
23 legal perspective. So I believe that any compliance issue
24 must go through an adequate Environmental Impact Assessment.

25 Q. Have you reviewed the siting regulations that

1 Mr. Seltzer recommended to you or talked to you about?

2 A. Yes, I have.

3 Q. Do you believe the siting recommendations
4 require an Environmental Impact Assessment or something
5 approaching that?

6 A. Well, I believe that this project needs to
7 submit something more defined and clearly state the
8 potential impacts that may occur as a result of this
9 project. It may not be what is defined in this proceeding
10 as an EIA or the EIS, but somewhere between what has been
11 submitted and the official policy, the national policy, is
12 what I'm recommending; that more be done before this permit
13 is issued.

14 MR. BURNS: I believe those are all the questions I
15 have, Your Honor.

16 JUDGE NEMEC: Recross?

17 MR. SELTZER: We have nothing further, Your Honor.

18 JUDGE NEMEC: Okay, sir. Thank you very much.
19 You're excused.

20 THE WITNESS: Thank you.

21

22 (Witness excused.)

23 JUDGE NEMEC: Mr. Trout, you may proceed.

24 MR. TROUT: Thank you, Your Honor. TrAILCo calls Dr.
25 William Bailey.

1 JUDGE NEMEC: Dr. Bailey, please raise your right
2 hand.

3 Whereupon,

4 WILLIAM H. BAILEY

5 having been duly sworn, testified as follows:

6 JUDGE NEMEC: You may proceed, Mr. Trout.

7 MR. TROUT: Thank you, Your Honor.

8 DIRECT EXAMINATION

9 BY MR. TROUT:

10 Q. Dr. Bailey, could you please state your full
11 name and your business address for the record?

12 A. William H. Bailey, 420 Lexington Avenue, Suite
13 1740, New York, New York.

14 Q. Sir, by whom are you employed and in what
15 capacity?

16 A. I am a principal scientist at Exponent.

17 Q. Sir, do you have before you this morning a
18 document of 20 pages entitled Direct Testimony of William H.
19 Bailey, Ph.D., dated April 13, 2007?

20 A. Yes, I do.

21 Q. And accompanying that document are there three
22 exhibits labeled TrAILCo Exhibit WHB-1 through WHB-3?

23 A. I have WHB-1, WHB-2 and WHB-3.

24 Q. Thank you. Is that testimony and are those
25 exhibits documents that were prepared by you or under your

1 direction?

2 A. Yes.

3 MR. TROUT: Your Honor, I would ask that the
4 testimony be marked for identification as TrAILCo Statement
5 No. 8, and the three exhibits be marked as they are labeled,
6 WHB-1, WHB-2 and WHB-3.

7 JUDGE NEMEC: They may be so identified.

8 (Whereupon, the documents were
9 marked as TrAILCo Statement No. 8
10 and TrAILCo Exhibits Nos. WHB-1
11 through WHB-3 for identification.)

12 BY MR. TROUT:

13 Q. Dr. Bailey, do you have before you yet another
14 document of 33 pages entitled Rebuttal Testimony of William
15 H. Bailey, and dated December 10, 2007?

16 A. Yes, I do.

17 Q. Was that document also prepared by you or under
18 your direction?

19 A. Yes.

20 MR. TROUT: Your Honor, I ask that that be marked for
21 identification as TrAILCo Rebuttal Statement No. 8-R.

22 JUDGE NEMEC: It may be so identified.

23 (Whereupon, the document was marked
24 as TrAILCo Rebuttal Statement No.
25 8-R for identification.)

1 BY MR. TROUT:

2 Q. Finally, Dr. Bailey, do you have before you a
3 document of seven pages entitled Rejoinder Testimony of
4 William H. Bailey, dated March 19, 2008?

5 A. Yes, I do.

6 Q. Is that also a document prepared by you or under
7 your direction?

8 A. Yes.

9 MR. TROUT: Your Honor, I would ask that the
10 rejoinder testimony be marked for identification as TrAILCo
11 Rejoinder Statement No. 8-RJ.

12 JUDGE NEMEC: And that may be so identified.

13 (Whereupon, the document was marked
14 as TrAILCo Rejoinder Statement No.
15 8-RJ for identification.)

16 BY MR. TROUT:

17 Q. Dr. Bailey, looking at the three pieces of pre-
18 filed testimony that you have before you, do you have any
19 corrections to any of those documents?

20 A. Just one, sir.

21 Q. Is it to the direct testimony?

22 A. Yes, it is.

23 Q. Could you tell us which page and line the
24 correction is on?

25 A. It's on page 16, line 18.

1 Q. Thank you. And what is the correction you would
2 make on page 16, line 18, of your direct pre-filed?

3 A. To strike two words, "adult leukemia."

4 Q. To strike both the words "adult" and "leukemia"?

5 A. That's correct.

6 Q. With that correction, are the pre-filed
7 testimonies and the three accompanying exhibits that you've
8 identified for us this morning true and accurate to the best
9 of your knowledge?

10 A. Yes, they are.

11 Q. If I were to ask you the same questions as are
12 set forth in the three pieces of pre-filed testimony, would
13 your answers here this morning be substantially the same as
14 you have written in these documents?

15 A. Yes.

16 Q. And do you adopt these documents and exhibits as
17 your sworn testimony in this proceeding today?

18 A. I do.

19 MR. TROUT: Your Honor, I would offer into evidence
20 at this time, subject to cross-examination, the direct,
21 rebuttal and rejoinder testimony of Dr. Bailey, and the
22 three exhibits, TrAILCo Exhibits WHB-1, WHB-2 and WHB-3.

23 JUDGE NEMEC: TrAILCo Statement 8, Rebuttal Statement
24 8-R, Rejoinder Statement 8-RJ, along with Exhibits WHB-1, 2
25 and 3 are admitted, subject to cross-examination and later

1 motion and/or objection by the parties.

2 (Whereupon, the documents marked as
3 TrAILCo Statement No. 8, with
4 TrAILCo Exhibits Nos. WHB-1 through
5 WHB-3, TrAILCo Rebuttal Statement
6 No. 8-R, and TrAILCo Rejoinder
7 Statement No. 8-RJ were received in
8 evidence.)

9 MR. TROUT: Thank you, Your Honor. The witness is
10 available for cross-examination.

11 JUDGE NEMEC: Ms. Dusman.

12 **CROSS-EXAMINATION**

13 BY MS. DUSMAN:

14 Q. Good morning, Dr. Bailey. My name is Dianne
15 Dusman and I represent the Office of Consumer Advocate in
16 this proceeding.

17 A. Good morning.

18 Q. I just have very few questions for you today.
19 The first is what was the reason for your deletion of the
20 words "adult leukemia" in your direct Statement No. 8?

21 A. The reason for the deletion is that in the 2002
22 California report they did not include adult leukemia, but
23 they had included adult leukemia in previous versions. It
24 was a simple error in terms of which year of the document I
25 was referring to.

1 Q. What is the most recent California report?

2 A. Two thousand and two.

3 Q. Do any of the other reports that you're
4 referring to in the context of that question at lines 9 to
5 15 suggest that adult leukemia might be a risk of exposure
6 to electromagnetic fields?

7 A. All of the other major reviews that I cited have
8 evaluated the literature on that disease as well, as did
9 California in the 2002 draft.

10 Q. So is it your testimony that the current state
11 of the literature is that the three scientists you're
12 referring to expressed their belief that EMF to one degree
13 or another may pose a possible risk of adult brain cancer,
14 miscarriage and amyotrophic lateral sclerosis? Is that
15 accurate?

16 A. Yes, as well as childhood leukemia, which I had
17 discussed previously.

18 Q. In the course of preparing to appear as a
19 witness here today, did you review any other testimonies
20 that have been submitted in this proceeding?

21 A. I have reviewed a variety of testimonies that
22 have been submitted in the proceedings. Is there a
23 particular one?

24 Q. Yes, let me be specific. Have you reviewed the
25 testimony of Peter J. Lanzalotta, witness for Office of

1 Consumer Advocate?

2 A. Yes, I have.

3 Q. You have. I'd like you to turn to page 3 and 4
4 of your Rebuttal Statement 8-R, and at the bottom of --

5 A. Can I have the page again?

6 Q. 8-R, pages 3 and 4. The sentence that begins on
7 page 3 states that "This is certainly true in connection
8 with OCA witness Lanzalotta's claim that there is a public
9 health 'need' to delete the transmission line between 502
10 Junction and Prexy or to convert the proposed single circuit
11 138 kV to double circuit 138 kV lines solely for the purpose
12 of reverse phasing the circuits." Is that an accurate read
13 of that statement?

14 A. Yes, it is.

15 Q. Dr. Bailey, can you acknowledge for me today
16 that Mr. Lanzalotta has not claimed that there is a public
17 need to delete the transmission line because of the
18 potential exposure to EMF of the population in Washington
19 and Greene County?

20 A. That was the substance of his rebuttal
21 testimony, yes.

22 Q. So you can now acknowledge and agree with me
23 that that is not our claim in this proceeding?

24 A. Yes, based upon his rebuttal testimony.

25 Q. I don't believe you addressed that in rejoinder.

1 A. No, I did not.

2 MS. DUSMAN: Your Honor, that's all the OCA has for
3 this witness at this time.

4 JUDGE NEMEC: Mr. Wilhelm.

5 **CROSS-EXAMINATION**

6 BY MR. WILHELM:

7 Q. Good morning, Dr. Bailey. My name is Jeff
8 Wilhelm. I'm an attorney for ECC. I have just a few
9 questions for you this morning.

10 Let me hand you a document that I'm going to mark as
11 ECC Cross -- I think we're up to 62, I believe. No?

12 JUDGE NEMEC: I believe you're up to 67.

13 MR. WILHELM: Sixty-seven.

14 (Whereupon, the document was marked
15 as ECC Cross-Examination Exhibit
16 No. 67 for identification.)

17 BY MR. WILHELM:

18 Q. Dr. Bailey, I'm going to represent to you that
19 ECC Cross-Examination Exhibit 67 is a document that was
20 produced to us through the course of discovery in this
21 matter from TrAILCo. Am I to understand that this is a list
22 from the years 2003 to 2007 of your participation in
23 testimony, either written or oral, before siting councils
24 either in the United States or abroad?

25 A. Yes.

FORM 2

1 Q. And if I was to go through each of these, I take
2 it you were participating on behalf of an applicant; is that
3 correct? Take your time, sir.

4 (Witness perusing document.)

5 A. Yes, in these projects.

6 Q. And prior to 2003, had you testified on behalf
7 of applicants in proceedings before Commissions or the like,
8 either in the United States or abroad?

9 A. Yeah, I testified both for applicants, in some
10 cases on behalf of public utility commissions.

11 Q. Were you testifying at the same clip that you
12 are testifying, which looks to me to be an average of four
13 or five per year, maybe more, maybe less?

14 A. No. I don't think that I would estimate it that
15 way. The last few years have been particularly busy, but it
16 was probably more on the order of between one and three a
17 year, probably.

18 Q. In 2002, did you testify on behalf of any
19 applicants, to your knowledge?

20 A. I can't recall. I presume that I did.

21 Q. And my understanding is 2002 is the same year
22 that the IARC monogram came out, is that correct, or
23 monograph? Excuse me.

24 A. It was published in 2002 and the work was
25 completed in 2001.

1 Q. And you are one of the, as I understand it, 21
2 panelists that sat on the IARC?

3 A. That's correct.

4 Q. And you were a voting member as a panelist?

5 A. That's correct.

6 Q. And my understanding of that process is it's a
7 consensus based process where you gather the data up and
8 then all the 21 members review the data, and then you make
9 value judgments and based on that majority rules; is that
10 correct?

11 A. Essentially, yes.

12 Q. And my understanding based on that monograph is
13 that the IARC acknowledged that EMFs pose a possible risk of
14 carcinogenic -- excuse me; that's a horrible question. I
15 apologize. EMFs is not my primary, as you can tell. That
16 IARC identified EMFs as a possible human carcinogen.

17 A. No.

18 Q. How did IARC identify EMFs?

19 A. You're using the term EMFs. The way that I use
20 it refers to electric and magnetic fields. The designation
21 of the IARC panel working group was that magnetic fields
22 were rated as a possible human carcinogen with regard to
23 childhood leukemia.

24 Q. And that is, it's my understanding, based on
25 more than one study that identified the statistical

1 association between -- more than one epidemiological study
2 that identified a statistical association between childhood
3 leukemia and magnetic fields; is that correct?

4 A. That's correct. When we do the reviews, and
5 under the IARC rules, if you identify evidence of a
6 statistical association between an exposure and cancer, that
7 automatically boosts the evidence as limited, and for
8 epidemiology data that would result in the possible human
9 carcinogen classification.

10 Q. And my understanding per the IARC rules is
11 epidemiological studies are given more weight than
12 environmental or experimental studies at this time; is that
13 correct?

14 A. Both are considered in making the decision, but
15 epidemiology studies, depending upon their strength and
16 weight, may be given greater importance.

17 Q. And in this case they in fact were given greater
18 importance in that there is a category of no possible risk
19 that IARC could have put magnetic fields in; correct?

20 A. I'm sorry, I couldn't hear all of your question.

21 Q. I apologize; I mumble from time to time. I'll
22 try and stop that.

23 With respect to the IARC and its process, my
24 understanding is that in this particular instance they did
25 in fact identify this as a risk as opposed to giving it a no

1 risk, a Class C certification, if I understand your system
2 correctly -- or a Class 3 certification.

3 A. Yes, Class 3. And the other possibilities were
4 evidence against there being a carcinogenic association, and
5 also we could have rated it a probable human carcinogen or a
6 known human carcinogen.

7 Q. And you, in the course of discovery in this
8 matter, did not provide us with a record of how the 21 panel
9 members voted on the classifications, did you, sir?

10 A. I don't believe I was asked that, and I don't
11 believe that I could recall how the voting was.

12 Q. Do they keep records of that information?

13 A. I have no idea.

14 Q. And the publication of the monograph itself just
15 lists the panel members and the results, but do not identify
16 what the outcome of the actual vote was; is that correct?

17 A. That's correct.

18 Q. And it's reasonable to assume that individuals
19 on the panel may have put it in a higher classification, and
20 individuals on the panel may have put it in a lower
21 classification; correct?

22 A. I'm sure that within the panel there was some
23 diversity of opinion.

24 Q. And in the consensus building model, then
25 obviously there are reasonable minds who might disagree with

1 which level to classify, if you will, magnetic fields; is
2 that correct?

3 A. Yes, that could be the case, but the IARC rules
4 are fairly strict as to what the options are.

5 Q. And so I understand your testimony earlier
6 today, page 16, you have removed adult leukemia from line 18
7 of your testimony, your direct testimony now, sir?

8 A. Yes.

9 Q. And the reason you have not placed in childhood
10 leukemia is because you believe that's adequately addressed
11 before in your testimony; is that correct?

12 A. Yes.

13 Q. And just to be clear, the report did cite all
14 four, the three that you're now saying on page 18 and 19,
15 and childhood leukemia; correct?

16 A. That's correct.

17 Q. You are being compensated for your testimony
18 here today; correct?

19 A. My firm is charging a fee for my appearance and
20 work on this project.

21 Q. And I take it you didn't work pro bono in any of
22 the other cases on ECC 67; is that correct?

23 A. No.

24 Q. You received a fee each time?

25 A. My firm was compensated.

1 Q. And in the monograph, outside of identifying
2 yourself as a member of Exponent, is there any other
3 disclosure, conflict of interest information?

4 A. I'm not sure I understand your question.

5 Q. Do you understand what a conflict of interest
6 is, sir?

7 A. Yes.

8 Q. And you understand that some people may view
9 accepting money from the industry to be a conflict of
10 interest when opining independently?

11 MR. TROUT: Objection.

12 JUDGE NEMEC: Basis?

13 MR. TROUT: Assumes facts not in evidence.

14 JUDGE NEMEC: Any response?

15 MR. WILHELM: I'll withdraw the question, Your Honor.

16 BY MR. WILHELM:

17 Q. Sir, my understanding is the term electro -- and
18 I've tried to read through the literature and it is fairly
19 dense, I must admit. My understanding is that the term
20 electromagnetic field is somewhat of a misnomer. In the use
21 of a 500 kV power line, you have electrical fields that are
22 generated; is that correct?

23 A. Yes.

24 Q. And magnetic fields which are generated?

25 A. Yes.

1 Q. And those are two separate items?

2 A. At these low frequencies they can be treated for
3 all practical purposes as separate forces.

4 Q. And my understanding is that the health research
5 or the literature with respect to possible effects of EMFs
6 have been limited to the magnetic fields as opposed to the
7 electrical fields?

8 A. No.

9 Q. Could you explain that answer, please, sir?

10 A. Research has been going on for decades about
11 both electric and magnetic fields, it has not been limited
12 to magnetic fields.

13 Q. And you testified earlier this morning that the
14 statistical association between childhood leukemia is
15 related to the magnetic fields; is that correct?

16 A. Yes.

17 Q. And you have testified I believe in your direct,
18 and probably also in your rejoinder, that electrical fields
19 are shielded by trees, shrubbery and the like; is that
20 correct?

21 A. Yes. Any conductive object would provide
22 shielding.

23 Q. Do trees and shrubberies shield magnetic fields?

24 A. No, they do not.

25 Q. And with respect to your testimony on trees,

1 shrubberies and the other likes, have you actually visited
2 the proposed route?

3 A. I have not.

4 Q. Could you tell me where the proposed route is
5 going?

6 A. In general terms.

7 Q. Could you tell me the location of the proposed
8 route with respect to any of the 121 residences that are
9 within 500 feet of this line, proposed Route C?

