

STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

May 8, 2012 - 1:06 P.M.
Concord, New Hampshire

DAY 3
AFTERNOON SESSION ONLY

NHPUC MAY24'12 AM 9:28

RE:

DE 10-261 PUBLIC SERVICE COMPANY OF NEW
HAMPSHIRE: Least Cost Integrated
Resource Plan

PRESENT: Commissioner Michael D. Harrington
Commissioner Robert R. Scott

F. Anne Ross, General Counsel

Sandy Deno, Clerk

APPEARANCES:

Reptg. Public Service Co. of N.H.
Gerald M. Eaton, Esq.
Sarah B. Knowlton, Esq.

Reptg. TransCanada:
Douglas L. Patch, Esq. (Orr & Reno)

Reptg. Granite Ridge Energy:
Howard M. Moffett, Esq. (Orr & Reno)

Reptg. N.H. Sierra Club:
Arthur B. Cunningham, Esq.

Reptg. Conservation Law Foundation:
N. Jonathan Peress, Esq.

COURT REPORTER: SUSAN J. ROBIDAS, N.H. LCR NO. 44



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

APPEARANCES: (C o n t i n u e d)

Reptg. Office of Energy & Planning:
Eric Steltzer

Reptg. Residential Ratepayers:
Rorie E. P. Hollenberg, Esq.
Kenneth E. Traum
Office of Consumer Advocate

Reptg. PUC Staff:
Alexander F. Speidel, Esq.
George R. McCluskey, Electric Division
Edward Arnold (Jacobs Consultancy)

I N D E X

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

WITNESS PANEL: TERRANCE J. LARGE
 WILLIAM H. SMAGULA
 ELIZABETH H. TILLOTSON
 RICHARD L. LEVITAN
 RICHARD L. CARLSON

| EXAMINATION | PAGE |
|---------------------------------|----------|
| Cross-examination by Mr. Patch | 18 |
| Cross-examination by Mr. Peress | 110 |
| Interrogatories: | |
| Cmsr. Scott | 121, 154 |
| Cmsr. Harrington | 132 |

| I N D E X (Continued) | | |
|-----------------------|---|------|
| EXHIBITS | | PAGE |
| Staff 7 | 5/20/11 PSNH's response to Staff 02-008 | 8 |
| TransCanada 4 | Record Request to provide actual net energy benefits realized by Newington in 12 months of 2011 | 26 |
| TransCanada 5 | LMP and congestion impacts of Northern Pass Transmission Project Final Report | 32 |
| TransCanada 6 | PSNH response to DR TC-04-004 | 35 |
| TransCanada 7 | PSNH response to DR TC 03-002 | 43 |
| TransCanada 8 | PSNH response to DR TC 03-001 | 65 |
| TransCanada 9 | PSNH "Steam Electric Generating Plant | 73 |
| TransCanada 10 | "Monthly Average Fuel Price and RT Hub LMP." | 81 |
| TransCanada 11 | ISO Forward Capacity Auction Results | 90 |
| TransCanada 12 | PSNH response to DR TC 04-012 | 99 |
| TransCanada 13 | PSNH response to DR TC-04-016 | 104 |

17
18
19
20
21
22
23
24

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

AFTERNOON SESSION

CMSR. HARRINGTON: We're back on the record in Docket DE 10-261 Public Service Company of New Hampshire Least Cost Integrated Resource Plan. Ms. Knowlton.

MS. KNOWLTON: I had one procedural issue that I wanted to raise before we get back to cross-examination of the panel, which is I'm trying to make my own best estimate about when this panel might finish on the stand. Not trying to rush it, but Mr. Smagula and I just wanted to remind everybody that, back when we were here back in April, we let everyone know that Mr. Smagula needs to leave tomorrow at about 11:30. He's got a flight to catch to go out of town for a professional commitment. So the Company at this point would have limited redirect for the panel. So I'm just wanting to raise that issue now, to make sure that before he leaves at 11:30 tomorrow, that we would do that. And we did talk about coming back on the 11th, on Friday, but the letter from the Commission didn't -- reserving these two days didn't

1 indicate anything about Friday.

2 CMSR. HARRINGTON: Well, our
3 goal is to finish in two days.

4 MS. KNOWLTON: Right.

5 CMSR. HARRINGTON: So why don't
6 you, tomorrow morning, make sure you remind
7 us, in case we haven't gotten to that point by
8 11:30 -- or before 11:30, so you can do your
9 redirect.

10 MS. KNOWLTON: Okay. Thank you.

11 MR. SPEIDEL: Commissioners,
12 thank you. There was a false start before we
13 broke for lunch, and the Company has in fact
14 confirmed what I initially tried to style as
15 "Confidential Staff Exhibit 2" is a public
16 document now because of the Commission order
17 related to the confidentiality of the
18 material.

19 CMSR. HARRINGTON: Okay.

20 MR. SPEIDEL: And I had, in
21 abundance of caution, gone on the basis of my
22 expectation that, even though it was most
23 likely that the material was public
24 information, there was a possibility that it

1 was still granted partial confidential
2 treatment with regards to a specific schedule.
3 So that doesn't seem to be the case, so I will
4 withdraw the copies of "Confidential Staff
5 Exhibit 2," so to speak, and distribute what I
6 have styled as "Staff Exhibit 7" to the
7 hearing room if it's all right.

8 CMSR. HARRINGTON: Is this
9 physically a different piece of paper or --

10 MR. SPEIDEL: It is not. And it
11 also relates to my questioning of Mr. Smagula.

12 So, have the witnesses been
13 sworn?

14 MR. SCOTT: Just for clarity,
15 you said -- don't you mean Confidential Staff
16 Exhibit 1?

17 MR. SPEIDEL: One, yes. That's
18 correct.

19 CMSR. HARRINGTON: So you're
20 going to basically toss out the one that says
21 "Confidential" on it and give us another one
22 that doesn't say that.

23 MR. SPEIDEL: That's exactly
24 right.

1 CMSR. HARRINGTON: Which will be
2 Exhibit 6.

3 MR. SPEIDEL: So this will be
4 Staff Exhibit 7.

5 CMSR. HARRINGTON: Seven.

6 (The document, as described, was
7 herewith marked as Staff 7 for
8 identification.)

9 BY MR. SPEIDEL:

10 Q. So, Mr. Smagula, the document that I've
11 distributed here, Staff Exhibit 7, is the
12 Company's response to Staff Data Request
13 Set 2, Question 8, and it was dated May 20
14 of 2011. Could you please confirm the fact
15 stated in your rebuttal testimony -- and I
16 will make reference to the specific lines of
17 that as well. Let's see here. I don't
18 think that has been -- has this been marked
19 by the Company yet or not?

20 MS. KNOWLTON: Yes, that's
21 PSNH 4.

22 MR. SPEIDEL: PSNH 4. Thank you
23 very much for your help, Counsel.

24 BY MR. SPEIDEL:

1 Q. All right. So your rebuttal testimony in
2 PSNH 4, at Pages 15 and 16, there is a
3 discussion of the fact that the capital
4 investment projections for the line marked
5 "2010" for Newington station were those
6 provided by PSNH and used by Levitan for the
7 Newington CUO study. And I will redirect
8 everyone's attention to the third page of
9 Staff Exhibit 7, which is a table outlining
10 different vintages of five-year capital
11 budget forecasts for Newington Station.

12 So you can see that there's a line marked
13 "2010," and there are a series of capital
14 investment figures for the years 2011 through
15 2015, and they're all \$500,000 a year. Now --
16 I'm sorry.

17 Could you please confirm the fact that
18 the capital investment projections for the
19 line marked "2010" for Newington Station were
20 those provided by PSNH and used by Levitan for
21 the Newington CUO study?

22 A. (By Mr. Smagula) Yes, they are.

23 Q. And that would be \$500,00 per year for each
24 year?

1 A. (By Mr. Smagula) That's correct.

2 Q. Now, would you also agree, Mr. Smagula, that
3 the line marked "2009" present the Company's
4 capital projections prepared during that
5 year for Newington Station?

6 A. (By Mr. Smagula) No, that's not correct.
7 The budget projections that you see starting
8 in any given year are those budgets that
9 were projected in the preceding year for the
10 next series of five years. So the budgets
11 that were in 2011 with \$500,000 were
12 projected in 2010 for those years.

13 Q. I think we agree on that point, Mr. Smagula.
14 But what I'm asking is, there's a line on
15 this table here in Staff Exhibit 7 that you
16 provided as part of a discovery response --
17 the Company did, and you were the witness
18 marked on that discovery response -- and in
19 2009 there was one projection for the 2010
20 budget and then there's another for the 2011
21 budget and then there's another for the 2012
22 budget and then there's another for 2013 and
23 2014 budgets.

24 A. (By Mr. Smagula) Yes.

1 Q. So my question is, that line that is marked
2 "2009" presents the capital projections for
3 Newington Station prepared during the year
4 2009, or does it not?

5 A. (By Mr. Smagula) Yes, that's right.

6 Q. Okay. So --

7 A. (By Mr. Smagula) Well, which line are you
8 talking about?

9 Q. I'm talking about the line marked -- for
10 example, 2009, there's a column on the far
11 left that indicates certain years --

12 A. I think that's right. The column on the
13 left indicates the year that those numbers
14 had been developed.

15 Q. Very good. That's my question. Thank you.

16 Now, Mr. Smagula, the projections for
17 2011 and beyond on the line marked "2009" are
18 significantly higher than the projections for
19 the same years on the line marked "2010"; are
20 they not?

21 A. (By Mr. Smagula) Yes, they're different.

22 Q. Have you any explanation for the
23 differences?

24 A. (By Mr. Smagula) Yeah, there's a number of

1 reasons for that, and I'm glad you asked,
2 because when you asked the question of
3 showing what your budgets are, we've
4 answered the questions, but there's
5 significantly more information that's behind
6 these numbers, and I'd be happy to explain
7 that for you.

8 As you look at this series of numbers,
9 starting in the budgets that were developed
10 in 2006 and '07, you see that there are some
11 large expenditures projected in the period
12 2010 and 2011. That indicates that in 2010
13 we had projected a large maintenance year.
14 And with a large maintenance year, it
15 usually requires a lengthy outage. And when
16 you have a lengthy outage, that is most
17 often the time when you would make large
18 capital investments. As a result, our
19 projection, as you can see here in 2010, we
20 had expected to do some major maintenance
21 and make some capital investments.

22 And as we proceeded from 2006, when we
23 started seeing reduced capacity factors, and
24 we still held -- in 2007, we still held that

1 large maintenance year in 2010. However, in
2 2008, with the reduced capacity factors, as
3 you're familiar with, you can see that the
4 large capital investment was pushed into
5 2012. 4.4 million was shifted. Our big
6 year was shifted out two years, and that's
7 because we were running less.

8 And then you see in 2009 that number
9 was pushed out even further. So, by the --
10 and the reason I explain this is, as things
11 were changing over time, our actual
12 projections, which is what this is a table
13 of, were shifted out because we didn't see
14 the operations which drives our budgets, we
15 didn't see the operations increasing. In
16 fact, the capacity factors were moderated.

17 And in line with that, what is also not
18 portrayed in this table is that the actual
19 expenditures for capital in 2008 were
20 2.51 million; in 2009 it was 1.1 million; in
21 2007 -- excuse me -- 2010, rather, it was
22 418,000; and in 2011 it was 750,000; and
23 this year we've spent, at this point, just
24 over \$200,000.

1 So you have to put it in context, that
2 as things were changing, as the projections
3 were pushed out, then accepting the fact
4 that the capacity factors would be in the
5 single digits, we determined that, based on
6 actuals of 2010 and '11, and projected for
7 2012, that \$500,000 was a very reasonable
8 number. Our O & M budgets similarly were
9 reduced over that period.

10 Q. So, Mr. Smagula, you seem to be indicating
11 that, on the basis of the Company's
12 expectations of lower capacity factors and
13 lower use rates for the Newington plant,
14 that it has downshifted its expected capital
15 expenditures for the plant on an ongoing
16 basis, starting in 2006 going forward.

17 A. (By Mr. Smagula) Not just capacity factors.
18 We have a planning process where we look at
19 equipment needs and other needs of the
20 facility over a moderate and long-term
21 horizon. And we look at a five-year horizon
22 most commonly, and that assists us in
23 driving these numbers out five years. And
24 we do also look at times beyond that.

1 Q. So on the basis of what you're saying there,
2 the Company decided to make a significant
3 downshift between its 2009 projection for
4 the year of 2011, which had been \$1,210,000
5 for Newington, to a 2010 vintage projection
6 for that very same year of 2011 of \$500,000?

7 A. (By Mr. Smagula) Yes, and that's consistent
8 to the actuals that we had in 2010 and 2011,
9 yes.

10 Q. Is that necessarily true, Mr. Smagula?
11 Because I believe that the Company's
12 projection for 2011, made in 2010 -- that
13 is, the \$500,000 projection -- has already
14 been shown to be too conservative. For
15 instance: Do you recall that the Company's
16 response to an OCA data request mentioned
17 the fact that actual capital expenditures
18 for Newington in 2011 totalled approximately
19 \$1 million?

20 A. (By Mr. Smagula) I think, actually, there
21 was some money that was expended that was
22 actually improperly booked to the station,
23 which was rebooked to a transmission account
24 for work in our high yard. That accounted

1 for, I believe, \$300,000 or so being
2 transferred out of the station costs. And
3 the energy costs for the Company, the actual
4 was, as I indicated, about \$450 -- \$750
5 million -- excuse me -- \$750,000.

6 Q. Seven hundred and fifty thousand.

7 A. (By Mr. Smagula) Right.

8 Q. And Mr. Smagula, has that data response been
9 updated by the Company in some fashion?

10 A. (By Mr. Smagula) I don't recall.

11 Q. Moving on. Isn't it true, Mr. Smagula, that
12 some consideration is being given by the
13 Company to replacing one of the two
14 auxiliary boilers at Newington Station
15 possibly in 2012 with a boiler that uses
16 natural gas?

17 A. (By Mr. Smagula) Yeah, there is a study
18 underway to look at one of our two auxiliary
19 boilers to determine whether it is more
20 economic to modify that or change that
21 boiler to one that burns natural gas. That
22 takes into account the economics of such an
23 investment, the value to customers and, you
24 know, air permitting requirements and so on.

1 And that has not been finalized as yet. And
2 I believe there was a data request which did
3 mention this.

4 Q. Now, so, Mr. Smagula, if the replacement
5 were to take place in either the year 2012
6 or the year 2013, is it likely that capital
7 expenditures in that given year in which the
8 boiler upgrade would take place would exceed
9 the half-million-dollar projection?

10 A. (By Mr. Smagula) That is likely. But the
11 basis upon which any such decision would be
12 made is one that would be economically
13 beneficial to customers. And I think if
14 this project is successfully justified, it
15 would in fact reduce costs to customers,
16 from what I am hearing, generally one- or
17 two- or two- or three-year payback. So the
18 economic analysis of Newington's continued
19 operation would in fact improve if that
20 investment were made.

21 Q. But as a general working principle, would it
22 be fair to say that the 2010 vintage capital
23 expenditure forecast that had been
24 integrated by Levitan in its analysis for

1 the CUO study would probably -- there would
2 be justification for updating or perhaps
3 revisiting such a projection?

4 A. (By Mr. Smagula) If a future decision were
5 made, that may be an analysis. But as I
6 indicated, I think that would illustrate
7 that the analysis would be improved, as far
8 as customer value over that period with a
9 short payback.

10 Q. Thank you very much, Mr. Smagula.

11 MR. SPEIDEL: Staff has no
12 further questions of the Company's witnesses.

13 CMSR. HARRINGTON: Okay. As
14 previously agreed, TransCanada has questions
15 for this panel?

16 MR. PATCH: Thank you.

17 CROSS-EXAMINATION

18 BY MR. PATCH:

19 Q. Good afternoon. Mr. Large, I think I'd like
20 to start with you. Is the microphone
21 working?

22 A. (By Mr. Large) Yes, indeed it is.

23 Q. Mr. Smagula [sic], you're familiar with a
24 Commission Order in 2009, Order No. 24,945,

1 in which it accepted the 2007 Least Cost
2 Integrated Resource Plan? Are you generally
3 familiar with that?

4 A. (Mr. Large) I am in general, yes.

5 Q. Do you recall that the Commission said in
6 that order, "Early retirement of existing
7 power plants for economic reasons is a
8 practical option for utility planners if
9 continued operation entails the expenditure
10 of significant investment dollars"? Does
11 that sound familiar? I can give you a copy
12 of the order if it would be helpful.

13 A. (Mr. Large) It would be helpful.

14 Q. What I read from was on Page 16 of that
15 order.

16 A. (By Mr. Large) Yes, it's under the heading
17 of "Merrimack Continued Unit Operations
18 Study." There was considerable dialogue, I
19 believe, in that docket about whether a CUO
20 should be conducted for Merrimack Station.

21 Q. Isn't it true that -- and I think the
22 Commission later modified that heading. I
23 think it recognized that that heading had
24 been improperly placed in that order. Do

1 you recall that?

2 A. (Mr. Large) I don't recall that. But I'd be
3 happy to take it, subject to check.

4 Q. Okay. And in the same order, did the
5 Commission require PSNH to include in future
6 Least Cost Integrated Resource Plans an
7 economic analysis of retirement for any unit
8 in which the alternative is the investment
9 of significant sums to meet new emission
10 standards and/or enhance or maintain plant
11 performance?

12 A. (Mr. Large) The section on Page 16 goes on
13 to say that, yes.

14 Q. I'm going to show you a copy of a response
15 to a data request from TransCanada in this
16 docket.

17 MR. PATCH: I'm going ask that
18 this be marked. It's TransCanada Set 4,
19 No. 5. And the responses are dated 12/16/11,
20 and it has your name as the witness at the
21 top.

22 CMSR. HARRINGTON: TransCanada
23 No. 3.

24 (The document, as described, was

1 herewith marked as TransCanada 3 for
2 identification.)

3 MR. PATCH: Thank you.

4 A. (By Mr. Large) Could we have an additional
5 copy for the remainder of my friends on the
6 panel?

7 (Document handed to Mr. Large.)

