

NUCLEAR REGULATORY COMMISSION

ORIGINAL

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of: :
: PHILADELPHIA ELECTRIC COMPANY :
: (Limerick Generating Station : DOCKET NO. 50-352 OL
Units 1 and 2) : 50-353 OL

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
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5 In the Matter of :
6 PHILADELPHIA ELECTRIC COMPANY : Docket No. 50-352 OL
7 (Limerick Generating Station : 50-353 OL
8 Units 1 and 2) :

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10 Norristown Borough Hall
11 23 East Airy
12 Norristown, Pa.
13 Tuesday, October 5, 1982

14 The hearing in the above-entitled matter
15 convened, pursuant to notice, at 9:05 a.m.

16 BEFORE:

17 LAWRENCE BRENNER, Chairman
18 Administrative Judge
19 RICHARD F. COLE, Member
20 Administrative Judge
21 PETER A. MORRIS, Member
22 Administrative Judge

23 FOR THE BOARD:

24 LUCINDY MINTON, Esq.
25 Atomic Safety & Licensing Board

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1	<u>C O N T E N T S</u>				CROSS		
2	<u>WITNESSES:</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>	<u>BOARD</u>	<u>ON BOARD</u>
3	Vincent S. Boyer,						
4	W. Haines Dickenson,						
5	E. H. Bourquard and Neil Moiseev (Resumed)						
6	By Mr. Sugarman	977					
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14	Anthony Policastro and Bryan J. Richter						
15	By Ms. Hodgdon	1115					
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17	By Mr. Conner		1158				
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P R O C E E D I N G S

1
2 JUDGE BRENNER: Good morning.

3 At approximately 6:00 o'clock yesterday,
4 immediately after we went off the record, Mr. Sugarman
5 handed the Board copies of proposed direct testimony of
6 Joseph P. Miller on behalf of Del-Aware, Inc.

7 MR. SUGARMAN: Mr. Chairman.

8 JUDGE BRENNER: Has this testimony been
9 discussed among the parties, Mr. Sugarman?

10 MR. SUGARMAN: No, sir.

11 JUDGE BRENNER: Well, I expect parties to have
12 discussions among themselves as to what the reactions
13 might be as to certain filings when they are out of the
14 normal course of filings, so that we can save time on
15 the record.

16 MR. SUGARMAN: I will undertake to do that,
17 sir, as soon as I can get the parties -- as soon as we
18 have a chance to do so. I have not had any reaction
19 from the parties.

20 I this morning received and handed to the
21 parties, and would like to now hand to the Board, the
22 direct testimony of Richard McCoy.

23 JUDGE BRENNER: All right. And you have given
24 the McCoy testimony to the parties only this morning?

25 MR. SUGARMAN: That is correct, sir.

1 JUDGE BRENNER: I presume that you've been in
2 contact with these witnesses in terms of any potential
3 scheduling?

4 MR. SUGARMAN: Yes, sir. Mr. Miller is here
5 this morning, sir.

6 JUDGE BRENNER: Why?

7 MR. SUGARMAN: Because he was arranged to be
8 here this morning and we didn't know what the scheduling
9 was going to be. He will be available at another time.
10 He will be available Wednesday or Thursday.

11 JUDGE BRENNER: Mr. Sugarman, you know what
12 the situation was today. It was your obligation, as I
13 told you, to stay in continuous touch with witnesses
14 you've subpoenaed so as to not inconvenience them and
15 have them here when we couldn't take them.

16 MR. SUGARMAN: We were in touch with them,
17 sir. Mr. Miller and we were in contact yesterday.

18 JUDGE BRENNER: Well, you must have known that
19 there was no way Mr. Miller would be called today.

20 MR. SUGARMAN: I did know that, sir, but there
21 was a confusion in our office. We didn't know to tell
22 him not to come.

23 JUDGE BRENNER: I just wanted to establish
24 whose fault it was that he has wasted his time in
25 appearing here today. It's your fault.

1 MR. SUGARMAN: Yes, sir, it was our fault.

2 JUDGE BRENNER: We have not even decided
3 whether we will receive the testimony at all, as you
4 know.

5 MR. SUGARMAN: I understand that.

6 JUDGE BRENNER: All right. I direct the
7 parties over the lunch break to discuss the matter of
8 the testimony of Mr. Miller and McCoy and as to whether
9 there would be objections to this testimony, procedural
10 or otherwise, and make those views known to each other
11 in these negotiations, so that when we come back on the
12 record this afternoon we do not waste time having to
13 explain among the parties what their position is, we ca
14 merely get the positions on the record and then rule.

15 All right. The other matter remaining from
16 yesterday was the status of Applicant's Exhibits 1, 1-A
17 and 1-B. We received them into evidence yesterday with
18 the proviso that the parties attempt to agree on which
19 portions of these exhibits would be relied upon as being
20 relevant to the contentions which we are litigating
21 here. Has that been accomplished?

22 MR. WETTERHAHN: Yes.

23 JUDGE BRENNER: Use the microphone, please.

24 MR. WETTERHAHN: Pursuant to the Board's
25 direction, Applicant prepared a cross-reference between

1 the Applicant's Exhibit 1, 1-A and 1-B, as to those
2 relevant, directly applicable to the three contentions,
3 and taking a narrow view of the matter, as directed by
4 the Board. We have prepared a table. Copies are being
5 made now.

6 Applicant discussed it with Mr. Sugarman. Mr.
7 Sugarman wanted a number of additional answers to
8 questions and sections marked as applicable to
9 contentions. In accordance with your wishes, we have
10 agreed to include those in our proffer.

11 As soon as I get back from reproduction copies
12 for the Board, I will indicate the changes requested by
13 Mr. Sugarman. Of course, Mr. Sugarman reserves his
14 right to cross-examine and to object as to the basis or
15 foundation, et cetera.

16 MR. SUGARMAN: If I may, I have only one offer
17 to which I object.

18 JUDGE BRENNER: Wait a minute. We will come
19 back to that in a moment.

20 All right, Mr. Wetterhahn, I think I
21 understand this table. Are the changes that you are
22 making on the copies which are still being reproduced
23 slight enough so that you can give us the changes to the
24 table I now have, or should we wait?

25 MR. WETTERHAHN: To prevent confusion, I had

1 the copy that you have reproduced. I will just read
2 them. The second entry, Section 2.4.3.4, is changed
3 from "not directly applicable" to "applicable to the
4 first contention".

5 The same thing with the next entry, 2.4.6.

6 On the second page, the response to question
7 E-240.25 is now listed as applicable to the first
8 contention.

9 And on the last page, the response to question
10 E 291.12 is now again applicable to the first
11 contention. And the same thing is true from Exhibit 1-B
12 of E-291.21, which is applicable to the first
13 contention.

14 JUDGE BRENNER: I infer that this table covers
15 everything within the entire Exhibit 1, including
16 subparts? That is, that there are no parts in the
17 category lower than "not directly applicable"? There is
18 no completely inapplicable category?

19 MR. WETTERHAHN: No, we took a narrow view and
20 found that the first three columns represent those which
21 are applicable to the three contentions. Of course, if
22 the contentions are ever modified we would have to
23 change that.

24 JUDGE BRENNER: Maybe I wasn't very clear.
25 The lowest category here, that is the least applicable

1 category listed, is called "not directly applicable".
2 Is there -- are there other subsections not listed in
3 this table at all because they are totally
4 inapplicable?

5 MR. WETTERHAHN: No. This represents a
6 complete cross-index of all sections from Exhibit 1, 1-A
7 and 1-B.

8 JUDGE BRENNER: This is a very helpful table
9 and a very helpful format, and we appreciate it.

10 Mr. Sugarman, you wanted to make a point as to
11 an objection?

12 MR. SUGARMAN: A point of clarification
13 first. My understanding from Mr. Wetterhahn is that the
14 fourth column is not being offered for admission.

15 JUDGE BRENNER: That is my understanding
16 also. Is that right, Mr. Wetterhahn?

17 MR. WETTERHAHN: Your understanding is
18 correct. I don't know -- we showed this to the Staff
19 also. As part of their direct testimony, I'm not sure
20 what they will present.

21 May I ask the Board's pleasure in procedurally
22 handling this?

23 JUDGE BRENNER: Yes, I will take care of it in
24 a moment. But Mr. Sugarman had one other point, I
25 believe, and then I did want to ask the Staff their

1 view.

2 Mr. Sugarman?

3 MR. SUGARMAN: Yes. I object to the admission
4 of E-240.28. E-240.28 requests a discussion and/or
5 analysis to support the conclusion, siltation will not
6 be a problem at the intake.

7 JUDGE BRENNER: Mr. Sugarman, excuse me. I
8 missed the number. 240-28?

9 MR. SUGARMAN: Yes, sir.

10 MR. WETTERHAHN: That is in Exhibit 1-A.

11 JUDGE BRENNER: Mr. Sugarman?

12 MR. SUGARMAN: I don't believe that anything
13 in there represents an identifiable undertaking of
14 provision of information that is at all specific or
15 provides sources or in any way qualifies who prepared
16 the information or who made the studies. I think it is
17 totally without foundation and has no probative value.

18 I think if there were a qualified answer to
19 that question, it would be relevant and admissible. But
20 this material is just very general and unqualified.

21 JUDGE BRENNER: In general, Mr. Sugarman, when
22 we deal with the basic source documents such as the
23 environmental report -- and for purposes of our
24 discussion here Exhibit 1-A may be considered within
25 that category -- there is a general sponsoring witness.

1 We also are proceeding on the representation that the
2 witnesses on the panel are knowledgeable and can support
3 any portion which has been identified as being
4 applicable to the contention.

5 I take it, Applicant, that it is your
6 representation that these witnesses can testify to these
7 matters?

8 MR. WETTERHAHN: I think that representation
9 was implied, more than implied, explicitly stated
10 yesterday, when Mr. Boyer was asked to sponsor Exhibit
11 1-A.

12 JUDGE BRENNER: We will proceed on that basis,
13 Mr. Sugarman. You are entitled to very vigorously
14 question the witness' knowledge and competence. The
15 basic expertise on paper at least has been established
16 collectively of this panel to testify to matters such as
17 those encompassed within question and response
18 E-240.28.

19 If after your cross-examination you've
20 established that they don't know anything about it, then
21 obviously the weight, if you've made your case, will be
22 zero or very close to zero.

23 MR. SUGARMAN: I understand the Board's
24 ruling. I just have --

25 JUDGE BRENNER: Let me state expressly. They

1 have witnesses on the panel with expertise in this
2 general area.

3 MR. SUGARMAN: I understand. I understand the
4 Board's ruling and I understand the Board's practice.

5 JUDGE BRENNER: But please ask them about it,
6 and if we find out they know nothing about it that will
7 reflect on the representation we have just received as
8 to their overall presentation and the weight which we
9 will accord their testimony.

10 You are not claiming the subject matter is not
11 relevant?

12 MR. SUGARMAN: No, sir, not at all.

13 JUDGE BRENNER: With that ruling, I take it
14 the list as modified is acceptable and we can rely on it
15 for the purpose of knowing which portions of Exhibit 1
16 are pertinent?

17 MR. SUGARMAN: Within the confines of the
18 Board's practice and procedures, yes.

19 JUDGE BRENNER: Staff?

20 MS. HODGDON: We find it acceptable. We have
21 gone through to try to identify what they are offering
22 that has already been in, and that is the extent of what
23 we have done with respect to this. I mean, we have
24 already seen the questions and answers, of course.

25 JUDGE BRENNER: I don't understand what you

1 said. I'm sorry.

2 MS. HODGDON: I said that the effort that we
3 have made this morning, we have no objections if that is
4 the state we are at now.

5 JUDGE BRENNER: Mr. Wetterhahn, in answer to
6 your question as to how to handle this list -- and I
7 address this to all the parties -- I think it would make
8 sense simply to bind it into the transcript at this
9 point. If you could make the changes that you read into
10 the record by hand on the one copy being bound in, that
11 would be acceptable.

12 In addition, I would suggest that we keep
13 copies of this list as modified as the cover sheet to
14 Exhibit 1 and in fact make it the first page of Exhibit
15 1.

16 MR. WETTERHAHN: Certainly. I will hand a
17 conforming copy to the reporter. I have two additional
18 conforming copies for the Board at this time.

19 (The document referred to follows:)

20

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PORTIONS OF EXHS. 4, 1A & 1B DIRECTLY APPLICABLE
TO CONTENTIONS

INSERT #1

SECTION OR QUESTION	V-15 & V16a (IN part)	V-16a	V-16b	NOT DIRECTLY APPLICABLE
2.4.2.3 (INCLUDING TABLES 2.4.7 & 8)	✓ (Defense Riser Only)			
2.4.3.4	✓			X
2.4.6	✓			X
2.4.7.1.4			✓	
App. 2.4A	✓ (Section c only)			
3.3	✓ (Last two paragr. on p 3.3-2 and Table 3.3-1)			
5.1.3.3				✓
5.3.1.2				✓
6.1.1.1			✓ (As to Defense R.)	

Question	V-15 & V-16a (in part)	V-16a	V-16b	NOT DIRECTLY APPLICABLE
E 240.3 (Section 2.4.2)	✓ (Delaware River Only)			
E 240.4 (Section 2.4.2)				✓
E 240.9 (Section 2.4.6)				✓
<u>Exh. 1A</u>				
E 100.2			✓ (Only Section 1, pp. 1-3 Section 5 (Delaware Water Quality Only)	
E 240.24			✓	
E 240.25	✓			✗
E 240.26				✓
E 240.27	✓			
E 240.28		✓		

Question	V-15 + V-16 (in part)	V-16A	V-16B	NOT DIRECTLY APPLICABLE
E 290.17		✓		
E 290.18		✓		
E 290.19		✓		
E 290.20		✓		
E 290.21		✓		
E 290.22		✓		
E 290.23		✓		
E 290.24		✓		
E 290 .25		✓		
E 290.26		✓		
E 290.27				✓
E 290.28				✓

Question	V-15 & V-162 (in part)	V-162	V-166	NOT DIRECTLY APPLICABLE
E 290.38		✓		
E 290.39		✓		
E 291.1				✓
E 291.2				✓
E 291.3				✓
E 291.4				✓
E 291.12	✓			✗
E 291.13				✓
E 291.17				✓
E 291.19				✓
E 291.20				✓
<u>Exh 16</u>				
291.21	✓			✗
291.23			✓ (Defenses R. Only)	
291.24			✓	

1 JUDGE BRENNER: We have no further preliminary
2 matters. I don't know if the parties have any. We
3 would like to proceed with the cross-examination of
4 these witnesses on the subject of noise. Mr. Sugarman,
5 they're all yours.

6 (Pause.)

7 Whereupon,

8 VINCENT S. BOYER
9 W. HAINES DICKENSON
10 E. H. BOURQUARD
11 NEIL MOISEEV,

12 the witnesses on the stand at the time of recess,
13 resumed the stand and, having previously been duly sworn
14 by the Chairman, were examined and testified further as
15 follows:

16 JUDGE BRENNER: Mr. Sugarman, can you key me
17 into which page of your cross-examination plan the noise
18 subject starts on?

19 MR. SUGARMAN: I'm not sure that I can do
20 that, because I was not aware that -- whatever the
21 gentleman's name is who has put in these exhibits on
22 noise -- ah, here it is, question 39 on page 9.

23 (Discussion off the record.)

24 JUDGE BRENNER: Back on the record.

25 One of my points, Mr. Sugarman, is we require

1 these cross plans for an important purpose. While there
2 is flexibility in varying them depending upon the
3 answers, they are essentially an outline of your
4 approach. And as I referenced the cross plan, I found
5 only that one question 39 on noise, or at least that is
6 the only one I recall.

7 MR. SUGARMAN: I was being responsive to the
8 fact that the testimony only had the two sentences, or
9 the three paragraphs, relating in any way to noise.

10 JUDGE BRENNER: Your point now is that in
11 designing the cross plan you did not consider
12 Exhibit 1?

13 MR. SUGARMAN: That is correct.

14 JUDGE BRENNER: All right. I understand that
15 on the basis of our discussion at the end of the day on
16 the record yesterday and will give you that
17 flexibility.

18 MR. SUGARMAN: Thank you, sir.

19 JUDGE BRENNER: To interrupt you one more
20 time, Mr. Sugarman, before you get going, can you give
21 me a rough time estimate of how long your examination
22 might last?

23 MR. SUGARMAN: I think it will be no more than
24 -- well, I don't know. It somewhat depends upon the
25 length of the answers, but I would say it is no more

1 than a half an hour.

2 JUDGE BRENNER: All right.

3 CROSS-EXAMINATION

4 BY MR. SUGARMAN:

5 Q In your testimony you indicate that the pumps
6 will have a decibal reading of 86 dbs. Isn't it true
7 that the walls and other noise controls to be installed
8 in the building will not in fact eliminate the noise
9 impacts of the pump outside of the pumphouse?

10 A (WITNESS MOISEEV) Are you speaking directly
11 outside the pump house, or at the property line or at
12 neighboring residences?

13 (Discussion off the record.)

14 JUDGE BRENNER: Back on the record.

15 BY MR. SUGARMAN: (Resuming)

16 Q May I ask that the witnesses who proposed the
17 direct testimony answer the question.

18 JUDGE BRENNER: Now, Mr. Sugarman, the way we
19 work is, anyone on the panel can answer. That was the
20 purpose of supplementing it, so we get the information
21 in the most efficient means. I see no point in turning
22 to one witness and having him say, witness B has the
23 detail.

24 However, where you are probing a particular
25 witness for a particular statement made by that witness,

1 in order to establish the credentials of the witness or
2 to follow up on a previous answer, we will give you some
3 discretion to designate that you want a particular
4 witness to answer. But they would have to be those
5 sorts of special, although not unique -- they occur --
6 but rather special circumstances where the situation is
7 such that it would be proper for you to require a
8 particular witness to continue to answer.

9 MR. SUGARMAN: Well, sir, I think it is proper
10 for me to do that in this case. And I apologize for
11 forgetting the gentleman's name. He's not listed as a
12 witness and was not made available for cross-examination
13 and is not a proponent of any direct testimony, and this
14 was what we went through yesterday and it was explained
15 to me that he is there to provide backup response.

16 JUDGE BRENNER: Mr. Sugarman, you're wasting
17 time. I made my ruling yesterday and I'm reiterating it
18 and perhaps explaining it to you again.

19 MR. SUGARMAN: I appreciate the explanation.

20 JUDGE BRENNER: Sir, don't interrupt me
21 again.

22 In this case, you're asking the general expert
23 questions. Ask them to the panel. Where you have to
24 follow up on a particular witness for a special
25 circumstance, we will consider it. This is not such a

1 circumstance.

2 MR. SUGARMAN: Is my objection to that ruling
3 preserved, sir, without my having to do so.

4 JUDGE BRENNER: I guess. It is expressly
5 reserved in any event now.

6 BY MR. SUGARMAN: (Resuming)

7 Q The question stands.

8 A (WITNESS BOYER) Will you identify where you
9 obtained that statement? I presume it is in question
10 290.20, but I would like to verify that.

11 Q That is one place that it appears.

12 A (WITNESS BOYER) If it appears in another
13 place, I would appreciate your identifying it for me.

14 JUDGE BRENNER: All right, excuse me. Repeat
15 the question, Mr. Sugarman, please.

16 BY MR. SUGARMAN: (Resuming)

17 Q The question is -- the witness' question?

18 JUDGE BRENNER: No, repeat your original
19 question to which you've not yet gotten an answer.

20 BY MR. SUGARMAN: (Resuming)

21 Q My question is, isn't it true that your pumps
22 will have a decibel reading of 86 db, and that the walls
23 and other noise controls to be installed in the building
24 will not in fact eliminate the impacts of the pumps
25 outside of the pump house?

1 JUDGE BRENNER: Answer the question, please,
2 panel.

3 WITNESS MOISEEV: Yes, it will eliminate noise
4 impact to areas outside the pump house property.

5 BY MR. SUGARMAN: (Resuming)

6 Q The question related to the pump house and the
7 pump house property.

8 A (WITNESS MOISEEV) You're asking if there's
9 going to be noise emitted right at the wall?

10 Q That is what I'm asking, yes.

11 A (WITNESS MOISEEV) Well, we didn't review the
12 noise impact immediately adjacent to the wall. But I
13 would hazard a guess that it might be --

14 Q I object. I don't want a guess.

15 JUDGE BRENNER: Excuse me. You could object
16 after, but don't interrupt the witness while he's in the
17 middle of answering, just as I will not allow the
18 witness to interrupt you.

19 MR. WETTERHAHN: Mr. Chairman, I'm sorry, we
20 had a little problem hearing, which might have caused a
21 confusion. Did he say "pump house property" or "pump
22 house proper"? I think that is where the confusion came
23 in, and I couldn't hear the distinction.

24 JUDGE BRENNER: He said "pump house proper";
25 is that correct, Mr. Sugarman?

1 MR. SUGARMAN: I didn't say either. I just
2 said "pump house". The witness responded by talking
3 about the pump house property.

4 JUDGE BRENNER: All right. Mr. Moiseev, why
5 don't you clarify your answer. I want everybody to use
6 the microphones. The acoustics in here are terrible.
7 Mr. Moiseev, move that microphone down towards you.

8 WITNESS MOISEEV: We are saying that there
9 will be no impact, noise impact, at the property line or
10 beyond the property line. As to your question about
11 immediately outside the pump house wall, I would imagine
12 that it might be audible.

13 BY MR. SUGARMAN: (Resuming)

14 Q Have you investigated a comparable set of
15 pumps with comparable specifications for a building and
16 measured any such locations to determine whether they
17 will have -- whether they have audible noise and at what
18 distances from the facility?

19 A (WITNESS MOISEEV) Our analysis was based on
20 the manufacturer's rated noise level as stated in his
21 response to a question, the construction of the pump
22 house wall, and the distances involved.

23 JUDGE BRENNER: Mr. Moiseev, if you're going
24 to reference a response to a question, you're going to
25 have to give the number, because we have a lot of

1 questions.

2 WITNESS MOISEEV: Well, it had already been
3 referenced. I was referring to question E-290.20.

4 BY MR. SUGARMAN: (Resuming)

5 Q Now, may I have an answer to my question?
6 Have you made any investigation of any comparable
7 facilities to determine the extent and distance at which
8 their noise levels occur?

9 (Panel of witnesses conferring.)

10 A (WITNESS MOISEEV) Yes, I have.

11 Q At which ones?

12 A (WITNESS MOISEEV) Let's see. It's not
13 exactly comparable. It was a New York City sewage
14 plant.

15 Q And did it have four pumps with 86 db
16 ratings?

17 A (WITNESS MOISEEV) No, they were higher noise
18 levels.

19 Q I beg your pardon?

20 A (WITNESS MOISEEV) They were higher noise
21 level pumps.

22 Q And how far away was the noise audible?

23 A (WITNESS MOISEEV) Well, it is not directly
24 comparable because these buildings all have windows.

25 Q Well, I'm asking for comparable cases.

1 A (WITNESS MOISEEV) You asked --

2 A (WITNESS BOYER) If I might comment.

3 JUDGE BRENNER: No. He's still following up
4 with the one witness' answer in that case, and then we
5 will allow you to comment after, Mr. Boyer.

6 WITNESS MOISEEV: You asked for comparable
7 pumps.

8 BY MR. SUGARMAN: (Resuming)

9 Q I asked comparable cases.

10 A (WITNESS MOISEEV) I did not measure anything
11 directly comparable.

12 Q What is the basis for your opinion that there
13 will be no noise at the property line?

14 A (WITNESS MOISEEV) An analysis, as I explained
15 before, based on pump noise levels as specified, the
16 expected transmission loss of the walls, and the
17 distance attenuation.

18 Q How did you compute the expected noise loss in
19 the walls?

20 A (WITNESS MOISEEV) Based upon our experience
21 of sound transmission class of such structure.

22 Q And you computed it such that it would
23 attenuate from 86 or from -- what is the inside level of
24 the noise in the operation of all four pumps?

25 A (WITNESS MOISEEV) It would be approximately

1 92 dba.

2 Q And what is the level immediately outside the
3 building?

4 A (WITNESS MOISEEV) As I said, I did not
5 calculate it immediately outside the building.

6 Q What calculation -- at what distance did you
7 find that the noise receded to ambient levels?

8 A (WITNESS MOISEEV) At the property line.

9 Q Right at the property line?

10 A (WITNESS MOISEEV) Where we did it, at the
11 property line and at the residences, and at both points
12 it was below the ambient, at or below the ambient.

13 Q How far -- what is the nearest point from the
14 pump station to the property line?

15 A (WITNESS MOISEEV) I don't recall.

16 Q Do you have your calculations?

17 A (WITNESS MOISEEV) No, I don't.

18 Q Did you make calculations?

19 JUDGE BRENNER: Wait a minute, Mr. Sugarman.
20 I know you're all wound up, but we're getting too far
21 ahead. Let's see if we can get an answer to your
22 question as to distance.

23 (Panel of witnesses conferring.)

24 WITNESS MOISEEV: It's 65 feet from the pump
25 house to the property line.

1 BY MR. SUGARMAN: (Resuming)

2 Q How many feet?

3 A (WITNESS MOISEEV) 65 feet, approximately.

4 Q And you made no calculation of what the level
5 would be immediately outside the building, and yet you
6 are able to calculate that it would be zero in respect
7 to ambient at 65 feet?

8 A (WITNESS MOISEEV) I didn't say it would be
9 zero in respect to ambient.

10 JUDGE BRENNER: Excuse me, Mr. Moiseev. You
11 have to stay close to the microphone.

12 BY MR. SUGARMAN: (Resuming)

13 Q I thought you said --

14 JUDGE BRENNER: Wait a minute. Could you
15 repeat your answer?

16 WITNESS MOISEEV: I did not say it would be
17 zero in respect to the ambient. I said it would be less
18 than or equivalent.

19 BY MR. SUGARMAN: (Resuming)

20 Q I think the record will show what you said.
21 But now you are saying it would be the same as the
22 ambient?

23 A (WITNESS MOISEEV) That is the same thing I
24 said before.

25 Q Are you saying that the pump station 65 feet

1 away from the station will emit no noise that will cause
2 an increase in the ambient noise level, is that right?

3 A (WITNESS MOISEEV) That is correct.

4 Q And I would like to know the basis of that
5 calculation. How did you make that calculation?

6 A (WITNESS MOISEEV) I explained to you how I
7 made that calculation.

8 Q I would like to see it.

9 JUDGE BRENNER: Excuse me. Answer the
10 question. How did you make that calculation?

11 (Panel of witnesses conferring.)

12 WITNESS MOISEEV: To describe it verbally, I
13 took the noise level of the pumps, subtracted the sound
14 transmission loss of the building structure, and
15 subtracted the distance attenuation to the point.

16 BY MR. SUGARMAN: (Resuming)

17 Q And what was the level or what was the
18 distance attenuation factor and what was the wall
19 factor?

20 A (WITNESS MOISEEV) I don't have that material
21 with me.

22 MR. SUGARMAN: I move to strike the witness'
23 opinion.

24 JUDGE BRENNER: Now, Mr. Sugarman, we're not
25 going to deal with motions to strike continuously

1 through the cross-examination, and I will explain why.
2 Every time somebody thinks they have made a hot point,
3 they will move to strike. The idea is, you do your best
4 on cross-examination and then argue in the findings
5 later that we should accord it no weight, given the
6 answer.

7 We have heard your question and we have heard
8 his answer. You may propose a finding that the witness
9 could not supply the details of his calculation when
10 asked.

11 MR. SUGARMAN: Thank you.

12 BY MR. SUGARMAN: (Resuming)

13 Q Mr. Bourquard, can you show me where in the
14 specifications for the system the requirement exists
15 that the pumps have a db rating of no more than 86,
16 referring to question E-290.20, or any other witness?

17 (Panel of witnesses conferring.)

18 A (WITNESS BOURQUARD) I have to have the
19 specifications to point it out.

20 Q Did you bring the specifications?

21 A (WITNESS BOURQUARD) There was a set of
22 specifications here.

23 JUDGE BRENNER: Mr. Conner, on an objection
24 you don't have to raise your hand.

25 MR. CONNER: I was just trying to tell you,

1 Mr. Sugarman has our copy of the specs. If he can hand
2 them to Mr. Bourquard.

3 JUDGE BRENNER: Well, I think he was doing
4 that, so your comment is gratuitous.

5 (Discussion off the record.)

6 WITNESS BOURQUARD: On page 15143-16 of volume
7 2 of the contract documents, at the top of the page it
8 says: "Sound level shall be 86 db as measured by IEEE
9 Standard 85."

10 BY MR. SUGARMAN: (Resuming)

11 Q Thank you, sir.

12 Have the transformers been selected for the
13 station?

14 A (WITNESS BOURQUARD) The transformers, the
15 make and model have not yet been selected.

16 Q What is the range of noise levels associated
17 with the transformers to be purchased or to be utilized,
18 if you know?

19 (Panel of witnesses conferring.)

20 A (WITNESS BOURQUARD) We will have transformers
21 that will provide a low sound level of 57 db.

22 Q How many transformers will there be?

23 A (WITNESS BOURQUARD) Two.

24 Q What will be the cumulative decibel rating in
25 db's of the two transformers?

1 A (WITNESS MOISEEV) At what point?

2 Q At the transformers.

3 A (WITNESS MOISEEV) At the transformers?

4 Q Yes, comparable to the 86.

5 A (WITNESS MOISEEV) It's going to be 57 at each
6 transformer.

7 Q And the two transformers operating together?

8 Is the plant operating both together?

9 A (WITNESS MOISEEV) Yes, but they are not going
10 to be close enough that the noise from one is going to
11 significantly affect the noise of the other one,
12 measured at the transformer.

13 Q How close is the closest transformer going to
14 be to the canal property?

15 A (WITNESS BOYER) The transformers are
16 immediately adjacent to the building. We will look and
17 give you an idea of what that distance is to the canal.

18 JUDGE BRENNER: Mr. Boyer, while you are
19 looking, it would help me if you could include as part
20 of your answer the relationship of the two transformers
21 to each other, given the previous answer.

22 WITNESS BOYER: Yes.

23 MR. SUGARMAN: And may I say, if the witness
24 is looking at a document, perhaps he could identify it
25 so we could all look at it, at our copies.

1 JUDGE BRENNER: Let him answer the question
2 first, and then if you want to follow up you can.

3 (Panel of witnesses conferring.)

4 WITNESS BOYER: The electrical equipment
5 consists of transformers, circuit breakers and
6 disconnect switches. The transformers are located
7 immediately adjacent to the building and on the river
8 side of the building, approximately 100 feet from the
9 canal.

10 We are looking at a document which is a plot
11 plan, vicinity plan, property and right of way limits of
12 the Point Pleasant pumping facilities, and is shown as
13 Policastro Exhibit 1.

14 JUDGE BRENNER: Mr. Boyer, on the river side
15 of the pump house, is that the 85 foot dimension or the
16 60.5 foot dimension?

17 WITNESS BOYER: No, the 85 foot.

18 JUDGE BRENNER: It's 85.5?

19 WITNESS BOYER: Pardon me? What are you
20 reading from?

21 JUDGE BRENNER: I'm looking at the pump house
22 dimensions, page 14 of your testimony.

23 WITNESS BOYER: It is on the 85-foot side, the
24 long dimension side of the pump house, although the back
25 part of the pump house is narrower than the front, and

1 it is located on the back of the pump house.

2 JUDGE BRENNER: All right. How far apart are
3 the transformers from each other?

4 WITNESS BOYER: I would say approximately 15
5 feet, 15 to 20 feet. There is a firewall located
6 between the transformers.

7 JUDGE BRENNER: Yes, I know, and you answered
8 my immediate question. Thank you.

9 BY MR. SUGARMAN: (Resuming)

10 Q Has any measurement -- I'm sorry, I missed the
11 distance on that. What is the distance from the nearest
12 point of the transformers to the canal property?

13 A (WITNESS BOYER) Approximately 100 feet.

14 Q Has any measurement been made of the impact of
15 the operation of the transformers at the canal property
16 line?

17 A (WITNESS MOISEEV) We did it to the nearest
18 property line?

19 Q I beg your pardon?

20 A (WITNESS MOISEEV) We did our calculation to
21 the nearest property line.

22 Q I understand that. I'm asking, has any
23 calculation been made of the impact at the canal
24 property line?

25 A (WITNESS MOISEEV) No, because the nearest

1 property line is where the greatest impact would occur,
2 and that will be less than ambient.

3 Q When you say less than ambient, are you saying
4 it will be quieter because the transformers are there?

5 A (WITNESS MOISEEV) I'm saying the noise
6 contribution from the transformers will be less than
7 ambient.

8 Q Well, that means that the ambient will go up?
9 That is, the noise level will go up?

10 A (WITNESS MOISEEV) Not necessarily.

11 Q All right. Not having your expertise, I find
12 it a little difficult to understand that. If you have
13 so much noise and you add so much more, doesn't that
14 increase the noise?

15 A (WITNESS MOISEEV) Sometimes. It depends upon
16 the levels of the two different noises.

17 Q Do you mean --

18 A (WITNESS MOISEEV) It is not always directly
19 additive.

20 Q Well, in this case will it be, with respect to
21 the transformers, or can you say with certainty that it
22 will not be?

23 A (WITNESS MOISEEV) Would you repeat that?

24 Q Can you state with certainty that it will not
25 be?

1 A (WITNESS MOISEEV) What will not be?

2 Q I guess you could say that was a non-additive
3 noise that we just heard. But if there is a noise --
4 and we are all familiar with what transformer noise
5 sounds like -- are you saying -- you're not saying that
6 there will be no noise impact at the property line, are
7 you?

8 A (WITNESS MOISEEV) We're saying the
9 contribution will not exceed the ambient.

10 Q But you're saying that that -- that is apples
11 and oranges, because the ambient noise may consist of
12 certain types of noise and this may be a different type
13 of noise. Aren't you saying that?

14 A (WITNESS MOISEEV) We have taken into account
15 the fact that they are different types of noise.

16 Q When you say you've taken it into account, I
17 don't know what you mean by that. What do you mean by
18 taken it into account?

19 A (WITNESS MOISEEV) We have taken into account
20 the tonal nature of the transformers.

21 Q Taken it into account in doing what?

22 A (WITNESS MOISEEV) In our assessment of
23 impact.

24 Q Well, I'm glad you've done that, but the fact
25 that you've taken it into account doesn't give us

1 information as to whether there will be a noise impact.
2 Can you state directly, not whether you've taken it into
3 account, but whether there will be a noise impact from
4 these transformers at the property line?

5 A (WITNESS MOISEEV) Our assessment is that
6 there will not be a noise impact.

7 Q They will not be audible?

8 JUDGE BRENNER: I missed your last word. I'm
9 sorry, Mr. Sugarman.

10 MR. SUGARMAN: That it will not be audible.

11 (Laughter.)

12 (Panel of witnesses conferring.)

13 MR. SUGARMAN: Mr. Chairman, are the witnesses
14 permitted on a panel to confer like this?

15 JUDGE BRENNER: Yes, Mr. Sugarman, they are,
16 so long as it isn't a question which we have determined,
17 based upon the request of the questioner, that only one
18 witness should answer. And that's the idea of having a
19 panel.

20 Otherwise, if we had done it separately, you
21 would go through one witness and then he would answer
22 all he could, and there would be questions perhaps that
23 he couldn't answer, and then we would sequentially have
24 to go to another and another. And it is much better for
25 the record as well as, I believe, based upon my

1 experience, for the questioner to get the same subject
2 matter all at the same time.

3 MR. SUGARMAN: I have no problem with that
4 basic procedure. What I do have a problem with is the
5 witnesses coaching each other.

6 JUDGE BRENNER: Well, they are up there as a
7 collective panel and they are allowed to do that.

8 MR. SUGARMAN: Well, may I know what they said
9 to each other off the record?

10 JUDGE BRENNER: No. They are allowed to
11 confer. Your witnesses are entitled to the same
12 privilege.

13 MR. SUGARMAN: I understand.

14 JUDGE BRENNER: Obviously, as a
15 cross-examiner, if you see an answer -- after they have
16 conferred you may ask the person who answered, how did
17 they know that, and he may answer, Joe told me.

18 MR. SUGARMAN: I understand. I appreciate the
19 education in the Board's procedure.

20 JUDGE BRENNER: I don't think you need that
21 much of an education. Go ahead.

22 MR. SUGARMAN: Thank you, but I appreciate it,
23 I do.

24 WITNESS MOISEEV: To answer the question, it
25 may be audible.

1 JUDGE BRENNER: Mr. Moiseev, if Mr. Sugarman
2 is not going to ask, I am going to. How do you take
3 that into account? You said you took into account the
4 fact that it was noise of a different character. How do
5 you take that sort of thing into account?

6 WITNESS MOISEEV: Well, that was in judging
7 whether it would be audible or not. You see, two noises
8 of the same character, you have to have a greater
9 increase in the noise level for it to be audible above
10 the background than if it is tonal.

11 JUDGE BRENNER: Is it correct, then, that in
12 this instance even though the two noises being compared
13 in your view have a different character, that the
14 difference in intensity, if that is the right word, was
15 not so great, notwithstanding that difference in
16 character, so as to make the sound audible?

17 WITNESS MOISEEV: It may be audible. The
18 difference in intensity is such that it may be audible.
19 The ambient sound level is not static.

20 JUDGE BRENNER: Well then, what is meant in
21 the testimony on page 15, paragraph 31?

22 All right, I'm sorry. That is within the pump
23 house. Let me strike that question.

24 All right, I have no follow-up at this time.
25 I should state for the record what my confusion was.

1 There is a statement that equipment operation within the
2 pump house will not affect ambient levels at the site
3 property line. What we're talking about now are
4 transformers outside the pump house. So I was
5 momentarily confused.

6 Mr. Sugarman?

7 BY MR. SUGARMAN: (Resuming)

8 Q Now, you testified that ambient levels will
9 not be exceeded at the site property line because of
10 equipment operation within the pump house. Are you
11 talking about the minimum noise levels in the area or
12 the maximum noise levels in the area?

13 A (WITNESS MOISEEV) We are talking about what
14 we call the background ambient, which is the LC-90.

15 Q Well, I just saw -- I don't know if the Board
16 knows this, and I don't know very much about noise, but
17 isn't it true that each two db increase in noise levels
18 doubles it?

19 A (WITNESS MOISEEV) No, that is not correct.
20 It's three db's. But that is only in terms of its own
21 energy. That is not in terms of human perception.

22 Q And is there a measurement for human
23 perception?

24 A (WITNESS MOISEEV) It is approximately ten db
25 for a doubling in sound level.

1 Q Is that true at all different db levels?

2 A (WITNESS MOISEEV) It varies somewhat with the
3 loudness of the noise and it varies somewhat with the
4 frequency of the noise.

5 Q And in the Point Pleasant area, whatever way
6 it varies, did your study not find that Point Pleasant
7 was unexpectedly a quiet area?

8 A (WITNESS MOISEEV) I wouldn't say
9 unexpectedly.

10 Q Well, let me see what word you did use.

11 Daytime -- reading from your report, which is
12 290.24, page 4, paragraph 7, "Daytime ambient levels,
13 however, are considerably below our estimates." You
14 found the daytime ambient levels, according to this,
15 were considerably below your estimate; is that correct?

16 A (WITNESS MOISEEV) The estimate was made
17 before I visited the site.

18 Q But isn't what I asked correct? Wasn't it
19 considerably below your estimate?

20 A (WITNESS MOISEEV) Yes.

21 Q Now, on table 1 you have a cumulative
22 distribution of A-weighted sound levels and you indicate
23 that at the LC-10. Is not LC-10 used for, frequently,
24 for public project planning? And is not LC-50 also used
25 frequently?

1 A (WITNESS MOISEEV) At one point. It is now
2 predominantly LEQ that is used.

3 JUDGE BRENNER: I'm sorry, excuse me. Mr.
4 Moiseev, what did you say? It is now predominantly?

5 WITNESS MOISEEV: It is now predominantly LEQ,
6 which is the equivalent sound level.

7 BY MR. SUGARMAN: (Resuming)

8 Q Now, looking at table 1 and addressing
9 ourselves to LEQ, which of those levels did you have
10 reference to in the testimony where it says at page 15,
11 question 31, "Noise generated by equipment operation
12 within the pump house will not affect ambient levels at
13 the site property line." Which of those levels?

14 A (WITNESS MOISEEV) We based our design on the
15 LC-90.

16 Q On the what?

17 A (WITNESS MOISEEV) On the LC-90, which is the
18 -- it is the sound level exceeded 90 percent of the
19 time. It is about the fourth one from the bottom
20 there.

21 JUDGE BRENNER: Mr. Moiseev, while we're
22 explaining things, why don't you explain the LEQ also.

23 WITNESS MOISEEV: Okay. The equivalent sound
24 level. I believe there is a note in the testimony that
25 gives a definition of the equivalent sound level, on

1 page 14.

2 (Pause.)

3 JUDGE BRENNER: Why don't you explain the note
4 to me.

5 WITNESS MOISEEV: Okay. Sound levels
6 typically vary. You have high periods of noise level
7 and low periods of noise level. The equivalent sound
8 level basically smooths that out on an energy basis, the
9 sound energy. So when you have a series of different
10 sound levels, the LEQ represents the single sound level
11 equivalent in energy to those sound hearings, sound
12 levels.

13 JUDGE BRENNER: But it's possible, then, that
14 at any particular given time the sound level could be
15 materially higher or lower than that LEQ?

16 WITNESS MOISEEV: That is correct.

17 JUDGE BRENNER: All right.

18 BY MR. SUGARMAN: (Resuming)

19 Q Well, again, when you say noise generated by
20 equipment operation within the pump house will not
21 affect ambient levels at the site property line, are you
22 referring to -- are you stating that they will not be
23 audible?

24 A (WITNESS MOISEEV) No. That is really not
25 what we're saying. We're saying that it is not going to

1 increase the ambient. I mean, audibility reflects on a
2 lot of different things.

3 Q But you're not saying that it will not be
4 audible at the property line?

5 A (WITNESS MOISEEV) At the pump house, you're
6 saying, the pump house noise?

7 Q Right.

8 A (WITNESS MOISEEV) We estimated that it would
9 not increase the ambient and therefore it would not be
10 audible.

11 Q Are you saying that it would not be audible at
12 the property line?

13 A (WITNESS MOISEEV) That is what I guess I'm
14 saying.

15 JUDGE BRENNER: Mr. Sugarman, I wonder if I
16 could interject. Mr. Moiseev, when you said pump house
17 noise, I don't know what you meant by that term. Do you
18 include the transformer noise in that?

19 WITNESS MOISEEV: No. The transformers are
20 outside the pump house.

21 JUDGE BRENNER: I know that, but they are
22 associated with the pump house and that is why the term
23 was a little ambiguous. Now I understand your use.

24 MR. SUGARMAN: We're distinguishing between
25 the noise from inside the pump house and the noise from

1 the transformers.

2 JUDGE BRENNER: I just distinguished between.
3 The term "pump house noise" by itself does not clearly
4 distinguish that for the record.

5 MR. SUGARMAN: I see. I appreciate that.

6 BY MR. SUGARMAN: (Resuming)

7 Q But you don't have with you any basis of your
8 calculation that it would not be audible? Did you
9 calculate that it would not be audible at the property
10 line?

11 A (WITNESS MOISEEV) We actually did the
12 calculation to the nearest residence.

13 Q Do you mean to the house?

14 A (WITNESS MOISEEV) To the house.

15 Q How about to the road?

16 A (WITNESS MOISEEV) We did it to the nearest
17 residence.

18 Q Then your testimony relates to whether it
19 would be audible at the nearest residence; is that
20 correct?

21 A (WITNESS MOISEEV) For the pump house noise as
22 we define it.

23 Q Which of the two, if there is a difference,
24 which of the two types of construction being used in the
25 pump house will confine more noise?

1 A (WITNESS MOISEEV) Pardon me?

2 Q Do you know that the proposal is to have two
3 different types of facing on the building, the walls?

4 A (WITNESS MOISEEV) Right.

5 Q Which of them will confine the noise more?

6 A (WITNESS MOISEEV) Well, the noise is going to
7 be confined by the basic structure of the pump house,
8 and the facing is extraneous.

9 Q All right. I take it you are not then
10 testifying that there will not be an increase in noise
11 levels at the road?

12 JUDGE BRENNER: Excuse me. I'm going to have
13 difficulty understanding the answer because of the
14 double negative. And I don't mean to be picky, but it
15 won't come out right. It's difficult for a witness to
16 deal with it. Can you straighten it out?

17 MR. SUGARMAN: Without the double negative, a
18 cross-examiner is lost.

19 (Laughter.)

20 (Panel of witnesses conferring.)

21 JUDGE BRENNER: Mr. Sugarman, go ahead and ask
22 the question again. I do want to get an answer.

23 MR. SUGARMAN: I'm waiting for the witnesses.

24 JUDGE BRENNER: You just proceed. They'll
25 keep talking until you ask a question.

1 BY MR. SUGARMAN: (Resuming)

2 Q Are you saying that there would be no increase
3 in noise at River Road?

4 (Panel of witnesses conferring.)

5 JUDGE BRENNER: From the equipment in the pump
6 house?

7 MR. SUGARMAN: Thank you. From the pumps and
8 the other equipment inside the pump house, and I'm
9 talking about operating all four pumps. I'm talking
10 about all four pumps and I'm talking about minimum
11 ambient levels.

12 (Panel of witnesses conferring.)

13 WITNESS MOISEEV: Yes.

14 BY MR. SUGARMAN: (Resuming)

15 Q There will be no increase in noise levels at
16 the road from the pumps, from the operation of the
17 pumps, even when all four pumps are operating and even
18 when the ambient levels are at their minimum?

19 A (WITNESS MOISEEV) That is our estimate.

20 Q That is your estimate?

21 A (WITNESS MOISEEV) Yes.

22 Q What is the general rule of thumb factor, if
23 there still is one used, for the noise attenuation over
24 distance?

25 A (WITNESS MOISEEV) It is 6 db per doubling of

1 distance.

2 JUDGE COLE: I'm sorry, I didn't hear that,
3 sir.

4 WITNESS MOISEEV: It is 6 db attenuation per
5 doubling of distance.

6 JUDGE COLE: Thank you.

7 BY MR. SUGARMAN: (Resuming)

8 Q What is the minimum of that calculation? You
9 can't make a calculation without knowing the first db
10 distance. Is it one inch? Is it one foot? Is it ten
11 feet? It's 50 feet, I thought.

12 A (WITNESS MOISEEV) It is only if you measure
13 the noise at 50 feet. If you measure the pump noise at
14 ten feet, then ten feet is the minimum you start
15 calculating your 6 db attenuation from.

16 Q But you don't know where you measured the noise
17 to be at the outside wall of the building?

18 A (WITNESS MOISEEV) We didn't measure the
19 noise.

20 Q Then how could you compute that it would be
21 zero increase at the road?

22 JUDGE BRENNER: Okay. I think I know what
23 just happened, but I want to make sure. I don't want
24 anybody to take advantage of a semantic problem and then
25 18 questions later have to straighten it out.

1 I don't think the witness likes your use of
2 the word "measurement." Is that the problem, Mr.
3 Moiseev? They can only measure something that exists,
4 as distinguished from calculating an estimate of
5 something predicted. Is that your problem, Mr.
6 Moiseev?

7 WITNESS MOISEEV: Yes.

8 JUDGE BRENNER: All right. How about if he
9 asked the question, did you calculate the noise at the
10 pump house in an estimate? What would your answer be
11 then?

12 WITNESS MOISEEV: At which point? At the
13 River Road?

14 JUDGE BRENNER: No, at the building wall.

15 WITNESS MOISEEV: We did not measure it at the
16 building wall as such, or calculate it at the building
17 wall.

18 JUDGE BRENNER: So your answer would have been
19 the same?

20 WITNESS MOISEEV: Yes.

21 JUDGE BRENNER: Maybe I was incorrect in what
22 I thought your problem was.

23 BY MR. SUGARMAN: (Resuming)

24 Q Are you saying the noise would attenuate by 6
25 db over a distance of 60 feet?

1 A (WITNESS MOISEEV) You've got to take into
2 account the transmission loss of the building.

3 Q I understand that, but I can't do that until
4 you tell me what it is. So I am trying to work backward
5 from River Road. I've got 60 feet from River Road to
6 the building, as I understand it.

7 A (WITNESS BOYER) I think that was 80 feet.

8 JUDGE BRENNER: Excuse me. I thought the
9 previous answer was 100 feet.

10 WITNESS BOYER: It's 100 from the canal. We
11 will measure it again.

12 (Pause.)