10 A. I'm not sure on a site-specific basis I could do
11 that, but I am familiar with the line route evaluation which
12 identified the locations of residences within zones at
13 various distances from the transmission line.

14 Q. And sitting here today, you couldn't tell me
15 where the trees and shrubberies or any of that are in
16 reference to those houses or residences?

17 A. No.

18 Q. You do not hold a degree in epidemiology, do
19 you, sir?

20 A. No.

21 Q. You're also not a medical doctor; correct?

22 A. No.

23 Q. Did anyone else at Exponent assist in
24 researching or writing your reports?

25 A. I have a staff who works with me.

1 Q. And what were their roles -- well, first of all,
2 who are they?

3 A. There's several people. Dr. Linda Erdrich, a
4 Ph.D. epidemiologist who worked for many years with the U.S.
5 Environmental Protection Agency. Meghan Wagner, an
6 epidemiologist. They were primary reviewers on my drafts.

7 Q. Were they principally responsible for making the
8 drafts, or were you responsible for making the drafts?

9 A. I prepared my drafts.

10 Q. Let me hand you what I'm going to mark as ECC
11 Cross-Examination Exhibit No. 68.

12 JUDGE NEMEC: This multi-page document may be
13 identified as ECC Cross-Examination Exhibit 68.

14 (Whereupon, the document was marked
15 as ECC Cross-Examination Exhibit
16 No. 68 for identification.)

17 BY MR. WILHELM:

18 Q. Dr. Bailey, I'd like you to familiarize yourself
19 just with the first couple pages of that document. If you
20 are already familiar with the document, I'll go ahead with
21 my questioning.

22 A. I'm familiar with this document.

23 Q. ECC 68 is a document prepared on behalf -- it's
24 my understanding this is the California Health Department
25 report, An Evaluation of the Possible Risks from Electric

1 and Magnetic Fields from Power Lines, Internal Wiring,
2 Electrical Occupations, and Appliances; correct?

3 A. It was a report prepared by the three authors
4 listed on the first page, Raymond Neutra, Vincent DelPizzo
5 and Geraldine Lee, and I note that this is not a complete
6 copy of the report.

7 Q. Is this the Executive Summary, is that --

8 A. This is the first 37 pages of an over 300-page
9 report.

10 Q. Sir, if you'll look on page 2, does it say
11 Executive Summary?

12 A. Yes.

13 Q. And on page 2 of this report does it indicate
14 additional individuals who put input into the drafts of
15 this?

16 A. I don't know what degree of input they had in
17 these drafts. I know the principal authors of this report
18 and the principal authors of the report themselves spent a
19 great deal of time in preparing the report, and as they
20 indicate here, they've gotten comments and criticisms from
21 the people listed on this page.

22 Q. Thank you, sir.

23 Let me hand you another exhibit, which is going to be
24 ECC 69, Cross-Exam 69.

25 (Whereupon, the document was marked

1 as ECC Cross-Examination Exhibit
2 No. 69 for identification.)

3 (Document handed to witness.)

4 (Pause.)

5 Q. Are you ready, Dr. Bailey?

6 A. Yes.

7 Q. Dr. Bailey, you've been handed what is ECC
8 Cross-Examination Exhibit 69. It is a review, Childhood
9 Leukemia and EMF: Review of the Epidemiologic Evidence. The
10 authors of that -- and I suspect that you are aware of one
11 of these authors, maybe both of them, but I'm going to spell
12 for the court reporter their names because, quite frankly, I
13 can't pronounce them. L-e-e-k-a, last name K-h-e-i-f-e-t-s.
14 Next, R-i-t-i, last name S-h-i-m-k-h-a-d-a. Are you
15 familiar with this article?

16 A. Yes, I am.

17 Q. Are you familiar with the first author?

18 A. Yes, I am. I know Dr. Kheifets.

19 Q. And how do you say that last name?

20 A. Kheifets.

21 Q. And was Dr. Kheifets not -- I'm sorry; a
22 horrible question. Dr. Kheifets was a panelist as well on
23 the IARC monograph, was she not?

24 A. Yes.

25 Q. I'd like to direct you to S56, principally the

1 last paragraph under Causality, which states, "The
2 classification of ELF as a 'possible human carcinogen' by
3 IARC was based on consistent epidemiological evidence of an
4 association between exposure to these fields and childhood
5 leukemia and laboratory studies in animals and cells, which
6 were not supportive of exposure to ELF causing cancer.
7 Although the body of evidence is always considered as a
8 whole, based on the weight of evidence approach and
9 incorporating different lines of scientific enquiry,
10 epidemiologic evidence, as most relevant, is given the
11 greatest weight." Do you agree with that statement?

12 A. You read it correctly.

13 Q. Well, I guess I'll just take that answer as
14 stated.

15 A. I think that what the statement describes is a
16 perfectly reasonable description of the approach, but you
17 have to recognize that if you have good human data, that is,
18 of course, important, but the circumstances do not always
19 present themselves that you do have good human data, and so
20 most of the assessments that are made, we do not have the
21 luxury of epidemiology data. Fortunately, in this case we
22 have both epidemiology data and experimental data.

23 (Pause.)

24 BY MR. WILHELM:

25 Q. Dr. Bailey, you've been handed what has been

1 marked as ECC Cross-Examination Exhibit 70, which is
2 "Childhood cancer in relation to distance from high voltage
3 power lines in England and Wales: a case-control study."
4 The first listed author is Gerald Draper.

5 (Whereupon, the document was marked
6 as ECC Cross-Examination Exhibit
7 No. 70 for identification.)

8 Q. Are you familiar with this study?

9 A. Yes, I am. It was addressed several times in my
10 direct and rebuttal testimonies.

11 Q. I have no further questions on that document.

12 JUDGE NEMEC: Mr. Eckenrod?

13 MR. WILHELM: On that document. I'm not finished,
14 Your Honor. I apologize. I'm not finished. I'm sure you
15 would like me to be finished.

16 JUDGE NEMEC: I'm easily confused.

17 (Laughter.)

18 BY MR. WILHELM:

19 Q. You have testified before, I believe, in front
20 of the Siting Council of Connecticut, for instance, on a
21 doctrine developed by Carnegie Mellon professor, which is
22 called Prudent Avoidance; is that correct?

23 A. Yes.

24 Q. And Prudent Avoidance, as I understand it, is
25 that with respect to this line, that you should not spend a

1 lot of money attempting to avoid the cost associated with
2 high power lines. You can take steps to avoid being exposed
3 to the risk yourself; is that correct? Is that a fair
4 summarization?

5 A. I think I would explain it somewhat differently.
6 What Granger Morgan was trying to get at was when you have
7 identified a potential risk or speculative risk like is
8 posed by EMF from power lines or appliances, that you would
9 not want to expend a lot of money to avoid exposure if there
10 was not likelihood of much of a benefit.

11 What he said was to limit how much you would expend
12 rationally would be -- you wouldn't want to spend more money
13 to avoid a speculative risk than we would spend to avoid a
14 known risk.

15 For the case of EMF, he suggested that the members of
16 the general public might do things like to take a clock and
17 move it from the bed to the opposite side of the room if
18 they were concerned about their exposure, and he gave that
19 as an example of a low cost or no cost response.

20 Q. And did he not also, sir, give as an example of
21 the way that the public could avoid the exposure to avoid --
22 to factor in whether or not a power line was near a property
23 that they were interested in purchasing?

24 A. Yes. That could be a factor that someone might
25 take into account.

1 Q. Hypothetically speaking, sir, if there is no
2 need for the line, wouldn't it be prudent not to put the
3 line in and expose these people to that risk?

4 A. I would say that if there was no need for the
5 line, then prudence would dictate that you wouldn't build
6 it, purely apart from questions of EMF.

7 MR. WILHELM: I have no further questions at this
8 time.

9 JUDGE NEMEC: Mr. Eckenrod.

10 MR. WILHELM: Excuse me. I'm sorry. I should have
11 moved the Exhibits 67 through 70 into evidence.

12 JUDGE NEMEC: Objections?

13 MR. TROUT: Your Honor, TrAILCo does not object to
14 the admission of Exhibit 67. With respect to Exhibit 68 and
15 70, we would object on the grounds that -- well, let's do
16 them one at a time. With respect to 68, we would object
17 both on the grounds that it's incomplete and on the grounds
18 that there is no witness sponsoring this document. The only
19 references that Dr. Bailey gave to this document in his
20 testimony were, frankly, critical of it, and it's
21 inappropriate to offer it into evidence when there is no one
22 to sponsor it.

23 With respect to 69, other than the fact that Dr.
24 Bailey has seen this and is personally familiar to some
25 extent with one of the authors, there is no linkage

1 whatsoever to this proceeding between 69 and this case.
2 So, there's a foundational issue as well.

3 Finally, with respect to 70, I cannot tell whether it
4 is complete or not on its face, but even assuming it is, it
5 suffers from the same infirmity as 68.

6 So, I would object to 68, 69 and 70 for those
7 reasons.

8 JUDGE NEMEC: Response?

9 MR. WILHELM: Your Honor, first off, 68 is sponsored
10 by a witness. ~~It is ECC Exhibit RQH 11, which is already --~~
11 excuse me. I'm sorry. Strike that.

12 Your Honor, with respect to all of these exhibits, I
13 think the witness is familiar with it. He has testified
14 that he conducted reviews. These are within the scope of
15 the reviews. I think they should be admitted into evidence.
16 They have the opportunity to redirect the witness if they
17 want to pull anything out that he hasn't already testified
18 to. I understand his criticisms of the California report.

19 JUDGE NEMEC: I understand the objections. The
20 exhibits are admitted simply to keep a full and complete
21 record and at least acknowledged by your witness as to his
22 familiarity with them, again, subject to weighing in the
23 event they are used in the briefing.

24 (Whereupon, the documents marked as
25 ECC Cross-Examination Exhibits Nos.

1 67 through 70 were received in
2 evidence.)

3 JUDGE NEMEC: Mr. Eckenrod.

4 MR. ECKENROD: Is it really my turn?

5 JUDGE NEMEC: It is.

6 CROSS-EXAMINATION

7 BY MR. ECKENROD:

8 Q. Good morning, Dr. Bailey. My name is Robert
9 Eckenrod from the Office of Trial Staff.

10 A. Good morning.

11 Q. I just actually have one question for you.
12 Turning to your direct testimony, page -- I'm sorry; to your
13 rebuttal testimony, page 7. Just let me know when you're
14 there.

15 A. Yes.

16 Q. There, would you agree with me that you state
17 Mr. Yocca had concluded that at least from an EMF
18 perspective, that TrAIL would create an unreasonable risk to
19 the health and safety of the public? Do you see that?

20 A. What line, sir?

21 Q. That would be lines 1 through 4.

22 A. That's the question.

23 Q. Yes.

24 A. My response is given on lines 5 through 9.

25 Q. Would you agree with me actually that my

1 witness, Mr. Yocca, has not made such a statement; that he
2 has not reached such a conclusion?

3 A. Based upon his rebuttal testimony, I understand
4 that's the case.

5 MR. ECKENROD: Thank you. That's all the questions I
6 have for this witness.

7 JUDGE NEMEC: Redirect?

8 MR. TROUT: Your Honor, if we could have a few
9 minutes, particularly to look at the documents.

10 JUDGE NEMEC: Ten minutes.

11 MR. TROUT: Thank you.

12 (Recess.)

13 JUDGE NEMEC: Back on the record.

14 You may proceed, Mr. Trout.

15 **REDIRECT EXAMINATION**

16 BY MR. TROUT:

17 Q. Dr. Bailey, you were asked a few minutes ago
18 some questions about the IARC review. It is discussed in
19 your prefiled testimony. Do you remember that?

20 A. Yes.

21 Q. And that review did not determine that
22 electromagnetic fields are a known human carcinogen, did it?

23 A. No, it did not.

24 Q. Did it determine that electromagnetic fields are
25 a probably human carcinogen?

1 A. No.

2 Q. And what does it mean for the study to have
3 concluded that it electromagnetic fields are a possible
4 human carcinogen?

5 A. In this situation, possible human carcinogen
6 means that there is limited epidemiological evidence. So,
7 there are a number of studies in the literature which
8 suggest a statistical association between magnetic fields
9 and childhood leukemia, but that the issues surrounding
10 these studies pertaining to the role of chance, various
11 types of biases and confounding by other factors could not
12 be ruled out, and like other committees, that identified
13 just a possibility of a causal relationship.

14 MR. TROUT: Thank you, Dr. Bailey. That's all we
15 have, Your Honor.

16 JUDGE NEMEC: Recross?

17 MR. WILHELM: No, Your Honor.

18 JUDGE NEMEC: Thank you, sir. You're excused.

19 THE WITNESS: Thank you.

20

21 (Witness excused.)

22 JUDGE NEMEC: I just want to note that I don't
23 believe that TrAILCo Cross-Examination Exhibits 5 and 6 were
24 moved.

25 MR. SELTZER: We have no interest in moving them,

1 Your Honor.

2 JUDGE NEMEC: All right. I thought that might be the
3 case.

4 Off the record.

5 (Discussion off the record.)

6 JUDGE NEMEC: Back on the record.

7 Your next witness?

8 MR. TROUT: Your Honor, TrAILCo calls Dr. Gary
9 Johnson. Good morning, Dr. Johnson.

10 JUDGE NEMEC: Sir, please raise your right hand.

11 **Whereupon,**

12 **GARY BURTON JOHNSON**

13 **having been duly sworn, testified as follows:**

14 JUDGE NEMEC: You may proceed.

15 MR. TROUT: Thank you, Your Honor.

16 **DIRECT EXAMINATION**

17 BY MR. TROUT:

18 Q. Dr. Johnson, could you please state your full
19 name and your business address for the record?

20 A. My name is Gary Burton Johnson. My address is
21 185 Hansen Court, Suite 100, Woodale, Illinois.

22 Q. Thank you. And by whom are you employed and in
23 what capacity?

24 A. I'm a senior managing engineer at Exponent.

25 Q. Do you have before you this morning a document

1 of 14 pages entitled "Direct Testimony of Gary B. Johnson,"
2 dated April 13, 2007?

3 A. Yes, I do.

4 Q. And accompanying that -- excuse me. Was that
5 document prepared by you or under your direction?

6 A. Yes, it was.

7 Q. And accompanying that document, are there three
8 additional documents labeled as TrAILCo Exhibit GBJ-1
9 through GBJ-3?

10 A. That's correct.

11 Q. Were those documents also prepared by you or
12 under your direction?

13 A. Yes, they were.

14 Q. Do you have any corrections to any of those
15 documents this morning?

16 A. Yes. I have two corrections. One is on page 8
17 of the direct testimony, line 14. The value listed there as
18 16 should be 33.

19 Q. Do you have any other corrections?

20 A. Then on page 9, line 4, the value 1.5 should be
21 1.65.

22 Q. Are those the only corrections you have, Dr.
23 Johnson?

24 A. Yes.

25 Q. And with those corrections, is the direct

1 testimony and the accompanying exhibits true to the best of
2 your knowledge?

3 A. Yes, they are.

4 Q. If I were to ask you this morning the same
5 questions as are set forth in the testimony, would your
6 answers be substantially the same?

7 A. Yes, they would.

8 Q. Do you adopt this prefiled testimony and these
9 exhibits as your sworn testimony in this proceeding?

10 A. Yes.

11 MR. TROUT: Your Honor, I would ask that Dr.
12 Johnson's direct testimony be marked for identification as
13 TrAILCo Statement 9, that his three exhibits be marked as
14 TrAILCo Exhibit GBJ-1 through GBJ-3.

15 JUDGE NEMEC: They may be so identified.

16 (Whereupon, the documents were
17 marked as TrAILCo Statement No. 9
18 and Exhibits GBJ-1 through GBJ-3
19 for identification.)

20 MR. TROUT: Thank you, Your Honor. I would then
21 offer them into evidence at this time subject to the cross-
22 examination of Dr. Johnson.

23 JUDGE NEMEC: TrAILCo Statement 9 with accompanying
24 Exhibits GBJ-1 through 3 are admitted subject to cross-
25 examination and later motion and/or objection.

1 (Whereupon, the documents marked as
2 TrAILCo Statement No. 9 and
3 Exhibits GBJ-1 through GBJ-3 were
4 received in evidence.)

5 MR. TROUT: Thank you, Your Honor. The witness is
6 available for cross-examination.

7 JUDGE NEMEC: Ms. Dusman?

8 MS. DUSMAN: The OCA has no cross-examination for
9 this witness at this time.

10 JUDGE NEMEC: Mr. Burns?

11 **CROSS-EXAMINATION**

12 BY MR. BURNS:

13 Q. Good morning, Dr. -- is it Doctor?

14 A. Yes.

15 Q. Dr. Johnson, I want to ask you just a couple of
16 questions. You have an exhibit to your direct testimony,
17 GBJ-3. It is a five-page exhibit. Can you turn to that?

18 A. All right.

19 Q. Mr. Hozempa testified earlier in this proceeding
20 that he provided some information to you about expected peak
21 and average loads that would be flowing through the two
22 different sections of the line; the one section being the
23 502 to Prexy, and the other section, 502 to Loudoun,
24 Virginia. Is that what happened?

25 A. Yes. I was provided information on the average

1 and peak loadings expected for the lines.

2 Q. And he testified that the average and the peak
3 loadings expected for the 502 to Prexy segment or the Prexy
4 facilities, as we've been calling it in this proceeding, was
5 260 MVA on average and 440 MVA peak. Is that consistent
6 with your recollection?

7 A. Yes, it is.

8 Q. And he testified that the average and peak
9 numbers that he provided you for the other part of the line
10 from 502 to Loudoun were 790 MVA for the average number and
11 1550 MVA for peak. Is that consistent with your
12 recollection?

