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PUBLIC UTILITIES COMMISSION
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October 22, 2014-9:05 a.m. DAY6
Concord, New Hampshire MORNING SESSION ONLY

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RE: DE 11-250
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE:
Investigation of Scrubber Costs and
Cost Recovery
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PRESENT: Commissioner Martin P.Honigberg, Presiding Special Commissioner Michael J. Iacopino
F. Anne Ross, Esq., General Counsel

Sandy Deno - Clerk

APPEARANCES:
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Reptg. Conservation Law Foundation:
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Reptg. the Sierra Club:
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COURT REPORTER: SUSAN J. ROBIDAS, N.H. LCR NO. 44
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PROCEEDINGS
CMSR. HONIGBERG: All right.
Is there any business we need to transact this morning? Ms. Amidon.

MS. AMIDON: Yes, just a few things. First of all, $I$ wanted to remind the Commission of the order of witnesses. Obviously, we have Mr. Large and Mr. Vancho on this morning. The next witnesses were the witnesses from PSNH, from NERA, Harrison and Kaufman. And we anticipate Mr. Reed to be called tomorrow. And, again, we still have our "swing witnesses," as we've been calling them, Dr. Shapiro and Eric Chung. And finally, the unknown is, of course, whether TransCanada or any other party will want to recall a witness based on the recently distributed information provided by PSNH.

CMSR. HONIGBERG: At this
point, does it look like the "swing witnesses" are going to be reached before the end, or are they just going to "swing" right to the end? I see Dr. Shapiro in the back wondering the same thing herself.
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MR. NEEDLEMAN: I think it's really hard to predict. We may have a better sense after lunch today.

CMSR. HONIGBERG: All right.
MS. AMIDON: And one other
thing --
CMSR. HONIGBERG: And another thing. Yes.

MS. AMIDON: Thank you. I
have a list of exhibits to which parties have reserved objections. Obviously, these are in addition to any documents that the Commission may rule they don't want to include as full evidence in this docket. So I'll read them into the record, and then I have -- I want to refer to CLF's attorney to make an argument about some of the documents that were presented yesterday in cross-examination of Mr. Hachey.

CMSR. HONIGBERG: Okay. MS. AMIDON: So, 12-2 -CMSR. HONIGBERG: Just before we go on, is there a particular party that has objected to --
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MS. AMIDON: Okay. Well, yes. First, these are CLF objections, where they reserved the right to object to the admission of these documents as full exhibits.

CMSR. HONIGBERG: All right.
MS. AMIDON: So, 12-2.
Smagula wHS Rebuttal 16 --
CMSR. HONIGBERG: Does that
have a number attached to it?
MS. AMIDON: It's our 16. His rebuttal testimony is...

SP. CMSR. IACOPINO: Exhibit
12-16?
CMSR. HONIGBERG: Is that what you meant, 12-16?

MS. AMIDON: I'm sorry. Yeah.
CMSR. HONIGBERG: Okay.
MS. AMIDON: 12-17.
CMSR. HONIGBERG: Is this also
CLF?
MS. AMIDON: Correct, until I
tell you otherwise. 12-18, 12-19, 12-21, 12-22, 12-23 and 87.

MS. CHAMBERLIN: Where does
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the 87 come in?
MS. AMIDON: That is
Exhibit 87. It's Exhibit 87, not 12-87.
OCA has objected or reserved
the right to object to $11-3$, which is an attachment to, I think, the 2012 testimony of Smagula, and 18-8.

PSNH has reserved the right to object to Exhibit 70.

And CLF also made a
reservation with respect to the Synapse report that's now identified as 29 , and for the following the reasons -- and again, I will refer to her to complete the argument if I express it incorrectly. But originally, Exhibit 29 was reserved for a CLF exhibit. They were going to offer a Synapse report. We're not sure if the report that was admitted by PSNH yesterday is indeed the same report. So we need to get a copy of that and take a look at it, see if it is 29 and see if there's any other objection.

