

STATE OF NEW HAMPSHIRE  
PUBLIC UTILITIES COMMISSION

May 10, 2012 - 9:08 a.m.  
Concord, New Hampshire

DAY 5

NHPUC MAY30'12 PM 1:16

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

PRESENT: Chairman Amy L. Ignatius, Presiding  
Commissioner Michael D. Harrington  
Commissioner Robert R. Scott

Sandy Deno, Clerk

APPEARANCES: Reptg. Public Service Co. of New Hampshire:  
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Sarah B. Knowlton, Esq.

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

Reptg. Granite Ridge Energy:  
Maureen Smith, Esq. (Orr & Reno)

Reptg. N.H. Sierra Club:  
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Court Reporter: Steven E. Patnaude, LCR No. 52

ORIGINAL

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Edward Arnold (Jacobs Consultancy)

## I N D E X

## PAGE NO.

WITNESS PANEL:       GEORGE R. McCLUSKEY  
                          EDWARD C. ARNOLD

Cross-examination by Ms. Knowlton	6
Interrogatories by Cmsr. Harrington	106, 137
Interrogatories by Cmsr. Scott	125, 138
Interrogatories by Chairman Ignatius	127
Redirect examination by Mr. Speidel	141

## E X H I B I T S

EXHIBIT NO.	D E S C R I P T I O N	PAGE NO.
PSNH 16	<b>RESERVED</b> (Updated information for Jacobs Consultancy Statement of Work)	12
PSNH 17	PUC Staff Response to PSNH Data Request 1-24 (08-29-11)	26
PSNH 18	E-mail from Gerald M. Eaton to RLC@levitan.com and an e-mail from Alexander Speidel to Gerald M. Eaton, et al, with attached Agenda for Friday, June 3rd (06-01-11)	42
PSNH 19	PSNH response to Technical Session Request TS-02, Q-TECH-008	68
PSNH 20	PSNH response to Technical Session Request TS-02, Q-TECH-009	69
PSNH 21	<b>RESERVED</b> (Supporting documentation to Mr. McCluskey's claim to other Commissions' treatment of plant retirement)	87
PSNH 22	PSNH Response to Staff Data Request 01-070	103
Staff 13	<b>RESERVED</b> (Record request from Cmsr. Harrington about Newington Station)	115

**P R O C E E D I N G**

CHAIRMAN IGNATIUS: We will reopen the hearing in Docket DE 10-261, PSNH's Least Cost Integrated Resource Plan. As we left yesterday afternoon, we were about to begin cross-examination from Ms. Knowlton of the Staff panel.

Is there anything before we begin that to address? Mr. Speidel.

MR. SPEIDEL: Yes, Chairman Ignatius. Mr. Peress informed the Office of the Consumer Advocate and Staff that he will not be able to come to in to today's hearing. He sends his apologies. He had a number of prior commitments, but he's confident that we can handle the matter in his absence.

CHAIRMAN IGNATIUS: All right. Thank you. Anything else?

(No verbal response)

CHAIRMAN IGNATIUS: If not, Ms. Knowlton, are you ready?

MS. KNOWLTON: Yes, I am. Thank you. Good morning.

CHAIRMAN IGNATIUS: Good morning.

**GEORGE R. McCLUSKEY, Previously sworn.**

**EDWARD C. ARNOLD, Previously sworn.**

1 **CROSS-EXAMINATION (Resumed)**

2 BY MS. KNOWLTON:

3 Q. Good morning, Mr. Arnold. I'm going to start with you  
4 this morning.

5 A. (Arnold) Okay.

6 Q. My understanding is that your firm was hired in May of  
7 2011 by the Staff of the New Hampshire Public Utilities  
8 Commission to work on this matter, is that right?9 A. (Arnold) I'd have to go back to the contract, but that  
10 date sounds right to me.11 Q. Okay. And, if you want to do that, we do have a copy  
12 of the Statement of Work and Vendor Quote. That's your  
13 contract, correct?

14 A. (Arnold) I believe so. I don't have one handy with me.

15 Q. Okay. I can show that you to you, --

16 A. (Arnold) Okay.

17 Q. If I may?

18 A. (Arnold) Sure.

19 Q. It's attached to Mr. Large's testimony, which is PSNH  
20 Exhibit 3, and it's attached to his testimony, Bates  
21 Page 037. Do you have that before you?22 A. (Arnold) Yes. Looks like I've got a "Statement of Work  
23 and Vendor Quote".

24 Q. Okay. Is that the contract that you were hired

1       pursuant to?

2   A.   (Arnold) It's part of it.  It doesn't look like the  
3       whole thing is here.

4   Q.   Can you look at that and tell me, identify for me  
5       what's missing?  What I have is, in my version, is  
6       Bates Pages 037 through 040?

7   A.   (Arnold) Right.  Okay.  Let me see.  Here is  
8       "Background", "Statement of Work", "Schedule", "Project  
9       Team", "Deliverables", "Vendor Quote".  What I don't  
10      see is, yes, the details of the budget estimates are  
11      provided in the schedule below.  There is typically a  
12      project schedule that goes with these.  And, then  
13      there's --

14                   MR. SPEIDEL:  That here?

15                   WITNESS ARNOLD:  I can't see that from  
16      here.

17                   MR. SPEIDEL:  And, let me just see if I  
18      can assist you a little bit.

19                   (Atty. Speidel showing document to  
20      Witness Arnold.)

21                   MR. SPEIDEL:  Okay.  I think --

22                   WITNESS ARNOLD:  All right.

23   **BY THE WITNESS:**

24   A.   (Arnold) Yes.  This looked to be the initial work

1           agreement. There were subsequent work agreements as  
2           the project progressed.

3 BY MS. KNOWLTON:

4 Q.    So, was the contract amended?

5 A.    (Arnold) It was -- what we did, I can't think of the  
6           right word right now. We, you know, the budget ran  
7           out, and we came to agreement on additional monies to  
8           cover additional work that wasn't in this initial  
9           agreement.

10 Q.    Okay. Mr. Arnold, if you would look at Page -- if  
11           you're looking at Mr. Large's rebuttal testimony, the  
12           page before that is Bates Page 036, and that contains  
13           the Staff's response to PSNH Data Request 1-7. Do you  
14           see that, that page?

15 A.    (Arnold) Yes. This is Bates Page 036.

16 Q.    You're correct. Page 036. And, do you see there that  
17           the Company was requesting copies of any engagement  
18           letters or contracts associated with your work in this  
19           docket?

20 A.    (Arnold) Right.

21 Q.    And, what's attached to that data response is the  
22           contract that you have said is not the complete  
23           version?

24 A.    (Arnold) No, I didn't say that.



[WITNESS PANEL: McCluskey~Arnold]

1 Q. Okay.

2 A. (Arnold) I said that there were additional agreements  
3 that added additional funds to the work agreement.  
4 Most of these were verbal, some were probably confirmed  
5 by e-mail.

6 Q. Okay.

7 A. (Arnold) I wouldn't call those "contracts".

8 Q. Were they amendments, though, to the provisions in this  
9 agreement?

10 WITNESS ARNOLD: Alex? I don't know.  
11 Would those be called "amendments"?

12 MS. KNOWLTON: I'm actually --  
13 Mr. Speidel can't testify here today. So, I --

14 WITNESS ARNOLD: Oh. I don't know if  
15 technically they are "amendments". I'll tell you exactly  
16 what they were.

17 BY MS. KNOWLTON:

18 Q. Well, just before we do that, but it sounds like they  
19 related to the terms of this contract? It sounds to me  
20 like you were granted extensions of the -- the budget  
21 was expanded?

22 A. (Arnold) Uh-huh.

23 Q. Correct? Okay.

24 A. (Arnold) Right.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 Q. Do you know whether --

2 A. (Arnold) And, I think that happened after this date,  
3 but I'm not sure.

4 Q. Okay. Do you know what time frame that was?

5 A. (Arnold) I'd have to go back and consult my notes.

6 Q. Okay. Do you know whether this, the Staff's response  
7 to PSNH 1-7, was ever supplemented with information  
8 about those additions to this contract?

9 A. (Arnold) No, I don't.

10 Q. Are you aware that, under the Commission's rules, that  
11 parties who respond to data requests have a legal  
12 obligation to supplement responses as those -- as more  
13 information that's responsive to the request becomes  
14 known?

15 A. (Arnold) No, I'm not.

16 MS. KNOWLTON: I'd like to make a record  
17 request --

18 WITNESS McCLUSKEY: If I could just add,  
19 Commissioners?

20 MS. KNOWLTON: Sure.

21 **BY THE WITNESS:**

22 A. (McCluskey) That the only changes to the contract  
23 related -- relate to the budget. There were no  
24 additional work requirements added to the contract for

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 Mr. Arnold. We just got to a point, because of  
2 additional work to do with discovery, to do with  
3 attending hearings, that the initial budget ran out.  
4 We asked for an -- Mr. Arnold asked for an extension.  
5 We ran it by the managers at the Commission; they  
6 approved it. And that, to my knowledge, is the only  
7 change that has occurred to this particular piece of --  
8 to this particular piece of work. So, there's no scope  
9 of work changes were made.

10 BY MS. KNOWLTON:

11 Q. Mr. McCluskey, can you tell me how many hours were  
12 added to the contract?

13 A. (McCluskey) Not at this moment. I forget the actual  
14 dollar amount. The Commission has a contract with  
15 other members of the Jacobs team. And, I believe the  
16 budget that was approved for that much larger piece of  
17 work, it was agreed that Mr. Arnold could charge his  
18 additional time, in excess of the initial budget, to  
19 that separate contract for Jacobs' work.

20 MS. KNOWLTON: The Company would make a  
21 record request that the Staff provide a supplemental  
22 response to PSNH 1-7, and provide a complete -- any  
23 additions or amendments or changes to the Vendor Statement  
24 of Work, in whatever form it takes, whether it's e-mail

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 exchanges or if it relates to another Jacobs contract, to  
2 provide whatever documentation you have of that.

3 MR. SPEIDEL: Staff would like to state  
4 that it does not necessarily believe that such a  
5 supplemental response would be legally required by this  
6 proceeding, given the stage at which we find ourselves,  
7 and the fact that discovery had proceeded for a number of  
8 weeks and months. And, I'm not exactly certain as to  
9 whether the additional engagement information came in  
10 after discovery had concluded. However, Staff is willing  
11 to provide such information to the Company as a record  
12 request in the interest of comity and in the interest of  
13 cooperating with the Company and its inquiry.

14 CHAIRMAN IGNATIUS: Thank you for the  
15 response. We will -- I'll grant that record request. It  
16 would be "PSNH 16".

17 **(PSNH Exhibit 16 reserved)**

18 CHAIRMAN IGNATIUS: And, what I do want  
19 to clarify is, Ms. Knowlton, are you looking for dollar  
20 figures? Are you looking for hours expended?

21 MS. KNOWLTON: Both. I want to  
22 understand, you know, what -- it sounds like the scope of  
23 work did not change, but the total, you know, if there's  
24 an extension of the amount of the budget that was

[WITNESS PANEL: McCluskey~Arnold]

1 approved, hours, the number of hours, you know, allocated  
2 per task. It sounded like, from what Mr. McCluskey said,  
3 that it may be that there's another contract between  
4 Jacobs and the Commission. And, if it was done through  
5 that contract, then we would ask that that contract be  
6 provided, so that we have a full understanding of what the  
7 nature of the engagement is.

8 CHAIRMAN IGNATIUS: Well, I'm granting  
9 it with the understanding that it's seeking the authorized  
10 amounts to be expended, whether it's calculated in terms  
11 of hours or dollars, between the initial contract or the  
12 other Jacobs contract for general engineering services.

13 If you're asking for invoices for actual  
14 work done, --

15 MS. KNOWLTON: No.

16 CHAIRMAN IGNATIUS: -- we're not going  
17 there. But --

18 MS. KNOWLTON: Yes. No, that's fine.  
19 We don't need that.

20 CHAIRMAN IGNATIUS: Mr. Patch?

21 MR. PATCH: I would like to make a  
22 record request that PSNH provide the total expenditures  
23 for the Levitan Associates.

24 MS. KNOWLTON: I'm going to object to

[WITNESS PANEL: McCluskey~Arnold]

1       that request. I mean, we don't, first of all, have a  
2       Levitan witness on the stand. Certainly, Mr. Patch could  
3       have asked that question long ago, if he had wanted, in  
4       discovery, or when Mr. Levitan and Dr. Carlson or Mr.  
5       Large or Mr. Smagula were on the stand, and the time is,  
6       in my view, long past for that.

7                       CHAIRMAN IGNATIUS: Mr. Patch, your  
8       response?

9                       MR. PATCH: I think, in the interest of  
10      ratepayers, transparency would be appropriate here.

11                      CHAIRMAN IGNATIUS: And, her issue that  
12      "that could have been asked while they were on the stand"?

13                      MR. PATCH: I mean, she's right. It  
14      could have been asked. It wasn't. I think there was some  
15      information provided, perhaps at a technical session,  
16      might have been on the first day, with regard to some  
17      total amount that I remember. And, somebody may be able  
18      to back me up on that?

19                      MR. SPEIDEL: That's correct, Mr. Patch.  
20      As I recall, Mr. Large made a comment as to the total  
21      amount spent, and that's within the transcript of this  
22      hearing record at the present time. So, at least we have  
23      that figure to go on. I don't believe that we've received  
24      a full accounting of the amount of money spent by the

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 Company's consultant, but there was that estimate provided  
2 on the first day of hearing.

3 CHAIRMAN IGNATIUS: All right. We'll  
4 take the request under advisement and discuss it when we  
5 have a break.

6 MS. HOLLENBERG: And, if I might just  
7 add?

8 CHAIRMAN IGNATIUS: Yes.

9 MS. HOLLENBERG: I would support, to the  
10 extent that we're looking into consultant costs, I  
11 certainly support, you know, disclosure of all consultant  
12 costs.

13 MS. KNOWLTON: I just would like to  
14 state for the record that I think it's a dangerous  
15 precedent to go back and to allow parties to seek  
16 information, you know, through the forms of record  
17 requests or otherwise, in parts of the hearing that  
18 essentially have been concluded. I mean, if that's the  
19 case, you know, I certainly would like to go back and ask  
20 some other record requests and questions on topics that  
21 there's been discovery on. I can tell you, and the reason  
22 why I'm asking this line of questioning, is, you know, not  
23 that I have any criticism of the total dollar amount that  
24 was spent. I'm trying to understand the scope of effort

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 that was undertaken. And, so, you know, all I have to  
2 work with today is what was provided in response to PSNH  
3 1-7. So -- but I do think it's really a very dangerous  
4 place for the Commission to go, to reopen matters that,  
5 where witnesses have been taken off the stand and the  
6 matter has been concluded. So, you know, I'll offer those  
7 thoughts as well.

8 MR. SPEIDEL: Well, just to reiterate,  
9 as far as the Staff inquiry here goes, reserving the right  
10 to disagree with the characterization of the response to  
11 Staff 1-7, well, actually, it would be a Company data  
12 request, as "legally insufficient", we are willing to  
13 comply with the record request.

14 CHAIRMAN IGNATIUS: We'll take the  
15 second question of Mr. Patch under advisement. Let's move  
16 on.

17 BY MS. KNOWLTON:

18 Q. I'll direct this question, actually, to Mr. McCluskey  
19 or to Mr. Arnold. With regard to the existing contract  
20 with Jacobs, for the other matter that they have been  
21 engaged on with regard to the Commission, do you know  
22 whether Jacobs has a nondisclosure agreement with  
23 Public Service of New Hampshire with regard to that  
24 matter.



[WITNESS PANEL: McCluskey~Arnold]

1 A. (McCluskey) I don't.

2 Q. Okay. Mr. Arnold?

3 A. (Arnold) I do not.

4 Q. Would you accept subject to check that, in fact, there  
5 is an NDA between PSNH and Jacobs, with regard to that  
6 matter, which is the scrubber docket?

7 A. (McCluskey) Subject to check, yes.

8 Q. Okay. Mr. Arnold, when did you start -- first start  
9 working on this matter?

10 A. (Arnold) I'd have to go back to the contract and see.  
11 This was quite a long time ago.

12 (Short pause.)

13 **BY THE WITNESS:**

14 A. (Arnold) In April of 2011.

15 BY MS. KNOWLTON:

16 Q. And, at the time that you were hired, were you aware  
17 that PSNH had submitted a CUO of Newington Station back  
18 in September of 2010?

19 A. (Arnold) At the time I was hired?

20 Q. Yes.

21 A. (Arnold) I -- Yes. I believe that came up in the  
22 initial conversations between myself and George and  
23 Alex, and some other individuals here at the Public  
24 Utility Commission. They gave me background on the

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 project as we were -- as they were deciding if I was  
2 the right person, and I was deciding if I was the right  
3 person and wanted to do the job.

4 Q. Did you ever look at the order that the Commission  
5 issued that required the conduct of the CUO?

6 A. (Arnold) I don't remember ever looking at the original  
7 statement. However, I think, in a conversation, George  
8 reviewed that with me early on in the project.

9 A. (McCluskey) If I could, we did actually send a copy of  
10 the order as an attachment to an e-mail to Mr. Arnold  
11 prior to his engagement.

12 Q. Mr. Arnold, would you take subject to check that that  
13 order didn't contain any requirements that the CUO be  
14 premised on any certain type of data set or data  
15 inputs?

16 A. (Arnold) Yes, subject to check.

17 Q. And, would you also accept subject to check that that  
18 order didn't specify any particular method of analysis?

19 A. (Arnold) Subject to check, yes.

20 Q. Did you provide any guidance to the Staff about the  
21 review that you thought should be done of the CUO?

22 A. (Arnold) In terms of the review of the CUO, correct?

23 Q. That's correct.

24 A. (Arnold) Yes, I did.

{DE 10-261} {05-10-12/Day 5}

1 Q. Actually, I want to go back a minute. You indicated  
2 that you were hired in April of 2011. That that's when  
3 you began the work. I know that the Vendor Quote  
4 wasn't signed until May.

5 A. (Arnold) Uh-huh.

6 Q. But you began in April?

7 A. (Arnold) I began some work in April.

8 Q. Did you -- there was a March 30th technical session in  
9 this case. Did you attend that technical session?

10 A. (Arnold) I attended one technical session here. I  
11 can't remember the exact date. I'd have to go back to  
12 my notes.

13 Q. Would you accept subject to check that it occurred on  
14 March 30th?

15 A. (Arnold) Yes, subject to check.

16 Q. When you were -- at the time that you were engaged, did  
17 the Staff of the Commission give you any guidance about  
18 the review that they were seeking to have you do?

19 A. (Arnold) Yes. They gave me guidance.

20 Q. What did they tell you?

21 A. (Arnold) I'd have to go back to my notes to remember  
22 exactly what the guidance was. But, in general, what I  
23 was asked to do was to tell them whether or not the  
24 model used in the study would accurately represent the

1 value of the Newington asset into the future, whether I  
2 could be absolutely certain it was mistake-free,  
3 whether I could duplicate the results myself, and  
4 whether I was completely happy with the output.

5 Q. Was that -- who did you talk to on the Staff? Who  
6 provided that guidance to you?

7 A. (Arnold) George McCluskey.

8 Q. You're employed by Jacobs Consultancy, correct?

9 A. (Arnold) Correct.

10 Q. What does Jacobs Consultancy specialize in?

11 A. (Arnold) Jacobs Consultancy specializes in a number of  
12 technical consulting areas and financial consulting  
13 areas. And, I'm going to assume you're talking about  
14 the energy, chemicals, and petrochemicals practice, of  
15 which I am a part, because there are many other  
16 subpractices of Jacobs Consultancy. Can I assume that?

17 Q. Yes. That would be good. Thank you.

18 A. (Arnold) Okay. That narrows it down considerably. We  
19 specialize in -- I can give you examples, but we  
20 provide due diligence to investors, to banks. We  
21 specialize in evaluating work that other entities have  
22 performed. We will do this for investors, we will do  
23 this for the entities themselves, to prepare themselves  
24 for due diligence sessions. We'll work for government

1 agencies to do studies that will help set policy.

2 Sometimes we're asked to build custom models for

3 commercial organizations or government entities, that

4 they will use for planning purposes, to help them make

5 decisions about investment, divestment, or how --

6 whether they should close down an asset, sell it, or

7 enlarge it. We will offer advice on contract structure

8 to private entities. We will offer advice on market

9 scenario development. And, reluctantly, we will

10 develop forecasts. I say "reluctantly", we prefer

11 "scenarios", versus "forecasts". But --

12 Q. What's the difference between a "scenario" and a

13 "forecast"?

14 A. (Arnold) A "forecast" is typically a prediction of

15 where a certain value, such as a price, will be headed

16 in the future. It's usually a single string of values

17 into the future. I'm giving the typical definition.

18 And, based on the preparer's best understanding, best

19 guesses, best beliefs and opinions about where all the

20 driving forces for that price are going.

21 A "scenario", on the other hand,

22 typically comes as a group of scenarios. And, what it

23 will attempt to do is bracket the entire range of the

24 possible for a particular price. So that, in total,

1 the delivery of three or four scenarios will give the  
2 client a feel for where the particular price or price  
3 ratio or spread could be headed into the future. And,  
4 each --

5 Q. And, can I just interrupt you for a second? When you  
6 were referring to that, do you mean for something like  
7 natural gas?