13 A. Yes, it is.

14 Q. And then you came up with a chart that you
15 showed the magnetic field, and as I understand it, in the
16 first page of this exhibit, you were trying to show
17 basically how far the magnetic field went based upon those
18 average and peak loads. Is that generally what you did?

19 A. Okay. You're talking about Figure 1 and Figure
20 2 on page 1 of Exhibit GBJ-3?

21 Q. Yes.

22 A. Okay; the plots. Basically, I referred to them
23 as plots of the magnetic field as you go out in distance
24 from the transmission line corridor, and it shows it for the
25 magnetic field for average load conditions, which in the

1 exhibit is sort of a darker, heavier, sort of greenish line,
2 and for peak load conditions for the particular
3 configuration, which is in a somewhat lighter dashed green
4 line.

5 Q. Let me see if my projector is working. It might
6 be easier if I question you if this projector is working.

7 A. Okay.

8 Q. Right now on the screen we have your Figure 1
9 from the first page of the exhibit you identified, GBJ-3;
10 correct?

11 A. Correct.

12 Q. And that shows the peak and average magnetic
13 load field profiles for the TrAIL structure from Prexy to
14 502 Junction or the Prexy facilities; right?

15 A. From Prexy to 502 Junction, yes, as you're
16 looking south from Prexy.

17 Q. So, as you're looking south from Prexy, there
18 are proposed to be two lines, a 500 kV and a 138 kV line;
19 correct?

20 A. Two structures. The structure containing the
21 500 kV line and then a double circuit 138 kV structure,
22 which is the smaller one as you look at the figures to the
23 right.

24 Q. So, this Figure 1 shows two different lines; one
25 with sort of a darker green or black color, and the other is

1 like a lighter green and it's got -- and what do those show,
2 those two different lines? Can you tell me again?

3 A. Okay. Just to clarify, we have to make a little
4 bit sure that we're talking the right lines, because a lot
5 of times you talk transmission lines and then also the plot
6 line.

7 The plot lines, which I believe is what you're
8 referring you, showing the magnetic field, they are the
9 dashed lines that as you go across the plot from left to
10 right, you see it basically start off at or near zero all
11 the way to the left at minus 500 feet. It slowly increases.

12 Then the vertical dashed line at approximately minus
13 215 feet is the edge of the right-of-way, and at that point
14 you start to see sort of a difference between the two lines.
15 The lower, darker one is for the average load conditions
16 showing the magnetic field as you go on across the right-of-
17 way and then sort of exit the right-of-way at the right at
18 215 feet.

19 The upper line, the lighter shaded one, is for
20 conditions of the magnetic field that would be expected
21 under the peak load conditions.

22 Q. And it shows that those are greatest, the
23 magnetic fields are greatest immediately under the towers?

24 A. That's correct. These calculations were done
25 looking at basically the worst location along the span where

1 the conductor would be at its closest approach to ground and
2 producing the highest magnetic fields.

3 Q. And did you have an understanding as to how far
4 in the future those peak and average loads were going to go?

5 A. I believe they were projected for the 2011-2012
6 time frame.

7 Q. And for the 2011 and 2012 time frame, you were
8 told that there would be an expected 260 MVA on average and
9 440 MVA on average going through the lines from Prexy to
10 502, the 500 kV lines; correct?

11 A. For the 500 kV line, yes, that's correct.

12 Q. Do you remember what you were told with respect
13 to the 138 kV lines, how much would be going through them?

14 A. On this right-of-way, 60 MVA, I believe for
15 average; peak load conditions, 130 MVA; and that would be
16 split between the two sides of the tower.

17 Q. And did you have an understanding as to what
18 capacity the 138 kV double circuit line had? You know,
19 could it accommodate more than that; and if so, do you know
20 how much?

21 A. No, I don't.

22 Q. So, for the 138 kV line, the 60 MVA average
23 you're saying would be split between the two circuits? Is
24 that your understanding?

25 A. Correct.

1 Q. And how did you get from those peak and average
2 usage levels of these particular lines to the magnetic
3 fields that are shown in this exhibit?

4 A. What you do is you take the MVA loading for the
5 particular lines. You then convert that to current based on
6 the voltage levels of the line. You then use that current
7 and its position in the conductors, basically its height and
8 its separation from each other, and from that current in the
9 conductors, you calculate the magnetic fields.

10 Q. And you did that for the 500 kV line and then
11 the 138 kV line separately?

12 A. No. You do the whole thing in combination,
13 because you're looking at a total magnetic field.

14 Q. And for the 260 MVA number, do you know how to
15 convert that to megawatts, what that would be?

16 A. The 260 MVA to megawatts depends on the power
17 factor of the line. In determining the current, we're
18 basically looking at voltage. So, MVA is megavolt amperes.

19 So, if you have the voltage of the line, you have the
20 MVA rating of the line, you can develop and calculate what
21 the current is going to be. You don't have to go to the
22 megawatts.

23 Q. But do you know how to go to the megawatts?

24 A. Yes. It's basically a power factor many times
25 for -- I don't know the specific one for these lines, but it

1 usually varies between 90 percent and 95 percent. You would
2 divide the MVA by the power factor.

3 Q. And so, generally, the MVA number would be 5 or
4 10 percent higher than the megawatt number, approximately?

5 A. Correct.

6 Q. Did you do the same calculation for the 502 to
7 Loudoun part of the line? You took the expected average and
8 peak amounts that were going to be flowing through those
9 lines and converted that into magnetic fields?

10 A. Correct; converted it into current and then
11 calculated the magnetic fields.

12 Q. So, that's shown on your Figure 2 of this same
13 page of this exhibit; correct?

14 A. That's the magnetic field that you calculated
15 based upon 790 MVA on average and 1550 MVA peak for the 502
16 to Loudoun portion of the line; correct?

17 A. Correct.

18 Q. And the numbers that you were given, the 790 MVA
19 and the 1550 MVA, was it your understanding those were for
20 2011-2012?

21 A. That's my understanding.

22 Q. And I take it you were told -- and correct me if
23 I'm wrong -- by Mr. -- well, did you get the information
24 from Mr. Hozempa?

25 A. I believe Mr. Hozempa was the primary source,

1 yes.

2 Q. And did he give an indication to you as to
3 whether that number was expected to be constant in the
4 future?

5 A. No. No, he did not give any information. He
6 just gave me the loadings projected.

7 Q. So, he gave the loadings for 2011-2012 and
8 indicated that you should do your calculations based on
9 that?

10 A. Correct.

11 Q. All right. And you didn't indicate that he
12 expected any material different loading in the future years;
13 is that right?

14 A. He did not say one way or the other. I have no
15 information on that.

16 Q. I have to ask you this question, because people
17 ask me it all the time. Do you believe it's safe for people
18 with pacemakers to walk under these lines?

19 A. My mother has a pacemaker. I would not object
20 if she went under these lines.

21 Q. Does that mean you think it's safe for people
22 with pacemakers to walk under these lines? I don't know
23 what your relationship is with your mother.

24 (Laughter.)

25 MR. TROUT: Oh, I wish I could object to that, but I

1 won't.

2 THE WITNESS: All I can say, if and when I have a
3 pacemaker, I would walk underneath the line. I'm not a
4 medical expert.

5 MR. BURNS: All right. Those are all the questions I
6 have.

7 MR. ECKENROD: I have no cross for this witness, Your
8 Honor.

9 JUDGE NEMEC: Redirect?

10 MR. TROUT: I'm going to resist the temptation to
11 redirect about his mother. Nothing, Your Honor.

12 THE WITNESS: She would appreciate that. Thank you.

13 JUDGE NEMEC: Thank you, sir. You're excused.

14
15 (Witness excused.)

16 JUDGE NEMEC: Let's break for lunch until 1:15.

17 (Whereupon, at 11:44 a.m., the hearing was adjourned,
18 to be reconvened at 1:15 p.m., this same day.)

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AFTERNOON SESSION

(1:15 p.m.)

1 JUDGE NEMEC: On the record.

2 You may call your next witness.

3 MR. DEEVER: Thank you, Your Honor. My name is
4 Gerald Deever on behalf of TrAILCo. I will be presenting
5 our next three witnesses. Our first witness is Kevin T.
6 McLoughlin, who is already in the witness chair.

7 With your permission, I would ask that we mark Mr. --

8 JUDGE NEMEC: Hold on a second. Let me swear him in.

9 MR. DEEVER: Okay, sure.

10 JUDGE NEMEC: Sir, please raise your right hand.

11 Whereupon,

12 KEVIN T. McLOUGHLIN

13 having been duly sworn, testified as follows:

14 JUDGE NEMEC: You may proceed.

15 MR. DEEVER: With your permission, we would like to
16 mark Mr. McLoughlin's rebuttal testimony as TrAILCo Rebuttal
17 Statement No. 18.

18 JUDGE NEMEC: It may be so identified --

19 MR. DEEVER: And his two-page exhibit as TrAILCo
20 Exhibit KTM-1.

21 JUDGE NEMEC: And that may be so identified.

22 MR. DEEVER: Thank you.

23 (Whereupon, the document was marked
24
25

1 as TrAILCo Statement No. 18 with
2 TrAILCo Exhibit KTM-1 for
3 identification.)

4 DIRECT EXAMINATION

5 BY MR. DEEVER:

6 Q. Mr. McLoughlin, good afternoon. I'm going to
7 assume for the sake of time that you have a copy of your
8 rebuttal testimony in front of you. Was that testimony and
9 your exhibit prepared by you or under your supervision?

10 A. Yes, it was.

11 Q. Do you have any corrections to make to your
12 testimony or exhibit today?

13 A. None at all.

14 Q. If I were to ask you those questions, would your
15 answers be the same today?

16 A. Yes, they would.

17 Q. And are your answers true and correct to the
18 best of your belief and knowledge?

19 A. Yes, they are.

20 Q. And is it your intent to adopt your testimony,
21 your written testimony, as your sworn evidence today?

22 A. Yes, it is.

23 Q. Thank you, sir.

24 MR. DEEVER: Your Honor, at this time I'd ask that
25 Mr. McLoughlin's rebuttal testimony and his exhibit be moved

1 into the record subject to the usual conditions that have
2 been applied.

3 JUDGE NEMEC: TrAILCo Statement 18 and associated
4 Exhibit KTM-1 are admitted subject to cross-examination,
5 later motion and/or objection.

6 (Whereupon, the documents marked as
7 TrAILCo Statement No. 18 and
8 Exhibit KTM-1 were received in
9 evidence.)

10 MR. DEEVER: Mr. McLoughlin is ready for cross-
11 examination.

12 JUDGE NEMEC: Ms. Dusman.

13 MS. DUSMAN: Your Honor, OCA has no cross for this
14 witness at this time. We may have brief follow-up following
15 Mr. Burns' cross-examination.

16 JUDGE NEMEC: Okay. Mr. Burns.

17 **CROSS-EXAMINATION**

18 BY MR. BURNS:

19 Q. Good afternoon, Mr. McLoughlin.

20 A. Good afternoon.

21 Q. My name is Wil Burns. I represent the Energy
22 Conservation Council of Pennsylvania. I have some brief
23 questions for you.

24 First -- maybe I'll address this to your counsel.

25 MR. BURNS: Can you put the exhibits from yesterday,

1 56 through 60, in front of the witness?

2 MR. DEEVER: Yes, I will.

3 (Documents handed to witness.)

4 BY MR. BURNS:

5 Q. Mr. McLoughlin, I understand that your
6 testimony, your rebuttal testimony has to do with vegetation
7 management; right?

8 A. That's correct.

9 Q. And it involves the use of herbicides; right?

10 A. That's correct.

11 Q. Have you become familiar with the types of
12 herbicides that TrAILCo is proposing to use and, in general,
13 the methods that they're intending to use for the herbicide
14 application on this project if approved?

15 A. Yes, I have.

16 Q. Let me have you put Exhibit 56 in front of you.
17 This is ECC Cross Exhibit 56.

18 A. I have it here.

19 Q. This is a document that was an answer to an
20 interrogatory, ECC Interrogatory Set I, No. 24, and the
21 sponsor was John Bodenschatz. Do you see that?

22 A. Yes, I do.

23 Q. And it indicates some of the different
24 herbicides that will be used on the project, and it has
25 information on how to obtain the MSDS sheets and the product

1 labels for the different products starting on page 2. Do
2 you see that?

3 A. Uh-huh. Yes, I do.

4 Q. And just turning to the first page of that
5 exhibit, that indicates in the response what type of
6 herbicides or herbicide mixes will be used starting at the
7 bottom of that page for different applications, and it
8 includes cut stump, basal bark spray, foliar spray, et
9 cetera; correct?

10 A. That's correct.

11 Q. And is this interrogatory response consistent
12 with your understanding as to the type of herbicides and
13 herbicide mixtures that will be used for different
14 applications by TrAILCo on this project if approved?

15 A. Yes, pretty much, but I'd like to note that this
16 does say that these are the primary mixes. TrAILCo has
17 other secondary mixes, and they're always evaluating new
18 materials as they become available. So, this list may
19 change over time.

20 Q. So, this is the primary mixes, as you understand
21 it, but there are other herbicides or herbicide mixtures
22 that might be used as well on this TrAIL project if
23 approved?

24 A. That's correct.

25 Q. And just so I understand it, where the response

1 indicates that Pathway will be used for cut stump, tell me
2 what that means?

3 A. What happens is when you have a tall growing
4 tree growing on the right-of-way, that becomes the target.
5 In other words, it could grow tall enough to get into or
6 close to the overhead conductors. That tree is cut usually
7 with a chain saw, and immediately thereafter, a herbicide
8 application is made to the cut stump area focusing on the
9 outer ring of that stump. The inner part of the stump is
10 fairly much inert.

11 So, you're trying to get the material right around
12 the ring, the cambian layer, the living growth center, so
13 that it would translocate into the root system, and,
14 therefore, preclude the future growth of stump sprouts or
15 root suckers.

16 Q. And the basal bark spray it says here will be a
17 mix composed of either Garlon 4 or Garlon 4 Ultra and
18 Arborchem Basal Oil; right?

19 A. That's correct.

20 Q. What is the basal bark spray application? When
21 would that be used?

22 A. That is done to a similar tree, but the tree is
23 not severed or cut with a handsaw or chain saw, and the
24 material is applied to the lower usually 18 inches of the
25 stem to rundown so that you cover the entire stem. That's a

1 conventional basal spray.

2 There's also what's known as a thin line basal spray
3 where you use Pyro concentrate of chemical, but put much
4 less on the stem itself.

5 So, there's a range here of basal bark treatments
6 that can be applied. The herbicide is usually in an oil
7 formulation as noted, because it has to penetrate the bark.
8 A water borne material would not penetrate the bark, and,
9 therefore, it would be ineffective.

10 Q. And there are two types of foliar, f-o-l-i-a-r,
11 applications, one by ground crews and one by aerial crews
12 that are described here; correct?

13 A. Correct.

14 Q. And is foliar spray basically applying it to
15 leaves?

16 A. That's correct.

17 Q. And you can do it either through ground crews or
18 through aerial crews?

19 A. That's basically correct.

20 Q. And with respect to the ground crew application,
21 it indicates that the primary mix for the type of foliar
22 spray application would be a mix composed of Garlon 3-A,
23 Tordon K, and Arborchem Clean Cut Surfactant, and a drift
24 control agent; right?

25 A. That's correct.

1 Q. And for the aerial spraying, the mixture would
2 be a mix composed of either Garlon 3-A or Krenite, K-r-e-n-
3 i-t-e, S, plus Tordon K, Escort XP, and Invade 9D
4 Surfactant; correct?

5 A. That's correct.

6 Q. And on page 3 of this interrogatory answer,
7 there is a description of how much herbicides will be used,
8 and it says in the middle of the paragraph right before sub-
9 headings A and B that herbicides will be applied on an as-
10 needed basis. Do you see that?

11 A. Uh-huh. Yes. Yes, I do.

12 Q. And then it indicates that mixes designed for
13 aerial applications will be applied at a rate of 25 gallons
14 mix per acre; correct?

15 A. Correct.

16 Q. And that would be the foliar spray mixture;
17 correct? That's the basal bark?

18 A. The one you just referred to is 30 gallons per
19 acre mixed for basal bark.

20 Q. I'm sorry. I was asking a question. I don't
21 know if your answer got ahead of me or I got ahead of you.

22 A. Okay.

23 Q. Let's just go through what the expected
24 application amounts are. Mixes designed for aerial
25 applications will be applied at a rate of 25 gallons mix per

1 acre; right?

2 A. Correct.

3 Q. And mixes designed for basal bark will be at a
4 rate of less than 30 gallons per acre; correct?

5 A. Correct.

6 Q. High volume foliar mixes will be applied with
7 application rates usually less than 300 gallons per acre;
8 right?

9 A. Correct.

10 Q. And then low volume foliar mixes usually will be
11 applied at a rate of less than 50 gallons per acre; correct?

12 A. Correct.

13 Q. What determines whether you use an application
14 rate of usually less than 300 gallons per acre for foliar
15 mixes or 50 gallons per acre?

16 A. The two techniques are significantly different,
17 but the overriding factor is the number of target species,
18 trees, their density or total number and height. So, it
19 depends on the volume of the leaf surface area that must be
20 treated.

21 With the high volume, that is usually called a higher
22 volume of material, but a lower concentrate of herbicide.
23 For example, you might have 1 percent to 2 percent herbicide
24 mixture in a high volume. In a low volume, which is done
25 again with lower amounts getting on the tree -- in fact,

1 many of the labels will say 70 percent coverage of the
2 leaves on the tree -- this is done usually with backpacks
3 and is done with a higher concentration of chemical. So,
4 you might have 5 or 6 percent of chemical in the backpack.