8 A. Thank you.

9 BY MR. PATCH:

10 Q. I would ask you, Mr. Large, to look at Roman
11 VI. And this asked that you provide the
12 actual net energy benefits realized by
13 Newington in the first 11 months of 2011 and
14 compare the results to the analysis used to
15 determine the ES rate in the Levitan real
16 option value approach. Could you read the
17 response that you provided.

18 A. (Mr. Large) Yes. In small Roman VI, we
19 objected to the request, identified that the
20 plan we submitted was complete and that the
21 net energy benefits were not reasonably
22 calculated to lead to discovery of
23 information that would be admissible. But
24 not withstanding that objection, we

1 identified that, excluding real-time
2 dispatch that appears to have been mainly
3 for operating reserves, PSNH estimates
4 Newington's energy margin using offer prices
5 for all of 2011 to be \$4 million. Using
6 accounting record fuel expense, including
7 days where the dispatch appears to have been
8 mainly for operating reserves would produce
9 a different value. Fuel accounting is done
10 on a monthly, not daily or hourly basis, and
11 includes No. 2 fuel oil not directly used
12 for dispatch. While it might be possible to
13 refine the accounting record using daily gas
14 billing information, and possibly daily fuel
15 use information, that information is not
16 readily available, whereas the offer prices
17 are. Offer prices on gas do not necessarily
18 reflect actual gas costs because the gas is
19 purchased only after Newington is provided
20 dispatch instructions, which is subsequent
21 to the Newington offers being submitted.

22 The final ES rate filing model
23 submitted on December 2010 for 2011
24 estimated Newington's energy margin to be

1 approximately \$0.7 million.

2 Q. So we had asked for the first 11 months of
3 2011, and it doesn't look as though you
4 provided that. Is that correct?

5 A. (Mr. Large) We objected to the question and
6 provided the information we felt provided a
7 reasonable response.

8 Q. Do you have actual numbers for 2011 now?

9 A. (Mr. Large) Not with me, as I sit here
10 today.

11 Q. Would you take a record request?

12 MS. KNOWLTON: I'm going to
13 object to that. Certainly, TransCanada could
14 have moved to compel if they felt that this
15 response was not sufficient, and they chose
16 not to do so. The time for filing a motion to
17 compel in response to this response is
18 certainly long overdue.

19 MR. PATCH: Well, if we filed a
20 motion to compel, I don't think the 2011
21 numbers would have been ready. I think it's a
22 reasonable record request at this point in
23 time, given where we are. I mean, we just
24 talked about CapEx numbers where they updated

1 with actual numbers for those years. And
2 that's all I'm asking for in this situation is
3 actual numbers for 2011.

4 MS. KNOWLTON: I have a
5 further -- may I state a further objection on
6 the basis of relevance?

7 CMSR. HARRINGTON: Sure.

8 MS. KNOWLTON: This CUO was
9 conducted and filed -- well, was filed with
10 the Commission in September 2010. The work
11 was done in the summer of 2010. And so,
12 certainly information on that was -- Mr. Patch
13 is seeking information from a time period
14 subsequent to that I don't believe is
15 relevant.

16 MR. PATCH: Well, if I could
17 just point out to the Commission, one of the
18 remedies that is requested in this docket is
19 that an independent consultant be hired to
20 complete a CUO study of Newington. So I think
21 it would be very useful for the Commission to
22 know whether actual numbers from 2011
23 correspond in any way to the numbers on which
24 Mr. Levitan relied and the numbers which PSNH

1 has provided.

2 (Off-the-record discussion among Commissioners.)

3 CMSR. HARRINGTON: We'll let you
4 make the request, Mr. Patch.

5 MR. PATCH: Okay. So, just to
6 be clear, that record request would be for the
7 actual numbers for 2011.

8 A. (Mr. Large) And clear as to what actual
9 numbers, just so we're all understanding?

10 CMSR. HARRINGTON: Is this as
11 stated in your Roman VI there, provide the
12 actual net energy benefits realized by
13 Newington in the first 11 months of 2011?

14 MR. PATCH: Yeah, that's
15 correct.

16 CMSR. HARRINGTON: So you're
17 basically asking for what's stated in
18 TransCanada Exhibit 3, Roman VI, on the first
19 page, but for the entire year and not just the
20 first 11 months.

21 MR. PATCH: Yeah, that's right.
22 For all of 2011.

23 CMSR. HARRINGTON: That would be
24 Record Request 1?

1 THE CLERK: No. 4.

2 CMSR. HARRINGTON: Four. Okay.

3 (The document, as described, was
4 herewith marked as TransCanada
5 Request Request 4 for
6 identification.)

7 BY MR. PATCH:

8 Q. Now, the estimates that you provided,
9 Mr. Large, in that response, one of them was
10 an estimate, in that second full paragraph
11 on the second page of TransCanada Exhibit 3,
12 under Roman VI. "PSNH estimates Newington's
13 energy margin using offer prices for all of
14 2011 to be \$4 million"; is that correct?

15 A. (Mr. Large) That's what I read, yes.

16 Q. And yet, in December of 2010, the estimate
17 had been .7 million, or \$700,000?

18 A. (Mr. Large) Yes, for the energy service
19 rate.

20 Q. Can you explain why there was such a
21 significant difference?

22 A. (Mr. Large) I think, simply put, the unit
23 operated at a lower capacity factor than had
24 been originally considered, and that energy

1 prices, therefore energy margin, was lower
2 than had been previously considered.

3 Q. Why would that explain going from 700,000 to
4 4.0 million?

5 A. (Mr. Large) Well, if the market price for
6 power was lower, the unit would likely
7 operate less, and therefore, the margins
8 associated with the benefits to be derived
9 would be smaller.

10 Q. And the number that Mr. Levitan used that
11 would correspond with this number, are you
12 familiar with that number? I believe it's
13 on Page 232 of the total IRP pages. So I
14 guess that's a Bates number. I think it was
15 4.486 million.

16 CMSR. HARRINGTON: Which
17 document are you referring to, Mr. Patch?
18 Exhibit 1?

19 MR. PATCH: Well, it's the
20 actual IRP. So is that PSNH No. 1?

21 CMSR. HARRINGTON: Yeah, PSNH
22 Exhibit 1.

23 MR. SPEIDEL: And I think for
24 the benefit of the hearing room, Mr. Patch,

1 you're referring to Bates Page 232, or Page 49
2 of the Newington study?

3 MR. PATCH: That's correct.

4 MR. SPEIDEL: Thank you.

5 A. (Mr. Large) What I see on Exhibit G.17,
6 which is the reference page on net revenue,
7 the bottom number in the "2011" column in
8 the "Expected Value" section is \$4.48
9 million.

10 Q. And that's actually the corrected page; is
11 that right?

12 A. (Mr. Large) It's the study that was filed on
13 4/26/11.

14 Q. Okay. The original net revenue was 2.1;
15 correct? That was corrected to -- actually,
16 I guess the original net revenue was
17 9 million, and it was corrected to --

18 (Court Reporter interrupts.)

19 Q. Let me withdraw that question. I want to
20 make sure I get the numbers right.

21 CMSR. HARRINGTON: The corrected
22 numbers are on which exhibit, Mr. Patch?

23 MR. PATCH: Well, is it PSNH 3
24 with the corrected numbers? There's the

1 original IRP, which I think is No. 2, and then
2 the corrected pages, the CUO study --
3 actually, those are PSNH 2, as I understand
4 it. PSNH 1 is the original IRP with the
5 original CUO study, and PSNH 2 is the
6 corrected pages.

7 BY MR. PATCH:

8 Q. So, Mr. Large, I don't know if you can
9 provide to the Commission a comparable
10 number to the one that you provided in
11 response to that data request that Mr.
12 Levitan uses. Is there a comparable number
13 or not?

14 A. (Mr. Large) A comparable number to what, Mr.
15 Patch? I'm sorry.

16 Q. Well, TransCanada No. 3, Roman VI, we had
17 asked you to please provide the actual net
18 energy benefits realized by Newington. And
19 I guess what I'm asking for is whether Mr.
20 Levitan had a number that would correspond
21 to that. Obviously, it would not be actual,
22 but it would be net energy benefits assumed
23 by Mr. Levitan.

24 And Mr. Levitan, if you want to answer

1 this question, that's fine.

2 A. (By Mr. Levitan) Sure, I'd be happy to. I'm
3 sure in our model we do have data that would
4 correspond on a probabilistic basis using a
5 stochastic approach employed for real option
6 valuation for a net revenue for 2011. Of
7 course, it was conducted on an annual basis.

8 Your Question VI references the first
9 11 months. I'm not sure we can sort that
10 out, but we do have on annual basis the
11 results.

12 Q. And is that the 4.486 million number in the
13 Expected Value box in Exhibit G.17?

14 A. (By Mr. Levitan) Yes.

15 Q. And the original number that you provided --
16 that was the corrected number I just read.
17 The original number you provided was
18 15.7 million.

19 A. (By Mr. Levitan) Yes. And that was based on
20 an erroneous specification that Dr. Carlton
21 addressed in terms of model flaws that were
22 corrected in April of 2011.

23 Q. And that's -- and we're talking about
24 basically the same number that PSNH

1 estimated as being \$700,000 when it did the
2 estimate for the ES study in 2010.

3 A. (By Mr. Levitan) One is a simulated
4 risk-adjusted result, and the other is an
5 expected -- is an actual number. So, with
6 distinction in mind, and that is a very
7 important distinction, they represent an
8 estimation of performance versus the actual
9 net margin realized in the market. And of
10 course, it's important to note that the fuel
11 price forecast in the summer of 2010 was
12 remarkably higher across the board than
13 actual fuel prices that materialized in
14 2011 -- in particular, the second half of
15 2011, when natural gas prices across North
16 America weakened, and in particular key
17 pricing points across New England.

18 Q. But I think you referenced, you said, an
19 actual number. That's not -- the 700,000
20 figure was not an actual number. That was
21 an estimate by PSNH for the purposes of the
22 ES docket. So that's not an actual number;
23 is that correct?

24 A. (By Mr. Levitan) I did not derive the

1 number, so I can't comment.

2 Q. Okay. Mr. Large, back to you. You're
3 familiar with the Charles River Associates
4 studies on the impacts of Northern Pass
5 that's been the subject of a motion to
6 compel in this docket and a Commission
7 order?

8 A. (Mr. Large) I have familiarity with it, yes,
9 and did address questions with respect to it
10 in my rebuttal testimony.

11 MR. PATCH: I have a copy of
12 this report. I would request this be marked
13 as the next exhibit.

14 CMSR. HARRINGTON: This will be
15 TransCanada --

16 THE CLERK: Five.

17 CMSR. HARRINGTON: TransCanada
18 5, LMP and Congestion Impacts of Northern Pass
19 Transmission Project Final Report.

20 (The document, as described, was
21 herewith marked as TransCanada 5 for
22 identification.)

23 Q. Is this a copy of that study?

24 A. (Mr. Large) I believe it to be so, yes.

1 Q. This study says that Northern Pass
2 transmission would provide -- I'm looking
3 here at Page 1, and I'm looking about five
4 or six lines down. It says that Northern
5 Pass would provide 1200 megawatts of
6 capacity, "allowing a significant amount of
7 power generated by plants burning fossil
8 fuels to be replaced with imported power
9 generated predominantly by hydroelectric
10 facilities in Quebec." Is that what it
11 says?

12 A. (Mr. Large) Other than your characterization
13 of 1200 megawatts of "capacity." The report
14 says "power."

15 Q. Okay. And one of the conclusions of this
16 study -- and this is on Page 34 -- one of
17 the conclusions is that the addition of the
18 Northern Pass Transmission Project has a
19 pronounced and continuing effect on the New
20 England power market. Is that correct?

21 A. (By Mr. Large) The conclusion at Section 5
22 identifies those words as you said, yes.

23 Q. And you, Mr. Large, I think have indicated
24 in your testimony, both on the stand and

1 your written testimony, that you were
2 basically in charge of putting the IRP
3 together and also in charge of directing the
4 CUO study; is that correct?

5 A. (Mr. Large) Yes, I have overall
6 responsibilities for both of those filings.
7 That's correct.

8 Q. So was it your decision that Mr. Levitan --
9 or Levitan Associates, be directed not to
10 take this project into account?

11 A. (Mr. Large) Yes.

12 Q. In your rebuttal testimony at Page 19, Lines
13 27 to 29 --

14 CMSR. HARRINGTON: Excuse me.
15 What exhibit number is that so we're all on
16 the same one?

17 MR. PATCH: I'm sorry?

18 CMSR. HARRINGTON: The exhibit
19 number.

20 MR. PATCH: I don't have the
21 exhibit list in front of me. I'm sorry. But
22 it's the --

23 CMSR. HARRINGTON: Looks like
24 it's PSNH 3.

1 MR. PATCH: PSNH 3. Thank you.

2 BY MR. PATCH:

3 Q. Mr. Large, Page 19, Lines 27 to 29.

4 A. (Mr. Large) I have it.

5 Q. And there you had indicated that, at the
6 time the analysis was begun in June of 2010,
7 you concluded it should be -- "it" meaning
8 the NPT consideration -- should be excluded
9 because the line had not received the
10 approvals and permits that it needed; is
11 that correct?

12 A. (Mr. Large) That is what I stated in that
13 testimony, yes.

14 Q. I'm going to show you a copy of a PSNH
15 response dated December 18th, 2011 to a data
16 request from TransCanada, TC4-4, Set 4, No.
17 4.

18 MR. PATCH: And I'd ask that it
19 be marked.

20 (The document, as described, was
21 herewith marked as TransCanada 6 for
22 identification.)

23 CMSR. HARRINGTON: This will be
24 marked as TransCanada 6.

1 THE CLERK: Correct.

2 CMSR. HARRINGTON: It's Data
3 Request TC4-4, dated 12/16/2011.

4 BY MR. PATCH:

5 Q. You're listed as the witness on this
6 particular response; is that correct?

7 A. (Mr. Large) Yes, I am, but certainly in
8 consultation with our team.

9 Q. And Question 5 asked you to state whether
10 PSNH believes there are any approvals for
11 Northern Pass that are in doubt. Can you
12 read the response?

13 A. (Mr. Large) I'd be happy to. The response
14 begins with Items i through ix, where we
15 object to the request on the basis that it's
16 argumentative and seeks information that's
17 not going to reasonably be calculated to
18 lead to discovery of information that would
19 be admissible in this proceeding.

20 The status of any given transmission
21 project that was in the early planning stage
22 in mid-2010 isn't relevant to the Newington
23 CUO. In addition, information regarding the
24 status of such projects is equally available

1 to the requestor, which is a member of
2 ISO-New England. To the extent any
3 information isn't public and relates to the
4 Northern Pass transmission lines it's
5 confidential and subject to attorney/client
6 privilege.

7 Notwithstanding that, am I correct it
8 was Roman VI you were referring to, Mr.
9 Patch?

10 Q. Actually, Roman V.

11 A. (Mr. Large) Neither I nor PSNH possesses
12 knowledge of any approvals that are in doubt
13 by the Northern Pass entity.

14 Q. Now, obviously, this is a little bit later
15 in time from when the study was prepared.
16 But do you know what happened with regard to
17 Northern Pass between the time the study was
18 prepared and this particular date that would
19 cause you to say they were in doubt at that
20 point, but they're not in doubt then?

21 MS. KNOWLTON: Mr. Patch, I'd
22 ask you to clarify when you refer to "the
23 study," what study you mean.

24 MR. PATCH: Well, I guess I'm

1 speaking about the CUO prepared by Levitan
2 Associates.

3 A. (Mr. Large) Well, I'll attempt to respond,
4 Mr. Patch, because at Page 19 of my
5 testimony, I don't use the words "in doubt."
6 I said that they had not been received and
7 needed for the project to move forward. So
8 that's not a discussion about doubt. It's a
9 statement about permits having been
10 received.

11 BY MR. PATCH:

12 Q. Okay. So you didn't have any doubt in the
13 summer of 2010 that they would be received?

14 A. (Mr. Large) No. And that's what the
15 response in Roman V says.

16 Q. Well, I thought you were just referring to
17 your testimony on Page 19, where you said it
18 wasn't about doubt.

19 A. (Mr. Large) If I could have the reporter
20 reread what the original question was,
21 because my interpretation of what you asked
22 was about there being doubts as identified
23 in my testimony and then doubt as
24 established in the data request. And my

1 point was to say that my testimony did not
2 refer to "doubt."

3 Q. Well, did you have any doubt in the summer
4 of 2010 about approvals? Is that why you
5 told Levitan Associates not to include it,
6 because there was some doubt?

7 A. (By Mr. Large) It wasn't a question of
8 doubt. It was a question of the
9 appropriateness in considering it for this
10 analysis, when in fact our transmission team
11 and the transmission portion of the least
12 cost planning docket had excluded it from
13 their plan, and it was clearly premature for
14 it to be considered. And it was in
15 discussion with our teammates from Levitan
16 that we agreed to that conclusion. But I
17 own responsibility for the recommendation
18 that it be excluded.

19 A. (By Mr. Levitan) And if I may supplement,
20 Mr. Large's response. As an independent and
21 objective consulting firm, we welcome the
22 opportunity to thrash out with PSNH the
23 reasonableness of not including NPT in the
24 study. And after careful and measured

1 consideration, it was a very easy call to
2 reject its inclusion, since we knew in the
3 summer of 2010 that there's no chance that
4 the project was going to be commercialized
5 in the 2014, 2015 time frame. And we
6 recognize the legitimate triggers of
7 commercial success: ISO system impact
8 studies, ISO queue positions, environmental
9 permits, financing, a clear commitment by HQ
10 in Quebec to line up the financing to
11 support the bill for exportation. All of
12 these things were relevant in reaching that
13 decision in 2010 to exclude NPT from the
14 study design. It was on that basis that we
15 bolted down the metrics and ran the numbers.

16 Q. So, no chance at all, Mr. Levitan? In 2010,
17 no chance at all it was going to be ready in
18 that time frame? Is that what NPT -- excuse
19 me. Let me finish the question. Is that
20 what NPT officials were saying at that time?