8 A. (Arnold) Yes.

9 Q. Okay.

10 A. (Arnold) And, each scenario -- each scenario will be  
11 defined on the basis of a particular environmental -- a  
12 set of particular environmental drivers. As an  
13 example, what some consultants will do is talk about  
14 "*status quo*" as being their first scenario. And, what  
15 that often means is, the current conditions in the  
16 macro economic environment persist and the political  
17 environment and the policy environment persist out in  
18 the years of the forecast. If that happens, they will  
19 say "okay, these will be the prices and the price  
20 ratios." Then, there will be what they might call a  
21 "mark" -- growth -- "high growth scenario". And, I'm  
22 just thinking of one I read recently. A high growth  
23 minimal policy change scenario, and that will be one  
24 where there are minimal new policies connected to

1 greenhouse growth -- excuse me, greenhouse gas  
2 abatement and high economic growth. And, they will  
3 deliver a set of alternative prices and ratios for that  
4 scenario, and so on and so on. And, then, there could  
5 be a low growth of high greenhouse gas abatement  
6 scenario.

7 Q. What kind of information do you and your colleagues  
8 rely on to develop either those forecasts or those  
9 scenarios?

10 A. (Arnold) We rely on information from the markets. We  
11 follow most of the markets. We have a lot of -- and,  
12 we have offices all over the world, and we get input  
13 from a lot of our clients and a lot of the  
14 price-setting points all over the world. You know, it  
15 depends on what we're talking about, whether it's coal,  
16 natural gas, oil. And, we'll rely on other  
17 consultants' input, some public domain, some private,  
18 always with permission.

19 Q. When you refer to "private" sources of input, I'm  
20 interested, are there any private sources of input that  
21 you use when you -- when you're trying to follow the  
22 market and where the market prices are going?

23 A. (Arnold) Yes.

24 Q. Can you tell me what those are?

[WITNESS PANEL: McCluskey~Arnold]

1 A. (Arnold) Okay. I'm likely not to remember all of them,  
2 because there are many. But, some of the more common  
3 private sources of input are input from, as far as  
4 prices go, Platts, Opus, ISIS, CMAI, Herman Gertz, some  
5 special newsletters from other consultants.

6 Q. Are those essentially data services that your company  
7 subscribes to?

8 A. (Arnold) Some are. Some are one-time requests.  
9 Actually, and then some are developed with our company.  
10 We participate with a number of other companies, in  
11 fact, some of the organizations I mentioned, we  
12 actually help them develop their price sets, their  
13 ratios. And, by and large, most of these are not  
14 forecasts. This is historical data that I'm talking  
15 about.

16 Now, forecast is another issue. We  
17 develop all our own forecasts. Not in total, but what  
18 we do is, as I mentioned yesterday, I believe, we use  
19 composite forecasts. And, we like to transfer those  
20 into scenarios. But almost most of the people that  
21 provide these call them "forecasts". The way they're  
22 defined, though, you can almost turn every scenario  
23 into a forecast -- every forecast into a scenario,  
24 because, when a good forecast is defined, there will be

{DE 10-261} {05-10-12/Day 5}



[WITNESS PANEL: McCluskey~Arnold]

1 a basis provided. "We assume this, this, and this."

2 And, on that basis, the gas price, the oil price is  
3 going to be -- the ratio between the two will be that.

4 So, we actually will try to bracket the forecasts to  
5 use in the scenarios. So, we'll take forecasts from

6 different sources and bring them into a weighted

7 forecast. We have found that that is quite accurate,

8 when we do historical evaluations of forecasts versus

9 the future. What we find, just in simple terms, is

10 that the wisdom of the -- of the masses is superior, in

11 the long term, to any single forecast. It's quite

12 interesting how well these composite forecasts will do.

13 Q. And, those proprietary sources of data that you use,  
14 are they subject to terms and conditions for how the  
15 data can be used?

16 A. (Arnold) Yes, they are.

17 Q. Okay.

18 A. (Arnold) I think, in almost every case, they are, yes.  
19 And, they differ from provider to provider.

20 Q. Mr. Arnold, I'd like to show you a Staff response to a  
21 data request that was filed in this case.

22 MS. KNOWLTON: I'd like to mark this for  
23 identification as "PSNH" --

24 CHAIRMAN IGNATIUS: It would be "17".

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 MS. KNOWLTON: -- "17". Thank you.

2 (Atty. Eaton distributing documents.)

3 CHAIRMAN IGNATIUS: All right. We'll  
4 mark for identification, this is a Staff response to PSNH  
5 1-24 for identification as "PSNH 17".

6 (The document, as described, was  
7 herewith marked as **PSNH Exhibit 17** for  
8 identification.)

9 BY MS. KNOWLTON:

10 Q. Looking at this -- looking at this response,  
11 Mr. Arnold, you'll see that the Company was asking you  
12 in discovery to "provide a copy of all the studies that  
13 had been performed by Staff or Jacobs since  
14 January 1st, 2010 that project or discuss future oil  
15 product and natural gas prices." Do you see that in  
16 the question?

17 A. (Arnold) Yes, I do.

18 Q. And, would you just, if you look at your response to  
19 Part (c), isn't it true that Jacobs indicated here that  
20 "The studies that [it] performed that you're aware of  
21 are part of commercially confidential reports [that  
22 are] prepared for clients", and you thus declined to  
23 provide them?

24 A. (Arnold) You asked for "copies of all studies performed

1 by Staff or Jacobs since January 1, 2010 that project  
2 or discuss future oil product and natural gas prices."  
3 Yes. I did say that these studies were -- I'll repeat  
4 what I said: "The studies performed by Jacobs for this  
5 period that Mr. Arnold is aware of are part of  
6 commercially confidential reports prepared for  
7 clients."

8 Q. If you would go back to the Statement of Work, that's  
9 the document that's attached to Mr. Large's rebuttal  
10 testimony.

11 A. (Arnold) Okay. Let me find it.

12 Q. If you can get that before you.

13 A. (Arnold) Okay. I'm looking at the Statement of Work.

14 Q. All right. I'm going to apologize, go back and ask one  
15 question more on the data sources before we get to the  
16 Statement of Work. You gave me a list of sounds like  
17 at least some of the data sources that your company  
18 has, and Platts was one of those on the list.

19 A. (Arnold) Uh-huh.

20 Q. Would you accept subject to check that -- that the  
21 Platts database does include historic Dracut daily spot  
22 prices?

23 A. (Arnold) No, not the Platts database that we purchase.  
24 I've looked, believe me. I wanted to find those. I

1 was hoping it had.

2 Q. Uh-huh.

3 A. (Arnold) But it didn't. We subscribe to, you know,  
4 narrow versions of Platts data.

5 Q. Did you check with the rest of them to see whether any  
6 of the other --

7 A. (Arnold) Oh, yes.

8 Q. -- those other databases, you checked them all?

9 A. (Arnold) We checked them all. Absolutely. I was  
10 looking hard for that.

11 Q. All right. Looking at the Statement of Work, you have  
12 that in front of you, I presume?

13 A. (Arnold) Yes, I do.

14 Q. Okay. Looking on Page 1, under the "Scope", it says  
15 that "Jacobs will first determine and then evaluate how  
16 the LAI modeling system works including understanding  
17 and evaluating: Each proprietary model, the inputs and  
18 outputs to those models, add how the various models  
19 interact." Is that right?

20 A. (Arnold) That's correct.

21 Q. And, some of the inputs that went into the model were  
22 developed by Levitan & Associates, correct?

23 A. (Arnold) That's what I remember reading, that they did  
24 develop some of the inputs, yes.

1 Q. And, did that include the energy price forecast?

2 A. (Arnold) Let's see. Well, energy, versus fuels, I  
3 believe so, yes.

4 Q. And, the cost of SO2 emissions?

5 A. (McCluskey) If I could just add, that the inputs for  
6 the model, some were developed by Levitan, some of the  
7 inputs came from PSNH. As regards to the CO2  
8 emissions, I believe the model did use values extracted  
9 from some source, extracted by Levitan. That's  
10 correct.

11 Q. Okay. Mr. Arnold, are you familiar, prior to your work  
12 here on this matter, are you familiar with the Levitan  
13 firm?

14 A. (Arnold) No, I was not.

15 Q. Would you accept subject to check that, under Mr.  
16 Levitan's direction, that Levitan & Associates  
17 developed all of the energy, capacity, and REC price  
18 forecasts used by the four electric distribution  
19 utilities in Massachusetts for purposes of procurement  
20 of renewable energy under the Green Communities Act?

21 MR. SPEIDEL: That seems like a little  
22 bit of an irrelevant question to this proceeding.

23 CHAIRMAN IGNATIUS: Ms. Knowlton.

24 MS. KNOWLTON: I think it is relevant.

[WITNESS PANEL: McCluskey~Arnold]

1 I mean, --

2 WITNESS ARNOLD: Okay.

3 MS. KNOWLTON: -- the Levitan firm  
4 provided the price forecasts. And, I'm just trying to  
5 understand the extent of Mr. Arnold's awareness --

6 CHAIRMAN IGNATIUS: Well, I think he  
7 already answered that question, that he wasn't aware of  
8 the firm prior to this engagement.

9 MS. KNOWLTON: Okay.

10 BY MS. KNOWLTON:

11 Q. All right. If you turn to Page 3 of this Statement of  
12 -- under this Statement of Work and Vendor Quote.

13 A. (Arnold) Okay. I'm there.

14 Q. Actually, I apologize. It's Page 2 of the Statement of  
15 Work and Vendor Quote. Do you have that before you?

16 A. (Arnold) Yes, I do.

17 Q. Okay. The second paragraph says that, under this  
18 contract, you were to evaluate the LAI model by doing  
19 the following: "Reviewing and analyzing the various  
20 written and verbal descriptions of LAI's modeling  
21 system provided in the LCIRP, at technical sessions,  
22 and in response to discovery,... visit LAI's offices to  
23 interview the developers and operators of [LAI's]  
24 modeling system with the goal of resolving all

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 remaining queries. Jacobs' evaluation of LAI's  
2 modeling system will also be informed by a back-casting  
3 exercise conducted by LAI". And, that "back-casting  
4 exercise will require LAI to feed the 2009 and 2010  
5 data into its model...In addition to overseeing and  
6 analyzing LAI's back-casting work, Jacobs will review  
7 and approve the data used to conduct the exercise." Do  
8 those statements accurately capture your agreed upon  
9 scope of work.

10 (Witness Arnold conferring with Witness  
11 McCluskey.)

12 **BY THE WITNESS:**

13 A. (Arnold) I agree with this statement in the -- this is  
14 what was written in the Work and Vendor Quote.

15 BY MS. KNOWLTON:

16 Q. Did LAI provide you with written and verbal  
17 descriptions of the modeling system?

18 A. (Arnold) Yes. They did.

19 A. (McCluskey) In fact, I'd like to add that we did  
20 actually request --

21 Q. And, actually, can I -- my questions right now, my  
22 questions are focused on Mr. Arnold.

23 MR. SPEIDEL: But we did have, during  
24 the Company's panel, some to-and-fro between Mr. Levitan

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 and Dr. Carlson in particular. So, I think it's  
2 appropriate for Mr. McCluskey to add a few thoughts on the  
3 question. We're trying to answer the question as  
4 thoroughly and as completely as possible.

5 CHAIRMAN IGNATIUS: Ms. Knowlton, is  
6 there some reason why you need to do it in two stages, and  
7 have us go back and ask the same questions, either from  
8 you or from someone else, --

9 MS. KNOWLTON: Right. I mean, the  
10 reason why I'm focusing these questions on Mr. Arnold is  
11 that he's produced an expert report in this case, which is  
12 Exhibit 9 to the Staff's testimony. And, I want to ask  
13 that that was not -- my understanding is that report was  
14 not co-authored, that it was a report solely of Mr.  
15 Arnold. And, so, I need to ask him some questions to  
16 understand, you know, what he -- the work that he did that  
17 resulted in the -- with the culmination of that expert  
18 report.

19 CHAIRMAN IGNATIUS: All right. I'll  
20 allow as to his inputs, his preparation in that report, I  
21 think that's fine. As to sort of the larger Staff  
22 positions, which really are a blend, I think, then I think  
23 the chiming in from either side is fair. But, as to that  
24 particular issue, we'll limit it to Mr. Arnold only.

{DE 10-261} {05-10-12/Day 5}



1 BY MS. KNOWLTON:

2 Q. Mr. Arnold, did you interview the developers and  
3 operators at LAI's offices?

4 A. (Arnold) Yes.

5 Q. Do you recall that, when you visited LAI's offices in  
6 Boston, that Dr. Carlson offered to provide you with a  
7 code walk overview tour through the various procedures  
8 in the Newington dispatch model?

9 A. (Arnold) Yes.

10 Q. And, you declined that offer, right?

11 A. (Arnold) For good reason. Could I explain my reason?

12 Q. Sure.

13 A. (Arnold) Okay.

14 WITNESS McCLUSKEY: If I could just have  
15 a conversation with you.

16 CHAIRMAN IGNATIUS: Well, if he's having  
17 trouble answering the question, I think that's fine. But  
18 I think it would be better to have the witness speak to  
19 what he knows first.

20 **BY THE WITNESS:**

21 A. (Arnold) Okay. As I mentioned earlier, what I was  
22 asked to provide was answers to these types of  
23 questions. And, these questions came up after the  
24 Statement of Work was written, when we all came to

[WITNESS PANEL: McCluskey~Arnold]

1 understand the situation better. But what I was asked  
2 to do was answer these questions: "Are you totally  
3 confident that the output of the model is accurate and  
4 mistake-free? Could you duplicate these results,  
5 within reason? Are you happy with what you're seeing?  
6 Do the results accurately represent the value of that  
7 asset into the future?"

8 To do that, what I know from experience  
9 is that seeing code from a model doesn't help me answer  
10 those questions. I have seen code written many times,  
11 I have seen descriptions of models written many times.  
12 But it's not until I can actually play with the model  
13 myself, and test it and probe it, that I am confident  
14 that there's no issues within the model, and that it is  
15 an accurate representation, that it is free of material  
16 mistakes.

17 Just looking at code doesn't tell me how  
18 they -- those pieces of code interact in the model.  
19 And, what I'm looking for is more than code. Where I  
20 often find issues in models is in calculations, it's in  
21 data pulls. There's complex conversions in these  
22 models. Data is being pulled from many places in  
23 different directions. Especially when you're doing  
24 Monte Carlo type work, that's the stochastic aspect of

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 the model, there's a number of ways that things can go  
2 wrong. For example, input distributions can be  
3 truncated incorrectly, if they should be truncated at  
4 all. Data can be pulled incorrectly from input  
5 distributions. There could be a lack of correlation  
6 when there should be correlation, etcetera. So, my  
7 experience has told me that I can't depend totally on  
8 descriptions and code to answer those questions that I  
9 was given.

10 Q. So, I want to make sure I understand your testimony  
11 correctly. So, what you're saying is, is that the only  
12 way that you could have answered those questions, which  
13 we're not specified in the Statement of Work, was to  
14 have physical access to the model?

15 A. (Arnold) Yes. And, when I say "direct physical  
16 access", "direct physical/direct personal access", what  
17 that usually means is, I'm able to work at the client's  
18 site, the producer site, depending on the situation, in  
19 this case it would be the model producer site, and I  
20 can put my information into the model, I can look at it  
21 stepwise, I can do all the transformations that they do  
22 and see if I get the same results. I mean, it's  
23 actually a two-step process. The first thing I do is  
24 just see if I can get the same results they do. And,

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 by the way, by doing this, I often get around the data  
2 issue, myself and my group. Because what we're able to  
3 do is put our data in there that we have rights to, and  
4 so that there's usually, if there ever was initially a  
5 data issue, we get around that. But I just bring that  
6 up as an aside.

7 Now, so, first thing I do is see if I'm  
8 using the right model, because often that's not the  
9 case. The model has been improved or it's been  
10 changed, so we have to straighten that out. Once I am  
11 using the same model that they use to get the results  
12 that I'm supposed to validate, I will test it often.  
13 And, there's a number of ways that we do that.

14 I mean, just to be quick and simple, one  
15 of the key things we do is a sensitivity test to make  
16 sure that makes sense. Another thing we do is test the  
17 model at the extremes of the distributions, just to see  
18 if we're getting results. We'll look at things at  
19 intermediate steps to see if we agree with the results.  
20 And, then, I'll talk to the people. If I am not an  
21 expert in the subject matter of the model, you know, a  
22 high-level expert, I will go to somebody like George  
23 and say "George, give me some things that you would  
24 expect here." And, I'll give him some suggestions,

{DE 10-261} {05-10-12/Day 5}

1 things I should look for in the model, and I will do  
2 that. And, George will say "Well, in general, if this  
3 happens, we should see this. If that happens and this  
4 happens in concert, this type of a thing should occur."  
5 So, those are the kind of things I look for.

6 Q. And, there's nothing in the Statement of Work and  
7 Vendor Quote that says that you will have that kind of  
8 access, physical access to the model, right?

9 A. (Arnold) No, there isn't. I mean, that's not uncommon  
10 --

11 Q. And, so, you -- let me just --

12 A. (Arnold) Okay.

13 Q. And, so, you signed a contract that did not have a  
14 description in it of what you needed to do then,  
15 correct?

16 A. (Arnold) I did not sign a contract -- I didn't sign  
17 this.

18 Q. I'm sorry, your firm?

19 A. (Arnold) Right. That's right. This was a high-level,  
20 our best guess at what would be required to answer the  
21 questions. That's often the case. Until you get into  
22 the meat of the problem, you don't know how to solve  
23 the problem.

24 Q. Now, at that visit that you made to LAI's office, that

[WITNESS PANEL: McCluskey~Arnold]

1 was in June 2011, I believe?

2 A. (Arnold) That sounds right.

3 Q. Subject to check, I believe it was June 3rd?

4 A. (Arnold) Okay. There were two visits.

5 Q. Do you --

6 A. (Arnold) I have --

7 Q. Would you accept subject to check whether June 3rd was  
8 the first one?

9 A. (Arnold) Yes. I will.

10 WITNESS ARNOLD: And, can I ask a  
11 question about "subject to check"?

12 MS. KNOWLTON: Sure.

13 WITNESS ARNOLD: If I don't check, and  
14 it turns out these dates are wrong, what happens?

15 CHAIRMAN IGNATIUS: I think it's fair to  
16 say that they're not tricks. These are, you know, we're  
17 holding you to those being your best understanding of the  
18 facts, and rather than having to go searching, that it's  
19 --

20 WITNESS ARNOLD: Okay. Just trying to  
21 keep out of trouble.

22 CHAIRMAN IGNATIUS: Okay.

23 MS. KNOWLTON: Okay. So, I'd like to  
24 mark for identification as "PSNH 18" an e-mail, and which

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1       actually contains -- has attached to it an agenda for that  
2       meeting on June 3rd, 2011, at the LAI offices.

3                       WITNESS ARNOLD:   Okay.

4                       (Atty. Eaton distributing documents.)

5   BY MS. KNOWLTON:

6   Q.   Do you have that document before you?

7   A.   (Arnold) Yes, I do.

8   Q.   I see that you're actually not copied on the e-mail.  
9        So, I understand that you may have not been familiar  
10       with that --

11   A.   (Arnold) Oh, I certainly saw this as the meeting was  
12       starting.

13   Q.   Okay.  And, is the agenda something that you've seen  
14       before?

15   A.   (Arnold) George is pointing out that I was copied on  
16       the e-mail.

17   Q.   Oh, you are.  Thank you.

18   A.   (Arnold) Right.

19   Q.   Yes, I see that.

20   A.   (Arnold) So, yes.

21   Q.   Okay.

22   A.   (Arnold) In fact, I probably had something to do with  
23       developing this.

24   Q.   Okay.  Did you help write it?

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 A. (Arnold) I imagine I did.

2 Q. And, what was, in your words, the purpose of this  
3 meeting?

4 A. (Arnold) Okay. To see if the model would arrive near  
5 2010 actuals, using the actual data that we had for  
6 prices. And, it turned out this morphed a little bit.  
7 We actually incorporated some forecasts into the  
8 back-casts.

9 Q. Okay. So, this was the back-casting that was  
10 contemplated by the Statement of Work that LAI was to  
11 perform?

12 A. (Arnold) Essentially. You see, let me give you some  
13 background. This Statement of Work is almost  
14 boilerplate for me in these situations. I am hoping  
15 that it's adequate.

16 But, in this case, when I saw the  
17 historical results on energy net revenues being most of  
18 the time below the zero line, and then I saw the model  
19 producing results up around -- hold on, please -- up  
20 close to \$20 million a year --

21 MR. SPEIDEL: Now, Mr. Arnold, are you  
22 referring to your own report at the present time?

23 WITNESS ARNOLD: Yes, I am.

24 MR. SPEIDEL: Okay. So, we can all take

{DE 10-261} {05-10-12/Day 5}



[WITNESS PANEL: McCluskey~Arnold]

1 a look at Staff Exhibit 1, --

2 BY MS. KNOWLTON:

3 Q. Well, actually, my question, and I don't think this is  
4 responsive to my question, which is, I thought, a  
5 simple one. Which is, the Statement of Work includes a  
6 provision in it that there would be a "back-casting  
7 exercise that would require LAI to feed 2009 and 2010  
8 data into the model." And that, "in addition to  
9 overseeing and analyzing [the] back-casting work,  
10 [that] Jacobs will review and approve the data used to  
11 conduct the exercise." So, my question is just, this  
12 meeting was about that back-casting exercise that was  
13 described in the Statement of Work, correct?