5 So, the amount of chemical getting on the site could
6 be very similar. It's in the volumes of total sprayed
7 material that differ.

8 So, does that help you at all in judging these two
9 techniques? Like I said, high volume has a lower
10 concentrate of chemical. Low volume has a higher
11 concentrate of chemical in it.

12 Q. So, would you expect that the 300 gallons per
13 acre described as a high volume foliar mix and the low
14 volume foliar mix of less than 50 gallons per acre would
15 contain the same amount of active ingredient of the mix?

16 A. If they were -- it could. It could if
17 everything else is equal. Usually you don't use a high
18 volume technique in areas that would be more amenable to a
19 low volume. So, a high volume is used usually where you
20 have higher density of trees up to, say, 10 to 15 feet tall.
21 Low volume is used where you have a lower density of trees
22 and maybe a little shorter, 5 to 10 feet tall.

23 So, the characteristics of the vegetation would
24 differ.

25 Q. Well, I take it in a high volume application, if

1 you're dealing with bigger trees or more concentrated
2 amounts of trees or more trees in general, you're going to
3 need a more active ingredient overall in, say, a per square
4 acre; right?

5 A. That's correct.

6 Q. Now, I take it from your testimony that it's
7 very difficult to say at this time exactly what
8 concentrations of these herbicides will be used and exactly
9 what mixture will be used in each particular application;
10 correct?

11 A. That's correct. It will be probably four to six
12 years after the initial clearing of the line when the first
13 herbicide treatment will be necessary. So, you're
14 projecting out a number of years now, and, again, as I
15 mentioned, new materials are always coming on line and older
16 materials are being reformulated.

17 So, it would be very difficult to project into the
18 future exactly what the mix rates would be, exactly what the
19 amounts per acre would be.

20 Q. So, are you saying that because the construction
21 would basically clear-cut the whole area, you're not going
22 to need to apply herbicides for four to five or six years?

23 A. That's right. After the initial clearing of the
24 right-of-way, the trees are severed. They're cut. They're
25 disposed of. And then you -- then slowly at first, the new

1 trees will come on usually from seedlings if this is a
2 mature forest that's being cut. It depends on the seed bank
3 that's there in the soil. It depends on the seeding coming
4 from the side of the right-of-way.

5 So, there are a lot of variables here as to what
6 species of trees will start growing and their growth rates,
7 but normally, four to six years after that first clearly
8 there will be a need at that point to start treating the
9 vegetation.

10 Q. And so, you anticipate that the initial clearing
11 will be effective enough so you won't have to do anything
12 more for at least four years?

13 A. Yes. You wouldn't use anything right away.

14 Q. You wouldn't want to treat the clear-cut area to
15 make sure nothing came up right away? You'd want to wait
16 until it grew and sort of established itself a little?

17 A. That's right. What you're hoping for is a mix
18 of vegetation, grasses, herbs, forbs, woody shrubs, and some
19 trees. And as you move into your integrated vegetation
20 management, you would selectively remove the trees and help
21 promote and foster those lower growing species.

22 So, you wouldn't want to be going out there and
23 spraying wily-nily initially killing many what will become
24 in the future desirable species. So, you want that
25 resurgent vegetation to recapture the site, to reestablish

1 it, stabilize the soil, and then later you can begin to
2 manage the site for a relatively stable, low growing plant
3 community.

4 Q. And what is your understanding as to what is
5 proposed to be applied via aerial spray?

6 A. What is my understanding?

7 Q. Yes.

8 A. Just what they've given me in these documents
9 and what it's in my testimony. I look at aerial spraying as
10 another technique that is often used at the initiation of
11 integrated vegetation management in some instances. The
12 instances usually are very remote areas that are hard to get
13 to with normal ground equipment or areas of the right-of-way
14 which have a high number of resurgent stems, where,
15 virtually, if you went in there with ground equipment, you
16 would have to spray everything. Aerial can do it quicker
17 and with less chemical.

18 That's my understanding of the aerial.

19 Q. But as I read the interrogatory that we were
20 just looking at, I'm a little confused, because it seems to
21 indicate that the only aerial spraying will be for foliar
22 spray mixtures. Is that your understanding?

23 A. That's right. Aerial is done to the foliage,
24 and it's a foliar type mixture; that's correct.

25 Q. Do you have an understanding as to how that

1 would be done aurally? Is it helicopters?

2 A. Yes. It is done with a helicopter. I've looked
3 at their equipment, their specs or equipment. It's very
4 similar throughout the country, and what they're doing now
5 in some cases with aerial, it's a microfoil boom or, you
6 know, a uniform droplet size, uniform placement of the
7 herbicide on the right-of-way through the use of aerial
8 equipment, the helicopter.

9 Q. It sounds rather precise and incapable of any
10 kind of a drift or error. You can just take each drop and
11 put it where you want it.

12 A. Well, that's why they use drift agents, drift
13 control agents, have all these operating restrictions as to
14 air speed of the aircraft, height of the aircraft, wind
15 speed on the ground, et cetera. It is a very precise
16 application.

17 Q. How precise is it as far as in terms of the
18 target? Would it be within 2 feet, 5 feet, 20 feet?

19 A. Usually, I find within 10 to 25 feet they can be
20 very accurate, in that range. Ten feet is -- you don't want
21 to -- going up and down the right-of-way where you're
22 shutting off and shutting on the equipment, 10 to 15 feet I
23 find in the past has been a good range.

24 Now, on the edge of the right-of-way, as they're
25 going down the edge of the right-of-way, they can get a

1 little closer there, because they're not turning on and off.
2 They're simply flying down the edge of the right-of-way.

3 So, to the edge of the right-of-way, 5 feet, but on
4 the longitudinal section of the right-of-way, you know,
5 about 10 feet, 15 feet.

6 Am I making myself clear on the dimensions?

7 A. It's just me. Longitudinal and those type of
8 long words sometimes throw me off.

9 So, if you have a 200-foot right-of-way and it goes
10 for a mile, how close can you get at the different parts of
11 that right-of-way?

12 A. As you're going down the edge of the right-of-
13 way, going down that mile, on the outside edge where you're
14 not going to spray, I've seen them 5 feet. Where you're
15 trying to shut off at a stream or a sensitive land use and
16 you're shutting it off and then turning it back on again to
17 miss that sensitive land use, usually there's a good size
18 buffer zone to allow for that 5 to 10-foot flex.

19 Q. So, if you were going along the edge and you had
20 to shut off and restart, you would have to have the 10-foot
21 buffer. Is that what you would recommend?

22 A. If you're going across a linear feature where
23 you're stopping the flow and then starting it up again.
24 They're going about 25 miles an hour.

25 Q. How far in the air would these be going? I

1 mean, you have a tower, right, so there's only so close you
2 can get. I mean, say the tower is 125 feet. How high is
3 the helicopter?

4 A. A small distance above the towers, a short
5 distance.

6 Q. Like what's that? Six inches?

7 A. No, no. Probably more like -- well, I remember
8 when we did it, it was about 25 feet.

9 Q. And how many times would you have to go back and
10 forth to cover that 200-foot right-of-way in a helicopter?

11 A. Well, again, it would be dependent upon the
12 width of the boom, the length of the boom. If it's a 30-
13 foot boom and you have a 180-foot wide right-of-way, about
14 six passes, a little more, with maybe a little overlap, a
15 tiny bit of overlap.

16 Q. Let me ask you about some of the labels that
17 have been marked as Exhibits 57 through 60. The first one
18 is a label for Pathway. Do you see that, Exhibit 57?

19 A. Yes, I do.

20 Q. And that is one of the herbicides that will be
21 used in the different mixtures and applied on the TrAIL
22 project that's proposed in this proceeding; correct?

23 A. Correct.

24 Q. And the Pathway label at the upper right of the
25 first page says, "Harmful if swallowed or absorbed through

1 skin;" correct?

2 A. That's correct.

3 Q. And it says to avoid contact with skin, eyes or
4 clothing; right?

5 A. That's correct.

6 Q. And then on the second page, there's a listing
7 of, amongst other things, environmental hazards; right?

8 A. That's correct.

9 Q. And picloram, p-i-c-l-o-r-a-m, is that the
10 active ingredient in Pathway?

11 A. That's correct.

12 Q. And this indicates that picloram is known to
13 leach through soil into groundwater under certain conditions
14 as a result of agricultural use. Use of this chemical in
15 areas where soils are permeable, particularly where the
16 water table is shallow, may result in groundwater
17 contamination.

18 A. That's correct.

19 Q. And it also indicates that the chemical can
20 contaminate surface water through spray drift and that under
21 some conditions picloram may also have a high potential for
22 runoff into surface water, primarily via dissolution in
23 runoff water; right?

24 A. That's correct.

25 Q. Can you turn to the next exhibit? This is for

1 Garlon 4. It's a label for that. On the first page in the
2 bottom left, there's a list of precautionary standards, and
3 it lists hazards to humans and domestic animals. Do you see
4 that?

5 A. Yes.

6 Q. And one of the listed hazards is harmful if
7 swallowed. Do you see that?

8 A. That's correct.

9 Q. And would you expect that that would be
10 hazardous to non-domesticated animals as well as just
11 domesticated animals?

12 A. Well, I believe if you look further on the
13 label, there are instructions for grazing in this label, if
14 you want to go to those sections.

15 Q. That would be great. Where is that?

16 A. Well, we'll have to find it.

17 (Pause.)

18 Q. Is there a section that talks about
19 precautionary statements or --

20 A. Here it is; grazing and haying restrictions.

21 Q. What page are you on?

22 A. Page 3. "Except for lactating dairy animals,
23 there are no grazing restrictions following application of
24 this product."

25 Q. Okay. So --

1 A. Do you want me to read it all to you?

2 Q. If you'd like.

3 A. "Grazing Lactating Dairy Animals: Do not allow
4 lactating dairy animals to graze treated areas until the
5 next growing season following application of this product.
6 Do not harvest hay for 14 days after application. Grazed
7 areas of non-cropland and forestry sites may be spot treated
8 if they comprise no more than 10 percent of the total
9 grazable area."

10 So, there are a number of -- I think that was
11 answering your questions about domestic animals.

12 Q. Why would this product be harmful to domestic
13 animals if swallowed but not to other animals?

14 A. Well, again, I think it's in the concentration.
15 These are as applied in a foliar condition that's already
16 diluted with water, and any chemical product you're not
17 supposed to drink. There's no pesticide that I know of that
18 says it's okay to drink it.

19 Q. Turning to environmental hazards on page 58 of
20 that same label for Garlon 4, it says this pesticide is
21 toxic to fish. Do you see that?

22 A. Yes.

23 Q. And the last sentence of the environmental
24 hazard says, "The use of this chemical in areas where soils
25 are permeable, particularly where the water table is

1 shallow, may result in groundwater contamination;" right?

2 A. Correct.

3 Q. Let me ask you to turn to the next exhibit, 59.
4 That's Garlon 4 Ultra. On the second page --

5 A. Basically, Garlon 4 and Garlon 4 Ultra, the
6 newest version of Garlon 4 is the Ultra. I think it's
7 superseding it completely. So, this is the material that
8 was available commercially. This will be the material that
9 will be forthcoming, will be available.

10 Q. So, more likely, you'd be using Garlon 4 Ultra
11 than Garlon 4?

12 A. That's correct. And I think one of the few
13 differences was that there's no petroleum distillates in the
14 Garlon 4 Ultra. If you look at the labels closely, the
15 active ingredients, the only difference there is the
16 petroleum distillates.

17 Q. So, it's still hazardous, but it might save us
18 some gas?

19 A. No. Actually, petroleum distillates can add a
20 problem to the herbicide in the sense it can brown-out some
21 of the non-target vegetation that Garlon wouldn't normally
22 hurt itself, but the petroleum distillates could have a
23 slight effect on the foliage, and for other reasons -- I
24 think that's one of the reasons the manufacturer took the
25 petroleum distillates out.

1 Q. And it looks like the warnings for Garlon 4
2 Ultra are similar to Garlon 4. If you look under
3 precautionary statements for hazards to humans and domestic
4 animals, it says again, "Harmful if Swallowed." And on the
5 second page, the environmental hazards include, among other
6 things, the pesticide is toxic to fish; right?

7 A. Uh-huh. Yes.

8 Q. And then it also contains what I think is the
9 same or similar description about environmental hazards,
10 indicating that the chemical has properties and
11 characteristics associated with chemicals detected in
12 groundwater. "The use of this chemical in areas where soils
13 are permeable, particularly where the water table is
14 shallow, may result in groundwater contamination;" right?

15 A. That's correct.

16 Q. Does this also have a caution for non-domestic
17 animals, lactating cattle --

18 A. Basically, except for lactating dairy animals,
19 there are no grazing restrictions following application of
20 this product.

21 Q. What page are you looking at, sir?

22 A. Page 3. And the others are the same as well,
23 but they have a slaughter restriction. "During the season
24 of application, withdraw livestock and graze treated areas
25 at least three days before slaughter." That is added from

1 the other label.

2 Q. And the first label that we looked at for
3 Pathway, does that have specific warnings or instructions
4 with respect to non-domestic animals?

5 A. I'm looking here. I do not believe so. I
6 cannot find any language to that effect.

7 Q. So, reading the Pathway label where it talks
8 about environmental hazards, would you conclude that the
9 environmental hazards apply to humans, domestic animals, as
10 well as other animals?

11 A. I would accept that.

12 Q. On the third page of that Exhibit 57, which is
13 the Pathway label, on the left there are some general use
14 precautions, and about two-thirds of the way down, it says,
15 "Do not contaminate water intended for irrigation or
16 domestic purposes;" correct?

17 A. That's correct.

18 Q. It also says, "Do not contaminate" right above
19 that. It says, "Do not contaminate cropland, water or
20 irrigation ditches;" right?

21 A. That's correct.

22 Q. Okay. Can you turn to the last exhibit in front
23 of you, Exhibit 60? This is the label for Tordon K we were
24 referring to in that prior interrogatory answer, and that's
25 again, another one of the chemicals proposed to be used as a

1 herbicide if the TrAIL project is approved; right?

2 A. That's correct.

3 Q. And under environmental hazards for Tordon K,
4 about two-thirds of the way down of the first paragraph, it
5 says, "Do not allow runoff or spray to contaminate wells,
6 irrigation ditches or any body of water used for irrigation
7 or domestic purposes;" correct?

8 A. Correct.

9 Q. Then the second paragraph talks about picloram
10 again, p-i-c-l-o-r-a-m; right?

11 A. Correct.

12 Q. Is that an active ingredient in Tordon and
13 Pathway?

14 A. In Pathway, you have 2,4-d, 2,4-
15 dichlorophenoxyacetic acid, and picloram. In this product
16 you have just picloram.

17 Q. Now, the warning for Tordon K says, amongst
18 other things, in that second paragraph under environmental
19 hazards that picloram is a chemical which can travel, seep
20 or leach through soil and under certain conditions has the
21 potential to contaminate groundwater, which may be used for
22 irrigation and drinking purposes.

23 Do you see that?

24 A. Yes, I do.

25 Q. And is there a specific warning for agricultural

1 use or agricultural animals or non-domestic animals for this
2 particular product?

3 A. Usually it's on non-crop areas, and products
4 that are usually licensed or registered for use on non-crop
5 areas do not have any warning instructions about animal use.

6 Q. So, this --

7 A. It's not that it's -- well, it says here, "Do
8 not transfer livestock from treated grazing areas onto
9 sensitive broad-leaf crop areas without first allowing seven
10 days of grazing on an untreated grass pasture. Actually, it
11 talks about animals using areas that have been treated with
12 Tordon K, but it doesn't mention any grazing restrictions.

13 Q. Can you show me where you're reading from?

14 A. On page 3, the top of the page.

15 Q. One of the things you read that says "Do not
16 transfer livestock from treated" --

17 A. Right.

18 Q. -- "grazing areas onto sensitive broadleaf crop
19 areas without first allowing seven days of grazing on an
20 untreated grass pasture." Right?

21 A. That's correct.

22 Q. What else were you referring to on that page?

23 A. Well, I was just saying that in general if a
24 material is not -- this says it's for non-crop areas. The
25 specimen label says non-target plants (inaudible).

1 THE REPORTER: I'm sorry?

2 THE WITNESS: I'm just trying to look at where the
3 label has the statements that it's a non-crop area for you.
4 Yeah, down under Specialty Herbicide on the first page, "For
5 control of annual and perennial broadleaf weeds, woody
6 plants, and vines on non-crop areas."

7 BY MR. BURNS:

8 Q. So Tordon K is intended to be used in non-crop
9 areas?

10 A. That's what the label says.

11 Q. Now, the second page, or the third page of this
12 Exhibit 60, the Tordon K label, in the middle to the left
13 says again, similar to some of the other labels, says "Do
14 not contaminate water intended for irrigation or domestic
15 purposes"; right?

16 A. Correct.

17 Q. Did you -- well, turn to page 19 of your
18 statement, if you could.

19 A. Page 19?

20 Q. Yes. Tell me when you're there.

21 A. I'm there.

22 Q. Page 19, lines 17 through 20 or so, you talk
23 about buffer zones for all known sources for domestic or
24 commercial water wells. Do you see that?

25 A. I do.

1 Q. Are you aware that there has been no survey of
2 domestic and commercial water wells in this proceeding?

3 A. I am aware of that at this point in time.

4 Q. And with respect to the buffers, in Jack
5 Halpern's testimony, Statement 5, page 11 of 19, he
6 describes, at lines 3 to 7, a buffer zone. It says,
7 "TrAILCo will maintain herbicide free buffer zones around
8 houses and barns of 50 feet, ponds, lakes and year-around
9 flowing water of 25 feet, gardens, farms crops, grape
10 arbors, ornamental trees, flower gardens and cultivated
11 fruit and nut trees of 100 feet, and tobacco farms of 500
12 feet so there would be no effect on domestic animals." Is
13 that the buffer zone you are referring to in your testimony?