13 WITNESS BOYER: On a remeasurement, we say 75
14 feet.

15 MR. SUGARMAN: We will split the difference
16 and make it 70.

17 BY MR. SUGARMAN: (Resuming)

18 Q At 70 feet, and assuming 70 feet as the
19 relevant distance, I calculate that you would have an 18
20 db attenuation by your method.

21 A (WITNESS BOYER) Could you tell us your
22 calculational methods?

23 Q 6 db for the first 10 feet, 6 db for the next
24 20 feet, and 6 db for the next 40 feet.

25 A (WITNESS MOISEEV) Where did you get the first

1 10 feet?

2 Q You gave it to me.

3 A (WITNESS MOISEEV) I did not. I gave an
4 example. I did not give a specific measurement
5 distance.

6 A (WITNESS BOYER) If I can interpret the
7 problem here for you, he said that the decibels decrease
8 by 6 for a doubling of the distance. When you double
9 the distance, you would expect the decibels to decrease
10 by 6. You have to take a measurement or make a
11 calculation at some point.

12 You mentioned 10 feet. If you took a
13 measurement at 10 feet or made a calculation at 10 feet,
14 you would expect then the decibel level to be 6 decibels
15 less than that at a distance of 20 feet. But you have
16 to have a measurement at 10 feet.

17 Q I understand that. I am assuming that the
18 walls are not there because we don't know what the walls
19 do attenuate. Now, I realize that the walls have to be
20 taken into account, but I can't take them into account
21 because the witness doesn't have with him the
22 calculation as to the attenuation factor of the walls.
23 So I am trying to work out as if there were no walls,
24 and then we can do what we can do with the walls.

25 JUDGE BRENNER: Mr. Sugarman, this is

1 beginning to degenerate into a panel discussion. Ask
2 questions. You don't have to explain your purpose to
3 the witnesses other than to the extent they need to know
4 to answer the question.

5 MR. SUGARMAN: Thank you, sir.

6 BY MR. SUGARMAN: (Resuming)

7 Q Given that the decibel reading is 86 at the
8 pumps and assuming the distance from the pumps to the
9 road was 70 feet and that there was no walls, what would
10 you calculate the decibel reading at the road to be?

11 A (WITNESS MOISEEV) Well, that is not a
12 realistic assumption, in the first place.

13 Q I understand that.

14 A (WITNESS MOISEEV) The 86 db is measured
15 according to the standard at one meter, which is
16 approximately three feet.

17 Q Right.

18 A (WITNESS MOISEEV) So we're talking 70 divided
19 by 3. The actual formula is 20 times the logarithm of
20 the ratio of 70 divided by 3.

21 Q Can you calculate that for us?

22 A (WITNESS MOISEEV) I can't take logs in my
23 head.

24 JUDGE BRENNER: Mr. Moiseev, before you do
25 that -- but I will give you an opportunity to do that in

1 a moment -- why don't you tell us what you think is
2 unrealistic about the question, so I can understand the
3 materiality.

4 WITNESS MOISEEV: You would not have these
5 pumps in a populated area without some kind of
6 sound-attenuating structure or some kind of protective
7 structure, just period.

8 JUDGE BRENNER: And now I will give you an
9 opportunity to answer the question.

10 WITNESS BOYER: I just made a rough
11 calculation. If it was 86 at the pumps, one meter from
12 the pumps, at five doubling distances, which would bring
13 you out to 48 feet, that would be 30 db's less, or at
14 56. And the next doubling distance would take it to 96
15 feet, and we're approximately halfway between that. So
16 it would be roughly 53 decibels.

17 JUDGE BRENNER: Let's wait a moment, because
18 Mr. Moiseev is, I observe, calculating it on a machine.

19 WITNESS MOISEEV: It would be approximately
20 27, a 27 db reduction.

21 BY MR. SUGARMAN: (Resuming)

22 Q And that's 59 db?

23 A (WITNESS MOISEEV) That is correct.

24 Q And the LC-90 in the area is 45. At the three
25 time frames that you mentioned it, 4 hours, 8 hours, and

1 12 hours, you got 45, 44 and 45 db in Table 1?

2 A (WITNESS MOISEEV) That's right.

3 Q And that was the standard that you designed
4 to?

5 A (WITNESS MOISEEV) Yes.

6 Q And therefore the building wall was expected
7 to accomplish that?

8 A (WITNESS MOISEEV) It is a matter of what 59
9 minus 45 is, 14 db.

10 (Pause.)

11 Q The question is, is the building designed to
12 accomplish that?

13 A (WITNESS MOISEEV) Yes.

14 Q But you don't have the calculations?

15 A (WITNESS MOISEEV) As I stated before --

16 JUDGE BRENNER: I didn't hear your answer.

17 WITNESS MOISEEV: As I stated before, I don't
18 have the calculation with me.

19 BY MR. SUGARMAN: (Resuming)

20 Q And just so we are clear, the figure 59 db
21 without the walls, 44 ambient, granting that there are
22 walls and also we don't know how the attenuation
23 capability of the walls was determined and what it is,
24 it is approximately a quadrupling or a quintupling of
25 noise levels?

1 JUDGE BRENNER: Mr. Sugarman, they didn't hear
2 your last question. Why don't you ask it in the form of
3 a question and stop making statements. I do want to get
4 their view on it. Ask them, is it correct that, and
5 then give them the statement.

6 BY MR. SUGARMAN: (Resuming)

7 Q Is it correct that without the walls the
8 increase from 44, which is the LC-50, or 45 to 59 would
9 be something like a quintupling of the noise levels in
10 the area?

11 A (WITNESS MOISEEV) Quintupling is incorrect.

12 Q Which way would you characterize it, if each
13 three db is doubling?

14 A (WITNESS MOISEEV) No. As we established
15 before, three db is a doubling of sound energy and not
16 of human perception.

17 Q I'm talking about sound energy. Quintupling is
18 five times, and 44 to 59 is 15.

19 A (WITNESS MOISEEV) On the basis of sound
20 energy, that is approximately correct.

21 JUDGE BRENNER: Okay, now explain why it is
22 not correct in your view to draw the inference that that
23 is also a quintupling of perceived hearing.

24 WITNESS MOISEEV: A human normally in the
25 field can barely hear a three db increase in noise

1 level. The basis for a doubling of sound level for
2 human perception is approximately ten db.

3 BY MR. SUGARMAN: (Resuming)

4 Q You said that before, but then you said that
5 it can vary up or down according to other factors.

6 A (WITNESS MOISEEV) Yes. But as a general rule
7 of thumb ten db is used.

8 Q I understand that, but you said it can vary as
9 to factors and I was going to get to that. What is the
10 difference between the sound -- or have you calculated
11 the -- or have you determined the octave band for the
12 nine active bands of the existing noise levels. You say
13 in your report that you made measurements in nine octave
14 bands from 31.5 hertz to 8,000 hertz.

15 A (WITNESS MOISEEV) Right.

16 Q And do you have those numbers available?

17 A (WITNESS MOISEEV) They are on the next page
18 of that report. Figure 1 is the octave band levels that
19 I measured.

20 JUDGE BRENNER: Mr. Moiseev, excuse me. Could
21 you give us the page for the record, and then repeat
22 what you said, because I didn't hear your last phrase.

23 WITNESS MOISEEV: It's the page after Table
24 1.

25 MR. SUGARMAN: It's figure 1, also identified

1 as sheet 1 of 1.

2 JUDGE BRENNER: I didn't hear -- appropriately
3 enough for this subject, we're having a lot of
4 difficulty -- your statement associated with that page.

5 WITNESS MOISEEV: These are the octave bands
6 and pressure levels that I measured at the site.

7 BY MR. SUGARMAN: (Resuming)

8 Q This is -- what octave band would the pumps
9 operate at?

10 A (WITNESS MOISEEV) Well, they generate noise
11 throughout the frequency spectra.

12 Q And therefore where would the greatest level
13 of increase occur in octave band increase from the
14 operation of the pumps?

15 A (WITNESS MOISEEV) Well, I do not have the
16 figures with me.

17 Q Do you recall anything about them, whether it
18 be at the high end or the low end?

19 A (WITNESS MOISEEV) I recall that the peak
20 frequency was approximately 500 hertz, but I cannot be
21 more specific.

22 Q What is the frequency range at which human
23 perception is the highest, normally?

24 A (WITNESS MOISEEV) Between 1,000 and 4,000.

25 Q And is it high at 500?

1 A (WITNESS MOISEEV) 500 is in the speech range
2 and human hearing is fairly good there.

3 Q And I see that the highest octave frequency in
4 Figure 1 is at the frequency band of 65.

5 A (WITNESS MOISEEV) 63.

6 Q 63. Is that below the normal speech range?

7 A (WITNESS MOISEEV) Yes.

8 Q Is that an area of high sensitivity for human
9 ears?

10 A (WITNESS MOISEEV) No, it is not.

11 Q So if you take the areas that are of high
12 human sensitivity and you look at the pump action at
13 those levels, it will actually -- the pump noise levels
14 will occur at levels to which the human ear is
15 relatively sensitive, is that not correct?

16 A (WITNESS MOISEEV) Yes.

17 Q And yet, when you say -- and I think you said
18 it, and I don't want to get repetitive, but I think you
19 said that there will be no acoustical perception of the
20 pumps at the road --

21 A (WITNESS MOISEEV) That is not exactly how I
22 said it, but I said there would be no -- that the pumps
23 in my estimation would not be audible.

24 Q Is there a difference between acoustical
25 perception and audibility?

1 A (WITNESS MOISEEV) There can be.

2 Q What would the difference be?

3 A (WITNESS MOISEEV) If you are talking about an
4 instrument, an instrument might be able to detect it.

5 JUDGE BRENNER: Mr. Sugarman, I want to back
6 up three questions, because I didn't understand in the
7 context of both your question and the witness' answer
8 what was meant by, the human ear would be sensitive.
9 And maybe you and the witness understood it, but I
10 didn't.

11 Mr. Moiseev, when you said yes to that
12 question, did you mean sensitive in the sense that there
13 would be discomfort or did you mean sensitive in the
14 sense that it would be well within the perceived range?

15 WITNESS MOISEEV: Sensitive in the fact that
16 it would be able to hear it, that you would be able to
17 hear it. It is in the sensitive part of the perceived
18 range, not that it would be painful or irritating or
19 whatever.

20 BY MR. SUGARMAN: (Resuming)

21 Q Have you seen Mr. Policastro's testimony?

22 A (WITNESS MOISEEV) I have reviewed it
23 briefly.

24 Q Do you see that he says that the building
25 structure appears to have sufficient attenuation to

1 reduce pump and fan noises to insignificant levels?

2 A (WITNESS MOISEEV) I believe I recall that
3 statement.

4 Q You do believe you recall it?

5 A (WITNESS MOISEEV) That is what I said.

6 Q Yes, do you agree with that?

7 A (WITNESS MOISEEV) Yes.

8 Q Have you provided Mr. Policastro, or have you
9 been provided -- strike that.

10 Have you been provided with final plans and
11 specifications for the pump station?

12 A (WITNESS MOISEEV) No, I have not.

13 Q When you are so provided, will you be able to
14 make a calculation, a better calculation as to the
15 attenuation impacts of the pump house construction?

16 A (WITNESS MOISEEV) I don't believe it will
17 improve the calculations I have already made.

18 Q You say you agree with Mr. Policastro that the
19 structure will reduce pump and fan noises to
20 insignificant levels. Do you understand what he means
21 by insignificant?

22 A (WITNESS MOISEEV) I take it to mean at or
23 below ambient.

24 Q Again, I have a problem with understanding
25 some of your answers. You indicated that at or below

1 ambient depends upon the range or the types of noise
2 involved, isn't that correct?

3 A (WITNESS MOISEEV) No, I indicated that
4 audibility of a noise that is at or below ambient
5 depends on the character of the noise and the character
6 of the ambient noise.

7 Q And is that character represented by an octave
8 band and center frequencies?

9 A (WITNESS MOISEEV) Not entirely.

10 Q Partly?

11 A (WITNESS MOISEEV) Partly.

12 Q And if the transformer -- strike that.

13 If the pumps will operate across the octave
14 band center, across the whole octave band frequencies,
15 are you saying that there is no octave band frequency at
16 which they will increase the ambient levels, or are you
17 saying that they may increase it but not audibly?

18 A (WITNESS MOISEEV) I can categorically state
19 -- agree with the second part of that question.

20 Q And the first?

21 A (WITNESS MOISEEV) The first, I cannot recall
22 specifically whether it would not increase the ambient
23 at any point.

24 Q Do you have the calculation of what the impact
25 would be, the results of your calculation?

1 A (WITNESS MOISEEV) Not with me.

2 JUDGE BRENNER: Which result were you talking
3 about, Mr. Sugarman?

4 MR. SUGARMAN: The calculation that led him to
5 the conclusion that there would not be an increase in
6 the audibility, but that he cannot say whether there
7 would be an increase in the ambient level at all
8 frequencies.

9 JUDGE BRENNER: Did you understand that to be
10 the question, Mr. Moiseev?

11 WITNESS MOISEEV: Yes.

12 JUDGE BRENNER: All right. The question was,
13 do you have the result of that calculation, not do you
14 have the calculation here. You are saying you do not
15 recall the result of the calculation?

16 WITNESS MOISEEV: No, I said I don't have it
17 with me.

18 JUDGE BRENNER: The question was, do you have
19 the result of the calculation, as I recall.

20 MR. SUGARMAN: I think, if I may, the witness
21 and I understood, and I'm sorry you didn't. Let me
22 explain.

23 JUDGE BRENNER: Wait a minute. I want to get
24 an answer to my question, even if it wasn't your
25 question.

1 WITNESS MOISEEV: Your question is which one,
2 now?

3 JUDGE BRENNER: You don't have the calculation
4 here, for some reason that I cannot fathom. Beyond
5 that, do you recall what the conclusion of the
6 calculation was numerically?

7 WITNESS MOISEEV: Not the specific numbers,
8 no.

9 JUDGE BRENNER: All right.

10 BY MR. SUGARMAN: (Resuming)

11 Q Now, the emergency generator was dropped from
12 the plans, as I understand it, this spring. Let me ask
13 any of the witness panel, is there any intention to have
14 any backup source of energy other than a single feed to
15 the pump station? The point being, what will the noise
16 effects of that be?

17 (Panel of witnesses conferring.)

18 WITNESS BOYER: What was the last part of that
19 question?

20 BY MR. SUGARMAN: (Resuming)

21 Q Is there any plan to have any secondary source
22 of power to the pump station?

23 A (WITNESS BOYER) Yes, we have that 4-KV local
24 service.

25 Q I mean for operating the pumps.

1 A (WITNESS BOYER) There are two lines coming
2 down to supply the service.

3 Q Let me back up. The emergency generator was
4 for what purpose?

5 A (WITNESS BOYER) The emergency generators are
6 no longer included.

7 Q I know, but what purpose were they to serve?

8 A (WITNESS BOYER) Not to run the pumps, but to
9 just provide emergency power for the building purposes.

10 Q Will there be any source of emergency power
11 for the building purposes?

12 A (WITNESS BOYER) We have the local service
13 which will provide that.

14 Q Well, I take it that the emergency generators
15 were originally planned as additional to the local
16 service?

17 A (WITNESS BOYER) Well, that was when it was
18 not thoroughly analyzed to look at the various sources
19 of power and the diesel generators were proposed to
20 provide a backup source of power. When we re-analyzed
21 the electrical power feed into the area and the
22 capabilities of crews to restore power and the need for
23 emergency power, it was decided that diesel generators
24 were not needed.

25 Q Well, I don't want to get into that. That is

1 not the subject of this. The question of whether there
2 is adequate power to the station is not directly a
3 subject of this proceeding. I intend to raise it in
4 another context. But I am only trying to get into it to
5 the extent that it relates to noise in this proceeding.

6 In reading the PECO documents, it seemed to me
7 that there was a conclusion that there would be, because
8 of the time to discover the location or the potential
9 time to discover the location of an outage on the feed
10 and the time to, the maximum time to correct it, that
11 there would be a potential down time in excess of the 24
12 hours which was the recommended maximum.

13 And so my question is, have your new
14 calculations caused you to conclude that you can in all
15 events repair an outage in less than 24 hours, or have
16 you accepted a lower level of performance, and is it not
17 possible that that will change and you will need some
18 new source of emergency generation? And I want you
19 please to bear in mind, I understand that the engineers
20 recommended that there be that emergency generator.

21 JUDGE BRENNER: Mr. Sugarman, wait a minute.
22 Mr. Conner, you don't have to raise your hand to
23 object. I told you that before.

24 MR. CONNER: I didn't understand that before,
25 because I have been trying to get your attention three

1 or four times.

2 JUDGE BRENNER: Well, I saw you, but unless
3 you want to object I don't want to interrupt the
4 cross-examination.

5 MR. CONNER: We do object to this question as
6 being wholly beyond the contention and certainly not
7 related to the sound. By the formation of the question
8 itself, it does not relate to sound.

9 JUDGE BRENNER: The objection is overruled.
10 It was overly long, but by the time he got to where he
11 wanted to go, presumably, in his very last question, it
12 is pertinent. The question is, do we have assurance
13 that the presently proposed equipment upon which we are
14 basing the testimony as to noise from the pump house
15 will be the equipment, or whether as soon as this record
16 closes or some time in the future are you going to add
17 new machinery.

18 WITNESS BOYER: We will not add a diesel
19 generator or other equipment.

20 BY MR. SUGARMAN: (Resuming)

21 Q You're saying you're convinced there will
22 never be a need for any emergency backup to the pump
23 house?

24 A (WITNESS BOYER) That is correct.

25 Q Now, I would like to test that, just to this

1 extent. Is that because you decided that you can repair
2 within 24 hours or is it because you decided you don't
3 need 24 hour capability?

4 JUDGE BRENNER: Mr. Sugarman, now you're
5 beyond the subject, regardless what the basis was for
6 their conclusion and even if they are totally wrong in
7 their conclusion. You have now got the answer th they
8 are not going to put it in. If they put it in some day,
9 they are going to have a problem with the state of this
10 record.

11 MR. SUGARMAN: I understand that, sir.

12 JUDGE BRENNER: All right. Proceed.

13 (Pause.)

14 JUDGE BRENNER: To make express, Mr. Sugarman,
15 the reason for my jumping in on my own is, as you know,
16 questions going to the basis for that kind of
17 reliability analysis can become very lengthy, and given
18 the remoteness of the subject I wanted to cut you off.

19 MR. SUGARMAN: I understand your ruling.

20 JUDGE BRENNER: Mr. Sugarman, like most things
21 in life time estimates are just estimates. But we've
22 been going about an hour. I wonder if I might, simply
23 as an inquiry and not to force you to stop, about how
24 much more do you have?

25 MR. SUGARMAN: I'm almost finished.

1 JUDGE BRENNER: I would like to note one thing
2 about the efficiency of your examination, in the hopes
3 that it might assist you because I think it might assist
4 the record. Throughout you've asked a lot of questions
5 as to perceived sound levels at certain points, in some
6 cases as compared to the ambient. And we are very
7 interested in that.

8 But you've often restricted your questions to
9 the equipment in the pump house. I don't know why you
10 did that. We are interested in the total noise
11 emanating from around the pump house, and in fact
12 according to Dr. Policastro's testimony that which
13 you've excluded from some of your questions, albeit not
14 totally, may be the item of most effect.

15 MR. SUGARMAN: I do intend to get to that.
16 The reason that I've been concentrating on the pump
17 house is because Dr. Policastro's testimony doesn't
18 bring that out.

19 JUDGE BRENNER: All right. My comment is that
20 it would have been more efficient to talk about the
21 total noise at any given point, at that point. But you
22 are entitled to proceed the way you want, within
23 reason.

24 MR. SUGARMAN: I will be guided by your
25 thoughts on that. Thank you.

1 BY MR. SUGARMAN: (Resuming)

2 Q What is the final page of your report? What
3 did that represent, Mr. Moiseev?

4 A (WITNESS MOISEEV) That is a plot of the
5 statistical sound levels given in Table 1.

6 Q Okay. Now, have you made any -- have you
7 determined what the cumulative increase in the noise
8 levels at the property line will be from the pump
9 station? I understand your testimony about audibility
10 and insignificant, but you also indicated that there may
11 be increases in ambient noise levels at some
12 frequencies, and you don't have the calculations.

13 What I'm asking you is, have you calculated
14 now the cumulative increase in ambient noise levels at
15 all frequencies due to the pump house operation and the
16 transformers combined?

17 A (WITNESS MOISEEV) Yes.

18 Q And what does that show?

19 A (WITNESS MOISEEV) That shows that --

20 Q At the property line, now.

21 A (WITNESS MOISEEV) Which property line?

22 Q The nearest property line.

23 A (WITNESS MOISEEV) That shows that the pump
24 house noise is insignificant, the transformer noise is
25 of primary concern, and it may or may not be audible.

1 Q But have you calculated them cumulatively?

2 A (WITNESS MOISEEV) Yes.

3 Q And what does that show?

4 A (WITNESS MOISEEV) It shows that the
5 transformer noise is the predominant and it may or may
6 not be audible.

7 Q Did they not have a cumulative effect, the two
8 of them together? You keep answering one or the other.
9 I'm asking cumulative, the two together, the
10 transformers operating plus the pumps operating.

11 A (WITNESS MOISEEV) The pump noise at the
12 nearest property line is low enough so that the
13 transformer stands alone.

14 Q Even in terms of acoustical measurements?

15 A (WITNESS MOISEEV) Yes.

16 Q I'm afraid I don't understand that.

17 A (WITNESS MOISEEV) If you have one noise that
18 --

19 JUDGE BRENNER: Excuse me. You've got to stop
20 interrupting each other. Ask your question.

21 BY MR. SUGARMAN: (Resuming)

22 Q If you have an ambient noise level of 44 at
23 the 1,000 frequency band and you add, let's say 10 -- 10
24 is a high number. Let's say you add one db at that
25 frequency from the pump house.

1 A (WITNESS MOISEEV) There would be no
2 addition.

3 Q To audibility?

4 A (WITNESS MOISEEV) No addition, period, to
5 sound level. It is not additive in an additional sort
6 of way. It is logarithmic addition, so that two 10-db
7 noise levels do not add up to 20. They add up to 13.

8 Q Well, let's say we add five from the pump
9 house.

10 JUDGE COLE: Excuse me. Mr. Sugarman, when
11 you say "add five" are you saying adding five decibels
12 above what the ambient would be? A noise source of say
13 44 is the ambient and you say you are going to add five,
14 you are going to bring in a sound source of 49?

15 MR. SUGARMAN: Yes, exactly.

16 JUDGE COLE: And you're going to be standing
17 there and say, that 44 is what was before and now
18 there's no noise; now there's a noise source that
19 measured here would be 49, and you're going to add those
20 two. What would you get.

21 MR. SUGARMAN: Thank you, sir.

22 WITNESS MOISEEV: You will get approximately
23 51.

24 BY MR. SUGARMAN: (Resuming)

25 Q I beg your pardon?

1 A (WITNESS MOISEEV) You would get approximately
2 51.

3 Q Now, let's say you add the transformers at,
4 let's say, 60. Then what do you have?

5 A (WITNESS MOISEEV) You're adding 60 to the
6 51?

7 Q Yes.

8 A (WITNESS MOISEEV) You will get really 60. If
9 you get in the neighborhood of 10 db's below, there is
10 no real addition. If one sound level is 10 db less than
11 the other, there is no real addition in sound level.

12 Q Well, what would the sound level of the
13 generator be at the property line?

14 A (WITNESS MOISEEV) There is no generator.

15 Q I don't mean generator. I mean transformers.

16 A (WITNESS MOISEEV) In terms of a weighted
17 sound level, the number that I recall from the
18 transformer is approximately 36 or 38 dba.

19 Q At what distance?

20 A (WITNESS MOISEEV) This is at the property
21 line.

22 JUDGE BRENNER: I'm sorry, I didn't hear you.

23 WITNESS MOISEEV: At the property line.

24 That's 36 to 38 dba at the property line.

25 JUDGE BRENNER: Why did you say your

1 recollection? You dont have that data here?

2 (Pause.)

3 WITNESS MOISEEV: Okay, it's 36 dba with a 10
4 db below NEMA standards.

5 JUDGE COLE: What was the last part of your
6 answer?

7 WITNESS MOISEEV: It's 36 dba at the property
8 line, with the 57 dba transformers.

9 WITNESS BOYER: That is the low noise level
10 transformers, which are 10 dba below the standard
11 transformer.

12 JUDGE COLE: That is what you call the quiet
13 transformers?

14 WITNESS BOYER: Yes. These are customary used
15 at areas where noise is of concern or consideration, and
16 approximately one-third of the transformers that we
17 install around communities to supply local power are low
18 noise level transformers.

19 JUDGE COLE: Is this what you're planning to
20 be using in this instance, sir?

21 WITNESS BOYER: Yes.

22 JUDGE COLE: Thank you.

23 BY MR. SUGARMAN: (Resuming)

24 Q Why is it that Mr. Policastro was of the
25 understanding that you were going to use unquieted

1 transformers?

2 JUDGE BRENNER: Mr. Sugarman, he can't answer
3 a question like that.

4 BY MR. SUGARMAN: (Resuming)

5 Q Well, let me ask it this way: Is that a
6 recent decision?

7 A (WITNESS BOYER) Yes. In the initial
8 specifications, standard transformers were indicated.
9 We, Philadelphia Electric, had not had a chance to
10 review and Mr. Bourquard had not reviewed thoroughly the
11 effect of the noise, potential noise source from the
12 transformers.

13 When we addressed that question, we saw that
14 we should use and specify low noise level transformers.
15 So we have modified the specifications to include low
16 noise level transformers.

17 Q Can you show me where in the specifications
18 that appears?

19 A (WITNESS BOYER) It is not in there yet. It
20 will be a change in the specifications.

21 Q Were your previous answers addressed, where
22 you indicated that the transformers may or may not
23 create a noise problem at the property line or create a
24 noise at the property line, speaking in general terms,
25 were they related to the present transformer plans or to

1 the earlier plans?

2 A (WITNESS MOISEEV) To the proposed
3 specification.

4 JUDGE BRENNER: Mr. Sugarman, I had planned on
5 taking a mid-morning break at about this time. But if
6 you only have a little bit left I won't interrupt you.
7 What do you think?

8 MR. SUGARMAN: I'm almost finished. I just
9 have one more area.

10 JUDGE BRENNER: Well, about how long?

11 MR. SUGARMAN: It's short, I think.

12 JUDGE BRENNER: Ten minutes?

13 MR. SUGARMAN: Yes. Yes, sir.

14 BY MR. SUGARMAN: (Resuming)

15 Q You indicate that there is a principal local
16 noise source of traffic, and the area is also subjected
17 to noises from motorboats on the river and blasting
18 operations conducted in a nearby quarry. I take it that
19 those sources, to the extent that they existed on the
20 days of your visits, were taken into account in your
21 report; is that correct?

22 A (WITNESS MOISEEV) In the cumulative
23 measurements, yes.

24 Q So that, for example, in your Table 1 you have
25 apparently one reading of 94 db.

1 A (WITNESS MOISEEV) Right, at least one. We
2 have no way of knowing whether that 94 occurred more
3 than once.

4 Q I understand that. But less than one-tenth of
5 one percent of the time; is that correct?

6 A (WITNESS MOISEEV) Yes.

7 JUDGE BRENNER: Mr. Sugarman, excuse me.
8 Which page are you reading from?

9 MR. SUGARMAN: His Table 1 of his report,
10 which follows page 5, sir.

11 JUDGE BRENNER: Thank you.

12 BY MR. SUGARMAN: (Resuming)

13 Q You indicate that the sound level -- just so
14 we understand what the effect of these things is in
15 Point Pleasant, you indicate that the sound level at
16 one-tenth of one percent of the time is 67 at the
17 highest point?

18 A (WITNESS MOISEEV) The L.1, the sound level
19 exceeded one-tenth of a percent of the time, right.

20 Q And so when the testimony talks about the
21 principal local noise source is traffic, the area is
22 also subjected to noise from motorboats and blasting
23 operations, what we would have to -- what you would say
24 about that is that most of the time, let's say 99.9
25 percent of the time, the decibel reading is only as high

1 as 67 and that only 10 percent of the time does it go
2 above 55; is that correct?

3 A (WITNESS MOISEEV) For that specific period,
4 yes.

5 Q So there again, would you agree that from your
6 study Point Pleasant is an area where noise levels are
7 extremely low? And I'm looking at page 4 of your
8 study: "The measured daytime levels are extremely
9 low."

10 A (WITNESS MOISEEV) That was referring to the
11 LC-90 noise levels, yes.

12 Q But would you agree that the measured daytime
13 levels are extremely low across the board?

14 A (WITNESS MOISEEV) Not across the board,
15 because you've got one that is 94.

16 Q I mean relative to others, as a relative
17 statement, relative to others?

18 A (WITNESS MOISEEV) They are extremely low, say
19 to New York City.

20 Q Well, sir, this is your --

21 A (WITNESS MOISEEV) But compared to the middle
22 of the desert, they are a little higher.

23 Q But do you stand by the statement in your
24 report, "The measured daytime levels are extremely
25 low"?

1 A (WITNESS MOISEEV) That refers to the octave
2 band sound levels, which were an attempt to approximate
3 the LC-90 noise levels.

4 Q So you don't stand by the statement?

5 A (WITNESS MOISEEV) I stand by it, but it is
6 not as broad as you are making it out to be.

7 Q I'm only reading it, sir. I'm asking you if
8 you will stand by it without qualification, and your
9 answer is no, you won't.

10 MR. CONNER: Objection. Asked and answered,
11 and argumentative.

12 JUDGE BRENNER: Objection sustained.

13 BY MR. SUGARMAN: (Resuming)

14 Q Then let me explore what it is, the
15 limitations on your statement that you are now saying I
16 should have understood. What is it and where do I find
17 in here that there is a basis for qualifying that
18 statement?

19 A (WITNESS MOISEEV) It is referring to octave
20 band sound pressure levels given in Figure 2. It says
21 these levels are extremely low.

22 Q Figure 2?

23 A (WITNESS MOISEEV) Those are the octave
24 pressure band sound levels.

25 Q I don't have a Figure 2 in my copy.

1 A (WITNESS MOISEEV) They are misnumbered. The
2 Figure 2 that I'm referring to is the octave band sound
3 pressure levels, which occur in my copy as -- apparently
4 they are both labeled Figure 1, but Figure 2 is the
5 octave band pressure levels.

6 Q Well, is it sheet 1 of -- they are both sheet
7 1 of 1?

8 A (WITNESS MOISEEV) It is this one
9 (Indicating).

10 Q Let's understand. It is the one entitled
11 "Octave Band Center Frequency in Cycles Per Second"?

12 A (WITNESS MOISEEV) Well, the actual title is
13 "Ambient Octave Band Sound Pressure Levels," at the
14 bottom of the page.

15 Q I see. Well, what is the difference between
16 saying what you are saying and saying measured daytime
17 levels are extremely low?

18 A (WITNESS MOISEEV) That would be if you take
19 it in the broader sense, you were talking about all of
20 the sound levels, including the LC-10 and the maximums.

21 Q So what you were talking about is the norm?

22 A (WITNESS MOISEEV) Is the LC-90's.

23 Q In other words, the noise levels that are
24 exceeded only 10 percent of the time?

25 A (WITNESS MOISEEV) They are exceeded 90

1 percent of the time.

2 Q I'm sorry, that are exceeded 90 percent of the
3 time.

4 A (WITNESS MOISEEV) That is correct.

5 Q Well, would you make the same statement about
6 the LC-10?

7 A (WITNESS MOISEEV) You can make that statement
8 about the nighttime measurements, which is the second
9 column.

10 Q And what statement would you make about the
11 first and third columns at LC-10?

12 A (WITNESS MOISEEV) That for a suburban area
13 this is normal or average.

14 Q For a suburban or for rural areas?

15 A (WITNESS MOISEEV) Suburban, rural. I'm not
16 differentiating between the two.

17 Q Well, what did you originally estimate the
18 daytime levels to be?

19 A (WITNESS MOISEEV) I estimated, to the best of
20 my recollection, for approximately 50 dba.

21 Q You estimated 50 dba for the LC-90?

22 A (WITNESS MOISEEV) For the LC-90's.

23 Q What did you estimate for the LC-10?

24 A (WITNESS MOISEEV) I did not estimate an
25 LC-10.

1 MR. SUGARMAN: I have no further questions.

2 Thank you.

3 JUDGE BRENNER: We will take our break before
4 the Staff's examination.

5 I don't have any cross plan from the Staff.
6 As I recall, no cross plan was filed for any Applicant
7 testimony; is that correct?

8 MS. HODGDON: That is correct. I would,
9 however, like to ask five or six questions.

10 JUDGE BRENNER: We will allow you to ask
11 follow-up questions based upon the examination.

12 MS. HODGDON: There is no plan, though.

13 JUDGE BRENNER: Let's take a 15-minute break,
14 until 11:05 promptly on the hearing room clock.

15 (At 10:50 a.m., the hearing was recessed, to
16 reconvene at 11:05 a.m. the same day.)

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1 JUDGE BRENNER: All right. Staff.

2 BY MS. HODGDON:

3 Q On page 14 of your testimony, on paragraph 28
4 it is stated the equivalent A weighted sound level range
5 between 46 db to 56 db.

6 Now, you've characterized that in your report
7 as extremely low, and my question is a comparative one:
8 compared with what?

9 A (WITNESS MOISEEV) As we discussed in the last
10 question with Mr. Sugarman, I was not referring to the
11 equivalent sound level. I was referring to the octave
12 band sound pressure levels.

13 Q That whole discussion. But my question is
14 still compared with what?

15 A (WITNESS MOISEEV) Compared to noise levels,
16 general noise levels that you would find in a village
17 community, a suburban-rural community, as again we
18 discussed earlier.

19 JUDGE BRENNER: Mr. Moiseev, I know your
20 expertise is in acoustics and engineering and not in
21 land use planning, but in my subjective mind there is a
22 big difference between rural and suburban and you keep
23 equating them.

24 MS. HODGDON: He is from New York.

25 (Laughter.)

1 JUDGE BRENNER: Excuse me, Ms. Hodgdon. I'm
2 inquiring of the witness.

3 Do you see any distinction? I don't
4 understand your frames of reference.

5 WITNESS MOISEEV: Okay. For purposes of noise
6 classification it is basically dense urban, urban, and
7 then you get into the suburban-rural category.

8 JUDGE BRENNER: And it is one category?

9 WITNESS MOISEEV: It is sometimes
10 differentiated and sometimes not.

11 JUDGE BRENNER: You have visited Point
12 Pleasant, is that correct?

13 WITNESS MOISEEV: Yes.

14 JUDGE BRENNER: Do you consider that suburban
15 or rural, or are you incapable of distinguishing?

16 WITNESS MOISEEV: It is sort of in between. A
17 rural area is, in my opinion, is an area with farmhouses
18 and farms as opposed to a little village, which is why I
19 am sort of putting it together with suburban. There is
20 quite a bit of traffic that goes along that river road.

21 JUDGE BRENNER: Continue.

22 BY MS. HODGDON: (Resuming)

23 Q Yes. Your Figure 1 in which you have ambient
24 octave --

25 A (WITNESS MOISEEV) That has been identified

1 further as really being Figure 2.

2 Q Which is a graph. Can you tell me what noises
3 are represented on here, what noise sources?

4 A (WITNESS MOISEEV) Well, that is -- that was
5 taken in watching the meter and waiting until there are
6 no nearby transient noise sources; so that is
7 represented by river noises and just the wind in the
8 trees.

9 Q Can you differentiate them from this figure?
10 Can you tell me which is river and which is wind in the
11 trees?

12 A (WITNESS MOISEEV) River is going to be
13 primarily the peaks and the upper frequencies.

14 Q The river is the noisiest noise source here
15 then as you measured it?

16 JUDGE BRENNER: Ms. Hodgdon, I'm having
17 difficulty understanding you. The acoustics are very
18 bad here. You have to speak much more slowly.

19 BY MS. HODGDON: (Resuming)

20 Q The river then is the noisiest source here, or
21 is it the road?

22 A (WITNESS MOISEEV) The noisiest source is
23 vehicles on the road, but that is an attempt to measure
24 the background ambient noise levels, the L 's, which
25 would not be with cars on the road. 90

1 Q When you measured, you measured when there
2 were no cars on the road, is that correct?

3 A (WITNESS MOISEEV) I measured between cars
4 passing by, yes.

5 Q So cars on the road are not included here?

6 A (WITNESS MOISEEV) In this octave band
7 analysis that's correct.

8 JUDGE BRENNER: Hold it. You're speaking over
9 each other now. It is not a conversation, it's question
10 and answer, or else the Reporter has a great deal of
11 difficulty.

12 BY MS. HODGDON: (Resuming)

13 Q Did you make the same kind of analysis for
14 nighttime sounds?

15 A (WITNESS MOISEEV) No. As the statistical
16 sound level measurements showed, there is very little
17 difference between the background ambient at night and
18 during the day.

19 Q And because -- let me see if I get this right
20 -- because you excluded the contribution of transient
21 noise, nighttime and daytime were felt to be the same
22 and did not need to be measured?

23 A (WITNESS MOISEEV) Right.

24 (Counsel for NRC staff conferring.)

25 Q Did you have to wait a long time in order to

1 get the background transportation noise out in the
2 daytime?

3 A (WITNESS MOISEEV) Yes. I waited, watched the
4 meter, and waited for the lowest point on the meter.

5 Q Would it have been appropriate to include it?

6 A (WITNESS MOISEEV) Not for the purposes for
7 which I was making this measurement, which was to
8 measure the background, the residual background ambient
9 noise level.

10 Q You are telling me that it is a realistic
11 measure for the purpose of which you wanted it which was?

12 A (WITNESS MOISEEV) As a basis for designing
13 noise control measures.

14 JUDGE BRENNER: As a basis for designing what?

15 WITNESS MOISEEV: Noise control measures.

16 JUDGE BRENNER: Thank you.

17 BY MS. HODGDON: (Resuming)

18 Q Now, I want to skip to the transformers.

19 JUDGE BRENNER: Ms. Hodgdon, I wonder if I
20 might back up to the subject you just had.

21 I think the real question, Mr. Moiseev, is why
22 does your definition of background ambient noise not
23 include traffic noise that would normally occur?

24 WITNESS MOISEEV: What I am trying to
25 represent by the L noise level is the deep

1 background. To further clarify it, noise level, the
2 noise level that you hear when you are just standing
3 there and there aren't any cars whizzing by, that would
4 be the lowest noise level that you could observe.

5 BY MS. HODGDON: (Resuming)

6 Q It would be lower than a realistic noise
7 measure made for some other purpose?

8 A (WITNESS MOISEEV) Well, it was a realistic
9 noise measure, but it would lower than most other, than
10 the majority of other noise measurements.

11 Q If I wanted to know how noisy it was at the
12 site perimeter, including the traffic, that is not what
13 I would have done, is that correct, or that was not the
14 kind of measure? I would measure the trucks?

15 A (WITNESS MOISEEV) There are various ways of
16 doing it. You can go and try and get peak noise levels
17 at the site, or you can do a statistical octave band
18 analysis which would require frequency analysis.

19 Q In your report you say that the estimates
20 turned out to be very conservative for nighttime noise,
21 so you were interested in getting the lowest realistic
22 number because that would be what you would have to meet
23 with your noise control program.

24 A (WITNESS MOISEEV) Yes.

25 Q May I turn now to the transformers?

1 JUDGE BRENNER: Please.

2 BY MS. HODGDON: (Resuming)

3 Q You've said that the transformers and related
4 facilities will be selected to assure -- I mean -- I am
5 in paragraph 31 -- that the ambient noise levels will
6 not be exceeded at the site property line in the
7 direction of the existing residence.

8 Will there be audible tones at those
9 residences?

10 A (WITNESS MOISEEV) At the residences? No.

11 Q How do you know?

12 A (WITNESS MOISEEV) It is the further distance
13 extrapolation from the property line. The newest
14 residence is somewhat further from the transformers and
15 the property line. At the property line it may or may
16 not be audible.

17 Q Have you done calculations to determine that?
18 I mean have you done calculations based upon what will
19 be done to baffle the noise, the quieted transformers?

20 A (WITNESS MOISEEV) Yes. At the property line.

21 Q And possibly the enclosure?

22 A (WITNESS MOISEEV) (Nods.)

23 JUDGE BRENNER: I'm sorry. I don't know if
24 that was a separate question, and I don't know if the
25 witness answered it.

1 BY MS. HODGDON: (Resuming)

2 Q The separate question was: and possibly the
3 enclosure, I understand that there would be two ways of
4 dealing with this problem, if there is a problem. One
5 is using quieted transformers, which Mr. Boyer says will
6 be ordered and installed; and the other would be further
7 quieting if needed.

8 A (WITNESS MOISEEV) Yes.

9 JUDGE BRENNER: My question now is do your
10 calculations assume further enclosure around the
11 transformers?

12 WITNESS MOISEEV: No. It just assumes the
13 quieted transformers.

14 JUDGE BRENNER: Out in the open except
15 separated by the firewall?

16 WITNESS MOISEEV: Exactly.

17 BY MS. HODGDON: (Resuming)

18 Q And my next question was the quieted
19 transformers were proved out to be sufficient so that no
20 audible tones are heard at the property line. Is it
21 possible to provide further quieting by construction of
22 baffling walls?

23 A (WITNESS MOISEEV) Yes. Sound wall barriers.

24 Q There is?

25 A (WITNESS MOISEEV) Yes.

1 Q And will that be done?

2 A (WITNESS BOURGUARD) Yes, that would be done.

3 JUDGE BRENNER: I didn't hear Mr. Moiseev
4 about two questions ago. Ms. Hodgdon asked you whether
5 there would be further construction of such enclosures,
6 and you said yes to something.

7 WITNESS MOISEEV: Yes. Sound barrier walls.

8 JUDGE BRENNER: Well, why don't you just put
9 them in now?

10 WITNESS BOURGUARD: We're not sure that
11 they're needed.

12 JUDGE BRENNER: What is the balance against
13 putting them in now? What would be the considerations
14 such that you would not want to put them unless in your
15 view you are sure they were needed?

16 WITNESS BOURGUARD: The only thing is cost
17 involved in putting them in.

18 MR. SUGARMAN: I'm sorry. I can't hear the
19 witness.

20 WITNESS BOURGUARD: There is space for sound
21 walls, and we have a preliminary layout as to where they
22 would go if they are needed. His conclusion was that
23 they may be needed, and so on the basis of that we have
24 felt that we should wait until we are sure they are
25 needed and then put them in.

1 JUDGE BRENNER: What would occur such that you
2 would make a later decision? Do you mean after the
3 transformers are actually in and running?

4 WITNESS BOURGUARD: Yes, sir.

5 JUDGE BRENNER: How much would the sound
6 barriers cost around the transformers?

7 WITNESS BOURGUARD: We actually don't have a
8 cost estimate. It has been estimated roughly \$35,000 or
9 \$40,000, but that is kind of out of the air for the most
10 part. We don't have a definite estimate of the cost.

11 JUDGE BRENNER: Could it be significantly less
12 than that?

13 WITNESS BOURGUARD: I don't know, sir.

14 JUDGE BRENNER: Well, you told me one of the
15 considerations was cost, and so I assume you had an
16 analysis of the cost.

17 WITNESS BOURGUARD: Only to the extent we have
18 made a rough estimate.

19 JUDGE BRENNER: How much does a pumphouse cost
20 to build, not including the equipment, the structure of
21 the pumphouse?

22 WITNESS BOURGUARD: It would probably run
23 about \$7 or \$8 million.

24 JUDGE BRENNER: So you are talking about an
25 additional possibly \$35,000 or \$40,000?

1 WITNESS BOYER: Yes. It is a small increment,
2 but it is an increment that may, in the initial
3 calculations, may not be necessary. So it is an option
4 we have should the calculations be in error on the noisy
5 side. If the calculations are in error on the quiet
6 side, then the walls are not needed. The walls are not
7 that difficult to put up. They have been used, and we
8 used them at various places on our transformers around
9 the country. So we are leaving it as an option should
10 conditions not work out the way they are presently
11 estimated to.

12 JUDGE BRENNER: It is possible the cost might
13 be less than two days of hearing litigating the
14 subject. Well, you don't have to answer that.

15 WITNESS BOYER: Sir, I don't see why it should
16 be that pertinent.

17 JUDGE BRENNER: It is not, and you don't need
18 to respond.

19 Let me ask this. Are there any considerations
20 other than cost involved?

21 WITNESS BOURGUARD: No.

22 JUDGE BRENNER: In stating no, Mr. Boyer, that
23 reason, you would not presently propose to add the sound
24 baffling walls. You mention the calculations. The
25 calculations by Mr. Moiseev deal with perceived sound at

1 the property line, is that right, Mr. Moiseev?

2 WITNESS MOISEEV: The calculations deal with
3 estimated calculated sound pressure levels at the
4 property line.

5 JUDGE BRENNER: At the property line?

6 WITNESS MOISEEV: At the property line.

7 JUDGE BRENNER: And you cannot conclude from
8 the calculation that the transformer's sound will not be
9 perceived at the property line, correct?

10 WITNESS MOISEEV: You cannot conclude
11 definitely one way or the other.

12 JUDGE BRENNER: Do you agree that the property
13 line is the pertinent consideration as distinguished
14 from the residence?

15 WITNESS BOYER: I don't think that is his
16 judgment. I think that is our judgment, and I think it
17 would be.

18 JUDGE BRENNER: I am asking the panel. Okay.
19 Thank you.

20 We will have to go off the record.

21 (Discussion off the record.)

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1 JUDGE BRENNER: Let's go back on the record.
2 While we were off the record we had a brief
3 scheduling discussion which I need not repeat, but as
4 long as we had the scheduling discussion, Mr. Sugarman,
5 I remind you that we are waiting for word as to what
6 schedules you've set up with respect to Mr. May and Mr.
7 Pence, and also in coordination with the applicant what
8 schedule has been worked out for Mr. Brundage.

9 MR. SUGARMAN: We have Mr. Pence for -- they
10 say he probably won't be able to get up here until 11:00
11 tomorrow. I would suggest afternoon. And we have Mr.
12 May on call for either tomorrow or Thursday.

13 JUDGE BRENNER: Will he be available tomorrow
14 if we get to him?

15 MR. SUGARMAN: Yes, sir.

16 JUDGE BRENNER: Okay. What about Mr. Brundage?

17 MR. SUGARMAN: Mr. Brundage we are still
18 trying to reach. And I say I wasn't sure about one
19 thing. You asked Mr. Conner to stay in touch with Mr.
20 Brundage.

21 JUDGE BRENNER: Yes, I did.

22 Mr. Conner, have you been in touch with Mr.
23 Brundage either directly or through NWRA?

24 MR. CONNER: No. And I didn't know the Board
25 had told us to. As I repeat, Mr. Brundage is an NWRA

1 consultant.

2 May I ask --

3 JUDGE BRENNER: Well, let me leave it at
4 this. You don't have to tell us right away. I
5 understand your position on who he is. However, I don't
6 recall whether I asked you to contact him either, but in
7 order to assist matters, I'm going to direct you and Mr.
8 Sugarman to coordinate and through whatever contacts you
9 have get in touch with him so you can schedule him here
10 for either Thursday or Friday of this week, preferably
11 Friday morning.

12 MR. CONNER: Okay. We have to do what has to
13 be done. But I do want to emphasize that Mr. Brundage
14 is not our witness.

15 JUDGE BRENNER: Yes, in the sense that you're
16 not calling him. However, Mr. Brundage was directly and
17 heavily involved in the studies which you are relying
18 upon in coordination with NWRA for the Point Pleasant
19 intake. It's that simple. He is friendlier to you than
20 to Mr. Sugarman.

21 MR. CONNER: That may be the Board's
22 characterization, but I just can't help but make the
23 point that we are not responsible for everybody in the
24 world. And we ran errands yesterday for Mr. Sugarman.

25 JUDGE BRENNER: Mr. Conner, I'm going to cut

1 you off because it's unnecessary. I will just add the
2 observation that we're not talking about somebody off
3 the street. We're talking about somebody who has done
4 work for the benefit of PECO, even if you maintain your
5 technical position that he has done the work for NWRA.

6 I don't have to repeat our rulings that we
7 have jurisdiction over the intakes, notwithstanding your
8 prior arguments that it is NWRA's intake. And I will
9 leave it at that.