14 A. (Arnold) This Statement of Work here covers this  
15 back-casting exercise, yes.

16 Q. Okay. All right. And, so, I just want to ask you some  
17 questions about that back-casting exercise.

18 CHAIRMAN IGNATIUS: And, before you go  
19 further, did -- we haven't marked this. Are you seeking  
20 to mark this as an exhibit?

21 MS. KNOWLTON: Oh, yes. I apologize.  
22 "PSNH 18", I believe?

23 CHAIRMAN IGNATIUS: Yes. For  
24 identification.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 (The document, as described, was  
2 herewith marked as **PSNH Exhibit 18** for  
3 identification.)

4 MS. KNOWLTON: Thank you.

5 BY MS. KNOWLTON:

6 Q. And, as part of this agenda, you agreed that inputs  
7 into this back-cast, you had a very specific list of  
8 inputs that would be developed by LAI or PSNH, is that  
9 right?

10 A. (Arnold) Well, this is our proposal.

11 Q. Okay. And, did LAI do that?

12 A. (Arnold) Did they do -- are you asking if they  
13 incorporated everything that we suggested here?

14 Q. Yes.

15 A. (Arnold) No.

16 Q. Well, which ones didn't, let's just go through --

17 A. (Arnold) I'd have to go back and actually review. I  
18 can say we all came to agreement on incorporating many  
19 of these. And, as I remember, during this meeting, we  
20 learned a little more about how they were doing things.  
21 We may have found that some of our requests were not  
22 especially material, pertinent. We found that we had  
23 to add others, I believe. I would view this as just  
24 our starter for the session. We spent quite a long

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 time deciding how to set up the back-cast efficiently  
2 to answer multiple questions.

3 Q. And, you reached a conclusion in that discussion,  
4 correct?

5 A. (Arnold) Yeah, we did, on how to set up that back-cast.

6 Q. And, LAI ran that back-cast consistent with that --

7 A. (Arnold) With the consensus discussion. And, let me  
8 add that it took a while to come to consensus.  
9 Because, I mean, I think there were three different  
10 opinions on how to run this and what to do. And, we  
11 realized, on our side, that this was a time-consuming  
12 exercise, not simple, and we came to a consensus.

13 Q. And, Mr. Arnold, LAI --

14 MS. KNOWLTON: And, actually, I just  
15 want to -- that there's no question pending. So, I  
16 understand that the witnesses may confer, but it appears  
17 that Mr. McCluskey is conferring with Mr. Arnold when  
18 there's no question pending. So, --

19 CHAIRMAN IGNATIUS: He just told him to  
20 move the microphone farther away, but there may be more  
21 than that.

22 MS. KNOWLTON: Okay.

23 CHAIRMAN IGNATIUS: So, why don't you  
24 ask your question.

{DE 10-261} {05-10-12/Day 5}

1 MS. KNOWLTON: Okay.

2 BY MS. KNOWLTON:

3 Q. Mr. Arnold, why don't you tell me about the second  
4 meeting, when was that?

5 A. (Arnold) I believe it was later in June, I'd have to  
6 check the dates, go back to my notes.

7 Q. Did you travel again to Boston for that meeting?

8 A. (Arnold) Yes, I did.

9 Q. What was the subject matter of that meeting?

10 A. (Arnold) I'd have to go back and check my notes. I  
11 believe it was review of the initial back-cast results.

12 Q. And, would you agree that LAI voluntarily provided yet  
13 another back-cast simulation, at the Staff's request?

14 A. (Arnold) I don't -- you know, "volunteer", I don't  
15 remember if they volunteered or we asked and they  
16 agreed. I'd have to go back and check my notes.

17 Q. But they did it?

18 A. (Arnold) They did an additional back-cast, yes.

19 Q. And, all -- all during those meetings, it sounds like  
20 both meetings were in June, correct, of 2011?

21 A. (Arnold) I believe they were, yes.

22 Q. And, that exchange of information all occurred without  
23 the benefit of having a non-disclosure agreement in  
24 place, correct?

1 A. (Arnold) That's correct.

2 Q. And, --

3 A. (Arnold) That was inhibiting progress.

4 Q. But you went to the meanings and LAI answered your  
5 questions, correct?

6 A. (Arnold) All the -- yes. They answered the questions  
7 that we were asking about the model, yes.

8 Q. And, in that same time frame, on June 21st, 2011, LAI's  
9 last version of the NDA was transmitted to you, you and  
10 your colleagues, correct?

11 A. (Arnold) I have to check the timeline I have, excuse  
12 me. Would you repeat your question?

13 Q. Sure. That, in that same time frame that these  
14 meetings were ongoing, that, more specifically, on  
15 June 21st, 2011, LAI's last version of the NDA was  
16 transmitted to you and your colleagues?

17 A. (Arnold) Okay. What I can't remember is the date of  
18 the second meeting in Boston.

19 Q. Would you accept subject to check that it was  
20 June 13th, 2011?

21 A. (Arnold) Subject to check, yes.

22 Q. Okay. And, June 21st, 2011, LAI's latest version and  
23 last version of the NDA was sent to you, correct?

24 A. (Arnold) Yes. That's what I have in my timeline.

1 Q. And, about three weeks later, on July 15th, 2011, you,  
2 when I say "you", you or your firm, responded to that  
3 version of the NDA, right?

4 A. (Arnold) That's correct.

5 Q. And, in July of 2011, you were on vacation, right?

6 A. (Arnold) Off and on, yes. Not the whole period, I was  
7 on vacation off and on. And, in fact, just to clarify,  
8 I was working on this project while on vacation, too.

9 Q. And, shortly after you got back from your vacation, you  
10 filed your testimony and expert report in this docket,  
11 right?

12 A. (Arnold) Yes.

13 Q. If you would go back to your Statement of Work. That's  
14 the one attached to Mr. Large's rebuttal testimony.

15 A. (Arnold) I've got it.

16 Q. Subject to the contract amendments that we'll see in  
17 your record response, you had limits on how much time  
18 you could spend on this matter, right?

19 A. (Arnold) Correct. Limits? No.

20 Q. Okay.

21 A. (Arnold) I would not define those as "limits". Those  
22 are the hours that I would agree to spend for the  
23 agreed compensation.

24 Q. So, if you look at the last page of the Statement of

[WITNESS PANEL: McCluskey~Arnold]

1 Work, it's got a -- there's a table with "work items"  
2 and "estimates". Do you see that before you?

3 A. (Arnold) Yes. It's an ugly table.

4 Q. And, you've allocated, you have "low end" and "high end  
5 estimates" where you've allocated what you called "Work  
6 Man days" per task?

7 A. (Arnold) Right.

8 Q. Do you see that?

9 A. (Arnold) Yes.

10 Q. Do you know, were those -- were those work man day  
11 estimates low and high, were they amended subsequently?

12 A. (Arnold) No. Absolutely not. I don't -- never do  
13 that. I mean, they were not.

14 Q. So, just the dollar amounts?

15 A. (Arnold) Right.

16 Q. Okay. Did you follow these -- so, were you bounded at  
17 all by these estimates, in terms of how much time you  
18 spent per task?

19 A. (Arnold) It came to be understood that the project  
20 turned out a little different than we expected. And,  
21 George and I agreed that, you know, there would be  
22 wiggle room between the individual tasks there. That's  
23 not uncommon. When we wrote this, you know, agreement  
24 up -- when I wrote this agreement up and presented it,

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1           it was based on my understanding of the project at the  
2           time.

3   Q.   And, it sounds like your understanding of the project  
4        changed once you got into it?

5   A.   (Arnold) Yes.

6   Q.   But the scope of work was never changed to match that  
7        understanding?

8   A.   (Arnold) Not on paper, no. I mean, --

9                       MS. KNOWLTON: And, I actually would  
10       ask, Mr. McCluskey, I just, you know, I can hear a little  
11       bit through the microphones, and I just heard you whisper  
12       an answer to Mr. Arnold. And, I would really -- I would  
13       ask that the Commission instruct Mr. McCluskey to not do  
14       that.

15                      WITNESS ARNOLD: I didn't hear it. Did  
16       you hear it?

17                      MR. SPEIDEL: Might have been a sigh,  
18       counsel, which is known to happen.

19                      MS. KNOWLTON: I'm going to start  
20       sighing shortly.

21                      CHAIRMAN IGNATIUS: Well, I think, Mr.  
22       McCluskey, you understand the questions are being directed  
23       to Mr. Arnold. I am beginning to wonder what the reason  
24       for your concern about this separation is. You seem

{DE 10-261} {05-10-12/Day 5}



[WITNESS PANEL: McCluskey~Arnold]

1 concerned that -- well, I'm not sure what you're concerned  
2 about.

3 MS. KNOWLTON: Well, just as I said, I  
4 mean, it's an expert report that was written by  
5 Mr. Arnold. And, I just, you know, I want to ask him  
6 questions about what he did. How he reached those  
7 conclusions, how he got there, how much time he had. And,  
8 you know, Mr. McCluskey has testimony that he provided,  
9 I've got some questions for him on that. But I really  
10 would like to understand, you know, Mr. Arnold's effort  
11 here.

12 CHAIRMAN IGNATIUS: All right. But  
13 you've been asking questions "do you remember the day of a  
14 certain meeting?" If Mr. Arnold doesn't recall it, and  
15 Mr. McCluskey does, and you know he was in attendance, I'm  
16 not sure I get the point --

17 MS. KNOWLTON: Yeah. Okay. That's  
18 fine.

19 CHAIRMAN IGNATIUS: -- of filling in the  
20 answers. So, if it's focused on his report and his input,  
21 and I've told you that that's fair, but I'm not -- I'm not  
22 entirely seeing the link here.

23 MS. KNOWLTON: Okay.

24 BY MS. KNOWLTON:

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 Q. Okay. Well, let's look at your expert report. That's,  
2 I believe, attached as "Exhibit 9" to your testimony.

3 A. (Arnold) Okay. I've got it.

4 CHAIRMAN IGNATIUS: So, that would be,  
5 for the record, Staff Exhibit 1, starting at Bates  
6 Page 59.

7 MS. KNOWLTON: I have Page 59.

8 WITNESS ARNOLD: It starts on Page 59.

9 BY MS. KNOWLTON:

10 Q. So, I take it, Mr. Arnold, that this report was drafted  
11 by you?

12 A. (Arnold) Yes, it was.

13 Q. And, the model that -- in your report you write about  
14 the LAI model, correct?

15 A. (Arnold) Yes. I do write about the LAI model in this  
16 report.

17 Q. And, it's referred to as a "Monte Carlo stochastic  
18 model"?

19 A. (Arnold) I would -- you would have to direct me to a  
20 line or a paragraph. I mean, I generally agree with  
21 that.

22 Q. Okay.

23 A. (Arnold) It's a model that incorporates Monte Carlo  
24 submodels.

{DE 10-261} {05-10-12/Day 5}

1 Q. Okay. And, is a stochastic model based on  
2 probabilities?

3 A. (Arnold) A stochastic model uses probability input  
4 distributions, yes.

5 Q. And, in essence, probabilities to determine whether  
6 certain scenarios will occur?

7 A. (Arnold) A typical model will use probabilities for  
8 certain variables to develop various scenarios within  
9 the model.

10 Q. And, that's in contrast to a deterministic model, which  
11 bases an analysis on a single set of determinants?

12 A. (Arnold) Yes. That's a -- that's a simplified  
13 definition, but, yes.

14 Q. Would you agree that a stochastic model has a higher  
15 chance of capturing the potential future value of an  
16 asset within a range of values than a deterministic  
17 model?

18 A. (Arnold) I would agree that you're more likely to  
19 capture the ultimate future value you're looking for  
20 with a properly built and executed stochastic model  
21 than if you're using a deterministic model, in most  
22 cases. Now, if there's a lot of certainty involved,  
23 that's not the case. But, in situations like this,  
24 where there is so much uncertainty, if the model is

1 built to accurately represent the behavior of the asset  
2 and the behavior of the people managing the asset, and  
3 if you're reasonably lucky about the forecasts you're  
4 putting in to the model, if forecasts are involved, or  
5 scenarios, it will do a much better job than a  
6 single-line deterministic forecast. But you have a  
7 range of outputs based on probability, versus a single  
8 number.

9 Q. Now, as I understand it, that this model that was  
10 developed by LAI actually consists of ten separate  
11 submodels?

12 A. (Arnold) It consists of many. I would have to go back  
13 to their diagram to look at the exact number. But it  
14 does consist of a number of separate submodels, yes.

15 Q. And, you reviewed the structure of each of those  
16 submodels, with the exception of the Capacity Price  
17 Forecast Model, correct?

18 A. (Arnold) I, well, reviewed it in written descriptions  
19 of the structure, right.

20 Q. And, that's what your report is about, you go through  
21 each of those model structures?

22 A. (Arnold) Well, we go through, as they were described to  
23 us, and, if they work as described, we make conclusions  
24 and talk about each submodel or the key submodels.

1 Q. And, the first one that you write about is "Model 1a:  
2 Natural Gas Monthly Forward Pricing Models"?

3 A. (Arnold) Yes.

4 Q. And, with regard to that submodel, you concluded  
5 favorably that LAI, I'm reading, "LAI's overall  
6 approach for modeling natural gas prices at Newington  
7 Station over the 10 year analysis period is acceptable,  
8 with reservations." That's on Page 3 of 13 of your  
9 report.

10 A. (Arnold) Okay. Let me -- "Page 3 of 13". Could you  
11 direct me to the paragraph?

12 Q. Right. So, under "Model 1a".

13 A. (Arnold) Uh-huh. And, which paragraph?

14 Q. And, I'm looking at the first full paragraph. "LAI's  
15 overall approach for modeling natural gas prices at  
16 Newington Station over the 10 year analysis period is  
17 acceptable, with reservations."

18 A. (Arnold) And, your question was?

19 Q. Well, I want to just go through and talk with you about  
20 those reservations that you have.

21 A. (Arnold) Okay.

22 Q. My understanding is is that the first two of those  
23 three reservations with regard to Model 1a related to  
24 the Bloomberg data issue and the data inputs for Dracut

1 to Newington Station basis spreads.

2 A. (Arnold) Do you have a question?

3 Q. Right. Those are the two reservations, correct?

4 A. (Arnold) Where are you reading the reservations?

5 Q. Well, I'm reading through your subsequent discussion,  
6 which goes on Page 3 and onto Page 4, which talks about  
7 issues that you have with the basis spreads, and that  
8 you didn't have access to the Bloomberg data. I'm just  
9 trying to understand the nature of your reservation.

10 A. (Arnold) Okay. And, I don't remember ever numbering  
11 reservations.

12 Q. Yes, you might not have put a number on it. I just  
13 counted myself and I saw two; one that related to the  
14 Bloomberg data and the second that related to the basis  
15 spread issues.

16 A. (Arnold) Right. You understand what the key  
17 reservation is, that I can't tell Mr. McCluskey that  
18 the model is working like it should.

19 Q. You testified earlier that your version of Platts  
20 didn't -- wasn't a comprehensive access to Platts?

21 A. (Arnold) Right. We just get the prices that we need.  
22 I mean, for example, if we would have been doing work  
23 with somebody in the New England area, and we -- and  
24 they were using natural gas from the Dracut point, we

[WITNESS PANEL: McCluskey~Arnold]

1 would have asked for those prices from some source. We  
2 probably -- I figure we could have found them from one  
3 of our sources.

4 Q. But you didn't do that here, right?

5 A. (Arnold) No.

6 Q. Okay.

7 A. (Arnold) I mean, I looked, first of all, to see if we  
8 had them. We do have some natural gas price strings.

9 Q. Did you ever attempt to call Platts to ask whether they  
10 would give you access to those Dracut prices?

11 A. (Arnold) Yes.

12 Q. And, what did they say? What did they tell you?

13 A. (Arnold) They told -- they didn't tell me. I had one  
14 of my assistants inquire about them. And, it was  
15 another organization, I don't remember who it was. We  
16 found them somewhere, it was a price, but that was  
17 beyond the scope for us to pay for data.

18 Q. Would you accept subject to check that Platts will  
19 provide that gas price data for Dracut for \$500?

20 MR. SPEIDEL: I find that question to be  
21 extremely speculative and, essentially, a blanket  
22 statement by Ms. Knowlton that goes beyond the "subject to  
23 check" possibility. It's extremely speculative.

24 MS. KNOWLTON: You could call Platts and

{DE 10-261} {05-10-12/Day 5}

1 ask.

2 MR. SPEIDEL: Okay. Call up Platts from  
3 the stand, Counsel?

4 CHAIRMAN IGNATIUS: All right. Let's  
5 stop. You didn't ask him what price he was quoted, that's  
6 what he was told. If you want to introduce new evidence,  
7 I don't think a question through the "subject to check" is  
8 -- that's sort of going beyond what our normal "subject to  
9 check" is.

10 MS. KNOWLTON: Okay.

11 CHAIRMAN IGNATIUS: But you can ask him,  
12 if you want, what he was told as a price.

13 BY MS. KNOWLTON:

14 Q. What price -- do you recall what price you or your  
15 colleague were given?

16 A. (Arnold) It was so -- It was so high that I would have  
17 had to ask for approval. And, so, I just -- and, it  
18 just seemed out of the scope. I can't remember exactly  
19 what it was, but it was, if I remember right, I had to  
20 buy a packet, it -- I couldn't just get that. But I'm  
21 not sure. But it was a little too high for me to just  
22 go out and put it on my AmEx card. And, also, I don't  
23 think that was what I was supposed to do for this  
24 project. I didn't think that was my obligation. It's



1 not how I typically perform these studies. It's on the  
2 other side to provide the data.

3 Q. If you would go to Page 4 of your report, at the top of  
4 the page, on 4, you suggest that a better method for  
5 valuing Newington would have been to look at "multiple  
6 [gas price] scenarios", and then allow the study reader  
7 "to pick one or two [gas] futures [that the reader]  
8 considered to be [the] most likely as the basis for  
9 [the] valuation." Do you see that at the top of the  
10 page?

11 A. (Arnold) I've got to read the whole paragraph.

12 Q. Okay. Why don't you just do that. And, then, when  
13 you're ready, I'll ask you my question.

14 A. (Arnold) Okay. I'm ready for your question.

15 Q. Isn't that more like a deterministic approach, going in  
16 and picking one?

17 A. (Arnold) No, it is not. Because, when I talk about  
18 "scenarios", each one of them is a probabilistic based  
19 scenario. Just for a little bit of background, when we  
20 -- when I talk about "scenarios", we typically range  
21 base them and base them on probabilistic ranges and  
22 values.

23 And, where I was really going here was  
24 trying to get away from a futures-based type forecast,

[WITNESS PANEL: McCluskey~Arnold]

1 but a forecast based upon market scenarios. What I  
2 find is typically decision-makers can do a better job  
3 when they can -- when they have options in front of  
4 them. We don't know how the future is going to turn  
5 out. We don't know, for example, where -- I mean,  
6 natural gas is a great example. A lot of things are  
7 driving that price right now. Five to ten years from  
8 now, they could be significantly different than they  
9 are now. We've certainly been surprised the last few  
10 years. But there's a lot of things that could happen,  
11 policywise, macroeconomicwise to change it. Well, and  
12 decision-makers, to make a decision, they pretty much  
13 have to pick one or two scenarios that they're going to  
14 use as a planning basis for going forward. And, my --  
15 my group's general recommendation is to, first of all,  
16 pick the view of the future you believe in most for  
17 your market, for your area, and then make sure, if  
18 you're having a study done, that the forecast you're  
19 using, the scenario you're using, fits your view of the  
20 future.

21 Q. Is it possible then, though, that you might pick one,  
22 and I might pick another?

23 A. (Arnold) Yes. Now, it's also possible that the -- if I  
24 delivered, and this is just a hypothetical possibility,

{DE 10-261} {05-10-12/Day 5}

1       that if I delivered four different scenarios to the  
2       decision-makers in this project, they would each be a  
3       probabilistic -- let's just talk about what the value  
4       is of natural gas in year 2025. There would be a  
5       probable histogram, a range of values for natural gas  
6       in year 2025 for each scenario. There might be some  
7       overlap between two scenarios. But there would be some  
8       low prices -- okay, I'm just the opposite of you guys,  
9       but, low to high, high price scenario defined by a  
10      histogram of probability distribution. It may well be  
11      that the LAI type scenario was wide enough to encompass  
12      all those different scenarios. I'd have to go and  
13      review it.

14                       So, this all comes down to how you  
15      define your scenarios, and the way you want to set up  
16      your forecast and make your decision. I was just  
17      trying to provide a little insight. It's hard for me  
18      not to be a consultant when I'm doing the job. That's  
19      all.

20   Q.   Let's look at Model 1b that starts on Page 4. That's  
21       the "RFO and 2FO Monthly Forwards Pricing Model".

22   A.   (Arnold) Okay. Page 4. All right.

23   Q.   Page 4. And, there it was your opinion that LAI's  
24       forecasted prices for RFO and 2FO "do not represent the

1 most likely near-term scenario (over next 1 to 5+  
2 years)"?