21 A. (By Mr. Levitan) I am not certain what NPT
22 officials were saying at that time. I know
23 I was cognizant of their expressions of
24 support for the project. But of course, it

1 goes so far beyond NPT itself to include
2 HQ's commitment as a provincial entity to
3 enter into the financial commitments and to
4 do the bill and to commit the resources in a
5 weak energy marketplace, both for capacity
6 and energy, when the market expectations had
7 shifted radically from what was initially
8 contemplated when gas was \$8 to \$10 per
9 million BTUs. So, for those reasons, and,
10 in particular, the lack of an ISO queue
11 position and the lack of rightness with
12 respect to environmental permits and other
13 requirements, it seemed very clear to us, as
14 a transmission modeling team, that the
15 project would not be operational in the
16 first half of the study horizon.

17 A. (Mr. Large) Additionally, that's supported
18 by what the Northeast Utilities Transmission
19 Organization that filed a document as part
20 of the Least Cost Plan indicated, that NPT
21 was not included in their plan horizon
22 through 2015.

23 Q. Is that what they were saying publicly at
24 that time, or is that just an internal

1 document?

2 A. (Mr. Large) Least Cost Plan section on
3 transmission was filed as part of this
4 docket.

5 Q. No, but my question is the time frames that
6 you're talking about for when Northern Pass
7 was going to be operational. Is what you
8 just said consistent with what they were
9 saying publicly at that time?

10 MS. KNOWLTON: I'm actually
11 going to object because that's a
12 mischaracterization of the testimony that's
13 been given. I think what the witnesses have
14 testified to is the period in which it would
15 not be operational.

16 A. (By Mr. Levitan) And we noted from our
17 advisory firm's substantial expertise with
18 HVDC projects elsewhere in the greater
19 Northeast what it takes to get them built
20 even when there are signed contracts
21 anchoring the project.

22 Q. Mr. Large, I'm going to show you a copy of a
23 response to a data request from TransCanada,
24 Set 3, No. 2, and ask that it be marked as

1 an exhibit.

2 CMSR. HARRINGTON: Any
3 objections to marking this?

4 (No verbal response)

5 CMSR. HARRINGTON: Okay. This
6 will be TransCanada No. 7.

7 (The document, as described, was
8 herewith marked as TransCanada 7 for
9 identification.)

10 MR. PATCH: Thank you.

11 BY MR. PATCH:

12 Q. Now, Mr. Large, you're listed as the witness
13 on this response; is that correct?

14 A. (Mr. Large) I am, but certainly in
15 consultation with our team members,
16 including the Levitan team.

17 Q. And so you're familiar with the response,
18 obviously.

19 A. (Mr. Large) Yes, I am.

20 Q. And this shows the data on Newington Station
21 costs revenues and margins from the CRA
22 studies for the years 2015, 2016, 2018; is
23 that correct?

24 A. (Mr. Large) Yes, that's one view of the

1 world as presented in our CRA analysis, yes.

2 Q. Could you please take a look at the Levitan
3 study, Page 49. And I'm looking at
4 corrected Page 49, so I think that's part
5 of...

6 CMSR. HARRINGTON: Mr. Patch,
7 are you referring to the original Exhibit 1
8 Page 49?

9 MR. PATCH: No, it's PSNH 2.
10 That's the corrected pages.

11 CMSR. HARRINGTON: All right.

12 BY MR. PATCH:

13 Q. And again we're at G.17. At the box at the
14 top, Expected Value, do you see the line
15 Energy Revenue for the year 2015?

16 A. (Mr. Large) I have that. 29,886,000.

17 Q. And what's -- or okay. The CRA has for a
18 base number for 2015 what figure?

19 A. (Mr. Large) It appears \$1,219,000.

20 Q. So that's about a \$28 million difference,
21 roughly?

22 A. (Mr. Large) Yes.

23 Q. And for year 2016, what's the number that
24 Levitan has?

1 A. (Mr. Large) 30,223,000.

2 Q. And what's the number that the CRA study
3 has?

4 A. (Mr. Large) 796,000.

5 Q. So, again, we're talking about \$29 million
6 difference, ballpark?

7 A. (Mr. Large) If one believes that the CRA
8 analysis is an accurate representation of
9 what Newington's benefits or energy revenues
10 are going to be, that's what -- you would
11 reach that conclusion.

12 Q. Who commissioned the CRA study?

13 A. (By Mr. Large) Northeast Utilities
14 Transmission Organization.

15 Q. And for the year 2018, what's the number
16 that Levitan has?

17 A. (Mr. Large) 24,323,000.

18 Q. Actually, I think the comparable number is
19 30,887,000.

20 A. (Mr. Large) Oh, I'm sorry. Down by a line.
21 30,887,000. Thank you.

22 Q. And what does the CRA have for a base number
23 for 2018?

24 A. Energy revenue of 2,417,000.

1 Q. So, actually, the CRA study does sort of
2 both, with and without NPT. If you look at
3 the numbers, they have base and they have
4 NPT numbers. But either way, the numbers
5 are not significantly different. But in any
6 event, they are significantly different than
7 the ones Mr. Levitan provided, aren't they?

8 A. (By Mr. Large) They're different, yes, as
9 pretty much any analysis that attempted to
10 analyze such a variable would be. But I
11 wouldn't begin to conclude that they are
12 accurate or more accurate. As a matter of
13 fact, I would find them to be far less
14 accurate because they didn't account for and
15 care for the actual operation of Newington
16 Station that the Levitan model does.

17 A. (By Mr. Levitan) And I would also point out
18 that the Charles River analysis is a
19 pinpoint, terministic study used in a math
20 model of a conventional simulation tool;
21 whereas, the real option valuation technique
22 is grinding through 250 scenarios,
23 accounting for all sorts of uncertainty
24 factors in terms of market key rates,

1 natural gas costs or oil gas parity ratios
2 and the like. They didn't do that, nor did
3 they even begin to contemplate the hedge
4 value of the asset in terms of PSNH's use.
5 But most importantly, the numbers represent
6 very different states, since they're running
7 a but-for test with and without NPT.

8 In our analysis, we didn't include NPT,
9 which is exactly the point. If Charles
10 River is right, and in fact Newington's
11 energy margins are crushed following the
12 injection of 1200 megawatts of energy per
13 hour, then it will have a significant
14 economic implication in a weak capacity
15 market for Newington's future. Why roll the
16 dice on its inclusion when you really don't
17 know in 2010, 2011 and the like? All that
18 leads you to is the premature retirement of
19 the plant. So, with that abundance of
20 caution, the decision was made once again to
21 run it without NPT.

22 A. (By Mr. Large) If I could add, another point
23 of difference between the two analyses is
24 that CRA, when they were running the GE maps

1 model, was making use of publicly available
2 data on generators throughout the region;
3 whereas, we had access to PSNH's operating
4 performance -- operating behavior data for
5 the plant, in terms of minimum run time,
6 ramp rates, cold and hot start costs, et
7 cetera. So, for the limited amount of data
8 that we were able to observe from the CRA
9 study, it appeared that it was using older
10 data, and perhaps not even accurate as older
11 data. It was different. And so it tended
12 to show that the minimum up-time would be
13 much longer. So, in order to be able to be
14 dispatched for a much longer minimum
15 up-time, it would have to have a higher
16 spark spread; whereas, the operating
17 performance now of Newington is able to take
18 into account some of the daily ups and downs
19 of the energy spark spread.

20 Q. Mr. Large, looking back at the CRA study,
21 again commissioned by Northeast Utilities,
22 I'd ask you to take a look at Page 4 under
23 Section 2.1. And at the end of the first
24 paragraph, if you could read to me the last

1 sentence in that first paragraph.

2 A. (Mr. Large) Page 4, the Background section,
3 Mr. Patch, is that what you're referring to?

4 Q. No, it's not the Background section. It's
5 the regular Page 4, not in Roman numerals.

6 CMSR. HARRINGTON: Which
7 document are we in, Mr. Patch?

8 MR. PATCH: We're in the CRA
9 study. Sorry, but I don't recall --

10 MR. SPEIDEL: TransCanada 5.

11 CMSR. HARRINGTON: TransCanada
12 5.

13 MR. PATCH: Thank you.

14 BY MR. PATCH:

15 Q. Page 4, Section 2, Background, 2.1, last
16 sentence in the paragraph, if you could read
17 that, please, for the record.

18 A. (Mr. Large) Yes. That sentence says that
19 major construction is expected to begin in
20 2013, with a target in-service date of 2015.

21 Q. And Mr. Large, again, this report is
22 dated -- do you know what the date is on it?
23 December 7, 2010; is that correct?

24 A. (Mr. Large) The copy that you provided

1 doesn't have a date on it, Mr. Patch. But
2 I'll accept that, subject to check.

3 Q. I think if you look at the bottom, second
4 page --

5 A. (Mr. Large) I see that now, yes. The cover
6 doesn't include that.

7 Q. Okay. Thank you. And it was commissioned
8 by Northeast Utilities. And actually, the
9 report was prepared -- you know, my guess.
10 You tell me if I'm wrong -- five or six
11 months after you prepared the IRP in this
12 docket; correct?

13 A. (Mr. Large) Five or six months after we
14 filed it, yes.

15 Q. Okay. As you indicated before, you have
16 responsibility for preparing the IRP. And I
17 guess one thing I have a hard time
18 understanding, based on the responses that I
19 heard to various questions this morning in
20 the discussion about the non-disclosure
21 agreement, you clearly understood that the
22 IRP was going to be presented to the
23 Commission, the Public Utilities Commission,
24 in a public forum; is that correct?

1 MS. KNOWLTON: I'm going to
2 object to the line of questioning, to the
3 extent that you're asking about the IRP. That
4 phase of this case has already been heard.

5 CMSR. HARRINGTON: Mr. Patch.

6 MR. PATCH: I'm not sure I
7 understand that. I have a couple of sort of
8 foundational questions I'd like to ask first.
9 But I guess --

10 MS. KNOWLTON: I mean, Mr. Large
11 was on the witness stand for two days on the
12 IRP. We're here today on the CUO. So, you
13 know, I think questions about the CUO are the
14 focus of his examination today.

15 MR. PATCH: Okay. Well, my
16 question actually, if you let me get there,
17 relates to the CUO.

18 (Off-the-record discussion among Commissioners.)

19 CMSR. HARRINGTON: All right.
20 We'll listen for a little bit, but we don't
21 want to regress back into the IRP portion of
22 the docket.

23 MR. PATCH: No, understood.

24 BY MR. PATCH:

1 Q. I guess it's clear from the record,
2 Mr. Large, that you had responsibility for
3 the preparation of the IRP, so I won't ask
4 you that question again.

5 But you understood, did you not, that the
6 IRP and the CUO study would be something that
7 would have to be presented publicly in this
8 case? Is that correct?

9 A. (Mr. Large) That was the whole intent of the
10 preparation of those filings. Absolutely.

11 Q. So, I'm just having a problem understanding
12 why you would not have instructed Levitan
13 Associates with regard to the data on which
14 they relied, but it would have to be
15 information available publicly at the time
16 that the report was presented, because I
17 heard a lot of discussion this morning about
18 various inputs that were protected or too
19 expensive to provide. You want us to see
20 the outputs but apparently not the inputs.
21 So, could you explain that to me.

22 A. (Mr. Large) Well, the work done by Levitan
23 was to examine what they felt were the best
24 sources of information available to produce

1 the highest quality output product in the
2 CUO that was possible. And their choice of
3 using Bloomberg information was based upon
4 their experience and historic use of that
5 information. I believe I heard from my
6 friends, Mr. Carlton and Mr. Levitan, that
7 they were unclear until a later point in
8 time about the lack of accessibility on a
9 public basis of the Bloomberg information.
10 I believe I heard that said earlier. So I
11 take it their expectation was that wasn't an
12 issue, and that substantial time, energy and
13 expense went into trying to resolve those
14 issues, and when found unresolvable, provide
15 alternatives that would be perfectly
16 consistent with, in the specific case of
17 Bloomberg information, that data. And if I
18 misstated or left something short on that
19 response, please feel comfortable to add.

20 A. (By Mr. Levitan) As a licensee, we were
21 under rigid requirements that required us to
22 protect the information. It was disclosed
23 in graphic form in the form of basis
24 spreads. But the actual data itself in

1 electronic format could not be provided, or
2 it would have been a breach of our
3 obligation.

4 Q. Those are the only numbers you have used?

5 A. (By Mr. Levitan) No. There was lots of data
6 that we could have used, all pretty much
7 taking you to the exact same place: Platts,
8 you know, EIA data. These data sets are
9 commonly available to all consultants and
10 Staff Commission and other market
11 participants.

12 We based our analysis on Bloomberg
13 because we're comfortable using them, and
14 they're embedded in our models. Frankly,
15 this had never come up before, in terms of
16 public disclosure, cross-examination and the
17 like. If given the opportunity to do it
18 over again to avoid this kind of
19 controversy, I would have easily made the
20 decision to use some data sets in the public
21 sector so as to avoid this kind of extended
22 argument. But again, it wouldn't have
23 changed a thing with respect to the results.

24 Q. Okay. I have a few questions for Mr.

1 Smagula and Ms. Tillotson, since you filed
2 your testimony together.

3 In that testimony, the two of you say
4 that you jointly have more than 50 years'
5 experience monitoring the regulatory
6 environment in order to plan for and implement
7 any environmental regulations that apply to
8 the Company's operations. And I was looking
9 at Page 8, Lines 4 to 6. Does that sound
10 familiar to you?

11 A. (By Mr. Smagula) Yes.

12 Q. And you also say that you are constantly
13 monitoring the status of regulations;
14 correct?

15 A. (By Mr. Smagula) Yes.

16 Q. And you say that PSNH needs to wait until a
17 final rule is established with a compliance
18 date in order to begin planning; correct?

19 A. (By Mr. Smagula) That's correct.

20 Q. And you say that quality planning must be
21 based on final regulations; correct?

22 A. (By Mr. Smagula) Yes.

23 Q. At the same time in your testimony, you
24 cited the Commission's December 28, 2010

1 letter that's been marked in this docket as
2 TransCanada No. 1, Pages 13 and 14 of your
3 testimony. And that letter says that a
4 sound planning process should consider
5 reasonably foreseeable regulatory changes,
6 not just those where a final regulation with
7 a compliance date is in place; correct?

8 A. (By Mr. Smagula) I don't have the text in
9 front of me. But assuming you're correct,
10 I'll agree to it.

11 Q. It's Page 13 and 14 of your testimony, if
12 you want to double-check it.

13 A. (By Mr. Smagula) I'm sure it's correct.

14 MS. KNOWLTON: Mr. Smagula, I'd
15 just ask you to speak more into the
16 microphone. Thank you.

17 A. (By Mr. Smagula) I'll trust that your text
18 is correct.

19 BY MR. PATCH:

20 Q. Okay. Thank you. And given what that
21 letter lays out as basically a standard to
22 use, in the next IRP docket, would PSNH
23 utilize a different standard than the one
24 that you've articulated with regard to final

1 regulations with a compliance date? Would
2 you use a different standard next time?

3 A. (By Mr. Smagula) I think the standard we
4 used is as we had characterized it, and that
5 is consistent to what had been used in all
6 the preceding IRP dockets. In the future, I
7 guess I'm not going to assume what we will
8 use, but we will certainly take into
9 consideration all of the discussions here
10 and certainly review the ruling from the
11 Commission as to what would be appropriate
12 in future dockets and future analysis. I
13 think there has been much discussion about
14 what should or should not be included and
15 things that certain parties may have thought
16 were appropriate. But if we look at what
17 we've done in the past and we look at our
18 traditional planning process, we filed
19 consistent with both of those.

20 Q. And so, then, it sounds like direction from
21 the Commission and the order in this docket
22 with regard to what standard you ought to
23 use in the future might be helpful, because
24 it sounds like the Commission's standard

1 outline in the December 28th letter is
2 pretty different from the one that you
3 articulated in your testimony; correct?

4 A. (By Mr. Smagula) I guess I think I responded
5 to your question. I'm not sure I'd
6 characterize what the Commission should do
7 beyond that.

8 Q. All right. On Page 14, you say that at the
9 time the Company prepared the IRP, it did
10 not, in good faith and with prudence, commit
11 Company resources for planning for any
12 potential future compliance with any of --
13 and then you cited the proposed regulations,
14 the ones that had been cited by the Consumer
15 Advocate, Sierra Club and CLF; correct?

16 A. (By Mr. Smagula) That's correct.

17 Q. Now, given your many years of experience and
18 your self-described "constant monitoring of
19 regulations," if the plan were being
20 prepared today, are there any other
21 environmental regulations you would take
22 into account with regard to Newington
23 Station, given what the Commission said in
24 the December 2010 letter?

1 A. (By Mr. Smagula) You know, as I look at the
2 regulations that have been referenced, the
3 CUO has been, I guess I could characterize
4 it as criticized for not taking a review of
5 the regulations. But we have reviewed the
6 regulations. And I won't belabor everyone,
7 unless it's desired, to go through every
8 regulation and comment with regard to the
9 status of Newington and its compliance with
10 regard to the regulations on part and
11 visibility, Clean Air Transport Rule, or the
12 MAC Rule, and cite the condition of the
13 facility, the equipment that's been
14 installed, and our means of managing its
15 availability into the future, irrespective
16 of what these rules are, based on the fact
17 that it's gas-fired and it does have some
18 limited use of oil. We feel very
19 comfortable that our assessment of this unit
20 is very positive with regard to that
21 equipment that's installed. And the fact
22 that we didn't spend pages and go into it in
23 detail perhaps is something to reflect upon
24 in the future. So I think we're aware of

1 certain people's perception of this
2 projected need to meet in the future, but I
3 think the station is well positioned for it.

4 Q. Have you read the Levitan study?

5 A. (By Mr. Smagula) I have reviewed the Levitan
6 study.

7 Q. Are you familiar with the fact that he
8 assumed the retirement of 2100 megawatts of
9 generation?

10 A. I'm familiar that there was some megawatts,
11 but I don't recall the exact number.

12 Q. Well, I'd ask you to look at Page 38 -- and
13 I guess it would be Exhibit 1, Page 38 of
14 the CUO study, and it's Page 221 of the
15 overall plan.