10 MR. CONNER: In order to get moving I will not
11 respond.

12 JUDGE BRENNER: Good.

13 You may continue.

14 MS. HODGDON: I only have one more question,
15 and I have to make a statement just to get back where I
16 was.

17 BY MS. HODGDON: (Resuming)

18 Q Am I correct in understanding then that if
19 your calculations are not borne out and if these quieted
20 transformers don't prove to be as quiet as you expect in
21 that application that you will provide further baffling?

22 A (WITNESS BOURGUARD) That is correct.

23 Q And would it be possible for you to make your
24 noise mitigation plans available for the transformers
25 available to the staff for review when they become

1 available?

2 A (WITNESS BOURGUARD) I see no reason why not.

3 JUDGE BRENNER: I don't know what you mean,
4 Ms. Hodgdon by "when they become available." They said
5 they are not going to have any further plans unless they
6 determine it is necessary.

7 MS. HODGDON: Yes, that's right.

8 BY MS. HODGDON: (Resuming)

9 Q I mean if they become available -- excuse me
10 -- if they become available should you plan further
11 noise mitigation than you've just indicated?

12 A (WITNESS BOYER) Yes, that would be done, but
13 I think I can say that there have been a number of sound
14 walls put around transformers, and these would be
15 similar to those. They are a standard type of device
16 that is used in the installations of those type. It is
17 a simple sound wall, a sound-absorbing wall.

18 MS. HODGDON: Thank you.

19 JUDGE BRENNER: Mr. Boyer, following up on
20 your last point -- and I'm addressing this to the panel
21 in general -- can you give us some quantification of
22 what the attenuation contribution would be of the
23 standard type sound walls that are common in your
24 experience?

25 WITNESS MOISEEV: Well, it depends a great

1 deal on the location of the sound wall in relation to
2 the transformer and the site you are projecting the
3 sound to and the height of the sound wall. So it would
4 be sufficient to reduce the noise at the property line.
5 I can't really be more specific.

6 WITNESS BOYER: I would have to ask our sound
7 people on that. I would expect our witness to have some
8 estimate.

9 JUDGE BRENNER: I inferred from your answer,
10 Mr. Moiseev, but I want to state my inference in case it
11 is wrong: that there is no problem within the state of
12 the art of sound wall construction at the location for
13 the Point Pleasant transformers given the expected noise
14 level, even if you are a little bit wrong in your
15 calculations such that the noise can be attenuated so
16 that it will not be audible at the property line.

17 WITNESS MOISEEV: Yes, it is within the state
18 of the art.

19 JUDGE BRENNER: Thank you.

20 Ms. Hodgdon, were you complete?

21 MS. HODGDON: I have no further questions.

22 JUDGE BRENNER: Redirect?

23 MR. CONNER: None.

24 JUDGE BRENNER: Mr. Sugarman, do you have any
25 questions following up on the staff's questions? You

1 are entitled to that in our procedure, but you have to
2 limit it to their questions or our questions that we may
3 have asked after you inquired.

4 MR. SUGARMAN: I beg your pardon.

5 JUDGE BRENNER: When first I said you would be
6 limited to the staff's questions, and I met by that to
7 state or any questions from the Board.

8 RECROSS EXAMINATION

9 BY MR. SUGARMAN:

10 Q In response to Ms. Hodgdon you indicated that
11 she asked you if you were using lowest levels by
12 excluding vehicles. Is the reason for that the fact
13 that the equipment that would be added by the project
14 and the noise from that equipment would constitute a new
15 base level of noise as distinguished from transitory
16 noise represented by vehicles and so forth?

17 Is that why you chose that?

18 A (WITNESS MOISEEV) We chose to prevent that
19 from being the new base sound level.

20 Q But that is the reason, isn't it, you were
21 comparing apples and apples?

22 A (WITNESS MOISEEV) Right.

23 Q That any new level introduced by the project
24 would constitute a base level rather than a new noise
25 level.

1 A (WITNESS MOISEEV) Let me state it more
2 clearly. The noise sources from the pumphouse would be
3 a steady noise source.

4 Q Exactly. Now, you indicated that -- the
5 testimony indicates that you are committed to ensure
6 that ambient noise levels will not be exceeded at the
7 site property line in the direction of any existing
8 residence.

9 Will that same commitment hold true with
10 respect to the road on one side and the canal property
11 on the other side?

12 A (WITNESS MOISEEV) Yes.

13 Q Do your answers as to the feasibility of
14 providing walls that would reduce or eliminate any
15 increase in the ambient noise levels apply to the canal
16 property as well as to the direction of the existing
17 residences?

18 A (WITNESS MOISEEV) Yes.

19 Q Have you measured the anticipated level from
20 -- or when I say measured, have you calculated the
21 anticipated level from the 57 db transformers at the
22 canal property line?

23 A (WITNESS MOISEEV) No, because the canal
24 property line is further away than the nearest property
25 line.

1 Q Have you measured them at the nearest property
2 line, that is, the 34 number?

3 A (WITNESS MOISEEV) That was the 36 number.

4 Q Does that assume any attenuation other than
5 distance?

6 A (WITNESS MOISEEV) Well, there is the firewall
7 between the two transformers.

8 Q Will the firewall attenuate the noise in the
9 direction of the canal property?

10 A (WITNESS MOISEEV) No, it will not.

11 Q Wouldn't it be appropriate to know what the
12 cumulative impact of the two generators is -- two
13 transformers is towards the canal direction?

14 A (WITNESS MOISEEV) Well, the two transformers
15 added together only add 3 db, and you have approximately
16 a 3 db difference with something.

17 Q What is the ambient noise level at the canal?

18 A (WITNESS MOISEEV) It would be the same as we
19 measured.

20 Q Did you measure an ambient noise level at the
21 canal?

22 A (WITNESS MOISEEV) We measured the ambient
23 noise level on the site.

24 Q Where on the site?

25 A (WITNESS MOISEEV) As it states in the report,

1 30 feet from the southern property line and about 100
2 feet east of the road; that is, on the site.

3 Q So isn't it not entirely possible that the
4 noise level at the canal is lower than on the site?

5 A (WITNESS MOISEEV) Very improbable. The noise
6 levels, ambient noise levels of this type do not vary
7 substantially over these short distances.

8 Q You're talking about the 44 level or the 53
9 level?

10 A (WITNESS MOISEEV) We are talking about the
11 L-90 level which is the 44.5 dba.

12 Q Well, but how about at levels that are more
13 generally attained? In other words, the L-90 gives you
14 the quietest 10 percent of the time at the canal.

15 A (WITNESS MOISEEV) Right.

16 Q Where there is very little activity might not
17 that 44 level obtain much more of the time than 100 feet
18 from the road?

19 A (WITNESS MOISEEV) As I said, sound levels
20 aren't going to vary that much over the short distances
21 we're talking about, 100 feet maybe, from where I
22 measured to the canal. It's not going to vary that much.

23 Q Well, let me ask a different question. Is
24 there any reason why you cannot put sound baffles in the
25 direction facing the canal?

1 A (WITNESS MOISEEV) No, there's no reason.

2 Q How high would they have to be to provide
3 complete attenuation?

4 A (WITNESS MOISEEV) What do you mean by
5 "complete attenuation?"

6 Q No increase in ambient noise level at the site
7 property line.

8 A (WITNESS MOISEEV) It depends on the height of
9 the transformer.

10 Q And what is the height of the transformers?

11 A (WITNESS MOISEEV) I do not know.

12 Q Mr. Bourguard?

13 A (WITNESS BOURGUARD) Offhand I would say
14 they're around 11 or 12 feet.

15 JUDGE BRENNER: Mr. Bourguard, use the
16 microphone.

17 WITNESS BOURGUARD: I don't really know, but
18 offhand I would say they were around 11 or 12 feet tall.

19 BY MR. SUGARMAN: (Resuming)

20 Q Mr. Boyer, can you add anything to that?

21 A (WITNESS BOYER) No. That would be my
22 estimate.

23 Q Does the fact that the elevation is 20 feet
24 higher at the site of the transformers than it is at the
25 canal have any bearing on the noise travel?

1 A (WITNESS MOISEEV) It would increase the
2 attenuation from a barrier.

3 Q A higher elevation?

4 A (WITNESS MOISEEV) I beg your pardon?

5 Q The noise being at a higher elevation would
6 increase the attenuation from the natural attenuation or
7 the barriers?

8 A (WITNESS MOISEEV) The barriers.

9 Q How would it affect natural transmission?

10 A (WITNESS MOISEEV) It would have no
11 appreciable effect.

12 Q Which way would it have an unappreciable
13 effect?

14 A (WITNESS MOISEEV) You're talking about
15 fractions of db's which are inaudible.

16 Q Have you made calculations -- you have not
17 made a calculation as to the impact of the transformers
18 at the canal property line?

19 A (WITNESS MOISEEV) That is what I stated, yes.

20 MR. SUGARMAN: That's all I have. Thank you.

21 BOARD EXAMINATION

22 BY JUDGE MORRIS:

23 Q I would like to ask a few questions just to
24 make sure I understand what you've been telling us this
25 morning.

1 To start with, we've been talking about noise
2 within the pumphouse. I believe from the testimony that
3 noise is described as motor noise, is that correct?

4 A (WITNESS MOISEEV) That is correct.

5 Q Is there noise from the pumps or flowing water?

6 A (WITNESS BOURGUARD) No. The pumps are
7 approximately 50 feet below the floor of the pumphouse.
8 In other words, they are vertical turbine pumps located
9 down at about an elevation 55 or 56, in there, and the
10 floor of the pumphouse is about 106.

11 Q So essentially there's no contribution to
12 noise outside the pumphouse except from the pump motors,
13 is that correct?

14 A (WITNESS BOURGUARD) Yes, and other equipment
15 that is in the pumphouse. Other than that the pumps
16 would not make a noise themselves.

17 Q What other equipment would contribute to noise?

18 A (WITNESS MOISEEV) Well, the design is such
19 that the noise inside the pumphouse is not going to
20 contribute to ambient outside, but the other noise
21 sources within the pumphouse are HVAC equipment
22 primarily.

23 A (WITNESS BOYER) That is ventilating equipment
24 and small air compressors for air storage use, air
25 control.

1 Q Could you characterize the noise from those
2 sources in terms of decibels?

3 A (WITNESS MOISEEV) They would be substantially
4 less than the pump motors.

5 Q I think in every hearing, possibly more than
6 once, I have to quote Lord Kelvin who said "If you can't
7 measure something, you don't understand it." I don't
8 know what "substantially" means.

9 A (WITNESS MOISEEV) I'm talking on the order of
10 10 db.

11 Q Thank you.

12 In calculating the attenuation of the noise
13 from within the pumphouse to the site boundary or
14 wherever you did, you did do the calculation of
15 attenuation through the walls, is that correct?

16 A (WITNESS MOISEEV) That is correct.

17 Q And is this a difficult calculation?

18 A (WITNESS MOISEEV) No. It is standard.

19 Q Is it done by hand or a calculator?

20 A (WITNESS MOISEEV) It is done by hand. You
21 basically take the transmission loss of the wall and
22 subtract it from the estimated noise level inside the
23 pumphouse.

24 Q And to arrive at the transmission attenuation,
25 is this something you look up in a handbook for the

1 materials?

2 A (WITNESS MOISEEV) There are tables --

3 Q Please don't start to answer until I'm
4 finished. I know it is difficult to discipline yourself
5 this way, but it is just impossible for the Reporter to
6 report two conversations that are simultaneous. So if
7 you would describe how you go about the calculation,
8 please.

9 A (WITNESS MOISEEV) You take the sound pressure
10 levels of the pump noise source or the noise source in a
11 general sense. Then you subtract the transmission loss
12 of the barrier, in this case the pump walls -- that is a
13 simple subtraction -- and then you incorporate the
14 distance attenuation.

15 Q I want to know the details of the attenuation
16 through the wall. How do you determine that?

17 A (WITNESS MOISEEV) All right. There are
18 tables. It is based on the material of the wall which
19 is concrete, nine inches -- is it -- it's approximately
20 nine inches of concrete. And there are tables of
21 transmission loss test from which it is derived.

22 Q Is this a function of frequency of the sound?

23 A (WITNESS MOISEEV) Yes.

24 Q And are those tables also given in terms of
25 frequency?

- 1 A (WITNESS MOISEEV) Yes, they are.
- 2 Q So this is a standard-type calculation?
- 3 A (WITNESS MOISEEV) Yes.
- 4 Q Have you done this calculation under other
5 circumstances?
- 6 A (WITNESS MOISEEV) Yes.
- 7 Q Do you recall approximately what the
8 attenuation would be for about nine inches of concrete?
- 9 A (WITNESS MOISEEV) Well, there is a measure
10 called sound transmission class which is a single digit
11 number for the frequency range, and for a nine-inch
12 concrete wall it's approximately STC-55.
- 13 Q You will have to define that.
- 14 A (WITNESS MOISEEV) That is approximately equal
15 to 55 dba. It can be thought of that way.
- 16 Q For what thickness would this be?
- 17 A (WITNESS MOISEEV) Approximately nine inches.
- 18 Q So it is approximately 55 decibels for
19 approximately nine inches of concrete?
- 20 A (WITNESS MOISEEV) That is correct.
- 21 (Board conferring.)
- 22 Q We have spent some time looking at what is
23 labeled Figure 1, but the title is "Ambient Octave Bound
24 Sound Pressure Level."
- 25 A (WITNESS MOISEEV) Yes.

1 Q If you were to draw a similar curve for the
2 pump noise, what would that look like?

3 A (WITNESS MOISEEV) Well, without getting into
4 specific levels, it would be a general curve that would
5 look something like that (Indicating). It would tail
6 off at each end, the curve.

7 Q I should have said pump motor noise, but what
8 you're telling me is there is no sharp peak; it is a
9 gradually increasing, fairly slow curve in the middle
10 frequencies, say from 500 to 1,000, and then it begins
11 to decrease.

12 A (WITNESS MOISEEV) Yes, generally.

13 Q Generally a downward curve.

14 A (WITNESS MOISEEV) Yes.

15 Q No particular spikes.

16 A (WITNESS MOISEEV) That is correct.

17 Q Or pronounced peaks.

18 A (WITNESS MOISEEV) Yes.

19 Q What about for the transformer noise, what
20 would the shape of the curve be there?

21 A (WITNESS MOISEEV) Well, it would be
22 substantially the same. However, a transformer noise
23 consists of discrete frequencies with a fundamental at
24 120 and multiples thereof.

25 Q But in spite of those peak frequencies it

1 would still generally be a smooth curve?

2 A (WITNESS MOISEEV) Representative -- on an
3 octave band curve it would be represented as a smooth
4 curve. However, the reality of the noise is that it is
5 discrete frequencies at 120, 240 and so on, and it would
6 decrease.

7 Q Would there be a substantial difference
8 between say 120 and 240?

9 A (WITNESS MOISEEV) No.

10 Q In your calculations you calculated, I
11 understand, to the site boundary?

12 A (WITNESS MOISEEV) That is correct.

13 Q Was there just that one calculation or did you
14 calculate for different distances?

15 A (WITNESS MOISEEV) Are you referring to which
16 set of calculations now?

17 Q Any.

18 A (WITNESS MOISEEV) Well, we did it to the site
19 boundary. Any other distance would be a lower noise.

20 Q I understand that, but I was just interested
21 if you had done specific calculations at different
22 distances or simply one calculation for one distance.

23 A (WITNESS MOISEEV) Well, we did some
24 additional calculations for the different residences,
25 and then we concentrated on the property line.

1 Q In your measurements I understand from your
2 exhibit that you used several kinds of instrumentation.
3 And am I correct that you would take an effective beta
4 point from a five-minute observation?

5 A (WITNESS MOISEEV) It would depend on the
6 frequency. At, for instance, the 250 frequency it would
7 take longer because that is one of the predominant
8 noises from passing automobiles. Eight thousand hertz
9 would be very quick.

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1 Q So in effect you would take an observation
2 over a period long enough to establish what you judged
3 to be the low background noise; is that correct?

4 A (WITNESS MOISEEV) That is correct.

5 Q And these measurements were made over a period
6 of how many days?

7 A (WITNESS MOISEEV) This was done in one day.

8 Q In one day in October, was it?

9 A (WITNESS MOISEEV) Pardon me?

10 Q The month of October?

11 A (WITNESS MOISEEV) October 14th or 15th.

12 Q Would there be any differences in the
13 background noise levels as a function of time of year or
14 weather patterns or things of that kind?

15 A (WITNESS MOISEEV) To a certain extent. In a
16 wind the background noise levels would be higher, in a
17 gale. But for these LC-90 noise levels, it wouldn't be
18 a significant difference, meaning more than a couple of
19 dba.

20 Q I guess in October there are still plenty of
21 birds and insects around that contribute quite a bit to
22 the background noise; is that correct?

23 A (WITNESS MOISEEV) Not to the LC-90's that I
24 was measuring. That would produce peaks, depending of
25 course on where they are in relation to the microphone.

1 I mean, if it's a tree over your head it's going to be
2 louder than if it's across the river.

3 Q What about in January when it's frozen solid
4 with snow on the ground? Is the noise level
5 significantly different?

6 A (WITNESS MOISEEV) The LC-90 noise levels are
7 not going to be significantly different.

8 Q Why is that?

9 A (WITNESS MOISEEV) Because it is based -- the
10 way I took the measurements is to exclude any transient
11 noise sources. Now, the river, it is a kind of a river
12 fall somewhat upstream that is causing the noise that is
13 shown in the upper frequencies, and that is not going to
14 be frozen over as far as I know.

15 Q So is it your opinion that the measurements
16 that you made in that one day are fairly representative
17 of what you would find on any day of the year?

18 A (WITNESS MOISEEV) Yes. There would be some
19 variation if there was a lot of activity in town on one
20 particular day, but the LC-90 levels would be primarily
21 the same.

22 (Board conferring.)

23 Q Do you recall what day of the week those
24 measurements were made?

25 A (WITNESS MOISEEV) I believe it was a Thursday

1 night to Friday, but I'm not real sure.

2 Q Are you sure that it was not a weekend?

3 A (WITNESS MOISEEV) Yes, it was not a weekend.

4 We do not make noise level measurements of this type
5 over the weekend unless there is a specific cause to do
6 so.

7 (Board conferring.)

8 Q Would there be any reason to suspect that it
9 might be quieter, that the background noise level might
10 be lower, over the weekend than during the weekday?

11 A (WITNESS MOISEEV) No, not the LC-90's, but
12 the general noise level might be higher because of
13 tourists.

14 JUDGE MORRIS: Thank you.

15 BY JUDGE COLE:

16 Q Just a couple of questions, gentlemen.

17 With respect to the measurement of ambient
18 level, I note in question E -- in the answer to question
19 E-290.24 on page 2 -- as a follow-up to one of Judge
20 Morris' questions, I noticed that you used a slow time
21 averaging setting, A frequency weighting, in the
22 measurements.

23 A (WITNESS MOISEEV) Yes.

24 Q And there was some discussion about the
25 different kinds of noises, a continuous noise as would

1 be emitted from the transformers or from the motors and
2 intermittent noise such as traffic, motorboats, and
3 blasting from the nearby quarry.

4 A first question: Is it standard practice to
5 use a slow time-averaging setting when trying to
6 determine noise levels in a community?

7 A (WITNESS MOISEEV) Yes. The A weighting and
8 the slow setting are designed to approximate the way the
9 human hears noise.

10 Q Now, when it says "time averaging," where you
11 say "time averaging," you say "slow time averaging
12 setting," what does that mean?

13 A (WITNESS MOISEEV) That refers to the response
14 of the meter to a sound, so that -- there are two types,
15 fast and slow. For fast there is a certain rise time
16 involved with the meter peak reading, and a different
17 one for the slow one. The slow one approximates more
18 the human ear.

19 Q All right, sir. In your testimony somewhere,
20 you state that the principal noise sources are the
21 roadway, the traffic roadway, the quarry operations, and
22 noises from motorboats on the river. Now, those kinds
23 of noises, how would they be reflected in whatever
24 records you would receive from your community noise
25 analyzer?

1 A (WITNESS MOISEEV) Well, the traffic is fairly
2 represented by the LC-10 noise level. The other ones,
3 there is no way of knowing whether they are the peak
4 noise levels or anywhere in between.

5 Q You say there is no way of knowing. Upon what
6 is that dependent, sir?

7 A (WITNESS MOISEEV) It depends upon the
8 nearness of the particular sound source to the
9 microphone location and the intensity of that particular
10 sound source.

11 Q When we're talking about time averaging, over
12 what period are we averaging with the instruments you've
13 used?

14 A (WITNESS MOISEEV) Well, let's see. The time
15 average of the LEQ is over the measurement periods,
16 which were for --

17 Q No, I think I'm talking about a different time
18 frame than you are now, sir. I'm talking about, for
19 example, a blast from a quarry that might last something
20 on the order of a second or two. Would that, would the
21 instantaneous peak from that quarry blast be reflected
22 in your measurement because of the slow time averaging
23 setting that you used?

24 A (WITNESS MOISEEV) Yes, it would. But it
25 would reflect a peak closely to how your ear would

1 perceive it, rather than the actual sound pressure level
2 peak, which may be higher.

3 Q Okay, sir. So the kind of time averaging that
4 you're talking about when you say slow time averaging in
5 response to that question, on the order of seconds or
6 fractions of seconds, and not with respect to minutes?

7 A (WITNESS MOISEEV) That's right.

8 Q All right. Thank you, sir.

9 In Table 1, the same one we've been talking
10 about, question E-290.24, you had a maximum sound level
11 reading of 94 decibels in the six-hour -- or the
12 sampling that started at 6:00 a.m. Do you know what
13 that noise was?

14 A (WITNESS MOISEEV) No, I do not.

15 Q Now, with respect to Figure 2 of the same
16 question -- it's identified as Figure 1, but you
17 indicated it is really Figure 2, "Ambient Octave Bound
18 Sound Pressure Levels".

19 A (WITNESS MOISEEV) Yes.

20 Q You have a range of frequencies depicted on
21 that graph, sir. How does that compare with the sound
22 frequencies that you measure in the A-weighted
23 measurements? Does this depict the range over which you
24 measure the sound in the A-weighted measurements?

25 A (WITNESS MOISEEV) Yes, it does.

1 Q And could you tell me how you calculated the
2 L-equivalent, for example, on the next page, Figure 1?

3 A (WITNESS MOISEEV) The LEQ is calculated
4 internally by the instrument, but there is a complex
5 formula that is used as the basis.

6 Q My concern is that I could not determine a
7 consistent L value associated with LEQ for each of the
8 three curves.

9 A (WITNESS MOISEEV) To go back to the
10 definition of LEQ, it is -- it takes the total sound
11 energy measured by the meter during the period and
12 divides it by, basically by the time period, to give you
13 what is sometimes called an average sound level for the
14 period.

15 Q Is it average energy level or average sound
16 level, or are they the same?

17 A (WITNESS MOISEEV) In this instance they are
18 pretty much the same.

19 Q And you say this is done internally in the
20 machine, but it is capable of being calculated?

21 A (WITNESS MOISEEV) Yes. But then you have to
22 have a series of measurements for every couple of
23 seconds the machine samples, I believe it is. What is
24 it, five times per second. Well, it doesn't say --
25 well, yes, five samples per second.

1 Q Someplace in the response to question
2 E-290.24, you indicated that the nighttime measurements
3 were conservative measurements. On page 4 of the
4 response to the question, in section 7, the second
5 sentence in section 7: "Our assumptions for nighttime
6 noise levels were conservative and still stand."

7 Now, in that context, sir, what did you mean
8 by conservative? You prepared this response, did you
9 not?

10 A (WITNESS MOISEEV) Yes.

11 Q What did you mean by conservative? Is that
12 high or low?

13 A (WITNESS MOISEEV) That is low.

14 Q So that you think the actual sound levels that
15 you would realize at night in this area are in fact
16 higher than what you measured?

17 A (WITNESS MOISEEV) No, they are higher than
18 what I estimated in a previous calculation or
19 estimation. The conservative statement refers to
20 assumed sound levels that I had assumed before we made
21 any measurements.

22 Q All right, sir. So when you say in originally
23 reviewing and analyzing, that data isn't here?

24 A (WITNESS MOISEEV) That is correct.

25 Q Now, what do you mean by saying, they were

1 conservative and still stand? What does that mean?

2 A (WITNESS MOISEEV) That means that at that
3 point I was still using it as a basis for comparison to
4 the pump house noise.

5 Q But what you actually used was the information
6 that is contained in the response to this question?

7 A (WITNESS MOISEEV) Yes.

8 Q Now, Figure 1 of the response to the question,
9 I note that the L-90 level and the L-minimum level, the
10 minimum sound levels that you would realize here at the
11 site, are down around 45 decibels. What is the physical
12 makeup of that noise? Do you know? What is the
13 source?

14 A (WITNESS MOISEEV) Okay. Based on the
15 observations that we did during the day -- and the
16 daytime levels were not substantially different at the
17 LC-90 level from the nighttime -- then the noise, the
18 residual noise, is due to the river noise. There is
19 apparently some kind of small waterfall from some source
20 which I did not locate at the time; and residual noise
21 from distant sources, which are unidentifiable, but it
22 is usually traffic.

23 Q All right, sir. On page 15 of the testimony,
24 with respect to the noise generated by equipment
25 operation within the pump house, you stated in item 31

1 on page 15 that that noise will not affect ambient
2 levels at the site property line.

3 Now, I want to make sure I know exactly what
4 you mean when you say will not affect ambient levels at
5 the site property line. You've estimated by measurement
6 the ambient levels at the property line; is that
7 correct, sir?

8 A (WITNESS MOISEEV) Yes.

9 Q You've given the information from the
10 manufacturer about the noise levels of the equipment or
11 a certain distance from the equipment. You have then
12 taken those noise levels from the source and passed them
13 through whatever media you had to to get to the property
14 line; is that correct, sir?

15 A (WITNESS MOISEEV) That is correct.

16 Q Either through the air or through the air to
17 the wall and through the air again.

18 A (WITNESS MOISEEV) That is correct.

19 Q Now, you then made those calculations and then
20 came up with a decibel level at the property line that
21 would be associated with the noise source, either the
22 pumps or the transformers; is that correct, sir?

23 A (WITNESS MOISEEV) Yes.

24 Q Now, I believe you previously indicated you
25 did not bring those numbers with you?

1 A (WITNESS MOISEEV) That is correct.

2 Q But there is a conclusion here -- and I guess
3 Mr. Bourquard was responsible for some of this, and you
4 can join in whatever response, sir. When you say "will
5 not affect ambient levels," given the number that you
6 calculated as the noise responsible or caused by the
7 noise source, you then compared that with the ambient
8 level.

9 Now, how did you arrive -- how did you
10 actually make that comparison to then say it will not
11 affect it?

12 A (WITNESS MOISEEV) Well, it is a matter of
13 decibel addition, where you convert the numbers
14 basically to an energy, add them together, and then come
15 up with your sound pressure level.

16 MR. SUGARMAN: Excuse me. I didn't hear that,
17 the last part of that.

18 WITNESS MOISEEV: Then you convert it back to
19 sound pressure level.

20 BY JUDGE COLE: (Resuming)

21 Q So you know how to make that calculation, is
22 that right, sir?

23 A (WITNESS MOISEEV) Yes.

24 Q Could you tell me how to do that? If you have
25 one ambient sound level and then you have brought

1 another sound from a distance up to that point, you now
2 have to add two sound levels, or you can compare the two
3 levels and make some conclusions. I want to know
4 exactly what you did to come to the conclusion that
5 there was no effect.

6 A (WITNESS MOISEEV) What you do is you take the
7 first sound level, pressure level, divide it by 10,
8 raise it to the power of 10, take the second sound
9 pressure level, divide it by 10, raise it to the power
10 of 10, add those two numbers together, take the
11 logarithm to base 10 of that and multiply it -- take the
12 logarithm to base 10 of that number and then multiply by
13 10.

14 Q All right, sir. And the number that you would
15 get will always be larger than the largest number,
16 right, sir?

17 A (WITNESS MOISEEV) No. If the difference
18 between the two levels is more than 10 db, then it will
19 not be larger. You see, if you have 34 and 44, the 44
20 would still stand afterwards.

21 Q Sir, are you then telling me that when I
22 measure an ambient level at a given spot and then I
23 bring in some other noise, however small, that when I
24 calculate what the resultant noise level is it's going
25 to be lower than the ambient?

1 A (WITNESS MOISEEV) No, that is not what I
2 said. I said that if you have an additional noise
3 source that is 10 db lower than the ambient, you will
4 not get an increase in the ambient, to paraphrase. If
5 you have a noise source that is 34 and an ambient that
6 is 44, the 44 would stand as the result.

7 Q And it will not be raised even a very small
8 amount?

9 A (WITNESS MOISEEV) You really can't --

10 Q I'm not talking about what you're able to
11 detect with your ears, sir. I'm talking about the
12 calculation.

13 A (WITNESS MOISEEV) The calculation at 10 db .
14 would be like .1 db.

15 Q Fine, sir. But it is higher, right, albeit
16 insignificant?

17 A (WITNESS MOISEEV) Yes.

18 Q But it would be higher?

19 A (WITNESS MOISEEV) For that specific example.

20 Q So now you've added these two noise levels
21 together and come up with a noise level, and how did you
22 come to some conclusion to say that there is no
23 difference, that there is no impact? What was your
24 criteria?

25 A (WITNESS MOISEEV) My criteria is based on the

1 fairly common criteria of an increase in ambient of no
2 more than 5 db, that is considered not to be
3 noticeable.

4 Q All right, sir. In your making your
5 calculation, do you remember what the difference was?

6 A (WITNESS MOISEEV) No, I do not. But based
7 upon this statement here, I would assume it to be less
8 than 5 db.

9 MR. SUGARMAN: Objection to the assumption.

10 JUDGE BRENNER: What is the objection? What
11 do you want us to do?

12 MR. SUGARMAN: Not admit his assumption.

13 JUDGE BRENNER: Well, we've got the basis
14 here. He said he made the assumption. And as I said,
15 you can argue that all he had was an assumption because
16 he didn't have any numbers here, and he characterized it
17 the way he characterized it. And if you want to come
18 back and ask him, you don't know, do you, and get the
19 answer, no, I do not know for sure, you can do that.

20 JUDGE COLE: I think I want to pursue that one
21 a little, too.

22 BY JUDGE COLE: (Resuming)

23 Q Who wrote that statement, then?

24 A (WITNESS MOISEEV) Which statement?

25 Q The statement that "will not affect the noise

1 generated by equipment operation within the pump house
2 or not affect ambient levels at the site property
3 line." Or similarly, the statement relative to
4 transformers and related facilities will not be exceeded
5 -- "the ambient noise levels will not be exceeded at the
6 site property line in the direction of any existing
7 residence".

8 A (WITNESS BOURQUARD) I think I wrote that, Mr.
9 Cole, or Judge Cole, on the basis of a discussion with
10 Mr. Moiseev.

11 Q And so what did you learn from him that made
12 you write that statement?

13 A (WITNESS BOURQUARD) When I was advised that
14 the noise level of the pump house motors at the property
15 line would not exceed the ambient noise level and the
16 fact that it would be only a minor amount of additive
17 effect, then that was my conclusion as a result of that,
18 based on the understanding that the increase would not
19 be perceptible to the human ear.

20 Q And what is your knowledge of what is
21 perceptible to the human ear, sir?

22 A (WITNESS BOURQUARD) Very little. I am
23 limited to the information that I received from Mr.
24 Moiseev on characterizing sounds.

25 Q Mr. Moiseev, what is your understanding of

1 what is perceptible to the human ear, what differences?
2 Did you testify earlier that a 10-decibel difference was
3 perceptible?

4 A (WITNESS MOISEEV) A 10 db difference in sound
5 levels is perceived as a doubling in sound level
6 intensity. Approximately 5 db is generally recognized
7 as a significant difference.

8 Q Is that --

9 A (WITNESS MOISEEV) You may be able to detect
10 in certain conditions a 3 db difference in sound
11 levels.

12 Q All right, sir. And you do not recall what
13 the difference is here?

14 A (WITNESS MOISEEV) No, not precisely.

15 (Pause.)

16 JUDGE COLE: That's all I have. Thank you.

17 BY JUDGE BRENNER:

18 Q Mr. Moiseev, on this last point that Judge
19 Cole was asking you about, do you agree with that first
20 sentence in paragraph 31, "Noise generated by equipment
21 operation within the pump house will not affect ambient
22 levels at the site property line"?

23 A (WITNESS MOISEEV) Well, if you take that
24 sentence to mean in the absolute sense, I would have to
25 say I disagree with it. But in the general sense, as we

1 discussed just a moment ago, it is not going to affect
2 ambient level as far as the human being is concerned.

3 Q You believe it is correct insofar as human
4 beings will not be able to --

5 A (WITNESS MOISEEV) Perceive a difference.

6 Q That is on the basis that you think maybe your
7 calculation showed that the difference was not greater
8 than 5 db?

9 A (WITNESS MOISEEV) I'm sure my calculations
10 will have shown that.

11 Q One thing that confuses me in terms of the 5
12 db standard is that I thought elsewhere in your report
13 which is appended to the response to the question you
14 stated that your estimate was wrong with respect to your
15 assumption on the daytime ambient noise levels. In
16 fact, your words are: "The daytime ambient noise
17 levels, however, are considerably below our estimates."

18 That is on page 4 of your report, correct?

19 A (WITNESS MOISEEV) Yes.

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1 Q I thought you also said that the difference
2 which gave rise to that statement was of approximately 5
3 db. Is my recollection correct?

4 A (WITNESS MOISEEV) I believe that is what I
5 said.

6 Q How come 5 db over here leads to the phrase
7 that the estimates were considerably below our
8 estimates. Yet, in this other context you're telling me
9 that 5 db is insignificant?

10 A (WITNESS MOISEEV) I said that 5 db was
11 significant. Less than 5 db was insignificant.

12 Q Well, what was the difference, again, between
13 your pre-conceived estimate of daytime ambient level and
14 the actual 45 that we're talking about?

15 A (WITNESS MOISEEV) Well, the actual is 44 to
16 45, and the original estimate was 50.

17 Q So 44 to 45 is considerably below 50. Is that
18 correct, in your view?

19 A (WITNESS MOISEEV) Yes.

20 Q And yet, an increase, hypothetically, from 45
21 to 50 would not affect ambient levels at the site in the
22 sense of perception by a human hearer?

23 A (WITNESS MOISEEV) The difference in ambient
24 sound levels of the 5 dbs in relation to any pump noise,
25 so a 5 db difference is going to make a substantial

1 difference in that context than it would be if you had a
2 pump noise that is going to raise the ambient by maybe 5
3 db.

4 Q I'm sorry, I don't understand.

5 A (WITNESS MOISEEV) If the pump noise would
6 perhaps raise 50 db by 5 db, it is going to raise 45 by
7 substantially more.

8 Q And which of the two statements I've been
9 comparing was in relation to the pump noise? I thought
10 they were both in relation to the total existing noise.

11 A (WITNESS MOISEEV) What I am saying is that an
12 increase of 5 db in the ambient is a not unnoticeable
13 increase. What I am saying also is that a decrease in
14 the ambient of the 5 db from the 50 to the 44 or 45
15 would lead to a greater -- could lead to a greater
16 increase in the ambient than 5 db, and therefore, the 5
17 db decrease in ambient becomes significant, or
18 considerable.

19 Q Is it your testimony that a person standing at
20 the site property line at the closest point to the pump
21 house will not hear any noise from any equipment within
22 the pump house?

23 A (WITNESS MOISEEV) Yes.

24 Q Just to summarize, is it also your testimony
25 that with respect to the transformers you do not know

1 whether a person standing at the site property line at
2 the closest point will hear the transformer noise?

3 A (WITNESS MOISEEV) Yes, I stated that it may or
4 may not be audible.

5 Q Is there anything about the transformer noise
6 that would make it particularly irritating to a human
7 hearing it? Even if it was minimally audible in terms
8 of the continuity or discontinuity of the sound or the
9 frequency? Could you characterize it a little?

10 A (WITNESS MOISEEV) Transformer noise is pretty
11 much a steady state noise with discreet frequency peaks.

12 Q Yes. You did state that earlier. I would
13 like to try to get a better characterization of the
14 discreet peaks you are talking about.

15 A (WITNESS MOISEEV) For instance, a note on the
16 piano. Even a note on a piano does have harmonics and
17 so does a transformer.

18 Q Is it kind of a background hum?

19 A (WITNESS MOISEEV) Yes, background hum.

20 Q With various peaks within the hum?

21 A (WITNESS MOISEEV) You perceive it really as a
22 hum because you don't hear the individual frequencies by
23 themselves. You hear all of them at once. But to give
24 it more characterization than noise and pump noise is
25 more broad band, so there is more noise spread out

1 throughout the frequency range, and hence, it is less
2 bothersome than discreet frequency noises.

3 Q Could you characterize it as a high-pitched
4 hum or -- I recognize this is very qualitative --
5 high-pitched hum or medium pitch or low pitch?

6 A (WITNESS MCISEEV) It is really a low-pitched
7 hum.

8 A (WITNESS BOYER) It is a low-pitched hum. In
9 fact, you probably might even have noticed one even on
10 the street from a heavily loaded transformer. Or if you
11 go along a road to pass some of our what we call load
12 centers, if you would walk up close to the transformer
13 you could hear a slight hum.

14 Q It wouldn't help the record any to ask if the
15 sound that has been annoying us all morning is like a
16 transformer hum because the record won't know what the
17 noise is, so I won't ask.

18 (Laughter.)

19 JUDGE BRENNER: Mr. Sugarman, do you have any
20 follow-up based solely on our last round of questions?

21 MR. SUGARMAN: Yes, I would like to start with
22 your last non-question because I've been thinking of
23 asking the same thing. And I think the fact that the
24 record won't reflect it will not prevent it from being
25 useful to you as the finders of fact.

1 JUDGE BRENNER: Okay.

2 MR. SUGARMAN: It's as if you were looking at
3 your site visit.

4 CROSS ON BOARD EXAMINATION

5 BY MR. SUGARMAN:

6 Q The noise that we are hearing, how many
7 decibals is it and how does it compare with a
8 transformer noise?

9 MR. CONNER: Objection. Unless it's within
10 his judgment. He has no instruments to measure it,
11 obviously.

12 JUDGE BRENNER: I'm sorry, I didn't hear the
13 objection.

14 MR. CONNER: I said objection, unless it is
15 his judgment, because he obviously has no instruments to
16 measure it accurately.

17 JUDGE BRENNER: Well, I don't understand that
18 as a legal objection. That is something the witness can
19 characterize in his answer.

20 MR. CONNER: I would not want the record to
21 reflect that his guesstimate as to what the decibal
22 level of that hum is equates to his measurements
23 referred to in the exhibit.

24 JUDGE BRENNER: That's not a legal objection;
25 it is overruled. We have expert witnesses here who are

1 capable of explaining their answers to the question,
2 unless there is a legal objection.

3 WITNESS MOISEEV: Without a sound level meter
4 I cannot, as I was about to state when I was
5 interrupted, I cannot measure or estimate the noise
6 level of this hum.

7 BY MR. SUGARMAN (Resuming):

8 Q How does it compare with a transformer in
9 terms of noise level?

10 A (WITNESS MOISEEV) Not having heard this
11 particular transformer and not having measured this
12 noise level, I cannot give a comparison.

13 Q How about you, Mr. Boyer? You say if you walk
14 up to one of PE's load centers you can get up close to
15 the transformer and you can hear it hum. How does this
16 hum compare to that?

17 A (WITNESS BOYER) This has a slightly higher
18 pitch to it, I would say.

19 Q You indicated -- I think I understand your
20 testimony but I just want to get one thing clear. You
21 indicated that in response to Judge Morris's questions
22 that you evaluated the noise levels in Point Pleasant at
23 the L90 level. And I assume, therefore, that -- well,
24 let me ask the question this way.

25 Are your statements or the statement that you

1 gave to Mr. Bourguard and that you've associated
2 yourself with more or less in response to Judge
3 Brenner's questions as to the effect of the equipment
4 operation on ambient levels at the site property line,
5 are they related to the L90 level or to the LAQ level,
6 or to all levels or what?

7 A (WITNESS MOISEEV) We are basing the analysis
8 on the L90 level.

9 Q Would the effect of the equipment be more or
10 less at the L levels, at the L50 level or the L10 level,
11 for example?

12 A (WITNESS MOISEEV) The equipment would be of
13 less impact, less effect at that point.

14 MR. SUGARMAN: That is all I have, thank you.

15 JUDGE BRENNER: Does the staff have any
16 follow-up questions based on our questions?

17 MS. HODGDON: No, I have no further questions.

18 JUDGE BRENNER: Does the applicant have any
19 questions?

20 MR. CONNER: None.

21 JUDGE BRENNER: All right. We are going to
22 excuse temporarily most of the applicant's panel. We
23 are probably excluding for good Mr. Moiseev, except we
24 would request that he remain here through Dr.
25 Policastro's testimony in case something comes up. But

1 in case you don't resume the stand, Mr. Moiseev, I would
2 like to thank you for your presence here.

3 I don't know if you have testified before, but
4 this is usually an interesting experience for most
5 technical people, and I will leave the word
6 "interesting" purposefully ambiguous. It is a different
7 thing than a seminar, and we appreciate your patience in
8 trying to adapt to our needs. So thank you for your
9 assistance here.

10 (We are going to break for lunch at this point
11 and we will take an hour and a half break until 2:00
12 p.m., since we have directed the parties to meet and
13 either agree or narrow the differences at least with
14 respect to how we will treat the McCoy and Miller
15 testimony.

16 One of the things you might consider beyond
17 any objections to admission is if the testimony is
18 admitted, do you need to cross examine the witnesses.
19 That is, do you have questions or -- this would be for
20 the staff and applicant -- could you just let the
21 testimony in without questions, notwithstanding whether
22 you might have other objections. That is in case you
23 lose on your objections. So discuss that over lunch.

24 When we come back, -- why don't you also
25 discuss time estimates for Dr. Policastro. We would

1 really like to assist him but not at the expense of not
2 being able to complete Mr. Hansler. So find out how
3 long it would take with Dr. Policastro among
4 yourselves. Find out where Mr. Hansler has to be when,
5 if you can, and I don't know when he will be here but I
6 think he is expected here at around 1:00 o'clock. And
7 see what you can do among yourselves, and we will
8 attempt to assist if we can.

9 MR. CONNER: Is the Board willing that you
10 will admit McCoy and Miller?

11 JUDGE BRENNER: No.

12 MR. CONNER: From what you said, I thought
13 that was foregone.

14 JUDGE BRENNER: Absolutely not. We haven't
15 fully considered it, and we are willing to hear
16 arguments but I didn't want to waste time, in case we
17 overrule it, to find out what the status was.

18 We have discussed Mr. McCoy's testimony among
19 ourselves preliminarily. Give us a moment.

20 (Board conferring.)

21 JUDGE BRENNER: I believe I said Mr. McCoy.
22 Of course, I meant the testimony that we have discussed
23 was Mr. Miller's which we read yesterday. I will give
24 you our preliminary view, but you can convince us
25 otherwise.

1 His testimony in general is pertinent.
2 However, it meanders awfully generally until you get
3 down to the one direct question and that is the last
4 one. And I say the last question is relevant. Whether
5 or not it is material in terms of needing to pursue it
6 is another matter because it merely states if this is
7 going to take place, no problem. And this is supposedly
8 your witness, Mr. Sugarman.

9 We could let it in without any questions and
10 then take a look at the record later as to whether the
11 assumption is there, although it might be useful to ask
12 him a quick question as to how he picked the .5, whether
13 it was his magic number or whether he just picked it
14 because that was the proposal.

15 I don't want to go into it. I just wanted to
16 give our preliminary view, and you can tell us later
17 what the situation is. But we have direct testimony
18 before us which we appreciate as distinguished from just
19 an outline.

20 MR. SUGARMAN: May I say, though, that I have
21 a couple of questions to ask the witness in addition to
22 what he came prepared with, and again bearing in mind
23 that I could not -- there were things that he knows and
24 can testify to that are his personal opinions that are
25 not necessarily reflected in his testimony.

1 JUDGE BRENNER: Well, he didn't provide us
2 with any outline of that. In other words, we either get
3 an outline of a subpoenaed witness or we get the
4 testimony. All we have to guide us on what these
5 witnesses will testify to is what you provided us.

6 MR. SUGARMAN: It is in the trial brief. You
7 see, I couldn't prepare an outline of what I needed in
8 addition, until I saw what he was going to testify to.

9 JUDGE BRENNER: Well, I don't want to debate
10 it now, but you could have given us an outline two weeks
11 ago what you thought he would testify to.

12 MR. SUGARMAN: In my trial brief is the
13 outline, but I also want to point out that I identified
14 these witnesses as early as July, and they, of course,
15 the cross examination or discovery cross examination was
16 available.

17 JUDGE BRENNER: Testimony is very late, and
18 I'm not convinced yet that you could not have taken some
19 steps to mitigate the situation, notwithstanding the
20 difficult position that you had to await their
21 bureaucratic clearances.

22 I will leave it at that for now. I want you
23 to discuss it during the lunch break. We have some
24 sympathy with the difficulty of your position, but there
25 are other things you could have done to make it easier.

1 MR. SUGARMAN: I will have him testify as to
2 what I did do.

3 JUDGE BRENNER: I am not interested. We will
4 rule when we hear it. We will be back at, I guess, 2:05
5 at this point.

6 (Whereupon, at 12:35 p.m., the hearing in the
7 above-entitled matter was recessed for lunch, to
8 reconvene at 2:05 p.m. the same day.)

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1 AFTERNOON SESSION

2 (2:05 p.m.)

3 JUDGE BRENNER: Good afternoon. In order to
4 conserve time, we don't want to handle any extensive
5 arguments now with respect to the testimony of Mr. McCoy
6 or Mr. Miller. But I would like to -- since we could
7 not get to that testimony today in any event.

8 But I would like to inquire for a brief status
9 report as to whether there is a dispute and what that
10 dispute is.

11 MR. SUGARMAN: I have agreed that some
12 questions are outside the scope of what the Board has
13 already decided that it would permit, and so the scope
14 of difference is narrowed to one or two or three
15 questions, and I don't know that we're going to be able
16 to get much further. But I think it may be useful for
17 us to talk a little more about it.

18 I must say, with respect to Mr. Miller's
19 testimony there is a broad area of difference between
20 Mr. Conner and myself. I don't know what the Staff's
21 position is on Mr. Miller's testimony.

22 JUDGE BRENNER: All right, thank you.

23 Mr. Conner, is the dispute down to the
24 pertinence of portions of the testimony or is there a
25 basic dispute as to whether any of it should be

1 accepted?

2 MR. CONNER: I don't want to interrupt Mr.
3 Hansler's time, but I will say very briefly that, in
4 addition to our objections on timeliness, we do object
5 to all of McCoy as being really irrelevant. And Mr.
6 Sugarman agrees with us on a great deal of that.

7 Mr. Miller, subject to checking, what he has
8 there is basically sort of a textbook discussion, which
9 is interesting and perhaps relevant, but not material.
10 So it would boil down to that last question, that if the
11 testimony were admitted -- and I don't want to go into
12 this in detail, but I want to speak some more to it --
13 as being very proper testimony to be submitted late and
14 without foundation for us to have to go into it now --
15 but that would be the only area that I would consider to
16 be of relevance and materiality that should be even
17 considered for acceptance.

18 JUDGE BRENNER: If that portion of the Miller
19 testimony is admitted, would you seek to cross-examine
20 on that last question?

21 MR. CONNER: Certainly.

22 JUDGE BRENNER: On the last question?

23 MR. CONNER: Certainly, because it is very
24 vague.

25 JUDGE BRENNER: The last question?

1 MR. CONNER: The last question. I mean, it is
2 very generic. Several things would have to be
3 clarified.

4 JUDGE BRENNER: Okay. Mr. Sugarman, is it
5 accurate that you agree that the McCoy testimony is not
6 relevant?

7 MR. SUGARMAN: No, sir, not all of it. No, I
8 thought what I said was that I had gone over it with Mr.
9 Connor and Ms. Chan and Ms. Hodgdon and I had
10 acknowledged that much of the testimony, my view, it was
11 something that the Board, from its prior rulings, would
12 not hear, much of it but not all of it. And I have
13 indicated to them very specifically which questions I
14 believe the Board would hear based upon its prior
15 rulings.