3 A. (Arnold) Right. This was, and when I say "personal  
4 opinion", it's a group of opinions of a number of  
5 people in our consultancy that -- and we had a similar  
6 forecast out there that we thought was more likely than  
7 this. You know, you're getting close to dueling  
8 consultants here.

9 Q. And, here, you actually chose to provide LAI data, you  
10 gave LAI data on oil and natural gas price ratios to  
11 feed into the model, right?

12 A. (Arnold) Yes.

13 Q. And, those ratios that you developed were developed  
14 sometime in 2011?

15 A. (Arnold) Let's see. These ratios were probably  
16 updated, I mean, I haven't gone back and checked all  
17 the foot dates, but we update our forecasts quarterly,  
18 sometimes monthly. And, we put out typically three  
19 forecasts, we call them "scenarios".

20 Q. So, would that data, those price ratios, the price  
21 ratios that you provided to LAI to put in the model,  
22 they would have been updated through the Summer of  
23 2011?

24 A. (Witness Arnold nodding affirmatively) I would imagine

1       that they had been updated sometime in the previous  
2       three months to when I provided them. I'd have to go  
3       back and check whether it was the week before, the day  
4       before, or two months earlier.

5   Q.   And, --

6   A.   (Arnold) With something like this, it's quite  
7       important, this is a quite important ratio in our  
8       group. It's probably a very near-term estimate.

9   Q.   And, the data that LAI relied upon to develop its  
10       ratios, that was done sometime before the report was  
11       submitted and the CUO was submitted in September 2010,  
12       does that sound right?

13  A.   (Arnold) That sounds right. That's what I understand,  
14       yes.

15  Q.   Is it possible that, if LAI had updated its data to  
16       2011, like you did, that it would have had a different  
17       ratio?

18  A.   (Arnold) Yes.

19  Q.   Okay. And, those ratios we're talking about are  
20       reflected -- we're still on Page 4 of Staff -- of your  
21       expert report. Those are in Table 1?

22  A.   (Arnold) Right. The "Ratio of the 1% sulphur resid to  
23       natural gas" and the "Ratio of the Number 2 oil to  
24       natural gas".

[WITNESS PANEL: McCluskey~Arnold]

1 Q. And, so, the -- again, I mean, just the LAI ratios are  
2 a year earlier in time, right?

3 A. (Arnold) Yes. The report was issued -- their report  
4 was issued earlier in time. I don't know when they  
5 devised their forecasts to feed into the report.

6 Q. Are you aware that LAI interpreted your introduction to  
7 feed these price ratios in based on natural gas at  
8 Dracut, rather than Henry Hub?

9 A. (Arnold) I am aware now, yes, that they did that.

10 Q. So, would the numbers in this chart be different?

11 A. (Arnold) If I had used a Dracut versus a Henry Hub  
12 basis?

13 Q. Right.

14 A. (Arnold) Yes. I could not use Dracut.

15 Q. Is it possible that that different location, as well as  
16 the different point in time when the ratios were  
17 developed, could account for some of the differences  
18 between the LAI and Staff results?

19 A. (Arnold) Yes.

20 Q. And, the RFO gas and 2FO gas price ratios that you  
21 developed, they weren't based on any particular theory,  
22 were they?

23 A. (Arnold) Theory? Well, let's -- really, a ratio is two  
24 elements. We took our forward view of natural gas

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 prices, we took our forward view of fuel oil and Number  
2 2 oil prices. And, we have three scenarios for each of  
3 those prices. And, each of those scenarios results in  
4 a different ratio for natural gas to these oils. I  
5 took what I called our "most conservative scenario".

6 Q. Do you have in front of you PSNH 17? We marked that a  
7 little bit earlier today. It's Staff's response to  
8 PSNH 1-24?

9 A. (Arnold) Yes.

10 CHAIRMAN IGNATIUS: And, this is a  
11 question Mr. McCluskey responded to.

12 MS. KNOWLTON: Right.

13 CHAIRMAN IGNATIUS: So, are you asking  
14 him about Mr. McCluskey's statements?

15 MS. KNOWLTON: Well, it refers -- all of  
16 the responses that we got were authored by Mr. McCluskey.  
17 I can ask Mr. Arnold whether he participated in it. I  
18 mean, it does --

19 CHAIRMAN IGNATIUS: Well, I'm just  
20 trying to get to your distinction.

21 MS. KNOWLTON: Okay.

22 CHAIRMAN IGNATIUS: It seems to me  
23 something that both of them together would be helpful on.

24 MS. KNOWLTON: Sure. Okay.

{DE 10-261} {05-10-12/Day 5}

1 MR. SPEIDEL: Thank you.

2 BY MS. KNOWLTON:

3 Q. Well, if you look in the response to the Request (a)  
4 was asking about to "provide an explanation of the  
5 theory [or the] data analysis, and assumptions" based  
6 on the Staff's development of these ratios. And, the  
7 response that we got back that has Mr. McCluskey's name  
8 on it says that "There's no theory involved here."  
9 And, then, it goes on to say that "the  
10 assumptions...are based on personal expectations." Are  
11 those your personal expectations or Mr. McCluskey's?

12 A. (Arnold) No. These ratios were provided by my group.  
13 They're based upon the personal expectations of the  
14 nine different individuals who contribute to the  
15 forecasts. And, "personal expectations" and "theory"  
16 are two different things to me. Maybe we're getting  
17 into a matter of semantics.

18 Q. Well, I think what I -- let me ask you if I have a  
19 correct understanding of what you're saying, is that  
20 experts have different opinions? You might have one  
21 opinion, and someone else might have a different  
22 opinion?

23 A. (Arnold) Oh, that's correct. That's why we blend the  
24 points of view of nine different people to come up with



1       our three scenarios. Each of the contributors develops  
2       three outlooks. And, we give them the same market and  
3       macroenvironment policy description. And, then, for  
4       each of those descriptions, the nine experts provide a  
5       outlook for the key prices.

6   Q.   And, is it possible that other consultants undertake a  
7       similar process, where they have a blending of opinions  
8       to reach a perspective?

9   A.   (Arnold) Oh, yes. Yes.

10  Q.   All right. Let's skip to the next model. And,  
11       actually, I think we can go through Models 2 through 7  
12       in one fell swoop. In your report, Model 2 starts on  
13       -- your discussion of Model 2 starts on Page 5, and all  
14       the way, your discussion from 2 to 7, all the way  
15       through to Page 7. And, my understanding is is that,  
16       for each of those models, you found all aspects of  
17       those models to be reasonable, with essentially no  
18       critical comments?

19  A.   (Arnold) Okay. Let me review. Which model numbers are  
20       you talking about again?

21  Q.   Two through six. I'm sorry, 2 through 7.

22  A.   (Arnold) Okay. In general, their design, as explained  
23       to me, appear to be reasonable.

24  Q.   And, looking at Model 8, --

1 A. (Arnold) Uh-huh.

2 Q. -- and, generally, you felt that that model was  
3 appropriate, with one exception?

4 A. (Arnold) I have to review what I wrote.

5 Q. Okay. Just take a minute, if you would.

6 A. (Arnold) I mean, I think it may be best for me to  
7 repeat what I --

8 Q. Sure. That's fine.

9 A. (Arnold) -- what I consider to be the conclusive  
10 statement. "Although we cannot be definitive about its  
11 structure, the general concept of the model", and this  
12 is the Dispatch Simulation Model, "the general concept  
13 of the model is familiar to Jacobs Consultancy and,  
14 aside from the exception noted above," which I'll talk  
15 about in a little bit, "it makes sense. It appears to  
16 be appropriate for this type of system." And, I also  
17 said "The modeling of [the] forced outage events  
18 appears to be reasonable", based on the description  
19 that we've got.

20 Okay. Now, the exception: "LAI modeled  
21 energy net revenues on the assumption that Newington  
22 Station is dispatched only when it is economically  
23 profitable to do so, that is, when market-based  
24 revenues are expected to exceed fuel costs plus

[WITNESS PANEL: McCluskey~Arnold]

1 appropriate O&M costs including the cost of emission  
2 allowances."

3 CHAIRMAN IGNATIUS: And, Mr. Jacobs  
4 [Arnold?], I don't know if you need to read the entire  
5 paragraph. We have it in the record.

6 WITNESS ARNOLD: Okay.

7 BY MS. KNOWLTON:

8 Q. If I can ask you -- I just want to ask you a question  
9 about that one exception.

10 A. (Arnold) Okay.

11 Q. You were here yesterday, I believe, when Mr. McCluskey  
12 -- you were on the stand with Mr. McCluskey yesterday?

13 A. (Arnold) Yes.

14 Q. And, he testified yesterday that ISO-New England fully  
15 compensates the generation units when it's called to  
16 provide operating reserves.

17 A. (Arnold) Uh-huh.

18 Q. Do you still have that exception with regard to this  
19 model?

20 A. (Arnold) I would agree with what Mr. McCluskey said  
21 yesterday. And, so, I would change this statement in  
22 alignment with what he said yesterday.

23 Q. And, this question can go to either witness. And,  
24 Staff, in discovery, the Company had asked Staff about

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 the number -- I'm sorry, Staff had asked the Company  
2 about the number of days that Newington Station had run  
3 for economic reasons in 2010. And, I can show you the  
4 response, if you want. But the answer was that "there  
5 were 33 days and 32 starts in 2010." Would you accept  
6 that, Mr. McCluskey, or would you like to see the  
7 response?

8 A. (McCluskey) If I could see the response, please.

9 MS. KNOWLTON: We can -- I propose to  
10 mark for identification as "PSNH 19" the PSNH response to  
11 Technical Session Request 2-8.

12 (Atty. Eaton distributing documents.)

13 CHAIRMAN IGNATIUS: We'll mark that for  
14 identification as "PSNH 19".

15 (The document, as described, was  
16 herewith marked as **PSNH Exhibit 19** for  
17 identification.)

18 MS. KNOWLTON: Actually, at the same  
19 time I'd like to mark, if I may, --

20 WITNESS McCLUSKEY: If I could just --  
21 is this the response that you just referred to?

22 MS. KNOWLTON: No. I just realized  
23 that. I've got two questions that relate. So, if we  
24 could mark as "20", "PSNH 20", the response to Tech

{DE 10-261} {05-10-12/Day 5}

1 Session 2-9.

2 (Atty. Eaton distributing documents.)

3 MS. KNOWLTON: I think that's the one  
4 you need, Mr. McCluskey. Sorry about that.

5 CHAIRMAN IGNATIUS: So, we'll mark the  
6 response to Tech Session 9 as "PSNH 20" for  
7 identification.

8 (The document, as described, was  
9 herewith marked as **PSNH Exhibit 20** for  
10 identification.)

11 CHAIRMAN IGNATIUS: And, Ms. Knowlton,  
12 why don't we plan on about five more minutes, and then  
13 take a break for the court reporter.

14 BY MS. KNOWLTON:

15 Q. When you're ready, Mr. McCluskey, just let me know.

16 A. (McCluskey) Yes, I'm ready.

17 Q. Okay. So, my question is, is it correct that the --  
18 that Newington Station in 2010 ran for economic reasons  
19 33 days and 32 starts?

20 A. (McCluskey) I haven't added up the number of days, but  
21 I'll -- what was this? I haven't added up the number  
22 of days, but I'll accept your statement.

23 Q. Okay. And, if you look at PSNH 19.

24 A. (McCluskey) Nineteen?

[WITNESS PANEL: McCluskey~Arnold]

1 Q. Nineteen. This was a data request from the Staff to  
2 the Company, and it relates to the back-cast analysis,  
3 correct?

4 A. (McCluskey) This is the response to TECH-08, is that  
5 correct?

6 Q. And, can you see, if you go to the second page, --

7 CHAIRMAN IGNATIUS: Yes, Mr. McCluskey.  
8 It's 08.

9 WITNESS McCLUSKEY: Thank you.

10 BY MS. KNOWLTON:

11 Q. So, we're looking at the second page of the response to  
12 Tech Session 2-8. And, can you -- do you see there how  
13 many days the back-cast analysis estimated that the  
14 Station would run for economic reasons in 2010?

15 MR. SPEIDEL: Now, --

16 **BY THE WITNESS:**

17 A. (McCluskey) Number of days or number of starts?

18 BY MS. KNOWLTON:

19 Q. Sorry, number of starts. Under the "Number of Starts"  
20 column.

21 A. (McCluskey) Yes, I see that.

22 MR. SPEIDEL: Now, what may be helpful,  
23 Ms. Knowlton, if you're specific in terms of which column  
24 value --

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 MS. KNOWLTON: All right.

2 MR. SPEIDEL: -- you would like to ask  
3 about, because there's several different versions of the  
4 number of starts presented here. So, which are you  
5 referring to?

6 MS. KNOWLTON: All right. Just a  
7 minute, actually. I think this response, I didn't  
8 realize, may have been -- there's a page that is missing.  
9 It says "Page 2 of 3", and I'm just realizing that my copy  
10 is missing the third page.

11 MR. EATON: I have it on the back of  
12 mine.

13 MS. KNOWLTON: On the back? Okay, my  
14 copy didn't get it on the back. Operator error in the  
15 copy machine.

16 BY MS. KNOWLTON:

17 Q. But, if you could look at Page three, is where we're  
18 looking, under "Number of Starts", for 2010, what was  
19 the -- under the "EV", which is "Expected Value",  
20 correct, what is the number?

21 A. (McCluskey) The "Expected Value" was "37".

22 Q. If you go -- do you have a copy that's got Page 3?

23 MR. SPEIDEL: He does, I don't.

24 MS. KNOWLTON: Okay.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 MR. SPEIDEL: Thank you.

2 **BY THE WITNESS:**

3 A. (McCluskey) Yes, I do.

4 BY MS. KNOWLTON:

5 Q. And, expected value is the result of running the  
6 analysis what the particular result was expected to be,  
7 on average?

8 A. (McCluskey) Under the "Revised Start Fuel Data"?

9 Q. Yes.

10 A. (McCluskey) Is that what you're referring to? Yes.  
11 The "Expected Value" was "32".

12 Q. Okay. And, that's pretty close to the 33 days that  
13 Newington Station actually did run, right?  
14 Thirty-three (33) days, 32 starts in 2010, based on  
15 Tech 2-9?

16 A. (McCluskey) Under the "Revised Fuel Start Data", is  
17 that what you're saying?

18 Q. Yes.

19 A. (McCluskey) Yes. Based on your statement that the  
20 number of starts, actual, under economic dispatch, were  
21 in the low 30s, yes, the two are very close.

22 Q. Okay.

23 MS. KNOWLTON: Actually, this would be  
24 -- we could break now, and then I think I can wrap up

{DE 10-261} {05-10-12/Day 5}



[WITNESS PANEL: McCluskey~Arnold]

1 pretty quickly when we come back with this panel.

2 CHAIRMAN IGNATIUS: Certainly. Let's  
3 take a 15-minute break, and resume at 11:00 please.

4 (Whereupon a recess was taken at 10:45  
5 a.m. and the hearing reconvened at 11:07  
6 a.m.)

7 CHAIRMAN IGNATIUS: Ms. Knowlton, are  
8 you ready?

9 MS. KNOWLTON: Yes. Thank you.

10 BY MS. KNOWLTON:

11 Q. I'll direct this question to the panel. There were  
12 some data changes relating to fuel use for starts and  
13 plant warming that were made to the model, is that  
14 right?

15 A. (McCluskey) Could you give me the question again.

16 Q. There were some data changes related to fuel use for  
17 starts and plant warming in the model, correct?

18 A. (McCluskey) That's correct. They were made to the --  
19 to what's been described as the "re-run" requested by  
20 Staff.

21 Q. But the back-cast exercise didn't reveal any structural  
22 flaws in the model, right?

23 A. (McCluskey) "Structural flaws", what do you mean by  
24 that?

{DE 10-261} {05-10-12/Day 5}

1 Q. In the price scenario simulation model or in the  
2 dispatch simulation model, for example, we saw, right  
3 before we took the break, we saw that, when the  
4 back-cast was run, with regard to the number of starts  
5 for operating reserves, that it actually was quite  
6 accurate that, you know, the numbers were very close,  
7 based on actuals. And, so, there weren't any  
8 structural flaws to how the model worked that, you  
9 know, that were revealed when the back-cast was run?

10 A. (McCluskey) I would not agree with that. If the  
11 Commission would like to turn to PSNH Exhibit 19, which  
12 was just handed out. And, turn to the third page,  
13 where we were discussing before the break. And, if you  
14 could focus on the two columns "actual" for Newington  
15 and the "Expected Value" column. And, before the  
16 break, we were talking about the number of starts.  
17 And, I agreed that the number of starts, at least for  
18 economic dispatch, were reasonable, actual versus  
19 expected value. However, if you cast your eyes down to  
20 the last row, which is referred to as "Net Revenue",  
21 which really is the primary objective of the model, is  
22 to calculate the net revenue. It's showing that, under  
23 the "Expected Value", the model is producing a figure  
24 of almost \$5 million. And, under the "Actual" run, it

[WITNESS PANEL: McCluskey~Arnold]

1 was approximately \$1.5 million. So, Attorney Knowlton  
2 referred to "structural problems", I'm not really sure  
3 what that means. But the result of the back-cast  
4 analysis, as represented in this particular exhibit,  
5 was showing that there was significant differences in  
6 the expected versus actual net revenue. So, if that's  
7 due to structural flaws, then, yes, there are  
8 structural flaws. But I certainly couldn't point to  
9 what they are, because we never got access to the  
10 actual model itself.

11 Q. Okay. Looking at -- if you would, still looking at  
12 your report, Mr. Arnold, on Page 11 of 13.

13 A. (Arnold) Okay. Page 11, 12, and 13.

14 MR. SPEIDEL: And, this is Staff Exhibit  
15 1.

16 BY MS. KNOWLTON:

17 Q. Looking at -- if you would look at "Table 2", the  
18 "Back-Cast Result Analysis", do you see that?

19 A. (Arnold) Yes, I do.

20 Q. Do you agree that the simulated value of energy net  
21 revenue referred to in the revenue and cost values in  
22 the three back-cast case columns in this table is the  
23 expected value or the mean of the 250 scenarios of  
24 random prices and forced outages?

{DE 10-261} {05-10-12/Day 5}

1 A. (Arnold) Okay. Would you repeat that?

2 Q. Sure. Do you agree that this simulated value of energy  
3 net revenue that's referenced in this chart and the  
4 revenue and cost values in the three back-cast case  
5 columns of this Table 2 is the expected value or the  
6 mean of the 250 scenarios of random prices and forced  
7 outages?

8 A. (Arnold) I'd have to go back to the Levitan report to  
9 see whether they used the median or the mean. It's one  
10 of the two. Or, I may have written it down here.  
11 Could I have a moment to review my report?

12 Q. Sure. Yes. You might want to look at the response  
13 that's been marked as "PSNH Exhibit 19", on the back  
14 page, Page 3, under the "P50" column.

15 A. (Arnold) I don't see corresponding numbers in my  
16 Table 2 and your Page 3 of 3, between either of the  
17 mean or the median value in the "Net Revenue" line.  
18 Oh. And, there's probably a reason for this. We had  
19 to adjust to get on an apples-to-apples basis. We did  
20 find one correlation, I mean, one match in numbers.  
21 Right. So, if you, on Table 2, in my report, the  
22 number at the far right, "Rev 0", the original  
23 back-cast, you'll see a number there for "Net Revenue"  
24 of "5,359". Okay? That is -- that corresponds to the

[WITNESS PANEL: McCluskey~Arnold]

1 expected value in Table 2 of 3 in PSNH Exhibit 19.

2 And, what we did was, the process of going towards the  
3 middle was to get everything on an apples-to-apples  
4 basis, using some corrections that we had to do, I  
5 believe these were, you know, hand math corrections, to  
6 get everything on an apples-to-apples basis between the  
7 two points of comparison. So, you're not going to find  
8 those numbers in the output from Levitan.

9 Q. And, if you look at, on your Table 2, under the column  
10 "Rev 2", and then go to PSNH 19, Page 3, under the  
11 "Expected Value" column, it looks like you derived some  
12 of those numbers, "Fuel Cost", "Emission" --

13 A. (Arnold) I don't think you can --

14 CHAIRMAN IGNATIUS: Let her finish the  
15 question.

16 WITNESS ARNOLD: Okay. I'm sorry.

17 BY MS. KNOWLTON:

18 Q. Okay. Just I'm looking at the Page 3 on that Exhibit  
19 19. And, if you look at the "Energy Revenue", under  
20 the "Expected Value", --

21 A. (Arnold) Uh-huh.

22 Q. Do you see where I am?

23 A. (Arnold) Yes.

24 Q. Where it says "22,640". Looks like --

{DE 10-261} {05-10-12/Day 5}

1 A. (Arnold) Looks like I've pulled some of those numbers  
2 from here.

3 Q. Right. So, for that "Rev 2" column, it looks like you  
4 have relied on the data that's in this Exhibit PSNH 19?

5 A. (Arnold) In part. Uh-huh.

6 Q. The "22,640", the fuel cost data and the emission  
7 allowance cost information is all from this exhibit,  
8 correct?

9 A. (Arnold) Correct.

10 Q. And did, Dr. Carlson calculate that plant warming cost  
11 for you at your request?

12 A. (Arnold) I believe he did. I think that happened live,  
13 while we were there, if I remember right. And, the  
14 reason you're going to see a difference here is this is  
15 a high-level comparison to try to get to an  
16 apples-to-apples basis, between "Rev 0", on the left,  
17 the actual original 2010, and the back-cast results.  
18 So, I think it's a little dangerous to try to compare,  
19 because we didn't go through the comparison to get to  
20 apples and apples in the detail you have on Table 3.