14 A. Those and others could be applied as well. It
15 all depends. In some cases, 50 feet, 25 feet, it depends on
16 the technique, the chemical, the slope or aspect of the
17 property. There's other variables there, so it -- sometimes
18 I think that's a minimum, and there could be, not a maximum,
19 but it could be greater in some cases. That would be up to
20 TrAILCo and the underlying fee owner to work that out.

21 Q. Because if you had a well, for example, it would
22 draw groundwater from a much greater distance than 25 or 50
23 feet from a house, you would expect; right?

24 A. It depends if it's a deep water, a deep well, a
25 shallow well. Those factors would also be in there. It

1 depends on the type of soil. As you know, Picloram, you're
2 not even supposed to use it on sandy soils, so if it was a
3 material like a Accord, you can come very close to the water
4 sources. Accord deactivates upon touching the soil.
5 Picloram, as you noted, has more persistence and has a more
6 tendency to move, so you could change your chemical and do
7 the same type of, say, cut-and-stump treatment very close to
8 a water source with Accord and not have to worry about it
9 getting into that water source.

10 Q. What's your understanding -- you said
11 persistence. What does that mean?

12 A. How long the chemical will last in the soil
13 before it degrades and breaks down.

14 Q. Do you have an understanding as to how long that
15 would be for Picloram, for example?

16 A. Picloram is one of the more persistent, it
17 probably is the most persistent of all these chemicals, and
18 depending upon the soil characteristics it can be anywhere
19 from a few weeks to more than a year, so there is a wide
20 window there for Picloram.

21 Q. And I take it if people had spring fed water
22 supplies or surface water that was used by residence or
23 domestic animals or agricultural animals, then the buffer
24 zone you would expect might have to be much bigger than 25
25 or 50 feet.

1 A. If you were using Picloram at a high volume,
2 foliar or a helicopter, probably, yes, it would be much
3 larger than that, whereas if you're using Accord and a stump
4 application, it could be closer than that in some case.

5 MR. BURNS: Your Honor, I'd like to move for
6 admission of ECC Cross Exhibits 56 through 60 at this time.

7 MR. DEEVER: No objection.

8 JUDGE NEMEC: They are admitted.

9 (Whereupon, the documents marked
10 as ECC Cross-Examination Exhibits
11 Nos. 56 through 60 were received in
12 evidence.)

13 MR. BURNS: I believe that's all the questions I have
14 for you, sir. Thank you.

15 THE WITNESS: Thank you.

16 MS. DUSMAN: Your Honor, I do have a few follow-up
17 questions.

18 JUDGE NEMEC: Go ahead.

19 **CROSS-EXAMINATION**

20 BY MS. DUSMAN:

21 Q. Good afternoon, Mr. McLoughlin. My name is
22 Dianne Dusman and I'm a Senior Assistant Consumer Advocate
23 with the Office of Consumer Advocate and we're a protestant
24 in this case.

25 We've just gone through a number of cross exhibits

1 just moved in by ECC. I think the first question I have for
2 you is with regard to your Rebuttal Statement No. 18, at
3 lines 5 through 9.

4 A. Page what?

5 Q. I'm sorry; Rebuttal Statement No. 18, page 17,
6 lines 5 through 9.

7 A. Page 17. And lines?

8 Q. Lines 5 through 9.

9 A. Five through 9.

10 Q. Yeah. And there you mention the public input
11 hearings. Did you yourself review the transcripts of the
12 public input hearings that were held in August and September
13 of 2007?

14 A. I reviewed some of them, and I reviewed the -- I
15 testified in West Virginia as well and I reviewed so many
16 papers and testimonies, but I don't think I read -- I read
17 summaries of the public input hearings for Pennsylvania.

18 Q. Okay. Fair enough. You refer there to the
19 perceived toxicity of herbicide, and after your answers to
20 Mr. Burns, to be fair, do you not agree that these
21 substances are very toxic substances?

22 A. No. The way the EPA evaluates a pesticide, they
23 have four different classifications. One is barely --
24 pretty much non-toxic, one is slightly toxic, one is mildly
25 toxic and the other is toxic. All of these chemicals, with

1 the exception of 2-4-d, are rated as either non-toxic or
2 slightly toxic, so 2-4-d is mildly toxic.

3 Q. I think to be clear, don't you mean that they
4 are mildly toxic if used as instructed?

5 A. They look at just -- on just the toxicity alone,
6 this is based on oral determinations like LD50, lethal dose
7 that will kill 50 percent of the test organism, these are
8 based on those types of things, and then there are other
9 conditions put in here to make sure that the materials will
10 be used with as least risk as possible.

11 Q. I understand that, and that's where I was going.
12 You're talking about if used in every detail as specified on
13 the specimen label that Mr. Burns was asking you about;
14 right?

15 A. Right. This label is the law.

16 Q. I understand that.

17 A. If you don't abide by this label, you're
18 actually breaking the law.

19 Q. Yes. I mean, with each of these substances, you
20 know, you see at the very beginning of the label cautions
21 which pertain to avoiding contact with skin, eyes and
22 clothing, causes eye irritation, harmful if swallowed, et
23 cetera. To be fair, don't you have to agree that it's not
24 just the perceived toxicity of these herbicides, that these
25 substances are as you said, the EPA has found them to be

1 toxic, in and of themselves, not as applied, not as diluted,
2 not as, you know --

3 A. Well, let's put it in perspective, again, LD50.
4 This might help.

5 Q. Before you go into your explanation, please
6 explain for the record what you mean by LD 50.

7 A. This is where you use the concentrate on test
8 animals and you're attempting to find what will kill 50
9 percent of the test animals.

10 Q. Right. So LD --

11 A. Lethal dose.

12 Q. -- means lethal dose --

13 A. Right.

14 Q. -- for 50 percent of the test animals.

15 A. That's correct. So this way you get an idea of
16 where different materials lie or different substances,
17 different pesticides, different chemicals, lie in their
18 toxicity ranking. So most of these are 5,000 milligrams per
19 kilogram per body weight or above. Some are 3,500 and
20 above. Ocean water, saltwater, is 3,200 milligrams per
21 kilogram. These are the types of other substances -- some
22 cleansing agents, things like that we use around our home,
23 are even more toxic. So these are the oral toxicities,
24 which give you an idea of where these materials lie in the
25 range of toxicity.

1 You mentioned caution. That's the least -- every
2 pesticide has to have caution on it. That's the least.
3 There is warning, that's another step down or more toxic,
4 there is danger, that's another one, and then there's danger
5 with skull and crossbones. These all have -- you can't go
6 any lower than warning, caution.

7 Q. Yeah, I've encountered that in my house, the
8 skull and crossbones.

9 A. Right. So there is that caution, warning,
10 danger, danger and skull and crossbones.

11 Q. I think you've amply answered my question, and I
12 appreciate your explanation.

13 A. Thank you.

14 Q. Hypothetically -- and you go on, after this
15 reference to perceived toxicity, you go on to describe the
16 rigorous research and testing that's done on these
17 substances before being made available for public and
18 commercial use. That's at the bottom of the page that I
19 just referred you to.

20 A. Yes.

21 Q. I just have a hypothetical for you, Mr.
22 McLoughlin.

23 A. Sure.

24 Q. Hypothetically, if a substance, let's just say
25 it's Pathway, just pick one, is subjected to this rigorous

1 research and testing by the EPA and is found to be, let's
2 say -- I'm not sure what the right term -- not dangerous if
3 used as instructed, and then years later the testing of
4 these substances improves to the point where additional and
5 further risks are encountered, would that then change the
6 conclusion that you draw based on these specimen labels?

7 A. The EPA is in a constant state of evaluating
8 different materials. They go through cycles where they take
9 a look every six years, I believe it is, at the new
10 information that's evolved for these chemicals. In some
11 cases, like 2-4-d, they have actually kept the cycling
12 continuous for 21 years; they are constantly evaluating
13 2-4-d. Why? Because it's so ubiquitously used. 2-4-d is
14 in your weed-n-feed, it's sold in every supermarket, it's
15 sold in every hardware store, it is used by farmers
16 extensively, so it's a heavily used chemical and it was
17 studied continuously for 21 years. In other words, new
18 information kept coming out, so they kept evaluating it.
19 They never waited for the six-year cycle to start over
20 again. In 2007, August of 2007, 2-4-d was finally given a
21 clean bill of health, it was re-registered as such and it's
22 not going to be looked at for another -- until the next
23 cycle. That's how rigorously it is --

24 Q. I understand, but it will be looked at again.

25 A. Yeah, again and again and again.

1 Q. What's the EPA's view on DDT these days?

2 A. Oh, it's been banned for 50 years now in the
3 United States. It's still being used --

4 Q. But at one point it was considered to be safe to
5 be used, wasn't it?

6 A. Back in the '50s; that's correct.

7 Q. Right. Were you given a summary of the
8 testimony of a woman named Dr. Faith Bjalobok?

9 A. I can't recall.

10 Q. You were not?

11 A. I just don't recall that name.

12 Q. I'm going to just tell you what the gist of her
13 testimony was. Dr. Bjalobok testified about species
14 specific toxicity. Are you aware of that phrase?

15 A. Oh yes; yes.

16 Q. Now, can you tell me as you sit here today which
17 species of laboratory animal these various herbicides were
18 tested on?

19 A. No. Each one has been tested on a variety of
20 laboratory animals, birds --

21 Q. And what might they have been?

22 A. Well, if you look through some of the MSDS
23 sheets, you go to the literature, rabbits, guinea pigs,
24 chickens, dogs, mice, rats, quail, ducks, a variety. I've
25 seen dozens of different animals tested.

1 Q. I understand, but you don't know specifically
2 which, if any, of the ones you just named pertain to the
3 ones that TrAILCo intends to use, do you?

4 A. No. All that information is gathered up at EPA
5 and is distilled and finds its way into -- relevant to the
6 applicator in the label itself.

7 Q. My question is: do you agree that while one of
8 these herbicides may have been tested on a particular
9 species, that doesn't guarantee that it will not be toxic to
10 another species, either wildlife or domesticated animals?

11 A. That's correct, and that's why they test so many
12 different species of birds and animals, to see if there's an
13 outlier or a large fluctuation. From the data I have seen,
14 it's usually in a situation where the range is never overly
15 toxic for one animal and non-toxic for another, not with
16 these herbicides at least.

17 Q. Can you explain to me why there are restrictions
18 on allowing lactating farm animals to graze in areas that
19 have just been sprayed with, let's say, -- was it Pathway
20 that was --

21 A. Garlon. It was Garlon.

22 Q. Can you explain to me why?

23 A. I would imagine that you don't want any residues
24 of Garlon to get into the milk.

25 Q. Well, I don't want you to imagine, sir.

1 A. That's what I -- well, 14 days. Again, we have
2 to abide by the label.

3 Q. Do you know?

4 A. I would again imagine, or that's my conclusion,
5 that they don't want -- the EPA has recognized that milk
6 could be a source of unwanted triclopyr, which is the active
7 ingredient in Garlon, so they actually say 14 days and then
8 you can put the cattle back in there and start grazing,
9 because in that 14-day period it disappears from the site,
10 so you can once again graze your cattle.

11 Again, an awful lot of information. That's why my
12 study --

13 Q. I understand. I understand. I'm not holding
14 you to all of it, I'm just asking you some general questions
15 because frankly I learned quite a lot listening to the
16 people at the public input hearings about what this type of
17 project, the magnitude of it, the operation of this project
18 means to people in their day-to-day lives, and it greatly
19 concerns me. I imagine you've talked to a lot of farmers --

20 A. Oh yeah.

21 Q. -- that are going to have to deal with this.
22 Frankly, as a practical matter, I look at these specimen
23 labels and one of the questions that comes to mind is who is
24 going to police all of these requirements? Who is going to
25 insure that the people that are actually out there spraying

1 these chemicals on the earth near the water sources, near
2 the grazing animals, are enforced?

3 A. There are, I imagine, in Pennsylvania, much like
4 there is in New York and other states, pesticide inspectors.
5 One of the interesting things about herbicides as far as the
6 inspection, because I've actually accompanied many inspector
7 out to a site, --

8 Q. In Pennsylvania or other places?

9 A. Not in Pennsylvania, in other states. Mainly
10 New York.

11 Q. Do you know for a fact that Pennsylvania has
12 inspectors that will police these types of requirements?

13 A. Every state has to have -- under FIFRA every
14 state is required to have certified pesticide applicators --

15 Q. And would that --

16 MR. DEEVER: Could Mr. McLoughlin be allowed to
17 complete his answer?

18 MS. DUSMAN: I believe he's had ample opportunity to
19 answer most of my questions, Your Honor.

20 BY MS. DUSMAN:

21 Q. I do apologize if I interrupted, but go ahead.

22 A. Each state is required under FIFRA, yes, to have
23 this type of program.

24 Q. And in Pennsylvania would that be someone who's
25 employed by the Department of Agriculture?

1 A. It well could be.

2 Q. But you don't know?

3 A. I'm not sure.

4 I just wanted to make a point about herbicides and
5 who polices them. The interesting thing about a herbicide
6 as opposed to an insecticide, a fungicide, many other
7 pesticides is if a herbicide is misused, gets off site, it
8 usually shows up immediately in affecting a plant off site,
9 so you will see the discoloration, you'll see the chlorosis,
10 you'll see the plant leaves begin to turn color if minute
11 amounts of the herbicide have actually traveled off site, as
12 we were talking about drift or off-site spray. Herbicide is
13 one of the easy, if you will, to note if there has been an
14 off-site movement. Other pesticides you have to take soil
15 samples, collect a lot samples, analyze them, because you
16 can't see the results.

17 Q. I think you're actually making one of my points,
18 Mr. McLoughlin, because many of these farmers have testified
19 that they have acres and acres of pasture land, grazing land
20 for their cattle and other domestic animals, and I'm sure --
21 would you agree with me that it is very, very difficult for
22 a farmer to be able to examine every square inch of every
23 acre after a right-of-way has been sprayed to determine
24 whether there has been any -- what was the phrase you used -
25 - off-site --

1 A. Off-site, off-target movement.

2 Q. Off-target movement of these herbicides.

3 A. Well, again, when you're dealing with a pasture
4 situation, if it's a very active pasture and there's no
5 trees out there, there's no spraying done. We're only after
6 certain target species, so if there's herbaceous material
7 there and grass, there won't be any spraying done. You'll
8 notice that some of these herbicides are -- the predominant
9 use of triclopyr or Garlon is by farmers in pastures. They
10 are trying to eradicate certain noxious or invasive weeds
11 and certain other non-palatable species so to improve their
12 pasture. So these chemicals are used primarily by farms,
13 some of them, Garlon in particular, to improve their
14 pasture. All right? So they should be familiar with these
15 chemicals, --

16 Q. Yes.

17 A. -- they're probably using them themselves, but
18 the utility, if the pasture is fully occupied by grass and
19 the cows and sheep are out there munching away, there will
20 not be any herbicide applied. There's no need for it, there
21 are no trees to get into the conductors. So pasture is one
22 of the actually best uses of rights-of-ways. And in my
23 experience, what we've done in creating new rights-of-ways
24 if often expanded pasture for farmers whereas they now
25 pasture the right-of-way. In fact, one situation I was

1 involved with with the Mohawk Indians in New York, we helped
2 build on a right-of-way a buffalo enclosure for over a mile
3 of right-of-way on the reservation. Buffalo.

4 Q. I'm sorry; did you say --

5 A. Buffalo. They eat everything. So there was no
6 need for the utility to ever do maintenance again on that
7 right-of-way, and the utility paid for the buffalo enclosure
8 in lieu of having to do brush control ad infinitum. Now the
9 native American tribe, the Mohawks, have a buffalo herd that
10 they now have developed to get meat from, so it was a win-
11 win situation. So a pasture is a very positive land use for
12 multiple use on a right-of-way.

13 Q. Were you given synopses of any of the
14 testimonies of the -- and I'm going to use this together
15 right now but I know there's a distinction -- natural or
16 organic farmers in Washington and Green County?

17 A. No, but I've encountered that type of situation,
18 and the utility pulls back, provides the buffer zone
19 required by law -- the federal standards have required
20 buffer zones, I think they're 50 feet -- that you cannot
21 spray anywhere 50 feet within that organic crop. So those
22 are --

23 Q. Okay, crops, I understand about the crops.
24 Where you have an organic beef farmer or a natural beef
25 farmer, how would you propose that farmer keep their cattle

1 from grazing past where the buffer zone begins?

2 A. Well, there would be a couple of ways to do
3 that. One, you could just hand cut. If you truly have an
4 organic grazing situation, and you don't want to intrude at
5 all, and the farmer needs that acreage, he doesn't have a
6 fence out there to keep them off the right-of-way, you can
7 back off and hand cut the few trees that are out in his
8 pasture.

9 Q. In other words, TrAILCo would take on that
10 responsibility?

11 A. Yes, in that situation. Many cases the farmer
12 will actually move his cattle off and you go ahead and treat
13 and then they bring them back on later.

14 Q. I just have one last line of questioning. Were
15 you aware of testimony provided by a Mr. Goroncy --

16 A. Again, the name -- I've had summaries of these
17 concerns. I don't recall the name.

18 Q. You testified that in certain circumstances
19 there would be mixtures of these various herbicides that
20 would be used. Has the EPA subjected every permutation of
21 mixtures of these various herbicides to the same rigorous
22 testing that you suggest in your testimony is what makes
23 them safe now?