16 JUDGE BRENNER: I don't want to waste time on
17 the record. By the end of the day today -- we will have
18 a mid-afternoon break -- I would like provided jointly
19 from the parties, and it can be handdwritten, given the
20 logistics, a listing of which portions of the testimony
21 that you, Mr. Sugarman, agree would not be included,
22 given our prior rulings, a concise listing without
23 argument; and also, a listing of the portions of the
24 testimony that either the Staff or the Applicant or both
25 believe are not relevant, probative or material, which

1 Mr. Sugarman believes, to the contrary, should be
2 admitted.

3 So I should have two categories. If only one
4 of the other parties is objecting, it would be I guess
5 two subparts of that second category, so I know whether
6 it is the Staff or Applicant. I want that in writing by
7 the end of the day today, and then we will be able to
8 consider it overnight so we know which ones to focus
9 on. If necessary, we will hear further argument it
10 later in the week, possibly as soon as tomorrow.

11 MR. SUGARMAN: Would it be fair to assume that
12 if Mr. Miller and Mr. McCoy are to be here, that they
13 would be here on Thursday or Friday?

14 JUDGE BRENNER: I cannot make that
15 assumption. I will have to see how the schedule goes.
16 We are just getting too locked in. You will have to be
17 flexible with them. You can assume we will not take
18 them tomorrow. I hope to finish this week, which gets
19 us down to Thursday or Friday.

20 All right. Has there been any resolution of
21 the scheduling problem between Dr. Policastro and Mr.
22 Hansler? I might say, it was only just before the break
23 that we learned Dr. Policastro could be here on Friday.
24 If I had been told that at the beginning of the week, I
25 would have held off the whole noise contention until

1 Friday. We were led to believe that he had to testify
2 by Tuesday and then be gone.

3 MS. HODGDON: He said he could come back, if
4 he left the conference early, at 3:30 Friday afternoon.

5 JUDGE BRENNER: That is not being here on
6 Friday.

7 MS. HODGDON: That's not really being here on
8 Friday.

9 JUDGE BRENNER: All right. What are we going
10 to do about Dr. Policastro? I've been told off the
11 record that it was agreed that we would go with Mr.
12 Hansler; is that correct?

13 MS. HODGDON: That is correct.

14 JUDGE BRENNER: What are we going to do with
15 Dr. Policastro?

16 MS. HODGDON: I've spoken with Mr. Sugarman
17 and with Mr. Conner. Mr. Sugarman says he has about a
18 half an hour of cross-examination at the most, and Mr.
19 Conner says he has only one question for Dr. Policastro,
20 it would be very short, and it would be less than an
21 hour all-told.

22 JUDGE BRENNER: Well, why don't we go with him
23 first, then?

24 MS. HODGDON: We could do that. Actually, I
25 think that Mr. Hansler -- we have not spoken -- we did

1 speak with him, but I did not represent that we would go
2 first. We could go with Dr. Policastro first, but I
3 haven't really arranged that with Mr. Hansler.

4 JUDGE BRENNER: Well, Ms. Hodgdon, the reason
5 I'm involved in these whole logistical problems is
6 because the Staff witness has a conflict. I don't want
7 to be more rigorous than you in trying to fit him in.

8 MS. HODGDON: That's fine. That's fine with
9 me to go first.

10 JUDGE BRENNER: Well, you also said it's fine
11 with you for Mr. Hansler to go first.

12 MS. HODGDON: The reason I said that Mr.
13 Hansler could go first is that Mr. Sugarman doesn't know
14 how long he will take with Mr. Hansler, and therefore I
15 would agree to go last if that is the Board wants.
16 Either way, I am happy to do it any way that it can
17 accommodate everybody.

18 JUDGE BRENNER: Let's recognize DRBC's counsel
19 at this point. Mr. Goldberg?

20 MR. GOLDBERG: Judge, I'm David J. Goldberg.
21 I'm General Counsel to the Delaware River Basin
22 Commission, and I'm here with Gerald Hansler, who is the
23 Executive Director of DRBC.

24 At the outset, let me say first of all that I
25 ask leave of the Board to be admitted for the purposes

1 of the testimony of Mr. Hansler only. That is our only
2 involvement in this proceeding.

3 Secondly, as I have indicated to you and to
4 counsel, Mr. Hansler is here, is available, has been
5 available all day. We would hope that whatever is
6 required beyond what we have submitted -- and you have
7 our motion to quash, so you know my position with regard
8 to his testimony. You know my position with regard to
9 the limitations that we see that exist with regard to
10 anything he is capable of testifying about. I'm not
11 going to repeat it.

12 But we would ask that whatever the Board feels
13 it requires from Mr. Hansler to have a complete record,
14 that it be obtained today, because he is leaving for the
15 West Coast first thing Thursday morning and has other
16 commitments tomorrow. So we ask that the Board take
17 whatever testimony Mr. Hansler is asked to provide this
18 afternoon.

19 JUDGE BRENNER: We will certainly start with
20 him this afternoon. We have a scheduling problem. I
21 don't know why the Board has had to get into the
22 business on the record of this kind of detail. I had
23 hoped the parties would have discussed this thoroughly
24 over lunch.

25 I will fill you in on the problem, if

1 necessary, as we go along, Mr. Goldberg. But that
2 problem is the reason for my next question to you, sir.
3 What is Mr. Hansler's conflict tomorrow morning, in the
4 event we do not finish with him today? Most assuredly
5 we will start with him today.

6 MR. GOLDBERG: He is going to be out of the
7 office in the state for approximately a week, and he has
8 a series of matters within the Commission that relate to
9 the scheduling of the Commission meeting that we are
10 having immediately upon his return. And so he has a
11 series of matters that he has to deal with.

12 JUDGE BRENNER: All right. We're going to go
13 with Dr. Policastro. The reason is that Dr. Policastro
14 has a definitely scheduled meeting and seminar, which as
15 I understand has been scheduled of long standing, even
16 though we haven't been advised, unfortunately, of that
17 for long standing. It is in Chicago and he will be out
18 of town. It is not a matter of conflicting work. He
19 just physically would not be here.

20 The main reason I am ruling this way is that
21 it is our belief that his examination will be
22 substantially shorter than Mr. Hansler's. If that
23 belief turns out to be incorrect as we get through the
24 afternoon, we may make an adjustment. It is my hope
25 that if we start with Dr. Policastro at this point, at

1 2:15, we would be able to start with Mr. Hansler by
2 approximately 3:30.

3 We will run until 6:00 o'clock in order to
4 attempt to finish with Mr. Hansler today, rather than
5 our usual finishing time. If you're not finished with
6 him today, we will finish with him tomorrow morning. It
7 is my expectation that if we do not finish today, we
8 will not be taking up his time all day tomorrow. We
9 should finish fairly briefly tomorrow morning. And
10 those are the considerations.

11 In addition, let me clue you in as to why he
12 is here. He is not here solely at the behest of the
13 Board or even initially at the behest of the Board. If
14 you read yesterday's transcript, at some point you will
15 see the discussion which took place. The parties were
16 not able to come to agreement with respect to his
17 deposition. The only agreement they could come to was
18 to put the deposition in and then file post-hearing
19 motions to strike.

20 We have seen enough prehearing motions to
21 know, as I stated yesterday when you weren't here, Mr.
22 Goldberg, that the differing views as to the meaning of
23 particular portions of Mr. Hansler's deposition, have
24 been at such variance as if to lead us to believe that
25 the parties were at two different depositions.

1 We felt the situation would continue
2 post-hearing and we would not have the benefit of Mr.
3 Hansler's being able to explain contemporaneous with
4 whatever characterizations the parties were making of
5 his deposition as to what he meant, and it just was not
6 going to be a material focusing on the important
7 issues.

8 With respect to the motion to quash, as we had
9 indicated in the conference call, we would consider
10 further our ruling yesterday after viewing Del-Aware's
11 submission as to their revised outline of what they
12 would hope to educe from Mr. Hansler. We did that
13 yesterday upon reviewing the revised outline, and we
14 agreed that there were material, relevant, probative
15 portions of the outline for which Mr. Hansler's
16 testimony would be pertinent to the record.

17 We also ruled that certain portions would not
18 be pertinent. However, our ruling was more in terms of
19 general guidance which we expect Del-Aware to adhere
20 to. Beyond that, parties to the proceeding, which do
21 not include you, Mr. Goldberg, as you've indicated, can
22 object to questions in terms of their relevance and
23 materiality to the issues. You cannot do that.
24 However, you are free to make any objections with
25 respect to any matters of evidentiary privilege

1 involving Mr. Hansler or the work of the Commission or
2 that nature.

3 MR. GOLDBERG: Judge Brenner, I don't want to
4 prolong the hearing, because I would like to see the
5 Board proceed and get rid of the witnesses, and
6 hopefully we will complete with Mr. Hansler.

7 I have to demur to the Board's conclusion that
8 Mr. Hansler's problems tomorrow are not of such moment
9 that it will permit his attendance here. I would hope
10 that as we go through it, if it appears that we are not
11 going to be able to complete Mr. Hansler, that we may be
12 able to reach some agreement with the panel and counsel
13 that whatever hasn't been covered may then be covered in
14 connection with the submissions and the deposition that
15 have been taken.

16 So I would at least like to leave open that
17 option of finishing Hansler, either through testimony or
18 through a combination of use of the deposition and other
19 submissions and testimony.

20 JUDGE BRENNER: Well, I won't foreclose that,
21 since you may have a concrete focused proposal depending
22 upon what transpires. But don't be too optimistic about
23 that. Given the discussion we had yesterday, it became
24 increasingly apparent that to handle the evidence at the
25 deposition would not work too well. The deposition was

1 a rather wide-ranging affair, as you may know, which did
2 not focus on the issues.

3 In addition, we have a matter which we were
4 going to announce at the outset of Mr. Hansler's
5 testimony, and perhaps we will do it now so parties can
6 consider it, even though the very next witness will be
7 Dr. Policastro.

8 I should add that I certainly have made no
9 determination that Mr. Hansler's business tomorrow is
10 not of important moment. It was a matter of the
11 relative weighing, and also the fact that we believe we
12 can finish fairly rapidly with Dr. Policastro. We're
13 not insensitive to your problems, but we do have to
14 weigh the problems of other people also.

15 MR. GOLDBERG: We are ready to go.

16 JUDGE BRENNER: Mr. Sugarman, you wanted to
17 introduce Ms. Coe?

18 MR. SUGARMAN: Yes. May I introduce and enter
19 an appearance on behalf of Ms. Mary Coe, my associate,
20 associated with me.

21 JUDGE BRENNER: We have seen her name in
22 papers in the proceeding, and now we have her presence.

23 We have a motion before us which, as we
24 indicated, we were going to rule on later in the week,
25 involving the petition dated September 20, 1982, filed

1 by Delaware to amend contentions. One of the
2 contentions, the third one in the sequence presented by
3 Del-Aware, deals -- and this is a paraphrase -- with the
4 effect of the possibility that Unit 2 would not be built
5 on the need for the Point Pleasant diversion.

6 We are not formally ruling on the motion now.
7 However, we will note our preliminary disagreement with
8 the one-sentence assertion by the Staff without
9 explication that it is premature to consider that
10 possibility because the Applicant still wants to build
11 it. We reject that as a reason, as a sole reason, and
12 certainly it contains no analysis leading us to accept
13 the proposition that so long as the Applicant continues
14 to want to build something we should assume it is going
15 to be built until we are led to believe otherwise.

16 The Applicant in more extensive analysis in
17 addition to its procedural objections -- and I want to
18 get to the substantive objections here -- at page 8 of
19 the Applicant's response includes an excerpt from the
20 Commonwealth of Pennsylvania Department of Environmental
21 Resources, "Environmental Assessment Report and
22 Findings, Point Pleasant Water Supply Project, August
23 1981," which also happens to be Applicant's proposed
24 Exhibit 3.

25 In that excerpt it is stated that, given the

1 flow requirements for one unit and for two units in the
2 Schuylkill imposed by DRBC, that in effect the diversion
3 would be needed for one unit almost as much as for two
4 units. To state it another way, the difference in
5 availability of the Schuylkill with one unit would be
6 very negligible.

7 If that were true, there would be no basis for
8 admitting the contention. We're not into the argument.
9 I want to set up the fact that this is a subject we will
10 ask Mr. Hansler about if nobody else does. We assume
11 Mr. Hansler is familiar with that excerpt. If not,
12 hopefully somebody can show it to him quickly.

13 Beyond that and more directly, at the
14 construction permit stage the Appeal Board decision,
15 ALAB-262, issued on March 19, 1975, at page 168 of that
16 decision states: "Central to that decision" -- and that
17 is the decision to seek supplementary water -- "Central
18 to that decision was the DREC conclusion that water
19 could be drawn from the Schuylkill, Perkiomin and
20 Delaware by users such as the Limerick facility only in
21 circumstances where the flow in those waters exceeded
22 certain limits which the DRBC had specified."

23 And footnote 9, there is a discussion of some
24 of the flow considerations in the Schuylkill. The
25 decision goes on to state:

1 "In this connection, DRBC at least implicitly
2 found that there would be periods during which the flow
3 from these tributaries, even as augmented by water
4 released from certain now existing storage facilities,
5 would be insufficient to enable the Limerick facility to
6 procure enough cooling water to operate at full
7 capacity."

8 In effect, the thought is consistent, the NRC
9 proceedings is consistent with the excerpt provided by
10 the Applicant. However, the detail as to the numbers is
11 not provided, and we would like to inquire of Mr.
12 Hansler as to whether or not that differing numbers of
13 flow, 530 cfs with one Limerick unit operating as
14 compared with 560 cfs in the Schuylkill with both
15 proposed units operating, are accurate; and if DRBC has
16 performed an assessment as to the historical occurrence
17 of the number of days difference which would result from
18 one unit operating versus two units.

19 So that is a subject we want to explore ahead
20 of our ruling on the motion. Normally we would have
21 waited, but we want to take advantage of Mr. Hansler's
22 presence here. If he doesn't know because he wasn't
23 prepared to address it, we will understand that
24 consideration in the sense that we are announcing our
25 interest for the first time.

1 However, it is our hope that, since we are
2 talking about information that has always been well
3 within the DRBC's ken for a large number of years, that
4 he can in fact enlighten us on it.

5 I will let it go for now.

6 Mr. Sugarman, very briefly.

7 MR. SUGARMAN: Just very briefly, I would hope
8 that the Board would include in that question storage on
9 the Schuylkill River and not just river run on the
10 Schuylkill River as indicated by the quotation from
11 ALAB-263.

12 JUDGE BRENNER: No, we are not going to
13 include the feasibility of storage on the Schuylkill. I
14 will go into the explanation again, if you want, later.
15 It will repeat some of our earlier rulings. But I do
16 want to understand the sensitivity of the flow without
17 storage. I will give you the benefit of a fuller
18 explanation if you want to raise that point again.

19 MR. SUGARMAN: I do. Should I now?

20 JUDGE BRENNER: No. We will get to it after.

21 MR. SUGARMAN: I would appreciate your keeping
22 it open until I can address it. Thank you.

23 JUDGE BRENNER: Well, I'm going to prohibit
24 your asking Mr. Hansler any questions about the
25 feasibility of storage on the Schuylkill. So that is

1 our ruling. I will give you the benefit of the full
2 explanation later, so we do not delay Mr. Hansler, if
3 you would like it later.

4 MR. SUGARMAN: Well, I would hope that I would
5 have a chance to go into that before the Board decides
6 on the motion to supplement.

7 JUDGE BRENNER: All right, we will hear you on
8 it in that connection later this week, but not in
9 connection with questioning Mr. Hansler.

10 MR. SUGARMAN: I understand that.

11 JUDGE BRENNER: All right, let's get Dr.
12 Policastro up there and see if we could help him out of
13 town.

14 MS. HODGDON: Judge Brenner, may I present
15 Bryan Richter with him on that contention? His
16 testimony is merely procedural, in that it envelopes Dr.
17 Policastro's. I can always bring him back.

18 JUDGE BRENNER: All right, let's try it. But
19 Dr. Policastro is our witness. If it starts to get too
20 long because there are two people up there, I'm going to
21 cut it off.

22 MS. HODGDON: Yes, I understand that.

23 JUDGE BRENNER: Well, Mr. Richter doesn't know
24 anything about the noise. He's just talking about the
25 character of the area; is that correct?

1 MS. HODGDON: All he knows is the
2 circumstances of what Dr. Policastro is doing for the
3 NRC Staff with regard to the noise.

4 JUDGE BRENNER: Okay. We will see how it
5 goes.

6 Whereupon,

7 ANTHONY POLICASTRO and
8 BRYAN J. RICHTER,
9 called as witnesses by counsel for the Regulatory Staff,
10 having first been duly sworn by the Chairman, were
11 examined and testified as follows:

12 DIRECT EXAMINATION

13 BY MS. HODGDON:

14 Q Dr. Policastro, would you state your name for
15 the record, please?

16 A (WITNESS POLICASTRO) Yes, Anthony Joseph
17 Policastro.

18 Q Mr. Richter?

19 A (WITNESS RICHTER) Bryan J. Richter.

20 Q Dr. Policastro, have you prepared a statement
21 of professional qualifications?

22 A (WITNESS POLICASTRO) Yes, I have.

23 JUDGE BRENNER: Ms. Hodgdon, I wonder if I
24 might make a suggestion, since we are worried about the
25 time today. Are they going to have any corrections?

1 WITNESS POLICASTRO: Just a few minor
2 typographical corrections.

3 MS. HODGDON: I think Mr. Richter has a
4 substantive correction, one only.

5 JUDGE BRENNER: Why don't you let him make the
6 correction, the substantive one, and then let's just ask
7 them one question: Subject to the correction you are
8 going to make, gentlemen, is your testimony and
9 qualifications true and correct?

10 WITNESS RICHTER: Yes.

11 WITNESS POLICASTRO: Yes.

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1 JUDGE BRENNER: Let's get the correction and
2 then we will just bind it in.

3 BY MS. HODGDON: (Resuming)

4 Q Yes. The substantive correction to your
5 testimony?

6 A (WITNESS RICHTER) On page 5, footnote 4, the
7 last sentence in the footnote should now read, "This
8 memorandum has been executed by the district engineer
9 and the SHPO and the ACHP."

10 JUDGE BRENNER: I assume this correction has
11 been made on the copies provided to the Reporter
12 pursuant to our previous orders in this case?

13 (Pause.)

14 MS. HODGDON: Judge Brenner, to save time the
15 professional qualifications, the testimony and the
16 exhibits are all together, and I can move them in all
17 together except that I have to make a slight
18 adjustment. The prefiled testimony of Dr. Policastro
19 included Figure 1 from Applicant's -- I don't know how
20 to characterize -- E-290.24, Applicant's 1-A. And that
21 is part of Mr. Moiseev's document, and I won't introduce
22 it again.

23 JUDGE BRENNER: Well, it's already attached,
24 isn't it?

25 MS. HODGDON: I can take it back. I don't

1 want to confuse the record by pretending it is something
2 else.

3 JUDGE BRENNER: Just leave it in the way it is.

4 MS. HODGDON: I would move then that Dr.
5 Policastro's and Mr. Richter's testimony together with
6 four exhibits and statements of professional
7 qualifications be received into the record into evidence
8 as if read.

9 JUDGE BRENNER: Yes. We will bind in the
10 testimony along with the documents designated as
11 exhibits and attached to the testimony. I have attached
12 to Mr. Richter's testimony Exhibits 1 through 4 and to
13 Dr. Policastro's testimony Exhibits 1 and 2. We will
14 refer to them as attachments hereafter so as to not
15 confuse them with official exhibits, and they will be
16 bound into the record as if read.

17 (The information referred to follows.)

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09/20/82

UNITED STATES OF AMERICA
 NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
PHILADELPHIA ELECTRIC COMPANY)	Docket Nos. 50-352
(Limerick Generating Station,)	50-353
Units 1 and 2))	

NRC STAFF TESTIMONY OF ANTHONY
 POLICASTRO IN RESPONSE TO CONTENTION V-16a

This testimony is offered in response to Contention V-16a, which states:

Noise effects and constant dredging maintenance connected with operations of the intake and its associated pump station will adversely affect the peace and tranquility of the Point Pleasant proposed historic district.

- Q1. Please state your name and occupation.
- A1. My name is Anthony J. Policastro. I am Principal Investigator, Power Plant Noise Impacts, Argonne National Laboratory (ANL). I am serving as a consultant to the NRC Staff on the evaluation of impacts of noise associated with operation of the Limerick Nuclear Generating Station. My evaluation will be provided to the Staff for use in the Draft and Final Environmental Statements (DES/FES) on Limerick.
- Q2. What is the purpose of your testimony?
- A2. The Staff has requested me to evaluate the potential impacts on residents of Point Pleasant, Pennsylvania of noise resulting from

operation of the proposed Point Pleasant intake and pumping station. I have conducted a preliminary evaluation of potential noise impacts from such sources and the results of that evaluation are presented in this testimony. The results of my final evaluation will be presented in the DES/FES.

- Q3. Based upon your review of information provided to you by the Applicant, what will be the principal source of noise from operation of the Point Pleasant intake and pumping station.
- A3. The principal source of noise which will be audible to residents of Point Pleasant from the intake and pumping station will be the electrical transformers to be located adjacent to the pumphouse. I have been advised that constant dredging maintenance of the intake is not anticipated and have not, therefore, performed any analysis of noise associated with dredging activities.
- Q4. Please describe the evaluation you conducted.
- Q4. Calculations have been prepared with the University of Illinois/ANL community noise model [1] as applied to the noise sources at the Point Pleasant pumping station. The noise levels at the four nearest residences to the pumphouse have been chosen as representing the potentially most severely affected inhabited locations. The location of the pumphouse and nearest residences are sketched in Exhibit 1. Assumptions made in preparing the calculations were as follows:

(1) The equipment within the pumphouse does not transmit any significant noise through the pumphouse walls and the pumphouse will not, therefore, be a noise source to Point Pleasant residents. The building structure appears to have sufficient attenuation to reduce pump and fan noises to insignificant levels. The heating, ventilating and air conditioning outlets to the outside should be insignificant noise sources and may be neglected.

(2) The major noise sources at the pumping station are the two transformers outside the pumphouse. Noise levels from these transformers were based on data presented in the Edison Electric Institute Environmental Noise Guide [2]. The transformers are expected to operate continuously. At present it is not clear which of four manufacturers of transformers will be chosen. However, present plans are for unquieted transformers (with standard FEMA rating 67dB), rather than transformers which have been quieted beyond the FEMA rating. Outdoor noise calculations for both types of transformers have been made.

(3) Effects of the pumphouse structure as a barrier to the propagation of noise from the transformers were not included in the present calculations. Residences 1 and 4 are in the line of sight of the transformers, and as a result, barrier effects of the pumphouse are not expected to be important for those locations. The pumphouse, however, stands between the transformers and residences 2 and 3. Noise levels due to the transformers may be greatly reduced at these locations as a result of the presence of the pumphouse.

(4) Standard day conditions ($^{\circ}$ 15C, 70% RM) are assumed for ambient meteorology.

(5) Ambient noise level measurements provided to me by the Applicant (report by Cerami & Associates [3]) were used and assumed valid for the site of each home. The ambient noise levels reveal the presence of the running water through the sluice gates of the nearby Pennsylvania Canal and a small creek flowing into the canal near the pumphouse site. This octave band sound pressure level spectrum (for daytime hours-45dBA) is given in Exhibit 2. The plateau in the 500-4000 Hz frequency range reveals the presence of the noise from the flowing water. Measurements by Cerami and Associates were made at the proposed site of the pumping station at a location 30 ft north of the south property line and 100 ft east of Route 32 (River Rd). It is not certain that these measurements are typical of ambient noise measured at the property lines of the four nearest residences, since the homes are at different distances from the running water sources. The ambient noise levels at residences 1, 2, and 3, may be lower than at the location where ambient measurements were made by Cerami and Associates. The lack of data on the spatial variation of the ambient noise measurements, necessarily leads to some uncertainties in the noise prediction at the site of each home. For purposes of my calculations, I have, however, used for the ambient noise level at all four residences the nighttime noise level of 44dBA measured at the site chosen by Cerami and Associates.

The computer model [1] predicted noise levels from the two transformers at the four community locations. The model run included the effects of sound attenuation due to atmospheric conditions including temperature and humidity, and sound attenuation due to the ground.

Q6. Please describe the results of your calculations.

A6. The results of the calculations were:

(a) The noise caused by the unquieted transformers consists of low frequency tones which will be audible above background at the four residents' homes. These tones may be found to be objectionable (e.g., they may interfere with sleep during summer nights, when windows may be open). The tones which are expected to be audible at each home are listed in Table 1. Inclusion of barrier effects of the pumphouse may change these results, particularly for residences 2 and 3. Use of a full or partial enclosure for the transformers to deflect the noise away from the homes, perhaps towards the river, should correct this problem. Use of quieted transformers, alone or in combination with a partial/full enclosure, should also correct the problem.

(b) The predicted broadband noise resulting from the two transformers is quite low at each of the four residences. Two noise indicators (explained in Table 1) are presented in Table 1. The indicators reveal that the transformer noise is low in absolute terms. The noise, however, will be noticeable in terms of tonal components, but not significantly in terms of overall or A-weighted sound pressure levels. This residential area is relatively quiet

and, as a result, the transformer noise (though not a loud source itself) is expected to be audible.

Q7. Have you reached any preliminary conclusions regarding the potential impacts of transformer noise on the residents of Point Pleasant?

A7. Yes. The noise of the transformers could be objectionable to persons living at the four residences nearest to the pumphouse. The noise levels could, however, be significantly reduced by construction of an enclosure around the transformers, by purchase of quieted transformers, or by a combination of the above steps. The transformer tones are not expected to be audible beyond approximately 175 meters from the transformer location.

Q8. Do you expect to be able to factor further details of the final plans and specifications for the Point Pleasant pumping station into your evaluation for the DES/FES?

A8. Yes, provided that I receive from the Applicant the final plans and specifications for the pumping station (including details on the sound levels associated with operation of the transformers purchased and information on any enclosures that may be planned), I will be able to factor this information into my evaluation for use in the DES/FES.

References

1. W.E. Dunn, A.J. Policastro, and M. Wastag. User's Guide for Mathematical Model to Predict Noise Impacts in the Community. Division of Environmental Impacts Studies. Argonne National Laboratory. Draft Report. September 1982.
2. Bolt Beranek and Newman, Inc. Edison Electric Institute Environmental Noise Guide. Volumes 1 and 2. Published by Edison Electric Institute. New York City, 1978.
3. Neil Moiseev. Site Noise Survey, Point Pleasant Pumping Station. Cerami and Associates, Inc. Report 5127. October 20, 1981. Provided in September 3, 1982, Applicant's response to Staff Request for Additional Information #E290.24-1.

Exhibits

- Exhibit 1: Neshaminy Creek Water Resources Development Plan. Point Pleasant Pumping Facilities, Point Pleasant Pumping Station. Vicinity Plan - Property and Rights of Way Limits, with identification of four nearest residences added by Dr. Policastro.
- Exhibit 2: Point Pleasant Pumping Station. Figure 1: Ambient Octave Band Sound Pressure Levels, 45 dB(A). Cerami and Associates, Inc.

Table 1. Noise Predictions At The Four Nearest Residential Community Locations Due To Point Pleasant Pumping Station

Location	Noise Levels (dB) due to Transformers alone				Ambient Noise Level (dB)		Noise Level (dB) (Transformers Plus Ambient)				Audible Tones (Hz)		
	Unquieted ^{1/}		Quieted ^{4/}				Unquieted		Quieted		Unquieted ^{5/}		Quieted
	dB0 ^{2/}	dB A ^{3/}	dB0	dB A	dB0	dB A	dB0	dB A	dB0	dB A			
1	47	38	37	28	49	44	51	45	49	44	120,240,360,480		None
2	50	41	40	31	49	44	52	46	49	44	120,240,360,480		None
3	48	39	38	29	49	44	51	45	49	44	120,240,360 480		None
4	49	40	39	30	49	44	52	45	49	44	120,240,360,480		None

1/ Transformers with a NEMA rating of 67dB.

2/ dB0 is an unweighted, overall measure of sound pressure levels.

3/ dB A is an A-weighted measure of sound pressure levels, which is defined to approximate sound pressure levels perceived by the human ear.

4/ Quieted by 10dB below NEMA rating.

5/ These values represent the frequency of the tonal components of the transformer sound at the locations indicated.

PROFESSIONAL QUALIFICATIONS

Anthony J. Policastro

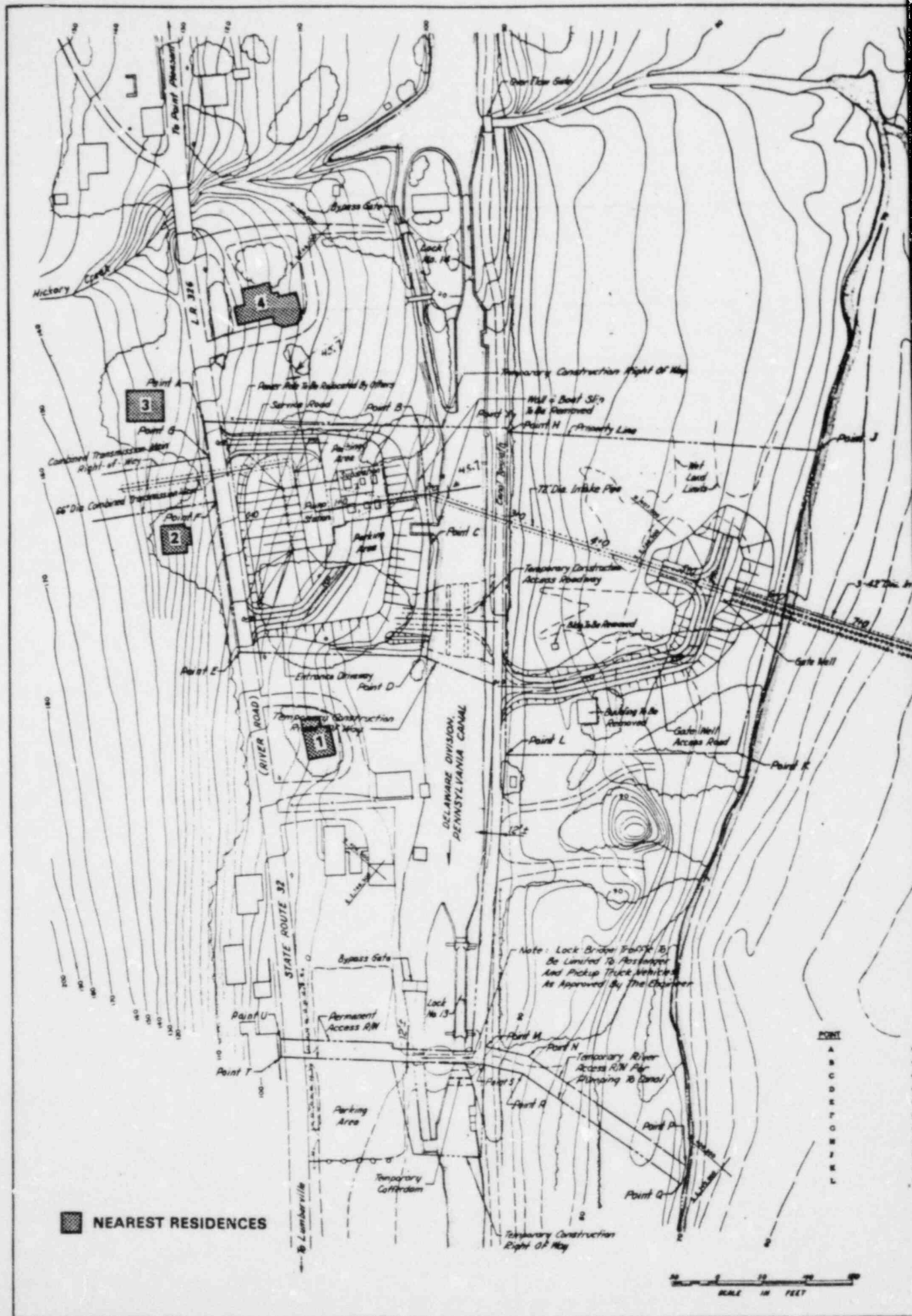
Argonne National Laboratory

I am a Mechanical Engineer in the Division of Environmental Impact Studies. I am also a project leader for research projects in the area of environmental transport relating to fluid mechanics. Over the past year, my duties have involved direction of the following projects (a) development of a computer model for noise impacts in the community from coal-fired and nuclear power plants (for DOE/ERA) (the model is presently being used (for NRC) in the environmental impact evaluation in support of the licensing of new nuclear plants), (b) development of validated models for cooling tower plume rise, drift deposition, fogging, icing, and snowing (for EPRI), (c) validation of models for ultimate heat sink cooling pond thermal performance (for NRC) and (d) validation of short-term long-range models for SO₂, sulfates, and particulates (for EPA). Each of these projects provides research results needed for the preparation of environmental impact evaluations. Since 1972, I have participated in the preparation of approximately 10 environmental impact statements and appeared as a witness at two Atomic Safety and Licensing Board hearings.

I received my B.S. (1966), M.S. (1967), and Ph.D. (1970) in the areas of applied mathematics and fluid mechanics at Columbia University. From 1970-1975, I worked on the Great Lakes Research Project at Argonne (Energy and Environmental Systems Division). On that project I carried out a validation study of mathematical models for the prediction of surface and submerged thermal discharges in water. In that area I am presently preparing a monograph entitled "Thermal Pollution Models" for publication by the American Geophysical Union. In addition, I am the U.S. representative to a technical working group for the International Atomic Energy Agency for the purpose of developing a nuclear power plant safety guide on radioactivity dispersion in the surface waters.

I have also been a consultant and research collaborator at several European research institutes: Swedish Meteorological and Hydrological Institute (thermal discharges in water), Rudjer Boskovic Institute (thermal discharges in water), Boric Kidric Institute (thermal discharges in water), and Karlsruhe University (cooling tower plume modeling). Other areas of my work over the past several years included the modeling of ground-water flow, LNG dispersion, and air pollution over complex terrain.

My publications consist of about 50 papers (journal articles, conference papers, invited papers, and reports). I have also directed five M.S. theses and am presently on the dissertation committee for two Ph.D. theses at the University of Illinois.

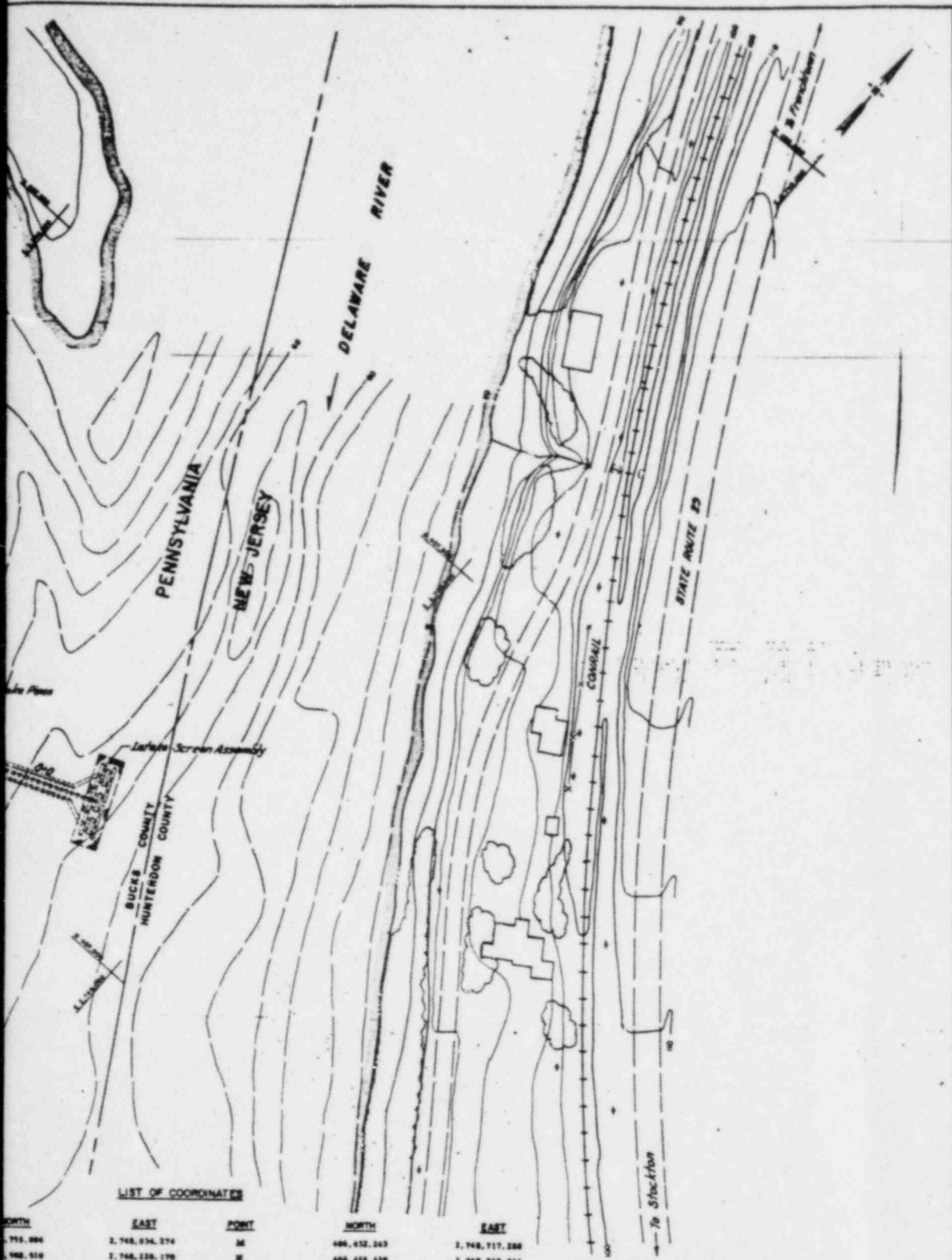


■ NEAREST RESIDENCES

Note: Lock Bridge Points B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

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LIST OF COORDINATES

NORTH	EAST	POINT	NORTH	EAST
975.884	2,748,834.874	M	466,432.243	2,748,717.288
980.910	2,748,838.170	N	466,435.628	2,748,762.941
816.826	2,748,814.990	P	466,475.917	2,748,956.883
715.336	2,748,805.717	Q	466,484.880	2,748,977.227
586.912	2,748,829.586	R	466,436.871	2,748,746.111
499.913	2,748,193.788	S	426,413.999	2,748,738.991
779.046	2,748,844.217	T	466,475.794	2,748,851.831
940.228	2,748,848.873	U	466,436.199	2,748,837.798
174.646	2,748,847.118			
601.189	2,748,132.868			
669.207	2,748,826.945			
			666,972.525	2,748,277.112

NESHAMINY CREEK WATER RESOURCES DEVELOPMENT PLAN	
POINT PLEASANT PUMPING FACILITIES POINT PLEASANT PUMPING STATION VICINITY PLAN - PROPERTY AND RIGHT OF WAY LIMITS	
CIVIL	
E. H. BOURQUARD ASSOCIATES, INC. CONSULTING ENGINEERS HARRISBURG, PENNSA.	
DATE August 1982 SCALE As Shown	COUNTY OF BUCKS NESHAMINY WATER RESOURCES AUTHORITY
DRAWING NO. PPPS-C SHEET NO. 4 OF 24	

REVISION NO.	DESCRIPTION	BY	DATE

PROJECT Point Pleasant Pumping Station

SHEET 1 OF 1
DATE 10/20/81

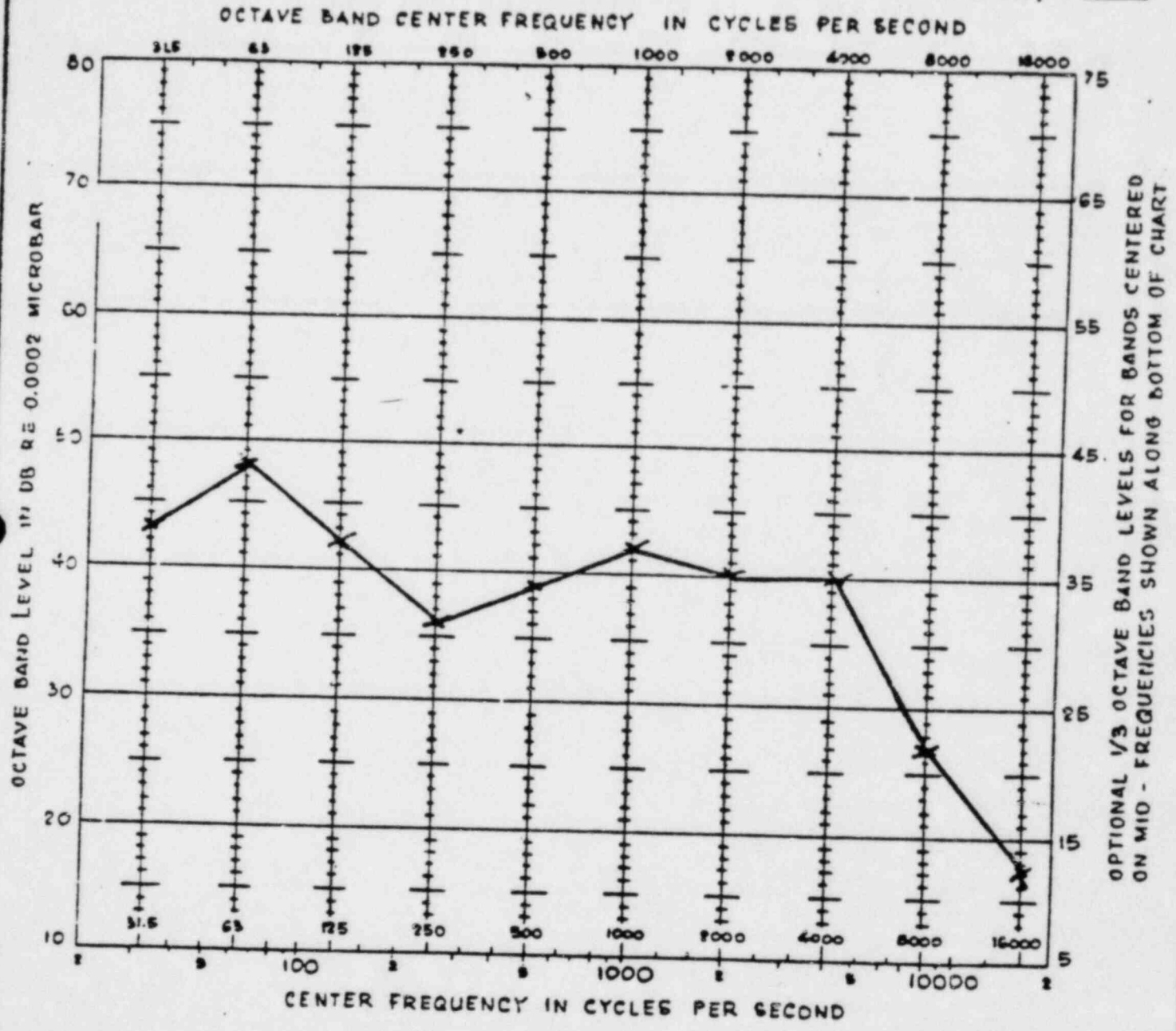


FIGURE 1: Ambient Octave Band Sound Pressure Levels, 45 dB(A)

09/20/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
PHILADELPHIA ELECTRIC COMPANY)	Docket Nos. 50-352
(Limerick Generating Station,)	50-353
Units 1 and 2))	

NRC STAFF TESTIMONY OF BRIAN J. RICHTER
ON LIMERICK CONTENTION V-16a

Del-Aware contends in Contention V-16a, as rewritten by the Board,
that:

Noise effects and constant dredging maintenance connected with operations of the intake and its associated pump station will adversely affect the peace and tranquility of the Point Pleasant proposed historic district.

In response to this contention, the Siting Analysis Branch (through Brian J. Richter) submits the following testimony:

- Q. Please identify yourself and your responsibility with respect to the review of the Point Pleasant Diversion Project.
- A. I am Brian J. Richter, an economist with the U.S. Nuclear Regulatory Commission. One of my areas of responsibility is to evaluate the impacts of the licensing of nuclear power reactors upon historical and cultural resources. One of the applications assigned to me for review is Philadelphia Electric Company's application for operating licenses for Limerick, Units 1 and 2. As part of my review, I will consider the effects of operation of the Point Pleasant Diversion

Project on the historical and cultural resources of the proposed Point Pleasant Historic District.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to state the Staff's present assessment of the potential impact of noise emanating from the Point Pleasant Diversion Project upon the proposed Point Pleasant Village Historic District. Based upon the testimony of Dr. Anthony Policastro, I understand that the only anticipated source of noticeable noise will be the transformers to be located adjacent to the pumphouse.

Q. What do you understand to be the principal historic and cultural characteristics that have qualified the proposed Point Pleasant Historic District for inclusion in the National Register of Historic Places?

A. In a letter dated September 21, 1981, from Larry E. Tise, the State Historic Preservation Officer (SHPO) to Lieutenant Colonel Roger L. Baldwin, District Engineer, Philadelphia District, U.S. Army Corps of Engineers, (Exhibit 1), the Point Pleasant Historic District was recommended as being "eligible for listing on the National Register of Historic Places." In the Statement of Significance attached to the letter, the District is said to represent "a significant resource relating to community development history of 18th century English settlements in Pennsylvania." The Statement concludes with: "Due to the high degree of integrity and

continued rural setting the district provides us with a strong sense of time and place."^{1/}

In addition to the characteristics identified in the designation of eligibility, I am also aware of interest in the Point Pleasant area because it was the site of a prehistoric Indian settlement.^{2/}

- Q. Does it appear that the noise emanating from the transformers at the pumphouse will adversely affect the historic and cultural characteristics of the proposed Point Pleasant Historic District?
- A. It does not appear that the transformer noise will constitute an adverse effect on the proposed Historic District. As stated in Dr. Policastro's testimony, the transformer tones will be audible only within approximately 175 meters of the transformers and the transformer tones heard within this distance could be substantially reduced by construction of an enclosure around the transformers and/or by installation of "quieted" transformers.
- Q. To your knowledge are there any noise standards or guidelines specifically applicable to historic areas?

^{1/} The proposed Historic District has since been declared eligible for listing on the National Register by the Keeper of the National Register. See December 29, 1981 letter from Carol D. Shull, Acting Keeper of the National Register, to Col. Roger L. Baldwin, District Engineer of the Corps' Philadelphia District. (Exhibit 2)

^{2/} See letter dated April 8, 1982 from Dr. Richard H. Jordan and Glenn W. Sheehan to Ms. Cathy Auerbach and enclosed evaluation. Exhibit 3.

- A. No. Historic sites are not treated as unique in terms of sensitivity to noise. Nevertheless, to the extent that increases in noise levels might cause a change in the historic or cultural attributes that qualify a particular site for inclusion on the National Register, such noises could constitute adverse effects which Federal agencies must consider under the National Historic Preservation Act of 1966, 16 U.S.C. § 470.^{3/}
- Q. Have other agencies considered the impacts of the Point Pleasant intake and pumphouse upon the historic and cultural characteristics of the proposed Point Pleasant Historic District?
- A. Yes. In particular, the Corps has acted as lead agency in seeking the advice of the Advisory Council on Historic Preservation (ACHP) and the SHPO as to the potential impacts of the Point Pleasant intake and pumping station upon the proposed Point Pleasant Historic District and upon the Delaware Division of the Pennsylvania Canal, a property already listed on the National Register of Historic Landmarks.
- Q. Have those agencies identified noise from the pumping station as a potential impact on the proposed Point Pleasant Historic District?

^{3/} The regulations of the Advisory Council on Historic Preservation provide that "[i]ntroduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting" may constitute adverse effects on National Register sites. 36 C.F.R. § 800.3(b).

A. No. The ACHP and SHPO have identified certain measures which Neshaminy Water Resources Authority (NWRA) should take (e.g., use landscaping to minimize visual impact of the pumping station, restore all areas within the District disturbed by construction as nearly as possible to their original appearance) to minimize the impacts of the construction and presence of the pumping station upon the proposed Historic District.^{4/} The SHPO and ACHP, which are responsible for providing expert advice on the impacts of Federal projects (including Federally licensed projects) on historic sites, *and the Corps as lead agency,* have not identified noise impacts of operation of the pumphouse as an adverse impact of concern to the preservation of the proposed Point Pleasant Historic District.