21 Q. Uh-huh.

22 A. (Arnold) So, I believe this, what you see here on  
23 Table 2 is what we did at the session at Levitan, to  
24 see how we were.

[WITNESS PANEL: McCluskey~Arnold]

1 Q. Okay. And, in your testimony, I'm looking at your  
2 testimony on Page 19. I'll let you take a minute and  
3 get that before you.

4 A. (Arnold) Okay.

5 Q. I'm looking at Lines 13 to 17.

6 A. (Arnold) Yes.

7 Q. There you state that, "even after adjusting the results  
8 of the back-casting analysis for several data errors,  
9 the model continued to overestimate actual 2010 energy  
10 net revenues by about 1.2 million or 45 percent."  
11 Would you agree that, when you refer to "several data  
12 errors" there, you were referring to the fuel data  
13 adjustments that I had asked Mr. McCluskey about, the  
14 plant warming and the fuel use data? Or, Mr. McCluskey  
15 can answer that, either one of you.

16 A. (McCluskey) If I can? Yes. It certainly included  
17 changes to start-up fuel costs and the plant warming  
18 data. What was your third one that you said?

19 Q. Just I had those two. Just those two.

20 A. (McCluskey) Yes. Taking those data errors into  
21 account, and the information that we've got from the  
22 re-run with those corrected inputs, did allow us to  
23 reduce the difference between the 2010 actuals to  
24 \$1.2 million. That's correct.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 Q. And, would you agree that the median result of the  
2 model scenarios for 2010 was 3.6 million?

3 A. (Arnold) Could you ask the question again.

4 Q. Let me ask it a different way. Would you accept  
5 subject to check that the median result of the model  
6 scenarios for 2010 was \$3.6 million?

7 A. Now, you're talking "median", and not "expected  
8 values"?

9 Q. Right.

10 A. (Arnold) Okay.

11 MR. SPEIDEL: It would appear to me, if  
12 I may interject, that there may be a ready answer to this,  
13 but is there a ready answer to this that it might involve  
14 a good deal of calculation?

15 WITNESS McCLUSKEY: Could I ask, do you  
16 have an exhibit that you're referring to, Attorney  
17 Knowlton?

18 BY MS. KNOWLTON:

19 Q. Well, let me ask it a different way. Assuming that the  
20 -- to avoid having you make the calculation, assuming  
21 that the median result of the model scenarios for 2010  
22 was \$3.6 million, would you agree that that was a  
23 \$1 million difference from the actual that Mr.  
24 McCluskey just referred to, the 2.6 million?

{DE 10-261} {05-10-12/Day 5}



1 A. (Arnold) Okay.

2 A. (McCluskey) Excuse me. When did I refer to the "2.6  
3 million"?

4 Q. I thought you said "2.6 million". I'm sorry, maybe you  
5 referred to the 1.2 million difference?

6 A. (McCluskey) Yes. That's what --

7 Q. Okay.

8 A. (McCluskey) -- our testimony at Page 19 says.

9 Q. Okay. Well, sorry. I'll try another, take another  
10 stab at it. If we assume that the median result for  
11 2010 of the model scenarios was 3.6 million, that is  
12 only a 1 million difference from the model's expected  
13 value of 3.8 million, minus the 2010 actual value of  
14 2.6 million?

15 A. (McCluskey) We're going to have to go through this step  
16 by step. You've made an assumption about a number, and  
17 you compared it with something that apparently was the  
18 result of the model. Could you point me to where the  
19 model result that you're reading from?

20 Q. Okay. If you look at PSNH 19.

21 A. (McCluskey) Yes.

22 Q. Under the "Energy Revenue" line.

23 A. (McCluskey) Are we looking at the "Revised Start Fuel  
24 Data" sheet?

[WITNESS PANEL: McCluskey~Arnold]

1 Q. Right. The last page.

2 A. (McCluskey) Okay.

3 MR. SPEIDEL: That's Attachment 2 for  
4 the record.

5 WITNESS McCLUSKEY: Okay.

6 BY MS. KNOWLTON:

7 Q. And, you see the "P50" value?

8 A. (McCluskey) Yes.

9 Q. Okay. And, then, you look at the "Emission Allowance  
10 Cost"? And, the "Fuel Cost"?

11 A. (McCluskey) Hold on. "Emission Allowance Cost" of  
12 "372", yes.

13 Q. And, you subtract those numbers, the "18,366" and the  
14 "372" from the "Energy Revenue" number.

15 A. (McCluskey) From the "4,807"?

16 Q. Right. And, then, you take -- remove an additional  
17 1,200 from the plant warming costs, as you did on  
18 Table 2.

19 A. (McCluskey) Okay. So, we're subtracting three items,  
20 emission allowance costs, fuel costs, and plant warming  
21 costs, from the net revenue number of "4,807", correct?

22 Q. What I'm asking you to do is to take the energy revenue  
23 of "23,545", which is under the "P50"?

24 A. (McCluskey) One moment. "Energy Revenue"? Okay.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1           That's -- yes, I see that, "23".

2   Q.    Yes.  And, then, you're going to take out the fuel  
3           cost, the emission allowance cost, and the plant  
4           warming cost, just as you did on Table 2.

5                   CHAIRMAN IGNATIUS:  Can someone help me  
6   with the third item, you had said was "1,200", and I'm not  
7   finding any "1,200"?

8                   MS. KNOWLTON:  If you look on Table 2,  
9   the "plant warming cost" is taken out.  That's the  
10   "1,200".

11                  MR. SPEIDEL:  Where is the line item for  
12   that?

13                  CHAIRMAN IGNATIUS:  I'm sorry, I don't  
14   know where you are.

15                  MS. KNOWLTON:  I'm on Page 11, of Staff  
16   Exhibit 9.  Under "Table 2", it's the last item on the  
17   table.

18                  MR. SPEIDEL:  At this juncture, I would  
19   like to object to this question.  This is sort of -- this  
20   is sort of a very complicated question involving  
21   mathematics.  If we can just have a specific line item  
22   pointed to, and allow Mr. McCluskey and Mr. Arnold to  
23   refer to that in making their calculations, versus five  
24   different sources of information, that would be pretty

{DE 10-261} {05-10-12/Day 5}

1 helpful.

2 MS. KNOWLTON: All right. I'm okay with  
3 moving on.

4 BY MS. KNOWLTON:

5 Q. Mr. McCluskey, yesterday you agreed that the energy net  
6 revenue results of the LAI model would not differ by  
7 including the modeling of operating reserves, to  
8 clarify that your understanding that this means that  
9 energy revenues will change by the same amount as  
10 additional fuel and emissions costs resulting in zero  
11 net difference had provision of operating reserves also  
12 been modeled?

13 A. (McCluskey) Could you give me that question again  
14 please?

15 Q. Did you get -- I think the first part you got, right?  
16 That yesterday you agreed that the energy net revenues  
17 results of the model would not differ by including the  
18 modeling of operating reserves?

19 A. (McCluskey) That's my understanding, yes.

20 Q. Right. That was my understanding of your testimony.  
21 And, so, I just wanted to clarify, is it also your  
22 understanding that this means that the energy revenues  
23 will change by the same amount as additional fuel and  
24 emission costs resulting in zero net difference had

1 provision of operating reserves also been modeled?

2 A. (McCluskey) The energy revenues would change by the  
3 same amount as emissions/fuel costs?

4 Q. As any additional fuel and emissions costs? Otherwise  
5 it would net out to zero?

6 A. (McCluskey) Well, we're talking about revenues and  
7 costs. Are you suggesting that increasing costs would  
8 be recovered through the dispatch price, the offer  
9 price? Is that what you're asking me?

10 Q. So, what I'm trying to get at is, is that, as operating  
11 performance may change, I mean, from a net revenue  
12 perspective, it's going to be a wash, given the net  
13 commitment payments are made?

14 A. (McCluskey) If the change in operations is to deal with  
15 providing operating reserves, then --

16 Q. Assume that, correct.

17 A. (McCluskey) -- then the impact on net revenues, based  
18 on my testimony yesterday, would be zero.

19 Q. Okay. And, yesterday, you testified that you were  
20 aware of situations where Commissions had disallowed  
21 recovery of retired plant and a return on unamortized  
22 balances. Do you remember that?

23 A. (McCluskey) Yes. This is a totally different issue.

24 Q. Totally different issue, yes.

[WITNESS PANEL: McCluskey~Arnold]

1 A. (McCluskey) We're now talking about the investments  
2 made for the plant. And, in particular, we're talking  
3 about the undepreciated investment and the return that  
4 the Company receives on that.

5 Q. And, you've seen cases where that's happened?

6 A. (McCluskey) Yes.

7 MS. KNOWLTON: Can you -- we'd like to  
8 make a record request as "PSNH 20", that Mr. McCluskey  
9 provide the citations to those cases that he's familiar  
10 with.

11 CHAIRMAN IGNATIUS: Well, you first  
12 haven't even asked if he has cases. If you could -- let's  
13 work it through more slowly, before we have to create a  
14 new exhibit.

15 MS. KNOWLTON: Okay. Well, I understood  
16 that he was -- he just said that he was aware of  
17 situations where that had occurred. And, so, I just want  
18 to know what -- if he could provide us information about  
19 what those situations --

20 CHAIRMAN IGNATIUS: Let's ask him first  
21 if he can provide them?

22 WITNESS McCLUSKEY: Yes, I can. The  
23 statement that I made yesterday was based on reviewing, in  
24 particular, an order from the Oregon Commission, to the

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 Trojan Nuclear Power Plant, and also a couple of cases by  
2 the California Commission, to do with power plants and  
3 other utility equipment. So, I could -- I have electronic  
4 copies of those. I can provide those.

5 CHAIRMAN IGNATIUS: All right. Why  
6 don't we reserve Exhibit 21, PSNH 21 for that.

7 **(PSNH Exhibit 21 reserved)**

8 BY MS. KNOWLTON:

9 Q. Mr. McCluskey, the next line of questioning I want to  
10 ask is about Staff Exhibit 11 from yesterday.

11 A. (McCluskey) Okay.

12 CHAIRMAN IGNATIUS: And, this contains  
13 confidential data, is that correct?

14 MR. SPEIDEL: Yes.

15 CHAIRMAN IGNATIUS: All right. Let's  
16 keep that in mind in questions and answers.

17 BY MS. KNOWLTON:

18 Q. Mr. McCluskey, does that exhibit contain Dracut price  
19 data information?

20 A. (McCluskey) Yes, it does. It's actually -- you said  
21 "does it contain". The results that are shown on this  
22 exhibit reflect Dracut price data from Gas Daily.

23 Q. Is that the Commission's subscription to Gas Daily?

24 A. (McCluskey) Yes. It's the subscription that goes to

{DE 10-261} {05-10-12/Day 5}

1 the Gas Division.

2 Q. Is that a Platts publication?

3 A. (McCluskey) I believe it is.

4 CHAIRMAN IGNATIUS: Can I ask you a  
5 clarifying question? My notes from yesterday, and they  
6 may be wrong, what I wrote down on this exhibit was "Data  
7 from Emera to PSNH" was the source of the information.  
8 Did I -- what am I getting wrong here?

9 WITNESS McCLUSKEY: This -- these  
10 numbers that you see, under the monthly columns, reflect  
11 the differential between the Emera gas price at Newington  
12 and the Dracut trading price. And, so, it's a difference.  
13 So, they reflect two prices.

14 CHAIRMAN IGNATIUS: Thank you.

15 WITNESS McCLUSKEY: So, we need to have  
16 two sources; one the Emera prices, one the Gas Daily  
17 natural gas prices.

18 MR. SPEIDEL: And, the Emera data was  
19 provided to Staff subject to confidential treatment.

20 WITNESS McCLUSKEY: That's correct.  
21 That's why this exhibit is being requested to be  
22 confidential.

23 BY MS. KNOWLTON:

24 Q. Mr. McCluskey, do you remember a number of months back



[WITNESS PANEL: McCluskey~Arnold]

1       having a telephone conversation between yourself,  
2       Mr. Speidel, myself, and Ms. Menard at PSNH, as you  
3       were with regard to calculation of these basis  
4       differentials?

5   A.   (McCluskey) Yes. Not in great detail, but I remember  
6       having a conversation with you. When I think the  
7       primary subject of the conversation was getting access  
8       to the Levitan natural gas prices, but that was not  
9       possible. So, we turned to the source that we had  
10      internally.

11   Q.   And, I think, is it -- do recall from that conversation  
12       that the Company offered to have you send your data  
13       that you had from Gas Daily that was the basis of  
14       calculating the differentials and to compare that to  
15       the Bloomberg data?

16   A.   (McCluskey) No, I don't recall you asking for the Gas  
17       Daily data.

18   Q.   Well, --

19   A.   (McCluskey) I seem to -- I think you did ask for a copy  
20       of my conclusions.

21   Q.   I think we offered -- do you recall that we offered to  
22       conduct a comparison using the Bloomberg data to the  
23       calculations that you had done using the Gas Daily  
24       data?

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 A. (McCluskey) I don't recall that, no.

2 Q. So, you don't recall the Company offering to make that  
3 comparison and your declining?

4 A. (McCluskey) I don't. In fact, we had requested that --  
5 the Company actually did do a version of this exhibit  
6 with the Levitan gas prices as the basis of that. The  
7 problem was, we couldn't verify the numbers, because  
8 the Levitan data was confidential. And, we certainly  
9 wanted to verify it, because the results that we get  
10 from this analysis are different from the results that  
11 Levitan or the Company produced. So, we wanted to  
12 investigate the source of the differences. But, since  
13 we were not allowed to see that data, we just completed  
14 the exercise ourselves with the data available to us.

15 Q. And, Ms. Menard is here, and I may ask to swear her in  
16 once you take the stand, I just want to -- once you've  
17 concluded your testimony, I want to give you one more  
18 chance of this. So, during that conversation, you  
19 don't recall her offering to take your calculations and  
20 have Levitan compare them to what it had done using the  
21 Bloomberg data?

22 A. (McCluskey) Compare them? We actually have a copy of  
23 the similar exhibit from the Company, which is based on  
24 the -- on the Bloomberg data. That's my understanding.

{DE 10-261} {05-10-12/Day 5}

1 Q. But you couldn't, when we had the phone call, isn't it  
2 true that you represented that you wanted to see the  
3 underlying data to make the comparison between what you  
4 had done and what the Company had done?

5 A. (McCluskey) That's correct.

6 Q. And, because LAI was not able to release that data,  
7 based on its contract with Bloomberg, on that phone  
8 call Ms. Menard represented that the Company would be  
9 willing to take the information that you had and to  
10 have LAI run a comparison, so as to give us some sense  
11 of how comparable those data sources were. Is that  
12 coming back?

13 A. (McCluskey) No, it's not.

14 Q. Okay. Can you describe the methodology that you used  
15 to calculate your Exhibit 11?

16 A. (McCluskey) Yes. If you take a particular data point  
17 that's shown here, take the first column, January of  
18 2010, in January of 2010, there will be certain days in  
19 that month, perhaps very few, that Newington was  
20 dispatched. And, on those days, there would be gas  
21 prices in the data provided by PSNH from Emera. And,  
22 we would take those gas prices, pump them into a  
23 spreadsheet. And, on the very same day that gas was  
24 consumed, we'd find the Gas Daily trading price at

[WITNESS PANEL: McCluskey~Arnold]

- 1       Dracut, and subtract one from the other, and you'll  
2       come out with the premium. So, now, we have to  
3       calculate an average for each of -- for the whole  
4       month. And, what we do is, we don't take a simple  
5       average, because certain days have much more  
6       consumption than other days. And, hence, you need to  
7       -- if you're going to come out with an average  
8       differential, you need to weight them based on the  
9       consumption in each day. So, each average price for a  
10      particular month in a particular year is a weighted  
11      average price of, one, the difference on each day in  
12      prices and prices times the consumption. And, we do  
13      that in every column and in every year.
- 14   Q.   Did you include or exclude days when Newington ran for  
15      operating reserves when you put together this analysis?
- 16   A.   (McCluskey) I believe this analysis reflects every day  
17      that gas was consumed by Newington.
- 18   Q.   So, that would include days when Newington ran for  
19      testing purposes?
- 20   A.   (McCluskey) That's correct.
- 21   Q.   Is it your understanding that Friday trade dates for  
22      natural gas are Saturday, Sunday, and Monday flow  
23      dates?
- 24   A.   (McCluskey) Could I have the question again?

{DE 10-261} {05-10-12/Day 5}

1 Q. Is it your understanding that Friday trade dates for  
2 natural gas are Saturday, Sunday, and Monday flow  
3 dates?

4 A. (McCluskey) I believe that's the case.

5 Q. And, that they would all have the same flow day price?

6 A. (McCluskey) That's correct.

7 Q. And, are you aware that the Gas Daily price data for  
8 2010, upon which this is based, had Friday, Saturday,  
9 and Sunday with the same price, but different prices  
10 for Mondays for most weeks?

11 A. (McCluskey) I think that's the case, yes.

12 Q. So, that would affect the analysis, right?

13 A. (McCluskey) That would be reflected. Whatever the Gas  
14 Daily price was for a particular day is reflected in  
15 this schedule.

16 Q. So, if there would need to be some -- that could affect  
17 the basis spreads, correct, if the Monday price is not  
18 the accurate price?

19 A. (McCluskey) Well, I'm assuming what's in the report, in  
20 the Gas Daily report, is the accurate price for that  
21 trading point. And, if I could just kind of complete  
22 the thought. The impact would also depend on whether  
23 Newington actually consumed gas on a Monday. So, if  
24 there are very few instances of that throughout this

[WITNESS PANEL: McCluskey~Arnold]

1 schedule, then this suggested problem would have very  
2 little impact, if there is a problem at all.

3 Q. I may have -- I'm not sure I asked the question in a  
4 way that -- I think maybe I was saying one thing and  
5 you were answering another, with regard to the data  
6 that you used in your confidential Exhibit 11. It  
7 sounds like your understanding is that Friday,  
8 Saturday, and Sunday, and Monday -- I'm sorry,  
9 Saturday, Sunday, and Monday flow dates all have the  
10 same price, right?

11 A. (McCluskey) I believe that's the case.

12 Q. Is it possible that when you put your Exhibit 11  
13 together that you used a different price for some  
14 Mondays than the Saturday and Sunday prices?

15 A. (McCluskey) I think I've just said that whatever the  
16 price was in the Gas Daily for that day is what's  
17 reflected in this schedule.

18 Q. Well, if you were incorrect, and did not have the  
19 Monday pricing the same as the Saturday and Sunday,  
20 would that affect the basis spreads that show up in  
21 your Exhibit 11? And, my belief is is that some of  
22 those, in the development of your exhibit, that some of  
23 those dates were off. That the Monday prices don't --  
24 are not consistent with the Saturday and Sunday.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 MR. SPEIDEL: Is that a question to Mr.  
2 McCluskey or is that a statement to Mr. McCluskey?

3 MS. KNOWLTON: Well, I just -- I want to  
4 get a sense for whether, you know, what verification he  
5 went through when he developed this.

6 **BY THE WITNESS:**

7 A. (McCluskey) Well, I've said that, whatever price is  
8 reflected on a particular Monday, if gas happened to  
9 flow on that day, the -- my schedule will reflect the  
10 price that's shown in the Gas Daily. If there's a --  
11 you seem to be suggesting that there's a problem with  
12 that. I'm not sure -- I'm not sure I understand what  
13 the problem is. But all I'm saying is that this  
14 schedule reflects the Gas Daily. And, to the extent  
15 that gas flowed on a Monday, within the days reflected  
16 in the schedule, then it's going to reflect the Gas  
17 Daily price.

18 BY MS. KNOWLTON:

19 Q. Okay. I'm going to ask you some questions about your  
20 testimony yesterday. You talked about a case run that  
21 LAI had done that showed a net present value benefit of  
22 \$37 million. Do you recall that?

23 A. (McCluskey) Yes, I do.

24 Q. And, that was the data run that LAI performed at

{DE 10-261} {05-10-12/Day 5}

1 Staff's request?

2 A. (McCluskey) That's correct.

3 Q. And using Staff's assumptions?

4 A. (McCluskey) Well, there were essentially four changes  
5 from the model run that was used to produce the  
6 April 26 revised results. Two were to correct errors  
7 that Levitan found as a result of the back-cast  
8 analysis. So, I wouldn't call those "Staff  
9 assumptions". Those are their corrections. One was to  
10 do with reflecting the Staff basis spreads for --  
11 between Dracut and Newington, which would show, on  
12 confidential Staff Exhibit 11. I'm hesitant to read  
13 them out. Are those confidential?

14 Q. You don't need to read them out. I guess what I was  
15 trying to get at is that, if they did what you asked  
16 them to do, it was your -- how you wanted it run? It  
17 wasn't based on LAI's assumptions, it was based on the  
18 way Staff wanted the scenario run?