CMSR. HONIGBERG: Maybe we'll
just let Ms. Frignoca deal with it. Is the
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objection that it's a different document? MS. FRIGNOCA: Would you like me to clarify now? It's fairly simple. It's that we had originally listed a Synapse additional report to the Legislature that was done in early 2009, and then we made it clear we were not going to use that exhibit and did not present it here. In cross-examination yesterday, Attorney Glahn said, "Well, we're using Exhibit 29." So there is no Exhibit 29. It's a place holder. And we don't know what he used yesterday, and I did not receive a copy of it.

And so what I'm saying is that
I talked to Mr. Glahn's paralegal, Denise, last night, and just asked that they produce copies of it, show it to everyone, and then maybe we just substitute that in the place of 29, since everybody's been referring to it that way. It's more of an administrative issue.

CMSR. HONIGBERG: Understood. Fair enough.

MS. AMIDON: And since CLF's
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attorney is talking now...
Why don't you address your concerns about the documents that I think begin with Exhibit 93 that were used in the cross-examination of Mr. Hachey.

CMSR. HONIGBERG: All right.
I would ask that you move closer to the microphone because it's really hard to hear you.

Off the record.
(Discussion off the record.)
MS. FRIGNOCA: So, my concern with a number of the exhibits yesterday, which were TransCanada documents submitted during the cross-examination of Mr . Hachey, was that they were documents that seemed to pertain to Canadian situations, particularly from Western Canada. There was no reference whether they were in Canadian dollars or American dollars. Many of the exhibits were not complete. They were just pages taken out of lengthy documents, so there's no context within which to gauge the statements. And they are also documents that appear to
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continue well after the 2008, 2009 time frame, when all of the witnesses have testified the decision-making about whether to proceed with the Scrubber should have occurred.

So I object to the exhibits:
One, because they're not complete; and two, because they appear to have limited, if no relevance. And if the intent is solely to discredit Mr. Hachey, I think they also have very limited relevance for that purpose and don't seem to me to be something that should be considered by the Commission in any motion to draw an adverse inference about his testimony concerning events in early 2008. CMSR. HONIGBERG: Mr. Glahn. MR. GLAHN: First of all, they were used for cross-examination. Secondly, the documents -- Ms. Frignoca is correct that certain pages of the documents deal with Canadian gas or western Canadian gas. But the questions that I asked -- for the most part, the questions I asked Mr. Hachey related to shipments to the East and -- to
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the Eastern United States. To the extent that certain pages of the documents were not included, it's because I only wanted to ask Mr. Hachey about information on one or two pages of the documents. I didn't want to clutter up the docket with extra pages if I didn't need to. If for some reason the issue is incomplete pages, I'm more than happy to go back and substitute the full exhibit. But I don't think that's necessary because the purpose was cross-examination to ask Mr . Hachey about a particular document. Now, if the issue is no documents come in to this proceeding, except documents in the time frame of 2009 -- or 2008 to 2009, that's a different issue. I think there's a lot of those documents in the record already. And the purpose of these documents was largely to show for that time frame, first of all, on the fracking issue. That was designed to show that TransCanada, even during the period of 2010, 2011, and as late as 2012, was taking a very different position from the position that Mr. Hachey
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took in his testimony. And so they weren't designed to show that somehow we think projections at that period are necessarily relevant, but, $A$, TransCanada had them; and B, that on information related to fracking, even that late, TransCanada was taking a different position.

So, I think they are relevant.
I think they are certainly fair game for cross-examination. And they were also designed to show that TransCanada had public information within its possession that it did not produce in this case.

CMSR. HONIGBERG: Does any other counsel want to weigh in on this? Yes, Ms. Goldwasser.

MS. GOLDWASSER: Just to echo what Attorney Frignoca said and to further enunciate it. I think the testimony on the stand was clear, that Mr. Hachey didn't know what the documents were referring to, and he -- we don't have any other witnesses that, at least to date, have explained what the documents meant, if they were referring to
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the same kind of fracking that's at issue in the United States. We don't know if some of the documents are referring to fracking in Canada that's related or unrelated. We don't know if the prices are Canadian prices or American prices. We don't have contact for the information. Mr. Hachey was unable to explain it.