16 A. (By Mr. Smagula) I have the page here.

17 Q. Okay. About four lines down there's a
18 sentence that begins with "Generally
19 consistent with the Connecticut IRP, we
20 assumed retirement of approximately 2100
21 megawatts of capacity over the period 2014
22 to 2016" -- and then the next phrase is of
23 particular interest to my question -- "due
24 to increasingly strict environmental

1 standards." Now, that sounds a little
2 different than the standard that you have
3 used in deciding whether or not to take into
4 account particular environmental
5 regulations.

6 A. (By Mr. Smagula) I think --

7 MS. KNOWLTON: Actually, I want
8 to state an objection for a minute, because
9 the standard that the Commission stated in the
10 December 2010 letter, as I understand it,
11 related to the IRP. And this is -- Mr.
12 Smagula's here testifying as to the CUO.

13 MR. PATCH: Well, my question of
14 whether Mr. Smagula -- maybe I wasn't clear
15 enough. But with regard to the standard that
16 he articulated when PSNH takes into account
17 environmental regulations, and that's the
18 standard basically, that they're and there's a
19 compliance date. And what I'm asking him is
20 that that's a little different than apparently
21 what Levitan Associates used as the basis for
22 assuming 2100 megawatts of capacity
23 retirement.

24 CMSR. HARRINGTON: Do you

1 understand the question?

2 WITNESS SMAGULA: Yes.

3 MR. PATCH: It's not a question
4 for Mr. Levitan. It's really for Mr. Smagula.

5 A. (By Mr. Smagula) Well, if I look at the
6 units that are referenced which characterize
7 the quantity of megawatts that are
8 identified, and I look at those units
9 specifically, because I do have some
10 familiarity with it, Norwalk Harbor units
11 are oil-fired. Montville 6 is an oil-fired
12 unit without a precipitate. Middletown 3 is
13 a cyclone-fired unit which will burn natural
14 gas. Bridgeport Harbor is an older facility
15 and so on.

16 So, talking about units being retired
17 and comparing them generically or
18 specifically with Newington Station is not
19 an appropriate measure. I'm satisfied that
20 the statement made is perhaps appropriate,
21 but its characterization and its linkage to
22 Newington cannot be made directly.

23 Q. Okay. But that wasn't my question, was it,
24 Mr. Smagula?

1 A. (By Mr. Smagula) Okay. Then I guess maybe
2 we'll -- I'll be happy to respond if you
3 could repeat it then. I'm sorry.

4 Q. I mean, it appears, based on the language
5 that Levitan Associates used in that portion
6 of the IRP, that they were just referring to
7 increasingly strict environmental standards;
8 whereas, you seem to rely specifically on
9 final regulations with a compliance date.

10 A. (By Mr. Smagula) I guess I provided you with
11 some input from me, but I'm not sure I'm the
12 appropriate one to comment on their study.
13 I may want to invite them to provide remarks
14 as well.

15 Q. Okay. I'll actually give Mr. Levitan that
16 opportunity a little bit later. I have some
17 questions for them as well.

18 A. (By Mr. Smagula) Okay. Good.

19 A. (By Mr. Levitan) Although, I would be happy
20 to comment now if you would appreciate the
21 clarification.

22 Q. Actually, I'd prefer to wait. Thank you.

23 You're familiar, Mr. Smagula, aren't you,
24 with the correction that Levitan Associates

1 had to make to the study? There was some
2 testimony about that this morning.

3 A. (By Mr. Smagula) I did hear some numbers
4 that were changed. I'm not as directly
5 familiar with the specifics of each, but I
6 understand generally what took place.

7 Q. I mean, as an example of -- I just want to
8 point you to net present value of the
9 expected energy net revenues reduced from
10 120 million to 40 million. And I'm
11 referencing Page 52 of the IRP -- actually,
12 of the -- I guess it's the CUO contained in
13 the IRP, and corrected Page 52, which would
14 be part of PSNH Exhibit 2. I don't know if
15 you want to take a look at that, but --

16 A. (By Mr. Smagula) I heard them correct the
17 number. I'm not sure what I can do to
18 assist you any further.

19 Q. Well, as an order of magnitude, from \$120
20 million to \$40 million, does that sound
21 consistent?

22 MS. KNOWLTON: And I'm actually
23 going to object to this line of questioning.
24 When Mr. Smagula took the stand in the case

1 this morning, and I asked him what his role in
2 the CUO was, I thought he was very clear that,
3 as a director of generation of PSNH, what he
4 did was provide some input data about the
5 operation of the plant. So, I mean, I really
6 feel like these questions are not properly
7 focused to Mr. Smagula's involvement in the
8 CUO.

9 MR. PATCH: Well, Mr. Chairman,
10 I'll actually withdraw that question for now
11 and lay a foundation for it.

12 I'd like to ask that a
13 response to TransCanada 3-1, with Mr.
14 Smagula as the witness, be marked as the
15 next exhibit.

16 CMSR. HARRINGTON: Any
17 objections to entering this?

18 (No verbal response.)

19 CMSR. HARRINGTON: Seeing none,
20 this will be TransCanada 7 -- 8.

21 (The document, as described, was
22 herewith marked as TransCanada 8 for
23 identification.)

24 Q. Are you familiar, Mr. Smagula, with this

1 response that has you listed as a witness,
2 dated June 3rd, 2011?

3 A. (By Mr. Smagula) I'm familiar with it, yes.

4 Q. And Paragraph C asks, "Does PSNH still
5 believe that the original Levitan work
6 'properly represents the expected value of
7 Newington to customers?'" Do you see that?

8 A. I do.

9 Q. Could you read the response.

10 A. (By Mr. Smagula) "PSNH still believes there
11 is a range of outcomes under which Newington
12 provides value to customers by being a
13 physical hedge against market prices, as
14 well as providing revenue to customers. The
15 original and revised Levitan study
16 quantifies the range of value Newington
17 provides. The differences in outcomes
18 predicted by the original and revised
19 Levitan studies are relatively small, and as
20 a result, PSNH believes that the original
21 Levitan work 'properly represents expected
22 value of Newington's customers.'"

23 Q. I wanted to focus on the phrase "relatively
24 small" and ask you whether a reduction from

1 120 million to 40 million -- basically, over
2 a 200-percent reduction -- is "relatively
3 small" in your opinion?

4 A. (By Mr. Smagula) I guess it seems as though
5 the number is about half or less than half
6 of what it was previously. Relatively
7 small, though, is relative to what? Is it
8 relative to zero, or is it relative to the
9 two numbers? So I guess it is a reasonably
10 good change. I don't know how to
11 characterize that any further.

12 Q. Okay. Mr. Smagula, are you familiar with
13 the capacity factors in recent years at
14 Newington Station?

15 A. (By Mr. Smagula) I am.

16 Q. And I believe in your testimony you referred
17 to them as -- and I'm looking at Page 15,
18 Lines 8 and 9, "a reduced capacity factor in
19 recent years." Does that sound correct?

20 A. (By Mr. Smagula) Yes.

21 Q. In fact, I don't know if you're familiar
22 with -- I'm going to give you a copy of this
23 Commission order. It's an order dated
24 December 21, 2009, approving the 2010 energy

1 service rate. And I would ask you to take a
2 look at this order at Page 17.

3 MS. KNOWLTON: Mr. Patch, could
4 you give us the order number.

5 MR. PATCH: Order 25,061 in
6 Docket DE 09-180. It's dated December 31st,
7 2009.

8 MS. KNOWLTON: Thank you.

9 BY MR. PATCH:

10 Q. And the first full paragraph describes
11 comments by Steve Mullen, the assistant
12 director of the Electric Division here at
13 the Commission. And it says there, "Mr.
14 Mullen noted that Newington Station had
15 become increasingly uneconomic, and as a
16 result, its capacity factor has steadily
17 declined from 55.9 percent in 2003 to
18 3.3 percent in 2008." Did I read that
19 correctly?

20 A. (By Mr. Smagula) Yes.

21 Q. So, at Page 16 of your testimony, Line 16,
22 you referred to, quote, anticipated
23 continued lower capacity factors; is that
24 correct?

1 A. (By Mr. Smagula) Yes.

2 Q. Do you know the capacity factors that
3 Levitan assumed?

4 A. (By Mr. Smagula) I would have to ask them or
5 refer to what they have on their study. I
6 don't have that number in my memory.

7 Q. I mean, subject to check, in the first round
8 it was 15 to 19 percent; and in the
9 corrected version, it was 7 to 10.7 percent.
10 I'm looking at the revised G.17. Subject to
11 check, would you accept that?

12 A. (By Mr. Smagula) Yes.

13 Q. And any of those numbers are higher than any
14 capacity factors that have been present at
15 Newington since 2007; is that correct?

16 A. (By Mr. Smagula) It is.

17 Q. Now, a couple of questions --

18 A. (By Mr. Smagula) I will add, however, that
19 we provided them with the information, and
20 their knowledge of fuel and other factors
21 creates their projection as to what the
22 operations of the facility will be. I do
23 not project the capacity factors.

24 Q. At Page 87 of the IRP itself, it describes

1 Newington Station as, quote, Designed as a
2 peaking unit for quick start-up." Does that
3 sound correct?

4 A. (By Mr. Smagula) That's a general
5 characterization of its design. That's
6 correct.

7 Q. And on the same page, "designed for fast
8 response and start-up."

9 A. (By Mr. Smagula) Yes, that's the same
10 concept.

11 Q. What's the cold-start time for Newington?

12 A. It has been reduced significantly from what
13 it had been in the past. I think at the
14 moment it's in the six- to seven-hour range,
15 subject to check.

16 Q. So if a nuclear unit were to go offline on a
17 summer afternoon at, say, 1:00, and
18 Newington was needed to come online from a
19 cold start, it would be, at a minimum, 7 or
20 8 p.m. before it would be producing power at
21 its capacity. Is that what those numbers
22 mean?

23 A. (By Mr. Smagula) The numbers we refer to as
24 six to seven hours to ISO are numbers that

1 we feel very comfortable with. If there is
2 a system emergency, it is my opinion that we
3 could improve that. But the ISO system
4 would fill that gap, would fill that period
5 of time with other resources that are more
6 readily available to come on until a more
7 economic unit could come on. And the fact
8 that Newington provides strength in the
9 345KV line from Vermont down into eastern
10 Massachusetts I think would be a very
11 important factor for it to get online
12 quickly.

13 Q. It's a 400-megawatt unit, and of those 400
14 megawatts, is it true about 80 megawatts are
15 designed for oil?

16 A. (By Mr. Smagula) No.

17 Q. How would you characterize it?

18 A. (By Mr. Smagula) It's a 400-megawatt unit
19 that can run very close to full load on gas,
20 on natural gas. However, if a full load is
21 needed, we supplement the gas with some oil
22 firing to get full load. It can achieve
23 full load on an oil or a oil/gas
24 combination, but not quite a full load on

1 all gas.

2 Q. In 2011, do you have any idea of what
3 percentage of the time Newington operated on
4 oil versus natural gas? Ballpark.

5 A. (By Mr. Smagula) I think it operated very
6 sparingly on oil. There have been some
7 problems with the natural gas supply system
8 at times where there was a deficiency in
9 availability, where Newington stepped in to
10 fill that gap for New England. But it was
11 very limited. Based on economics.

12 Q. And those economics being that the price of
13 oil is a lot higher than the price of
14 natural gas on an MMBtu basis; is that
15 right?

16 A. (By Mr. Smagula) I guess I view the price of
17 natural gas is a lot lower than oil.

18 Q. That's what I meant to say.

19 A. (By Mr. Smagula) And that's the current
20 market assessment with gas.

21 Q. I'm going to show you a copy of what I think
22 is a Form 1 document with regard to
23 Newington, and I believe this is for 2011.

24 MR. PATCH: And I would ask that

1 this be marked as the next exhibit for
2 TransCanada.

3 CMSR. HARRINGTON: Any objection
4 to marking?

5 (No verbal response)

6 CMSR. HARRINGTON: So this will
7 be TransCanada 9. It's a document from Public
8 Service Company of New Hampshire, "Steam
9 Electric Generating Plant Statistics," dated
10 2011/Q4 -- 4/9/12 I guess is the date.

11 (The document, as described, was
12 herewith marked as TransCanada 9 for
13 identification.)

14 BY MR. PATCH:

15 Q. Mr. Smagula, are you familiar with this
16 particular document?

17 A. (By Mr. Smagula) Not typically, but I have
18 had familiarity with it in the past.

19 Q. Now, if I'm reading this correctly, I mean,
20 Newington's in the far right column;
21 Schiller's in the column next to it. But
22 I'm interested in Newington. It has No. 6
23 oil barrels, No. 2 barrels and No. 6 gas;
24 correct? Down near the bottom?

1 A. (By Mr. Smagula) I see it, yes.

2 Q. And it looks as though the unit produced in
3 2011, 125 -- make sure I gets this right --
4 125,215-megawatt hours -- or kilowatt hours,
5 125,215,000; is that correct?

6 A. (By Mr. Smagula) Yes.

7 Q. That's Line No. 12.

8 I mean, overall in 2011, I think it was
9 approximately a 3.4 percent capacity factor.
10 Does that sound about right?

11 A. That could be right. I'd have to check
12 that.

13 Q. And it shows that --

14 CMSR. HARRINGTON: Excuse me,
15 Mr. Patch. Just for clarity, the writing on
16 the bottom of this, where it's written in by
17 hand "3.4 percent capacity factor," was that
18 produced by yourself, or does that come from a
19 Public Service document?

20 MR. PATCH: No, it was produced
21 by TransCanada.

22 CMSR. HARRINGTON: Okay. Thank
23 you.

24 MR. PATCH: And if you'd prefer,

1 we could submit a clean copy.

2 CMSR. HARRINGTON: No, I just
3 wanted -- and the bottom figure below that
4 says -- I'm not sure what it says. Check
5 97.32, slash, something fuel cost maybe?

6 MR. PATCH: Yeah, that's per
7 megawatt hour fuel cost. It was an estimate
8 done. I'm not sure I need to ask questions
9 about that.

10 CMSR. HARRINGTON: All right.

11 BY MR. PATCH:

12 Q. No. 6 oil barrels, if I read correctly, it's
13 83 million -- 83,126; is that correct? I'm
14 looking at, I guess it's Line 38.

15 A. (By Mr. Smagula) That's correct.

16 Q. And then No. 2 oil, 10,647 barrels.

17 A. (By Mr. Smagula) That's what's on the sheet,
18 yes.

19 Q. And then MCF looks as though it's 1,034,154
20 MCF of gas; right?

21 A. (By Mr. Smagula) That's correct.

22 Q. Now I'm going to ask you to take this,
23 subject to check. I mean, you're probably
24 familiar with the MMBTU conversion factor.

1 Do you know how to make that conversion to
2 an MMBTU figure?

3 A. (By Mr. Smagula) I don't have that with me
4 or in my head at the moment.

5 Q. Okay. Well, based on these numbers, would
6 it surprise you to learn that approximately
7 36 percent of the 2011 power actually was
8 produced by oil versus natural gas?

9 A. (By Mr. Smagula) That could be the case. I
10 guess I'd have to refresh myself on exactly
11 what we earned last year and when and why.

12 Q. I mean, you admitted that the price of oil
13 is obviously significantly higher right now
14 than the price of natural gas. So I'm
15 trying to understand, if that's the case,
16 why would PSNH have utilized so much oil as
17 opposed to natural gas in 2011?

18 A. (By Mr. Smagula) I think our choice is to
19 run the most economic fuel that's available.
20 And we bid our unit in on gas, and it's
21 based on gas price and gas availability. If
22 there are times when the system, when the
23 ISO-New England system has a problem with
24 the supply of natural gas, as I said

1 earlier, we occasionally will be actually
2 dispatched on oil.

3 Also, and I guess I'll have to confirm
4 all of this -- but also, we have certain
5 regulatory requirements that require us to
6 do testing periodically with our air permit
7 on oil. And there are times when,
8 irrespective of the incremental cost to
9 customers, we have a regulatory and
10 environmental obligation to operate the unit
11 on oil in order to achieve test data to
12 provide appropriate filings with our
13 regulatory community. So there are a number
14 of reasons why we do this.

15 We also sometimes have control system
16 modifications or other operational
17 characteristics of the unit which we need to
18 assure reliability of the unit in order to
19 prove that equipment is operating and
20 responding properly, when we would have to
21 operate the unit on the alternate fuel.

22 I think, if I recall, we were having
23 some start-up gas testing, so that the unit
24 traditionally would start up on oil and then

1 transfer to gas. We were doing testing so
2 that we could start up on just gas and be
3 able to more economically start our units,
4 which contributes to the shorter start time.
5 But it also contributes to our customers on
6 a lower-cost start-up, which makes it more
7 environmentally friendly, but also makes it
8 more economically friendly. I think there
9 were periods in which that start-up on gas
10 had to be adjusted and curtailed in order to
11 go into an oil start-up until that -- those
12 systems were proven.

13 So I believe our reasons to operate on
14 gas were driven by either environmental,
15 economic or various business decisions in
16 order to maximize the flexibility of the
17 unit and meet our regulatory or dispatch
18 obligations.

19 A. (Mr. Large) And if I could add, it's unclear
20 from your question, Mr. Patch when you speak
21 about taking the amount of oil that was
22 utilized, if you're referring only to the
23 RFO or the No. 2 oil, because if in fact it
24 included the No. 2 oil, that really doesn't

1 generate many megawatt hours. That's the
2 house heating oil, so...

3 Q. It was both, No. 6 and No. 2.

4 A. (Mr. Large) So I think a more accurate
5 computation would exclude the No. 2 oil from
6 the percent of megawatt hours made.

7 Certainly the numbers on the page, you could
8 do that arithmetic and come up with the
9 value that you did. But in terms of making
10 megawatt hours, it's not producing megawatt
11 hours.