19 A. (McCluskey) Yes. But I'm just correcting your  
20 statement that --

21 Q. Okay.

22 A. (McCluskey) -- it was our assumption.

23 Q. Okay.

24 A. (McCluskey) They weren't our assumptions. Two were



1 error corrections, which we asked the Company whether  
2 it was going to file a revision to correct those, and  
3 it said "no". So, we asked them to do a run which  
4 corrected those. And, in addition, change the basis  
5 spreads to the level -- levels that we thought were  
6 appropriate, and I would add that Levitan, in its  
7 rebuttal testimony, agrees that the basis spreads used  
8 in the initial model and in the revised model were no  
9 longer appropriate. So, we think it was appropriate to  
10 ask for that change. And, we also -- the fourth thing  
11 we did ask, that the Company run the model with oil to  
12 natural gas price ratios are different from what the  
13 Company had in the model, and Mr. Arnold has already  
14 explained that those ratios were more reflective of the  
15 margins between oil and natural gas prices at the time  
16 we were having this discussion with the Company. So,  
17 again, we thought that was an appropriate update to the  
18 model.

19 Q. Can you explain how a net present value calculation  
20 works?

21 A. (Arnold) Can I explain?

22 Q. Sure.

23 A. (Arnold) Okay. First of all, you start off with a  
24 string of net cash flows. What that typically means

[WITNESS PANEL: McCluskey~Arnold]

1 is, you add up all revenues related to the project or  
2 asset you're evaluating over time. You add up all  
3 costs. You subtract the costs from the revenues. And,  
4 then, typically, what you will also do is subtract any  
5 capital cost items that are related to the project at  
6 the appropriate time. What you end up with is a string  
7 of net cash flows, year zero through whatever the  
8 period is for your analysis, let's say 25 years. Then,  
9 you will discount each year past year zero, I'm  
10 simplifying it here, as always, you can get more  
11 complicated in these things, but you discount each  
12 year's cash flow by the discount rate in the  
13 appropriate manner. So, in year one, if your discount  
14 rate is 10 percent, you discount that cash flow by  
15 10 percent. And, in the second year, you discount it  
16 by what's essentially the square of 10 percent, to come  
17 back at the present value, today's value, of that  
18 string of cash flows. And, --

19 Q. Mr. Arnold -- I'm sorry, continue.

20 A. (Arnold) Okay.

21 MR. SPEIDEL: Well, --

22 WITNESS ARNOLD: I could keep going.

23 BY MS. KNOWLTON:

24 Q. I wasn't trying to -- I apologize for interrupting you.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 If you want to say more, I don't mean to stop you  
2 there.

3 A. (Arnold) I love -- I give courses on this.

4 Q. Okay. All right. Well, I have actually a reasonable  
5 question, so we probably just need the short version, I  
6 think which you just gave us.

7 A. (Arnold) Okay.

8 Q. Do you recall yesterday, there was some testimony about  
9 the net present benefits being 37 million under this  
10 re-run that was done at Staff's request?

11 A. (Arnold) Yes. Which I call the "second revised model  
12 run".

13 Q. And, there was some testimony, I believe, that the  
14 average would be -- of benefits would be \$3.7 million a  
15 year, based on that \$37 million NPV. Do you recall  
16 hearing that?

17 A. (McCluskey) Yes, if I could respond to that. I stated  
18 that, very roughly, the average would be \$3.7 million.  
19 And, I did state that the \$37 million was a present  
20 value number. And, hence, the -- divided by ten, is a  
21 very rough calculation. The purpose of that was to  
22 just provide an indication of how those annual net  
23 benefits compared with the returns on investment.

24 Q. And, stated in that way, the \$3.7 million per year, I

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 mean, that actually shortchanges the benefit as it  
2 would actually be realized, right?

3 A. (McCluskey) That's correct. In nominal terms, it --  
4 certainly, the further out you would get, it would be  
5 higher.

6 A. (Arnold) The numbers are bigger than 3.7 in the  
7 beginning, smaller than 3.7 near the end of the string.  
8 But they all will add up to 37.

9 A. (McCluskey) On a present value basis.

10 A. (Arnold) Right. To come to a present value.

11 Q. And, I just -- I don't think I asked you this earlier.  
12 Neither of you have conducted a CUO before, right?

13 A. (McCluskey) Well, you asked us this in discovery. And,  
14 the response was, neither Mr. Arnold nor myself have  
15 actually conducted a continued unit operation study.  
16 However, as Mr. Hachey said, in effect, this is --  
17 continued unit operation studies, by the way, don't  
18 have to be done on a stochastic basis. They can be  
19 done on a deterministic basis. And, I have  
20 participated in the development of valuation exercises  
21 for Seabrook and Millstone, while I worked at LaCapra,  
22 doing a DCF analysis. And, also, while working for the  
23 Commission, I've done extensive review of the DCF model  
24 that was presented by both PSNH and Laidlaw in the

{DE 10-261} {05-10-12/Day 5}

1 Laidlaw Project. So, I've done reasonably extensive  
2 work on assisting in the development of DCF analyses or  
3 reviewing them.

4 Q. Mr. Arnold?

5 A. (Arnold) Yes. I have never done anything called a  
6 "Continued Unit Operation Study. However, I have done  
7 probably a couple hundred valuation analyses, some  
8 deterministic, many stochastic-based, in other words,  
9 accounting for uncertainty and risk, that are very  
10 similar in terms of what they do. Trying to understand  
11 what today's value of an asset will be as it goes  
12 forward into the future.

13 Q. And, is most of your experience, Mr. Arnold, in the  
14 petrochemical industry?

15 A. (Arnold) No. This is -- I work mostly in refining, and  
16 that's probably 30 percent of my work. I do a lot of  
17 work with biofuels. And, there's been a number of  
18 biofuels to power projects there, certainly, in the  
19 last four or five years. I do work some in  
20 petrochemicals. I also will do the same for some hard  
21 asset evaluations related to M&A work. So, --

22 Q. How would you break down the other 70 percent?

23 A. (Arnold) Of my work?

24 Q. Yes.

[WITNESS PANEL: McCluskey~Arnold]

1 A. (Arnold) Okay. Let me see here. Let me make sure it  
2 adds up to 100 at the end. So, just a second here. I  
3 would say it's 30 percent related to refining, and that  
4 -- and 30 percent related to biomass and production.  
5 And, in "production", I'm talking about oil production,  
6 natural gas production, and so on. Thirty (30) percent  
7 then is related to a blend of things. It could be  
8 biomass to chemicals, biomass to power,  
9 pharmaceuticals. I do quite a bit of portfolio  
10 analysis for R&D projects for pharmaceutical companies,  
11 or at least I help them set up models that they use. I  
12 would like to note that a number of the refining  
13 projects I've worked on include power production.

14 Q. So, are we at 90 percent?

15 A. (Arnold) No. Oh, we're up to 90. Let's make that last  
16 group "40".

17 Q. Okay.

18 A. (Arnold) Thank you. You caught me.

19 MS. KNOWLTON: I'd like to mark for  
20 identification as "PSNH 22" a response to a data request,  
21 Staff 1-70.

22 (Atty. Eaton distributing documents.)

23 CHAIRMAN IGNATIUS: So, we'll mark for  
24 identification the response to 1-70 as "PSNH 22".

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 (The document, as described, was  
2 herewith marked as **PSNH Exhibit 22** for  
3 identification.)

4 BY MS. KNOWLTON:

5 Q. Do you have that before you, Mr. Arnold?

6 A. (Arnold) Yes, I do.

7 Q. This is a chart that is listing out LAI's experience  
8 with regard to forecast of wholesale market prices in  
9 New England. And, I'm just wondering, do you have any  
10 expertise that's similar to this that we can note for  
11 the record?

12 A. (Arnold) Well, I --

13 Q. You know, where you've had a regulatory proceeding with  
14 a docket, you know, where you've provided a forecast?

15 A. (Arnold) For a regulatory proceeding, that's similar to  
16 this? No.

17 Q. You know, a state commission or the FERC or --

18 A. (Arnold) Neither of those.

19 Q. Okay. Mr. McCluskey, do you --

20 A. (Arnold) Although, --

21 Q. Sorry.

22 A. (Arnold) -- I have provided a number of forecasts for  
23 government agencies, such as the Department of Energy,  
24 or various Departments of Energies.

{DE 10-261} {05-10-12/Day 5}

1 Q. Back to you, Mr. McCluskey.

2 A. (McCluskey) Yes.

3 Q. Do you have your testimony before you?

4 A. (McCluskey) Yes, I do.

5 Q. If you would go to Page 28.

6 A. (McCluskey) Okay.

7 Q. Yesterday you made a change to your testimony to take  
8 out the references, Lines 4 and 7, I believe, with  
9 regard to the installation of the need to install or  
10 the requirement that the Company install an activated  
11 carbon injection system at Newington Station. Do you  
12 recall that?

13 A. (McCluskey) I do.

14 Q. And, when you put together this testimony, you had --  
15 your testimony had some estimates about what the costs  
16 would be to meet those requirements, is that right?

17 A. (McCluskey) That's correct.

18 Q. And, we had asked you in discovery about those costs,  
19 the 20 million figure?

20 A. (McCluskey) That's correct.

21 Q. And, you had indicated in your testimony that -- we had  
22 asked you how you derived that figure, and you had  
23 indicated that you had obtained that from Conservation  
24 Law Foundation's lawyer, Mr. Peress, is that right?



[WITNESS PANEL: McCluskey~Arnold]

1 A. (McCluskey) Yes. That's correct. In preparing this  
2 testimony, I did have occasion to call Mr. Peress to  
3 seek his input on the costs of activated carbon  
4 injection systems. Which, at the time, I thought was a  
5 potential system that the Company might need to install  
6 in order to address the requirements of Utility MACT.

7 Q. But you didn't, as I understand it, yesterday remove  
8 these numbers in terms of the level of investment that  
9 you thought was required at Newington Station?

10 A. (McCluskey) I didn't. And, it's for this reason. And,  
11 actually, on Line 3, this paragraph begins by stating  
12 "if we assume for illustrative purposes". So,  
13 essentially, what I was trying to do was to estimate  
14 what would be the net effect of, if the Company were to  
15 have to install a system of this type, that would cost  
16 \$20 million capital, and have ongoing annual costs of  
17 half a million dollars. The idea was simply to say  
18 "this could be the impact on the net benefit of  
19 \$37 million, if this kind of system was to be installed  
20 at these costs." It was intended just for illustrative  
21 purpose. It was nothing else. And, I think the  
22 testimony is fairly clear that it was intended to be a  
23 guide, if the magnitude of the impact that such a cost  
24 would have on the ten year present value. So, I didn't

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 think there was any need to remove these cost  
2 estimates. This cost estimate could, whatever system,  
3 if -- let me back up. If Utility MACT were to apply to  
4 Newington, and they were required to install a system  
5 to control emissions, and the cost of that system were  
6 to be in the \$20 million range, with additional annual  
7 expenses, then the reduction in net present value, from  
8 37 to \$19 million, is the kind of outcome that we would  
9 expect. That was the only purpose of the testimony.

10 MS. KNOWLTON: I've concluded my  
11 examination of these witnesses.

12 CHAIRMAN IGNATIUS: Thank you. Let's  
13 keep moving on a bit longer before we take a break. We  
14 may be able to conclude and not need to come back. So,  
15 Commissioner Harrington.

16 CMSR. HARRINGTON: Thank you.

17 BY CMSR. HARRINGTON:

18 Q. Just to kind of maybe clean up the results on this  
19 issue that seems to keep coming up over and over again  
20 on the "operating to produce energy" versus "operating"  
21 -- or "running for operating reserves". There was a --  
22 I guess part of the testimony in Staff Exhibit 1 that's  
23 now been retracted, that that was a problem. So, what  
24 you're saying now is that, because when someone runs

[WITNESS PANEL: McCluskey~Arnold]

1 for operating reserves, ISO basically makes them whole  
2 for the additional cost that they have for being  
3 holding back power, say for 30 minute spinning reserve.  
4 That, in the modeling world, that comes out the same as  
5 if they were actually dispatched for economic purposes?

6 A. (McCluskey) That's correct. It might be a better way  
7 to think about, assume that the Newington had been  
8 called by the ISO to dispatch in hours that it wouldn't  
9 dispatch in order to make a profit. And, as a result,  
10 it ran and received revenues that fell short of their  
11 actual variable costs, the ISO will compensate them for  
12 that. The concern was that, in the development of that  
13 compensation, it was Staff's understanding that they  
14 would take into account the profits from those  
15 profitable hours in determining what the amount of  
16 compensation would be. And, if that were the case,  
17 then that would impact the net revenues. For various  
18 technical reasons, based on the advice of the ISO, that  
19 is not actually the case. And, as a result, I  
20 retracted that part of the testimony.

21 Q. Okay. There's been a lot of discussion of the capacity  
22 factor at Newington. And, what was it at about five  
23 years ago?

24 A. (McCluskey) Five years ago? Where have I got that? If

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1       you just give me a moment, Commissioner. There is a  
2       schedule in the -- let's see if it's this one. Okay.  
3       If you turn to, this is in the original filing, which I  
4       think is PSNH Exhibit 1, I believe. And, you go to the  
5       Continuing Unit Operation Study. And, on Page 21,  
6       which is Bates numbered 000204. And, it's "Exhibit  
7       G.3". You'll see, in the first column, all the data  
8       that you need for the capacity factor.

9   Q.   And, so, if we go back to 2003, 2004, 2005, the  
10       capacity factors were substantially higher than they  
11       are now?

12  A.   (McCluskey) That's certainly the case, yes.

13  Q.   Okay. In all of these studies that have been looked at  
14       there, now we have a capacity factor that's gone down  
15       from what might be even to say is somewhat of a  
16       baseloaded plant to something that is a peaker at best,  
17       or one that mostly runs for operating reserves. Are  
18       you aware of any staff reductions at the plant during  
19       that time, permanent reductions of staff, to reflect  
20       the new, much lower capacity factors?

21  A.   (McCluskey) I'm not aware of that. I don't get  
22       involved in energy service cases, which is probably  
23       where that kind of information would be found.

24  Q.   Well, just to follow up on that, it would seem like, if

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 a plant was running at 50 percent, it would require  
2 more people than if it was running at 3 or 4 percent.  
3 Does that seem to make sense?

4 A. (McCluskey) You would think that's the case, but --

5 Q. Well, we'll just leave it at that then.

6 A. (McCluskey) Yes.

7 Q. In your testimony, you talked about a 9 to \$10 million  
8 a year return on rate base. What's the exact page  
9 here?

10 A. (McCluskey) Yes. If you go to Exhibit G.1, of the same  
11 document. Page 13.

12 Q. You're in 13 of which exhibit?

13 A. (McCluskey) This is the Continuing Unit Operation  
14 Study.

15 CHAIRMAN IGNATIUS: Although, G.1 is one  
16 of those that was revised --

17 CMSR. HARRINGTON: Yes.

18 CHAIRMAN IGNATIUS: -- and supplemented  
19 in the supplemental testimony of Mr. Levitan, was it not?

20 WITNESS McCLUSKEY: Yes.

21 BY CMSR. HARRINGTON:

22 Q. I was referring to your testimony, though?

23 A. (McCluskey) I know.

24 Q. Yes.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 A. (McCluskey) But my statement about the "return to rate  
2 base" are based on the Company's numbers. And, the  
3 source of those numbers is Exhibit G.1, which is  
4 Page 13.

5 Q. Okay. And, is this one of those -- is this one of  
6 those revised tables?

7 A. (McCluskey) Well, I can tell you, Commissioners, that  
8 the revisions had very -- they may have had small  
9 impacts on these numbers, but very, very small.

10 Q. Okay. So, what you had stated was that, in the 9 to  
11 \$10 million a year range was a return on the rate base  
12 going forward, based on the undepreciated cost of the  
13 plant?

14 A. (McCluskey) Well, so, that the -- if you look at the  
15 row which says "Return on Rate Base", you'll see it was  
16 over 10, and it's fallen to 8.7 in 2009. 2010, by the  
17 way, is a half year, so you shouldn't really take that  
18 into account. So, what's actually going to happen  
19 going forward is that the rate base will, on one side,  
20 continue -- will be added to as they add capital, and  
21 it will also be depreciated. So, going forward, the  
22 actual return on rate base will depend on the balance  
23 between those two items, and, obviously, if the return  
24 that's allowed is also changed, that's going to impact

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 the return on rate base as well.

2 But I'm saying is, unless they really  
3 begin to depreciate this thing very fast, for the  
4 foreseeable future, you're going to see returns on rate  
5 base of this kind of magnitude, 8 to \$10 million.

6 Q. Okay. And, what I'm trying to get to here is, if the  
7 plant were to be closed, that amount would still be  
8 left, as far as I guess we call it "stranded costs".  
9 Would that then play out about the same way, with maybe  
10 no new additional capital costs going in, if the plant  
11 was closed. But they would still be depreciating the  
12 rate base. Would that basically work the same, that 8  
13 to \$10 million a year?

14 A. (McCluskey) Well, this is a really critical issue, what  
15 you said, "if the plant were to be closed."

16 Q. Uh-huh.

17 A. (McCluskey) If it was still a regulated plant, and it  
18 was closed because of economic obsolescence, --

19 Q. Uh-huh.

20 A. (McCluskey) -- then the issue is, which is addressed,  
21 by the way, in this Trojan decision in Oregon, does the  
22 undepreciated investment stay in rate base for a plant  
23 that's no longer used and useful? And, if it does stay  
24 in rate base, then they will continue to depreciate it,

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 and the return will correspond to whatever the  
2 undepreciated investment is.

3 If it's determined that the  
4 undepreciated investment should be taken out of rate  
5 base, then the return could be zero. Another option  
6 would be, well, we should have -- they should have a  
7 lower return on the undepreciated investment to  
8 recognize the fact that the plant is no longer  
9 providing useful service.

10 Q. Okay. I think I understand what you're saying then.  
11 But it couldn't go any higher than depreciating the  
12 full amount after the plant was closed down, that would  
13 be the maximum size?

14 A. (McCluskey) Going forward, even if it's closed down,  
15 there's probably going to be costs that continues to be  
16 incurred. And, so, they would probably want to  
17 depreciate that. So, I think it's probably not going  
18 to change too much, but it's still -- it's roughly  
19 whatever the balance is at the time of closure. That's  
20 going to get depreciated over some appropriate time  
21 period.

22 Q. And, going to Page 28 of Staff Exhibit 1.

23 A. (McCluskey) If I could just finish on this?

24 Q. Yes, sir.



- 1 A. (McCluskey) What we're talking about there is a return  
2 on rate base. We're not talking about whether the  
3 Company would be allowed to depreciate the plant.  
4 That's a different issue. They would recover two --  
5 they have got two cost streams; one is recovering the  
6 investment in the plant, and that perhaps could  
7 continue, but the return on the undepreciated  
8 investment is another stream of revenues, and that  
9 really is the issue in this type of case and in the  
10 case of uneconomic plants, which I would not call  
11 "stranded costs", because "stranded cost" is something  
12 where it's what's left, it's what's not recovered when  
13 there's an instruction to divest the power plant.  
14 That's how we've used that term in this state. Here,  
15 this is still a regulated asset that just happens to be  
16 uneconomic. So, it's not a "stranded cost". It's just  
17 an unrecovered investment.
- 18 Q. All right. Thank you. On Page 28, at the bottom of  
19 the page, and whoever is most appropriate to answer the  
20 question, please do. It talks about "as of year of --  
21 "As of end of year 2010, Newington had a total rate  
22 base of \$72 million comprising 46 million of net plant  
23 and 25 million of fuel oil inventory." And, then, you  
24 go on to assume a little bit, "the net plant investment

[WITNESS PANEL: McCluskey~Arnold]

1 is fully depreciated over the 10 year period, fuel  
2 inventory is expensed in equal amounts, we estimate  
3 customers would pay approximately \$51 million in  
4 depreciation charges in NPV terms." Now, there was a  
5 lot of discussion the other day on the value of that  
6 fuel oil. And, first, let me start with, is the "\$25  
7 million" you refer to here, is that what the book value  
8 of the fuel oil is, i.e. what they paid for it?

9 A. (McCluskey) That's correct.

10 Q. Okay. And, since we know that fuel oil prices have  
11 gone up substantially over the last couple of years,  
12 what would happen if they sold that oil for a  
13 substantially higher price? In other words,  
14 market-based prices that were, let's say, double the  
15 \$25 million?

16 A. (McCluskey) Well, that's what happens in the next  
17 sentence. We say, "However, drawing down the fuel  
18 inventory and selling the product at market value would  
19 produce offsetting savings for customers", which, in  
20 this particular example, we estimated would be  
21 "\$17 million".

22 Now, if you assume that the market price  
23 is at twice what I assumed in this analysis, then it  
24 would be twice the offsetting savings. So, yes,

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1           depending on what you can get for that product, would  
2           affect this particular calculation that I did.

3   Q.    So, you're using -- the \$17 million figure there was  
4           assuming you sold it for what it was bought at?

5   A.    (McCluskey) No. I believe I may have used a market  
6           price, but I can't recall at this point. I can provide  
7           you that information, if you wish?