So I think that the point here is that Mr. Glahn used those documents for cross-examination, but the documents can't be used for the fact of the matter asserted. There's no foundation for what they mean or for what they're intended to demonstrate. So, I think that's really the source of the objection. And he can use them for cross-examination purposes, and the Commission can draw whatever conclusions it wants to draw about that. But in terms of the fact of the matter asserted in those documents, we just don't know what those facts are.

CMSR. HONIGBERG: Anyone else
want to weight in on this?
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MR. GLAHN: If I may just say one other thing? Actually, if no one else does.

CMSR. HONIGBERG: Does anyone else want to speak for the first time? Let's let Ms. Frignoca go next, in between --

MR. GLAHN: Yeah, sure.
MS. FRIGNOCA: Just to clarify
a point -- because I am not finished this beverage in this container, and I may not be as articulate as I'll be later in the day -but the point that I was making about the 2008-2009 time frame is that this Commission has already ruled that it will consider evidence up through the date that the Scrubber went into operation. So I understand that there's some evidence that will go in after that time frame.

But what Mr. Hachey was testifying to is that he would have made a decision in September of 2008 not to proceed with the Scrubber. So, asking him about documents that relate to entirely different matters, in an entirely different country in
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2010 and 2011 should not have a lot of bearing on whether to draw an adverse inference against him, and should certainly not be relevant to this Commission's determination of what information was available to PSNH in 2008 and 2009 before it proceeded to install or begin major construction on the Scrubber.

CMSR. HONIGBERG: Before you go, Mr. Glahn, the record will reflect that the cup she held up, referring to the beverage, appears to be a coffee cup. [Laughter]

MR. GLAHN: So, first of all, all these objections could have been raised during Mr. Hachey's testimony yesterday, at which point it would have been easier to clarify some of the questions that they're raising. However, Mr. Hachey never said, "Oh I don't understand this document because it's in Canadian dollars or other dollars." And in one instance in which he wanted to make the point that the chart only referred to Western Canadian Sedentary Basin gas prices,
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he made the point.
There were two issues I was
driving at: One is, PSNH -- or TransCanada was making projections of gas prices that were inconsistent with Mr. Hachey's testimony, and secondly, the issue of fracking. Those two things were not, in these documents, in any way specific to Canada or Canadian prices. And the documents should be clear on their face as to whether it's a Canadian price or U.S. price. But, again, there was no testimony on that at all. If the only issue is gas price projections in 2008 and 2009, that would seem odd because, of course, TransCanada has been asking and has made a big deal about EVA documents from 2010 and 2011.

I think I made the point yesterday about the adverse inference. I won't go through it again today, except to say that these documents are highly relevant to that question. They were used for cross-examination, and the Commissioners can take their own view of that for how they were
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used. But I don't think there was any contemporaneous objection to the nature of the questions or the documents; and where there were, we sort it out. So it's a little bit late now to be doing that.
(Commissioners conferring.)
CMSR. HONIGBERG: We're going to overrule the objections to the documents we've just been discussing, the exhibits that were used with Mr. Hachey yesterday.

Do we want to take up discussion of the other documents right now, or is it -- Ms. Frignoca.

MS. FRIGNOCA: I have two clarifications. One is, are we now able to, despite the Commission's rules, enter just pages from an exhibit on cross-examination, so that parties don't have a full and fair opportunity to read the whole document and to redirect. And the second question that I have is, I thought $I$ was instructed by the Commission not to raise objections to exhibits and that there would be a separate section like this. So I didn't belabor
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cross-exam yesterday, and I just would like clarification going forward whether the Commission would now like to have contemporaneous objections or not.

CMSR. HONIGBERG: Ms. Amidon. MS. AMIDON: All I wanted to do is to confirm what was just said. We have discussed among ourselves, and PSNH was well aware of that, that we were trying to sort out the issue about objecting to exhibits. And I specifically sent out an e-mail to the parties on Friday saying, "Please identify those exhibits to which you would object." Obviously, they didn't include the ones that were brought up yesterday. So, our understanding was that the exhibits would not be objected to when they were proffered, but we would have an opportunity to argue about them at a later point.