12 Q. Does it all go to running the station,
13 either way?

14 A. (By Mr. Smagula) Well, it doesn't go into
15 the cost to generate megawatt hours.

16 Q. And ratepayers pay for all of that, right,
17 regardless of whether it's No. 2 or No. 6;
18 right?

19 A. (By Mr. Smagula) That's correct.

20 Q. Okay. I'm going to show you -- this is
21 "Monthly Average Fuel Price and RT Hub LMP."
22 This is an ISO document that shows the price
23 of oil and dates back to 2003. But
24 through -- it has projections, actually,

1 through September of 2012. It's an ISO
2 document. And this is really just to
3 underscore something that you already
4 indicated, which is that the price of oil is
5 obviously, at this point in time, anyway,
6 and at least in the fairly recent past,
7 significantly higher than the price of
8 natural gas. And, again, in my mind, at
9 least it raises the question of why you
10 would be burning oil at all unless you
11 absolutely had to during 2011. Maybe you
12 want to respond to that?

13 A. (By Mr. Smagula) I did respond to that. I
14 told you that there are operational and
15 regulatory and other reasons why we burn
16 oil. Other than those reasons, we
17 absolutely burn the lowest-cost fuel, or as
18 you can see from the capacity factors, we
19 purchase energy on the open market.

20 A. (Mr. Large) If I can, my take is that these
21 are monthly average values, and it doesn't
22 recognize the fact that there are days and
23 hours in which natural gas prices are
24 substantially higher than oil. And the

1 beauty and benefit of having a station like
2 Newington, with dual fuel capacity and the
3 ability to run at or near full load, takes
4 full advantage of the fact that on those
5 days when there are very high natural gas
6 prices or lack of availability of natural
7 gas, it can operate on oil, and does.

8 A. (By Mr. Smagula) If I had anticipated your
9 question further, I would be able to become
10 very specific with you. But I think my
11 characterization of the different reasons we
12 burn oil should explain why we do it. We
13 only do it if we need to do it.

14 MR. PATCH: Mr. Chairman, I'm
15 not sure that I requested that this be marked
16 as an exhibit, but I would request that it be
17 marked.

18 CMSR. HARRINGTON: That would be
19 TransCanada 9 -- 10?

20 THE CLERK: Ten.

21 (The document, as described, was
22 herewith marked as TransCanada 10
23 for identification.)

24 BY MR. PATCH:

1 Q. Mr. Smagula, I'd like to ask you to look at
2 Page 9, I believe it is, of the CUO study.
3 Appendix G, about four lines down in the
4 first full paragraph where it says, "The
5 station has a 12-hour cold start-up time."
6 Now, that sounds inconsistent with your
7 testimony that it's a six- to seven-hour
8 start-up time. Maybe you could explain
9 that.

10 A. (By Mr. Smagula) Well, it was my
11 recollection that it was a seven- to
12 eight-hour cold start.

13 Q. Seven to eight? I thought you said six to
14 seven.

15 A. (By Mr. Smagula) If I said six to seven -- I
16 think I did say six to seven. I'm not sure.
17 I could... I'd have to check on that number.
18 I may have recalled the time for a hot start
19 being six to seven hours. But on a cold
20 start, it could be longer. It would be
21 longer, but I...

22 Q. Okay. Okay. Mr. Levitan and Dr. Carlton,
23 I'm prepared to ask you a few questions now.

24 I mean, obviously, we've been through the

1 corrections that were made to the studies, so
2 I don't see the need to belabor that. It
3 sounded like they were grouped into at least
4 two different categories; one were corrections
5 that were made, I think as you said, on Page
6 15 of your testimony, after legitimate
7 questions were raised in the first round of
8 discovery and at the first technical session.
9 So in fact, you didn't make the corrections on
10 your own. It was only after TransCanada and
11 others raised questions that you made them; is
12 that correct?

13 A. (By Mr. Levitan) We made the corrections on
14 our own. We appreciated Mr. Hachey's
15 constructive criticisms at that first
16 technical session which revealed defects in
17 the results and then motivated us to go back
18 and do a deep dive into the programming
19 code, the assumptions and the like, at which
20 point we quickly found problem areas and
21 moved to correct them at once.

22 Q. On Page 15, Line 20 of your rebuttal
23 testimony, you made it sound as though there
24 were time constraints on the completion of

1 the study. Could you explain that.

2 A. (By Mr. Levitan) Page 15, Line 20?

3 Q. Yes.

4 A. (By Mr. Levitan) The production process in
5 the summer of 2010 was less ideal. We got a
6 bit of a late start, and we found ourselves
7 challenged to accomplish a great deal of
8 programming and technical analysis with an
9 eye toward a September filing date. I would
10 defer to my colleague, Dr. Carlton, to flush
11 out some of the additional challenges.

12 A. (By Mr. Carlton) As Mr. Levitan stated, we
13 didn't get the go-ahead until a little bit
14 later than we had initially anticipated,
15 based on our proposal discussions. In that
16 initial proposal there was this framework
17 specified of doing a real option valuation
18 analysis for which we needed to do some
19 from-scratch model development. So one of
20 the time pressures was simply that there was
21 a shorter time line for the model
22 development and testing phase before filing
23 that report and...

24 Q. Are you done?

1 A. (By Mr. Carlton) And then, in addition,
2 there were some other extenuating
3 circumstances.

4 Q. Do you want to describe them?

5 A. (By Mr. Carlton) I'm sorry. It was a death
6 in my family.

7 Q. Okay. Sorry.

8 The next set of corrections that Levitan
9 Associates made, as I understand it, were
10 really in response to a request from Staff for
11 a backcast case. Could you explain what a
12 "backcast case" is, first of all.

13 A. (By Mr. Carlton) Well, a backcast case is
14 what the name may seem to imply. You go
15 backwards in time, but rather than trying to
16 run a model in reverse chronological order,
17 you take a past time period and you run the
18 model forward. The basic idea is to be able
19 to compare model performance against the
20 actual results which would be known at that
21 time. However, there are many difficult
22 aspects of doing a reasonably good job at a
23 backcast case, the main one being that every
24 year or any time period you look at is going

1 to be just one state of nature. It's going
2 to be unique for certain reasons, and
3 especially for a probabilistic model. Part
4 of the model validation process is to know
5 whether its distribution of values are in
6 the reasonable range, not just a
7 single-point estimate.

8 Q. So as a result of that request from Staff,
9 then you uncovered some other errors. And
10 those concerned, as I understand it, start
11 fuel, use assumptions. And No. 2 fuel use
12 for station warming hadn't been included in
13 fixed costs. I think there were a couple of
14 other areas that were uncovered as part of
15 that. So they weren't something you came
16 across on your own. It was only after Staff
17 requested that particular analysis; is that
18 correct?

19 A. (By Mr. Carlton) That's right. So, in the
20 course of trying to reconcile the
21 differences, one factor I was able to
22 isolate, as recently been stated, that the
23 No. 2 oil is not used in generation. It was
24 used, in part, for start fuel, and then as

1 we determined, a significant amount was also
2 used for plant warming purposes. And given
3 that we knew how many starts had occurred in
4 the year 2010, that we were studying how
5 many were cold, how many were hot starts, we
6 were able to estimate how much total fuel
7 use for No. 2 oil would be involved and
8 calibrate that against the model result.

9 Q. One of the assumptions that you made was
10 that 2100 megawatts of capacity in NEPOOL
11 would retire; is that correct? I'm looking
12 at Page 38 of the CUO. And we already
13 looked at it with Mr. Smagula at
14 Footnote 26. So, is that correct?

15 A. (By Mr. Levitan) It is correct in the narrow
16 context of the mid case. As I'm sure you
17 recognize, three distinct capacity price
18 forecasts were formulated. Only in the mid
19 case was the assumption of 2100 megawatts of
20 retirement considered.

21 Q. And are you familiar with New England ISO
22 Forward Capacity Auctions? And I'm going to
23 refer now specifically to capacity auction
24 No. 6.

1 A. (By Mr. Levitan) Yes, I'm familiar with it.

2 Q. And this particular capacity auction is for
3 delivery June 1, 2015 to May 31, 2016. Does
4 that sound correct?

5 A. (By Mr. Levitan) Sounds correct. I don't
6 have the building block assumptions from
7 that auction in front of me. But your
8 characterization sounds right.

9 Q. And have you checked to see how the units
10 that you listed in Footnote 26 fared in that
11 particular auction, as to whether or not
12 they've been obligated through 2016? Have
13 you had a chance to do that?

14 A. (By Mr. Levitan) No, I have not. Nor would
15 it matter, insofar as the analysis reflected
16 these unit retirements on a generic basis.
17 I'm sure that it was stated either in this
18 report or in data responses that we relied
19 on the work done by another consultant in
20 the 2010 Connecticut IRP to come up with an
21 estimation of total plant attrition over the
22 forecast period. If these plants don't
23 retire, typically, another resource would be
24 expected to retire in conjunction with the

1 assumption of our total RTO-wide attrition
2 that was used in this forecast.

3 Q. Well, would it surprise you to learn that,
4 in fact, as a result of that particular
5 capacity auction, that the ISO anticipates
6 being 2800 megawatts long?

7 A. (By Mr. Levitan) No, it would not surprise
8 me.

9 Q. Okay. I'm going to show you a copy of a
10 document that is dated April 30th, 2012.
11 And I have not copied the entire document
12 which is over a hundred pages, but I would
13 represent to the Commission that what I have
14 copied is what I believe to be the relevant
15 portions of this filing with the FERC by the
16 ISO with regard to the results of this No. 6
17 capacity auction and the relevant portions
18 of it as they relate to the units that Mr.
19 Levitan had assumed would be retired. And
20 we have highlighted in yellow the particular
21 units as they appear in this filing. So I
22 would ask --

23 CMSR. HARRINGTON: Mr. Patch, do
24 you want to enter this as an exhibit?

1 MR. PATCH: Please.

2 CMSR. HARRINGTON: Any
3 objections?

4 (No verbal response)

5 CMSR. HARRINGTON: Seeing none,
6 this will be TransCanada 11?

7 THE CLERK: Eleven.

8 (The document, as described, was
9 herewith marked as TransCanada 11
10 for identification.)

11 Q. And maybe, Mr. Levitan, in light of your
12 comments, you don't want to run through each
13 of these. But I would represent to you that
14 what I have highlighted on the hand-numbered
15 pages are the portions of this particular
16 filing by the ISO with the FERC that relate
17 to the generating units that you referenced
18 in Footnote 26. And I would further
19 represent to you that, based on the math
20 that I've done, which is -- or Mr. Hachey's
21 actually done, which would probably give you
22 more faith than if I did it, that for some
23 summer ratings, 2,045 megawatt for the
24 units, 1821 -- or 89 -- almost 90 percent of

1 the total capacity that you had identified
2 in that footnote are included as capacity
3 obligations through at least May of 2016. I
4 would just ask you to accept that, subject
5 to check. And I know you have an
6 explanation that you've already given, at
7 least in part. Maybe there's something
8 else --

9 A. (By Mr. Levitan) No, I'm happy to consider
10 it, subject to check.

11 Q. Thank you.

12 A. (By Mr. Levitan) Of course, it's worth
13 noting --

14 Q. Go ahead.

15 A. (By Mr. Levitan) -- that there are many
16 components of the Forward Capacity Market
17 that continue to be revisited by both FERC
18 and stakeholders across the region. And it
19 is the evolving nature of the restructuring
20 of the Forward Capacity Market that
21 certainly encourages incumbent generators to
22 hang in there, wait for a better day. Some
23 of the structural reforms presently before
24 the ISO and various stakeholder committees

1 could not have been known with as much
2 accuracy in 2010 as we know today.

3 Q. Well, that may be true. But I guess I would
4 ask you to look back at the CRA study then,
5 which was done, actually, five or six months
6 later than the study you did. This has been
7 marked as an exhibit in this docket. It's
8 TransCanada -- sorry, but I don't recall the
9 number. But I'd ask you to look at Page 23
10 of that particular document. And underneath
11 that chart, at the top it says, "The
12 capacity retirements assumed to take place
13 in 2010 and beyond based on accepted delist
14 bids in the Forward Capacity Auctions
15 include: Somerset 6 and Salem Harbor 1 and
16 2."

17 So, in fact, the CRA study had a very
18 different approach than what you had. And
19 that was done in 2010; was it not?

20 A. (By Mr. Levitan) It was done in 2010. But
21 I'm not sufficiently acquainted with the
22 study to really comment on the differences.

23 CMSR. HARRINGTON: Mr. Patch
24 with regard to your exhibit, just a question

1 from labeling. This is on TransCanada 11.
2 When you go to the first chart, the page there
3 is labeled page, I guess that's one. For
4 Bridgeport Harbor 2, you go across, and
5 underneath the dates there's a series of zeros
6 there --

7 MR. PATCH: That's right.

8 CMSR. HARRINGTON: And the next
9 page you have other ones highlighted where
10 there's -- well, in the case of Middletown, it
11 starts with 236,000. What are those -- what's
12 the units of those? 236,000 what for
13 Middletown?

14 MR. PATCH: Kilowatts.

15 CMSR. HARRINGTON: Pardon?

16 MR. PATCH: Kilowatts.

17 CMSR. HARRINGTON: Is it
18 kilowatts or -- so, that's the capacity?
19 Okay.

20 So in the case of Bridgeport
21 Harbor, you've highlighted where it's all
22 zeros, and you're saying they do not have a
23 capacity supply obligation?

24 MR. PATCH: That's correct. And

1 so that's among the 10 percent or so that we
2 said of the ones in Footnote 26 that do not.
3 You know, it adds up approximately to
4 90 percent that do.

5 CMSR. HARRINGTON: So those are
6 the ones that didn't clear the auction, in the
7 case of Bridgeport Harbor 2?

8 MR. PATCH: That's right.

9 BY MR. PATCH:

10 Q. And Mr. Levitan, or anybody else on the
11 panel, just because they didn't clear the
12 auction doesn't necessarily mean that
13 they're going to retire; is that fair to
14 say?

15 A. (By Mr. Levitan) It's technically correct.
16 But if a resource did not clear the auction
17 and it's holding on by its fingertips and
18 making virtually no profit from energy sales
19 and ancillary sales, the loss of capacity
20 revenue would no doubt discourage them from
21 staying in the market. I haven't met a
22 resource that would be that benevolent year
23 over year. So its retirement would likely
24 ensue.

1 With respect to the Charles
2 River analysis for NPT, I note on the very
3 page that you referenced that they're
4 stating that the retirements are calculated
5 on a conservative basis. They have noted
6 that additional delist bids have been
7 rejected based on reliability concerns.
8 They note, if those concerns are resolved,
9 additional unit retirements are likely.
10 Specifically, permanent delist bids have
11 been filed for Salem Harbor 3 and 4 for
12 FCA 5. And they go on to say that a delist
13 was requested for Vermont Yankee, for which
14 the Vermont Legislature voted to deny
15 extension of an operating license was
16 rejected in FCA 4. We now know, of course,
17 Vermont Yankee did not clear FCA 6.

18 So, there's a lot going on
19 here in the context of the study that they
20 were asked to perform. Presumably, they
21 wanted to state the energy price-suppression
22 benefit attributed to NPT on a conservative
23 basis. So they conservatively carried
24 forward resources that were likely to retire

1 just so as to avoid over-estimating the
2 price-suppression effect. If we were doing
3 this study, in all likelihood, we would have
4 stated it conservatively as well.

5 Q. I think I left up there on the Bench a copy
6 of Order 25,061. And I would ask if Mr.
7 Levitan or Dr. Carlton, either one of you,
8 could take a look at Page 18. Turning to --

9 A. (Mr. Large) I don't think we do. If you
10 could be kind enough to share that with us?

11 Q. We had two copies of the order, so --

12 A. (By Mr. Large) We have 24,945... where would
13 you like us to go?

14 Q. Have you got it?

15 A. (By Mr. Large) We do not.

16 A. (By Mr. Levitan) Yes, we do.

17 A. (Mr. Large) Oh, I'm sorry. We do have it.

18 Q. We're at 25,061, Page 18. And on that
19 page -- are you there?

20 A. (By Mr. Levitan) Yes.

21 Q. There are statements attributed to Steve
22 Mullen, the assistant director of the
23 Electric Division, where he said that with
24 the end of the Forward Capacity Market

1 transition payments in May of 2010, lower
2 future capacity prices resulting from the
3 Forward Capacity Auctions may result in a
4 widening gap between plant-related expenses
5 and revenues for Newington Station. Do you
6 see that?

7 A. Yes.

8 Q. Do you know how much Newington received for
9 market transition payments in 2010?

10 A. (By Mr. Levitan) I do not have that
11 information.

12 Q. Would you accept, subject to check, that it
13 was \$20 million? And I think that's on the
14 same Page 18. Maybe it's referenced above
15 where I just read to you.

16 A. (By Mr. Levitan) I see the reference in the
17 document.

18 Q. And so those are revenues that Newington no
19 longer receives. I mean, they stopped in
20 2010; is that right?

21 A. (By Mr. Levitan) To the best of my
22 knowledge, revenues are received based on
23 the FCA outcome from annual auction to
24 annual auction.

1 Q. In your testimony at Page 18, you commented
2 on Mr. Hachey's testimony about
3 reconfiguration auctions. Do you recall
4 that?

5 A. (By Mr. Levitan) Yes.

6 Q. And he had pointed out that you failed to
7 take into account the fact that retiring the
8 Newington Station could result in \$20- to
9 \$30 million of capacity revenue if Newington
10 were to shed its future capacity obligations
11 in the reconfiguration auctions; correct?

12 A. (By Mr. Levitan) Yes.

13 Q. I'm going to show you a copy of a response
14 to a data request. It's TransCanada Set 4,
15 No. 12. And you're listed as the witness.

16 MR. PATCH: And I would ask that
17 this be marked as the next exhibit for
18 TransCanada.

19 CMSR. HARRINGTON: Mr. Patch,
20 how much longer will your cross-examination
21 go?

22 MR. PATCH: If I could just have
23 one minute, I'll take a quick look at my
24 questions.

1 CMSR. HARRINGTON: I'm just
2 trying to get an idea because we're coming up
3 on needing a break.

4 Any objection to entering this
5 in evidence?

6 (No verbal response)

7 CMSR. HARRINGTON: So this will
8 be TransCanada 12.

9 (The document, as described, was
10 herewith marked as TransCanada 12
11 for identification.)