Q. Will the Staff be undertaking any further consideration of the potential impact of pumping station noise upon the proposed Point Pleasant Historic District?

A. Yes. The Siting Analysis and Environmental Engineering Branches will further consider the potential impact of pumping station noise upon the proposed Historic District as part of their input to the Draft and Final Environmental Statements (DES/FES) for the Limerick

^{4/} See "Memorandum of Agreement Between U.S. Army Corps of Engineers, Pennsylvania State Historic Preservation Officer and the Advisory Council on Historic Preservation Concerning A Permit Application By the Neshaminy Water Resources Authority, NAPOP-R-80-0534-3." Exhibit 4. This Memorandum has been executed by the District Engineer, ~~and the SHPO, but has not yet, to the Staff's knowledge, been executed by the ACHP.~~
and

plant. As noted in the testimony of Dr. Policastro, the Staff will review whatever additional information is provided by the Applicant on the specifications for the design of the transformers and any sound barriers which may be planned. The Staff's final analyses of whether there would be any noise impacts anticipated from the operation of transformers will be presented in the DES/FES.

Exhibits

- Exhibit 1: Letter dated September 21, 1981 from Larry E. Tise, Pennsylvania State Historic Preservation Officer, to Col. Roger L. Baldwin, District Engineer, Corps of Engineers, Philadelphia District, re: Point Pleasant Historic District.
- Exhibit 2: Letter dated December 29, 1981 from Carol D. Shull, Acting Keeper of the National Register, to Col. Baldwin, enclosing determination of eligibility notification for Point Pleasant Historic District.
- Exhibit 3: Letter dated April 8, 1982, from Dr. Richard H. Jordan, Associate Professor, and Glenn W. Sheehan, Ph.D. Candidate, Bryn Mawr College, to Ms. Cathy Auerbach, Bucks County Conservancy, enclosing evaluation of archeological investigations of Point Pleasant.
- Exhibit 4: Memorandum of Agreement Between U.S. Army Corps of Engineers, Pennsylvania State Historic Preservation Officer and the Advisory Council on Historic Preservation Concerning A Permit Application By the Neshaminy Water Resources Authority, NAPOP-R-80-0534-3.

Brian J. Richter

Professional Qualifications

Siting Analysis Branch
Division of Engineering

I am an economist in the Regional Impact Analysis Section of the Siting Analysis Branch, U.S. Nuclear Regulatory Commission. My duties include the evaluation of the socioeconomic impacts of nuclear power plant construction and operation, and the socioeconomic impacts of severe plant accidents. The socioeconomic impacts include cultural resources as one of the subject areas. I have contributed to the environmental impact statements of six nuclear power plants.

I graduated from the University of Toledo with a B.A. degree in mathematics in 1968 and from Purdue University with an M.S. in economics in 1970. After completing my graduate work, I was employed as a health economist with the New York City Health Services Administration through 1974. My work focused on the delivery of health care services in New York City. From 1974 to 1976 I was employed as a quantitative analyst in the Operations Research Department of the Manufacturers Hanover Trust Company in New York. The work consisted of modeling interest rate activity and loan pricing. In 1976 I was hired by Enviro Control, a consulting firm in Rockville, Maryland, as a health economist focusing on cancer related issues. Enviro was the prime contractor to the National Cancer Institute (NCI) on their Smoking and Health Program and support contractor on NCI's Diet, Nutrition and Cancer Program. During that period I co-authored two papers on the economic impacts of disease prevention, Science (1978) and Banbury Report 3: A Safe Cigarette? (1980). I joined the NRC in my present position in November 1979. I am a member of The American Economic Association.

Richter Exhibit 1



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
P. O. BOX 1026, HARRISBURG, PENNSYLVANIA 17120

EXECUTIVE DIRECTOR

September 21, 1981

Lieutenant Colonel Roger L. Baldwin
District Engineer, Philadelphia District
U. S. Army Corps of Engineers
Custom House, Second & Chestnut Streets
Philadelphia, Pennsylvania 19106

ATTENTION: Environmental Resources Branch

Re: File ER 81 017 0382 (DOE)
Point Pleasant Historic District

Dear Colonel Baldwin:

The Bureau for Historic Preservation has reviewed information on the above referenced property. In our opinion, this property is eligible for listing on the National Register of Historic Places. A statement explaining the property's eligibility is attached.

If you need further information, please call Bill McLaughlin at (717) 783-8947.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Larry E. Tise", with a long horizontal flourish extending to the right.

LARRY E. TISE

STATEMENT OF SIGNIFICANCE: POINT PLEASANT HISTORIC DISTRICT

The Point Pleasant Historic District represents a significant resource relating to community development history of 18th century English settlements in Pennsylvania. The physical development patterns and remaining architectural resources reflect three principal forces: the influence of topographic features, the growth of rural commerce and industry and the development of land and water transportation links to the outside world. The most important and unique influence resulted from the Delaware Division Canal (NRHP 1974; NHL 1976) with which the village is strongly associated. Due to the high degree of integrity and continued rural setting the district provides us with a strong sense of time and place.



United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

IN REPLY REFER TO: 710

DEC 29 1981

Mr. Roger L. Baldwin
Lieutenant Colonel
District Engineer
Department of the Army
Corps of Engineers
Custom House - 2nd & Chestnut Sts.
Philadelphia, Pennsylvania 19106

Dear Colonel Baldwin:

Thank you for your letter requesting a determination of eligibility for inclusion in the National Register pursuant to Executive Order 11593 or the National Historic Preservation Act of 1966, as amended. Our determination appears on the enclosed material.

As you understand, your request for our professional judgment constitutes a part of the Federal planning process. We urge that this information be integrated into the National Environmental Policy Act analysis in order to bring about the best possible program decisions. This determination does not serve in any manner as a veto to uses of property, with or without Federal participation or assistance. Any decision on the property in question and the responsibility for program planning concerning such properties lie with the agency or block grant recipient after the Advisory Council on Historic Preservation has had an opportunity to comment.

We are pleased to be of assistance in the consideration of historic resources in the planning process.

Sincerely yours,

Carol D. Shull
Acting Keeper of the
National Register

Enclosure

11593

DETERMINATION OF ELIGIBILITY NOTIFICATION
National Register of Historic Places
National Park Service

Name of property: Point Pleasant Historic District

Location: Plumstead Township, Bucks County

State: PA

Request submitted by: DOD/COE Roger L. Baldwin

Date received: 12/18/81

Additional information received:

Opinion of the State Historic Preservation Officer:

Eligible

Not Eligible

No Response

Comments:

The Secretary of the Interior has determined that this property is:

Eligible

Applicable criteria:

Not Eligible

Comments:

36 CFR Part 60.3
Determination

Documentation insufficient

(Please see accompanying sheet explaining additional materials required)

FOR Susan S. Anderson
Keeper of the National Register

Date: December 29, 1981



BRYN MAWR COLLEGE
BRYN MAWR, PENNSYLVANIA 19010

Richter Exhibit 3

DEPARTMENT OF ANTHROPOLOGY
12151 645-3030

8 April 1982

Cathy Auerbach
Bucks County Conservancy
11 North Main Street
Doylestown, PA 18901

A-8
G.R.B.
8-18-82

Dear Ms. Auerbach:

Enclosed is our evaluation of the archaeological investigations conducted in 1978 by Shortman and Urban in conjunction with the pumping station, transmission corridors, and reservoirs in and around Point Pleasant. Based on our own understanding of the local prehistory, we are highly critical of their report.

Note that we have no objections to your using this in any future discussions concerning this proposed construction project.

Sincerely,

Dr. Richard H. Jordan
Associate Professor
and

Glenn W. Sheehan
Ph.D. Candidate

cc:
Dr. Larry Tice
Pennsylvania Historic and Museum Commission
William Penn Memorial Museum
Harrisburg, PA 17120

and
Kurt W. Carr
Review Archaeologist
Division of Planning and Protection
Bureau of Historic Preservation
William Penn Memorial Museum
Harrisburg, PA 17120

The Bucks County Conservancy has asked us to present a brief evaluation of the archaeological sensitivity and potential of the area around Point Pleasant which is involved in the proposed diversion project. We have been doing independent research in the area for almost a year, including field research to locate prehistoric sites which are documented archivally, and surveys to discover new sites. The project has had the over-all goal of documenting outcrops of stone which were used as sources of raw materials for tools, and of investigating the distribution of these materials after their initial quarrying. A secondary goal has been to research the history of archaeology in the area as exemplified by the work of Henry Mercer. Our archival research has extended to the collections of Mercer's field notes and correspondence at the Mercer Museum, at Font Hill, and at the University of Pennsylvania. This project, the South Mountain Lithics Project, is under the direction of Richard H. Jordan, associate professor of Anthropology at Bryn Mawr College. G.W. Sheehan, one of Jordan's doctoral students, serves as field supervisor. About a dozen other individuals have devoted considerable time to the project. Our initial interest in Point Pleasant lay in Mercer's work there before the turn of the century, and in the distribution, nature and age of the historic Indian sites in the region. Hence we feel that we are in a somewhat special position to comment upon the archaeological work conducted in conjunction with the proposed Point Pleasant pumping station and the pipe line corridor.

Schortman and Urban (1978) conducted the work at Point Pleasant under contract with E.H. Bourquard Associates. Their work is summed in the Environmental Report on Neshaminy Water Supply System (1979:III,104) as follows: "In the area of Point Pleasant, four archaeological sites were identified by

Henry Mercer in the late nineteenth century, from the late 1880s (sic) to the early 1890's. None of the sites lie within or proximate to the right-of-way..." And "There is no archaeological evidence that the construction of the project's components would harm or destroy any archaeologically valuable site (III-113)."

These conclusions are almost without question incorrect. We believe that an examination of the effort by ~~Schortman and Urban~~ reveals areas in which their program did not meet generally accepted standards for cultural resource management projects, and that these deficiencies account for their failure to note the presence of even a single "archaeologically valuable" site in the impact area. We address our remarks specifically to prehistoric remains, but it should be noted that they apply at least in part to the question of historic archaeological sites.

The program failed to involve a thorough or significant literature and archival search. This resulted in an inability to find or judge the significance of sites which have already been documented by other archaeologists and collectors. This initial failing should have resulted in a more intensive field project, since the lack of archival sources made the impact area a virtual terra incognita to the investigators.

Unfortunately, the field work was seriously flawed above and beyond the lack of archival documentation. Although the report is not explicit as to the exact width of the corridor, it was at least 10.25 miles long. In this entire area, only four test pits and twenty highly localized rapid shovel tests in four areas were made. Had the entire corridor been under the plow or otherwise exposed, perhaps a small number of tests would have been sufficient. According to the investigators, most of the ground surface was totally obscured,

which in our opinion would require more intensive sub-surface testing. Moreover, the investigators rigidly adhered to a self-imposed course of action which restricted them totally to the land inside the designated, but not always apparent, boundaries of the corridor itself. In mitigation surveys it is necessary, especially where ground cover obscures the visibility of surface materials, to consider the setting of the corridor by investigating adjacent areas, especially when these areas are plowed or sparsely covered, or where they exhibit topographic or other features that might indicate the possibility of sites. Failure to consider and examine areas adjacent to the corridor leads to an inability to properly assess the geographic setting and site potential within the corridor itself.

At the juncture of the combined transmission line, east branch and north branch ^{lines} is the Bradshaw Reservoir - a 25 acre impact area just northeast of the north branch of the Neshaminy Creek. We feel that since these efforts here consisted of a single test pit, that they are inadequate. The only reported time that the investigators strayed from the corridor was during an investigation of a stratified village site trenched and reported upon by Mercer (1897 and elsewhere). Although they report that this mounded area, the Lower Black' Eddy site, is 350 feet from the pipeline running out of the pumping station, a more accurate assessment is that it is at most a few tens of feet from the pumping station impact area. Although they did find the general site that Mercer investigated, Schortman and Urban failed, as did Mercer, to delineate the extent of the village site. In other words, activity areas associated with the village could very well lie entirely within the impact area - no one knows. Within the direct impact area of the pumping station, an area of about 3.9 acres, only two test pits were excavated. One test pit hit a rock at

36 cm (14") so excavation was stopped. The second subsurface test by the investigators was carefully placed on the same contour interval as the known part of the village site. It extended to 25 inches below the surface. Since Mercer states and illustrates in his publications, sketches, and notes, that the second and older stratum of the site is at least 25" below the depth reached by Shortman and Urban's test (Mercer, 1897), and since they stopped in a sand subsoil which may be the same one reported by Mercer to overlay the lower stratum of cultural material, we can only conclude that there was a complete failure to test for this buried horizon.

Although the investigators were aware that Mercer had found a lithic reduction station (he called it a blade factory), they, as did Mercer, made no attempt to discover its extent. Although our field work was not directed toward ascertaining locational facts in relation to the proposed construction area, we have succeeded in determining that both the village site and the lithic reduction station immediately to the south and north of the pumping station impact area, are still valuable and viable archaeological entities. In fact, both contain undisturbed in situ prehistoric materials which make them particularly significant for archaeologists.

The steep slope corridor up Hickory Run was not investigated at all by Shortman and Urban. See, for example, the enclosed Schaddinger 1890's map of Hickory Run, indicating ten sites where Indian "relics" have been found (Mercer Museum Archives). Without question Shortman and Urban were entirely unaware of this map. Moreover, local residents have stated that there are numerous caves along Hickory Run which may have been temporary occupation sites (Charles Chaney, personal communication - Chaney lived for years on the plateau adjacent to Hickory Run) and there is a distinct possibility that

quarry work shops are also present here. We have found that the steep slopes along Gaddis Run were not a hindrance to aboriginal quarrying and are extremely visible along the Danboro-Point Pleasant Pike. We thus feel that this area of the corridor should have been closely inspected.

Our experience indicates that what, at first glance, often appears to be scree and loose rock in the Point Pleasant area is in fact the remains of pre-historic quarrying and reduction activities. Since Shortman and Urban report walking over loose rock, we suspect that some quarry or reduction sites lie within the impact area and were not recognized. Again, no archaeologist, including Mercer, has ever precisely delineated the extent of the quarrying activities. Although the Danboro-Point Pleasant Pike is almost one continuous archaeological site for a distance of about 0.4 mile west of Point Pleasant, with evidence of extraction and reduction activities everywhere, Shortman and Urban make no mention of the fact. We believe they were unaware of this, and were therefore not alerted to test for its possible extensions within the impact area.

Our review of the work by Shortman and Urban reveals it to be unsatisfactory for the reasons stated above and summarized here: there was a totally inadequate archival and literature search; there was an inadequate program of interviews with knowledgeable local people; there was a misunderstanding about the basic areal extent of concern for investigation during the course of a cultural resource management project, so that areas adjacent to the direct impact area were ignored, both unnecessarily limiting the scope of work and limiting the possibilities for understanding the area within the corridor; and finally there was a totally inadequate testing program. In short, the conclusion reached in the Environmental Report that "there is no archaeological

evidence that the construction of the project's components would harm or destroy any archaeologically valuable site"(1978, III-113) is totally without scientific justification; there is no basis for such a determination.

We have not reviewed the work done by archaeologists other than Shortman and Urban. That is, we have not seen any reports on other impacted areas, such as the transmission lines and water treatment plant in and around Chalfont. Nor have we seen any archaeological investigations at Limrick or the pipeline corridor leading from the Perkiomen to the Limrick Power Plant site.

References Cited

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- 1979 Environmental Report on Neshaminy Water Supply System.
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SHORTMAN, EDWARD M. AND PATRICIA A. URBAN

- 1978 "A Survey of Cultural Resources in the Area of the Proposed Point Pleasant Pumping Facilities, Combined Transmission Main, Bradshaw Reservoir, North Branch Main and Perkiomen Main, Bucks County, Pennsylvania." Report submitted to E.H. Bourquard Associates, Harrisburg, PA.

MEMORANDUM OF AGREEMENT

BETWEEN U. S. ARMY CORPS OF ENGINEERS,
PENNSYLVANIA STATE HISTORIC PRESERVATION OFFICER AND THE
ADVISORY COUNCIL ON HISTORIC PRESERVATION CONCERNING
A PERMIT APPLICATION BY THE NESHAMINY WATER RESOURCES AUTHORITY,
NAPOP-R-80-0534-3

WHEREAS, the Corps of Engineers (Corps), Department of the Army, proposes to issue a permit to the Neshaminy Water Resources Authority (NWRA) for construction associated with the Point Pleasant Diversion Project, Bucks County, Pennsylvania; and,

WHEREAS, the Corps in consultation with the Pennsylvania State Historic Preservation Officer (SHPO), has determined that this project as proposed could have an adverse effect on National Register properties; and,

WHEREAS, pursuant to Sections 106 and 110(f) of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470(f), 16 U.S.C. 470 h -2(f)) and Section 800.4(d) of the regulations of the Advisory Council on Historic Preservation (Council), "Protection of Historic and Cultural Properties" (36 CFR Part 800), the Corps has requested the comments of the Council; and,

WHEREAS, pursuant to Section 800.6 of the Council's regulations, representatives of the Council, the Corps, and the Pennsylvania SHPO have consulted and reviewed the undertaking to consider feasible and prudent alternatives to avoid or satisfactorily mitigate the adverse effect; and,

WHEREAS, pursuant to Section 110(f) of the National Historic Preservation Act of 1966, as amended, the Corps has, to the maximum extent possible, minimized harm to the Delaware Division of the Pennsylvania Canal, a National Historic Landmark, and has afforded the Council a reasonable opportunity to comment on the undertaking;

NOW, THEREFORE, it is mutually agreed that the undertaking will be implemented in accordance with the following stipulations to avoid, minimize, or mitigate the adverse effects on the above-mentioned properties.

STIPULATIONS

The Corps will condition its permit to ensure that the following measures are carried out:

A. Delaware Division of the Pennsylvania Canal

1. Blasting activities for the construction of the Point Pleasant Pumping Station will be implemented in accordance with the requirements of the Pennsylvania Department of Environmental Resources (DER) (Attachment 1).

2. During trenching operations through the Canal, and prior to any blasting or laying of pipeline, a qualified professional will record cross sections and other Canal construction information through appropriate photographs and drawings, so that there will be a permanent record of its construction. Sufficient time will be provided during construction for this work. The Historic American Engineering Record (HAER) (National Park Service, Department of the Interior, Washington, D.C. 20243; 202-272-3542) will first be contacted to determine what documentation will be required. Final copies of this documentation will be provided to the Pennsylvania SHPO, the National Register, HAER, and the Bucks County Conservancy. The Council will be notified of the acceptance, by HAER, of this documentation.

3. Following construction, the Canal, and Canal towpath and adjacent areas will be restored as closely as possible to their original appearance in consultation with the Pennsylvania SHPO, through bank reshaping, grading, seeding, and landscaping to their preconstruction contours in accordance with the requirements of DER and with sound engineering practices and will

include installation in the Canal of an impervious clay liner.

4. Care will be taken during construction to minimize machinery disturbance in the vicinity of the Canal and towpath through the use of such things as rubber tired vehicles or construction mats, and restrictions on placement of construction staging areas, vehicle parking and access, in accordance with the requirements of the Pennsylvania Department of Environmental Resources (DER).

B. Point Pleasant Historic District

1. The design, plans, and specifications for the Point Pleasant Pumping Station and boundary fencing will be developed in consultation with the Pennsylvania SHPO, and approved by the SHPO prior to construction. Failure of the SHPO to comment within 15 days of receipt of the aforementioned design, plans and specifications will be deemed approval of same.
2. A landscaping plan to minimize the visual impact of the pumping station and boundary fence on the visual setting of the District, that is consistent with the existing natural setting of the area, will be

developed in consultation with and approved by the Pennsylvania SHPO prior to the completion of construction or any Canal restoration. Failure of the SHPO to comment within 15 days of receipt of the aforementioned plan will be deemed approval of same.

3. All areas disturbed by construction of the intake structure and conduit crossing of the Delaware Division of the Pennsylvania Canal, including the temporary sedimentation basin, temporary stockpile area, and temporary access roads, will be restored as closely as possible to their original appearance.

C. Archaeology

1. An archaeological testing program will be conducted in areas to be affected by construction of the intake conduit and pumping station, in accordance with 36 CFR Part 66, Appendix B, "Guidelines for the Location and Identification of Historic Properties Containing Scientific, Prehistoric, Historical, or Archaeological Data" (Attachment 2) and the Archaeological Survey Plan

(Attachment 3). The program will be designed to identify, delimit, and evaluate any prehistoric or historic archaeological resources within the proposed project boundaries, as well as to determine whether additional unidentified resources are likely to exist in the area, and will be conducted in consultation with the Pennsylvania SHPO and the Pennsylvania State Archaeologist.

2. The results of the archaeological survey, along with any recommendations for further work, will be provided to the Pennsylvania SHPO, the Pennsylvania State Archaeologist, and the Council. In the event that significant prehistoric or historic archaeological resources are identified or predicted within the project boundaries that may meet the National Register Criteria (36 CFR Part 60), measures will be taken to avoid the resources or preserve them in place to the extent feasible. If there is any question as to whether a property may meet the Criteria, a determination of eligibility for inclusion in the National Register of Historic Places will be requested from the Secretary of the Interior in accordance with 36 CFR Sec. 63.2. If avoidance or preservation in place is not feasible, plans for data recovery consistent with the principles and standards contained in the

Council's Handbook, Treatment of Archaeological Properties (Attachment 4) will be developed and implemented in consultation with and approved by the Pennsylvania SHPO, the Pennsylvania State Archaeologist, and the Council. Failure of the SHPO and Council to comment within 15 days of receipt of the aforementioned data recovery plan will be deemed approval of same.

D. Additional Provisions

1. All historic and archaeological work will be conducted under the direct supervision of qualified individuals chosen by NWRA, who meet, at a minimum, the appropriate qualifications set forth in 36 CFR Part 66, Appendix C (Attachment 5).
2. Archaeological materials, field notes, maps, drawings, photographic records, and related documentation collected as part of this project will be donated to the Pennsylvania Historical and Museum Commission, or its designee for permanent curation.
3. Copies of any final technical report(s) will be supplied to the Pennsylvania SHPO, the Bucks County Conservancy, and the Council. A brief, nontechnical account of the

results of any archaeological data recovery efforts performed under stipulation C.2 above will be provided to the media for public information. In addition, a copy of any final technical report will be furnished to Interagency Archaeological Services (National Park Service, Department of the Interior, Washington, D.C. 20243), for possible submission to the National Technical Information Service (NTIS).

4. Failure to carry out the terms of this Agreement requires that the Corps again request the Council's comments in accordance with 36 CFR Part 800. If the Corps cannot carry out the terms of the Agreement, it shall not take or sanction any action or make any irreversible commitment that would result in an adverse effect with respect to National Register or eligible properties covered by the Agreement or would foreclose the Council's consideration of modifications or alternatives to the Point Pleasant Diversion Project that could avoid or mitigate the adverse effect until the commenting process has been completed.

5. If any of the signatories to this Agreement determine that the terms of the Agreement cannot be met or believes a change is necessary, that signatory shall immediately request the consulting parties to consider an amendment or addendum to the Agreement. Such an amendment or addendum shall be executed in the same manner as the original Agreement.

6. Within 90 days after carrying out the terms of the Agreement, the Corps shall provide a written report to all signatories to the Agreement on the actions taken to fulfill the terms of the Agreement.

5 Attachments
As Stated

_____(date) _____
Executive Director
Advisory Council on Historic Preservation.

Roger Baldwin (date) 3 Sept 82
District Engineer
Corps of Engineers

Brenda Baugh (date) 9/3/82
Pennsylvania State Historic
Preservation Officer

_____(date) _____
Chairman
Advisory Council on Historic Preservation

1 JUDGE BRENNER: Did you have any other
2 preliminary matters with them, Ms. Hodgdon?

3 MS. HODGDON: No. The attachments to Mr.
4 Richter's testimony are four letters which he merely
5 received. He just represents --

6 BY MS. HODGDON: (Resuming)

7 Q Do you represent what they are or what they
8 purport to be?

9 A (WITNESS RICHTER) Yes.

10 Q And not part of your testimony?

11 A (WITNESS RICHTER) No.

12 MS. HODGDON: I have no further questions.

13 JUDGE BRENNER: Mr. Sugarman.

14 MR. SUGARMAN: Am I to cross examine Mr.
15 Richter now, too, or just Dr. Policastro?

16 JUDGE BRENNER: You can cross examine both of
17 them. You can do it in however manner you prefer. You
18 can go back and forth where the subject matter is
19 pertinent. You can focus on one or the other, and we
20 will allow them to supplement each other's answer.

21 MR. SUGARMAN: I'm sorry. I didn't make
22 myself clear. What I meant was should I limit this to
23 the noise issue? Mr. Richter's testimony goes into a
24 number of other matters.

25 JUDGE BRENNER: Well, yes. That is why I was

1 a little confused why the staff wanted to put somebody
2 up besides Dr. Policastro which would only delay things.

3 MS. HODGDON: If we could limit it to the
4 noise issue, Mr. Richter can come back.

5 JUDGE BRENNER: Yes, let's do that. Thank you
6 for your suggestion, Mr. Sugarman.

7 CROSS EXAMINATION

8 BY MR. SUGARMAN:

9 Q What information would you need with respect
10 to dredging to determine whether there would be a noise
11 impact from dredging in the area of the historic
12 landmark?

13 JUDGE BRENNER: Wait a minute. I'm confused.
14 I thought we were going to leave Mr. Richter up there to
15 the extent he might have anything to contribute on noise
16 but would be asked solely about noise. Is that right,
17 Ms. Hodgdon?

18 MS. HODGDON: Yes, that is correct. We were
19 going to leave him up there for solely about noise.

20 WITNESS RICHTER: I'm sorry.

21 JUDGE BRENNER: You're not the only one who's
22 confused, Mr. Richter. That's okay.

23 BY MR. SUGARMAN: (Resuming)

24 Q This is really addressed more to Dr.
25 Policastro. You indicated in your testimony that you

1 were told to assume there would be no dredging and
2 therefore, no noise from dredging. What information
3 would you need with regard to dredging in order to
4 evaluate the noise impacts of dredging?

5 A (WITNESS POLICASTRO) Well, in dredging there
6 is usually a barge with a diesel engine on it which
7 causes the predominant noise release from the dredging
8 equipment, and I would need to know the horsepower of
9 the engine, the number of cylinders, and I think from
10 that there is a report by Boperenick and Newman, there
11 is a report by them on construction noise, where from
12 that information I can get the sound power level as a
13 function of octave band spectrums. So, given the engine
14 type and horsepower and number of cylinders, I should be
15 able with that reference to be able to determine the
16 sound power. I would also like to know how often it is
17 used, basically the frequency of use.

18 Q You indicate that the building structure
19 appears to have sufficient attenuation to reduce pump
20 and fan noises to insignificant levels. What did you
21 mean by the word insignificant?

22 A (WITNESS POLICASTRO) Well, first of all, the
23 testimony said that was an assumption I was making. And
24 that was an assumption I made at that time, and since
25 that time I have been looking into the problem in a

1 little more depth. And to answer your question about
2 insignificant, I mean below the contribution of the
3 pumphouse. Below is below ambient such that -- so that
4 it adds a very significant level -- a very insignificant
5 level. By looking at the problem, I've looked at the
6 noise sources in there, I've looked at the attenuators
7 to determine whether the sound traps are adequate, and
8 I've gotten all of the problems settled except for, I
9 think really, two which we really just didn't have time
10 to settle at the present time.

11 Q What are those two?

12 A (WITNESS POLICASTRO) Well, one is whether the
13 double doors out of the pumphouse are sound speced, into
14 which sound spec they are, and the other one relates to
15 the air intake into the building that goes into the
16 pumphouse. And apparently there is no sound traps there
17 but there is accoutic lining and I need to know exactly
18 where those louvers are. The applicant told me they
19 were near the roof line and it appears that the drawings
20 I was provided I seem to believe they are down near the
21 base of the wall where they are entering.

22 Q What steps are you taking to resolve those
23 questions?

24 A (WITNESS POLICASTRO) I just needed time to
25 talk to the applicant to find out the answer to those

1 questions. Where exactly are the louvers, and are the
2 double doors sound speced, and to what level.

3 JUDGE BRENNER: Excuse me. Ms. Hodgdon, why
4 didn't you ask the applicant's witness those questions?

5 MS. HODGDON: Excuse me.

6 JUDGE BRENNER: Why didn't you ask the
7 applicant's witness those questions?

8 MS. HODGDON: When did I ask?

9 JUDGE BRENNER: No. Why didn't you ask them
10 when they were on the stand if you knew your witness
11 needed to know those answers?

12 MS. HODGDON: I did not ask them because I did
13 not know my witness needed to know those answers.

14 JUDGE BRENNER: It would have been useful,
15 right?

16 MS. HODGDON: I did not know my witness needed
17 to know those answers.

18 WITNESS POLICASTRO: May I answer that? It is
19 not quite as simple as just answering. I think the
20 second question involves pulling out a lot of drawings
21 and sitting down and taking a look at the drawings, and
22 I understood this hearing was not a means for getting
23 information out of the applicant.

24 JUDGE BRENNER: I'm not addressing the
25 procedures with you, Dr. Policastro. Counsel knows they

1 can talk to parties at any time off the record.

2 MS. HODGDON: Excuse me.

3 JUDGE BRENNER: All right. I've made my
4 point. Mr. Sugarman.

5 BY MR. SUGARMAN (Resuming)

6 Q You indicate that you considered the pumphouse
7 walls to be a significant factor. What information did
8 you have when you wrote this testimony regarding the
9 character of the walls?

10 A (WITNESS POLICASTRO) Well, the walls were, I
11 believe, either 6 or 8 inches of concrete and, looking
12 that up, you find that you can look that up in tables
13 and you can find out you're going to be losing 50 to 60
14 dbs. You get that much attenuation, 50 to 60 dbs
15 through that cement wall, so considering the level of
16 noise that would probably exist in the pumphouse, minus
17 50 or 60 dbs, you're going to have very little on the
18 outside.

19 Q Well, do I understand that there is 92 dbs
20 with four pumps operating inside the pumphouse? Do you
21 agree with that calculation?

22 A (WITNESS POLICASTRO) I didn't do the
23 calculation.

24 Q You didn't?

25 A (WITNESS POLICASTRO) No. But the 85 to 90 I

1 would expect.

2 JUDGE BRENNER: Wait a minute. You're
3 interrupting each other.

4 MR. SUGARMAN: I'm sorry.

5 JUDGE BRENNER: Wait a minute. Dr.
6 Policastro, did you complete your answer?

7 WITNESS POLICASTRO: Yes.

8 JUDGE BRENNER: Could you repeat it now. I'm
9 afraid I missed the end of it.

10 WITNESS POLICASTRO: Well, the point I was
11 making was that the attenuation through the 6 or 8
12 inches of concrete of 50 to 60 db's and the noise level
13 within the pumphouse would probably be 85 to 90 and,
14 again, I didn't calculate that but that is probably a
15 reasonable estimate and that subtracting 50 or 60 from
16 that is a very low level on the outside compared to what
17 the ambient is. So the sum of the two would be just
18 infinitesimally very small number of that ambient.

19 BY MR. SUGARMAN (Resuming)

20 Q Have you, and perhaps you've already answered
21 this question, have you reviewed the final plans and
22 specs, yet?

23 A (WITNESS POLICASTRO) I don't have the
24 information about the final design of the transformers,
25 which I think are very important, but I don't have

1 information about them.

2 Q Were you here when the applicant testified
3 this morning that they plan to use a 57 db transformer?

4 A (WITNESS POLICASTRO) Yes.

5 Q Is there more than one, is that a definitive
6 statement? In other words, does that resolve ambiguity
7 as to that or does it contain within it a range of
8 possibilities?

9 A (WITNESS POLICASTRO) It does. That 57 is
10 probably the NEMA rating and what I really need to make
11 my calculations is what the db levels are in the
12 individual tones, since the audibility of the tones,
13 which I consider to be the major issue.

14 Q At what tones are the dbs measured?

15 A (WITNESS POLICASTRO) One twenty, 240, 360 and
16 480.

17 Q I understand. I take it you will be doing
18 that in the future, that is, requesting that information
19 through the normal channels?

20 A (WITNESS POLICASTRO) Yes. We have requested
21 them. As soon as I get them, I will redo the
22 calculations with specifically the source that they're
23 going to use.

24 JUDGE BRENNER: Dr. Policastro, you're going
25 to have to take one deep breath to be sure Mr. Sugarman

1 completes his question before you jump in. I know
2 you're in a hurry to get out of here, but if I have to
3 ask you to repeat everything, it will take twice as
4 long.

5 BY MR. SUGARMAN (Resuming)

6 Q You, as you indicated, were here this
7 morning. Assuming that the transformers do create noise
8 at the perimeter of the property boundary, are you
9 familiar with the present extent and character of the
10 noise in the area, the ambient noise levels in terms of
11 their characteristics and as to the types of noises
12 involved?

13 A (WITNESS POLICASTRO) I was at the site twice,
14 and I didn't have a sound level meter with me, but I am
15 familiar with the different components of that noise
16 spectrum.

17 Q Well, for example, now can you estimate
18 anything about the transformer or whatever that
19 electrical equipment is that is in this room at this
20 time?

21 A (WITNESS POLICASTRO) No. I don't have a
22 sound level meter.

23 Q No, I understand that, but can you estimate
24 anything?

25 A (WITNESS POLICASTRO) I really can't.

1 Q At the site. Given, if you will assume for a
2 moment that the 67 db transformers are used, or let's
3 assume that because we don't have any information on the
4 57 ones, just for this question that the 67 db
5 transformers are used.

6 JUDGE BRENNER: Mr. Sugarman, please allow me
7 to interrupt with the suggestion, how is that going to
8 be material? It seems we're wasting time unless you are
9 going somewhere that I haven't yet imagined. Why base
10 it on a transformer that they say they're not going to
11 use?

12 MR. SUGARMAN: To get a base from which to
13 move in terms of the 57. We can't talk about the 57s
14 because we don't know the tone, the tone values.

15 JUDGE BRENNER: How do you know he knows the
16 tone values for the other one?

17 MR. SUGARMAN: Because he has calculated
18 offsite impacts.

19 JUDGE BRENNER: Okay. You are correct.
20 Proceed.

21 BY MR. SUGARMAN: (Resuming)

22 Q In your Table 1 as you've calculated it you
23 indicate that there would be an increase in dbo and
24 dba. And dbo, I take it, is the sound pressure
25 unadjusted to ... to approximate human ear pressures.

1 A (WITNESS POLICASTRO) That's right.

2 Q And can you say anything besides the numbers
3 to describe qualitatively whether there is a difference
4 in type of noise? For example, if the dba's are not
5 changed or the dbo's are not changed, are changed or are
6 not changed, does having a transformer noise change the
7 quality of the type of sound in the area from that of
8 running water as a predominant sound to that of a
9 transformer sound?

10 A (WITNESS POLICASTRO) Yes, absolutely, if that
11 transformer noise is audible. I mean if they are
12 audible tones it changes the character completely. You
13 get this constant hum in the background. So to me the
14 issue is whether there are audible tones at the site and
15 less an issue about what the dba or dbo are.

16 Q And what is the difference between audible
17 tones as you defined it and dbo?

18 A (WITNESS POLICASTRO) Well, dbo is sort of a
19 flat -- it is a sum of the frequencies of different
20 components including the ambience or the ambient and
21 transformer combined. It doesn't tell you much about
22 the audibility or the comfort of individuals. That
23 number is low. You are just looking at that number.
24 You would think nobody would be bothered or annoyed.
25 But the fact that you see that there is audible tones

1 indicates that that would be a problem to people living
2 in those residences. So the audibility of the tones to
3 me gives it a distinct character.

4 Q Now, in order to evaluate the audibility of
5 tones do you need to be able to compare the level of
6 sound of the ambient noise versus the noise with the new
7 facility for each tone?

8 A (WITNESS POLICASTRO) It is not quite that
9 simple. What you are suggesting is to look at the
10 ambient level in that octave band and compare it with
11 the tone.

12 Q That is what I was asking.

13 A (WITNESS POLICASTRO) It doesn't really work
14 that way. You have to look at the masking level. It
15 turns out if you have a tone and you want to mask it
16 with broad band noise, which you have in the ambient,
17 you can mask it with the ambient level at that tone and
18 with frequencies right near that tone, perhaps plus or
19 minus 20 hertz. You cannot mask it with frequencies
20 other than that range, and if you sum up essentially
21 what the noise is in that range, that is the masking
22 level and that is the level that you use to compare your
23 tone with.

24 Let me give you an example. If we are looking
25 at I guess it's the 125 or the 120 hertz tone -- let's

1 look at that tone -- and if the ambient level in that
2 octave band, the ambient level is 37, to get the masking
3 level you have to subtract 3, so that's 34. If the tone
4 is louder than 34 you will hear it even though it is
5 lower than ambient. So actually you can have a nice low
6 ambient and have a tone whose db level is below the
7 ambient in the octave band and still be audible. So you
8 have to use the masking level concept to determine if
9 the tone is audible or not, and that masking level is
10 not necessarily equal to ambient, and in our case it is
11 less.

12 Q Why is it less in our case as opposed to more
13 in other cases?

14 A (WITNESS POLICASTRO) Well, I think I would
15 amend that to say it is less in all the cases.

16 Q So is it your view then that in order to
17 determine whether the transformers are going to have a
18 significant offsite effect you would have to know the
19 tonal value or the range of tonal values for that
20 transformer?

21 A (WITNESS POLICASTRO) Yes. I would have to
22 know the number of db's in each of the tones.

23 Q Is there any other information that we need to
24 make that determination?

25 A (WITNESS POLICASTRO) No, that is it, just the

1 db levels in each of the four tones.

2 Q Now, do you have an opinion at this time as to
3 whether, bearing in mind what you just said as to
4 whether some or all 57 db transformers used at that site
5 -- and my question is for the moment do you have an
6 opinion, are you able to form an opinion based upon the
7 extent of the information you have after listening to
8 the testimony today as to whether those transformers if
9 installed would create offsite audible noise at tones?

10 A (WITNESS POLICASTRO) Well, I've done some
11 calculations subsequent to the testimony trying to hone
12 in on exactly the size transformer that they have here
13 and to determine how many db's of reduction is required
14 in each of the tones. And I believe without seeing the
15 numbers that I must use to check that I don't think it
16 can be done without a barrier.

17 Q Do you know whether there is any reason in
18 your opinion why it would be difficult, impossible,
19 counterproductive or is there any other factor other
20 than cost which would go into the question whether to
21 provide a barrier?

22 A (WITNESS POLICASTRO) No. To me that is state
23 of the art to have a quieted transformer plus a
24 barrier. To the best of my knowledge it is just cost.

25 Q Would the barrier have to exceed the

1 transformers in height in order to be effective?

2 A (WITNESS POLICASTRO) Yes. There is usually a
3 rule of thumb, but it is, I think, five or six feet
4 beyond the top of the transformer.

5 Q How high off the ground -- do you know how
6 high off the ground the transformers are? In other
7 words, are they at the ground level or are they on
8 platforms?

9 A (WITNESS POLICASTRO) I think the top of the
10 transformer -- this is just an approximation -- I think
11 it is roughly 20 feet above the ground.

12 Q Twenty feet?

13 A (WITNESS POLICASTRO) Yes.

14 Q So the wall would have to be about 25, 26 feet?

15 A (WITNESS POLICASTRO) Twenty-five or so.

16 Q Is there any reason why there can't be walls
17 on all four sides of the transformer platform?

18 A (WITNESS POLICASTRO) No. That is another
19 alternative. You can even have an enclosure with a
20 roof, basically a top on it, as well. You get different
21 reductions depending on if it's two wall, three wall,
22 four wall or with a roof or maybe an acoustic lining.

23 JUDGE BRENNER: Mr. Sugarman, maybe I
24 misunderstood your question. That answer was helpful,
25 but I thought maybe you were going to the point of

1 whether there is anything about the location here that
2 would prevent having walls totally surrounding the
3 transformers?

4 WITNESS POLICASTRO: Not from a noise point of
5 view.

6 JUDGE BRENNER: I take it obviously that on
7 one side of the transformer you have the pumphouse
8 wall. Would you add a sound barrier at that point also?

9 WITNESS POLICASTRO: Probably not. You would
10 use the pumphouse wall as one of the walls of your
11 barrier.

12 BY MR. SUGARMAN:

13 Q Do you have an opinion as to whether the noise
14 impacts of the 67 db transformers would have an adverse
15 effect on a national historic landmark, the quality of
16 the landmark in operation? You indicated it could be
17 objectionable to the residents, the people in the
18 residences.

19 A (WITNESS POLICASTRO) I think I also said in
20 there that you would not have audible tones beyond, I
21 think, 175 meters.

22 Q One hundred and seventy-five meters, right,
23 which is 300 and or 400 yards -- I mean 400 feet.

24 A (WITNESS POLICASTRO) Three hundred and fifty
25 perhaps.

1 Q Feet?

2 A (WITNESS POLICASTRO) Feet.

3 Q Wait a minute.

4 A (WITNESS POLICASTRO) Wait a minute. I'm
5 sorry. About 500.

6 Q Five hundred feet. Do you know how far it is
7 from the transformers to the landmark?

8 A (WITNESS RICHTER) I believe this morning the
9 Applicant testified that it was about a hundred feet.

10 Q And do you have any reason to disagree with
11 that?

12 A (WITNESS RICHTER) No.

13 Q So would you therefore have an opinion as to
14 whether the use of the 67 db transformers would have an
15 adverse effect on the landmark? And I'm asking you, Dr.
16 Policastro, because you used the word "objectionable" in
17 speaking of the persons living at the four residences
18 nearest to the pumphouse.

19 A (WITNESS POLICASTRO) You're asking me about
20 just those people, those four residences?

21 Q No. Now I'm asking you whether it would be
22 objectionable to persons taking advantage of the
23 landmark, quietly canoeing down the canal or walking
24 along the towpath or otherwise enjoying the experience
25 of the national historic landmark.

1 JUDGE BRENNER: Mr. Sugarman, just for the
2 record let's establish that when you say "the landmark"
3 what do you mean, the canal itself?

4 MR. SUGARMAN: The canal, the canal and the
5 surrounding land which is part of the designated
6 national historic landmark.

7 JUDGE BRENNER: I thought it was proposed
8 rather than designated.

9 MR. SUGARMAN: No. The whole area is a
10 proposed historic district. Within the proposed
11 historic district there is an existing national historic
12 landmark.

13 JUDGE BRENNER: Is that your understanding,
14 Mr. Richter?

15 WITNESS RICHTER: Yes, it is.

16 JUDGE BRENNER: So when you say "the landmark"
17 I will assume the canal unless you specify otherwise.

18 MR. SUGARMAN: Yes. The canal and roughly ten
19 feet on each side of it, and this is very rough. I mean
20 it could be twenty or five. But it is five to twenty
21 feet on each side of the canal is the designated
22 national historic landmark.

23 JUDGE BRENNER: You might want to say "the
24 canal" when you mean that vicinity, because later when
25 we read the record it will help us distinguish that from

1 the entire proposed district.

2 MR. SUGARMAN: Yes, thank you. I mean the
3 canal and the towpaths.

4 WITNESS POLICASTRO: Actually I really can't
5 say because I don't have -- I did not compute the db
6 level above masking level at the canal. I mean there
7 have been studies to determine the comfort, the
8 acoustical comfort level of tones when they are not
9 masked, and they find out if you are five db's above
10 masking level you don't have anybody complaining. If it
11 is between five and ten you have individual complaints.

12 BY MR. SUGARMAN: (Resuming)

13 Q Did you make a calculation as to how many feet
14 above masking level, how many db's above masking level
15 the noise levels of the transformers would be at the
16 four residences that you spoke of?

17 A (WITNESS POLICASTRO) No, I didn't, not for
18 this case. I did some other calculations with other
19 sources with better information on the particular
20 transformer.

21 Q But you did do enough to reach the conclusion
22 that it would be objectionable in the residences?

23 A (WITNESS POLICASTRO) Yes. I think if I went
24 through the calculations with that specific source I
25 believe it would, but I can't be sure.

1 Q Well, let me try to do it this way. How far
2 -- in Table 1 you mentioned four locations for
3 residences. Do you have the information with you as to
4 how far they are from the transformers? Presumably you
5 had it in your calculation sheets.

6 A (WITNESS POLICASTRO) Yes, I did. Residence
7 4, 75 meters.

8 Q Seventy-five feet?

9 A (WITNESS POLICASTRO) Meters.

10 Q And residence 3?

11 A (WITNESS POLICASTRO) That's the only one I
12 have with me.

13 Q And did you conclude that there would be an
14 objectionable condition at residence 4?

15 A (WITNESS POLICASTRO) Based on the audibility
16 of tones, just the audibility of tone. If that is the
17 criteria, then there would be. That is what I found for
18 1 and 4, residences 1 and 4. I later on did a
19 calculation trying to account for the barrier. The fact
20 is that that the residences 2 and 3 are in front of the
21 pumphouse and the transformers are in the back, and I
22 found out the residences 2 and 3 were not going to be a
23 problem.

24 Q Because of the barrier of the pumphouse?

25 A (WITNESS POLICASTRO) Yes. But 1 and 4 would

1 be.

2 Q All right. Do you happen to recall which ones
3 1 and 4 are?

4 A (WITNESS POLICASTRO) One is the one furthest
5 out, and 4 is the one furthest north; 2 and 3 are the
6 ones right next to the road, across the street.

7 Q One is south, and 4 is north?

8 A (WITNESS POLICASTRO) One is south, and 4 is
9 the most north.

10 Q Now, would it be fair to conclude that if the
11 noise would be objectionable at residence 4 which is 75
12 meters north of the transformers, then the noise would
13 be objectionable in the canal and the towpaths which are
14 100 feet as opposed to 200 feet.

15 A (WITNESS POLICASTRO) Obviously if they are
16 closer it would be.

17 Q Would the standard for objectionability at a
18 historic site be different than the standard of
19 objectionability at a residence? And I'm talking about
20 the literature. Do you want to refer to Mr. Richter on
21 that?

22 A (WITNESS POLICASTRO) Yes.

23 A (WITNESS RICHTER) My testimony on page 3, the
24 last question, was "To your knowledge are there any
25 noise standards or guidelines specifically applicable to

1 the historic areas," and the answer, rather I say, "No.
2 Historic sites are not treated as unique in terms of
3 sensitivity to noise. Nevertheless, to the extent that
4 increases in noise levels might cause a change in the
5 historic or cultural attributes that qualify a
6 particular site for inclusion on the National Register,
7 such noises could constitute adverse effects which
8 federal agencies must consider under the National
9 Historic Preservation Act."

10 Q I don't want to go at this time into the
11 considerations by the Advisory Council and the State
12 Historic Preservation Office and the Corps, although I
13 want to cross examine you on that because we want to get
14 to Mr. Hansler at this time.

15 But I just want to ask you is your -- on page
16 5 and 6 of your testimony that you will be undertaking
17 further consideration.

18 A (WITNESS RICHTER) That is correct.

19 Q Of the noise, is that correct?

20 A (WITNESS RICHTER) That's right.

21 Q And you say pumping station, but would it be
22 more accurate or in light of the testimony would we be
23 understanding you better if we understood that to mean
24 the transformers primarily?

25 A (WITNESS RICHTER) The pumping station

1 including the transformers.

2 Q Is there any situation, Dr. Policastro, in
3 which the adverse effect of the noise could be greater
4 even though the ambient noise is at higher levels?

5 A (WITNESS POLICASTRO) I'm confused. What do
6 you mean by higher levels? Higher than what?

7 Q Higher than lower. In other words, if the
8 ambient -- is there any condition under which the impact
9 of the transformers could be, or are there noises, could
10 be more adverse even though the ambient levels are
11 higher than --

12 A (WITNESS POLICASTRO) No. It would be the
13 other way around. If the ambient is lower, you feel or
14 you hear the tone as being louder.

15 Q Do you agree with the use of L₉₀ as the
16 appropriate planning basis?

17 A (WITNESS POLICASTRO) For the transformers?

18 Q For the transformers.

19 A (WITNESS POLICASTRO) No.

20 Q What basis would you use?

21 A (WITNESS POLICASTRO) I would use the ambient
22 levels at those tones. You see, L₉₀ is an A weighted
23 number, and A weighting essentially de-emphasizes what's
24 going on at lower frequencies and hides what's going on
25 at higher frequencies.