24 A. They have tested certain tank mixtures that are
25 approved. They're in the label. There's only -- if it

1 doesn't say you can mix it, you can't. Only if the label
2 says you can mix Garlon with Tordon can you do that, and the
3 EPA has looked at those scenarios closely. But you just
4 can't wily-nily make up your own tank mixes that aren't on
5 these labels.

6 Q. And again, is the responsibility for insuring
7 that that sort of thing is complied with up to the herbicide
8 inspectors that you mentioned are probably employed by the
9 Department of Agriculture?

10 A. Right. And also there's requirements for taking
11 what you use on a daily, weekly basis -- you have to keep a
12 running record of your use of herbicides, so it would show
13 up in your own records, which have to be shown to the
14 pesticide inspector or on site the pesticide inspector would
15 look at what you're doing. So there's a couple different
16 ways that the concern about the tank mixes would be
17 regulated.

18 MS. DUSMAN: Just one moment, Your Honor. I think
19 that's about all I have.

20 (Pause.)

21 BY MS. DUSMAN:

22 Q. I guess just one final question. I think all of
23 the things that you've told me this afternoon would tend to
24 enable a person to reach a conclusion that -- let's say a
25 farmer is currently operating their farm now, and I don't

1 care what kind of farm, whether it's organic beef, whether
2 it's organic crops, whether it's an organic vineyard, et
3 cetera, and you agree with me that once a transmission line
4 is built across that property, that that farmer will not be
5 able to do business in the same way that that farmer could
6 before the line went in?

7 A. No, he should be able to do business in the same
8 way. TrAILCo should be giving him a buffer zone, pulling
9 back. Again, when you say -- if there's active farm
10 activity going on, there's no trees. If there are two
11 fields and there's a hedge row between the fields, and
12 there's trees in the hedge row, those would have to be cut,
13 hand cut, and not treated at all if they're within 50 feet
14 of an organic field. If the trees are way down in the back
15 40 and they're hundreds of yards or over 50 feet from the
16 organic fields, TrAILCo probably then could treat those
17 trees.

18 Q. Well, I think that --

19 A. But his operation, there's no way that his
20 organic operation should be jeopardized whatsoever by the
21 presence of this power line.

22 Q. I think your tree example is a little bit
23 simplistic because we have examples in these counties where
24 -- for example, let's take the Goroncys as an example. They
25 both grow crop to feed their cattle, and they raise their

1 cattle, and in order to do that well they need to have a
2 certain amount of treed acreage for the cattle to stay cool,
3 have protection from the hot summer sun, et cetera, so you
4 may have a mixture of uses in a farm that would most
5 certainly be disrupted with a power line, a high voltage
6 power line, going right straight through the middle of it.
7 Wouldn't you have to agree with that?

8 MR. DEEVER: Your Honor, these questions are assuming
9 facts that the witness has indicated in his testimony would
10 just not come into play.

11 JUDGE NEMEC: It's a hypothetical, and we had
12 testimony in the public input hearings pretty much to the
13 effect just related by counsel, so I'm going to permit the
14 question.

15 THE WITNESS: If you have a situation -- what I think
16 you're talking about now is a wooded pasture. Those trees
17 would have to be cleared to that wooded -- if the power line
18 is there, right-of-way, and you have a wooded pasture, in
19 other words, grass and then some trees growing up through
20 it, those trees would need to be cut at some point in time,
21 yes, but it wouldn't -- now the cattle would have to go
22 elsewhere to get their shade I guess, to another part of the
23 edge of the right-of-way off either side if there's
24 extensive wooded pasture.

25 BY MS. DUSMAN:

1 Q. Your answer assumes, though, that there is an
2 elsewhere, doesn't it?

3 A. Well, again, in the routing, that goes into the
4 routing or the micro-routing of the line, the alignment of
5 the line itself.

6 Q. And when you say routing, you mean
7 r-o-u-t-i-n-g?

8 A. R-o-u-t-i-n-g, right, in the routing. That is a
9 routing type of decision in the micro sense of what you can
10 do to save trees or move the line or to avoid that adverse
11 impact on that farm.

12 MS. DUSMAN: Your Honor, the OCA has nothing further
13 for this witness.

14 JUDGE NEMEC: Yes?

15 MR. BURNS: I forgot to ask this. I apologize.

16 **FURTHER CROSS-EXAMINATION**

17 BY MR. BURNS:

18 Q. Are you aware that in West Virginia, that
19 TrAILCo has agreed that it won't do any aerial spraying of
20 herbicides?

21 A. I am aware of that, that that business decision
22 has been made by TrAILCo, that's correct.

23 Q. So it's not necessary to use aerial spraying in
24 order to deal with and apply the herbicides to deal with the
25 brush and the growth? You can -- there are ways to do it,

1 it's really a business decision as to whether you do or
2 don't use aerial spraying; is that right?

3 A. That's correct.

4 Q. It's not absolutely necessary; is that right?

5 A. No. The removal of the trees is absolutely
6 necessary, but the different techniques, any one of them
7 could not be necessary. But in some eventuality, you'll
8 have to remove a tree, be it by hand-cutting, mowing or some
9 type of herbicide. A helicopter is just another technique.

10 Q. And in fact, you don't need to use herbicides at
11 all? It all could be hand-cut and dealt with because
12 TRAILCo would presumably own the right-of-way at that point
13 if the line was approved, right?

14 A. Well, what happens, you lose the advantages of
15 IVM of a minimum maintenance right-of-way. Hand-cutting
16 alone actually promotes tree growth. When you cut a tree
17 and the undisturbed root system is allowed to regrow, it
18 grows much faster. It grows a number of stems, and this
19 actually repopulates the right-of-way with trees much
20 quicker, resulting in shorter cycles of maintenance, and it
21 truly becomes maintenance then. You lock yourself into a
22 maintenance regime of physically clearing that right-of-way
23 say every three years, whereas with the selective use of
24 herbicides under IVM, you'll get down to a point where you
25 have minimum maintenance.

1 Maybe on a given acre, not one tree will appear. It
2 will all be shrubs, forbs, herbs, grasses. Over the course
3 of the line, natural succession, there will be trees, but we
4 often get it down, we call, minimum maintenance, and you can
5 extend the cycle. Instead of having a three-year
6 maintenance cycle for cutting, it can be four or five years,
7 and after a number of cycles of four or five years, people
8 have found they can go to six or seven years, if you're
9 using herbicides selectively.

10 MR. BURNS: That's all the questions I have.

11 MS. DUSMAN: May I have one more?

12 JUDGE NEMEC: You certainly may.

13 **FURTHER CROSS-EXAMINATION**

14 BY MS. DUSMAN:

15 Q. I have to ask you what a forb is.

16 A. Well, it's a form of a herb, herbaceous material
17 that isn't a grass. Goldenrod.

18 MS. DUSMAN: Oh, okay. Thank you.

19 JUDGE NEMEC: Mr. Eckenrod?

20 MR. ECKENROD: I have no cross for this witness.

21 JUDGE NEMEC: Redirect?

22 MR. DEEVER: Can we have a short break, Your Honor?

23 JUDGE NEMEC: Ten minutes.

24 (Recess.)

25 JUDGE NEMEC: Back on the record.

1 MR. DEEVER: I just have a few redirect.

2 JUDGE NEMEC: Go ahead.

3 REDIRECT EXAMINATION

4 BY MR. DEEVER:

5 Q. Mr. McLoughlin, early on during your cross-
6 examination, you described that the first visit to a cleared
7 right-of-way for any kind of vegetation control operations
8 could be four to six years or as needed; is that correct?

9 A. That's correct.

10 Q. Would it be your expectation that if there were
11 species of trees or saplings on the right-of-way, on a
12 particular section of the right-of-way that might sprout or
13 grow faster, that the company may need to get on that right-
14 of-way in advance of four years?

15 A. That could happen in some situations.

16 Q. You also indicated that it was your expectation
17 that the company would work with landowners who were
18 conducting organic or natural farming or cattle growing
19 operations --

20 A. That's correct.

21 Q. -- to accommodate their needs. Is it your
22 expectation that TrAILCo would work with landowners on a
23 wide variety of their concerns including buffer zones for
24 well water sources or spring water?

25 A. That's correct.

1 Q. And in fact, would that include, as you describe
2 in your rebuttal testimony, the willingness to work with the
3 landowner to allow them to conduct their own maintenance of
4 the right-of-way over their property?

5 A. That is correct. That's a very aggressive,
6 unique operation that TrAILCo has or Allegheny has for that
7 landowner privilege or work item, to clear his own right-of-
8 way.

9 Q. Finally, I'd like to take you to those few
10 questions you got about the policing of the use of
11 herbicides by whichever applicable state authority would do
12 so. Would it be your expectations that the company's own
13 contract in place with the contracted applicator would serve
14 as the initial stage of policing the application of
15 herbicides along the right-of-way?

16 A. That is correct. The company requires that the
17 contractor be a certified pesticide applicator. He will
18 have certified people working for him or technicians, and
19 the company oversees all that work, so they're sort of the
20 first line of policing to make sure that their contract
21 specs are carried out and that all the label conditions are
22 applied to.

23 MR. DEEVER: Thank you. That's all I have, Your
24 Honor.

25 JUDGE NEMEC: Recross?

REXCROSS-EXAMINATION

1
2 BY MS. DUSMAN:

3 Q. With respect to the landowner clearing of the
4 right-of-way, I imagine that is something for which TrAILCo
5 would compensate the owner?

6 A. Yes. That's their intent and their program.
7 They would pay them a percentage of their own, what they --
8 or I think full percentage of what their average costs are
9 for maintaining a right-of-way, so the landowner would be
10 paid in lieu of TrAILCo paying a contractor to go out there.

11 MS. DUSMAN: Thank you. Nothing further from OCA.

12 JUDGE NEMEC: Anything else?

13 (No response.)

14 JUDGE NEMEC: Thank you very much, sir. You're
15 excused.

16 THE WITNESS: Thank you.

17 (Witness excused.)

18 MR. DEEVER: Your Honor, TrAILCo's next witness is
19 Dr. Wayne Knoblauch.

20 **Whereupon,**

21 **WAYNE A. KNOBLAUCH**

22 **having been duly sworn, testified as follows:**

23 JUDGE NEMEC: You may proceed.

24 MR. DEEVER: Thank you, Your Honor.

25 Again, with your permission, we would like to have

1 Dr. Knoblauch's rebuttal testimony marked as TrAILCo
2 Rebuttal Statement No. 16.

3 JUDGE NEMEC: It may be so identified.

4 (Whereupon, the document was marked
5 as TrAILCo Rebuttal Statement No.
6 16 for identification.)

7 MR. DEEVER: And his multi-page exhibit marked as
8 TrAILCo Exhibit WAK-1.

9 JUDGE NEMEC: It may be so identified.

10 (Whereupon, the document was marked
11 as TrAILCo Exhibit WAK-1 for
12 identification.)

13 MR. DEEVER: Thank you, sir.

14 **DIRECT EXAMINATION**

15 BY MR. DEEVER:

16 Q. Dr. Knoblauch, good afternoon.

17 A. Good afternoon.

18 Q. Again, to save some time, I'm assuming you have
19 your rebuttal testimony exhibit before you?

20 A. Yes, I do.

21 Q. Were those questions and answers and your
22 exhibit prepared by you or under your supervision?

23 A. Yes, they were.

24 Q. Do you have any corrections to make to that
25 testimony today?

1 A. No, I do not.

2 Q. If I asked you the questions contained in your
3 testimony, would your answers be the same today?

4 A. Yes, they would.

5 Q. And would those answers in your view be true and
6 correct to the best of your belief and knowledge?

7 A. Yes, they would.

8 Q. And your intent is then to adopt this as your
9 sworn testimony?

10 A. That's correct, yes.

11 MR. DEEVER: At this time, I'd ask that Dr.
12 Knoblauch's testimony and his exhibit be moved into the
13 record subject to the conditions of cross-examination and
14 any subsequent motions.

15 JUDGE NEMEC: TrAILCo Rebuttal Statement No. 16 and
16 associated Exhibit WAK-1 are both admitted subject to cross-
17 examination and later motion and/or objection.

18 (Whereupon, the documents marked as
19 TrAILCo Rebuttal Statement No. 16
20 and TrAILCo Exhibit WAK-1 were
21 received in evidence.)

22 MR. DEEVER: Thank you. Dr. Knoblauch is available
23 for cross-examination.

24 JUDGE NEMEC: Ms. Dusman?

25 **CROSS-EXAMINATION**

1 BY MS. DUSMAN:

2 Q. Good afternoon, Dr. Knoblauch?

3 A. Yes.

4 Q. Is that the correct pronunciation?

5 A. Yes.

6 Q. My name is Dianne Dusman and I'm counsel for the
7 Office of Consumer Advocate. We are a protestant in this
8 matter. I just have a few questions for you today.

9 On the top of page three, your first Q and A where
10 you describe the topic and purpose of your rebuttal
11 testimony, first I'd just like to know exactly what did you
12 review to prepare to write this rebuttal testimony?

13 A. I reviewed a synopsis of the concerns expressed
14 in the public hearings regarding agricultural practices and
15 the operation of farm businesses.

16 Q. And who authored the synopsis?

17 A. I don't know for certain the author, but I
18 obtained it from Mr. Deaver.

19 Q. Okay. So you didn't read any of the transcripts
20 actually from those 15 hearings?

21 A. There would have been some portion of the
22 transcripts but I mainly relied upon the summary in terms of
23 what the issues were that were expressed.

24 Q. So as you read the synopsis, did you ever go
25 back to the transcript to get further detail on what the

1 owners' concerns were?

2 A. I don't believe so, not beyond the transcripts
3 that I had.

4 Q. Okay. And how many pages of transcript would
5 you say you had?

6 A. These are tough questions. I didn't count the
7 pages. I can't answer that. I'm sorry.

8 Q. Rough estimate. Ten, less than a hundred?

9 A. Somewhere in there.

10 Q. Okay. So were you given access to any of the
11 exhibits that were offered at the public hearings?

12 A. I believe so, yes, in terms of maps and that
13 type of thing that was presented.

14 Q. There was a huge variety of things presented.
15 I'm just trying to get a general idea of the state of your
16 knowledge of what was your starting point. Did you observe
17 any of the photographs that were taken during the course of
18 the public hearings?

19 A. The photographs that were included in some of
20 the documentation, yes, in terms of where the proposed line
21 was going across roads and fields and close to agricultural
22 buildings.

23 Q. Okay. Now, turning back to the original piece
24 of your testimony to which I referred you, you're responding
25 to the various comments and concerns about the possibility

1 that the proposed TrAIL project will negatively affect or
2 prohibit the current agricultural uses of farms over which
3 the right-of-way may pass. So, in your mind, there's a mere
4 possibility that the construction and operation of a series
5 of high voltage lines and towers will negatively affect the
6 current agricultural uses?

7 A. I think there's -- let me see if I can give you
8 an essay response to your question. I think --

9 Q. Yes or no would be good to start, but --

10 A. Is there a possibility?

11 Q. No. I'm asking, is it your opinion that there's
12 a mere possibility that this will negatively affect the
13 agricultural use of these lands.

14 A. Now we're getting into semantics. I'm not sure
15 how to distinguish mere possibility from possibility. Let
16 me try this and see if I'm responsive to your question. If
17 I were a farmer, would I welcome a tower base on my hand?
18 No. Could I effectively work around it? Yes. Do farmers
19 effectively work around tower bases? Yes. Is it a slight
20 inconvenience? Yes. I'm not sure if that's where you're
21 going with the question. I'm sorry. Based on your
22 expression, I didn't --

23 A. I think that's a fair explanation, but your
24 testimony is rather general, so you haven't really
25 specifically done an analysis, farm by farm, along to the

1 502 -- and do you know what I mean by the 502 to Prexy
2 segment?

3 A. I know the terminology, yes.

4 Q. Okay. So you know where that -- but you haven't
5 done a farm by farm analysis of to what extent the
6 construction and operation of the line will negatively
7 affect each of those parcels?

8 A. I haven't done a farm by farm analysis, but I
9 have spent time out in the field observing where the
10 proposed line would go and determining what uses are of the
11 land, but I've not said, this farm will have a tower base in
12 the center of the field, at the edge of the field, next to a
13 stream.

14 Q. I understand.

15 A. I haven't done that specific an analysis, no.

16 Q. That's fair enough. Have you personally spoken
17 with any of the owners through whose farms the high voltage
18 lines will pass?

19 A. No.

20 Q. Now, turning to the top of the next page, you
21 begin that sentence, "While the farm operator may lose the
22 benefit of the use of any acreage upon which the footprint
23 or base of a transmission tower is placed." Isn't that loss
24 itself, if you're looking at let's say a relatively small
25 farm operation, 40 to 50 acres, if there are multiple towers

1 on that acreage, could that not be a significant loss of
2 productivity, depending on the actual use to which the land
3 was put prior?

4 A. No. The tower bases, it's my understanding,
5 would likely be roughly 40 feet by 40 feet, probably at a
6 thousand foot spacing between the towers, so it's probably
7 unlikely that any one farm would have more than one tower on
8 it, and some may not have any.

9 Q. But you do agree that there would be lost
10 productivity in that footprint?

11 A. Yeah, roughly 160 square feet -- I'm sorry, if
12 it's 20 by 20, 400 square feet.

13 Q. I'm sorry, I lost you there. What's the
14 footprint of the towers?

15 A. In some analysis that I've done, I used 40 by 40
16 as an average, but all the towers, it's my understanding,
17 are not going to be the same size. They're going to be
18 different size towers in different areas.