12 MR. PATCH: My guess is about 15
13 more minutes. Would you like to continue?

14 CMSR. HARRINGTON: Yeah, we'll
15 continue for 15 minutes.

16 People should start thinking
17 about whether they can stay later this
18 afternoon, because we do have a lot to get
19 through, and we need to get PSNH's redirect
20 on some of the witnesses that won't be
21 available tomorrow afternoon. So, maybe we
22 can stay a little later than planned
23 tonight.

24 Go ahead and continue, Mr.

1 Patch.

2 BY MR. PATCH:

3 Q. So, Mr. Levitan, I'd ask you to look at
4 Section Roman X. And the question there was
5 regarding LAI-8, an attachment to your
6 rebuttal testimony. "Is it Mr. Levitan's
7 opinion that his calculation of 'net
8 retirement disbenefit' is an appropriate
9 valuation of the retirement benefit or cost
10 to PSNH customers of Newington?" And I'd
11 ask that you read the response.

12 A. (By Mr. Levitan) The response goes as
13 follows: "The purpose of the analysis
14 presented in Exhibit LAI-8 was to estimate
15 how under certain assumptions the net
16 revenues of Newington shedding its capacity
17 supply obligations would differ from the
18 revenues received under the continued
19 operation scenario. This is a simple rough
20 estimate that shows significant retirement
21 disbenefits compared to the continued
22 operation scenario. LAI believes that this
23 analysis is appropriate for the purpose of
24 the CUO study. However, valuation of the

1 retirement benefit or cost to PSNH customers
2 would probably require a more complex type
3 of analysis that goes beyond the scope of
4 this proceeding."

5 Q. And then Roman XII regarding that same
6 LAI-18 [sic], "Does this exhibit account in
7 any way to the ongoing costs of operating
8 Newington?" And your response to that was?

9 A. (By Mr. Levitan) "No." The analysis that's
10 presented in LAI-8 simply shows the net
11 retirement benefit -- or disbenefit over the
12 forecast period.

13 Q. So I'm just having a hard time understanding
14 why you fault Mr. Hachey's analysis, when
15 you didn't even include in your own
16 back-of-the-envelope calculation the actual
17 cost of the operating the facility.

18 A. (By Mr. Levitan) Mr. Hachey formulated an
19 idealized scenario where there would be a
20 continued sustained differential between the
21 FCA price outcome and the reconfiguration
22 auction prices of a dollar per kilowatt
23 month. It makes no sense to me as an
24 industry analyst to hold that differential

1 constant since the differential is driven
2 entirely by the magnitude of the megawatt
3 overhang in New England. You know from our
4 modeling assumptions that we do consider
5 additional DR entering the resource mix and
6 additional imports from New York, although a
7 decline in the level of imports due to the
8 price differentials. But most importantly,
9 we look at capacity attrition effects,
10 whether it's 2100 megawatts or 2500
11 megawatts or something less than that. It's
12 baked into each scenario.

13 As the magnitude of the megawatt
14 overhang dissipates, inevitably there would
15 be upward pressure, and significant upward
16 pressure on RA prices. So the benefits of
17 shedding the capacity supply obligation
18 would dissipate with that differential that
19 narrows. If Mr. Hachey is right that,
20 regardless of the magnitude of the megawatt
21 overhang, RA prices will stay fixed at a
22 dollar per kilowatt month, then the benefits
23 to PSNH's customers associated with shedding
24 the CSO would be large. But I don't expect

1 that outcome. And I think if you were to
2 poll industry experts, most would agree it's
3 overhang that drives the delta price-wise,
4 and that is inevitably going to disappear.

5 Q. On Pages 20 and 21 of your rebuttal
6 testimony, you criticized Mr. Hachey's
7 rejection of your price-suppression analysis
8 saying that it was "misplaced"; correct?

9 A. (By Mr. Levitan) Could you point me to a
10 line, please?

11 Q. Well, it's not one line. It's generally
12 Pages 20 and 21. I think there's Q & A --

13 A. (By Mr. Levitan) Yes. And I acknowledged in
14 the testimony that the use of the word
15 "suppression" in the context of capacity
16 price benefits is a bit of a misnomer. But
17 perhaps we'll get to that.

18 Q. Yes. I mean, I was going to ask you that.
19 Lines 33 to 34 on Page 21 is where you in
20 fact said that; right?

21 A. (By Mr. Levitan) Yes.

22 Q. "Price suppression may have been a
23 misnomer."

24 I'm going to show you copy of a data

1 request from TransCanada dated December 16,
2 2011, and it has you as the witness.

3 CMSR. HARRINGTON: Any
4 objections to entering this in the record?

5 (No verbal response)

6 CMSR. HARRINGTON: This is going
7 to be TransCanada 12?

8 THE CLERK: Thirteen.

9 (The document, as described, was
10 herewith marked as TransCanada 13
11 for identification.)

12 CMSR. HARRINGTON: Oh, I'll get
13 these straight one of these days.

14 "Monthly Average Fuel Price and RT Hub LMP."

15 Q. In your response, you say what you meant
16 when you used the term "capacity price
17 suppression benefit" was "the economic
18 benefits that were redound to customers
19 resulting from Newington remaining in
20 service"; is that correct?

21 A. (By Mr. Levitan) Yes.

22 Q. And you go on to say that, just as sellers
23 are entitled to consider portfolio benefits
24 of their actions in the markets -- and I

1 just want to stop there and ask you what you
2 meant by this. Are you saying that the
3 sellers are entitled to withhold capacity
4 from the market, that it's okay to
5 manipulate the capacity market?

6 A. (By Mr. Levitan) I'm wondering -- I'd ask
7 for your forbearance for a second. Where
8 are you reading from in the testimony?

9 Q. Not the testimony. This is the response to
10 TC 4-16. It's the second line. You say,
11 "Just as sellers are entitled to consider
12 portfolio benefits of their actions in the
13 markets, buyers may account for the benefits
14 resulting from their actions."

15 A. (By Mr. Levitan) Well, there are a number of
16 rigid safeguards that are built into the
17 existing ISO market structure. The internal
18 market monitor can and will take immediate
19 action to ensure that sellers do not
20 economically withhold, thus bringing the
21 market to cause energy prices to deviate
22 from a competitive outcome. So I would say,
23 no, sellers are not entitled to withhold.
24 They have an obligation to show up for work

1 and produce energy based on the marginal
2 cost of producing that energy, subject to
3 unit availability day in and day out.

4 Q. So, if Newington Station were an uneconomic
5 resource to PSNH's customers, then I guess
6 what you're saying is ISO has enough rules
7 in place that it wouldn't be allowed to
8 operate? Is that what you're saying?

9 A. (By Mr. Levitan) No, that's not what I said.

10 Q. Okay. Then if it were an uneconomic
11 resource, and PSNH continued operating it
12 solely to lower capacity market prices, that
13 would be fireside market manipulation; would
14 it not?

15 A. (By Mr. Levitan) No, it would not.

16 Q. It would not? Why not?

17 A. (By Mr. Levitan) Because first, the
18 Newington Station is an incumbent resource.
19 It's a price taker. It is not a price
20 setter. It's been around for a long time.
21 It would not be a manipulation of FCA
22 outcome based on continued unit operation.
23 What is meant in the study design and in the
24 data response is that the hypothetical

1 retirement prematurely of the Newington
2 Station could be followed by a run-up in
3 capacity prices as a result of the slope of
4 the supply curve. A more expensive resource
5 would be expected to fill the gap
6 attributable to the loss of 400 megawatts
7 and, all other things being the same, would
8 put upward pressure, not neutral or downward
9 pressure, on capacity prices, the cost of
10 which would redound to all ratepayers in the
11 state of New Hampshire and, to a lesser
12 extent, outside the state as well.

13 Q. Just a couple more questions, Mr. Levitan,
14 with regard to the reconfiguration auction.

15 Have all of the FCM auctions thus far
16 been significantly in excess of capacity? Is
17 that fair to say?

18 A. (By Mr. Levitan) There has been a
19 substantial amount of qualified resources
20 that have cleared the ICR in each auction.

21 Q. So it sounds like the answer is yes.

22 A. (By Mr. Levitan) Yes.

23 Q. Do you believe that the next auction --
24 which I think is the last one scheduled,

1 isn't it -- No. 7, do you believe that it
2 will continue to be -- or to provide for
3 excess capacity as the other six have?

4 A. (By Mr. Levitan) There are at present major
5 efforts among New England stakeholders and
6 ISO in response to FERC's directive to sort
7 out the defects in the capacity market here
8 in New England. That effort is well
9 underway. There are many potential outcomes
10 that could potentially result in the removal
11 of the floor in FCA 7, but more likely in
12 FCA 8, many other structural changes that
13 could have a profound effect on the future
14 trajectory of capacity prices in the region.

15 Q. Are you familiar with the FERC order that's
16 specific to FCA 7?

17 A. (By Mr. Levitan) No.

18 Q. And with regard to Mr. Hachey's testimony on
19 this, what assumptions did he make for
20 reconfiguration auction pricing through
21 FCA 7?

22 A. (By Mr. Levitan) I believe that Mr. Hachey
23 looked back at the reconfiguration auction
24 price of a dollar per kilowatt month and

1 just held it constant over the forecast
2 period and thus calculated the differential
3 between the pro rated FCA price outcome
4 versus the reconfiguration auction price of
5 a dollar, assuming that as other capacity
6 resources scramble into the reconfiguration
7 auction, there would not be any upward
8 pressure on RA prices. That was simplifying
9 assumption on his part as a comment to the
10 "reasonableness."

11 Q. Thank you.

12 MR. PATCH: That's all the
13 questions I have.

14 CMSR. HARRINGTON: Okay. We'll
15 go off the record now and take a short recess.

16 (Brief recess taken at 3:15 p.m., and
17 hearing resumed at 3:34 p.m.)

18 CMSR. HARRINGTON: Mr. Patch,
19 you're done your questioning?

20 MR. PATCH: Yes.

21 CMSR. HARRINGTON: So, next
22 would be Granite Ridge.

23 MR. MOFFETT: No questions, Mr.
24 Chairman. Thank you.

1 CMSR. HARRINGTON: Sierra Club.

2 MR. CUNNINGHAM: No questions,
3 Mr. Chair.

4 CMSR. HARRINGTON: Conservation
5 law Foundation.

6 MR. PERESS: Thank you,
7 Commissioner. I do have just a few questions.
8 Thank you.

9 CROSS-EXAMINATION

10 BY MR. PERESS:

11 Q. I'd like to refer Mr. Levitan to what's been
12 marked PSNH Exhibit 10, which is the
13 redacted copy of the modeling system
14 overview, and specifically to Page 3.

15 A. (By Mr. Levitan) We're there.

16 Q. So, if I understand the natural gas forward
17 pricing model, basically what the -- what
18 Levitan -- what you did was to calculate an
19 error to account for the differential in
20 prices between Henry Hub and Dracut in your
21 forward natural gas projection; is that
22 right?

23 A. (By Mr. Levitan) Yes.

24 Q. And from the testimony that we heard

1 earlier, I understand that you did not
2 disclose the historic data that you used to
3 develop the basis spread adders which is
4 what you used to forecast the gas prices at
5 Dracut; is that correct?

6 A. (By Mr. Carlton) That's correct. That was
7 part of the Bloomberg data. However, we did
8 provide in a data response the 12 monthly
9 percentage adders to make it easy for
10 anybody to calculate from any data source
11 what the add-on would be.

12 Q. I understand that. If I'm looking at the
13 testimony correctly, you criticized Staff's
14 estimation of those basis spreads using the
15 Emera data; is that correct?

16 A. (By Mr. Carlton) The Emera invoice data was
17 used for a different basis spread. So the
18 one you were just discussing was the Henry
19 Hub to Dracut Hub basis spread. And then,
20 in addition, there's getting the gas to the
21 Newington Station. And that is a basis
22 spread between the Dracut price and the
23 Emera invoice price on any of the days that
24 PSNH makes gas purchases.

1 Q. Thank you. So if I understand this, the
2 Henry Hub to Dracut spread is part of the
3 cost projection that would go into your
4 projection of the marginal cost at
5 Newington; is that correct?

6 A. (By Mr. Carlton) That's correct.

7 Q. And it would go into your projection of
8 energy prices for all of ISO-New England; is
9 that correct?

10 A. (By Mr. Carlton) That's correct. We also
11 use the Dracut Hub to drive the electric
12 price model.

13 Q. And it would go to the dispatch projections
14 that you are using for Newington; is that
15 correct?

16 WITNESS LEVITAN: Commissioner,
17 may we have a moment to confer?

18 CMSR. HARRINGTON: Sure.

19 A. (By Mr. Levitan) If you would forgive us for
20 one moment, please.

21 (Off-the-record discussion among panel members.)

22 A. (By Mr. Carlton) Sorry. Could you repeat
23 the last question?

24 Q. The Henry Hub to Dracut spread would also

1 ultimately dictate the dispatch scenarios
2 for Newington -- or have a big impact on the
3 dispatch scenarios for Newington; isn't that
4 correct?

5 A. (By Mr. Carlton) Well, yes, the Henry Hub to
6 Dracut scenario would affect the dispatch.

7 Q. So, isn't it true that the parties lack the
8 data necessary to assess the validity of
9 your gas price forecast at Dracut, since you
10 didn't provide it?

11 A. (By Mr. Carlton) We did provide it.

12 Q. The underlying data, the historical data
13 that you used.

14 A. (By Mr. Carlton) No, not the underlying
15 data. But we provided the month-by-month
16 forward price projection at Dracut.

17 Q. I understand that. But isn't it correct
18 that the parties lacked the ability to
19 assess the validity of that month-by-month
20 price projection without that historic data?

21 A. (By Mr. Carlton) Again, it gets back to
22 whether you think two different vendors'
23 daily spot prices are largely substitutable.
24 One can obtain, at relatively low cost, data

1 on a gas price series of historical data.

2 Q. But you've already testified that the spot
3 prices you used were not provided; correct?

4 A. (By Mr. Carlton) That is correct.

5 Q. And did you also --

6 A. (By Mr. Levitan) And I also testified that,
7 in my experience, the data sets for key
8 pricing points across New England are
9 strongly correlated at least -- or "highly
10 strongly correlated" I think is the way I
11 put it, at least in terms of the mid points,
12 because different vendors are discussing,
13 day in and day out with different brokers.
14 There might be more wider or narrower bid
15 spreads from vendor to vendor, but the
16 midpoint are right on top of one another.

17 Q. And you testified previously that you
18 decided to use vendor data that you could
19 not disclose; right?

20 A. (By Mr. Carlton) We did not know that at the
21 outset.

22 A. (By Mr. Levitan) We were following our
23 normal corporate forecasting procedure,
24 which has been used in a variety of major

1 state regulatory proceedings throughout the
2 Mid-Atlantic, New York and New England for
3 multiple client engagements. This had not
4 come up before, so I did not think it
5 through.

6 Q. And I think, Mr. Levitan, you testified that
7 Mr. Hachey's review of your modeling
8 assumptions and the modeling results -- I
9 think you used the term "constructive
10 criticism" -- uncovered defects in the study
11 methodology; is that correct?

12 A. (By Mr. Levitan) Yes. We appreciated Mr.
13 Hachey's criticisms and comments at the
14 technical session.

15 Q. And on the basis of the defects that he
16 uncovered, you recalculated the ratepayer
17 value of Newington; is that correct?

18 A. (By Mr. Levitan) I don't know that it's fair
19 to say that Mr. Hachey "uncovered" the
20 defects. He simply galvanized us to take a
21 fresh look at the structure of the model and
22 the equations in the model in which was
23 buried a problem, which once discovered was
24 easy to fix.

1 Q. And after he "galvanized" you, the asset
2 valuation for Newington went down quite
3 considerably; is that correct?

4 A. (By Mr. Levitan) Yes, in relation to the
5 expected value that was stated in the
6 September CUO; but no, in the more narrow
7 context of it leading to the same
8 conclusion -- that being that the Newington
9 Station remains clearly in the black with
10 respect to customers' economic interests.

11 Q. But you recalculated -- strike that.

12 Exhibit G.12, which is Page 44 of the
13 CUO, you recalculated what you term "net
14 revenue requirement" and determined that it
15 was less than half of what you had originally
16 projected; is that correct? I'm sorry. The
17 ratepayer benefit was less than half of what
18 you had originally projected; is that correct?

19 A. (By Mr. Levitan) Yes.

20 Q. And this Dracut gas price is very critical
21 to the asset valuation, isn't it?

22 A. (By Mr. Levitan) I would say no.

23 Q. So it's critical to the marginal cost. It's
24 critical to energy prices. It's critical to

1 dispatch scenarios. But it's not critical
2 to the valuation?

3 A. It's key to the valuation, but I wouldn't
4 say "critical," because it is correlated
5 with energy prices across all the key
6 pricing points in New England. And it is
7 therefore the single largest determinant of
8 the LMP hour to hour in the day-ahead
9 market, in the real-time market. But the
10 action at Newington reflects an additional
11 micro basis adder from the Dracut pricing
12 point on the joint facility system to the
13 Newington Station. And historically, that
14 basis -- or micro basis adder has been very
15 significant in the winter, in at least 2010,
16 and significant in the non-winter months as
17 well. That has a direct significant bearing
18 on the dispatch and the net profitability of
19 the Newington Station. But going forward,
20 there are all sorts of reasons why looking
21 back may not be a good indication of what
22 Newington's fuel costs will be going
23 forward.

24 Q. So I also believe you testified that you

1 conducted numerous forward gas price
2 projections for distribution companies
3 throughout New England; is that correct?

4 A. (By Mr. Levitan) Yes.

5 Q. And those were used by those distribution
6 utilities for planning purposes? Is that
7 why you did that?

8 A. (By Mr. Levitan) They used them for a
9 variety of purposes. Those purposes would
10 include: For long-term resource planning,
11 for short-term resource planning, for
12 purposes of entering into long-term
13 contracts for renewable energy sources, for
14 purposes of evaluating the merit of
15 conventional quick-start peaking resources
16 in Connecticut. I could go on. But those
17 are some of the first-order applications of
18 the forecast.