1 Q Please continue.

2 A (WITNESS POLICASTRO) Weighting de-emphasizes
3 what's going on at the lower frequencies, and it is
4 lower frequencies which is the problem at the
5 transformers; so I don't believe that A weighting gives
6 you any information about transformer tones.

7 Q Has the Applicant provided you with any
8 information that is un-A weighted, in other words, the
9 actual ambient levels?

10 A (WITNESS POLICASTRO) Yes. They provided us
11 with the daytime ambient octave band spectrum.

12 Q Is that what is contained in 240.24, the study?

13 A (WITNESS POLICASTRO) Yes. The study that you
14 were talking about this morning, yes. It was, I think,
15 Figure 1.

16 JUDGE BRENNER: Do you mean 290.24?

17 MR. SUGARMAN: I'm sorry. I did mean that,
18 yes.

19 JUDGE COLE: I thought we identified that one
20 as Figure 2.

21 BY MR. SUGARMAN: (Resuming)

22 Q Is that information sufficient for you to --
23 strike that. Let me ask this first.

24 Given that that information is, as you say,
25 not A weighted, what does it represent in terms of the

1 frequency of occurrence, the frequency of exceedance?

2 A (WITNESS POLICASTRO) What do you mean,
3 frequency in which it can get larger than that or
4 smaller?

5 Q Yes. The frequency with which it is exceeded.

6 A (WITNESS POLICASTRO) Well, there is really no
7 information about that.

8 Q Should you have that information?

9 A (WITNESS POLICASTRO) No. What I'm interested
10 in getting is the same graph but done for nighttime when
11 it's lower, between midnight and 4:00 a.m. I believe
12 that would be the most helpful information for me to get
13 this Figure 2 but done for nighttime.

14 Q Well, does that represent, does that figure
15 represent a single moment, a random single moment, or
16 does it represent the quietest moment or the average of
17 the moments or what?

18 A (WITNESS POLICASTRO) Well, I think what Mr.
19 Moiseev did was he was at the site and looked at each
20 band and over a 15-minute period tried to get the
21 minimum and plotted that as part of his curve.'

22 Now, it is possible that the background mass
23 transportation noise just could not be gotten out in
24 that period of time. You have to wait until midnight to
25 4:00 a.m. when the background transportation noise is

1 zero.

2 I believe that this curve would have been
3 lower if it were taken between midnight and 4:00 a.m. in
4 the range we are interested in.

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1 Q I understand exactly what you are saying. I
2 just want to clarify this to be sure that I understand
3 it. You are saying that it represents a 15-minute, each
4 point on that represents a 15-minute daytime reading?

5 A (WITNESS POLICASTRO) That's right.

6 Q And it is the 15 minutes averaged? Is it the
7 average?

8 A (WITNESS POLICASTRO) No. I think he weighted
9 15 minutes to get the lowest value. But my point is
10 that if he had done the same thing at nighttime, the
11 lowest point would be lower.

12 Q I understand. So it is the lowest value in a
13 15-minute segment?

14 A (WITNESS POLICASTRO) Yes.

15 Q Which may not even represent the lowest
16 daytime value?

17 A (WITNESS POLICASTRO) It depends upon what's
18 going on during that day.

19 Q During those 15 minutes. Right.

20 A (WITNESS POLICASTRO) But the important thing
21 is, in my view, that heat transportation noise, the
22 background transportation noise, is in the frequency
23 range I am most interested in, and at nighttime that
24 part would be gone. I am interested in audible tones at
25 nighttime with people trying to sleep. And therefore,

1 getting the ambient at that time is the most critical.

2 Q Would the background transportation noise be
3 essentially similar at the canal as it was at the site
4 where it was taken?

5 A (WITNESS POLICASTRO) I believe so. If you
6 look at the dimensions of the site, the site is very
7 small, and I think that within those small differences,
8 there wouldn't be a change.

9 Q How about at the river?

10 A (WITNESS POLICASTRO) I believe the same as
11 well.

12 Q Have you asked the Applicant for the
13 information for the nighttime minimum?

14 A (WITNESS POLICASTRO) Yes. But he hasn't
15 recorded it.

16 Q Will he be recording it and supplying it?

17 A (WITNESS POLICASTRO) To do that, I think he
18 would have to go back to the site and do the
19 measurements again at from midnight to 4:00 to provide
20 this. From my conversations with him, he did not have a
21 graph like this for between midnight and 4:00. So I
22 have had to use this graph and make some adjustment for
23 what I expected the decrease to be.

24 Q Do you feel it is appropriate to make the
25 decisions based on only having daytime information?

1 A (WITNESS POLICASTRO) No. It is really common
2 practice to measure the ambient at nighttime between
3 midnight and 4:00. That is the standard procedure.

4 MR. SUGARMAN: Thank you very much. I have no
5 further questions.

6 JUDGE BRENNER: Mr. Conner -- excuse me.

7 One thing you said, Mr. Sugarman, I want to be
8 sure I am clear on. You said you intended to
9 cross-examine Mr. Richter further. I understand that as
10 to subjects unrelated as to noise, I had hoped that you
11 would cross-examine him on everything regarding noise.

12 MR. SUGARMAN: Well, then may I resume briefly?

13 JUDGE BRENNER: Yes. Because he may say
14 something that Dr. Policastro has to contribute on.

15 MR. SUGARMAN: I do not think that that will
16 come up. And I do not want to run that risk.

17 JUDGE BRENNER: But if you stay with noise, I
18 will let you come back on dredging and so on.

19 BY MR. SUGARMAN: (Resuming)

20 Q Mr. Richter, with respect to your
21 consideration of the adverse effect or the potential
22 adverse effect of noise, have you relied on the work on
23 the consideration of the project by the Advisory Council
24 on Historic Preservation and the State Historic
25 Preservation officer?

“““

1 A (WITNESS RICHTER) I am sorry, I didn't quite
2 follow you. With regard to noise or the entire --

3 Q With regard to noise, and to the extent that
4 noise is a component of an overall valuation, have you
5 relied on the findings of the Advisory Council on
6 Historic Preservation and the Corps of Engineers and the
7 State Historic Preservation officer in evaluating
8 whether the noise of the project will have an adverse
9 effect on the pumping on the canal or the proposed
10 district?

11 A (WITNESS RICHTER) No. As I stated in the
12 testimony, they did not consider noise a problem, and
13 that is something that we are going to be undertaking.

14 Q Do you know whether the noise was even brought
15 to their attention?

16 A (WITNESS RICHTER) I do not know if it was
17 brought to their attention. I have not seen any
18 reference to it.

19 Q Do you agree with Dr. Policastro's conclusions
20 as to the objectionable effect of the noise, assuming
21 the 67 db transformers as in his -- assuming that there
22 is an audible -- or are you in a position to agree or
23 disagree? In other words, is it within your scope to
24 determine whether the noise impacts would be adverse?

25 A (WITNESS RICHTER) No, I am not. I would have

1 to go on Dr. Policastro's testimony.

2 Q Well, why are you up here now? This is a very
3 vague and broad question. But why? What have you done
4 with respect to the noise at this point?

5 A (WITNESS RICHTER) Relied on Dr. Policastro's
6 work, basically, since the contention included the
7 cultural resources. As I understand it, that is why we
8 are on the panel together. With regard to cultural
9 resources, I really don't know why it is included in the
10 contention. I understand it to be a noise contention
11 basically.

12 Q Well, do you understand cultural resources to
13 include the canal as an appreciation, recreation,
14 historic asset and cultural resource?

15 A (WITNESS RICHTER) Correct. But the
16 contention only mentions specifically the Point Pleasant
17 proposed district.

18 Q Is the canal part of the district?

19 A (WITNESS RICHTER) As I understand it.

20 Q Yes. So with respect to the canal, have you
21 -- would you not be evaluating the impact on the canal?

22 A (WITNESS RICHTER) I shall, or Dr. Policastro
23 will evaluate it and provide me with the noise impact, if
24 any, information.

25 JUDGE BRENNER: Mr. Sugarman, if I might, I am

1 not very clear either.

2 Mr. Richter, in your testimony on page 5, in
3 answer to the question will the Staff be undertaking any
4 further consideration of potential impact of pumping
5 station noise upon the proposed Point Pleasant Historic
6 District? You say, yes, you are going to consider it
7 further in the future. As I understand it, the only
8 thing you are going to do is find out from Dr.
9 PolICASTRO once he gets the information he said he
10 needed, whether there is going to be noise there.

11 WITNESS RICHTER: That's correct.

12 JUDGE BRENNER: And then you will tell us if
13 the answer is there is no noise, that will lead you to
14 one conclusion?

15 WITNESS RICHTER: That's right.

16 JUDGE BRENNER: What if the answer is there is
17 noise which is audible, what then would you do with that
18 information?

19 WITNESS RICHTER: I am not sure of the legal
20 aspects of it, but I am sure the Corps and the State
21 Historic Preservation officer would be apprised of that
22 information.

23 JUDGE BRENNER: And technically, what is left
24 for you?

25 WITNESS RICHTER: To include that in the draft

1 Environmental Impact Statements.

2 JUDGE BRENNER: Well, it says you will
3 consider further the potential impact. What are you
4 going to consider about it, assuming that there is noise?

5 WITNESS RICHTER: If it is so great such that
6 Dr. Policastro says there would be objectionable effect
7 on humans, we would have to appraise, I believe, the
8 permit-issuing agency as well as the State Historic
9 Preservation officer.

10 JUDGE BRENNER: Okay. So the whole thing is
11 not as involved as might be implied by this question and
12 answer. It comes down to the same essential point; that
13 is, Dr. Policastro's assessment as to what the noise
14 will be when he gets the further information that he
15 says he needs. Correct?

16 WITNESS RICHTER: Yes.

17 JUDGE BRENNER: Dr. Policastro, whatever
18 further assessments you might make prior to operation,
19 if you have the additional information which you
20 indicated, would still be a particular calculation;
21 correct?

22 WITNESS POLICASTRO: Yes.

23 JUDGE BRENNER: It might turn out to be wrong
24 for reasons anticipated or unanticipated once the
25 transformers go into operation; is that correct?

1 WITNESS POLICASTRO: Well, there is obviously
2 a margin of error, and what I am going to do is make a
3 conservative calculation or an optimistic calculation
4 and get an idea of what range there is. And there is a
5 methodology which is given in a two-volume report by
6 Bolt, Geranek and Newman of how to make such a
7 calculation with optimistic assumptions.

8 JUDGE BRENNER: Is it possible for you to give
9 us any feel for your expectation as to whether there
10 will be audible noise with the quieted transformer but
11 without the walls, given what you now know?

12 WITNESS POLICASTRO: Well, I have already made
13 a calculation, taking a look at one of Bolt, Geranek's
14 and Newman's reports where they listed actual
15 measurements on 7.5 NBA transformers. And I took the
16 quietest one they presented and I calculated with those
17 quietest ones, and I found out that they still would be
18 audible tones at residences 1 and 4.

19 And again, I don't have the exact information
20 that they have. But I think that the quieting of
21 required range is between 13 dbs and 23, and I think a
22 10 db quieting just won't do the job.

23 JUDGE BRENNER: So although this is subject to
24 the further detail that you indicated, it would be your
25 present expectation, based upon what you now know, that

1 the walls would be necessary in order to make the sound
2 inaudible at the property line?

3 WITNESS POLICASTRO: That's right. And I will
4 provide the Applicant with my calculations as well for
5 him to use.

6 JUDGE BRENNER: Do you expect that if the
7 walls are put in, that the sounds, in fact, will be
8 inaudible at the site property line?

9 WITNESS POLICASTRO: Well, it depends upon
10 which design of walls they used, but it is well within
11 the state-of-the-art to do that.

12 JUDGE BRENNER: Okay. You have answered the
13 question better than I asked it.

14 JUDGE MORRIS: Pardon me for interrupting, Mr.
15 Sugarman.

16 But if you will turn to Table 1, Dr.
17 Policastro, in the final column the heading is "Audible
18 Tones." And in the last column underneath that it says
19 "Quited," and the entries below that saying "None.

20 WITNESS POLICASTRO: That's a good question.

21 JUDGE MORRIS: Is that consistent with what
22 you have just answered for Judge nner?

23 WITNESS POLICASTRO: Yes, because if the
24 transformers that are used to make these calculations
25 were -- I got the sound power levels from the Edison

1 Electric Institute Environmental Noise Guide because I
2 didn't have anything definitive from the Applicant.

3 And reviewing the information that they
4 provide on sound level from the transformers, I found
5 out that those transformers were larger than the ones
6 they are going to have here, and as a result, more
7 quiet. It turns out that the smaller the transformer,
8 somehow the noisier they are.

9 So I have had to go to -- I had to go to the
10 extra references to find out specific measurements on
11 small transformers, and that reflects the latest
12 calculations I have done. And it turns out the smaller
13 transformer is noisier, and so actually Table 1 is
14 actually optimistic rather than conservative. The
15 situation is worse than what is presented in here.

16 JUDGE MORRIS: And in fact, we should
17 disregard that final column?

18 WITNESS POLICASTRO: Probably so. I have some
19 updated calculations with me.

20 BY MR. SUGARMAN: (Resuming)

21 Q You say you have updated calculations with you?

22 A (WITNESS POLICASTRO) Yes.

23 Q Would you put them in the record at this
24 point, or mark them?

25 A (WITNESS POLICASTRO) How do you mean that?

1 Q Would you produce them for examination?

2 JUDGE BRENNER: I do not want them in the
3 record right now.

4 MR. SUGARMAN: No. I retract my question.

5 BY MR. SUGARMAN: (Resuming)

6 Q Would you make them available for inspection
7 and copy?

8 A (WITNESS POLICASTRO) Well, I have a lot of
9 scribbling on here. I can rewrite it to a form where it
10 could be better understood.

11 JUDGE BRENNER: Mr. Sugarman --

12 MR. SUGARMAN: We are trying to accommodate
13 each other, I know.

14 JUDGE BRENNER: I am sure you can have them.
15 But if you are going to do anything with them, you had
16 better ask him questions about his calculations now. He
17 can describe what he did, if needed. We are not going
18 to go into any last-minute detail on this point. Did
19 you ask him for his calculations during discovery?

20 MR. SUGARMAN: Yes, sir. Dr. Policastro was
21 not identified as a Staff witness, and when we had the
22 deposition of the Staff and I asked them for the
23 documents, Dr. Policastro was not available. He was out
24 of town.

25 JUDGE BRENNER: Well, you do not need him to

1 get his documents. Did you ask for his documents?

2 MR. SUGARMAN: Yes, sir, I asked the Staff for
3 the documents of each witness.

4 WITNESS POLICASTRO: These calculations were
5 just done within the last week.

6 JUDGE BRENNER: Let us give you a copy, but we
7 are not going to go through detailed cross-examination
8 on them. It is much more efficient -- and that is my
9 main point: efficiency, without sacrifice to the record
10 -- to ask him what he did if you want to know a little
11 more about the calculations.

12 MR. SUGARMAN: I will. I would just like to
13 look at them and then ask.

14 JUDGE BRENNER: Well, he is going to need
15 them, too. Is there another copy around?

16 WITNESS POLICASTRO: Wouldn't it be better if
17 I wrote them up with the assumptions that I used and
18 make it more understandable and then gave it to him?

19 JUDGE BRENNER: No, because we are not going
20 to sit here and force you to produce testimony on the
21 spot. Why don't you have somebody for the Staff run a
22 copy of that, and we will ask questions unrelated to the
23 calculations? And as long as we are at it, I guess we
24 had better get copies for everybody. I do not know how
25 far I will let you pursue it. I do not want to get

1 bogged down in detail.

2 I think we are getting a very good picture of
3 Dr. Policastro's work and conclusions. If you need
4 resort to the detail -- I have not seen it yet -- I will
5 let you have it, and then we will see what happens.

6 MR. SUGARMAN: I may not need it. It just
7 seems that since --

8 JUDGE BRENNER: All right, you are going to
9 get them.

10 BY MR. SUGARMAN: (Resuming)

11 Q One last question, Dr. Policastro. One of the
12 questions that was asked brought to my mind that Mr.
13 Moiseev stated that below 5 decibels increase the
14 increase would not be perceptible by a human. I think
15 that was his testimony. Do you agree with that, and
16 does it apply to all tones or does it vary?

17 A (WITNESS POLICASTRO) It varies as a function
18 of frequency and I think it is more like 3, 3 dbs. But
19 statistics on acoustic discomfort reveal increments of
20 5. That may be the explanation.

21 Q As an average or as a constant or what? Do
22 you mean as a minimum?

23 A (WITNESS POLICASTRO) I think it is an
24 average. Actually, it is the 5 that I am familiar with,
25 is 5 above masking level. And 0 to 5 above masking

1 level experience shows that for transformers there is no
2 complaints. 5 to 10, individual complaints, and a large
3 number of complaints from 10 and above.

4 Q But it is above masking levels, not above
5 ambient levels?

6 A (WITNESS POLICASTRO) Yes, above masking
7 levels.

8 MR. SUGARMAN: Thank you.

9 JUDGE BRENNER: Mr. Conner.

10 CROSS-EXAMINATION ON BEHALF OF APPLICANT

11 BY MR. CONNER:

12 Q Dr. Policastro, you heard this morning what
13 the NWRA will build the pumphouse and the site for the
14 pumphouse said that it would do about adding the quieted
15 transformers and the sound barriers around the
16 transformers, if necessary.

17 You are nodding your head yes. Did you hear
18 the testimony?

19 A (WITNESS POLICASTRO) Yes, I did.

20 Q And do you agree that if those steps were
21 taken, there would be no audible sound at the site
22 boundaries?

23 A (WITNESS POLICASTRO) If properly designed,
24 yes.

25 Q And do you say that it is well within the

1 state-of-the-art to make the sound of the transformers
2 inaudible, in response to the Chairman's question?

3 A (WITNESS POLICASTRO) Do you mean in terms of
4 the transformer quieting plus barrier combination?

5 Q Right.

6 A (WITNESS POLICASTRO) Yes.

7 Q Is there any reason why the barriers could not
8 reduce the sound from the pumphouse and transformers to
9 below ambient at site boundaries? Any physical reason,
10 any acoustical reason?

11 A (WITNESS POLICASTRO) Do you mean just the
12 sound from the transformers and pumphouse, ignoring
13 ambient, you mean ignoring ambient? There is no reason
14 why they could not.

15 Q Directing your attention to figure Table 1 of
16 your testimony, I am asking, I guess, for a
17 clarification of what the right-hand column now means.
18 In the column headed "Audible Tones Unquieted" you have
19 what I understand to be the tonal variations that are
20 commonly used in your business. Well, what now does
21 that mean if for the quieted column the "none" is
22 eliminated? Does that mean that in the first instance
23 120, 240, 360, and 480 apply equally to both columns?

24 A (WITNESS POLICASTRO) Do you mean the word
25 "none"? Yes, the "none" means 120, 240, 360, and 480

1 will not be audible, each of them individually. Put let
2 me explain, the "unquieted" refers to the -- based on
3 the original information I got from the Applicant, and
4 that was 67 db, I think, NEMA rating.

5 And that's when I used the Edison Electric
6 Institute Noise Guide to get the sound power levels from
7 them. And they were larger transformers than what you
8 are using, which you plan on using. And the same thing
9 with the quieted; that is 10 db lower than 67, so it is
10 57 NEMA rating for larger transformers. That is why I
11 went and made the new calculations based on the best
12 information I could get on transformers of the size you
13 are going to use, 7.5 MVA Westinghouse.

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1 Q What size do you understand that NWRA is going
2 to use?

3 A (WITNESS POLICASTRO) 7.5 MVA.

4 Q Now, if those were used, what number should
5 properly appear in the quieted column on Table 1?

6 A (WITNESS POLICASTRO) I've made no calculations
7 for quieted. My new calculations don't give any
8 indication for special quieted transformers. It is with
9 the transformer Westinghouse 7.5 MVA, the same type that
10 you would use, based on measurements that were actually
11 taken on an existing transformer of that size,
12 Westinghouse 7.5 MVA. It is the closest data that I
13 could find in the literature that would match what you
14 are going to build.

15 Q Can you give me a better answer as to what
16 words should appear under "Quieted" on those four lines
17 in that column?

18 A (WITNESS POLICASTRO) Quieted, 7.5 NEMA rating
19 transformer sizes, 20 MVA 250. That is really what that
20 means. So in a sense, the table applies to larger
21 transformers than you would use.

22 Q Now, Mr. Sugarman asked you several questions
23 about significant noises from the transformers at
24 various places. In the context that you were answering
25 his questions, how would you characterize the term

1 "significance"? Very loud, louder than ambient, or
2 something else?

3 A (WITNESS POLICASTRO) Could you repeat for me
4 what context that came up in?

5 Q I can't recall any better probably than you
6 can what Mr. Sugarman asked you, but he would say a
7 significant increase in the db, or a significant
8 increase in the sound at the site boundary, and you
9 would then give an answer, always in response to a
10 question that had the premise of a significant
11 increase. And I am asking you to clarify on the record
12 or state on the record what you meant by "significant"
13 in the context of your answer. Did you mean it would
14 really be loud?

15 A (WITNESS POLICASTRO) No. I meant two audible
16 tones that are annoying.

17 Q How do you define annoying?

18 A (WITNESS POLICASTRO) Okay, that is based on
19 work done by Bolt, Beranek and Newman on numerous
20 studies that they have done on transformer noise. And
21 to repeat again, if they found from investigating noise
22 complaints that if the noise, the audible tone, is 5 db
23 above masking level, you hear no complaints; if it is 5
24 to 10, there will be individual complaints, and if it's
25 above 10 there will be a large number of individual

1 complaints.

2 I could be more precise by looking it up in
3 the reference, if you want.

4 Q No, I was trying to get the context of your
5 answer. The Chairman referred to -- I believe it was
6 the Chairman who referred to the noise level or whatever
7 we are hearing from this, whatever, the feedback, for
8 one thing if that was it, or from the air conditioner.

9 Now, how would that be characterized by you in
10 the context of your last explanation?

11 A (WITNESS POLICASTRO) I would think that is not
12 an annoying tone.

13 Q How about the feedback from the microphones?

14 A (WITNESS POLICASTRO) When it feeds back, yes,
15 I would say that is annoying.

16 Q So the noise you're talking about is somewhere
17 in that general context?

18 A (WITNESS POLICASTRO) Yes.

19 Q And you will make your calculations available
20 to everybody to see?

21 A (WITNESS POLICASTRO) Yes, that's right.

22 JUDGE BRENNER: Mr. Conner, excuse me, I want
23 to clarify one thing. First of all, I wasn't the one
24 who asked the question. I think it was Mr. Sugarman,
25 about the noise in the room.

1 MR. CONNER: You both did.

2 JUDGE BRENNER: But is it your testimony, Dr.
3 Policastro, that this background noise we're hearing now
4 is not annoying in the way you used the term?

5 WITNESS POLICASTRO: Well, indeed, it is a
6 very individual thing, and to me it is not annoying. I
7 would have to contact Bolt, Beranek and Newman and ask
8 them from their experience with noise complaints on
9 transformers whether this type of noise would be
10 objectionable. And I would guess probably not. I don't
11 see individuals complaining about it.

12 JUDGE BRENNER: Would the term "annoying" vary
13 with what the individual is also attempting to hear at
14 the same time? For example, if an individual is sitting
15 in this chair and was trying to hear what else is being
16 said in the room?

17 WITNESS POLICASTRO: That's true.

18 JUDGE BRENNER: We will get Bolt, Beranek and
19 Newman to sit in this chair tomorrow and see what they
20 think.

21 MR. CONNER: I didn't get the name of the
22 first man with Newman.

23 WITNESS POLICASTRO: That's Bolt, Beranek and
24 Newman. The investigators were Vernon and Anderson and
25 I have a two-volume report here with me.

1 BY MR. CONNER (Resuming)

2 Q But you're relying upon their characterization
3 and not on your independent judgment, is that correct?

4 A (WITNESS POLICASTRO) I think that their
5 analysis of noise complaints from transformers is far
6 better than my individual judgment.

7 Q Did you write the staff question E290.24?

8 A (WITNESS POLICASTRO) Could you read that back
9 to me, please?

10 Q Provide a copy of the ambient noise study
11 measured by the applicant and done for the region near
12 the pumphouse. Yes, I wrote that question.

13 Q Why didn't you specify that it should be at
14 night?

15 A (WITNESS POLICASTRO) Well, I wanted everything
16 that was done on the ambient measurements.

17 Q But you stated a minute ago that the one that
18 was sent to you in response to this was in the daytime,
19 and that these things should have been done at night.
20 Did you advise anybody from the applicant that you
21 wanted a study done at night?

22 A (WITNESS POLICASTRO) Yes, I did.

23 Q When was that?

24 A (WITNESS POLICASTRO) I talked to, I think it
25 was Neil Moiseev, and I asked him if he had data at

1 night. When I wrote that question I knew there was an
2 ambient study and I wanted it, not knowing what was in
3 it, expecting that I would get nighttime levels. But
4 then when I did not, I phone to find out if perhaps data
5 were available but not put in that document.

6 Q By the way, when did you ask the applicant for
7 information concerning the double doors on the pump
8 house and the air intake?

9 A (WITNESS POLICASTRO) When -- do you mean how
10 long ago?

11 Q Yes.

12 A (WITNESS POLICASTRO) Oh, that was a few weeks
13 ago, and I did get some answers and I did have some
14 discussion with some members of the applicant's staff
15 yesterday and went back and looked at the drawings, and
16 I was still a little confused. I think an hour with the
17 people might settle that issue. It is just that there
18 wasn't enough time.

19 Q I didn't quite understand your answer. Did
20 you say you talked with the staff about it or you talked
21 to someone from the applicant or NWRA about it?

22 A (WITNESS POLICASTRO) That's right.

23 Q Who was that?

24 A (WITNESS POLICASTRO) It was Neil Moiseev and
25 Mr. Bourquard.

1 Q A few weeks ago?

2 A (WITNESS POLICASTRO) Well, we talked about it
3 yesterday trying to settle the issue.

4 Q Had you talked to them about it before
5 yesterday?

6 A (WITNESS POLICASTRO) Not to them
7 individually. I taked to Dave Honan.

8 MR. SUGARMAN: Could he be identified?

9 MR. CONNER: That's David Honan.

10 MR. SUGARMAN: Could we just identify him?

11 JUDGE BRENNER: Is he an employer of PECO?

12 MR. CONNER: He is an employee of PE, yes.

13 BY MR. CONNER (Resuming)

14 Q Now, what would be the problem with double
15 doors?

16 A (WITNESS POLICASTRO) Well, if they are not
17 sound spec, they are ordinary doors and you could get
18 transmission of noise to the outside, and perhaps around
19 the building, perhaps to residents. And I received some
20 information that they were going to be sound spec'd to
21 sound class 42, but I wasn't sure whether that is in the
22 specs.

23 Q But is there any particular problem about the
24 double doors you're talking about? Is there any problem
25 in putting this acoustical material on them?

1 A (WITNESS POLICASTRO) Oh, no, it is just a
2 question of what the specs are on the doors.

3 Q And this is well within the state of the art,
4 also?

5 A Yes, no problem. It is well within the state
6 of the art.

7 Q Now with respect to the location of the
8 louvers, is that a similar type problem?

9 A Well, if they are at the top of the building
10 then there wouldn't be a problem. If they are at the
11 lower part of the building, the sound might escape
12 through the plenum out and around the false wall,
13 considering its short distance. So I need to get the
14 information as to exactly where they are. My looking at
15 the drawings last night indicated that they would
16 probably be at the base of the wall rather than towards
17 the group and I need to have that clarified. I need to
18 have the drawing clarified to me.

19 Q Okay. They used to have acoustical lining on
20 such air ducts. The efficiency thereof will vary
21 depending on whether the ducts are located high or low.
22 Is that what I understand your testimony to be?

23 A (WITNESS POLICASTRO) No. The question I'm
24 raising is the duct to the outside, the openings to the
25 outside have a short path around the false wall where

1 they can project -- propagate noise to houses 2 and 3.

2 Q And the use of acoustical lining, then,
3 wouldn't help that?

4 A (WITNESS POLICASTRO) No. I think that the
5 addition of sound traps or sound attenuators would
6 correct that, if that were a problem, and I believe
7 there is even space in there for them.

8 Q In other words, this is something that is also
9 well within the state of the art?

10 A (WITNESS POLICASTRO) Yes, it is.

11 Q And you would find no problem, then, with the
12 applicant being able to take such actions as may be
13 necessary to meet the fact that there would be no
14 contribution from the pump house or transformer at the
15 site boundary?

16 A (WITNESS POLICASTRO) Yes, I would have no
17 objection.

18 MR. CONNER: No other questions.

19 JUDGE BRENNER: Redirect?

20 REDIRECT EXAMINATION

21 BY MS. HODGDON:

22 Q Dr. Policastro, have you provided further
23 written questions for the applicant in addition to the
24 one that we have here, question E290.24, which was
25 answered in the applicant's letter of September 3rd and

1 which we have been talking about?

2 A (WITNESS POLICASTRO) Yes, I have another set
3 of questions submitted, basically following up on those
4 questions.

5 Q When did you provide them?

6 A (WITNESS POLICASTRO) Recently.

7 Q To whom did you give them?

8 A (WITNESS POLICASTRO) To you.

9 Q Did you include the problem of the double
10 doors and louvers in those questions?

11 A (WITNESS POLICASTRO) They were implicitly in
12 there but not stated specifically.

13 Q Do you have informal answers to those
14 questions?

15 A (WITNESS POLICASTRO) Yes, I have informal
16 answers but I need further clarification.

17 Q But you don't have any reason to believe that
18 the applicant has not received the questions? Or do you
19 know? The written questions.

20 A (WITNESS POLICASTRO) No, I don't know.

21 Q Do you have the questions with you?

22 A (WITNESS POLICASTRO) I gave you my only copy.

23 JUDGE BRENNER: Ms. Hodgdon, excuse me.
24 Presumably, this is for our benefit as it is being
25 developed at least in part. I don't understand the line

1 of where this is going in relation to either the cross
2 examination or the issues before us. Could you help me
3 out?

4 MS. HODGDON: Yes, I was asked -- the Board
5 asked me before about the double doors and the louvers,
6 about my not having asked the applicant, this panel,
7 about these problems, and I said I was unaware of it. I
8 was given further questions --

9 JUDGE BRENNER: Wait a minute. You're asking
10 your witness questions now to establish why you didn't
11 ask the applicant's witness questions on cross
12 examination?

13 MS. HODGDON: I failed to see the double doors
14 and I wondered if it was obvious in the questions. And
15 also, these questions are ongoing and I don't know that
16 they have gone out.

17 JUDGE BRENNER: It seems to be not to be a
18 terribly efficient process to find out on the record
19 before us whether questions that you as part of the
20 staff are sending out have gone out.

21 MS. HODGDON: That's right, and I had them
22 docketed and I can't seem to find out whether they've
23 gone out or not.

24 JUDGE BRENNER: I don't understand the
25 materiality of the questions. Why are you trying to

1 establish before us whether or not things have been put
2 in the mail when they are being put in the mail by your
3 client?

4 MS. HODGDON: They were not -- yes, they were
5 put in the mail by my client, yes. The materiality -- I
6 won't pursue it.

7 JUDGE BRENNER: If there is something
8 important that I'm missing, I don't want to do it but
9 I'm very confused.

10 MS. HODGDON: I don't have a copy of those
11 questions. I thought that Dr. Policastro had them. I
12 do have Dr. Policastro's references.

13 JUDGE BRENNER: Okay. Why don't you proceed
14 with another point.

15 (Pause.)

16 JUDGE BRENNER: Ms. Hodgdon, you may continue
17 your redirect.

18 MS. HODGDON: I have no further questions.

19 (Board conferring.)

20 BOARD EXAMINATION

21 BY JUDGE COLE:

22 Q Just a couple of questions, Dr. Policastro,
23 with respect to certain of your statements on pages 5
24 and 6 that state -- indicator and/or state that the
25 noise level from the transformers will be noticeable in

1 terms of tonal component. One or two questions
2 concerning that.

3 First, what is your source of information and
4 how did you determine what the tonal components of the
5 noise of the transformers -- what is your source for
6 that information?

7 A (WITNESS POLICASTRO) Do you want me to give
8 you a reference for it? Well, most of the transformers
9 have tunnel tones at 120, 240, 360, 480, and I have a
10 reference of Bolt, Beranek and Newman on their
11 transformer noise study where they have done numerous
12 measurements on transformers and found tones there.

13 Q All right, sir. Is any of that information in
14 any of the documents that are before us?

15 A (WITNESS POLICASTRO) No, they are not. That
16 is recent information that I have gotten.

17 Q All right, sir. With respect to what you were
18 comparing these tunnel components with, how did you
19 obtain the tunnel components of the masking noise?

20 A (WITNESS POLICASTRO) Do you mean the masking
21 level?

22 Q Yes.

23 A (WITNESS POLICASTRO) That is a classic
24 calculation. You can find that in textbooks.

25 Q That might very well be a classic calculation,

1 but I want to know how you did that, sir. Would you
2 come to the point of how you came to a conclusion that
3 this will be noticeable.

4 A (WITNESS POLICASTRO) All right. I see what
5 you mean. The first thing you do is you calculate the
6 masking level. You start with your ambient and you
7 either look at the table or you calculate with a formula
8 to determine what the masking level is at each tone.
9 Okay? That is the level above which another tone will
10 be audible.

11 So first, you derivate from the masking level;
12 that's a level above which the tone will be audible.
13 Then you start out with your noise voice which are the
14 transformers and then you calculate attenuation as a
15 function of distance until you get to a resonance, and
16 you have gotten the decibal levels at each of the tones.

17 Then you compare the dbs at each tone to the
18 masking level of the ambient at that tone, and if the db
19 level is higher than the masking level, then it will be
20 audible.

21 Q All right, sir. And did you, in fact, do
22 that, sir?

23 A (WITNESS POLICASTRO) Yes.

24 Q Is that in any of the information before us?

25 A (WITNESS POLICASTRO) Well, it is buried in the

1 testimony. It is part of the computer program that was
2 used, and also, the copy that you have here, it is not
3 written in detail but the final results are printed. I
4 mean, I have not prepared any very detailed calculations
5 explaining it on a step-by-step basis. I can do that.

6 Q All right, sir. At some stage in the cross
7 examination reference was made to a figure in the
8 ambient octave band sound pressure levels. Did you use
9 that at all in your determination of the tonal
10 components?

11 A (WITNESS POLICASTRO) Yes. Well, I lowered the
12 ambient. I lowered the ambient by 5 db, figuring that
13 that is --

14 Q Why?

15 A (WITNESS POLICASTRO) For a couple of reasons.
16 One, when you sum up the levels here you don't get 45
17 dba which it says in the caption, but you get 47. And
18 so obviously, the meter is correct. The value from the
19 meter is correct so I lowered it to that, and estimated
20 that the transportation noise in the background that you
21 just quite can't after in the day was approximately 3
22 dbs, so I lowered the ambient a little further because I
23 had to make an estimate of what the nighttime ambient
24 was because I had no data.

25 Q All right, sir. And is it that db level at

1 the different frequencies that you compared with the
2 information that you obtained from the manufacturers?

3 A (WITNESS POLICASTRO) No, the manufacturers'
4 information, I had to -- are basically sound power
5 levels, and I had to compute the attenuation of the
6 power with distance. And then when I got to a
7 particular resonance, the sound pressure levels at those
8 tones were what I used to compare with the masking level
9 I got from this curve.

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1 Q All right, sir. But you did get your masking
2 levels from this curve?

3 A (WITNESS POLICASTRO) Yes.

4 Q With certain modifications as you just
5 explained?

6 A (WITNESS POLICASTRO) That's exactly right.

7 Q All right, sir. When you compared those two
8 numbers, what criteria or criterion did you use to
9 determine whether there would be or would not be a
10 noticeable effect?

11 A (WITNESS POLICASTRO) If the sound pressure
12 level at the tone, as predicted, is greater than the
13 masking level, then there is an audibility of that
14 tone.

15 Q Just merely greater than?

16 A (WITNESS POLICASTRO) That is the criterion,
17 yes. That is well accepted.

18 Q All right, sir. So one decibel would be --

19 A (WITNESS POLICASTRO) Right. But annoyance is
20 five. Five is the level where Bolt, Baranek and Newman
21 found there would be individual complaints. So in
22 reality you can have five db's above audibility and
23 according to the BB&N study you wouldn't get
24 complaints. It would be audible but not to the
25 complaint level.

1 Q All right, sir, I understand. Thank you.

2 I have a question in front of me here. It
3 says: Is it clear which transformers we are talking
4 about? The outside transformers, right, sir?

5 A (WITNESS POLICASTRO) Yes.

6 Q And the size are the 7.5 MVA?

7 A (WITNESS POLICASTRO) Right.

8 Q Dr. Policastro, you indicated that there would
9 be a noticeable difference because of the tonal
10 components. How would you correct for this situation if
11 you were to find out after the installation is in place,
12 and then it is confirmed that there is in fact a noise
13 impact? How would that be corrected, sir?

14 A (WITNESS POLICASTRO) Do you mean to say if
15 they built the quieted transformer with the 57 nema
16 value? Then I would recommend a barrier. Perhaps a
17 three-sided barrier would do.

18 Q Thank you.

19 I guess, what sort of a criterion do you think
20 should be used to determine whether that should or
21 shouldn't be done? If we have some differences between
22 noise levels and differences in levels that are
23 objectionable, should there be some sort of a level
24 which would trigger the requirement for some mitigative
25 measures?

1 A (WITNESS POLICASTRO) Well, assuming someone
2 went out there after the transformers were built and I
3 went out with the sound level meter and measured it, I
4 think the 5 db above masking level. I think if they
5 were greater than that one could expect complaints, and
6 that might be enough to trigger a barrier, the use of a
7 barrier.

8 Q Would that have to be measured, say, in dba or
9 in decibels in the individual tonal frequencies?

10 A (WITNESS POLICASTRO) You would have to
11 measure them at the individual tones. You see, as I
12 mentioned, the A-weighting just covers up the problem.
13 It is the values, the DB's at the tones, that are in
14 question. It is a tonal problem and not an A-weighted.
15 A-weighting really doesn't help you any.

16 Q All right, sir. I noticed that you provided
17 noise levels for four tonal frequencies, and they seem
18 to be decreasing with increasing frequency. Are they
19 all about equal with respect to a five-decibel
20 difference being objectionable, or are there
21 differences?

22 A (WITNESS POLICASTRO) Where are you pointing?

23 Q I am on this calculational sheet.

24 A (WITNESS POLICASTRO) On page 1?

25 Q Page 1.

1 A (WITNESS POLICASTRO) Which line?

2 Q I'm just looking at the top line.

3 A (WITNESS POLICASTRO) Oh, I think I know what
4 you mean. Well, the top line refers to measurements
5 that were made on a Westinghouse transformer, 7.5 MVA,
6 and I think they were made at 50 or 100 feet,
7 extrapolated to 500 feet. So that is the value of the
8 tone at 500 feet.

9 Q Sir, I didn't ask you a question about those
10 individual values, but I'm talking about, when the
11 transformer is in place and operational, how do we
12 determine whether there is in fact a problem that needs
13 mitigation? And in trying to identify and characterize
14 that, are there any differences between, for example, a
15 5-decibel difference at the 120 cycles or a 5-decibel
16 difference at the 360 cycles?

17 A (WITNESS POLICASTRO) No, there is no
18 difference. Experiments have shown that it can be
19 equally annoying if it is 5 db in any of them. That is
20 the best evidence that is available.

21 JUDGE COLE: That was my question. Thank
22 you.

23 BY JUDGE BRENNER:

24 Q Dr. Policastro, in terms of establishing a
25 criterion at which the walls should be in place, if one

1 were to try to design in advance a predictive criterion
2 so that discretion later would be very narrow, short of
3 requiring walls in advance, if the Board was disposed in
4 that direction, which is a possibility among many
5 possibilities, could it be done solely along the lines
6 of a numerical difference as you've indicated for 5 dba
7 for each tone, or would there also be differences in
8 people, person's perception in hearing any tone?

9 A (WITNESS POLICASTRO) That's true, you can get
10 people who live in the residences nearby who don't get
11 bothered by it. You could get people who are bothered
12 by a db above audibility. So it is very much an
13 individual reaction.

14 But on a statistical basis, the dividing line
15 would be 5 db above audible, above masking level.

16 Q Yes. And I understand the usefulness of
17 overall statistical bases, but now we're trying to apply
18 it to a particular situation at Point Pleasant. And I'm
19 wondering, would it make sense to attempt as another
20 possibility or criterion, such that simply if there were
21 any audible noises that the walls should be installed?

22 A (WITNESS POLICASTRO) That might be a little
23 restrictive, I think, because measurements and
24 information on existing transformers indicate that there
25 is really 5 db above audibility that causes people to

1 react and complain. You can be conservative and say as
2 soon as the tone is audible at the site boundary then
3 you are going to be a barrier. That would be
4 conservative and assure no problems.

5 Q If one uses the term "audible", is that
6 something for which you would have to have people
7 inspecting, to see if people with normal hearing hear
8 it? Or is audible something that could be determined
9 instrumentally?

10 A (WITNESS POLICASTRO) With instruments you can
11 tell very easily.

12 Q I also thought I understood --

13 A (WITNESS POLICASTRO) Sure, it would be
14 audible as well to someone's ear at the site boundary.
15 They would be able to just detect a hum.

16 Q I take it, given your testimony, that you
17 would be in favor of some means of establishing
18 assurance later, if a wall were not installed before
19 operation, that a wall would be installed after, given
20 annoyance, however that is defined?

21 A (WITNESS POLICASTRO) Yes, I think it would be
22 a good idea to have a measurement program after the
23 transformers were put in place to determine if there is
24 audible tones or a level of annoyance at the site
25 boundary, rather than to let it rest on the individual

1 residents to complain.

2 (Board conferring.)

3 Q Do you know if the Applicant has such a
4 program proposed?

5 A (WITNESS POLICASTRO) I don't know.

6 (Board conferring.)

7 Q Dr. Policastro, with respect to the louvers,
8 you mentioned that it would be possible to install sound
9 attenuation devices. One of them which you referred to
10 was a sound trap?

11 A (WITNESS POLICASTRO) A sound trap. That's
12 another word for a sound attenuator, and there already
13 are, I think, eight or nine of them in the pump house in
14 different locations.

15 Q What would a sound attenuator be for a
16 louver? I thought the louvers have to stay open.

17 A (WITNESS POLICASTRO) Well, that's right.
18 Once the air goes through the louver, there is a duct
19 where you can put the sound attenuators. And in looking
20 at the drawings, there's a place where they can be put.

21 Q Do I understand that this would be such that,
22 rather than the louvers being directly in the outside,
23 they would feed into some sort of device that would
24 attenuate the sound?

25 A (WITNESS POLICASTRO) That is essentially how

1 it works. The air goes in, passes through the sound
2 attenuator, and then goes on towards the pump room.

3 Q If the louvers were in fact closer to the top
4 of the pump house, would you then have enough
5 information, combined with that fact, to determine that
6 the sound from the louvers would not need to be
7 attenuated?

8 A (WITNESS POLICASTRO) I think that is true,
9 because the path of the sound would be very tortuous and
10 it would be dissipated to a large degree.

11 (Board conferring.)

12 JUDGE BRENNER: Mr. Sugarman, follow-up
13 questions based on our questions if you have any.

14 RE-CROSS-EXAMINATION ON BEHALF OF
15 INTERVENOR DEL-AWARE UNLIMITED

16 BY MR. SUGARMAN:

17 Q A follow-up question to Mr. Richter. To your
18 knowledge --

19 JUDGE BRENNER: Excuse me, Mr. Sugarman.
20 Maybe I'm wrong. I don't recall anybody asking Mr.
21 Richter any questions since you examined. Am I right?

22 MR. SUGARMAN: That is a good question, sir.
23 But I think I will show you why the question is
24 addressed to Mr. Richter.

25 JUDGE BRENNER: Okay.

1 BY MR. SUGARMAN: (Resuming)

2 Q The Board asked a number of questions of Dr.
3 Policastro concerning the potential for obviating sound
4 effects by changes in the design of the station. To
5 your knowledge, have any such changes in the design of
6 the station been reviewed by the Advisory Council on
7 Historic Preservation or the Corps of Engineers or the
8 State Historic Preservation Officer?

9 A (WITNESS RICHTER) I don't know.

10 MR. SUGARMAN: Thank you.

11 JUDGE BRENNER: Staff.

12 MS. HODGDON: I have just one follow-up
13 question.

14 FURTHER REDIRECT EXAMINATION
15 ON BEHALF OF THE REGULATORY STAFF
16 BY MS. HODGDON:

17 Q Would those design changes be in fact
18 considered design changes for purposes of reporting, or
19 do you know that?

20 A (WITNESS RICHTER) I'm not sure, but as I
21 understand the memo of agreement if there was something
22 on the exterior they would require approval, both for
23 the Advisory Council and SHPO.

24 Q Even moving a louver?

25 A (WITNESS RICHTER) I don't know.

1 JUDGE BRENNER: Unless you have an objection,
2 Staff is inquiring now.

3 BY MS. HODGDON: (Resuming)

4 Q Is it your opinion that any change in the
5 exterior of the building would require approval?

6 A (WITNESS RICHTER) I would say a significant
7 change. I'm not going to say any change.

8 MS. HODGDON: Thank you.

9 JUDGE BRENNER: You're not going to say any
10 change because you don't know?

11 WITNESS RICHTER: That is right, I don't know
12 for sure.

13 MS. HODGDON: I have no further questions.

14 JUDGE BRENNER: Mr. Conner, do you have any
15 follow-up questions?

16 MR. CONNER: No.

17 JUDGE BRENNER: Mr. Sugarman, do you have a
18 follow-up based upon the follow-up?

19 MR. SUGARMAN: Yes, I do.

20 FURTHER RECROSS EXAMINATION ON BEHALF
21 OF INTERVENOR DEL-AWARE UNLIMITED

22 BY MR. SUGARMAN:

23 Q In your judgment, if you have a basis for
24 making a judgment, speaking of 25 or 30-foot high walls,
25 sound attenuation measures for the transformers, would

1 that in the context of this situation as you understand
2 it require a re-reference to the Advisory Council?

3 A (WITNESS RICHTER) I don't think I'm able to
4 answer that. It might be the case that the walls fit in
5 more with the scheme of the building. I don't know, not
6 having seen the plans of walls, et cetera. I just don't
7 know.

8 Q This would in effect be a partial or a total
9 new building. Partial or total, I say, somewhere
10 between two and four walls.

11 A (WITNESS RICHTER) I wouldn't think so.

12 Q You wouldn't think it would be?

13 A (WITNESS RICHTER) Not a new building.

14 Q I'm talking about 20 or 25-foot high walls on
15 the transformers to mask the sound.

16 A (WITNESS RICHTER) I understand. It could be
17 the case that it is more esthetically pleasing than the
18 transformers being exposed. I don't know, not having
19 seen them.

20 MR. SUGARMAN: I understand. Thank you.

21 JUDGE BRENNER: Mr. Richter, presumably if
22 somebody were looking at this, whether it be yourself or
23 the Advisory Council or both, it would be pertinent that
24 any sound attenuation walls would be five feet higher
25 than a structure that would exist anyway, and talking

1 about the transformers, and in fact next to an 85 -- or
2 a 44.5-foot structure, as opposed to walls that were
3 simply put in open fields, correct?

4 WITNESS RICHTER: Correct.

5 JUDGE BRENNER: All right. I believe we are
6 completed with this panel. Dr. Policastro I'm sure is
7 going to leave. We appreciate your presence here. I'm
8 sorry the schedule was such, and we were ignorant of it
9 until very recently. We would have preferred to
10 schedule things slightly different on this issue, but
11 I'm glad we were able to work you in.

12 WITNESS POLICASTRO: Also, I want to thank you
13 for allowing me to go ahead of my turn.

14 JUDGE BRENNER: Mr. Richter, we appreciate
15 your assistance here. You will be here some more, I
16 assume. Well, why don't you tell us at the end of the
17 day or tomorrow morning.

18 Well, let me ask you now. Mr. Sugarman, you
19 do have further questions of Mr. Richter on other
20 subjects in his testimony, or do you want to think about
21 that?

22 MR. SUGARMAN: I will think about that, sir.

23 JUDGE BRENNER: I think it would be useful for
24 us and a courtesy to the Staff if, as soon as you
25 determine one way or the other, hopefully by early

1 tomorrow morning, whether you have further questions of
2 Mr. Richter, you let everybody know.