19 Q. Okay. But what was the number, you said 24
20 hundred square feet?

21 A. I don't believe I said 24 hundred square feet.
22 I was saying --

23 JUDGE NEMEC: He said 20 by 20.

24 MS. DUSMAN: 20 by 20, okay. Thank you, Judge.

25 BY MS. DUSMAN:

1 Q. Let's say a farmer has a crop area through which
2 the towers and the lines are placed. Wouldn't that farmer
3 then have to work around those footprints with in some cases
4 some fairly heavy duty farm equipment?

5 A. Yes. I did an analysis of that, saying that if
6 we did have the 40 foot by 40 foot tower base, how much
7 additional time would it take to turn on each side of that
8 tower base as you were doing field operations.

9 And in my analysis, assuming on average that a piece
10 of equipment would be maybe 10 to 12 feet in width, that
11 would give you an additional four and maybe an additional
12 portion of turns that you wouldn't need to do necessarily,
13 and that would take less than two minutes of added field
14 operation time per tower base on the property.

15 Q. Is that --

16 A. That would, I'm sorry, that would vary somewhere
17 depending on whether it was a row crop operation or someone
18 was actually actively harvesting hay versus pasture where
19 you may just clip it once a year, maybe twice a year. So it
20 would depend on the crop and the particular field
21 operations.

22 Q. Is that referenced in your testimony?

23 A. Is the analysis that I just -- no.

24 Q. That you just discussed.

25 A. No.

1 Q. That's not in your testimony?

2 A. No.

3 Q. Okay. For a moment, you had me thinking I
4 missed something. Now, rather than go through the exercise
5 of looking at your testimony at the bottom of page four, you
6 go through the amount of lineal feet and then you calculate
7 the number of, the approximate number of acres of crop land
8 and of pasture/hay land from the West Virginia line to the
9 Prexy substation. Have you totaled those numbers, from the
10 bottom of page four to the bottom of page five?

11 A. Well, let me first of all clarify that I did not
12 perform those calculations.

13 Q. Oh, who did perform those?

14 A. That was taken directly from Exhibit JH-1.

15 Q. Okay. Do you know what the total of those
16 acreages is?

17 A. I don't believe I totaled them. I looked at
18 each segment independently, unless -- no, I don't see where
19 I've totaled them.

20 Q. I totaled them, although I don't trust my math
21 at all, but I totaled them. I got nearly 300 acres of land,
22 both based on your lineal feet calculation and your acreage
23 lost to tower structure bases; does that sound about right?

24 A. I'd have to go through and add them up, but I'll
25 trust your math for the moment unless we need to do

1 otherwise.

2 Q. Okay, we'll do subject to check. If you find
3 out that it's in error, you'll let us know.

4 MR. DEEVER: I'm sorry, did you indicate a total of
5 the acreage lost to the tower footprints?

6 MS. DUSMAN: Acreage lost, yeah. I wasn't quite sure
7 whether it was -- it seemed like it was close to 300 acres
8 considering the acreage lost to tower structure bases and
9 the acreage calculated based on the lineal feet of each of
10 the segments of the lines that are proposed. Is that fair?

11 MR. DEEVER: Yeah, that's fine.

12 BY MS. DUSMAN:

13 Q. Now, I do have a question. I know you got these
14 numbers from Mr. Bodenschatz, but you focused just on the
15 plots that are crossed that currently contain pasture and
16 hay land?

17 A. And crop land.

18 Q. And crop land. So if there was pasture, for
19 example, but it wasn't on a farm that was actively farming,
20 you didn't count that?

21 A. Again, I did not do that, but my discussions
22 would indicate that if it went across pasture land, whether
23 it was part of a farm or not, whether it was rented to
24 others or whatever the situation might be, that it would be
25 included.

1 Q. Okay. Turning to page six, you testify starting
2 at lines ten -- well, let's start at line nine. "Current
3 farming operations, whether cultivation or pasturing, could
4 be continued without interruption." I take it that that
5 really should be qualified by your earlier statements that
6 there would be lost time in maneuvering the equipment around
7 the towers. While you calculate that in minutes, it still
8 is lost time, is it not?

9 A. Well, the farming could continue without
10 interruption. There would be reduced field efficiency in
11 the operation of whatever equipment you may be using.

12 Q. That's what I was asking. And the most obvious
13 impact to the typical farm owner would be the relatively
14 small area footprint or base of each transmission tower
15 structure that might be placed on the right-of-way. Is that
16 your next sentence in your testimony?

17 A. That's correct.

18 Q. And forgive me, I'm not trying to be flip here,
19 but "relatively," as you use it in that sentence, is really
20 relative, isn't it?

21 A. I'd agree with that, yes.

22 Q. Do you know what I mean? The size of the farm
23 really depends on what the magnitude of the impact is on
24 structures and lines like this on the operation and the
25 relative productivity.

1 A. And even whether or not there's a tower base on
2 that property.

3 Q. Exactly. Now, are you aware that there was
4 testimony by beekeepers concerned about the effects of
5 electromagnetic fields on their operations?

6 A. I have heard of that testimony, yes.

7 Q. Was that in the synopses that you were provided?

8 A. Yes.

9 Q. And I don't believe you commented in any way on
10 the effect on beekeeping operations in your testimony, did
11 you?

12 A. No, I did not.

13 Q. Does that indicate that you have no opinion on
14 whether the operation of a high voltage line would have an
15 effect or not on beekeeping operations?

16 A. I think that reflects a couple things. Number
17 one, that's more in the area of Dr. Bailey and Dr. Johnson,
18 and I've had discussions with them on that which is the
19 source of my knowledge, but I was looking to them to respond
20 to that issue.

21 Q. Okay. In the course of your work in this field,
22 have you ever spoken with beekeepers about the impact of
23 high voltage lines on their operations?

24 A. That's a good question. I've had students that
25 were beekeepers and I'm certain we may have discussed it,

1 but I can't recall the specifics of what they might do to
2 shield or ground or move the hives to an area where they're
3 not impacted. I'm sure I probably did, but the specifics I
4 couldn't identify for you.

5 Q. Okay. I guess this is a general question, and I
6 was very, very awestruck by the number of publications and
7 your various work that you expressed in your curriculum
8 vitae and your list of experience and you've been in this
9 field for quite a long time, haven't you?

10 A. That's correct.

11 Q. And have you ever encountered situations where
12 there were farming accidents around or near high voltage
13 towers?

14 A. I don't believe so. I mean, I have hit utility
15 poles with a tractor when I was farming, but I know of
16 nothing regarding a high voltage metal tower. Utility
17 poles, as I describe it, yes, there's been many of those,
18 but the towers --

19 Q. You hit one yourself?

20 A. Yes.

21 Q. What kind of machine were you operating?

22 A. This is going to be embarrassing, but we bought
23 a new tractor that was not a tricycle tractor. It had a
24 wide front end, and I was harvesting corn and forgot that it
25 was a new tractor and the wheels stick out in front, and I

1 hit a power pole with that and knocked it off its base.

2 Q. And you were how --

3 A. I was able to pick it up and put it back on.

4 Q. And you were how old, then?

5 A. How old? Sixteen.

6 (Laughter.)

7 Q. I guess we've all been there, sort of, in one
8 way or the other, maybe not on the farm, but --

9 A. One of life's more embarrassing moments is
10 explaining to your father what you just did.

11 Q. That really wasn't my intention. I admit that
12 some of my knowledge about this based on review of cases,
13 and I am aware of cases that have been brought by farmers
14 who have experienced arcing to equipment. Have you ever
15 heard of that happening?

16 A. You mean, induced voltage on equipment that was
17 under a power line?

18 Q. Yes.

19 A. Is that what you're referring to?

20 Q. That's what I'm referring to.

21 A. Yes.

22 Q. You have heard of that phenomena?

23 A. Sure.

24 Q. And can you tell me some of the scenarios you've
25 heard of where that's occurred?

1 A. Oh, if you park your equipment under the power
2 line, you're likely to have some induced voltage created on
3 it, so you would --

4 Q. Can you explain what you mean by induced
5 voltage, for the record?

6 A. I'm not an engineer, so this is a layman's --

7 Q. Just to the best of your knowledge.

8 A. The voltage field is induced onto the metal skin
9 of the equipment.

10 Q. And then what happens? What's the risk?

11 A. Then if you touch it when you're getting back on
12 or perhaps even getting off if you've been there a while,
13 you will feel a shock, the potential for a shock.

14 Q. Okay.

15 A. So the moral of the story is, don't park your
16 equipment under the line. Don't park your equipment next to
17 a wellhead if diesel fuel or whatever leaks out. You need
18 to be very careful where you park your equipment, and that's
19 certainly one of the things you need to be aware of.

20 Q. Right.

21 MR. DEEVER: If I could just suggest, Mr. Bodenschatz
22 would be well equipped to explain induced voltage when he's
23 on the stand as well.

24 MS. DUSMAN: Okay. Well, I think we got enough from
25 Mr. Knoblauch. I had another question in mind -- yes.

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BY MS. DUSMAN:

Q. Injuries to cattle that graze in or near high voltage lines, have you heard of that phenomenon?

A. I've heard that being claimed, yes.

Q. And you say "claimed" as if you believe it not to be true. Is that accurate?

A. That's correct.

Q. You don't think that cattle or other domestic animals can be injured just simply by grazing or walk underneath the power line?

A. That's correct, based on my review of the literature. And again, I'm not a biologist, but based on that as well as my observations on farms, I don't believe that to be a concern.

Q. Okay. And would your answer be the same about the potential for harm to gestational domestic livestock?

A. That's correct.

Q. Which is correct?

A. My answer would be the same whether or not we're talking about animals that are pregnant, animals that are lactating, whatever the case might be.

Q. You don't believe that there's any harm to them due to the electromagnetic fields?

A. That's correct.

Q. Okay. You were here for the prior testimony by

1 Mr. McLoughlin, though, were you not?

2 A. Yes, I was.

3 Q. And I'm sure you probably heard the questions
4 and answers having to do with the limitations on the grazing
5 of lactating livestock in areas where the various herbicide
6 compounds have been used to stop the growth of plants on
7 rights-of-way. Did you hear those questions and answers?

8 A. Yes, I did.

9 Q. Okay. And are you aware that in Washington and
10 Greene Counties, there are dairy farms where the animals
11 that are being raised are lactating year-round?

12 A. We need to back up a bit. In my tour yesterday,
13 I did not see any dairy animals. I saw beef animals, in
14 other words cow-calf operations. And again, not being
15 flippant, but an animal will not lactate year-round.

16 Q. Even a dairy cow?

17 A. No. You need a dry period.

18 Q. Okay. I understand.

19 A. I may not be understanding your question. I
20 apologize for that.

21 Q. No, no. You understood my question completely,
22 but my question indicated my lapse in knowledge about that
23 field. But what length of dry period would be required for
24 a dairy animal?

25 A. Well, we strive for 60 days. Sometimes we make

1 it, sometimes we don't, but sort of the idea would be 60
2 days, sometimes up to 75. If you can't get an animal
3 re-bred, it may go much longer than that.

4 Q. So the remainder of the year, though, other than
5 the dry period, a dairy farmer would have to be concerned
6 most of the time about where that animal was grazing,
7 wouldn't he?

8 A. Well, certainly you would want to be concerned
9 about where they were grazing, control it. You would not
10 want to have the animal grazing on pasture land that had
11 recently had an herbicide application. That's something
12 that farmers deal with every day.

13 MS. DUSMAN: Thank you. That's all the questions I
14 have for you today, Mr. Knoblauch.

15 **CROSS-EXAMINATION**

16 BY MR. BURNS:

17 Q. I just have a couple questions, Mr. Knoblauch.
18 Have you read any summaries of the public input hearing
19 testimony where individuals testified about either wild
20 animals or domestic animals that were unwilling to cross
21 under a high voltage tower line? Do you recall reading any
22 synopses of those testimonies?

23 A. I don't know if it's been in this situation or
24 not, but I've heard of those stories, yes.

25 Q. Well, have you witnessed that phenomenon? Are

1 you aware of that phenomenon, that under certain
2 circumstances certain animals do not want to cross under
3 high voltage power lines such as a 500 kV or a 138 kV power
4 line?

5 A. As I indicated, I've heard of the claims. I
6 have never personally seen it, and yesterday in my tour I
7 saw probably on two farms animals were in fact lying down
8 under the lines next to the tower bases, certainly avoiding
9 it in no way, shape or form.

10 Q. So you've heard of the phenomenon, but you don't
11 know whether it's accurate or under what situations it
12 applies if at all?

13 A. I have never seen it. As a matter of fact, in
14 many of the cases, the cattle will actually seek out the
15 area underneath there for fewer flies or shade, whatever the
16 case may be. I have not seen an animal avoid walking
17 underneath or going close to a power line.

18 Q. Why are there fewer flies underneath the power
19 line?

20 A. Maybe the fields or whatever, but I have not
21 seen them avoid a power line.

22 Q. Does it operate as a big bug zapper?

23 (Laughter.)

24 A. That could be a question for Dr. Bailey.

25 Q. Are you touting that as one of the advantages,

1 perhaps? It's like a free bug zapper that would operate
2 around your house?

3 (Laughter.)

4 A. I am not touting that one shape or form. I'm
5 simply reiterating what I have observed.

6 Q. I think those are all the questions I have. I
7 think I've been very effective in establishing some key
8 points here.

9 (Laughter.)

10 A. I have never thought of it in those terms.

11 JUDGE NEMEC: Mr. Eckenrod?

12 MR. ECKENROD: I'm not sure I can follow up on that,
13 so I have no questions for this witness.

14 MS. DUSMAN: I do have a follow-up, Your Honor.

15 JUDGE NEMEC: Go ahead.

16 **FURTHER CROSS-EXAMINATION**

17 BY MS. DUSMAN:

18 Q. When you said you observed the animals lying
19 down underneath the line, at what distance were you from
20 that?

21 A. What distance was I from the animals?

22 Q. Yeah, when you made the observation.

23 A. Yesterday, or in prior experiences?

24 Q. Well, let's start with yesterday.

25 A. 300 yards.

1 Q. Were you able to tell whether that line was
2 energized?

3 A. The person I was with I believe indicated that
4 it was.

5 Q. And who were you with?

6 A. Kevin -- what's Kevin's last name?

7 MR. DEEVER: Phillips.

8 THE WITNESS: Kevin Phillips.

9 BY MS. DUSMAN:

10 Q. Kevin Phillips?

11 A. Yes.

12 Q. Okay. And I did have another area of interest
13 that I overlooked in our prior questioning. Does your
14 synopsis have information about the witness that has a horse
15 boarding operation in Greene County?

16 A. Does my testimony address that?

17 Q. No, no, the synopsis you read to prepare your
18 testimony.

19 A. I know horses have been discussed, but I don't
20 recall --

21 Q. And do you recall in what way they --

22 A. -- specifically what the testimony was, no.

23 Q. You don't recall in what way they were
24 discussed?

25 A. No.

1 Q. To paraphrase the testimony, one of the
2 witnesses was in the course for several years of developing
3 a horse boarding business, and my recollection is that it
4 was her belief that once the lines are constructed through
5 her property and the lines are energized, that people will
6 no longer bring horses to board at her farm. You don't
7 recall anything like that?

8 A. I don't recall that specifically, no.

9 Q. You don't recall that. Would it surprise you
10 that people would have that reaction, people that own
11 horses, that they wouldn't want them to be near the lines?

12 A. Some people may. We may speculate that that is
13 the situation. I think the facts would indicate otherwise.
14 We have a horse, and I would not hesitate to put Rhapsody in
15 a boarding facility next to a power line.

16 Q. Let's say hypothetically you had a choice of two
17 horse boarding places, and one of them had a power line
18 through it and one of them didn't. Which one would you take
19 Rhapsody to?

20 A. Which one is the least cost?

21 Q. They both cost the same.

22 A. I'd be indifferent.

23 Q. You'd take her to either one willingly?

24 A. Probably depend more on the personality of the
25 person and how good they were with horses rather than

1 whether a power line was there.

2 Q. Have you ever ridden Rhapsody on an area where
3 there were power lines?

4 A. Certainly on an area where there were power
5 lines. It's tough to avoid power lines, but the --

6 Q. I would certainly agree with that.

7 A. Whether it specifically was 500 kV power line, I
8 don't know.

9 Q. But you haven't ridden her -- or him, is it?

10 A. Her.

11 Q. You have ridden her under or near power lines?

12 A. Yes.

13 MS. DUSMAN: That's all we have for this witness,
14 Your Honor.

15 JUDGE NEMEC: Redirect?

16 MR. DEEVER: Just one redirect.

17 **REDIRECT EXAMINATION**

18 BY MR. DEEVER:

19 Q. Dr. Knoblauch, I'd like to take you back to page
20 four and five of your testimony where you quantified the
21 acres of farmland that might be passed over, farm or pasture
22 land. I'm asking you to trust my math. I attempted to add
23 up each of the calculations you did of estimated total
24 footprints of towers in each of those segments. I come up
25 with about 3.1 acres, beginning with 2.5 acres on the first

1 segment you described, and in six different instances
2 thereafter you described less than a tenth of an acre, and
3 would you accept that subject to check?

4 A. Sure. Yes.

5 MR. DEEVER: That's all.

6 MS. DUSMAN: Mr. Deaver, I totaled not just the
7 footprints but also the acreage associated with the linear
8 feet.

9 MR. DEEVER: No, I understand. I was concerned that
10 that 300 acre or approximately 300 acre figure, which
11 included these footprints, I just wanted to make it clear
12 that of that 300 acres, a much smaller amount was the actual
13 footprint of the towers.

14 MS. DUSMAN: Did you also total the amount of linear
15 feet?

16 MR. DEEVER: No.

17 MS. DUSMAN: I think the record will stand that Mr.
18 Knoblauch agreed subject to check that the total acreage
19 devoted to both the footprints and the linear acreage was
20 upwards of 300, 300 acres, so with that, no further
21 questions, Your Honor.