19 Q. And other than for the Continued Unit
20 Operations Study, did Public Service Company
21 of New Hampshire ask you to provide them
22 with the forward gas price projection in
23 association with this Integrated Resource
24 Plan?

1 MS. KNOWLTON: I'm going to
2 object, to the extent the question is asking
3 about the IRP. Again, this panel is here to
4 testify about the CUO.

5 CMSR. HARRINGTON: Mr. Peress.

6 MR. PERESS: Commissioner, in
7 the first instance, we had agreed at the
8 beginning of this hearing that there was not a
9 black line as between the panels and the
10 questioning. And the question that I asked
11 related directly to the work that they did on
12 the CUO. I'm just asking if it had any other
13 uses for PSNH in the context of the plan. I
14 think to suggest that the CUO can be
15 completely separated from the plan is not a
16 sound proposition as a matter of law. The CUO
17 is part of the plan.

18 CMSR. HARRINGTON: I'll allow
19 the question.

20 A. (By Mr. Carlton) Well, we provided PSNH with
21 the monthly forward prices that were used in
22 the CUO study. And exactly what they did
23 with those prices, I'm not entirely aware.

24 MR. PERESS: I have no for

1 questions. Thank you, Commissioners.

2 CMSR. HARRINGTON: Okay. Thank
3 you. Going to move on, if I can find my list
4 here. New Hampshire Office of Energy and
5 Planning?

6 MR. STELTZER: No questions.
7 Thank you.

8 CMSR. HARRINGTON: OCA?

9 MS. HOLLENBERG: No questions.
10 Thank you.

11 CMSR. HARRINGTON: Okay. Making
12 progress. Redirect by Public Service?

13 MS. KNOWLTON: The Company does
14 have limited redirect. I'm actually --
15 there's one of the documents that was marked
16 by one of the parties, by Trans -- I'm
17 sorry -- by Staff with an excerpt of a
18 document. And I'm waiting to -- I'm having a
19 hand delivery. I'm waiting to receive the
20 full document. So, either we could take a
21 break on redirect, or if the Commissioners
22 would allow me to conduct redirect after
23 they've concluded their questions, and
24 hopefully I will have received that document.

1 CMSR. HARRINGTON: We'll just
2 start with our questions now and see if that
3 works.

4 MS. KNOWLTON: Thank you.

5 CMSR. HARRINGTON: Commissioner
6 Scott.

7 CMSR. SCOTT: Thank you.

8 INTERROGATORIES BY CMSR. SCOTT:

9 Q. And again to the panel, I will -- whoever
10 feels most able to answer the question is
11 fine with me.

12 On the study itself, on the modeling
13 runs, just to ground everybody, if you could,
14 the last modeling run you did, can you give me
15 a time frame? When was that?

16 A. (By Mr. Carlton) Well, the last model run
17 that was done was the one that Staff had
18 requested, and that was done in the summer
19 of 2011. I don't recall the exact date, but
20 it's been provided in a data response.

21 MR. SPEIDEL: Yes, if I may
22 interject as a matter of clarification. I
23 believe that re-run was presented as part of
24 Public Service of New Hampshire's response to

1 Technical Session Question 2, and that would
2 have a cover letter of July 12th, 2011. And I
3 believe that has been submitted as PSNH
4 Exhibit 11.

5 CMSR. SCOTT: Thank you for that
6 clarification.

7 BY CMSR. SCOTT:

8 Q. Obviously, since that time we've seen a
9 continuing drop in gas prices and
10 projections into the future. I was -- given
11 your expertise, I was just curious, you
12 know, given the one-year -- or almost a year
13 time difference, have you -- is there
14 anything in your conclusions that have
15 significantly changed based on the passage
16 of time and events?

17 A. (By Mr. Carlton) With respect to the falling
18 gas prices, I would say no. From recent
19 look-ups of Mass. Hub and Henry Hub forward
20 concerns, the spark spread based on those
21 two indices is as large, if not larger than
22 it has been in the past. There's often a
23 relationship where lower natural gas prices,
24 even though they bring down power prices,

1 result in a slight increase in the market
2 rate.

3 Q. And the same question, I guess. It's tied
4 together, so it's probably going to be the
5 same answer, which is fine.

6 Again, in the past year, the capacity
7 factor of the plant, has that changed your
8 thinking as far as any outcomes for the study?

9 A. (By Mr. Carlton) We haven't evaluated it in
10 that regard. We heard earlier that it was
11 lower in 2011 than it was in 2010. But
12 we're not continually trying to update the
13 study with new information. But part of the
14 purpose of running those capacity analyses
15 is you're going to get a lot of year-to-year
16 variability, which greatly affects the
17 economics on a year-over-year basis of a
18 peaker-type plant as opposed to a baseload
19 plant. So you may get one or more years in
20 a row of relatively low capacity prices
21 based on current economic conditions
22 followed by an increase for a while.

23 A. (By Mr. Levitan) Because the plant dispatch
24 factor is in the single digits, it doesn't

1 take much in the way of extreme heat and
2 humidity relative to more normal summertime
3 conditions, or extreme cold, which we didn't
4 have, for the most part, in the winter of
5 2011-12. It was mild as well in the winter
6 of 2010 and 2011. But had we experienced
7 normal weather conditions, or colder than
8 average conditions, or even the low
9 likelihood of a cold snap, then the dispatch
10 of the plant would have been significantly
11 higher. Those weather conditions were not
12 encountered.

13 Q. Thank you. That's fair.

14 You mentioned your background in some of
15 the work you've done for other commissions.
16 Have you ever done a CUO study before?

17 A. (By Mr. Levitan) In the narrow context of
18 its implementation here in New Hampshire,
19 the answer is no. But for purposes of
20 advising global investors, debt lenders and
21 generation companies on the going-forward
22 economics of purchasing a fleet of
23 conventional resources, where many of the
24 units -- or some of the units are old-style

1 oil and/or gas/steam turbine generators, we
2 have exhausted the engineering and the
3 economic and the transmission and fuel
4 issues surrounding the potential repowering
5 of the asset, or how long in certain
6 capacity markets the resource could be
7 expected to limp along. Those analyses have
8 been undertaken for very prominent investors
9 and generation owners throughout the U.S.

10 Q. And in those analyses, did you use similar
11 methodologies?

12 A. (By Mr. Levitan) We have incorporated
13 aspects of real option valuation, but not
14 with the level of rigor practiced here for
15 the CUO.

16 Q. And those -- again, I heard you earlier.
17 You haven't done exactly the same thing for
18 another commission. But in those analyses,
19 did they require non-disclosure agreements?
20 Is that a -- that's not a new thing for you.

21 A. (By Mr. Levitan) Yes, in all cases, they
22 would have required non-disclosure
23 agreements with the generation owner selling
24 the unit or the fleet, as well, typically,

1 as required by the lender or the investor,
2 to protect their commercial interests. So,
3 firms like ours and, for that matter, other
4 prominent engineering firms doing business
5 in this room or elsewhere in North America,
6 typically enter into those NDAs.

7 Q. On the valuation itself, could you describe
8 comparisons you might have made? Obviously,
9 there's cost of if the plant were to close,
10 how would PSNH meet its customer needs
11 without the plants. Can you describe a
12 little bit the analysis you did on that end,
13 you know, the use of long-term contracts or
14 buying off the market, that type of thing?

15 A. (By Mr. Levitan) We focused on the unit's
16 continued operation. The threshold question
17 before us on a risk-adjusted basis when we
18 stochastically sample a broad spectrum of
19 possible market outcomes or probable market
20 outcomes: Does this unit provide economic
21 benefits to PSNH's customers? Given the
22 uncertainty in the energy markets, given the
23 uncertainty about retirements, given the
24 uncertainty about the evolving capacity

1 markets in New England, we did our best to
2 throw a lot of math and engineering
3 economics at the problem. And we concluded,
4 especially upon refinement of the initial
5 results in April of 2011, that the unit is
6 in the black, consistently in the black,
7 year over year. And there are all sorts of
8 reasons well documented in the study for
9 that. And in calibrating the value of the
10 product slate -- capacity, energy, ancillary
11 services, the hedge value of the asset -- to
12 kind of narrow the spectrum of financial
13 outcomes in comparison to the out-of-pocket
14 cash cost of continued Newington operations
15 the conclusion was straightforward: It's in
16 the black. So we did not then take the next
17 step of postulating a world of shedding the
18 capacity supply obligation and buying "loose
19 juice" from the day-ahead and real-time
20 market, or buying -- you know, entering into
21 structured financial products with a
22 credit-worthy counterpart doing business in
23 New England to strip out the risk of serving
24 PSNH's customers. Those questions could

1 have been answered, but were not because of
2 the determination that the asset itself was
3 in the black.

4 Q. Okay. Thank you. And for Mr. Smagula.
5 Earlier, when you were talking about the
6 Newington Station, I think you made the
7 comment about -- which I'm sure is true --
8 long-term and short-term planning horizons.
9 I was curious. What do you use for -- is
10 there some planning scheme you have? What
11 do you use for determining those horizons?

12 A. (By Mr. Smagula) Well, we use a five-year
13 horizon. And we look at the emerging
14 changes in regulation, we look at emerging a
15 number of scenarios on fuel pricing, we look
16 at our maintenance needs, we look at our
17 capacity investments, and we factor in all
18 of those drivers of capacity factor and
19 costs to look at that. It's a process we've
20 been using for over 25 years in our company
21 on all our facilities. So we don't hire a
22 consultant to do this for us. We don't hire
23 a service. We don't subscribe to a number
24 of databases in order to feed that. It's

1 based on our experience with awareness of
2 the New England marketplace.

3 Q. Do you memorialize that somehow or --

4 A. (By Mr. Smagula) Well, we develop budgets,
5 and from our budgets we develop the pieces
6 of equipment that we intend to maintain.
7 And through our energy service rate filing,
8 that gets reviewed by a third-party
9 consultant on an annual basis to determine
10 if our projected and current costs are
11 reasonable, based on a lot of these
12 appropriate variables. So there are other
13 regulatory PUC venues where opinions are
14 based on that assessment and our work there.

15 A. (By Mr. Levitan) Commissioner, would you
16 permit me to amend my prior response?

17 Q. Sure. I'd rather do it now than later.

18 A. (By Mr. Levitan) Sure. Thank you.

19 In discussing the structure of the CUO,
20 I hope I did not leave the Commission with
21 the mistaken impression that the Company is
22 not aggressively looking at its options, day
23 in and day out, with respect to the
24 Newington Station. There are opportunities

1 through brokers and other credit-worthy
2 counter-parties to enter into structured
3 products to take the place of the block of
4 energy that could be otherwise sourced from
5 Newington when the strike price of a
6 financial option or a physical option is
7 attractive. So they're constantly
8 systematically reviewing the relative merit
9 of Newington dispatch versus calling on a
10 plant as an option to meet that mid-range of
11 peaking block of energy, particularly when
12 there's a real chance in the real-time
13 market that prices explode.

14 What I meant to say is that we did not
15 run a scenario where we contemplated the
16 complete absence of Newington as a mid-range
17 or peaking option and having then to go to
18 the marketplace to supplant lost energy
19 production from the unit.

20 Q. That's helpful. And I think you've grasped
21 some of my thought process, anyways. It
22 wasn't whether -- and again, I'm
23 paraphrasing you. You made the conclusion
24 that this station's in the black. And

1 following beyond that, my question, I guess
2 is, is there not a potential for another
3 option, that even though the station's in
4 the black, it would be even more profitable,
5 if you will, or less cost to PSNH ratepayers
6 than the station, if that makes sense?

7 A. (By Mr. Levitan) Well, the postulated,
8 accelerated retirement of the station would,
9 from a directional standpoint, cause
10 capacity prices to run up. Exactly how far,
11 no one knows for sure. It's mostly
12 geometry. If you hold things constant, then
13 the slope of the supply curve, given the
14 vertical demand curve characteristic of the
15 Forward Capacity Market, suggests it could
16 run up a lot. Not for long, but certainly
17 for a year or two.

18 As far as energy prices are concerned,
19 the unit doesn't dispatch that much. So,
20 for the most part, throughout the year the
21 LMPs would be unaffected by the potential
22 retirement of the unit. The problem is when
23 the unit does operate is when you need it
24 the most. And so the loss of 400 megawatts,

1 both with respect to operating reserves or
2 in the day-ahead market, would have a --
3 could have a significant adverse impact on
4 the LMPs. So it would not be a major run-up
5 in LMPs, but a fractional uptick in LMPs
6 resulting from the loss of the station. And
7 when you multiply that fractional uptick in
8 LMPs times the entire load in the state,
9 it's an adverse economic outcome for all.

10 Q. Thank you.

11 CMSR. SCOTT: That's all I have.

12 CMSR. HARRINGTON: Thank you.

13 INTERROGATORIES BY MR. HARRINGTON:

14 Q. Again I'll ask questions of whoever is most
15 appropriate to answer those.

16 One question is, I guess, going back to
17 TransCanada No. 9, which is the chart that was
18 passed out, on Line 43 down there, I'm just
19 making sure I'm reading this correctly. It
20 talks about the average cost of fuel burned
21 per kilowatt hour net generation. And for No.
22 6 oil and No. 6 gas it's the same number.
23 Does that mean the cost is the same to run the
24 station on gas and oil?

1 A. (By Mr. Smagula) Thank you for asking that
2 question. After reflecting on the prior
3 questions and the discussions, I looked at
4 the sheet further during the break, and I
5 realized there was discussion with
6 representatives from Levitan, Line 42, which
7 identifies the average cost of oil versus
8 gas on a cents per million BTU -- or
9 dollars-per-million-BTU basis. And if you
10 look, they're very similar. What that means
11 is that -- and I just didn't think of it
12 instantaneously at the time -- is that the
13 oil we have in the tanks at Newington
14 Station were bought years ago. It's oil
15 that is very low-priced, and that when we
16 bid -- when we believe the unit will run, we
17 obtain prices for tomorrow's natural gas,
18 and we bid the unit out on gas and oil. But
19 if the unit is unlikely to run, we don't bid
20 in a gas price; we just have an oil price.
21 And we mark the oil price up so that our
22 customers don't just get reimbursed for the
23 cost of the fuel, but in fact make a small
24 margin. And since our oil price on the tank

1 is so low, the unit has been picked up to
2 operate with a little more than we would
3 normally expect. And that's what occurred
4 in 2011, is the unit ran on oil because of
5 its economic oil price it has on site.

6 Q. But presumably, eventually this cheap oil
7 goes away because it gets all burned.

8 A. (By Mr. Smagula) Yes, but we only burn very
9 modest amounts. But, yes, there's only a
10 finite quantity of that.

11 Q. And how much is there left at the rate
12 you're burning it now? Because I'm assuming
13 this would be a fairly drastic increase from
14 buying new oil.

15 A. (By Mr. Smagula) Yeah, I -- I'm not sure I
16 have that value with me. But we have a few
17 dozen days of full-load oil. So there's
18 quite a bit of BTUs in oil still on site to
19 cover us for any contingency.

20 CMSR. SCOTT: Sorry to go out of
21 order. So, on the same Form 1 here, on 40,
22 there's a zero price for No. 6. Is that
23 because, again, it's historically already
24 bought in the past? Is that what that means?

1 WITNESS SMAGULA: Yes, that's
2 the average delivered price during the year.
3 We didn't buy any. We haven't bought oil for
4 many years.

5 BY CMSR. HARRINGTON:

6 Q. So, assuming continued operation, somewhere
7 down the road here, if gas prices stay where
8 they are, the No. 6 gas would come down and
9 the No. 6 oil would go up substantially.

10 A. (By Mr. Smagula) Well, the No. 6 oil would
11 be the same, based on what we have in the
12 tank, and the gas would come down. We would
13 burn a small quantity of oil periodically to
14 meet certain circumstances. But --

15 Q. Okay.

16 A. (By Mr. Smagula) -- gas is our fuel at this
17 point, generally.

18 Q. Okay. That makes sense.

19 Based on the study itself, I'm just
20 trying to get some of the assumptions there.
21 Now, what was used for the capacity factors
22 and -- let me back up and start again.

23 You looked out over five years on this
24 study, the next five years of operation at

1 Newington Station?

2 A. (By Mr. Carlton) The next 10 years. 2011
3 through 2020.

4 Q. And what was the assumed capacity factor
5 during that time?

6 A. (By Mr. Carlton) Well, we had no assumption,
7 We ran the model for economic dispatch, and
8 depending upon the size of the spark spread
9 and its duration from scenario to scenario
10 or year to year there was resulting in a
11 capacity factor.

12 Q. Using that analysis, then, what was the
13 resulting capacity factor for the plant?

14 A. (By Mr. Carlton) Well, it was typically in
15 the single -- high single digits. But, you
16 know, it varies a lot from scenario to
17 scenario. If you look at the study,
18 Page 49, Exhibit G.17, it provides some
19 example of performance indicators. So in
20 the top panel it gives what the overall
21 average of the 250 scenarios is. And for
22 2011, for example, it gives a capacity
23 factor of 8 percent; in 2012, 7 percent.

24 Q. Okay. And those resulted by your projection

1 of -- well, I mean, I'm assuming the
2 modeling was based on the cost of natural
3 gas at Newington and then what you expected
4 to be the economic dispatch price for what
5 would be the marginal LMP that gets
6 dispatched? You got to say "Yes" or "No."
7 You can't shake you head.

8 A. (By Mr. Carlton) Yes.

9 A. (By Mr. Levitan) It's the relationship
10 between the LMP, which is reflective of all
11 the resources throughout ISO-New England,
12 not just Newington, and the marginal cost of
13 producing energy at full-load or part-load
14 heat rate based on the use of natural gas
15 only or oil only or some blend of oil and
16 natural gas at the plant, adjusted, of
17 course, for non-fuel-variable O & M. That's
18 the dispatch arithmetic that dictates the
19 output of the plant.

20 Q. And as far as gas prices, what was the range
21 you assumed? I mean, again, I assume that
22 you had many different runs. But what was
23 the range on that?