3 MR. SUGARMAN: Yes, sir.

4 JUDGE BRENNER: The panel is excused. We will
5 take a 15 minute break. As soon as we come back, Mr.
6 Hansler will be on the stand, so he can get set up with
7 whatever he needs.

8 (At 4:05 p.m., the hearing was recessed, to
9 reconvene at 4:20 p.m. the same day.)

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1 JUDGE BRENNER: All right. We are back on the
2 record.

3 Mr. Sugarman, one point. I would appreciate
4 it if, in coordinating with the witnesses you've
5 subpoenaed, if they could have a copy of their
6 professional qualifications when they appear. I'm not
7 requiring it, but if they could, that would be very
8 helpful so we could bind it into the record. Expert
9 witnesses usually have some such things lying around.
10 We request the same thing of Mr. Brundage or whoever
11 talks with him from the Applicant's, so we don't have to
12 spend time getting their expertise and also usually get
13 a fuller picture from their written qualifications. So
14 please try to do that.

15 MR. CONNER: Your Honor, I just barely heard
16 what you said. You say you want us to prepare Mr.
17 Brundage's professional qualifications?

18 JUDGE BRENNER: No, that is not what I said.
19 Tell him to bring his professional qualifications with
20 him if he has any that are in existence. Presumably,
21 since he is in the business of selling his professional
22 services, he has such a thing.
23 Whereupon,

24 GERALD M. HANSLER,
25 called as a witness by Counsel for Del-Aware Unlimited,

1 Inc., having first been duly sworn by the Chairman, was
2 examined and testified as follows:

3 JUDGE BRENNER: Mr. Sugarman, we're going to
4 allow you to proceed. Bear in mind that although we
5 know Mr. Hansler's position, and assuming one of the
6 first things you will do is get that for the record
7 also, we have no record knowledge of his qualifications
8 beyond his position. I don't know if that is going to
9 be pertinent or not, depending upon how far you go.

10 DIRECT EXAMINATION

11 BY MR. SUGARMAN

12 Q Mr Hansler, you have previously identified
13 yourself as executive director of the Delaware River
14 Basin Commission, and to serve as your responsibility
15 with respect to Point Pleasant at the present time
16 pursuant to the Commission's order or orders is to serve
17 as Stream Master if and when the project goes on line,
18 insofar as withdrawals from the Delaware River, and your
19 further responsibility is to consider any final design
20 or changes which may occur in the elements at the
21 project as they may come forward. Is that correct?

22 A (WITNESS HANSLER): Elements of the project
23 insofar as the intake as stated in the docket.

24 Q So it is your responsibility to give final
25 approval to the intake?

1 A (WITNESS HANSLER) Yes. If there are any
2 significant revisions, based on the earlier approval.

3 Q And you have testified that you are awaiting
4 final approval by the Corps of Engineers before giving
5 your final approval to the present proposal, is that
6 correct?

7 A (WITNESS HANSLER) That is correct.

8 JUDGE BRENNER: Mr. Hansler, let me be sure I
9 understand this. This is your individual responsibility
10 in your capacity as opposed to DRBC as an entire
11 commission having the authority to approve?

12 WITNESS HANSLER: That is correct.

13 JUDGE BRENNER: You've been delegated that
14 authority?

15 WITNESS HANSLER: Yes, as a condition in the
16 docket voted upon by the commissioners.

17 JUDGE BRENNER: Okay. Thank you.

18 (Pause.)

19 MR. SUGARMAN: Excuse me just one moment. I
20 had a list of documents which if I can find will save us
21 a little bit of time.

22 (Pause.)

23 JUDGE BRENNER: Mr. Sugarman, did I miss
24 something? Why are we waiting?

25 MR. SUGARMAN: I seem to have a small problem

1 here.

2 JUDGE BRENNER: Why are we waiting?

3 MR. SUGARMAN: I've got two-thirds of what I
4 was looking for.

5 BY MR. SUGARMAN (Resuming)

6 Q Did you also have occasion to inform the Corps
7 of Engineers that you would depend on the Corps to
8 comply with the National Historic Preservation Act?

9 A (WITNESS HANSLER) Yes.

10 (Pause.)

11 Q Is it correct that the commission in this
12 particular project looked at was there water available
13 in sufficient amounts in the Schuylkill at all times and
14 if there wasn't that is why the commission looked to the
15 Delaware River?

16 MR. CONNER: Objection. The question relates
17 to something on the Schuylkill which is beyond any of
18 the three contentions.

19 JUDGE BRENNER: No, sir. I asked that, if I
20 understood the question right, that there be enquiry on
21 that subject, that is whether it was DRBC's
22 determination that there would not be sufficient flows
23 in the Schuylkill. This may be pertinent to our
24 determination on the admissability of the proffered
25 third contention. In fact, let me hear the question

1 again just to be sure. Just repeat the question.

2 BY MR. SUGARMAN (Resuming)

3 Q The question was, did the commission in the
4 particular project Limerick look at was there water
5 available in sufficient amounts in the Schuylkill at all
6 times and if there wasn't, then the commission looked to
7 the Delaware River?

8 MR. CONNER: Mr. Chairman, please, I renew my
9 objection. It obviously relates to a historical
10 consideration and not to something new and different.

11 JUDGE BRENNER: It is also leading to where I
12 want to get but you can get at it more efficiently. Did
13 you understand the area, the limited area we are
14 interested in with respect to the Schuylkill, Mr.
15 Sugarman?

16 MR. SUGARMAN: Yes, sir.

17 JUDGE BRENNER: All right. Why don't you
18 immediately -- I will allow an answer to this question,
19 but after that very quickly move to the specific numbers
20 that are cited and so on. We don't need the broad
21 general historical perspective, because we're all quite
22 aware of it.

23 MR. SUGARMAN: Yes, sir. I was trying to go
24 through my outline and work into what the Board wanted.

25 JUDGE BRENNER: All right, but as you know

1 from our discussion the other day, to sum up your
2 outline dealing with the Schuylkill is beyond the scope,
3 that is, the alternative of supplemental water storage
4 there.

5 MR. SUGARMAN: I understand that.

6 JUDGE BRENNER: This whole permissible area
7 involving the Schuylkill at this point in time continues
8 after the construction permit proceedings given the
9 possibility of a change with respect to the status of
10 Unit 2 as reflected in your motion and the bases for the
11 Applicant's objection to your proposed contention. We
12 are interested in ascertaining Mr. Hansler's views on
13 whether the difference of whether there is one unit or
14 two units would affect materially the number of days of
15 availability of the Schuylkill and you can get at that
16 very quickly after an answer to this very introductory
17 question.

18 MR. SUGARMAN: Yes, I will do that, sir.

19 JUDGE BRENNER: After all that, Mr. Hansler,
20 do you remember the question?

21 WITNESS HANSLER: Yes. The commission did
22 consider the adequacy of the Schuylkill. I think that
23 is adequate based upon the information in the deposition
24 that was taken. The earlier reviews had been made as
25 early as 1973 on through to our assessment in 1980 and

1 the assessment in 1980 on page 229 addresses that.
2 Withdrawals from the Schuylkill River, the use of the
3 Schuylkill River as an alternative source of water
4 supply for Montgomery County is not considered adequate
5 because of, and it lists lack of available storage,
6 limited opportunities for further water storage,
7 etcetera. Also it goes into the nature of alternatives,
8 cooling water for Limerick, on page 230 and there is not
9 sufficient water in the Schuylkill at all times to
10 handle the Limerick facility.

11 MR. SUGARMAN: Sir, it might preclude it also
12 with respect to existing storage on the Schuylkill to
13 which the ALAB Board referred as part of its
14 consideration. I think if you read that footnote, it is
15 footnote 24, sir.

16 JUDGE BRENNER: Mr. Sugarman, I will ask the
17 questions on the subject that we are interested in and
18 then you can follow up within the scope of those
19 questions and after that we can move from the Schuylkill
20 to the Delaware.

21 BOARD EXAMINATION

22 BY JUDGE BRENNER

23 Q Mr. Hansler, in a quotation from the
24 Pennsylvania Department of Environmental Resources,
25 Environmental Assessment Report and Findings, Point

1 Pleasant Water Supply Project, at page 29, the document
2 is dated August 29, 1981, there is an excerpt beginning
3 at page 8 and continuing over to page 9, of the pleading
4 which has been filed before us by the Applicant,
5 entitled Applicant's Answer to Application for Approval
6 of Petition to Amend Contentions Submitted by Del-Aware
7 Unlimited, Inc. and the Applicant's filing is dated
8 September 24, 1982. Do you have either that document
9 before you or page 29 of the source document?

10 A (WITNESS HANSLER) Yes.

11 Q All right. Have you -- do you have in mind
12 that the contents of the two paragraphs -- I don't have
13 the source document in front of me but the first
14 paragraph begins "Even if Unit 2 is delayed," and the
15 paragraph immediately thereafter begins "Further, the
16 ultimate failure of Limerick Unit 2,".

17 A (WITNESS HANSLER) I have that in front of me.

18 Q Within that it is stated that under conditions
19 imposed by DRBC, cooling water for Limerick may only be
20 withdrawn from the Schuylkill River when river flows at
21 Hodgetown guage exceed 530 cfs with one Limerick unit
22 operating, or 560 cfs with both proposed Limerick units
23 operating. Is that statement accurate?

24 A (WITNESS HANSLER) That statement is
25 accurate. That is the conditions listed in a docket

1 decision relating the Limerick power plant.

2 Q The paragraph from which I read that sentence
3 goes on to discuss the difference in the number of days
4 in which the Schuylkill River flow would be unavailable
5 under those flow conditions which we just referenced for
6 one versus two units. Is that information taken from
7 information developed by DRBC or is that something the
8 Pennsylvania Department of Environmental Resources did
9 up on its own, or some combination?

10 A (WITNESS HANSLER) I couldn't tell you at this
11 point in time. I know DRBC has information indicating
12 when Limerick would take from the Schuylkill and the
13 Delaware and/or the Perkiomen. I am not sure as to the
14 specific days listed here for the period listed for
15 64-65-81.

16 Q All right. The conclusion in that paragraph
17 contained in Pennsylvania DER document is that if only
18 one unit were operating, the number of additional days
19 for which the flow conditions applicable to one unit,
20 that is, 530 cfs, would exist over and above the
21 marginal increment over and above the number of days
22 that 560 cfs required for two units would exist is
23 insignificant, being in their statement only 7 to 12
24 additional days of the year, or 3 percent of the time.
25 Do you have the basis for agreeing or disagreeing with

1 that statement and, if so, do you agree or disagree?

2 A I don't have an accurate basis in front of me
3 but I believe I would believe it is fairly accurate
4 because often your flow would drop considerably below
5 530 cfs and there would be more days where your flow
6 would be below 530 cfs, so the 560 wouldn't come into
7 play. It is very difficult, probably, to measure at a
8 gauging station, 30 cfs. USGS might say their gauging
9 stations are plus or minus some percent of accuracy, but
10 looking at how a river behaves there would probably be
11 many days where that flow was below 560 as well as below
12 530.

13 Q Is there anything in present circumstances
14 that is either officially before a DRBC or which you
15 would know of otherwise which would lead to a material
16 change in that flow condition for one unit such that
17 Limerick might be permitted to withdraw water from the
18 Schuylkill at flow that is materially below 530 cfs.

19 A (WITNESS HANSLER) No.

20 Q You indicated that you didn't have specific
21 information before you in answering the question before
22 the last one and I understand that, given the fact that
23 you were not prewarned that we would go into this, could
24 you reference offhand, if you know, any DRBC documents
25 or analysis that would indicate the approximate marginal

1 increment, either quantitatively or qualitatively, on
2 the availability of the Schuylkill for one unit versus
3 two units, given those two flows?

4 A (WITNESS HANSLER) I couldn't reference a
5 document, but when I go back hopefully to the office
6 tomorrow morning, I could get with staff and send you
7 such information with a document reference.

8 Q The information that you would be considering
9 providing would not be an assessment, but rather an
10 ascertainment of where this exists in the existing
11 documents and you would then provide that?

12 A (WITNESS HANSLER) Yes.

13 Q If your counsel had no objection, you would be
14 entitled and he would be entitled to object on a point
15 such as this, we would certainly appreciate such prompt
16 information provided to us. We are not asking that an
17 analysis be performed. We are asking for a submission
18 of any existing documents.

19 MR. GOLDBERG: We have no objection.

20 JUDGE BRENNER: The time is tight and the
21 sooner we get it, the better. Tomorrow if possible or
22 the day after.

23 MR. GOLDBERG: If you don't have us here
24 tomorrow, we will work on it, tomorrow.

25 JUDGE BRENNER: I'm not optimistic as to that,

1 given this time of day, but we will see.

2 MR. GOLDBERG: Let's keep going.

3 JUDGE BRENNER: That's good advice.

4 WITNESS HANSLER: Incidentally, in answer to
5 your question, we not only have an environmental
6 assessment but we respond to that as Issue Number 8 in a
7 written question by Mr. Sugarman, post the deposition
8 period and if you want that for the record --

9 JUDGE BRENNER: Yes. Do you have a copy of
10 that, Mr. Sugarman?

11 MR. SUGARMAN: I'm looking for it now. I
12 should have it. Yes. It is marked as D-2.

13 JUDGE BRENNER: That is not D-2 of your
14 exhibits, Mr. Sugarman. Remember the problems with
15 these "D" designations. Is it in D-2 somewhere?

16 MR. SUGARMAN: That is the issues that the
17 DRBC provided to us after the deposition.

18 JUDGE BRENNER: I see it, Issue Number 8, Mr.
19 Hansler?

20 WITNESS HANSLER: Yes.

21 MR. SUGARMAN: It is possible number 8 was not
22 included.

23 JUDGE BRENNER: Ms. Chan, I guess I turned you
24 away too quickly. Could we see the copy you had? All
25 right, Mr. Sugarman, we have a one-page provided to us

1 through the courtesy of Staff counsel denoted Issue
2 Number 8. In looking through your D-2, which consists
3 of a number of issues and questions, after Issue Number
4 7 the next page in what you provided to us is Question
5 1, at least in my copy.

6 MR. SUGARMAN: I see that now and that is in
7 error. I don't know why it happened by that is in
8 error. It was intended to be provided.

9 BY JUDGE BRENNER:

10 Q Mr. Hansler, the Issue Number 8 that I have
11 before me states any consideration by the DRBC of
12 alternate storage sites for Philadelphia Electric
13 replacement consumptive order. Is that what you had in
14 mind?

15 A (WITNESS HANSLER) Yes.

16 Q That is different than, I believe, what I was
17 asking about, although pertinent to the Schuylkill.
18 Were you telling me that one of the documents referenced
19 here also might be the one that contains the information
20 on the incremental time availability?

21 A No, not incremental time availability. It was
22 just alternatives to using Point Pleasant.

23 Q That is a very broad subject and much of which
24 is beyond the issues at this stage of our proceeding,
25 but we are interested in any particular existing

1 documents on the incremental availability.

2 JUDGE BRENNER: Ms. Chan, this is your copy.
3 I guess I better return it. I don't know if it is going
4 to become important, but at least one exhibit is then
5 complete, or a proposed exhibits. None of these are
6 exhibits at this time.

7 All right, Mr. Sugarman, I have exhausted the
8 permissible area on the Schuylkill River. You can
9 follow up within the area of the questions I have asked,
10 but that should set the boundaries quite clearly for you.

11 MR. SUGARMAN: It does set the areas quite
12 clearly, sir, but does that answer my earlier question,
13 then, that I would not be permitted to inquire into
14 existing storage?

15 JUDGE BRENNER: That is correct.

16 FURTHER DIRECT EXAMINATION

17 BY MR. SUGARMAN:

18 Q Mr. Hansler, you have indicated that the --

19 JUDGE BRENNER: Let me back up. As I
20 understand it, the point on existing storage would be
21 whether or not the assessment that Point Pleasant is
22 needed made back at the CP stage is accurate.

23 MR. SUGARMAN: I beg your pardon?

24 JUDGE BRENNER: Why would your question as to
25 existing storage be pertinent to the incremental flow

1 availability?

2 MR. SUGARMAN: Because it is our position in
3 our submission with the basis that we have stated that
4 there is adequate storage capability in the Schuylkill
5 so that the Schuylkill can be used with one unit; that
6 it exists now and it can provide the water to be
7 released during low flow periods in the Schuylkill that
8 exist there that can be used.

9 JUDGE BRENNER: Because you have a different
10 view of what flows would be adequate or because you are
11 arguing that the 530 cfs as a given would be met.

12 MR. SUGARMAN: The latter.

13 [Board conferring.]

14 JUDGE BRENNER: All right, we will let you
15 inquire limited to the subject of the incremental
16 availability of a flow of 530 cfs and not to challenge
17 DRBC's determination that that is the requisite minimum
18 flow for one unit.

19 MR. SUGARMAN: I understand.

20 BY MR. SUGARMAN: (Resuming)

21 Q Mr. Hansler, does DRBC maintain records as to
22 the available storage that is not now being utilized at
23 the existing available -- that is, existing storage
24 sites on the Schuylkill River?

25 A (WITNESS HANSLER) We have the information on

1 the storage site over which we have control, the Blue
2 Marsh Reservoir, which is on the Schuylkill system. We
3 could go back and determine the present -- or the
4 allocations from that additional water supply storage
5 based upon docket decisions.

6 Q You don't have that available now?

7 A (WITNESS HANSLER) No. I didn't know the
8 question was going to be asked.

9 Q There is no reason for you to have. I am just
10 trying to find out what you do have. There are other
11 storage sites existing on the Schuylkill River upstream
12 of Limerick; is that correct?

13 A (WITNESS HANSLER) I'm not sure. If there are
14 other sites that are capable of development upstream --

15 Q No, we are talking about existing sites,
16 existing storage facilities.

17 A (WITNESS HANSLER) The most significant one is
18 Blue Marsh. I am not aware of any other major storage
19 facilities.

20 JUDGE BRENNER: Mr. Sugarman, I wonder if I
21 could jump in for a minute here and ask questions.

22 MR. SUGARMAN: Certainly.

23 JUDGE BRENNER: Mr. Hensler, when I asked you
24 my previous questions on your agreement or disagreement
25 with the incremental flow availability -- and I

1 understand your answer was not a detailed quantification
2 because, as you indicated, you didn't have that
3 information before you -- but in giving the answer you
4 did, did you take into account the present storage
5 availability on the Schuylkill and the use of that
6 storage for maintaining flows when necessary?

7 THE WITNESS: I did in light of the docket
8 decision dealing with the Limerick, which said that any
9 taking by PECO at Limerick could only be if the storage
10 is about 530 or 560.

11 JUDGE COLE: Do you mean the flow?

12 WITNESS HANSLER: Yes, the flow, not including
13 future augmentations of flow from the
14 Commission-sponsored projects -- and the
15 Commission-sponsored project subsequent to this docket
16 decision was the Blue Marsh project -- because as people
17 downstream take it, industries, municipalities or
18 farmers, whether it is evaporative loss, then that
19 project was for MNI and that was so conditioned in this
20 docket.

21 JUDGE BRENNER: You said that project was and
22 then you gave four MNI?

23 WITNESS HANSLER: Well, the water supply
24 storage.

25 JUDGE BRENNER: I just didn't hear you. I

1 don't know if you gave a docket number or something else.

2 WITNESS HANSLER: Docket No. D-69, 210 CP
3 dealing with Limerick says that Limerick may withdraw
4 only if the flow is above 530 or 560, but you can't
5 count in an augmented flow from an upstream reservoir
6 sponsored by the Commission, and Blue Marsh is that
7 reservoir.

8 MR. SUGARMAN: Sir, are we bound to the DRBC's
9 docket decision in toto, including that condition?

10 JUDGE BRENNER: I don't know about in toto,
11 but we are bound to them given questions regarding water
12 allocation, and this is squarely, in our view, a
13 question involving water allocation. So on this
14 particular point you are. If you have something in mind
15 that I don't see, I will give you a little more leeway,
16 but not much more, given that answer.

17 MR. SUGARMAN: Well, I don't want to go very
18 far with that.

19 BY MR. SUGARMAN: [Resuming]

20 Q My question is this: Has the DRBC been asked
21 to consider whether to make water available from Blue
22 Marsh for that project? In other words, have you made a
23 decision in light of there being, if there is to be, one
24 unit at Limerick, have you made a decision as to whether
25 the DRBC will allow the use of Blue Marsh water for

1 Limerick?

2 MR. CONNER: Objection. There is no
3 foundation for that and it misstates the witness'
4 testimony.

5 JUDGE BRENNER: That is accurate. Why don't
6 you ask it the way I asked my other question. Is there
7 anything --

8 BY MR. SUGARMAN: (Resuming)

9 Q Is there anything pending?

10 JUDGE BRENNER: Anything pending or any
11 considerations that he knows of? I will ask it.
12 Are there any considerations that you know of such that
13 DRBC would be inclined to alter that limitation and make
14 the existing supplemental water storage -- that is, the
15 Blue Marsh project -- available to Limerick?

16 WITNESS HANSLER: To my knowledge the
17 Applicant has not made a request for an alternate source
18 of the Schuylkill.

19 JUDGE BRENNER: That answers the first part.
20 The second part is very hypothetical at this point.
21 Would the DRBC be favorably disposed to reallocating
22 that water contrary to the previously imposed condition
23 for the Limerick project?

24 WITNESS HANSLER: I couldn't answer that
25 question because that decision is made by the vote of

1 five commissioners. In the first instance, I don't know
2 if they would consider it, and in the second instance, I
3 don't who would apply and third, I don't know what their
4 decision would be.

5 JUDGE BPENNER: Are there any changed
6 circumstances with respect to availability on demand of
7 water in the Schuylkill since the condition was imposed
8 that you told us of, that is, not permitting PECO to
9 share in the Blue Marsh water storage availability?

10 WITNESS HANSLER: That would take considerable
11 research. I would have to go back probably since '73
12 and look at what Pennsylvania withdraws and what DRBC
13 withdraws and also that concerns both pre and post Blue
14 Marsh construction. I believe Blue Marsh went on line
15 in '78 or '79.

16 BY MR. SUGARMAN (Resuming)

17 Q I would just like to follow up in this way.

18 JUDGE BRENNER: Mr. Sugarman, Judge Cole has a
19 question.

20 JUDGE COLE: Mr. Hansler, do you know the
21 capacity of the Blue Marsh reservoir?

22 WITNESS HANSLER: The water supply storage is
23 8,000 acre feet.

24 JUDGE COLE: Do you have any knowledge of the
25 sustained yield that would be coming from this reservoir

1 as a result of the storage that is contained there?

2 WITNESS HANSLER: Eight thousand acre feet for
3 water supply.

4 JUDGE COLE: Eight thousand acre feet. I'm
5 talking about, now, how this changes the hydrology of
6 the river and the average flow.

7 WITNESS HANSLER: What it does is it provides
8 a pool for flow augmentation at all times and it
9 provides water supply storage for a period of low flow.
10 The water supply storage portion at low flow periods has
11 been contracted for at 400 percent by DRBC. We will
12 repay the Corps for that storage. That storage amount
13 is 8,000 acre feet.

14 Q I don't know what you mean when you say
15 contract at 400 percent.

16 WITNESS HANSLER: Well, we are paying for it.
17 It wasn't a grant from the Federal Government. The
18 Corps built a project, and for certain elements --

19 JUDGE COLE: Oh, I see. I am sorry. You said
20 100 percent. I thought you said 400.

21 WITNESS HANSLER: No, I'm sorry.

22 JUDGE COLE: You said it was for 100 percent.

23 WITNESS HANSLER: That's right.

24 JUDGE COLE: Okay.

25 JUDGE BRENNER: Mr. Sugarman, you may continue.

1 BY MR. SUGARMAN: (Resuming)

2 Q In the 1973 EIS of DRBC, it was stated that
3 with respect to two units at Limerick, also near-future
4 development of reservoir storage in the Schuylkill River
5 Basin upstream of Potsdown, such as the Blue Marsh and
6 Maiden Creek projects, could yield additional limited
7 supplies but they would not be available in time and,
8 taking into account other anticipated needs for
9 population growth and industrial expansion within the
10 Basin, would not be adequate.

11 Has the Basin Commission -- what is the
12 present status of Maiden Creek?

13 A (WITNESS HANSLER) Maiden Creek is in our
14 comprehensive plan. It has not been authorized by
15 Congress for construction. The Commission in the Level
16 B report has agreed to drop it from our comprehensive
17 plan because of faulty substructure: i.e., it is not a
18 safe place to put it in.

19 Q Now, you say that you are not aware of any
20 other significant storage in the Schuylkill River Basin?

21 A (WITNESS HANSLER) None.

22 Q On the main stem.

23 A (WITNESS HANSLER) On the Schuylkill?

24 Q On the Schuylkill.

25 A (WITNESS HANSLER) On the main stem, no. In

1 fact, a great stretch of the Schuylkill has put into a
2 Wild and Scenic River System.

3 Q Now, with respect to existing reservoirs only,
4 are you familiar with the Clean Lane Reservoir?

5 A (WITNESS HANSLER) I have seen it on a map.

6 Q That is owned by whom?

7 A (WITNESS HANSLER) I don't know.

8 Q If I could refresh your recollection, is that
9 not owned by Philadelphia Suburban Water Company?

10 A (WITNESS HANSLER) It could be. I would have
11 to look back. There are a lot of little reservoirs
12 owned by different water companies. That is not really
13 a major reservoir.

14 Q Are you familiar with the availability, that
15 Philadelphia Suburban Water Company has water for sale
16 that could be used for this project?

17 A (WITNESS HANSLER) I did not know that
18 Philadelphia Water Authority, the suburban water
19 authority, has water available in the amounts needed for
20 this project. I know Philadelphia Suburban is always in
21 the business of selling water.

22 Q So that you would have to make an evaluation
23 to determine the extent to which it would be feasible to
24 supply one unit at Limerick from existing storage in the
25 Schuylkill River.

1 A (WITNESS HANSLER) Not necessarily. I have
2 only read reports that Unit 2 may not be built. What we
3 have before us, based on all of the docket decisions of
4 the Applicant, is for two units, and I couldn't make any
5 prediction as to whether or not one or two units will
6 come to pass or what the Applicant would need insofar as
7 its source of water.

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1 Q I'm afraid the way I phrased my question you
2 misunderstood it. What I meant was -- I didn't mean do
3 you agree that you're going to do a study. I think that
4 was the question you answered, wasn't it?

5 A (WITNESS HANSLER) We haven't agreed to do a
6 study.

7 Q Right. But that is the way you understood my
8 question, is that not right?

9 A (WITNESS HANSLER) Yes.

10 Q That isn't the question I was trying to ask.
11 What I was trying to ask was in order to answer the
12 question whether there is sufficient existing storage in
13 the Schuylkill River to supply one unit at Limerick, you
14 would have to conduct a study of the existing sources
15 and existing demands, anticipated demands, is that not
16 correct?

17 A (WITNESS HANSLER) If the Commission were to
18 embark upon a study as to all of the needs in the
19 Schuylkill Basin, now, two years, five years from now,
20 they would direct staff to conduct such a study, but
21 such a study has not been called for.

22 Q Let me try once more.

23 JUDGE BRENNER: Mr. Sugarman, let me now jump
24 in. You're now straying beyond the area related to the
25 possible bases for your proposed contention; so let me

1 explain why.

2 What we are doing here is to give you an
3 opportunity beyond the written filings to see if there
4 might be a basis for admission of your contention, as
5 I'm sure has been clear. The decision that the
6 Schuykill needs to be supplemented for Limerick use is
7 the law of this case established back at the
8 construction permit stage. It is possible that a
9 changed circumstance such as possibly -- and I emphasize
10 -- the non-existence of Unit 2 could be a change in
11 circumstance such that we should look at it again. That
12 is your contention and that is the whole basis for your
13 contention.

14 MR. SUGARMAN: Exactly, sir.

15 JUDGE BRENNER: All right. Given that, the
16 question is whether the difference between 530 and 560
17 CSF would be material in terms of Schuykill
18 availability. That is the sole question.

19 MR. SUGARMAN: That's right.

20 JUDGE BRENNER: Your questions now are much
21 broader beyond that as to whether this would be a
22 re-termination for water supply such that the flows in
23 the Schuykill would be sufficient. Implicit in the
24 existing finding is that the flows would not be
25 sufficient for Part 60, so the only basis for the

1 contention is whether the difference in occurrence of
2 when 530 CSF exists and 560 exists is so complicated
3 that we should re-examine the whole water allocation
4 question.

5 Whether or not suburban Philadelphia would now
6 sell water would be too broad, because that would go to
7 the whole question of Schuylkill River flows, not limited
8 to the incremental difference, unless you've got a basis
9 for establishing that they could supply water enough to
10 get to 530 but couldn't make 560 -- a basis which you
11 would have to stretch my imagination some to show.

12 MR. SUGARMAN: That is not my intention or my
13 expectation.

14 JUDGE BRENNER: I don't want to waste record
15 time on something that isn't going to be material to our
16 consideration of the admission of the contention. So
17 given my statement, now tell me what further inquiry
18 would be pertinent of Mr. Hansler for us to consider on
19 that contention; because I want to move beyond that as
20 soon as we have exhausted the subject and get back to
21 your outline of Mr. Hansler.

22 MR. SUGARMAN: I would like to have the
23 question that I've asked him answered, and then I have
24 one other question.

25 JUDGE BRENNER: Tell me why the question you

1 asked is pertinent given my question and your statement
2 that you don't have a basis to state that suburban
3 Philadelphia water would have enough water available to
4 provide 530 CSF on the Schuylkill such that Limerick
5 could operate whereas they couldn't supply 560.

6 MR. SUGARMAN: I think they could supply both,
7 sir. My point is that the Board would want to look at
8 whether the Schuylkill -- and I read to you from the EIS
9 in 1973 which said there isn't adequate storage
10 available. They looked at storage as well as river
11 flow. And there is adequate storage available in the
12 Schuylkill River to supply one unit at Limerick. And in
13 the river flow and the storage -- in other words, to
14 keep the flow to 530 --

15 JUDGE BRENNER: Excuse me. That's only
16 because you also contend there is adequate storage
17 available to supply 560. I told you we are not
18 re-examining that. You have got to show me why the
19 change from two units to one unit now would give us some
20 material reason to reopen that whole water allocation
21 question.

22 MR. SUGARMAN: Yes, sir. The reason is very
23 simple. The reason is that with one unit Philadelphia
24 Electric needs half as much water; therefore, there is
25 now adequate storage in the river to supply that much

1 water whereas there wasn't adequate storage on the
2 Schuykill at the time of the A Lab decision to supply 23
3 million gallons a day or 46 million gallons a day
4 reliably in the Schuykill. There is now with one unit
5 enough water in the Schuykill storage to keep Limerick
6 going. That is the precise change in circumstances, and
7 that is a fact which I offer to prove.

8 JUDGE BRENNER: No, sir. Those are two
9 different changes alleged by you. One is that the
10 storage is available now to supply even 560 and
11 therefore certainly 530. That is contrary to the
12 existing finding at the CP stage which we are not going
13 to reopen without regard to whether you are right or
14 wrong. I think we've exhausted this.

15 MR. SUGARMAN: With deference, sir, there is
16 one particular point that you are missing, if I may.
17 And what I'm saying -- and I'm not saying it clearly
18 enough, I guess -- and that is that the relevant
19 consideration is whether there is enough water available
20 in the Schuykill River to meet Philadelphia Electric
21 Company's needs and also maintain the 530; that it is
22 those two things which have to be satisfied.

23 There never was any question that there was
24 enough water available in the Schuykill to meet the 530
25 and the 560. The point was that that couldn't be done

1 while at the same time providing Philadelphia Electric
2 with the water it needed.

3 Now, with the need cut in half there is now
4 water in the Schuylkill to do that.

5 JUDGE BRENNER: Now you've stated the question
6 too broadly, and that is why it proves my point. You
7 stated the question as whether there is now sufficient
8 water available in the Schuylkill to supply 530 CSF.

9 MR. SUGARMAN: And Limerick.

10 JUDGE BRENNER: Yes. And Limerick. That is
11 too broad a question. Rather, in order for us to
12 determine whether there is a basis for your contention
13 -- and we are at the basis stage and not the full merit
14 stage, but nevertheless, there is some crossover -- the
15 basis is whether whereas there was not enough to supply
16 560 to Limerick in the determination of the DRBC, there
17 is enough to supply 530 because the amount of time of
18 occurrence of flow between 530 and 560 is so significant
19 that 530 would exist.

20 MR. SUGARMAN: It is not natural occurrence,
21 though. It is natural occurrence plus storage.

22 JUDGE BRENNER: Yes, but we are not
23 re-examining the storage question for the reasons I've
24 indicated.

25 MR. SUGARMAN: With respect to existing

1 storage, sir, I believe you will see that the
2 Commission, and I said the DRBC EIS specifically
3 included the adequacy of existing storage on the
4 Schuykill in their consideration.

5 JUDGE BRENNER: All right. We've got the
6 answer that DRBC took into account the storage that they
7 took into account. If you think they are wrong, you
8 have to go argue with them or in court. They are the
9 water allocation authority.

10 MR. SUGARMAN: I'm not arguing with them.

11 JUDGE BRENNER: Yes, you are, very much so.
12 But let's go on. We have got enough on determining
13 whether or not to consider that contention unless you
14 have any further points going to the difference in
15 occurrence of availability given the difference in flows
16 of 530 and 560 CSF on the Schuykill.

17 MR. SUGARMAN: It is only as augmented, sir.
18 And I might say the DRBC condition -- if I just may
19 because I don't want this to come up later and distract
20 the Board -- the DRBC condition is also dependent on
21 temperature. And temperature is, as I think the witness
22 would testify, or if he knows, is more of a constraint
23 than flow actually.

24 JUDGE BRENNER: Well, if you want to help us
25 fill in a picture on that point you may.

1 MR. SUGARMAN: I think I'd better, because
2 otherwise it's got to come out.

3 BY MR. SUGARMAN: (Resuming)

4 Q Mr. Hansler, is there another condition on the
5 removal of water from the Schuylkill River besides flow?

6 A (WITNESS HANSLER) Yes. The relation to
7 temperature.

8 Q And what is the temperature constraint? Is it
9 59 degrees Fahrenheit?

10 A (WITNESS HANSLER) There shall be no
11 withdrawal from the river temperatures below the
12 Limerick station or above 15 degrees Centigrade except
13 during April, May and June when the flow is measured at
14 the Pottstown gauge as in excess of 1971 CSF.

15 Q And that is 59 Fahrenheit, is it not?

16 A (WITNESS HANSLER) What?

17 Q I thought you said Centigrade.

18 A (WITNESS HANSLER) Fifteen degrees Centigrade.

19 Q And that is roughly 59 degrees Fahrenheit, is
20 it not?

21 A (WITNESS HANSLER) I would have to do it.

22 Q And is that not more often the controlling
23 factor in the withdrawing of water from the Schuylkill
24 than the flow?

25 A (WITNESS HANSLER) I don't know. I would have

1 to go back and check it out.

2 Q What is the basis of the 59 degree limitation,
3 and is the DRBC at all -- has the DRBC considered --
4 would it consider changing that limitation in order to
5 eliminate Point Pleasant?

6 A (WITNESS HANSLER) I don't have any document
7 with me that would give the basis for that. It is very
8 historic, and I don't know what DRBC would consider at
9 this one time.

10 Q Thank you.

11 JUDGE BRENNER: I allowed you to ask it, Mr.
12 Sugarman, but in my view that question was beyond the
13 relevant point also of looking at whether the one change
14 circumstance of the potential of going from two units to
15 one unit would make a difference with respect to the
16 prior determinations in this case before us. That is to
17 be distinguished from whatever challenge you or anybody
18 else wants to make before DRBC or in view of DRBC's
19 decision of their bases for water allocation.

20 MR. SUGARMAN: The Board is aware I believe
21 through the Applicant that we have advised you that we
22 have filed a petition to the DRBC to reconsider its
23 petition on exactly that basis.

24 JUDGE BRENNER: Well, you are in the right
25 forum.

1 MR. SUGARMAN: They may not think so.

2 All right. Let me move along.

3 JUDGE BRENNER: All right. Let's go to the
4 outline.

5 MR. SUGARMAN: I'm going to move through it,
6 sir, but I'm not going to ask every question in it. I
7 think some of the questions in it are not going to be of
8 interest to the Board.

9 JUDGE BRENNER: I agree.

10 BY MR. SUGARMAN: (Resuming)

11 Q Is it true, Mr. Hansler, as you stated on
12 pages -- and I'm giving you page numbers more for the
13 benefit of the record than for yourself, because I don't
14 believe you have the deposition in front of you.

15 A (WITNESS HANSLER) I brought it.

16 JUDGE BRENNER: Incidentally, Mr. Sugarman, I
17 assume that you complied with our order to provide
18 copies of your revised outline of testimony of Mr.
19 Hansler to DRBC.

20 MR. SUGARMAN: Yes, on Friday afternoon.

21 JUDGE BRENNER: I think it would be useful, as
22 I indicated previously, to bind a copy into the record
23 at this point solely for the purpose of a convenience of
24 outlining at least what was initially your planned
25 scope. Whether or not we will let you stay with that

1 scope is something else. It is not being admitted as
2 testimony. It may not be cited as the basis for any
3 findings of fact.

4 MR. SUGARMAN: I understand that.

5 JUDGE BRENNER: Could you provide a copy to
6 the Reporter?

7 MR. SUGARMAN: Yes. Not at this moment but
8 yes.

9 JUDGE BRENNER: You'll have to do it very
10 quickly because the transcript is going out, and I
11 mentioned that the other day.

12 (The information referred to follows:)

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Direct Testimony of Gerald Hansler

In reviewing the effects of the intake location, DRBC limited its concerns to a general consideration of whether the proposal was in conflict with DRBC's comprehensive plan, its policies, rules and regulations, and whether the water was available. DRBC does not look at need for the project nor at the priorities for water uses. The Commission looks at the hydrology of the basin from the standpoint of a request and makes the decision based on what is existing at that time. Additional offstream storage may be proposed by the applicant to augment flow. (p.129)

DRBC does not make a judgment as to whether the proposal is the best option by an applicant. (p.131) DRBC has not adopted a regulated depletive water use budget program. (p.140)

In reviewing the Point Pleasant Project, DRBC looked to see if there was water available in sufficient amounts in the Schuylkill at all times; and if there wasn't, looked to the Delaware to supplement that water, putting a limitation on when water could be withdrawn if flow was under 3000 cfs at Trenton. (p.121)

Point Pleasant was looked at as a diversion including not only Limerick's but also NWRA's needs. DRBC

did not look at the diversion from the point of view that storage on the Schuylkill might obviate the need. (p.150)

When DRBC undertook the EA review in '80-81, it was on the basis that there was already an approved project before it. The review was for an amendment or modification of an existing project that had been passed upon. (pp.153-154)

DRBC's condition on the PECO Docket is that the portion used for Limerick can be withdrawn from the Delaware River so long as the river's flow exceed 3000 cfs at Trenton unless the utilities have provided offstream storage within the basin - then PECO can withdraw up to the amount they release from a storage system. (pp. 19,20)

Although not every project is assigned a Stream Master, this diversion has been assigned a Stream Master who has the authority to oversee and control the operation of the intake, whether the water is used by NWRA or PECO. (p.17) Under appropriate conditions, withdrawals can be ordered curtailed or suspended by DRBC, which acts knowing the condition of the river. (p.109) During an emergency the Commission can direct water uses as it determines necessity. (p. 62)

Concerning the recent PUC decision on Limerick Unit II, the Commission will not review the Point Pleasant diversion dockets since it doesn't to make sense to look for reductions or revisions whenever the economy or other

factors change. (p.136). The Commission procedures do not call for a reconsideration of an allocation based on less than the full use. (p. 137)

In considering alternatives to the diversion DRBC does not consider alternative ways of supplying goods or services which a project is proposing to supply - only the alternative location of a project in relation to the water resources of the basin. (p.121) DRBC does not consider the necessity of the project nor whether the project is the best alternative but only whether it is an acceptable alternative. (p.130) DRBC did not consider whether storage on the Schuylkill might obviate the need for Point Pleasant. (p.150)

The Commission considered that alternatives had already been looked at when doing the Environmental Assessment Review in '80-'81. (p.153) In 1973 DRBC had considered alternatives only for NWRA and only in terms of locations. In 1980 DRBC stated that NRC had determined the need for water for Limerick and therefore the Commission did not consider alternatives. (p.155)

There was no further environmental assessment in any document by the DRBC after the intake location was changed. (p.28) DRBC has not made a final decision on the intake - awaiting the Corps' finishing its work on the Shortnose Sturgeon. (p.29) DRBC is also awaiting the Corps'

review of the new historical and archeological issues
(p.169)

Since the change in location, the revised intake was discussed in a meeting on October 29, 1980, attended by DRBC, NWRA, USFWS, and the PA Fish Commission (Issue No. 4) DRBC staff members reviewed Harmon's November 1980 Biological Evaluation of the proposed water intake in early 1981. Interim communications of approval on March 25, 1981, and April 13, 1981, by DRBC, were based on MWRA satisfying state and federal fishery managers about final plans for intake prior to construction, even though McCoy of FWS had stated the intake was in the worst possible location. (Issues No. 3 and 4) In letters to the Corps on July 22, 1981, and October 26, 1981, DRBC indicated it would consider revision to the intake facility. (Issue No. 4)

DRBC considered the diversion would not significantly reduce the river flow needed to maintain fish life. (Neg. Dec. p.3) The impact on fish life would be insignificant because the minimum flow in the river could be maintained through the use of storage facilities. (p.67)

The micro-impact was looked at only in relation to the character and nature of the intake design, not the micro-impact from changes in maximum withdrawal periods or in background river flow. (p.83) In assessing the hydraulics and hydrology of the river, DRBC used data from Bouquard's letter of January 22, 1982, concerning river

flows of 3000 cfs which would result in velocities of 1.0 to 1.3 fps past the intake screen. (Issue No. 9) DRBC has cross section data on the river near Point Pleasant, as attached to the response to Issue No. 6.

There was no consideration about relative flow through the intake compared to the background river. Consideration of the impact of flows at less than 2000 cfs at Trenton with compensatory flows was considered irrelevant. (p.92) DRBC has not considered the micro-impact of Point Pleasant relating to changes in flows which determine velocity at the relocated intake. (p.103)

Concerning the seepage of water and toxics from Bradshaw Reservoir, DRBC based its consideration on water quality data obtained through EPA which showed all values were either well below "safe" levels or below the level of detection of the test from 1979-1982. (Issue No. 1) DRBC's compact calls for reliance upon signatory party agencies for water quality analysis, when possible (p.174)

DRBC considered the effect of Delaware River water quality on the Neshaminy and the Perkiomen in the EA. (p.170) DRBC's conclusion in the EA is that the Delaware River at Trenton and perhaps probably at Point Pleasant is of high quality water. (p.171)

DRBC understands tests conducted by NWRA or PECO for TCE show 2,4 and 2 parts per billion on three occasions within the last 2½ year period, but he thinks EPA's TCE

recommended threshold level is 4½ to 5 parts per billion.
(p.172)

Delaware River water quality sampling available to DRBC does not include any analyses for synthetic organic chemicals other than pesticides and PCB. PBC has been identified in the Delaware River water as contentions exceeding .01mg/l up to 0.1mg/l at Trenton. Twelve pesticides have been sampled for, and all are present in the River water. (Issue No. 1)

The Lumberville wing dam has an elevation above sea level of 64.5 (msl) at the weir and about 70.7 (msl) at the wings. (Issue No. 2)

The FEA of August, 1980 did not assess the effects of the instream intake, but stated it "might cause less impingement and entrainment" than the shoreline intake. (Issue No. 3)

Cross section data for the Delaware River establishes a surface water elevation of 69.4 on September 26, 1964, at R.M. 156.52, about .35 miles downstream of the intake; and 70.4 on the same date R.M. 157.08, or about .21 miles upstream of the intake.

Point Pleasant is counted as a nonexisting future diversion in DRBC's calculations of adequacy of water for future needs in the Level B Study and Recommendation 12 of the future policy recommendations. (Issue No. 8)

DRBC made no analyses of the hydraulic and hydrology in the intake area. (Issue No. 9)

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1 BY MR. SUGARMAN: (Resuming)

2 Q Actually it's Mr. Goldberg's statement at page
3 153. Do you agree DRBC in undertaking the environmental
4 assessment in '80 and '81 did so on the basis that it
5 had an improved project before it, that it had
6 applications that it was seeking to amend or modify a
7 project that had previously been passed upon and
8 approved, and that there were a number of things done by
9 way of environmental impact statements and
10 decisionmaking that were the basis of whatever future
11 action DRBC was going to take, and that it was going to
12 be built on the project, on the prior record?

13 JUDGE BRENNER: Mr. Sugarman, excuse me.
14 First of all, I lost you on about the second phrase in
15 that long question. Before I ask you to rephrase it,
16 Mr. Conner, you have raised your hand from time to time
17 while other people are examining. I have stated several
18 times now if you have an objection, make an objection.
19 You don't have to raise your hand. If you have anything
20 other than objections, I don't want to interrupt cross
21 examination.

22 Do you have an objection?

23 MR. CONNER: I have. I wanted to know for
24 clarification, I believe Mr. Sugarman said he was going
25 to refer to the outline you requested, and he was

1 referring to something else obviously on page 153. I
2 have now determined it was from the transcript. I was
3 going to object. You permitted him to declare Mr.
4 Hansler hostile and cross examine him by leading
5 questions, but I do not believe in anybody's book that
6 includes using incredibly compound questions, which is
7 the point I think you were going to make.

8 JUDGE BRENNER: Yes. I think I made that
9 point.

10 MR. SUGARMAN: I will try to make my questions
11 briefer. I was trying to read from the transcript so as
12 to eliminate any new testimony but to make it go faster,
13 but I will rephrase it and keep them simpler.

14 JUDGE BRENNER: Excuse me. We don't have the
15 deposition before us, first of all. The idea is you can
16 ask questions to get the information elicited through
17 him. Let's just proceed with normal questions.

18 BY MR. SUGARMAN: (Resuming)

19 Q When the DRBC undertook the EA review in 1980
20 and '81 is it correct that the DRBC was dealing just
21 with an amendment or a modification of an existing
22 project that had been approved?

23 A (WITNESS HANSLER) What DRBC was dealing with
24 insofar as the Point Pleasant project in '80-'81 was the
25 construction aspects of Point Pleasant, the pipeline,

1 Bradshaw Reservoir, the links to Perkiomen and the north
2 branch of the Neshaminy. And the only project change,
3 as I recollect, was that the NWRA were downsizing the
4 amount of water they would take from the Delaware by
5 somewhere between 40 and 50 percent.

6 Q Now, is it a condition -- and again, PECO's
7 use of water from the Delaware River -- that PECO can
8 use water from the Delaware River for Limerick so long
9 as the flow exceeds 3,000 CSF at Trenton?

10 A (WITNESS HANSLER) Yes.

11 Q Except if PECO provides -- if offstream
12 storage is provided, then PECO can withdraw it up to the
13 amount they are entitled to -- that is, the 46 million
14 -- provided they release that amount from a reservoir
15 system?

16 A (WITNESS HANSLER) Yes. A reservoir system
17 constructed by the utility consortium in the basin.

18 JUDGE BRENNER: Mr. Sugarman, when you said 46
19 million do you mean 46 million gallons per day?

20 MR. SUGARMAN: Yes, sir.

21 BY MR. SUGARMAN: (Resuming)

22 Q And they don't have to come back to the DRBC
23 for approval of those withdrawals, is that correct?

24 A (WITNESS HANSLER) That is the way the docket
25 reads, as I read the docket.

1 Q Now, is it also true that there is a constant
2 withdrawal by PECC provided in the docket to maintain
3 low flow in the Perkiomen regardless of whether the
4 3,000 is met and regardless of whether there is storage,
5 compensating release from storage in the Delaware?

6 A (WITNESS HANSLER) That is correct.

7 Q And is it also true that NWRA water can be
8 withdrawn from the Delaware at Point Pleasant, and
9 therefore the intake will operate regardless of the flow
10 in the Delaware?

11 MR. CONNER: Objection. This applies to the
12 NWRA part of this which is not part of the contention.

13 JUDGE BRENNER: Well, whether or not it is
14 part of the contention depends, as indicated in our
15 special prehearing conference order, as to whether the
16 effects are readily separable or not. We have had
17 argument on this question before and most recently at
18 the discovery stage. Let's allow some preliminary
19 questions so we can see if it is separable or not. But
20 if the answer to the question is yes, it sounds like it
21 will be separable; but we will get the answer to the
22 question.