22 JUDGE NEMEC: Anything else?

23 MR. DEEVER: No.

24 JUDGE NEMEC: Thank you, sir. You're excused.

25 THE WITNESS: Thank you.

(Witness excused.)

MR. DEEVER: My final witness, Your Honor, is Jay Williams.

Whereupon,

JAY WILLIAMS

having been duly sworn, testified as follows:

JUDGE NEMEC: You may proceed.

MR. DEEVER: Thank you, Your Honor. Again, with your permission, we'd ask that Mr. Williams' rebuttal testimony be marked as TrAILCo Rebuttal Statement No. 15 and his single exhibit be marked as TrAILCo Exhibit JW-1.

JUDGE NEMEC: They may both be so identified.

(Whereupon, the documents were marked as TrAILCo Rebuttal Statement No. 15 and TrAILCo Exhibit JW-1 for identification.)

DIRECT EXAMINATION

BY MR. DEEVER:

Q. Mr. Williams, again, I'm assuming you have your rebuttal testimony and exhibit in front of you; is that correct?

A. Yes, I do.

Q. Was that rebuttal testimony and exhibit prepared by you or under your supervision?

A. Yes, it was.

FORM 2

1 Q. Do you have any corrections to make to those
2 documents today?

3 A. Yes. I have one correction.

4 Q. Would you describe that for us, please?

5 A. It's on page two, lines 21 and 22. The wording
6 is, I am currently assisting Northeast Utilities as their
7 expert witness for a major 345 kV line. Those hearings have
8 actually been completed, so I am not currently doing that.
9 I was doing that at the time.

10 Q. Thank you. With that one correction, if I asked
11 you these questions today, would your answers be the same?

12 A. Yes.

13 Q. And are they true and correct to the best of
14 your belief and knowledge?

15 A. Yes.

16 Q. And you intend to adopt this testimony as your
17 sworn evidence today?

18 A. Yes, I do.

19 MR. DEEVER: Thank you. Your Honor, with that, I'd
20 ask that Mr. Williams' rebuttal testimony and exhibit be
21 moved into the record subject to cross or future motions.

22 JUDGE NEMEC: TRAILCo Rebuttal Statement No. 15 and
23 associated Exhibit JW-1 are both admitted subject to cross-
24 examination and later motion and/or objection.

25 (Whereupon, the documents marked as

1 TrAILCo Rebuttal Statement No. 15
2 and TrAILCo Exhibit JW-1 were
3 received in evidence.)

4 MR. DEEVER: Mr. Williams is available for cross-
5 examination.

6 MS. DUSMAN: Your Honor, we'll defer to ECC at this
7 time. We may have follow-up.

8 JUDGE NEMEC: Okay, Mr. Burns.

9 **CROSS-EXAMINATION**

10 BY MR. BURNS:

11 Q. Mr. Williams, I don't have a whole lot of
12 questions for you on your testimony, but I have a few. I
13 represent the Energy Conservation Council. I know you've
14 been here, so you understand. My name is Wil Burns and
15 that's who I represent.

16 Now, are you aware of the Neptune Project in New
17 York?

18 A. Yes, I am.

19 Q. What kind of project is that? What kind of
20 line, what kind of size?

21 A. It is a DC line, primarily submarine cable,
22 taking power from New Jersey underwater, again, primarily
23 submarine cable, to Long Island where there is a short
24 section of land cable.

25 Q. And you're testimony has to do with

1 undergrounding of alternating current lines?

2 A. Yes.

3 Q. And are there long stretches of undergrounding
4 of direct current transmission lines throughout the country
5 in at least a couple different places?

6 A. The Neptune Project is the only one that has any
7 section of land cable for high voltage DC cable.

8 Q. What do you mean, the only section with land --

9 A. Let me restate. There is no -- other than
10 Neptune, there is no high voltage DC cable 500 kV class on
11 land. So, there are no trenches, therefore.

12 Q. What about lower voltages, 345, something of
13 that nature?

14 A. The only -- you're asking about DC cable?

15 Q. Correct.

16 A. The only DC cable existing in this country is
17 the Neptune Project that you just asked about and a 150 kV
18 DC project that takes power to Connecticut from Long Island
19 or vice-versa -- that connects Long Island and Connecticut.
20 That's a 150 kV DC. Those are the only two DC cable
21 projects that I'm aware of with underground cable.

22 Q. What about outside the United States?

23 A. There is a short line in Canada less than a mile
24 long and a few lines other places overseas. There is quite
25 a bit of DC cable for submarine cable application, which is

1 the primary use of DC cable, but very little on land
2 anywhere in the world.

3 Q. Explain what submarine is. Just underwater?

4 A. I'm sorry. Yes. Cables -- one of the primary
5 uses when cables are applied is for underwater applications
6 where towers are obviously not feasible, and DC direct
7 current cable is the cable that's required for these long
8 distances because it has lower electrical losses.

9 Q. Now, I understand that you can place DC cables
10 underground for longer distances than alternating current
11 lines, but it may be expensive or at least part of it is
12 expensive. Is that generally correct?

13 A. Yes. A DC cable has the same problems in
14 installation, excavation, transition stations and so forth,
15 as an AC cable. In addition to that, it has the land
16 requirements and cost and losses associated with DC
17 conversion equipment. So, that's why it's very uncommon to
18 have DC cables on land.

19 Q. Because to coordinate with the alternating
20 current system, you'd have to have a conversion station?

21 A. Yes.

22 Q. And those are expensive; right?

23 A. Yes.

24 Q. Do you know what the cost difference would be to
25 run a DC line from 502 to Loudoun as opposed to an above

1 ground 500 kV line? Have you ever estimated that or do you
2 have any idea?

3 A. I have never estimated that.

4 Q. Do you have an understanding as to how long you
5 could run a DC line underground before you'd have to come
6 for one reason or another?

7 A. Because DC lines are very seldom used on land,
8 I've never looked at land, but there are submarine DC cables
9 which are basically the same cable construction that can go
10 for a hundred miles without having to come up.

11 MR. BURNS: That is probably all the questions I
12 have.

13 MS. DUSMAN: I do have a few questions, Your Honor.

14 JUDGE NEMEC: Go ahead.

15 **CROSS-EXAMINATION**

16 BY MS. DUSMAN:

17 Q. Good afternoon, Mr. Williams.

18 A. Good afternoon.

19 Q. My name is Dianne Dusman, and I'm an attorney
20 for the Office of Consumer Advocate, a protestant in this
21 case.

22 A. Ma'am.

23 Q. I see that you have multiple publications and
24 that you have taught extensively on underground power
25 transmission.

1 A. That's correct.

2 Q. And that you've written more than 50 technical
3 papers, articles and book sections on underground
4 transmission cables.

5 A. That's correct.

6 Q. And that you're a fellow of the Institute of
7 Electrical and Electronics Engineers, Inc.

8 A. Yes.

9 Q. So you've been working in this area for quite a
10 long time, have you not?

11 A. Yes, ma'am.

12 Q. I'm just going to ask you a few general
13 questions. Are you familiar with the OCA's position in this
14 case?

15 A. As regards to undergrounding, no, ma'am.

16 Q. We don't have a position on undergrounding.

17 A. I passed that one.

18 (Laughter.)

19 Q. Yeah; you passed that test. No; I just wanted
20 you to know that we're not taking a position that this line
21 should be undergrounded in this case.

22 A. Okay.

23 Q. But I do have some general questions for you on
24 the whole issue of undergrounding.

25 A. Yes.

1 Q. I want to ask you, first of all, let's say over
2 the last decade, has undergrounding high voltage electric
3 cables become more feasible or less feasible than in the era
4 before?

5 A. It has become more common. As far as
6 feasibility, in the last decade for the lower voltage
7 cables, there has been a greater use of an insulation
8 material called crosslink polyethylene, which is a simpler
9 insulation and simpler installation. So, there have been
10 more installations in the last decade because of the use of
11 this newer material for the lower voltage cables.

12 Other than that, the basic cable system, the basic
13 installations have been similar for the last 20 or 30 years.

14 Q. Okay. And would you say -- again, recognizing
15 that we're not taking a position on this issue -- that the
16 technology for undergrounding is changing more quickly or
17 less quickly than in the decade before?

18 A. At the present time, I would say it's changing
19 less quickly, because in the decade before, it was a
20 transition to this newer insulation material that's becoming
21 more mature. So, the changes are going more slowly now.

22 Q. Okay. I understand. When you were testifying
23 as an expert witness on behalf of the Vermont Department of
24 Public Service for the cable crossing at Grand Isle -- and
25 that's on page 2 of your testimony -- was that an

1 underground cable or an underwater cable?

2 A. The proposal by the utility was for an
3 underwater cable under Lake Champlain. In actuality, I
4 worked with the Department of Public Service to analyze
5 alternatives. We proposed an alternative along a causeway,
6 which was selected. So that the line started out to be an
7 underwater submarine cable and ended up being a one-and-a-
8 half mile cable on a causeway going across the water.

9 Q. On a causeway across Lake Champlain?

10 A. Yes.

11 Q. I'm familiar with that causeway. As a matter
12 fact, I was there last August.

13 A. Oh, good.

14 Q. So, does it go beneath the surface of the
15 causeway? Was a tunnel constructed so that the line could
16 go through that or alongside it, or how does that work?

17 A. If you're at the Grand Isle Causeway, there's a
18 shoulder about 10 or 12 feet wide, and the utility was able
19 to install the cables in that shoulder.

20 Q. Okay. And was that a DC or an AC?

21 A. That was an AC line.

22 Q. An AC line.

23 A. That was a 115,000 volt AC line.

24 Q. Okay. Now, I know that you testify here that
25 it's not feasible -- I understand that -- and that there are

1 a lot of roadblocks to the construction of a line of this
2 length, of this voltage underground. But in the cases where
3 it is feasible to do so, can you tell me what some of the
4 advantages are of having an underground cable?

5 A. Underground cables are used -- for example, one
6 of the applications is airport runways where you have an
7 approach zone where the FAA does not permit overhead lines.
8 So, underground cables would be buried and, therefore, not
9 present an impediment to aviation. So, that is one
10 application of underground lines.

11 Another application is in cities streets where
12 overhead is just plain not feasible. So, those are the two
13 primary advantages of using underground.

14 Q. Would there be an advantage to having an
15 underground cable in that it's not exposed to wind and
16 extreme weather events?

17 A. There is some advantage to that. An underground
18 cable has to have terminations where it comes above ground
19 to connect to substations or to overhead lines, and those
20 termination structures are subject to weather, just as an
21 overhead tower would be.

22 Q. Understood. Would there be an advantage to
23 having an underground cable in that it would not be visible
24 to people prone to acts of sabotage?

25 A. That's an interesting question. It would not be

1 visible. Underground lines do have to have splices
2 periodically, as I stated in my testimony, every 1,500 to
3 2,000 feet. Generally those splices are in vaults that have
4 manhole covers, as you see in city streets, and I guess
5 someone intent on sabotage could perhaps open the covers on
6 those vaults, do damage, which could take a long time to
7 repair.

8 Q. But they would have to know where they are;
9 right?

10 A. Well, they're visible because they're large,
11 round steel plates.

12 Q. If you underground a line, do you have people
13 that live adjacent to the line that are expressing fears
14 about electromagnetic fields from that underground line?

15 A. Yes, there have definitely been concerns about
16 that.

17 Q. Is that a more valid concern or a less valid
18 concern than when it's an overhead line?

19 A. I don't know if there's a difference. There is
20 no electric field from underground lines because they're
21 underground in a pipe or enclosure, and as far as magnetic
22 fields go, they're the same type of magnetic fields as from
23 an overhead line and in some cases the same magnitude, so
24 I'm not sure that there's a difference.

25 Q. The first part of your answer, you were speaking

1 a little quickly and I'm not sure I quite understood it.
2 Did you say that because it's encased there is no --

3 A. There is no electric field from an underground
4 line.

5 Q. There is no electric field.

6 A. That's correct.

7 Q. So people that live adjacent to it need not be
8 concerned about electrical fields?

9 A. That is correct.

10 Q. Do you reduce the number of people who object to
11 a line due to the effect on their view shed when you have an
12 underground line?

13 A. Yes. Yes. If the alternative were an overhead
14 line and there would be an underground line, there would be
15 less objection to the view shed. Yes, that would be a true
16 statement. Most underground lines are in city streets, in
17 which the overhead line is not feasible, so it's not really
18 a comparison of whether there's an overhead line or not.

19 Q. Can you think of any other advantages to
20 undergrounding high voltage lines that we haven't discussed?

21 A. No, I cannot -- I guess there is one additional
22 one, which is where overhead lines are not feasible, for
23 example, these long submarine crossings, so yes, that's the
24 only other advantage I can see, is that you don't need to
25 have the construction of a tower in deep water. Other than

1 that, I cannot think of any additional advantages to
2 undergrounding.

3 Q. Well, I guess one that is suggested by your
4 runway example is that there would be no impediment to local
5 aircraft or even migrating birds, for that matter; is that
6 right?

7 A. Yes. That was an earlier example, yes.

8 Q. That would be another example?

9 A. Yes.

10 MS. DUSMAN: Thank you very much.

11 THE WITNESS: Thank you.

12 JUDGE NEMEC: Redirect?

13 MR. DEEVER: Just briefly.

14 **REDIRECT EXAMINATION**

15 BY MR. DEEVER:

16 Q. Mr. Williams, the various advantages you agreed
17 with counsel regarding placement of lines underground, were
18 you speaking in a general sense in terms of voltage levels?

19 A. Yes, I was speaking in a general sense. There's
20 a substantial difference between the voltages that have been
21 placed underground, 115 kV, 138 and 345, where there's
22 experience, versus 500 kV where there is really no
23 experience, so my discussions were indeed general, but they
24 referred to what has previously been done, which is lower
25 voltage lines.

1 Q. And those advantages that you agreed to, you
2 don't intend to contradict or change your testimony
3 regarding the numerous impediments to 500 kV lines placed
4 underground that you describe in your rebuttal; is that
5 correct?

6 A. That is correct. The impediments actually are
7 almost independent of voltage, so the questions are all
8 directed toward the advantages, which I answered. The
9 impediments would be basically the same regardless of
10 voltage class.

11 MR. DEEVER: That's all.

12 MS. DUSMAN: Nothing further, Your Honor.

13 MR. BURNS: I have several follow-ups.

14 **RE-CROSS-EXAMINATION**

15 BY MR. BURNS:

16 Q. In answer to the questions from Mr. Deaver, you
17 talked 115, 138 and 345 kV lines that were placed
18 underground.

19 A. Yes.

20 Q. And there has been a lot more experience in this
21 country with those size lines being placed underground?

22 A. Yes, more experience than 500, most definitely.

23 Q. How far is the longest 345 kV line that you've
24 seen being placed underground in this country?

25 A. The longest one is 17 miles.

1 Q. How about 138 kV?

2 A. The longest one that I know of is 8.7 miles.

3 Q. How about 115?

4 A. The only 115 lines that I am familiar with are
5 less than a few miles long.

6 Q. How about outside the United States for those
7 same three sets of lines, or if they use different voltages,
8 tell me approximately how long is the longest ones you're
9 aware of in the different -- you know, 138 kV or 115 kV and
10 higher voltages.

11 A. 150 kV is the equivalent voltage overseas, and I
12 understand there are lines perhaps on the order of 20 miles
13 or so. 330 kV is the -- 330 or 400 kV, depending upon the
14 country, is the other voltage equivalent to our 345 kV. The
15 longest I know of is 17 to 20 miles.

16 Q. So in this country, for example, you could put a
17 345 kV line underground for at least 17 miles. It's been
18 done before. Right?

19 A. Yes. New York City had a requirement from West
20 Chester through Manhattan and that was a 17-mile line and
21 that was done.

22 Q. Do you know about how much power in terms of MVA
23 you can flow through a 345 kV line?

24 A. Each of those lines would be 800 amperes, which
25 is 480 MVA.

1 Q. And you also indicated that 500 kV lines have
2 been installed in Japan and Canada for lengths of less than
3 25 miles, and I guess there's more experience in other
4 countries with alternating current 500 kV lines being used
5 underground; right?

6 A. Substantially more, yes.

7 MR. DEEVER: Your Honor, I don't want to impede the
8 record, but it seems like these questions have gone way
9 beyond my brief redirect of Mr. Williams.

10 JUDGE NEMEC: I agree.

11 MR. BURNS: Well, then I'll stop. I'm all done, Your
12 Honor, with my questions.

13 JUDGE NEMEC: Anything else?

14 MR. DEEVER: No.

15 JUDGE NEMEC: Thank you, sir. You're excused.

16 THE WITNESS: Thank you.

17
18 (Witness excused.)

19 JUDGE NEMEC: And with Mr. Williams being excused, I
20 assume that we have completed the day's work, and we will
21 adjourn. Do we want to resume tomorrow at -- let's go off
22 the record.

23 (Discussion off the record.)

24 JUDGE NEMEC: Back on the record.

25 We are adjourning today. We will not resume again

1 until 9:00 a.m. on Thursday, April 3, and it's not an April
2 Fool's joke.

3 (Whereupon, at 3:38 p.m., the hearing was adjourned,
4 to be reconvened at 9:00 a.m. on Thursday, April 3, 2008, in
5 Pittsburgh, Pennsylvania.)

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FORM 2

C E R T I F I C A T E

I hereby certify, as the stenographic reporter, that the foregoing proceedings were taken stenographically by me and thereafter reduced to typewriting by me or under my direction, and that this transcript is a true and accurate record to the best of my ability.

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