CMSR. HONIGBERG: That's
correct. So, that reason that Mr. Glahn articulated, that you should have made these arguments yesterday, that's not the reason. The contemplation was that we would have a
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separate discussion about the documents apart from when they are offered, which is the practice here before the Commission, rather than get into discussions about the admissibility of documents contemporaneously and deal with them as a group at the end. But the lawyers have made a good point here, that if there is a problem identified, it would be nice to be able to fix it earlier than at the end of the proceeding, and that's sort of what we're doing right now.

But the more substantive grounds are overruled. To the extent you want a complete version of the document, Mr. Glahn has said they will provide full copies of the exhibits -- rather, of the documents that they used. And if, after looking at that, you conclude that something else needs to be done with the document, we can go that way. I mean, if the lawyers want to deal with exhibits as we go, we can do that. I mean, that's -- lawyers who practice in the courtrooms are used to doing that. So we can
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certainly do it here, but it's not been the practice here.

I didn't see lots of shaking of heads, so it doesn't sound like we want to do that.

Ms. Chamberlin.
MS. CHAMBERLIN: I was just going to weigh in. We've been dealing with expert witnesses and scheduling and trying to fit everybody in, and that's one of the reasons why we just did it as marking it as exhibits. So I think we should continue that way.

CMSR. HONIGBERG: And I will remind everybody of what you already know, that the Rules of Evidence don't apply here, as Ms. Goldwasser also pointed out and Mr. Glahn pointed out, and a couple others did. We can take these documents and give whatever weight we deem appropriate to them, with the limitations that you all have identified on their usefulness.

So, with respect to the
documents we've just been discussing, those
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exhibits used with Mr. Hachey, those are going to come in as marked. If you want full copies, folks from PSNH will provide them to anyone who wants them.

Yes, Ms. Amidon.
MS. AMIDON: This relates to the exhibits, too. I believe Mr. Glahn was going to correct Exhibit No. 99, which was that cover page of a notice from the Senate Committee regarding the hearing, and then attached to it were some random pages which appeared to be only a partial document and which he didn't reference in his cross-examination. So I was trying to determine whether that was the single page is Exhibit 99 or if it's the entirety of what he provided yesterday?

CMSR. HONIGBERG: Ms.
Goldwasser.
MS . GOLDWASSER: Attorney
Glahn's paralegal, Denise, and I had a conversation about that after the hearing yesterday. And my understanding from her -and I believe she had spoken with Attorney
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Glahn -- was that the document would be replaced with the full document. And she and I identified where to find that, and I believe that will happen.

Is that correct?
MR. GLAHN: As you'll notice, Denise isn't here this morning. She promised never to talk to me again.
[Laughter]
MR. GLAHN: But our librarian just e-mailed me that she has just left the State Archives and is going to drop off all the pages of that exhibit at the front desk of the PUC today. So we should have them momentarily.

CMSR. HONIGBERG: All right.
Yes, Ms. Goldwasser.
MS. GOLDWASSER: I have one more question. The Chair indicated that we can request full documentation from Attorney Glahn of partial documents that were provided yesterday. If a party wishes to replace the partial document with the complete document, can we find a time to do that? In other
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words, at this point, I don't know what I'd do with a full copy of the document because $I$ don't have a witness to bring it in with. So, for example: Some of the partial telephonic conferences. I'm going to need to review those and determine whether I would like the Commission to be able to see the more complete document. I guess I'm just querying the Commission how to deal with that if it happens, or at least providing a place holder for the issue should it arise.

CMSR. HONIGBERG: You've
identified it as an issue. I think if it becomes a problem, it's the kind of thing you discuss with all the other lawyers in the case to see if you can work something out; and if you can't, you ask the Commissioners to rule on something, a request that is fully formulated and appropriate for the situation that you find yourself in. But at this point, we don't have a situation, so I don't think I can give you any guidance beyond that.

Do we want to discuss other
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[WITNESS PANEL: LARGE|VANCHO]
exhibits at this time or let Mr . Vancho and Mr. Large continue? They are waiting patiently to my right.
(No verbal response)
CMSR. HONIGBERG: Sounds to me like Mr. Sheehan -- I'm sorry. Someone else? Oh, I'm sorry.