23 But I would like you to back up and get on the
24 record at this point the flow requirements that -- the
25 flow that would be taken in, the rate that would be

1 taken into Point Pleasant in order to maintain the
2 minimum flow condition in the Perkiomen. But let's get
3 the answer to the last question first.

4 Do you remember the last question, Mr.
5 Hansler, after all of this interruption?

6 THE WITNESS: The last question was, and I
7 will paraphrase, can NWRA take from the river at any
8 time, and the answer to that is yes. I will qualify
9 it: unless the Commission declares an emergency, and
10 they might take action against anybody in the basin
11 insofar as water withdrawals.

12 BY MR. SUGARMAN: (Resuming)

13 Q Thank you. Going back to the prior question
14 referring to -- and this is not for your reference, Mr.
15 Hansler, because you won't even know what this is I
16 don't think -- referring to question E-291.12, does the
17 DRBC require pumping during the entire low flow season
18 at a rate of 27 CSF and for the remainder of the year at
19 least 10 CSF to the extent that those flows are not
20 naturally in the Perkiomen?

21 A (WITNESS HANSLER) I will have to go back and
22 look through the dockets.

23 JUDGE BRENNER: Why don't you show him a copy
24 of that question and the response in case that refreshes
25 his recollection?

1 MR. SUGARMAN: Well, there's probably another
2 source of it, sir, but this is the Applicant's answer.

3 JUDGE BRENNER: I know what it is, and I
4 indicated the purpose for which I thought it might or
5 might not help, since there are docket numbers
6 referenced in the answer and so on.

7 MR. SUGARMAN: This is a document you haven't
8 seen before, Mr. Hansler, but it may refresh your
9 recollection as to the numbers involved in the Perkiomen
10 or in the flow maintenance withdrawal for the Perkiomen.

11 (Pause.)

12 THE WITNESS: These dockets speak for
13 themselves, and a lot of what I have been reading has
14 come out of the docket.

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1 JUDGE BRENNER: I know, but we discussed this
2 yesterday as to one of the purposes of Federal Rule 702
3 and when you have these many dockets over this many
4 years, your assistance is very welcome in filling out
5 the pertinent portions as directed to the issue.

6 THE WITNESS: "The Delaware River" -- and this
7 is from Docket D 69210 CP, page 6 -- "the Delaware
8 River, as augmented for the purpose of water supply by
9 upstream reservoirs, may be used by the Point Pleasant
10 pumping facilities, a pipeline at the east branch of the
11 Perkiomen Creek, the Perkiomen Creek with the
12 limitations that such use will not reduce the flow as
13 measured at the Trenton gauge below 3,000 c.f.s., 1940
14 MGD; and that such use will not be permitted when the
15 flow as measured at the Trenton gauge is less than 3,000
16 c.f.s., 1940 MGD, provided that annually after pumping
17 from the Delaware River has commenced, the rate of
18 pumping will be maintained at not less than 27 c.f.s.,
19 17.5 MGD throughout the normal low-flow season for the
20 protection of aquatic life in Perkiomen Creek and its
21 east branch regardless of ultimate downstream
22 consumptive use requirements. During periods of high
23 natural flow in the east branch Perkiomen Creek pumping
24 from Point Pleasant shall be kept at a level so as not
25 to aggravate high water levels."

1 JUDGE BRENNER: I guess I knew, and I guess
2 other people, that the minimum flow requirement was 27
3 c.f.s. But that is in the Perkiomen Creek in the east
4 branch. My question was, can that be directly related
5 to an intake flow at Point Pleasant which would be
6 required to maintain a 27 c.f.s.?

7 THE WITNESS: Yes. That is the reason the
8 condition is in there, I believe. If they are not
9 taking, they have begun taking from the Delaware to
10 provide Limerick, i.e., through Bradshaw Reservoir, east
11 branch of the Perkiomen Creek. And then to say the
12 Schuylkill would come up, they wouldn't have to take
13 from the Delaware; they would still want to maintain a
14 flow of 27 c.f.s. for that summer period in the
15 Perkiomen.

16 JUDGE BRENNER: Well, in order to maintain
17 that flow in the Perkiomen, do you take in 27 c.f.s. at
18 Point Pleasant or is it --

19 THE WITNESS: You would take in 27 c.f.s. at
20 Point Pleasant because it wouldn't be used to supply
21 Limerick, it would be used to maintain a flow in the
22 Perkiomen.

23 JUDGE BRENNER: Okay. Thank you.

24 BY MR. SUGARMAN: (Resuming)

25 Q Do I understand that the DRBC would not, in

1 the absence of some other reason, reconsider or review
2 the Point Pleasant dockets as a result of the decision
3 to go from two units to one unit of Limerick, if such a
4 decision, based on the present record or whatever might
5 happen, because the Commission's procedures do not call
6 for a reconsideration of an allocation based on the
7 change in need or use? Is that correct?

8 A (WITNESS HANSLER) I don't know what action
9 the Commission would take in reconsidering any
10 application, petition, or otherwise.

11 Q Well, did you --

12 JUDGE BRENNER: That is what he said when I
13 asked that question before, Mr. Sugarman.

14 BY MR. SUGARMAN: (Resuming)

15 Q Did you previously testify that --

16 A (WITNESS HANSLER) Which page?

17 Q Pages 134 and 135. You said, if the
18 Commission approves that amount and the Applicant draws
19 only half that amount, the Commission does not reduce
20 the allocation or the docket unless it is upon request
21 of the Applicant itself.

22 A (WITNESS HANSLER) Historically, that is what
23 the Commission -- that has been the mode of the
24 Commission. There are many water users out there, where
25 the water use goes up and down based on the economy, the

1 time of year or whatever. And the Commission doesn't
2 try to go back on their own and adjust those permits.

3 MR. SUGARMAN: May I ask the witness -- and I
4 am asking this for guidance -- may I ask the witness
5 about DRBC's consideration of alternatives that is
6 alternatives other than the vicinity of Point Pleasant?

7 JUDGE BRENNER: No. I will remind you of our
8 ruling in our special prehearing conference, however,
9 that if as a result of the adjudication of your
10 contentions we determine that there was a significant
11 environmental impact over and above the finding at the
12 CP stage that the impact would not be significant, that
13 could then lead to possible considerations of where do
14 you go from there given such a finding.

15 One of those considerations would presumably
16 be whether or not there should be then a requirement to
17 look for other alternatives. So we are not including
18 that forever. It is just that we do not know yet what
19 our findings are on these contentions that you now have
20 that there will indeed be such a significant impact.

21 MR. SUGARMAN: Thank you.

22 BY MR. SUGARMAN: (Resuming)

23 Q Is it true that at the time that DRBC
24 conducted its 1980 Environmental Assessment and in the
25 August 1980 Final Environmental Assessment the intake at

1 Point Pleasant that was under consideration was --
2 consisted of traveling screens placed flush to the bank
3 at the bank of the river with 150-foot-long,
4 50-foot-wide channel along the river bottom?

5 A (WITNESS HANSLER) I would have to go back and
6 look at those exact numbers. But in our Environmental
7 Assessment at 1980 the intake would have been a bank
8 flush one.

9 And in our assessment it also spoke of the
10 Applicant, Fish and Wildlife, and others looking at a
11 Johnson well-type screen which would be under the river,
12 which was deemed at that time to be better technology
13 insofar as protection of fish and wildlife. And it
14 mentioned that we would look at that, if that better
15 technology was followed.

16 Q But that was not examined or studied or
17 analyzed or passed upon at the time of the EA; is that
18 correct?

19 A (WITNESS HANSLER) No. It was passed upon
20 later when it was submitted to us for approval.

21 Q And that was the condition L approval?

22 A (WITNESS HANSLER) Yes.

23 Q Now, at that time is it true that the review
24 of the --

25 (Discussion off the record.)

1 JUDGE BRENNER: Was there a question pending?
2 The answer is there was no question pending.

3 MR. SUGARMAN: I started to ask a question,
4 and I did not get all the way through it. I am trying
5 to go back and forth here between documents.

6 May I ask, in the packet of documents that you
7 have as part of Del-Aware's exhibits, does the Court
8 have as part of Exhibit 2 Issue Number 4?

9 JUDGE BRENNER: Recognize the status of these
10 is still as proposed exhibits.

11 MR. SUGARMAN: Proposed exhibits. Yes, sir.

12 JUDGE BRENNER: You are asking because you do
13 not have it or because you want us to have it before us?

14 MR. SUGARMAN: It is not in my set.

15 JUDGE COLE: There is 2, 3, 6, and 7 in my set.

16 MR. SUGARMAN: Thank you very much. I
17 apologize to the Board. There was a little bit of
18 problem, I guess, when we disassembled those. I did
19 mark the document that I wanted to ask the witness about
20 as a separate exhibit, however.

21 JUDGE BRENNER: Keeping up with the paper is
22 half the battle in this case?

23 MR. SUGARMAN: I beg your pardon?

24 JUDGE BRENNER: I said keeping up with the
25 paper is half the battle in this case.

1 MR. SUGARMAN: For a while I was doing all
2 right. Now I am losing it.

3 (Pause.)

4 JUDGE BRENNER: Mr. Sugarman, why don't you
5 move on to something else and then come back to the
6 other matter when you find whatever it is that you are
7 missing? I do not want to restrict you unduly.

8 MR. SUGARMAN: No, no. It is just taking me
9 one minute. Once I get my hands on it, it would be much
10 easier for the Board, I think, if I just get this out of
11 the way.

12 (Pause.)

13 BY MR. SUGARMAN: (Resuming)

14 Q Do you have a memo with you? Would you have
15 the response to Issue 4?

16 A (WITNESS HANSLER) Yes.

17 Q And Attachment Number 4 to Issue Number 4 is
18 DRBC Memorandum 16745. And that is a memorandum to you
19 regarding the Point Pleasant intake. Now, Issue Number
20 4 --

21 A (WITNESS HANSLER) Just a second. I have to
22 find that. 16745?

23 Q Right.

24 A (WITNESS HANSLER) Okay.

25 Q Issue Number 4, the question that I asked was,

1 any further assessments of the intake location after the
2 completion of the 1980 Environmental Assessment or any
3 underlying assessments response. Subsequeunt to the
4 release of the Final Environmental Assessment in August
5 of 1980, NWRA revised its design of the Delaware River
6 intake. NWRA director Robert A. Flowers notified DRBC
7 of the change in a letter dated September 23, 1980. The
8 revision replaced the shoreline intake, et cetera, with
9 an in-stream intake, and describing it.

10 Then you say, DRBC engineering division and
11 environmental unit staff reviewed the intake design
12 change. And on October 29 a meeting was held with NWRA,
13 Fish and Wildlife, Pennsylvania Fish Commission to hear
14 the comments of the federal and state fishery experts
15 following their review of their revised intake.

16 You indicated it was first discussed in an
17 earlier meeting in May 1980. In January 1980 --

18 JUDGE BRENNER: Mr. Sugarman, excuse me. We
19 do not have the document before us. If you are going to
20 read the entire thing, we could mark it and get it in
21 the record. Are you going to ask him questions about
22 it, or are you just reading it to get it into the
23 record? Because there is a better way of doing it than
24 just reading it.

25 MR. SUGARMAN: I am satisfied to mark it and

1 ask if the witness adopts it as his testimony. That
2 might make it easier. That is, the cover page, Issue 4,
3 the question and the response.

4 JUDGE BRENNER: All right. I want a copy so
5 we know what it is we are being asked to admit into
6 evidence.

7 MR. SUGARMAN: We will get the Board a copy.
8 I regret that it was not --

9 JUDGE BRENNER: I want it before I allow you
10 to put it in evidence so I know what it is we are
11 putting into evidence.

12 MR. SUGARMAN: I would not be putting it into
13 evidence now, would I?

14 JUDGE BRENNER: What are you going to do with
15 it? What point do you want to get to with it?

16 MR. SUGARMAN: I want to get to the fact that
17 the DRBC did not perform an additional environmental
18 assessment after the intake was moved, that's all.

19 JUDGE BRENNER: Why don't you ask him the
20 question?

21 MR. SUGARMAN: All right.

22 BY MR. SUGARMAN: (Resuming)

23 Q Is it the case that the DRBC did not perform
24 an additional environmental assessment to deal with this
25 in-stream intake?

1 A (WITNESS HANSLER) The DRBC did not prepare a
2 formal document as an environmental assessment.
3 However, as the elements in Issue Paper Number 4
4 indicate we have been in constant review and
5 consideration as to pieces which haven't gone into the
6 Corps' consideration. And the last paragraph of that
7 Issue Paper 4, it is where we are about now.

8 My later letters to the Corps on July 22, '81,
9 and October 5, '81, indicate that the DRBC would
10 consider a revision of the intake facility if that is
11 deemed necessary.

12 Q Now, in the response to Issue Number 4, you
13 state that condition L of the docket restates a concern
14 first expressed in the environmental assessment that,
15 "State and federal fishery managers should be satisfied
16 that the final design of the intake structures is
17 appropriate prior to construction."

18 Did you conclude that the state/federal
19 fishery managers were satisfied that the final design of
20 the intake structures was appropriate? Did you reach
21 such a conclusion?

22 A (WITNESS HANSLER) Evidently, or I wouldn't
23 have moved ahead with the action. There has been
24 considerable work done since then on the shortnose
25 sturgeon.

1 Q Well, your memo from Mr. Kautz to Mr. Thursday
2 and Mr. Everett, which was furnished to us as Attachment
3 4, states that the fishery agency representatives
4 claimed the location of the intake was "worst possible"
5 due to presence of a backwater pool area during low-flow
6 periods. NWRA was urged to locate the intake where the
7 downriver currents were the strongest.

8 Do you recall reviewing that memorandum and
9 making your determination?

10 A (WITNESS HANSLER) I would have to go back and
11 look at the chronology here as to when I made my
12 decision and when the memo came in.

13 JUDGE BRENNER: Excuse me, Mr. Hansler. I am
14 a little lost in the chronology, too, in a broader
15 sense. Which intake, proposed intake location was the
16 subject of that memo, since we do not have the written
17 documents before us? Do you know?

18 THE WITNESS: What?

19 JUDGE BRENNER: Which proposed intake location
20 was the subject of that memo?

21 THE WITNESS: It is not the present one.

22 JUDGE BRENNER: Which one was it?

23 THE WITNESS: It was one between the bank side
24 and the present one, which I understand has been located
25 somewhat downstream at an angle and, I believe, a little

1 further out in the river. And what we intend to do is
2 to take a look at all of the new information based upon
3 the Corps action since the actions and conclusions in
4 1980-81 and later '81.

5 JUDGE BRENNER: I lost you. Do you mean the
6 present proposed location is not as far out in the river
7 as the one which was the subject of that memo?

8 THE WITNESS: No. I think -- I think the
9 present location is further out in the river.

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1 MR. SUGARMAN: That is correct.

2 JUDGE BRENNER: I misheard you.

3 BY MR. SUGARMAN: (Resuming)

4 Q That the location that was referred to in the
5 memo was 200 feet in the river, roughly. It was in the
6 river, not on the shoreline.

7 A (WITNESS HANSLER) Yes, it was in the river,
8 it wasn't on the shoreline.

9 Q Did you distinguish at that time between the
10 location of the intake and the design of the intake?

11 A (WITNESS HANSLER) Oh, I would have to go
12 back. I asked the staff, my Fisheries people, what they
13 think of it and should this be approved, and if they say
14 yes, they are the experts, and it was a wellscreen, it
15 was half a foot per second. These were better intake
16 technologies than existing around, and I approved the
17 condition, I approved the intake with the caveat that if
18 there are changes and new information, we would take a
19 look at it.

20 Q You don't recall a distinction being made as
21 to the design being a good design, but the location
22 being a bad location?

23 A (WITNESS HANSLER) I don't indicate -- I don't
24 recollect a particular discussion, of the elements of
25 discussion of that. Usually when something comes before

1 me like this there is a discussion, but that was a long
2 time ago.

3 [Pause.]

4 MR. SUGARMAN: Sir, may I have just a moment?
5 I think it will save us some time. What I can't find
6 now is the outline.

7 JUDGE BRENNER: While you are looking, and
8 please keep looking -- and incidentally, it was
9 understandable. We are going to have that problem
10 ourselves with papers shifting here. We are not going
11 to finish with Mr. Hansler today, obviously. We have
12 already lost some friends around here. Today was the
13 day we had promised them we would finish early out of
14 the whole week because of their Council meeting.

15 MR. HANSLER: If we would finish by 6:00, I
16 would hope that is possible.

17 JUDGE BRENNER: We will run till 6:00 but we
18 are not going to finish by 6:00.

19 How much longer do you think you will have
20 with Mr. Hansler, Mr. Sugarman?

21 MR. SUGARMAN: Not very long.

22 JUDGE BRENNER: What does that mean?

23 MR. SUGARMAN: Well, I'm looking at the
24 questions here, and the way it is going, I think I would
25 say we are looking at maybe another half-hour at the

1 most.

2 MR. GOLDBERG: Mr. Chairman, if there is any
3 chance, if you please, by extending a little longer, we
4 would ask that that be done. We are prepared to stay as
5 long as they will permit.

6 JUDGE BRENNER: I know, but we have been here
7 all day and you haven't. Besides that, we have
8 overstepped our welcome, in addition. There are rules
9 of thumb, of relationships, of things in life, such as
10 flows to velocities and so on. My rule of thumb for
11 lawyers' estimates is I double it as a minimum, and they
12 are usually low because lawyers only estimate the
13 questions and they don't include the time for the
14 answers.

15 We will let him keep going, but then there are
16 questions by other parties. Staff, are you going to
17 have questions of Mr. Hansler? I don't want to press
18 you into saying no.

19 MS. CHAN: Not at the present time, no, we
20 don't have any questions.

21 JUDGE BRENNER: Please say yes if you have
22 important questions. I don't want to discourage any.

23 Mr. Conner, are you going to have questions of
24 Mr. Hansler?

25 MR. CONNER: Not on the basis of what we have

1 heard so far. In our view it is all irrelevant to this
2 proceeding.

3 JUDGE BRENNER: Do you really think you can
4 finish in a half-hour, Mr. Sugarman?

5 MR. SUGARMAN: Yes, sir.

6 JUDGE BRENNER: All right, keep going. Let me
7 add, Mr. Sugarman, for the record that we are not
8 requiring you to do that. Use your best efforts. We
9 are not requiring. It is not a time limit. We don't
10 want to cut you off, but please do your best.

11 MR. SUGARMAN: I understand. We all want to
12 keep Mr. Hansler at least in business.

13 [Pause.]

14 BY MR. SUGARMAN: (Resuming)

15 Q Is it true that DRBC has not considered the
16 effects of flow of withdrawals at levels below 3000 cfs
17 at Trenton, the local effects of withdrawals?

18 A (WITNESS HANSLER) Below?

19 Q 3000 cfs at Trenton.

20 A (WITNESS HANSLER) Effects where?

21 Q At Point Pleasant.

22 A (WITNESS HANSLER) We have from a hydraulic
23 standpoint, and it was not in '80-81. It was a complete
24 response to your Question 9, which you might put on the
25 record.

1 Q My question or NRC's question?

2 A (WITNESS HANSLER) Yours. An analysis of
3 hydraulics and hydrology in the Delaware River around
4 Point Pleasant, both under current conditions and under
5 post-conditions with the project in place.

6 [Pause.]

7 Q This is the letter of 1982 from Mr. Borquard
8 to the Corps of Engineers, is that correct; the
9 attachment?

10 A (WITNESS HANSLER) There is a velocity, a
11 Table No. 1 and a curve, a USGS Water Resources
12 Division, flow measurements, development of -- the paper
13 says "Exhibit 7, Development of Relationship between
14 Water Discharge and Water Service Elevation at Point
15 Pleasant." It is a fairly elaborate document, a fairly
16 thick document.

17 [Pause.]

18 Q Does any of this information relate to the
19 velocity measurements below 3000 cfs?

20 A (WITNESS HANSLER) I would have to go through
21 with a fine-toothed comb. I see on page 2 it relates to
22 a Trenton flow below 3000, 2700, 2900, 2850.

23 Q Page 2?

24 A (WITNESS HANSLER) Page 2 of the exhibit.

25 JUDGE BRENNER: Mr. Hansler, this is still in

1 Question 9, you say?

2 THE WITNESS: Yes.

3 JUDGE BRENNER: That is another one that is
4 missing from my copy of the proposed exhibits.

5 MR. SUGARMAN: It is missing from mine, too.
6 I apologize to the Board. I don't understand how this
7 happened, but obviously, well, if I had this, and I must
8 have had it if Mr. Hansler sent it to me, it got
9 disassociated from the rest, and I will get that back to
10 the Board.

11 JUDGE BRENNER: I am not going to do anything
12 with it unless we have testimony on it. I am not later
13 going to review documents in the abstract of discovery
14 that was not used on the record.

15 MR. SUGARMAN: I understand.

16 BY MR. SUGARMAN: (Resuming)

17 Q My question is is there anything on velocity
18 at flows below 3000 cfs at the Point Pleasant at the
19 intake site?

20 A (WITNESS HANSLER) I would have to run through
21 this. This was prepared by technical staff. It was a
22 technical question.

23 Q Well, just let me ask you, as far as you are
24 aware, are you aware of any consideration of velocities
25 at flows below 3000 cfs at the intake? And I call your

1 attention to page 1 of Issue 9, which deals with the
2 subject of river flows and which indicates and cites the
3 Harmon data from November '80 when the flow was 3000 cfs
4 and from July 23, 1981 when the flow was about 4500 cfs,
5 and then says that Exhibit 3 reveals that even with the
6 low flow of 3000 cfs, the flow velocities past the
7 screen will range from 1.0 to 1.3 feet per second, which
8 is twice or more the maximum screen inflow velocity of
9 .5.

10 Now, does that refresh your recollection that
11 the DRBC does not have any flow velocity measurements at
12 flows below 3000 csf?

13 A (WITNESS HANSLER) It doesn't one way or
14 another at this time. I would have to completely
15 rereview it. I didn't know you were going to ask this
16 question.

17 JUDGE BRENNER: Mr. Sugarman, was that
18 question in your outline?

19 MR. SUGARMAN: Yes, sir. I don't understand
20 this, but there is a reference here to Issue 9 precisely.

21 JUDGE BRENNER: Just tell me where in the
22 outline.

23 MR. SUGARMAN: It is at the bottom of page 4
24 and the top of page 5.

25 THE WITNESS: The flow velocities are

1 addressed in this Issue Number 9.

2 BY MR. SUGARMAN: (Resuming)

3 Q And that is all the information that you know
4 that the DRBC has?

5 A (WITNESS HANSLER) They may have more but that
6 is all they put in here at this point in time.

7 Q Now, is the issue, is the information that
8 provides cross-section data on the river as attached to
9 your response to Issue Number 6, is that the information
10 that the DRBC has on the cross-sections of the river
11 near Point Pleasant?

12 A (WITNESS HANSLER) That is the information.
13 Evidently that is the information that we had that we
14 sent you.

15 Q And I requested that information as indicated
16 in that issue and that is what you found or your staff
17 found for you and that is what they sent me?

18 A (WITNESS HANSLER) Yes.

19 Q Does DRBC itself conduct water quality studies
20 on the Delaware River?

21 A (WITNESS HANSLER) We do not have a laboratory
22 but we direct monitoring be done at various times and
23 locations on the river.

24 Q Is the data that was provided in response to
25 Issue 1 the data that the DRBC has on water quality in

1 the Delaware River the most relevant water quality data?

2 A (WITNESS HANSLER) I believe at this point in
3 time it is.

4 Q Does DRBC maintain or require analysis of
5 Delaware River water for a broad spectrum of priority
6 pollutants in the Delaware River above Trenton?

7 A (WITNESS HANSLER) We do not.

8 Q To your knowledge, does any agency sample or
9 test for a broad spectrum of priority pollutants in the
10 Delaware River above Trenton?

11 A (WITNESS HANSLER) I understand that NWRA did
12 this in conjunction with water quality for this
13 project. I understand that either PECO or NWRA have
14 done this since our assessment of '80-81. We did have
15 water quality analysis in our assessment of '80-81, and
16 USGS collects and publishes data periodically. They
17 operate some monitors for us in the lower basin.

18 Q But do you know whether any of these agencies
19 has sampled the Delaware River water above Trenton for a
20 wide variety or what is called a broad spectrum of
21 priority pollutants?

22 A (WITNESS HANSLER) USGS has checked the water
23 at Trenton for quite a few heavy metals, and one, two,
24 three, four, five, six, seven, eight, nine, ten, eleven,
25 twelve, thirteen synthetic organics, and so the most

1 troublesome ones, those which are non-biodegradable or
2 that don't biodegrade very well.

3 Q That was at Trenton?

4 A (WITNESS HANSLER) Yes.

5 Q I am asking about above Trenton.

6 A (WITNESS HANSLER) Above Trenton to my
7 knowledge there hasn't been an intensive survey but the
8 Trenton water is about the same as the Point Pleasant
9 water because there is really no big influence from the
10 Lehigh down to Trenton. It is basically the same water.

11 Q Is it true that the water sampling quality
12 available to DRBC does not include any analyses for
13 synthetic organic chemicals other than pesticides and
14 PCB, referring to Issue 1?

15 A (WITNESS HANSLER) I would have to go back and
16 look at what is available to us through the EPA store
17 access system where many different environmental
18 regulatory agencies put information into that system.

19 Q Did you do that in preparing your response to
20 Issue 1?

21 A (WITNESS HANSLER) We got what we felt was the
22 best data, i.e., the USGS data, which was 1979 to 1982.

23 Q But do you know whether USGS sampled for a
24 broad variety of priority pollutants?

25 A (WITNESS HANSLER) I would say this is a broad

1 variety of pollutants.

2 Q No, toxic organics.

3 A (WITNESS HANSLER) Toxic organics, all DDT,
4 DDE. The most toxic of organics are the tough pesticides.

5 Q How about industrial, synthetic organics, the
6 polychlorinated hydrocarbons, the PCBs?

7 A (WITNESS HANSLER) I do not know to what
8 extent USGS has looked for those. The NWRA looked at
9 orthophosphates and polyphosphates.

10 Q Those aren't toxics.

11 A (WITNESS HANSLER) Some of them can be.

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1 Q They are not priority pollutants, are they?

2 A (WITNESS HANSLER) There are probably some
3 orthophosphates that are priority pollutants.

4 Q But not orthophosphates as a whole? There are
5 no orthophosphates that are on EPA's list of priority
6 pollutants?

7 A (WITNESS HANSLER) I haven't memorized what is
8 on EPA's list of priority pollutants. I do know that
9 Dick Russo, Superintendent of the Trenton Water Company,
10 says that the Delaware River water is of high quality,
11 very high quality, and it meets all the EPA standards.

12 Q The information that was provided to us in
13 issue 2 regarding the Lumberville Wing Dam, do you have
14 a copy of that in front of you?

15 A (WITNESS HANSLER) Yes.

16 Q That is the information that is available to
17 the DRBC concerning the elevation of the wing dam and
18 the weir, is that correct?

19 A (WITNESS HANSLER) Yes.

20 Q And it shows that the elevation of the wing
21 dam is at 64.5 and the elevation at the weir and at the
22 wings is 70.7; is that correct?

23 A (WITNESS HANSLER) Yes, that looks like it.
24 And the water downstream of course is at a lower
25 elevation and upstream is a higher elevation.

1 Q I beg your pardon?

2 A (WITNESS HANSLER) The water downstream is
3 going to be a lower elevation, if you've seen that wing
4 dam, and as you go upstream the elevation goes up.

5 Q Of the water?

6 A (WITNESS HANSLER) Yes.

7 Q Like in most rivers.

8 In response to issue number 6, you have
9 provided us cross-section data on the Delaware River at
10 just below and just above Point Pleasant; is that
11 correct?

12 A (WITNESS HANSLER) Yes.

13 Q And that data shows a water elevation -- I
14 don't know. Do I need -- I do want to get this
15 information in the record, and I'm hoping -- well, I'm
16 wondering, is it not possible for me to just ask whether
17 the data that was provided is the data of the DRBC?

18 JUDGE BRENNER: In response to your written
19 question?

20 MR. SUGARMAN: Yes, sir.

21 JUDGE BRENNER: Yes, absolutely, and then we
22 could put it in the record, if there are no objections,
23 if we could see it. The problem we have had every time
24 we try to shortcut is, you have never given us copies of
25 things you had thought you gave us.

1 MR. SUGARMAN: I understand that. I thought I
2 had.

3 JUDGE BRENNER: What one are you worrying
4 about now?

5 MR. SUGARMAN: I am at issue 6 now.

6 JUDGE BRENNER: I thought we were at 2, at the
7 Lumberville dam elevation, which one I had. I was so
8 happy to have it.

9 You're in luck, Mr. Sugarman. We have issue
10 6. You could save asking him the questions by putting
11 this in the record. Is that your point?

12 MR. SUGARMAN: Yes, sir.

13 JUDGE BRENNER: Mr. Conner?

14 MR. CONNER: Do I understand that Mr. Sugarman
15 has been offering the answers to these issues as
16 exhibits?

17 JUDGE BRENNER: Just issue 6 we're talking
18 about.

19 MR. SUGARMAN: Well, it is several issues. It
20 is other than that. The issue 2 --

21 JUDGE BRENNER: Mr. Sugarman, wait a minute.
22 We're all tired. Let's stay with issue 6.

23 The proposal as I understand it, Mr. Conner --
24 and I will poll the parties in a moment -- is that we
25 can put issue 6 into evidence as if it was the testimony

1 of Mr. Hansler. That is, it would be in evidence and
2 can be cited for findings of fact, rather than having to
3 ask him about all of the elevations and so on in it.

4 So I would ask all of the parties to inform me
5 if there is any objection to that, including Mr. Hansler
6 through his counsel, if he wants to confer for a
7 moment.

8 MR. CONNER: I don't want to bog anybody down,
9 but the material attached to issue 6 -- there is
10 material attached to issue 6 on Tock's Island. If it's
11 just the cover page, we have no objection to it. I'm
12 not even sure what is offered. But we would certainly
13 object to some of the other material coming in as being
14 irrelevant.

15 JUDGE BRENNER: Mr. Hansler, did you have a
16 point?

17 WITNESS HANSLER: This issue 6 response was
18 fine for the record. I would like to make an additional
19 comment on it.

20 JUDGE BRENNER: All right, we will allow you
21 to do that in a moment. Let's see if we can even get so
22 far as to get issue 6 in.

23 Mr. Sugarman, do you need anything in addition
24 to the first page for your purposes?

25 MR. SUGARMAN: Yes, sir. I need the

1 attachments. The attachments are really what I want
2 in. The attachments are studies that were prepared by
3 the DRBC by the Corps of Engineers. They do represent
4 the cross-section and the water service elevation of the
5 river at the locations indicated, and they are relevant
6 for the purpose of Mr. Phillippi's testimony and for the
7 consequent consideration by the other witnesses as to
8 what the velocities of the river will be in the intake,
9 at the intake location, when the flows of the river are
10 below 3,000 cfs.

11 JUDGE BRENNER: We would be inclined to admit
12 it, Mr. Conner, notwithstanding your point as to the
13 relevance of that one chart. When we later see what
14 purpose Mr. Sugarman wants to tie this background data
15 up with, we can better assess the relevance.

16 MR. CONNER: Mr. Chairman, I'm afraid it is
17 far more serious than that. You must understand that
18 this issue number 6, so-called, was a request to provide
19 data. The question in effect said, do you have any data
20 on this, and as a means of checking out the file.
21 Unfortunately, the things attached are totally without
22 foundation. Thereby, somebody made the report on Tocks
23 Island and it's not located -- we don't know where it
24 is.

25 I don't know what he wants it for, but he

1 wants it to support Mr. Phillippe's testimony, and there
2 is no foundation and no nexus.

3 JUDGE BRENNER: All right. You talked about
4 foundation in the first instance. Then you talked about
5 nexus. Then you also talked about relevance. They are
6 three different things.

7 MR. CONNER: You asked me if I objected. I
8 was trying to tell you why.

9 JUDGE BRENNER: I thought you had finished
10 your objection before. Now we will come back at it
11 again. Let's take them one at a time.

12 Foundation. If you have problems with the
13 truth of the factual information provided here, then
14 obviously we can't just put it into the record. You are
15 going to want to have Mr. Sugarman establish through Mr.
16 Hansler, to the extent he can, the basis for these
17 findings, and that is going to take quite a while. But
18 we will do it if that is your problem.

19 Is that your foundation problem?

20 MR. CONNER: Mr. Chairman, I would be remiss
21 in my duty as a lawyer to be pressured into letting some
22 document here that has nothing to do with it. Mr.
23 Hansler I don't think can lay a foundation for this
24 document if he took three days, because it came from
25 some other source about Tocks Island. How it may or may

1 not apply to Point Pleasant has not been stated.
2 Whether the people who did it did it for this purpose or
3 not, I don't know.

4 But all I know is, I cannot just let this go
5 idly by because we are in a hurry.

6 JUDGE BRENNER: Mr. Conner, I'm not pressuring
7 you. My sole question is, do you have problems as to
8 the accuracy of the river elevations presented in this
9 information provided by DRBC in response to the
10 question? If you do, then indeed we do have a
11 foundation problem and we will deal with it
12 accordingly.

13 MR. CONNER: I don't know how I can express
14 myself more clearly. We don't know where this is. It
15 indicates it may be at river mile 156.52. That is a
16 clue. I don't know. If the Chairman will tell me,
17 maybe we could withdraw our objection.

18 JUDGE BRENNER: Mr. Sugarman, you will have to
19 do it through examination, so we can establish what this
20 information represents and the source of it and so on.

21 MR. SUGARMAN: I understand.

22 JUDGE BRENNER: Mr. Hansler, you did want to
23 offer some explanation in connection with the response
24 to issue number 6. Perhaps I should allow it at this
25 time in the name of efficiency.

1 WITNESS HANSLER: The attachments here came
2 from a report which is in DRBC's hands concerning Tocks
3 Island issues, that dealt with the cross-sections of
4 different parts of the river, and it came from that
5 report. I think we could get the exact citation of that
6 report.

7 Second, it is important to point out the flow
8 associated with the water levels in these
9 cross-sections. Was this a flood through, was this
10 3,000 flow, a 2500 flow? I checked the USGS reports and
11 the flow at this point in time was approximately 200 cfs
12 at Trenton -- pardon me, 2,000 cfs at Trenton. And our
13 hydrology now, with additional upstream storage, shows
14 we never get below basically 2500.

15 So I think it is important to associate the
16 water levels in this cross-section with the flow at the
17 time, and that was approximately 2,000 cfs.

18 JUDGE BRENNER: Mr. Hansler, this is my
19 fault. I missed part of the beginning of what you
20 said. Do your comments apply to both cross-sections
21 presented here?

22 WITNESS HANSLER: Issue number 6 only.

23 JUDGE BRENNER: All right. The cross-sections
24 are very close to each other and your comments apply to
25 both?

1 WITNESS HANSLER: Yes.

2 JUDGE BRENNER: We're not going to be able to
3 finish today. Mr. Goldberg, Mr. Hansler, I've done my
4 best. We have already worn out our welcome here, and
5 that's our problem, not yours. But I think we've lost
6 our hearing room rights for future weeks as a result.
7 So I don't want you to think we haven't tried. It has
8 been at some great cost to us already.

9 WITNESS HANSLER: Bob only has one more
10 question. Would you ask Mr. Sugarman, please?

11 JUDGE BRENNER: I will do that. But the
12 problem, Mr. Hansler, is he never got in the information
13 in response to issue number 6. So we now have to go
14 back over that.

15 MR. SUGARMAN: Well, it is -- the problem is
16 that I'm going to have it with a couple of other
17 issues. As you can see, I was essentially finished with
18 Mr. Hansler. All I need to do at this point --

19 JUDGE BRENNER: All right, I will tell you
20 what --

21 MR. SUGARMAN: -- is to get the information in
22 on the issues. Now, that is the material that was
23 supplied to me.

24 JUDGE BRENNER: I will tell you what. It
25 occurs to me that as we are trying to hurry we are

1 losing time. We're going to take a five-minute break,
2 five minutes precisely. You work out with all the other
3 parties, with Mr. Hansler, what you have left to ask him
4 and see if you can work out a way to get the information
5 in through some of these remaining written submissions,
6 following up on Mr. Goldberg's suggestion at the outset
7 and whatever.

8 And then we will come back, and if you can
9 tell me you've got something like five minutes -- and I
10 don't mean six minutes and I don't mean seven minutes --
11 then we will proceed. If you tell me you cannot promise
12 that or you doubt that you could make it, to be more
13 practical then we will just have to come back and
14 continue.

15 MR. SUGARMAN: In doing that, I have one very
16 serious logistical problem that I can only apologize for
17 again, and that is that apparently -- I mean, obviously
18 the Board's copies of my issues are incomplete. And I
19 would like to know -- I'm going to have to do something
20 about that.

21 JUDGE BRENNER: No, you're not, because we are
22 not putting this into the record. We are only getting
23 into the record these issues that we are getting in
24 through this witness.

25 MR. SUGARMAN: I understand that. Therefore I

1 am going to have to somehow put copies before you of
2 each of the issues, to put each of them in.

3 JUDGE BRENNER: Not all of them. Only those
4 that you still need to get in.

5 MR. SUGARMAN: And there are several that I
6 want to get in.

7 MR. GOLDBERG: If we could work it out, we
8 might be able to make our copies available.

9 JUDGE BRENNER: All right, five minutes.

10 (At 6:16 p.m., the hearing was recessed, to
11 reconvene at 6:21 p.m. the same day.)

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1 (6:24 p.m.)
2 JUDGE BRENNER: Well, we gave you three extra
3 minutes. Hopefully, that has saved time in the long
4 run.

5 MR. SUGARMAN: We have all cooperated. I
6 think we have got what we need to take care of Mr.
7 Hansler's needs and to take care of our needs.

8 Issue 1 -- I'm going to ask that issue 1 be
9 identified as the data available to DPBC on toxic
10 synthetic and organic chemicals.

11 JUDGE BRENNER: Excuse me, Mr. Sugarman.
12 Mr. Conner?

13 MR. CONNER: Mr. Chairman, the only reason
14 that we have agreed to this very irregular presentation
15 by Mr. Sugarman is for Mr. Hansler and Mr. Goldberg's
16 benefit. May I suggest, we all know what the documents
17 are, but that we can identify them tomorrow, and we want
18 to object to some of them on the grounds of relevancy
19 tomorrow. But in order to let the witnesses get out of
20 here, we will agree to the authentication and ask two or
21 three qualifying questions from me at least, and we can
22 then argue about it tomorrow and we can also mark them
23 tomorrow. Let's not identify them now or argue about
24 what they are for.

25 JUDGE BRENNER: That sounds like a reasonable

1 approach so long as everybody is sure they are talking
2 about the same documents, and I hope we have had a
3 meeting of the minds on those.

4 MR. SUGARMAN: It is issue 1 and the response
5 to issue 1, issue 2 and the response to issue 2. Each
6 one is the issue and the response. Issue 4, the cover
7 page and memo number 16745 only. Issue 6 and issue 7.

8 Now, we didn't talk about the questions, the
9 questions that the Staff put in and were responded to.

10 JUDGE BRENNER: We have to get out of here. I
11 thought you had reached agreement.

12 BY MR. SUGARMAN: (Resuming)

13 Q Do you have the questions?

14 A (WITNESS HANSLER) What questions? NRC
15 Staff?

16 Q Yes.

17 A (WITNESS HANSLER) Sure.

18 JUDGE BRENNER: Let me ask, Mr. Conner, with
19 respect to the issues does that identification accord
20 with your knowledge of the documents we are talking
21 about, recognizing you may have some relevance
22 objections tomorrow and some brief clarifying questions
23 today?

24 MR. CONNER: True, except he stopped talking.
25 I mean, I thought he was going to go on to 7, 8 and 9.

1 JUDGE BRENNER: On the issues?

2 MR. CONNER: On the DRBC answers to his
3 request for more information, identified as issues
4 number 7, 8 and 9, respectively.

5 JUDGE BRENNER: What about 8 and 9, Mr.
6 Sugarman?

7 MR. SUGARMAN: Let me try and get them.

8 JUDGE BRENNER: Sit down. I have a better
9 idea. This is getting too disorderly.

10 Do it this way. The parties by 9:00 o'clock
11 tomorrow morning, which is when we will be back on the
12 record, are to agree on which documents they are even
13 talking about, and to also discuss with each other what
14 the objections are, so everybody understands what
15 argument, if any, we are going to hear.

16 If there are problems that arise such that we
17 need Mr. Hansler, even though we are not anticipating
18 that we will, I want arrangements to be made such that
19 Mr. Hansler can promptly be contacted tomorrow morning
20 to get him back here some time tomorrow, at whatever
21 time tomorrow is convenient to him but not later than
22 immediately after lunch.

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1 MR. CONNER: Mr. Chairman.

2 JUDGE BRENNER: I also understand, however,
3 that we do know today that there are some clarifying
4 questions that do have to be asked of Mr. Hansler. Is
5 that accurate?

6 MR. SUGARMAN: I have no further questions to
7 ask of Mr. Hansler.

8 JUDGE BRENNER: Mr. Conner, do you have any
9 questions for Mr. Hansler that you are going to have to
10 ask regarding these documents?

11 MR. CONNER: Yes.

12 JUDGE BRENNER: Why don't you ask them now?

13 CROSS EXAMINATION ON BEHALF OF
14 PHILADELPHIA ELECTRIC COMPANY

15 BY MR. CONNER:

16 Q Mr. Hansler, directing your attention to the
17 document identified as Issue Number 1, do you know what
18 standards, or are there any indicated violations of
19 anybody's standards on these numbers given in response
20 to Issue Number 1?

21 A (WITNESS HANSLER) To my knowledge, no.

22 Q Directing your attention to Issue Number 2,
23 which refers to the picture of the Lumberville wing dam
24 in 1964, do you know the water level, do you know the
25 cfs at Trenton or the water level elevation at the wing

1 I am at that time on that day?

2 A (WITNESS HANSLER) The elevation was at 69.9
3 when the water level was shown thusly. I would look up
4 into the USGS documents as to the flow on that day, the
5 flow at Trenton being plus or minus one percent of the
6 flow at Point Pleasant, but that flow can be
7 ascertained, and I could put that on my question list.

8 MR. CONNER: And we have no objection to you
9 providing it in that fashion.

10 JUDGE BRENNER: What did you mean, your
11 question list?

12 THE WITNESS: What, sir?

13 JUDGE BRENNER: What did you mean, you would
14 put that on your question list?

15 THE WITNESS: Well, I am going to get the
16 document for you as to one unit versus two units. I am
17 going to get the exact source of information for Issue
18 Number 6, those cross-sections, and I will have looked
19 up the flow on September 30, 1964 at Trenton, which is
20 comparable to the flow at Point Pleasant.

21 JUDGE BRENNER: We appreciate that. We don't
22 usually assign homework here, and we appreciate it, as
23 well as the quid pro quo is that you don't have to come
24 back.

25 Anything further, Mr. Conner?

1 BY MR. CONNER: (Resuming)

2 Q Directing your attention to Issue Number 4, do
3 you understand that all that is being offered is the
4 question and answer page and the two-page memorandum
5 identified as number 16,745?

6 A (WITNESS HANSLER) Yes.

7 Q And can you tell us if there is any
8 significance one way or the other to the handwritten
9 material which is barely legible on the bottom of the
10 page?

11 A (WITNESS HANSLER) No, I can hardly read it.
12 It is a Dave Everett note. Dave Everett is head of our
13 project review and it probably relates to Condition L
14 which we had in our docket decision, when the
15 Commissioners vote on this docket saying we will
16 continue to let you take a look at the intake as
17 revisions occur.

18 MR. CONNER: The Applicant, for the record,
19 since Mr. Sugarman has not said it, would stipulate that
20 if Mr. Hansler were asked, he would provide the answers
21 which appear on the face of the documents identified as
22 Issues Number 7, 8 and 9, and we would agree that this
23 is what he would say. We want to make objections to
24 their relevancy, but that can be deferred.

25 Now we have other questions that we have to

1 ask.

2 JUDGE BRENNER: Say that again, Mr. Conner.

3 MR. CONNER: I say we have a couple of other
4 questions we have to ask.

5 JUDGE BRENNER: I thought we had three or four
6 minutes worth of questions. These representations are
7 being extended now. I don't want to pick on you. I will
8 give you the time if you need it.

9 MR. CONNER: You are not picking on me. You
10 gave us five minutes to look at these documents. But I
11 also have some basic cross to ask on matters that Mr.
12 Sugarman has just raised which should take five minutes
13 if I can ask it.

14 JUDGE BRENNER: No, sir, we have to leave. I
15 am being pressured out of here. The understanding I had
16 was that we were merely going to agree on the
17 documents. You will be able to ask your
18 cross-examination tomorrow.

19 MR. CONNER: I will withdraw cross-examination
20 in deference to Mr. Hansler, although that was not my
21 understanding of the agreement. I don't think the
22 record will so state.

23 JUDGE BRENNER: Mr. Conner, it is 6:30. We
24 have to clear this room. You may ask your cross
25 tomorrow. I am not cutting off your cross-examination.

1 MR. CONNER: As long as this case has taken
2 today and as long as Mr. Hansler has stayed here, I
3 cannot believe it is that significant to the Applicant's
4 case to make him come back tomorrow.

5 JUDGE BRENNER: All right, that is your --

6 MR. CONNER: That is exactly right.

7 JUDGE BRENNER: What is exactly right? You
8 interrupted me. Excuse me. That is your own
9 assessment. You have voluntarily withdrawn your
10 questions. We will give you every opportunity to ask
11 your questions tomorrow if you wanted to, and I want
12 that to be clear.

13 All right, we are adjourned for today. When
14 these documents are discussed tomorrow, we want four
15 clean copies of the documents on our table at 9:00
16 tomorrow morning when they are discussed. We are not
17 going back to the extensive files. They are
18 incomplete. We want four complete, accurate copies up
19 here. In addition, I want three copies available so
20 that they could become official exhibits for the
21 reporter. In addition, I want a fourth copy available
22 for the reporter so that I can bind it in at the time we
23 discuss it tomorrow.

24 The parties are directed to meet tomorrow
25 morning sufficiently in advance of 9:00 so that we have

1 complete understanding of what the arguments are going
2 to be on these different portions of the written
3 document so we don't waste a lot of record time.

4 MR. SUGARMAN: Do you want to hear from us on
5 the Miller and McCoy testimony?

6 JUDGE BRENNER: Not today. We have got the
7 list and we are getting that list back. It was given to
8 you merely to ascertain the accuracy.

9 Staff, you stated before, and I just wanted to
10 make sure, that you have no questions of Mr. Hansler.

11 MS. CHAN: We had a single question that came
12 up in the last minute about the 2500 cfs.

13 JUDGE BRENNER: Put your mike on, please.

14 MS. CHAN: We had a single question, if he
15 could clarify a statement that 2500 cfs at Trenton is
16 the lowest anticipated flow in the future based on
17 upstream storage.

18 CROSS EXAMINATION ON BEHALF OF
19 THE REGULATORY STAFF

20 BY MS. CHAN:

21 Q Can you tell us the basis of that briefly?

22 A (WITNESS HANSLER) Those were the figures that
23 were worked through on Level B based upon the flow model
24 in the basin and upstream storage.

25 Q Does that include Merrill Creek?

1 A (WITNESS HANSLER) That does not include
2 Merrill Creek. It includes no prospective storage.

3 MS. CHAN: Thank you.

4 JUDGE BRENNER: You worked that in very
5 quickly. I am not sure I would have allowed you to ask
6 today.

7 Mr. Conner, why don't you pick your one best
8 question given that.

9 MR. CONNER: No, thank you.

10 JUDGE BRENNER: We are adjourned for the day.
11 We will be back at 9:00 tomorrow morning.

12 [Whereupon, at 6:35 p.m. the hearing was
13 recessed, to reconvene at 9:00 a.m. the following day,
14 Wednesday, October 6, 1982.]

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of: Philadelphia Electric Company (Limerick Generating
Station Units 1 and 2)

Date of Proceeding: October 5, 1982

Docket Number: 50-352 OL & 50-353 OL

Place of Proceeding: Norristown, Pennsylvania

were held as herein appears, and that this is the original transcript
thereof for the file of the Commission.

Ray Heer

Official Reporter (Typed)

Ray Heer

Official Reporter (Signature)