24 A. (By Mr. Carlton) I don't know if in the

1 study -- I don't believe we presented a
2 breakdown showing distribution of the
3 prices. But we do have graphs of what the
4 expected forward prices were. So, for Page
5 40, it shows the monthly fuel prices.
6 Again, given the volatilities that were
7 assumed in the simulation analysis, there
8 would be a sizable spread in prices. So it
9 shows basically in 2011 that it was somewhat
10 above \$5 in winter and below \$5 in the
11 summer, looks like. And around that there
12 may be a variation that would go down to the
13 \$2 or \$3 range and up to \$10 or more. That
14 variation may grow somewhat over time. So
15 you have a growing -- what's called a
16 "growing cone of uncertainty."

17 But as I said a little bit earlier, the
18 level of the gas prices isn't a prime driver
19 of the plant's economics, because gas is on
20 the margin throughout ISO-New England much
21 of the time, and therefore the power prices
22 tend to go up and down in tandem and the
23 market heat rates are relatively stable.
24 They'll vary a little bit, depending upon

1 the fuel price scenario, but not very much.
2 So, as Mr. Levitan said, another secondary
3 important driver is the size of the micro
4 basis spread to get the gas to the power
5 plant.

6 Q. Okay. So, basically what you're saying,
7 because the economic dispatch is basically
8 based on the price of gas, and the price of
9 gas is built into the price that Newington
10 would bid in at, that they sort of moved
11 together. So, barring something really
12 wild, a fairly small movement or even fairly
13 good-size movement in the price of gas won't
14 really affect the capacity very much; the
15 dispatching would be about the same.

16 A. (By Mr. Carlton) That's a good assessment.

17 A. (By Mr. Levitan) With one exception, and
18 that is, occasionally New England's
19 pipelines experience, on a coincident basis,
20 deliverability constraints due to when cold
21 snaps occur. And it has been experienced.
22 And when cold snaps occur, gas in the
23 day-ahead market and gas in the real-time
24 market skyrocket and get blown out of

1 anything recognizable the other 355 or 360
2 days of the year. On those very days, the
3 plant would be expected to burn residual
4 fuel oil, much less costly than gas, as a
5 raw material for power introduction. So
6 with that exception in mind, your statement
7 is correct.

8 Q. And on the -- we've heard that they buy
9 large quantities of oil well in advance,
10 which turned out to be pretty economic this
11 time. How is the gas purchased? Do you buy
12 it in the spot market or --

13 A. (By Mr. Smagula) We buy gas on a daily
14 market and day-ahead market -- we buy gas on
15 the day-ahead market.

16 Q. And just trying to get back to some of the
17 other things that got built into more or
18 less assumptions. You stated -- and we
19 don't have to go over it again for many
20 reasons -- why you didn't contain Northern
21 Pass as a scenario of what happens if
22 Northern Pass gets built. And the same
23 thing on what happens if there were new
24 environmental regulations, such as a cooling

1 tower. So if one of those was to come to
2 pass, would that -- would your analysis be
3 worth anything, or would it have to be
4 redone, if either Northern Pass or whatever
5 it was, like a \$120 million cooling tower
6 was required?

7 A. (By Mr. Levitan) It's our opinion that at
8 such time that it's known with reasonable
9 certainty that screens or a cooling tower is
10 required would be exactly the right time to
11 re-run the financial model to figure out
12 whether that incremental capital expenditure
13 is, counter-balanced by the value of the
14 products. It's not so simple as just to
15 infer from the existing work, because to the
16 extent that Newington, in this environment,
17 has a 316(b) compliance problem, then it's
18 probable that many other resources in
19 sensitive estuaries or rivers with some
20 exposure would be likewise challenged to
21 make that investment, particularly since the
22 owners of those resources, for the most
23 part, are not financially healthy generation
24 firms. So you can't simply conclude that in

1 the current marketplace, that our applicable
2 forecast of capacity and energy prices would
3 be of equal relevance at such a point in
4 time that Newington faces a 316(b) CapEx of
5 magnitude that was discussed this morning.

6 Q. Okay. You said -- if I get what you're
7 saying, if and when that would happen, you
8 would have to re-look at it. But it also
9 could substantially change market conditions
10 as well because of other plants having to
11 get the same type of compliance, which would
12 tend to drive up prices.

13 A. (By Mr. Levitan) Yes, yes. And to have
14 postulated the occurrence of heavy CapEx
15 spent, for example, a 316(b) compliance in
16 2016 or 2017 would have introduced financial
17 skewing of the results, which, in our
18 opinion, could conclude falsely that the
19 right decision is to retire Newington well
20 ahead of schedule. Why give up the free
21 option that PSNH's customers currently enjoy
22 based on a roll of the dice. It's better,
23 we believe, to wait until we understand the
24 applicability and timing and then

1 re-calibrate.

2 Q. Okay. Thank you.

3 The question on maintenance, from what we
4 heard earlier, the capacity of the plant has
5 been going down substantially over the past
6 few years; so that, rather than running for
7 longer periods of time, it's now running
8 shorter periods of times and probably maybe
9 starting up and shutting down more often. How
10 is this type of running it basically only as a
11 peaker now -- what is the effect of that long
12 term, do you expect, on your maintenance
13 budget?

14 A. (By Mr. Smagula) We don't think it will
15 cause our maintenance budget to increase.
16 We have been in this operating mode now and
17 have been experiencing it for a number of
18 years. And we've developed certain
19 processes and procedures in order make sure
20 we exercise equipment that would otherwise
21 be idle. And we go through an occasional
22 warm-up of the boilers, get the control
23 systems operational, rotate some of our
24 large pieces of equipment. So we've

1 developed practices at Newington Station in
2 order to make it reliable and not affect its
3 efficiency and so on. And we've learned
4 from other sister units in New England as to
5 what their techniques and practices are. So
6 there are many units that can be identified
7 in the 4- to 600-megawatt range that have a
8 similar position in ISO-New England. One In
9 Four(?), of which we are a part owner to, we
10 get information on their approach. And we
11 try to also learn what other similar units
12 are doing. So we don't see that as creating
13 any incremental cost. As a matter of fact,
14 as I indicated earlier, our expense budget
15 has dropped over the last few years by about
16 a million dollars also.

17 Q. I was more referring to the aging factor
18 with -- you know, five hours of start-up is
19 usually equivalent to, I don't know, using a
20 number of 10, 20, 30 hours of operation when
21 it comes towards preventative maintenance
22 requiring tear-downs and just general aging
23 of the equipment.

24 A. (By Mr. Smagula) With the good condition of

1 the unit and the investments we made over
2 the last six to eight years -- and I won't
3 go through the list of those -- the unit is
4 in very good condition, and that the
5 incremental cold starts, wear and tear is
6 very moderate. It's very low. And we feel
7 as though we monitor our equipment pretty
8 aggressively now on our oil analysis and
9 other issues, on temperatures on start-up,
10 make sure they're in proper condition. So
11 we haven't seen any degradation and don't
12 expect to with the number of starts we
13 envision.

14 Q. And you mentioned earlier that there was a
15 possibility of making a modification to one
16 of the boilers?

17 A. (By Mr. Smagula) One of the auxiliary
18 boilers. We have two light oil-fired --
19 No. 2-fired boilers which provide heat to
20 the facility. And one of those units we're
21 considering may require some maintenance
22 over the next few years. We were looking
23 into whether we'll do that maintenance, and
24 if we do, how. So we're looking whenever

1 there's an opportunity such as that. We
2 also look at what's the alternative we have
3 to replace that piece of equipment. We do
4 that with any pump or valve. We're looking
5 at the possibility of replacing it with a
6 boiler that would burn natural gas. And
7 that's all.

8 Q. Okay. So, presumably there would be savings
9 there from not burning oil.

10 A. (By Mr. Smagula) That's correct.

11 Q. And there was a lot of discussion on the
12 Forward Capacity Market, which I regret to
13 say I actually understood. I spent too much
14 time doing that.

15 What would be the effect OF \$1 FCA
16 clearing price, say in FCA 7 or 8, on
17 Newington?

18 A. (By Mr. Levitan) It would be bad.

19 Q. How bad is my question? Would that put it,
20 at least for that year, out of the black and
21 into the red?

22 A. (By Mr. Levitan) I hesitate to guess without
23 taking a moment to properly consider. But
24 it would be a material adverse change in the

1 project's cash flows and could place the
2 resource in that one year "underwater," so
3 to speak.

4 But what is more important than any
5 one-year snapshot of the cash flows that
6 deteriorate for incumbent generators across
7 the region is the staying power of those
8 resources to stay in the resource mix. This
9 gets complicated quickly. But the removal
10 of the FCA floor -- and I recognize that
11 FERC is acquiescent with respect to its
12 extension one more year. But the removal of
13 the FCA floor will definitely impair the
14 financial prospects of a number of incumbent
15 generation owners that burn only residual
16 fuel oil and are facing CapEx, as well as
17 units that are both dual-fuel-capable, but
18 using old-style steam-turbine generators
19 from the '50s, '60s and '70s.

20 I'm sure, Commissioner, that you know
21 from your active involvement with ISO and
22 other stakeholder groups, that the ISO has
23 expressed great concern about the loss of
24 these resources. And one good reason for

1 that concern is simply as a hedge against
2 pipeline deliverability constraints which
3 could bring the region to its knees during
4 cold snaps. Unlike PJM or New York ISO,
5 which has greatly benefited by major
6 infrastructure spent in pipeline and
7 gathering systems to accommodate shale gas
8 production, here in New England, we don't
9 have that luxury. We are looking at more or
10 less the same pipeline configuration. And
11 this is really important because almost all
12 of the other plants that have been
13 identified as candidates for attrition in
14 the ISO studies, as well as many of the
15 consultant studies referenced here today,
16 and that we've used before and that we've
17 been responsible for as well, these are
18 resources that are located "behind the city
19 gates." They're served by all these cities.
20 There's very little likelihood during cold
21 snaps, or even moderate winter conditions,
22 that gas would be deliverable to these
23 plants, which is exactly why they are more
24 likely to be the first units to retire.

1 Only Newington sits directly connected
2 to PNGTS. There aren't any other old-style
3 STGs, to the best of my knowledge, that are
4 directly connected to interstate pipelines.
5 That is a very important reliability
6 consideration that bodes well for continued
7 benefits to PSNH's customers, as well as
8 those outside the region -- outside the
9 state.

10 Q. And again on this, what did you look at then
11 for forward capacity prices? Was there a
12 range there as well? How did that model --

13 A. (By Mr. Levitan) We calculated them, and
14 they are revealed in the study. And then
15 there are a number of data responses on
16 this. If you bear with me for a moment...
17 If you would please turn to the CUO study.

18 Q. This is the original, the first one?

19 A. (By Mr. Levitan) Actually, it wouldn't make
20 a difference because it didn't change. But
21 if you'd be kind enough to turn, please, to
22 Page 37 of the revised study issued in April
23 of 2011. Here you will see the three
24 distinct cases that we were responsible for

1 in formulating. And you'll see that 2015
2 has very little separation among the three
3 cases. But starting in 2016 --

4 Q. Excuse me for one second. When did you
5 assume the floor would disappear?

6 A. (By Mr. Levitan) We assumed the floor would
7 disappear in delivery year 2016 in this
8 analysis. And I think that is one of the
9 key reasons why there's differentiation
10 between the high and low case in 2016.

11 The basic reasoning for the
12 differentiation in the mid case, the high
13 case and the low case is provided on Page 38
14 of the CUO. Simply put: The mid-range
15 forecast reflects an assumption of about
16 2100 megawatts of retired capacity through
17 2016 in response to more restrictive
18 environmental standards. And it also calls
19 for the phase-down of imports from NYISO
20 across the 345 lines. In the high case,
21 we've assumed that the prices escalate back
22 three years in the forecast period. Here,
23 the thought was that the region, in response
24 to FERC, would implement reforms in response

1 to the anticipation concern, the concern
2 that EDCs and states exercise monopsony
3 power to artificially depress capacity --

4 Q. The other market effect.

5 A. (By Mr. Levitan) Yes. And we know from the
6 PJM that the implementation of the Minimum
7 Offer Price Rule now has direct relevance
8 here in New England. Whether it's an
9 Alternative Price Rule or a Minimum Offer
10 Price Rule, we're contemplating here
11 outcomes in 2018, '19 and '20, where there
12 are adjustments made to the FCA price to
13 account for what could potentially be the
14 addition of new conventional resources prior
15 to the need date. So that's reflected in
16 the high price. And it also accounts for
17 the lessening of imports from New York to
18 New England in response to capacity needs in
19 New York on Long Island, and to a lesser
20 extent, the rest of the state. We did not
21 contemplate the attrition or the loss point
22 2 or 3 in doing --

23 Q. I'm sorry. You did not --

24 A. (By Mr. Levitan) We did not --

1 Q. -- participate in --

2 A. (By Mr. Levitan) Right, but we did consider
3 a reduction in exports from NYISO through a
4 variety -- through a number of import notes
5 in Connecticut.

6 In the low case, we have contemplated
7 some of the same assumptions that you would
8 normally expect to see that are the inferences
9 in the high case. In the low case, 200
10 megawatts of imports persist over the
11 forecast period for NYISO. We've postulated
12 the retirement of the West Springfield
13 facility being delayed one year. We
14 somewhat arbitrarily blended in an
15 additional 200 megs of DR in the capacity
16 mix, all of which helps to sustain a lower
17 trajectory going forward.

18 In handicapping these scenarios, we
19 acknowledge that there's a lot of our N
20 science in this. And we don't know with
21 great confidence what's going to happen,
22 which is exactly why the resource does
23 constitute a hedge against the uncertain
24 capacity price outcomes in the region. So

1 we have said that 50 percent of the sampled
2 outcomes are either along the low-price
3 trajectory or the high-price trajectory; so,
4 50 percent, therefore, on the mid-case
5 trajectory as well. And that then gives us
6 the primary financial drivers on the
7 non-energy part that drives these results.

8 Q. Okay. Thank you. And one last question,
9 which I think I know the answer to, about
10 your discussion on Northern Pass. And you
11 didn't consider that even being built as
12 part of your study. I assume the same thing
13 goes for the Northern Energy Link, the
14 proposal by National Grid to come down from
15 Canada -- Canadian Power -- Wind power from
16 Maine in the HVDC line coming down to --

17 A. (By Mr. Levitan) With all due respect, I
18 don't want to leave the Commission with the
19 view that we just tossed out NPT and didn't
20 consider it being built. Again, this goes
21 back to the reasons we did the study the way
22 we did it in the first place. Had we, for
23 the sake of discussion, incorporated a
24 1200-megawatt HVDC interface injecting that

1 quantity of energy in the neighborhood, it
2 could and perhaps would have had a clear
3 economic depressant effect on Newington's
4 future. Why skew the financial results for
5 something that may or may not happen? If it
6 does happen, it's highly likely to happen
7 not before 2016, and perhaps later.

8 Q. I understand. I'm not questioning your
9 logic. I just want to say the same logic
10 applies to other projects that are
11 speculative at this time.

12 A. (By Mr. Levitan) That's correct.

13 Q. Okay. That's all the questions I had.

14 A. (By Mr. Levitan) And as well as retirement.

15 CMSR. HARRINGTON: Go ahead,
16 Cmsr. Scott.

17 CMSR. SCOTT: One, hopefully,
18 final question.

19 INTERROGATORIES BY MR. SCOTT:

20 Q. Have you done any -- on your analysis
21 itself, have you done any -- I'm sure you've
22 done some kind of sensitivity analysis.
23 What I'm interested in, are there -- can you
24 identify critical components that drive the

1 analysis more than anything else? You know,
2 is it the price of gas or -- you know, are
3 there certain things that your client, PSNH,
4 you know, ultimately you'd want to tell
5 them, Look, if this changes significantly,
6 you need to pay attention to this?

7 A. (By Mr. Levitan) Well, sure. One key driver
8 would be the re-tooling of New England's
9 FCM, which would result in significant
10 changes against our baseline assumptions.
11 Another would be the potential applicability
12 of onerous environmental CapEx. You've
13 heard Mr. Smagula address the firm's view on
14 both the uncertainty of those regulations
15 and potential timing for implementation.
16 If, for whatever reason, those requirements
17 visit PSNH with respect to each of the
18 EPA-related requirements, that would be a
19 time to re-run the model. And a third
20 driver would be accelerated attrition
21 effects across the resource mix, or a
22 deceleration of the plant retirement
23 relative to the timing and quantity that we
24 forecast. So we'd want to look at that,

1 since that affects the operating revenues
2 driving capacity of sales, the key driver of
3 the unit's outlook.

4 You want to add to that list?

5 Q. Before you go on, could you clarify the last
6 statement? So, to paraphrase, if less
7 plants retire than you predict, that could
8 be a negative impact? Is that what you --

9 A. (By Mr. Levitan) If, for the sake of
10 argument, the floor is extended year over
11 year, or there are other modifications to
12 the demand curve slope or the supply curve,
13 that makes it easier for old-style resources
14 to hang in there. We would need to account
15 for that and refresh the economic
16 determination in an environment where some
17 of the capacity price trajectory shown in
18 the study may be materially lower.

19 Q. Thank you for clarifying.

20 A. (By Mr. Carlton) I don't think I have
21 anything else to add to the matter.

22 CMSR. SCOTT: Thank you.

23 CMSR. HARRINGTON: Okay. So
24 that's going to be it for this afternoon.

1 We'll go off the record now, and we will
2 adjourn and reopen tomorrow at 8:30 and make
3 sure we can get through this first thing in
4 the morning. I'd like to have an 8:30 actual
5 start, not an 8:30 mulling. So, try for 8:30
6 in the morning. The meeting is adjourned.

7 (Whereupon the AFTERNOON SESSION of the
8 hearing was adjourned at 4:34 p.m.)

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

C E R T I F I C A T E

I, Susan J. Robidas, a Licensed Shorthand Court Reporter and Notary Public of the State of New Hampshire, do hereby certify that the foregoing is a true and accurate transcript of my stenographic notes of these proceedings taken at the place and on the date hereinbefore set forth, to the best of my skill and ability under the conditions present at the time.

I further certify that I am neither attorney or counsel for, nor related to or employed by any of the parties to the action; and further, that I am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

Susan J. Robidas, LCR/RPR
Licensed Shorthand Court Reporter
Registered Professional Reporter
N.H. LCR No. 44 (RSA 310-A:173)