MS. CHAMBERLIN: Well, I was going to recommend that we go ahead with the witnesses.

CMSR. HONIGBERG: Excellent idea. Mr. Sheehan, I think you are up.

MR. SHEEHAN: Thank you.
CROSS-EXAMINATION (CONT'D)
BY MR. SHEEHAN:
Q. Two points to pick up from yesterday and then on to new stuff.

There was testimony about the net result of the incentives provided for in the Scrubber Law. And I think the incentives were largely related to the SO2 credits that were hopefully going to flow from the Scrubber; is that correct?
A. (Mr.Large) Yes, Mr. Sheehan. And I
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apologize. I went a bit far afield talking about SO2 bonus allowances. But in the entire Clean Power Act, there were many incentive mechanisms that were included. But as relates particularly to the Scrubber Law, it was really about conversion to SO2 allowances, yes.
Q. And as you said, PSNH was able to take advantage of those incentives. But the result was a, I think your word was, "miniscule" benefit?
A. (Mr. Large) Yes. Very, very limited. Correct.
Q. The other thing $I$ wanted to circle back to was the 2008, the fall of 2008 report. We were looking at the copy that's Attachment 9 to Mr. Long's deposition. And I had asked you yesterday questions about the role that natural gas prices played in some of the analyses referenced in that document. Do you recall that exchange?
A. (Mr. Large) I do.
Q. The page I pointed to you was Page 14. You don't have it there?
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A. (Mr. Large) Just a moment, if I may. I have a copy in front of me, yes.
Q. We were looking at Page 14 in that -Attachment 9, Page 14 to Mr. Long's depo, which is a September 2008 report. And I had asked you what role natural gas prices had played in the analysis reflected under Roman III. And you basically said "none," because that was evaluation of the cost to run the plant with the Scrubber. Is that a fair characterization?
A. (Mr. Large) That is correct.
Q. However, if you turn to Page 15, the very bottom under $E$, there is a reference to the "assumed natural gas price that is carried throughout these proceedings of $\$ 11$, escalating at 2-1/2 percent." Do you see that?
A. (Mr. Large) I do.
Q. And that is a slightly different analysis that you're doing in that report than is reflected on Page 14; is that right?
A. (Mr. Large) Different than on 14. It
would -- well, different than Roman III. It
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would begin with Roman IV.
Q. And a brief description of what the Roman IV analysis was, that did include some reference to natural gas prices.
A. (Mr. Large) Those pertain to analyses associated with purchases from the market. And we utilized natural gas price as a proxy for developing a future market price for energy. And secondly, consideration of the construction of natural gas-fired, combined-cycled power plant to produce capacity and energy for the market, the $\$ 11$ per million Btu price was the basis for fueling that.
Q. Okay. A few questions there. Is it fair to say that, because the role that natural gas plays in the electric generation in New England, it is a fair, as you say, "proxy" just to look at the natural gas price and say, in effect, that's what the energy price will be, some correlation to the gas price?
A. (Mr. Large) Yes.
Q. And it's a pretty direct correlation.
A. (Mr. Large) Typically, yes, most hours of the
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year.
Q. And so the analysis you're doing on pages -under Roman IV is you're comparing the cost of the Scrubber -- of the plant with the Scrubber to other alternatives.
A. (Mr. Large) Correct.
Q. One being buying power from the market, which would be largely set by the natural gas price.
A. (Mr. Large) Yes.
Q. And another being building your own natural gas plant and all the costs involved in that.
A. (Mr. Large) Well, building a regulated natural gas plant, not utilizing regulated criteria, in terms of cost of capital and financing. So it wasn't necessarily PSNH positing that it would build one.
Q. Right.
A. (Mr. Large) There was another alternative that was considered, and that was the construction of a coal-fired power plant.
Q. And the net result of the analysis under