8   Q.    All right. Thank you.

9   A.    (McCluskey) Do you want that information?

10   Q.    Yes.

11   A.    (McCluskey) Okay.

12                   CHAIRMAN IGNATIUS: So, why don't we  
13           make that a Staff record request.

14                   MR. SPEIDEL: It would be Exhibit 12.

15                   MS. DENO: Thirteen.

16                   CHAIRMAN IGNATIUS: Number 13? Thank  
17           you.

18                   MR. SPEIDEL: Oh, I'm sorry, 13.

19                   **(Staff Exhibit 13 reserved.)**

20                   MR. SPEIDEL: Oh, yes. Thirteen.

21   BY CMSR. HARRINGTON:

22   Q.    Do you agree with Mr. Hachey that, if the plant were  
23           closed, the possible revenue source for up to, you  
24           know, not to exceed three years, could be selling the

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 Newington's capacity supply obligation into the  
2 reconfiguration auction in the Forward Capacity Market?

3 A. (McCluskey) I neither agree or disagree. That's not my  
4 area of expertise.

5 Q. Okay.

6 A. (McCluskey) So, I can't really comment on that.

7 Q. Okay. On Page 19 of the Staff's testimony, this may be  
8 more appropriate for Mr. Arnold. On Line 15, it says,  
9 "the model continued to overestimate 2010 energy net  
10 reserves [revenues?] by about 1.2 million or  
11 45 percent." Now, given that no model is going to be  
12 100 percent accurate, what would you expect to see as  
13 an acceptable range? Is 45 percent -- is 45 percent  
14 very good? Or, should you expect 5 percent? Or, can  
15 you give me some idea on that?

16 A. (McCluskey) I'll let Mr. Arnold respond to that.

17 A. (Arnold) I have a benchmark that I apply based on  
18 experience. And, for models where you're testing both  
19 the forecast and the intrinsic model, I'm used to  
20 seeing plus or minus 30 percent. Now, that's -- that's  
21 a little fuzzy. You can imagine that, you know,  
22 there's some give there. But, and I also go -- I also  
23 note in my report, or maybe even here in the testimony,  
24 well, certainly in my report that I delivered to

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 George, I note that some investors might find this  
2 acceptable. So, -- the 45 percent level.

3 Q. But, in your opinion --

4 A. (Arnold) Just in my personal benchmark is just 30.

5 And, again, I didn't have the ability to go into the  
6 statistical analysis here. It may be that, because of  
7 the forecast that was used, it would have been very  
8 difficult to get to that level of precision.

9 Q. Okay. Thank you. On the same exhibit, Staff Exhibit  
10 1, Page 14, there's a question that starts out -- I'll  
11 wait till you get there. Are you all set or --

12 A. (McCluskey) Yes.

13 Q. Okay. "Do you accept LAI's representation of the  
14 appropriate economic analysis for the CUO Study?" And,  
15 without reading the whole thing, it says "We disagree."  
16 And, then, down the bottom of the page, starting at  
17 Line 17, it talks about "PSNH's assertion contradicts  
18 the FERC Uniform System of Accounts." Could you just  
19 maybe put that in a little bit more layman's terms what  
20 you're saying at the bottom of that page?

21 A. (McCluskey) Well, in effect, what we're saying is that,  
22 if a plant is retired for economic reasons, then the  
23 accounting treatment results in a plant balance, an  
24 asset balance of zero, which, in effect, eliminates the

{DE 10-261} {05-10-12/Day 5}

1 depreciation. That's essentially what we're saying  
2 here.

3 For completeness, we have responded to a  
4 discovery response on that issue, where we say -- where  
5 we were asked "are we saying that the Company would not  
6 be able to recover its undepreciated investment over  
7 time?" And, we said "no, we're not saying that."  
8 Typically, what happens is, in future rate cases, where  
9 there's a new depreciation study, there's an  
10 opportunity for the Company to come back and recover  
11 that through the mechanism of the depreciation study.  
12 However, there's also the opportunity for the Staff of  
13 the Commission to recommend that that opportunity be  
14 denied. So, essentially, it leaves the door open to  
15 the recovery of depreciation.

16 Q. So, if I can put it in a nutshell then, that any  
17 depreciation revenues that would -- may or may not be  
18 realized after a plant is closed or retired for  
19 economic reasons are not a given, but they're subject  
20 to further proceedings?

21 A. (McCluskey) That's correct.

22 Q. Okay. Thank you. This is sort of a different  
23 question, but just one I had open. Going to Exhibit 1,  
24 Staff Exhibit 8, which is attached to that, Page 57.

[WITNESS PANEL: McCluskey~Arnold]

1 And, there's a chart there called "Newington Station  
2 Comparison of Revenue Requirements and Market  
3 Revenues".

4 A. (McCluskey) Exhibit 7?

5 Q. Staff Exhibit 7, I'm sorry. Yes.

6 A. (McCluskey) Yes.

7 Q. Page 57, attached to Exhibit 1.

8 A. (McCluskey) Yes. Got it.

9 Q. Okay. In the column for "2010", which is the last one  
10 on the right, if we go down under "Revenues", it talks  
11 about, going all the way across, "Energy", and it says  
12 "21,459,000". Then, going down a couple of lines it  
13 says "Auxiliary", which is "254,000". And, maybe I'm  
14 just confused here, but I thought that all the  
15 discussion has been that, especially in the year 2010,  
16 that the plant was being operated mostly not to sell  
17 energy, but to sell auxiliary services in the form of,  
18 you know, operating reserves. So, is this -- am I just  
19 misreading those numbers? It seems like most of the  
20 revenue came from the sale of energy.

21 A. (McCluskey) Well, the most accurate response would be,  
22 I don't know where the compensation that the Company  
23 received for operating reserves appears in these  
24 numbers. I suspect it may be in the energy revenue.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

- 1 Q. Well, let me maybe clarify it this way. I guess, would  
2 I be correct in assuming then that, looking at these  
3 figures, that most of the time that the plant is  
4 running for operating reserves, it's also running at a  
5 high enough energy level so its major flow of  
6 compensation comes in the form of energy payments, and  
7 not operating reserve payments? Let me give you an  
8 example. If it was running at, I can't remember the  
9 size of the plant, say it's 400 megawatts, if it was  
10 running at 200 megawatts, with 200 being 30 minute  
11 spinning reserves, it would be compensated for  
12 200 megawatts it was running in energy, and then it  
13 would be made whole on the amount of money they're  
14 getting from the reserves. So, is it safe to say that  
15 most of the time they were running as reserves, they  
16 were still getting a large portion of their revenue in  
17 the form of energy?
- 18 A. (McCluskey) I think it would be safe to pose that  
19 question to the Company, Commissioner.
- 20 Q. Okay. All right. Fair enough. Okay. Getting to  
21 Staff Exhibit 11, this is the confidential gas one.  
22 Just to start out with, can you just define the terms  
23 you use, without going into any numbers there,  
24 "weighted average 2006 to 2011"? Are these -- those

{DE 10-261} {05-10-12/Day 5}



[WITNESS PANEL: McCluskey~Arnold]

1 are actuals that you calculated, where you got the  
2 "March-December" and the "January-February" figure?

3 A. (McCluskey) So, you're referring -- you're referring to  
4 the "weighted average 2006-2011" number?

5 Q. Yes.

6 A. (McCluskey) Actuals that -- yes.

7 Q. Okay.

8 A. (McCluskey) They are actual prices from Emera, less  
9 Dracut prices.

10 Q. And, what's the -- now, what is the "Staff 2010  
11 Calculation" mean? Was that a looking forward to 2010?  
12 I'm a little confused of the reference there.

13 A. (McCluskey) Oh, no. What actually happened is, when we  
14 had them re-run the model, we changed the basis prices.  
15 And, the calculation that we did was based just on  
16 2010. And, so, those numbers that you see, for March  
17 and December and January and February, is what they  
18 used in the re-run. Then, I went back and did a six  
19 year calculation. And, for some reason, for 2010, I'm  
20 getting slightly different numbers than what I got when  
21 I first did 2010. So, --

22 Q. So, the 2010 is part of the weighted average that  
23 appears with 2006 to 2011, so it wouldn't necessarily  
24 be exactly the same, correct?

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 A. (McCluskey) It wouldn't be the same. But, if you also  
2 move your eye up to the row "2010", --

3 Q. Uh-huh.

4 A. (McCluskey) You'll see a number that -- that is  
5 slightly different for March-December than the Staff  
6 2010 calculation.

7 Q. Right. That was going to be my next question. What  
8 accounts for that?

9 A. (McCluskey) I never did get to find the difference  
10 between those. I thought I was using the same Emera  
11 prices and the same Dracut prices. So, I don't know  
12 what the answer is to that. It's pretty close on the  
13 "January-February". But why it's slightly off for  
14 "March-December", I don't know the answer.

15 Q. And, the one that was -- the number that was actually  
16 used in the Staff requested re-run, which came out with  
17 the 37. something million dollars, that was the one  
18 that's across from the line that says "Staff 2010  
19 Calculation"?

20 A. (McCluskey) That's correct. In fact, the two numbers  
21 were used, the "March-December" number and the  
22 "January-February" number.

23 Q. Okay.

24 MR. SPEIDEL: And, Mr. McCluskey, just

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 state for the record what unit of measurement is supplied  
2 within this table.

3 WITNESS McCLUSKEY: Yes. I think  
4 yesterday I said "cents per MMBtu". I meant to say  
5 "dollars per MMBtu".

6 BY CMSR. HARRINGTON:

7 Q. Okay. And, on Page 12 of your, again, we're going to  
8 Staff Exhibit 1, on the bottom of the page, starting  
9 with Line 17, it says "Stated more succinctly, over  
10 this time period the costs incurred by [the] customers  
11 have exceeded the benefits received. Accordingly, the  
12 plant has not been part of PSNH's generation -- had  
13 been not part of PSNH's generation fleet during this  
14 time period customers would have paid less for their  
15 power needs." Do you, after all that's been said back  
16 and forth for the last few days, do you still stand by  
17 that statement?

18 A. (McCluskey) Yes.

19 Q. And, having said that, going to Page 30, where it says  
20 "What do you recommend?" And, the conclusion, in  
21 short, is that "Staff is unable to state definitively  
22 that customers would be better off if Newington  
23 continues to operate or is retired. For this reason,  
24 we make no recommendation." Am I correct in assuming

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1       that the statement you just made is looking back over a  
2       period of time which you had documentation to actual  
3       figures to work with, and your conclusion was that the  
4       customers would have paid less for energy if the plant  
5       had not been operated.

6                   But, in this case, you're saying, you're  
7       looking to the future, and without the access to the  
8       different information of the uncertainties that you say  
9       above here, that is why you can make no recommendation  
10      as to where to go forward?

11   A.   (McCluskey) Exactly.

12   Q.   Other people have made recommendations that a new study  
13       should be done. Would you then have no opinion on  
14       whether an additional study should be done, a second  
15       Continuing Operating Study?

16   A.   (McCluskey) We're not opposed to that recommendation to  
17       have an independent study done. I think the issue  
18       really is in the Commission's hands. What here  
19       we've -- Staff is saying, "because we can't get access,  
20       we can't make a definitive conclusion about the  
21       economics going forward. And, so, where do we go from  
22       here?" If you really want to nail this down, we really  
23       believe an independent study would be the most  
24       appropriate thing.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 CMSR. HARRINGTON: All right. Thank  
2 you. That's all the questions I had.

3 CHAIRMAN IGNATIUS: Thank you.  
4 Commissioner Scott.

5 CMSR. SCOTT: Good afternoon.

6 WITNESS McCLUSKEY: Good afternoon.

7 BY CMSR. SCOTT:

8 Q. So, I'll start with Mr. McCluskey. And, going back to  
9 the confidential Staff Exhibit 11, which you just  
10 discussed. I was just curious, again, without  
11 mentioning the numbers, but the weighted average  
12 percentages, obviously, as you've kind of talked to,  
13 there's a significant difference in the  
14 "March-December" percentages?

15 A. (McCluskey) Yes. You're talking about the second from  
16 the bottom line?

17 Q. Yes.

18 A. (McCluskey) Yes. In effect, what we're saying is, our  
19 numbers indicate that, relative to what Staff  
20 calculated in 2010, the average for the six years for  
21 "March-December" is not too far off, but it's below.  
22 Whereas, for "January-February", which is a less  
23 critical period versus less volume of production in  
24 those months, the figure that we used was way too low.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1       However, that's only based on two years. So, that's  
2       the downside. And, that we've got more data for  
3       "March-December" to produce the percentage that we've  
4       got than we had for "January and February". And, why  
5       is that? Because there's really not a lot of activity  
6       until the last couple of years in those months on  
7       Newington.

8   Q.   So, is there a conclusion that you've drawn or should  
9       be drawn from this or you recommend be drawn from this?

10  A.   (McCluskey) Well, this was done to respond to the  
11       criticism that our 2010 prices were not well supported.  
12       And, we think they are well supported based on this, on  
13       this schedule. And, that's the only benefit, that's  
14       the only use it has. We're not asking them to re-run  
15       the model again. But we're just saying that the basis  
16       differentials that we had them use are pretty well in  
17       the ballpark based on a six year average. I wouldn't  
18       necessarily agree that a six year average is  
19       appropriate. I think more recent times, in my mind, is  
20       appropriate. And, if you have a look at those numbers,  
21       for the very recent years, they're all in the ballpark  
22       for "March-December". So, I think the bottom line is,  
23       though, I think our numbers are well supported.

24  Q.   Thank you. Mr. Arnold, I just want to get your

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 opinion. I think I had talked to -- asked Mr. Hachey,  
2 I had some concerns in my mind, looking at the  
3 iterations, if you will, of the net present value  
4 calculations, they're halved from Exhibit 1, if I  
5 remember, and then half again and half again. In your  
6 opinion, is that to be expected? Is that a normal  
7 sequence of events?

8 A. (Arnold) From my perspective, it's not normal, you  
9 know, in terms of the use of a final model that's used  
10 to make a decision. No.

11 Q. Okay. And, perhaps you just answered this. And,  
12 should the Commission be concerned with that type of  
13 outcome?

14 A. (Arnold) Yes. I think so.

15 CMSR. SCOTT: Okay. And, that's all I  
16 had. Everything else has already been asked and answered.

17 CHAIRMAN IGNATIUS: All right. I had a  
18 few others questions.

19 BY CHAIRMAN IGNATIUS:

20 Q. Mr. Arnold, if you take away the issues of access to  
21 data and some uncertainty in your ability to verify  
22 results, you were to set that issue aside, what are the  
23 major findings of your study, of your report? What are  
24 the sort of key conclusions that you draw on that we

{DE 10-261} {05-10-12/Day 5}

1       should be aware of?

2   A.   (Arnold) I'm assuming I should emphasize what I think  
3       is important to you to make decisions.

4   Q.   Sure.

5   A.   (Arnold) Okay. Because a lot of my comments were  
6       related to model complexity and so on, --

7   Q.   And, that's the part that --

8   A.   (Arnold) You don't care about that.

9   Q.   -- doesn't sink into my head very well.

10   A.   (Arnold) Yes. Right.

11   Q.   It's what to make of all of that.

12   A.   (Arnold) Well, I think the key point here is that you  
13       still don't have a solid handle, for a number of  
14       reasons, on today's net present value of the Newington  
15       asset. And, I think you need one to make a decision.  
16       And, I think, to get a good estimate, and I think a  
17       good estimate is going to be a range of values. I'm,  
18       obviously, a proponent of stochastic, you know,  
19       probabilistic-type approaches, because what you get is  
20       a histogram. You know, you get something like this in  
21       terms of NPV. The most likely NPVs, the probable  
22       lowest, the probable highest. It gives you a good  
23       feel, right there in the middle, of what you're likely  
24       to have in terms of that value. And, what the lowest



[WITNESS PANEL: McCluskey~Arnold]

1       could be, what the best could be. I think you need  
2       that to make a decision. I would recommend that you  
3       define, with advice, what goes in to that calculation.  
4       What's in and out of the calculation that determines  
5       the net cash flow of that asset.

6               Now, I think net cash flow is the way to  
7       make decisions. If you want to use an accounting  
8       basis, fine. But you still have to -- I think that the  
9       design of the model, in the balance, what goes in it,  
10      what's out, has to come as part of the directions from  
11      the Commission.

12   Q.   Mr. McCluskey, you've reviewed the report. Do you have  
13       anything to add in response to that question of what  
14       are the -- if you take out the issues about access and  
15       some of the "could have done it this way", "could have  
16       done it that way", but the sort of major conclusions  
17       drawn from the report, anything else to add?

18   A.   (McCluskey) No. I think what you took out took away my  
19       major conclusions, the main thing. We just can't tell  
20       you whether this produces reasonable results, because  
21       we were not allowed to get access to really test this  
22       model. And, by taking that out, I think you've taken  
23       out the primary conclusion that we had. If we had  
24       gotten access, the report could have had something

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 really useful to say, in terms of whether we think this  
2 plant is going to be profitable or not going forward.

3 Q. Well, let's assume that you did have access and it  
4 verified everything. I know that's a big assumption,  
5 but let's assume that. What then would the conclusion  
6 you would draw, and could you then make a  
7 recommendation to the Commission?

8 A. (Arnold) If we -- let's assume, with the change, with  
9 the correction of the errors, and maybe a couple  
10 changed assumptions, and it produced this figure of  
11 \$37 million. And, we were very happy that, yes, the  
12 model has worked reasonably well. We think that is the  
13 correct output for this particular model. So, now we  
14 know that over ten years, in present value terms,  
15 you're going to receive \$37 million. That's better  
16 than zero.

17 Now, the question is, for the  
18 Commissioners, you're going to also pay them, say, \$50  
19 million in return, pay the Company. So, customers are  
20 out of pocket \$13 million. What do you want to do?  
21 That's the decision for the Commission.

22 Q. Well, let's talk about that. In one of the exhibits,  
23 it shows, this is in Staff's Number 1, and that  
24 Attachment 7, so, Page 57, shows --

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 A. (Arnold) And, just one moment, until I get there.

2 Exhibit -- "Staff Exhibit 7" you said?

3 Q. Yes.

4 MR. SPEIDEL: No. Staff Exhibit 1, and  
5 Staff -- Page 57.

6 WITNESS McCLUSKEY: Okay.

7 BY CHAIRMAN IGNATIUS:

8 Q. It shows, the second line from the bottom, the "Net  
9 Profit or Loss", over the period 2005 to 2010, and  
10 every year there's a loss ranging from 3.5 to  
11 \$20.7 million. That's not the years that it runs, but  
12 those are the highs and lows of the net losses. Does  
13 that figure account for the return earned on the plant  
14 asset?

15 A. (McCluskey) The return is in there. It's treated as a  
16 cost, and along with depreciation, and all the O&M and  
17 the fuel costs. And, then, it's offset with revenues,  
18 market revenues. And, so, each year you're comparing  
19 the similar costs with some of the revenues on a book  
20 basis, which is a little different from -- quite a bit  
21 different from a going-forward basis. So, it's  
22 producing, on a regulatory books basis, and that, in  
23 every year, a net loss.

24 Q. Are there reasons that it would be valuable for a

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 utility to maintain a plant that is consistently losing  
2 money that you can -- that you can explain?

3 A. (McCluskey) Are there reasons?

4 Q. Is there value in having a plant, notwithstanding the  
5 net loss year after year, is there value to that plant  
6 remaining in a utility's generation fleet?

7 A. (McCluskey) Well, in addition to generating  
8 electricity, energy --

9 (Court reporter interruption.)

10 **BY THE WITNESS:**

11 A. (McCluskey) Sorry. In addition to generating  
12 electricity, there's also -- and receiving energy  
13 revenues, there's also a capacity benefit, which is  
14 reflected in the revenue side. If you retire a plant  
15 like that, that's going to impact the regional  
16 reliability market. And, so, if we were in a shortage  
17 period, then that might be an issue. If we're in a  
18 surplus period, then it might be less of an issue.

19 **BY CHAIRMAN IGNATIUS:**

20 Q. Are you making any recommendation as to the value of  
21 the Newington plant in meeting capacity needs for the  
22 region?

23 A. (McCluskey) No. In this proceeding, we've tried to  
24 stay on the issue of the economics of going forward.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 We're not making any recommendation in relation to  
2 continued operation. Even though this analysis is all  
3 about continued operation, our objective has been to  
4 try to get a reasonable value of continued operation.  
5 And, if, as a result of that, the Commission thinks we  
6 need to go to another proceeding, then those kind of  
7 questions should be addressed in another proceeding.  
8 We're not making any recommendation about retirement,  
9 or continued operation, for that matter.

10 Q. Looking at PSNH 19, which was the response to a data  
11 request or a Tech Session Request 8. And, on that  
12 third page that you have "Revised Start Fuel Data"  
13 included.

14 A. (McCluskey) Just one moment. Okay. Yes.

15 Q. You may have already answered this, I'm not sure. Do  
16 you have any understanding why the expected value on  
17 net revenue of nearly \$5 million, that that was the  
18 expected value and revenue, and the expected number of  
19 starts was only "32", and yet the actual number of  
20 starts was "123", and yet the net revenue was very low,  
21 far below the expected value, was down to about  
22 1.5 million. Can you explain that?

23 A. (McCluskey) Yes. Let's start with the starts. The "32  
24 starts" relates to economic dispatch. Remember, so

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 we're dealing with the model now, under the "Expected  
2 Value" column. And, they modeled this on the basis of  
3 the economic dispatch, not on the basis of providing  
4 operating reserves. And, the actual number of starts  
5 reflects operating reserves as well. So -- and, the  
6 Company has stated that the majority of the hours that  
7 it was dispatched in 2010 was for operating reserves.  
8 Hence, we see this much bigger actual start number.  
9 So, that's number one.

10 The operating reserves, they can be  
11 running at a loss, not at a profit, during that time,  
12 but they receive compensation for their variable costs.  
13 So, that compensation is going -- it's not going to  
14 impact the "Net Revenue" line. So, the starts that  
15 resulted in operating reserve service should not affect  
16 the net revenue.

17 What's causing that difference, we  
18 think, is a modeling problem. It's a modeling problem.  
19 The model is not predicting the net revenues. And, how  
20 can we say that? Because we know what the actual net  
21 revenues are. So, the model is predicting something  
22 much greater. So, that difference is, we think,  
23 attributable to -- we know it's attributable to some  
24 errors, because this "Expected Value" line does not

{DE 10-261} {05-10-12/Day 5}

1 reflect correction of the two errors that we mentioned.  
2 And, potentially, it could reflect other differences  
3 that we haven't yet been able to identify.

4 Q. There was discussion of the changes you made to your  
5 testimony to remove the specific references to  
6 injection system -- well, injection systems, I guess,  
7 and yet the dollar figure that might be incurred  
8 remained in place. Are you making any assumption that  
9 there will be investments of the magnitude that are in  
10 your testimony coming forward in Newington in the near  
11 future?

12 A. (McCluskey) No. Our position was that the Company, in  
13 its modeling, should have taken into account the  
14 potential -- should have taken into account the  
15 potential for this Utility MACT rule to apply to  
16 Newington. And, since the -- we were expecting some  
17 kind of probability calculation. So, that probability  
18 might have reflected a very low percentage of chance  
19 that that rule might apply to this company. And, it  
20 might reflect a very high percentage. And, depending  
21 on what capital costs would be incurred, if it did  
22 apply, then that would be reflected in the analysis.  
23 We just feel this is a deterministic-type calculation.  
24 We think the Company should have modeled some costs

[WITNESS PANEL: McCluskey~Arnold]

1 associated with this rule. We now know that there's a  
2 possibility that it may not apply. But, at the time,  
3 we did not know that. And, we think, for consistency,  
4 since the whole study is based on uncertainty, why did  
5 we use a deterministic number for capital expenditures?  
6 Why didn't they make some assumptions, high, low, base  
7 case, for this kind of risk that the Company is facing?  
8 And, the same would apply to what's called the "Cooling  
9 Water Rule" as well.

10 So, we just felt that the model was  
11 unbalanced, in that it did not include certain costs,  
12 where we think there's a non-zero probability of them  
13 incurring those costs. So, for consistency, if this is  
14 done in the future, we think that it would be better to  
15 apply some kind of probability calculation to the likes  
16 of capital expenditures, and Northern Pass, some  
17 accountable treatment to that.

18 A. (Arnold) Madam Chairman?

19 Q. Yes, please.

20 A. (Arnold) I agree with that. I should have added that  
21 to my comments. I would hope to see -- would have  
22 hoped to see that type of uncertainty captured in this  
23 model. I think that that's typical, from my point of  
24 view.

{DE 10-261} {05-10-12/Day 5}



1 CHAIRMAN IGNATIUS: All right. That's  
2 it for me for questions. Anything further? Commissioner  
3 Harrington.

4 CMSR. HARRINGTON: Just one follow-up  
5 question.

6 BY CMSR. HARRINGTON:

7 Q. On the -- and, this has to do going back to Page 57 of  
8 the original of the testimony. On the bottom line  
9 there, where you were just talking about the "Net  
10 profit and loss", and it shows 2005 to 2010, and every  
11 year there there's a loss. And, then, when we get to  
12 the -- looking to the future in the model, it would  
13 appear that every year there's going to be a net  
14 benefit.

15 Now, can you account for -- what would  
16 you -- what would you say accounts for the difference  
17 between the two? Is there a physical change here  
18 that's occurring? Or, is it simply an error in the  
19 modeling or an error in the assumption, whatever?  
20 Because it seems to be a fairly radical performance  
21 change, we know it's showing substantial losses for  
22 2005-2010, and then every year going into the future it  
23 shows net gains.

24 A. (McCluskey) The answer is that they're two radically

[WITNESS PANEL: McCluskey~Arnold]

1 different calculations. The calculation that's done on  
2 Exhibit 7 is a calculation that takes into account  
3 what's being referred to as that "fixed costs",  
4 depreciation, and return, and compared those, along  
5 with all the other variable costs, against their  
6 revenues. Going forward, we have no fixed costs in  
7 there. So, we're just comparing, essentially, the same  
8 market revenues, with only the variable costs. So,  
9 obviously, it's going to be much easier to record a  
10 profit going forward because of the way we've actually  
11 done that calculation.

12 Q. But, in reality, those fixed costs that you talked  
13 about in the future years would still be paid by  
14 ratepayers, wouldn't they?

15 A. (McCluskey) They would. But they're just not reflected  
16 in that particular -- in the methodology for the  
17 Continuing Unit Operation Study.

18 CMSR. HARRINGTON: All right. Thank  
19 you.

20 CHAIRMAN IGNATIUS: Commissioner Scott,  
21 another question?

22 CMSR. SCOTT: Yes. Excuse me.

23 BY CMSR. SCOTT:

24 Q. Clearly, well, at least in my view, the fact of the

[WITNESS PANEL: McCluskey~Arnold]

1 Newington Station is dual fuel seems to provide a  
2 positive, as far as a hedge against radical changes in  
3 gas prices, that type of thing. And, I'm struggling  
4 with how -- your understanding is how is that  
5 quantified? And, I guess I would ask maybe Mr. Arnold  
6 to start. You talk about, it sounds like your  
7 preferred method is using a probabilistic analysis.  
8 Does that type of -- the fact that fuel diversity is  
9 there, does that factor into that? So, can I assume  
10 that, in that type of analysis, the fact that it's dual  
11 fueled is valued?

12 A. (Arnold) Yes. I would say this is the right type of  
13 analysis if you want to capture that benefit. And, I  
14 think you do. You, obviously, do want to capture that  
15 benefit. And, that's important for this type of plant.  
16 So, this is the right general approach to use.

17 (Court reporter interruption.)

18 **BY THE WITNESS:**

19 A. (Arnold) A stochastic approach, where you're looking at  
20 the potential for changes in the alternate cost of  
21 fuels, or their alternate temporarily -- temporarily  
22 unavailable, as unavailability, as we've heard can  
23 happen. So, it's not only costs you want to model and  
24 the possibility is there for the costs to get out of

[WITNESS PANEL: McCluskey~Arnold]

1       synch. But we've also heard that there's a potential  
2       for one or the other fuel to be temporarily unavailable  
3       or for it to spike. There's all kinds of reasons why  
4       that can happen.

5   Q. Did you see evidence that that was valued, if you will,  
6       in the analysis?

7   A. (Arnold) Based on what I've read, the model captured  
8       the -- at least some potential for deviations in  
9       natural gas prices, versus fuel oil and residual fuel  
10      oil prices. I can't remember that it captures the  
11      potential for a pipeline outage. That, to me, is a  
12      dramatic event.

13   A. (McCluskey) And, I'll just say -- I think I'll say,  
14      similar to Mr. Arnold, there's certainly a lot of  
15      discussion about the option value, the hedge value.  
16      But, exactly how it got reflected in the numbers, I  
17      couldn't tell you.

18                   CMSR. SCOTT: Okay. Thank you.

19                   CHAIRMAN IGNATIUS: All right.

20   Redirect, Mr. Speidel?

21                   MR. SPEIDEL: Yes. Very limited  
22      redirect. Let's get right to it.

23                   **REDIRECT EXAMINATION**

24   BY MR. SPEIDEL:

[WITNESS PANEL: McCluskey~Arnold]

1 Q. Now, let's begin with Mr. Arnold. Mr. Arnold, we heard  
2 from Ms. Knowlton, she asked a query as to whether you  
3 had heard that PSNH, the Company, had reached a  
4 non-disclosure agreement with Jacobs. Now, subject to  
5 check, are you aware of the fact that you work for  
6 Jacobs Consultancy, and yet there is a sister company  
7 called "Jacobs Engineering"? Are you aware of that?

8 A. (Arnold) Yes.

9 Q. Okay. Now, subject to check, would you think that it's  
10 reasonable that Jacobs Engineering, in fact, is the  
11 entity that has been retained by PSNH to look into the  
12 Bow power plant?

13 A. (Arnold) Subject to check, yes.

14 Q. Given that it's related to a major scrubber project?

15 A. (Arnold) Subject to check, yes.

16 Q. Okay. Now, I'm going to approach the Bench to show you  
17 Staff Exhibit 9. And, this is the last version of a  
18 non-disclosure agreement that was sent by you to  
19 Mr. Jerry Eaton of the Company on July the 15th. Would  
20 you take a look and tell me who the two signatory  
21 parties are for this non-disclosure agreement?

22 A. (Arnold) They are "John Bitler", of Levitan &  
23 Associates, and "Carlos Camacho", of Jacobs  
24 Consultancy.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 Q. You don't see a signatory line for PSNH there?

2 A. (Arnold) No, I don't.

3 Q. Thank you. Now, Mr. Arnold, there were a series of  
4 questions from Ms. Knowlton on the topic of the Scope  
5 of Work that had been issued on March the 31st, is that  
6 correct?

7 A. (Arnold) That's correct.

8 Q. Do you have that handy, under PSNH Exhibit 3?

9 A. (Arnold) No, I'll have to dig it out. I apologize.

10 Okay.

11 Q. All right.

12 A. (Arnold) I'm there.

13 Q. And, if you could just turn to Page 2 of that Scope of  
14 Work, and the second paragraph.

15 A. (Arnold) Yes.

16 Q. Now, I'm just going to ask a few questions about this,  
17 very short questions. There is a sentence there that  
18 mentions the fact that "a Staff member of the New  
19 Hampshire Public Utilities Commission, [together] with  
20 Jacobs Consultancy", and namely you, would "visit  
21 Levitan's offices [in Boston] to interview the  
22 developers and operators of the modeling system with  
23 the goal of resolving all remaining queries." Now, you  
24 are familiar with a specific company exhibit, and that

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 would be PSNH 9, that is the confidential version of  
2 the model description that Levitan had prepared and  
3 submitted on May 12th, 2012, is that right?

4 A. (Arnold) That's right.

5 Q. All right. Now, did that modeling description answer  
6 all of your outstanding queries?

7 A. (Arnold) No. It did not.

8 Q. And, did your visit, together with myself, Speidel, and  
9 Mr. McCluskey, at Levitan headquarters in Boston,  
10 answer all of your outstanding inquiries?

11 A. (Arnold) No. I still couldn't answer George's  
12 questions.

13 Q. And, that was the visit of June the 3rd. And, you do  
14 recall the Staff Exhibit Number 10, my e-mail to  
15 representatives of Levitan, and also to representatives  
16 of the Company, stating that we ought to move along a  
17 non-disclosure agreement, so that you would have  
18 additional access to information, is that correct?

19 A. (Arnold) That's correct.

20 Q. And, so, given that, was a non-disclosure agreement  
21 executed before the second visit in mid June of 2011?

22 A. (Arnold) No. It was not.

23 Q. And, was your set of inquiries answered as part of that  
24 second visit *in toto*?

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 A. (Arnold) No.

2 Q. So, let's take a look at the next sentence after that  
3 phrase, "the goal of resolving all remaining queries",  
4 in the Scope of Work, on Page 2. And, could you just  
5 read the first part of the following sentence that  
6 begins "Jacobs' evaluation".

7 A. (Arnold) Okay. "Jacobs' evaluation of LAI's modeling  
8 system will also be informed by a back-casting  
9 exercise" --

10 Q. That's fine. Thank you. So, "also be informed". So,  
11 the back-casting exercise was not the be-all and  
12 end-all of your inquiries, correct, as part of the  
13 Scope of Work?

14 A. (Arnold) Correct.

15 Q. It would be an additional element, in addition to  
16 having all of your queries answered, is that right?

17 A. (Arnold) That's correct.

18 Q. Very good. Thank you very much. Mr. McCluskey, did  
19 the Company's Exhibit 9, the confidential model  
20 description, the visit of June the 3rd to Levitan  
21 headquarters, and the subsequent mid June visit, answer  
22 all of your inquiries about the modeling?

23 A. (McCluskey) No, it didn't.

24 Q. Thank you very much. All right. Mr. McCluskey, if a

{DE 10-261} {05-10-12/Day 5}



[WITNESS PANEL: McCluskey~Arnold]

1 non-disclosure agreement had been reached between the  
2 Company and Jacobs on or after July the 15th, as  
3 indicated by Staff Exhibit 9, that was the last  
4 submission that had been sent from Mr. Arnold to the  
5 attention of the Company, if a non-disclosure agreement  
6 had been reached, and additional data provided to Staff  
7 by Levitan and PSNH had been in play, do you think it  
8 would have been likely that Staff would have requested  
9 an extension of the July 27th filing deadline for Staff  
10 testimony?

11 A. (McCluskey) It's certainly possible. It's very common  
12 for procedural schedules to be changed, if -- for a  
13 whole host of reasons. But, if we'd been making  
14 considerable process -- progress in understanding how  
15 the model operated, and we required more time to  
16 provide that description in our testimony, I'm almost  
17 certain we would have suggested a change in the  
18 schedule.

19 CHAIRMAN IGNATIUS: Mr. Speidel, before  
20 you go further, it seems to me that last question was  
21 something that could have been brought out on direct, it  
22 isn't appropriate for redirect. So, if you have anything  
23 else that truly responds to things that have come up  
24 through questioning by other parties --

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 MR. SPEIDEL: Sure. Just a few more.

2 CHAIRMAN IGNATIUS: -- or the  
3 Commissioners, you may do so.

4 MR. SPEIDEL: Very good.

5 BY MR. SPEIDEL:

6 Q. So, in any event, we can leave that as complete. We  
7 had heard some discussion earlier, the Company had  
8 inquired on the Staff testimony that had been presented  
9 on Page 28 of Staff Exhibit 1. And, that related to  
10 certain information that had been secured by Mr.  
11 McCluskey through some informal consultations of  
12 Jonathan Peress of the Conservation Law Foundation.  
13 Now, Mr. McCluskey, do you recall that Mr. Peress has  
14 private industry experience in pollution control with  
15 power plants in the Hudson River Valley?

16 MS. KNOWLTON: I'm going to object. I  
17 don't believe that Mr. Peress has ever presented here as a  
18 fact witness with regard to his background. So, I would  
19 move to strike that question.

20 MR. SPEIDEL: Well, the Company made an  
21 inquiry about the providence of this information. And,  
22 I'm just establishing that Mr. McCluskey was justified in  
23 asking an informal consultation piece of information from  
24 Mr. Peress.

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 CHAIRMAN IGNATIUS: Well, you were also  
2 testifying to what Mr. Peress's background is. So, if you  
3 can ask the question in -- if you want to ask him why he  
4 turned to Mr. Peress, that's fine.

5 MR. SPEIDEL: Sure.

6 CHAIRMAN IGNATIUS: But let's not --  
7 but, really, really, we are trying to -- first of all, I'm  
8 concerned about the court reporter. We've been going an  
9 awfully long time.

10 MR. SPEIDEL: Okay.

11 BY MR. SPEIDEL:

12 Q. Well, Mr. McCluskey, did you consult with Mr. Peress  
13 with the understanding that he had some knowledge of  
14 this issue?

15 A. (McCluskey) Yes. Mr. Peress works for CLF. And, it's  
16 well known that CLF has extensive experience in  
17 environmental issues in the New England region. And, I  
18 thought that was a good source to talk about these kind  
19 of systems and typical costs.

20 Q. Very good. Now, you also heard from Ms. Knowlton, she  
21 asked a series of questions related to some  
22 consultations that involved you and myself and  
23 Ms. Menard, regarding certain reproduction data sets  
24 that would involve the Bloomberg data, but not

{DE 10-261} {05-10-12/Day 5}

[WITNESS PANEL: McCluskey~Arnold]

1 specifically present it. And, also, there were  
2 questions about whether Staff had accepted that offer,  
3 and whether you recalled them, you said you didn't  
4 recall the offer specifically. But, assuming for the  
5 sake of argument that the offer had been made, wouldn't  
6 you agree that there might be a potential problem with  
7 being able to independently verify the voracity of such  
8 a schedule, in that you wouldn't have access to the  
9 Bloomberg data itself that underlie this production of  
10 the schedule?

11 A. (McCluskey) Since I can't recall the offer, I can't  
12 recall why we might have rejected the offer, if we did.

13 Q. Okay.

14 A. (McCluskey) So, that's as much as I can say.

15 Q. Very good. Thank you. Now, I have just one last  
16 question, and either Mr. Arnold or Mr. McCluskey can  
17 answer it. There were some discussion of whether "net  
18 present value "low-balls" or might underestimate the  
19 value of a given asset, in that you have an effect  
20 where you have a present year figure, and the  
21 subsequent years' figures are reduced. Now, gentlemen,  
22 isn't it true that or would you agree with the  
23 statement that net present value is a standard measure  
24 of the value of an industrial asset used in finance and

{DE 10-261} {05-10-12/Day 5}

1 industry?

2 MS. KNOWLTON: I'm going to object to  
3 the form of the question. I think it's a  
4 mischaracterization of the testimony. I think it was  
5 that, when presented as a yearly average, that it wasn't a  
6 fair representation of the net present value.

7 BY MR. SPEIDEL:

8 Q. Well, then, in the alternative, would you agree that a  
9 net present value incorporates a discount rate that  
10 reflects the opportunity cost of money on a going  
11 forward basis?

12 A. (Arnold) Yes.

13 MR. SPEIDEL: Thank you. I have no  
14 further questions.

15 CHAIRMAN IGNATIUS: Let's go off the  
16 record for a moment.

17 (Brief off-the-record discussion  
18 ensued.)

19 CHAIRMAN IGNATIUS: Let's excuse the  
20 witnesses. Thank you very much, gentlemen. That  
21 concludes the evidentiary portion of this proceeding. We  
22 have a few procedural matters still to finalize. Mr.  
23 Patch, did you have an issue?

24 MR. PATCH: To the extent it would be

1 helpful to the Commission, in the discussion of the record  
2 request that I made this morning, I believe that  
3 Mr. Speidel had indicated that there had been a reference  
4 during the first day. And, I've located in the  
5 transcript, at Page 147, and this is of the afternoon of  
6 Day 1. And, I believe it's Lines 8 to 11, in response to  
7 a question from Commissioner Scott, Mr. Large had said  
8 that "I believe we're approaching a half million dollars  
9 in expenditures associated with the Continued Unit  
10 Operation Study." So, I don't know if that's helpful to  
11 the Commission or not, but I just wanted to read you that  
12 cite.

13 CHAIRMAN IGNATIUS: Thank you. We had  
14 also recalled that testimony. So, thank you for pulling  
15 it out. And, our determination is to deny the request for  
16 the record request on a couple of bases. The opportunity  
17 to ask those questions was available earlier, unlike  
18 Ms. Knowlton's request, where the witness was on the  
19 stand. Also, the request that she made regarded updating  
20 a data response. And, so, it was already a matter in  
21 discovery that was fairly -- a request was fairly made to  
22 update it. And, then, the third issue, as you note, there  
23 has already been some testimony of a general number, a  
24 ballpark figure of a half million dollars. So, we will

1 not reserve an exhibit for that issue.

2 Is there anything else before we discuss  
3 exhibits themselves?

4 (No verbal response)

5 CHAIRMAN IGNATIUS: Seeing nothing, then  
6 the exhibits have all been marked for identification, with  
7 the opportunity for anyone to move to strike a particular  
8 document and not make them whole exhibits and others be  
9 made full exhibits to the docket. Is there any request  
10 that any documents not be made full exhibits?

11 (No verbal response)

12 CHAIRMAN IGNATIUS: Seeing none, then I  
13 take it there's no objection to all of the identifications  
14 being stricken and everything being made a permanent  
15 record?

16 (No verbal response)

17 CHAIRMAN IGNATIUS: All right. Then,  
18 the question of when record requests will be submitted.  
19 Some have started to come in, I know. I haven't kept  
20 track of -- I don't have a list of all of them at quick  
21 glance. But are the parties who are responsible for  
22 producing the data able to get those in by the end of next  
23 week, Friday, the 18th, I believe it is?

24 MS. KNOWLTON: That's fine with the

1 Company.

2 CHAIRMAN IGNATIUS: All right. Let's do  
3 that. And, obviously, earlier is also acceptable.

4 All right. We've agreed that closings  
5 will be done in the form of written briefs, to be  
6 submitted two weeks after the final transcript is  
7 produced. And, we will send out a commission letter with  
8 the actual date when that final transcript is received.  
9 We're not -- it won't be raced next week, so it will be  
10 certainly two weeks after next week, so it's three weeks.  
11 But we'll get you the actual date that they are due. And,  
12 we agreed to a --

13 MS. HOLLENBERG: Page limit.

14 CHAIRMAN IGNATIUS: -- page limit. I  
15 had the word "deadline". That's a time limit. This is a  
16 page limit, of 25 pages. Is there anything else further?

17 (No verbal response)

18 CHAIRMAN IGNATIUS: If not, I want to  
19 thank everyone for slogging through a lot of long days and  
20 a lot of material. And, trust us, we have it all, and  
21 we'll be going through it all, as well as the written  
22 briefs. So, thank you for your attention, and we are  
23 adjourned.

24 **(Whereupon the hearing ended at 1:11 p.m.)**