Roman IV, I believe, is your statement under
Paragraph I on Page 16, which says that the
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Merrimack Station with the Scrubber is in the best economic interest of PSNH's customers; is that correct?
A. (Mr. Large) Yes. And that's based upon the numbers shown in letter $H$.
Q. Right. And those numbers shown in letter $H$, you say that you compared things and you conducted sensitivity analyses, and some of those tests did involve -- or did some of those tests involve varying the assumed price of natural gas to see what effect natural gas would have on the conclusions in $H$ and I?
A. (Mr. Large) Absolutely.
Q. And so the report that you gave to the Commission in this document in the fall of '08, No. 1, assumed a natural gas price, but did test variations of natural gas price to see what would happen if those prices varied.
A. (Mr. Large) It assumed sensitivities on really four parameters: The cost of the construction of the Scrubber, or other capital additions; the cost of natural gas; the cost of coal; and the cost attributable to CO2 compliance. Those are the prime
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sensitivities.
Q. And why was not natural gas one of those?
A. (Mr. Large) It was.
Q. I'm sorry. Went right by me.
A. (Mr. Large) It was the second one.
Q. I'm sorry.

Okay. Now stepping to a slightly different topic. Back in the 2006 time frame when the Scrubber Law was passed, the Company did not do an economic analysis of the customer benefits flowing from the Scrubber; is that correct?
A. (Mr. Large) There were cursory analyses that were prepared to try and provide some directional assessment of how this would work. They were not detailed net present value of revenue requirements analyses. They were intended to be simplistic, directional, economic views of -- fundamentally, it was the costs associated with operating a Scrubber that only took care of mercury, and there was no benefit attributable to anything else, recognizing that, in this case, with the Scrubber that would remove SO2 and
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mercury, there was going to be additional benefit.
Q. Okay. And then you did the analysis in the spring of 2008 that we've been talking about here.
A. (Mr. Large) Summer of 2008, yes.
Q. Okay. And why was the analysis done then? What triggered it?
A. (Mr. Large) As we indicated previously, it was required as part of our corporate procedures to proceed before the RaCC and to identify the risks inherent to the Company of going forward with the Project, and our overall discussion of what the Scrubber Project meant to the Company.
Q. But was there any magic to the summer of ' 08 rather than the summer of '07, or the fall of '06?
A. (Mr. Large) Yes.
Q. What was that?
A. (Mr. Large) The timing associated with the analyses coincided with the receipt of final bids and the opportunity for us to put together a comprehensive assessment of what
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the price was going to be. That really was the triggering event that moved us into a reporting to RaCC , reporting to the board, and then subsequently coming to visit Staff and OCA here.
Q. So, earlier in '08 you learned fairly definitely the price was $\$ 450$ million, or whatever it is, and that's the number you're likely going to spend. So, now you need to get your approvals, now you do analysis. Is that a fair --
A. (Mr. Large) Over the second quarter of 2008, as information with respect to cost was coming in, it was being assembled, being analyzed, being evaluated, being added together, and it culminated in -- Mr. Smagula will probably be able to tell us better specifically -- but late May or early June, a definition that we were going to be utilizing $\$ 457$ million as the Project cost.
Q. And in the economic analysis you did for those June meetings, you said yesterday that you did not go back and update it from that point forward; is that correct?
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A. (Mr. Large) That is correct.
Q. So you did not update it for the September '08 report that we've been going over this morning that was given to the PUC.
A. (Mr. Large) The cost of the Scrubber, the $\$ 11$ per million Btus for gas, we did not change. We kept those consistent.
Q. And the same for spring of '09, when there's Consideration of legislation; there was no update then to provide the PUC or policymakers with any updated information as of then; is that correct?
A. (Mr. Large) There was. May I explain the rationale?
Q. Sure.
A. (Mr. Large) At the time of these presentation/discussion documents, reviews at the RaCC or at the board, or even here with the Commission Staff and OCA, we were very much in an analysis and informing and informational mode. With the Commission's secretarial letter in late August, you know, that really changed things. We knew then we were very much into what I would call
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"compliance mode," where we were responding to what it is that the Commission was seeking from us, and we did so. So, you know, there was a change, a shift in what the communication and analysis requirements were at that point in time.
Q. But did you go back -- well, I'll move on. The SO2 credit price that was used during the ' 06 discussion, as you testified, ranged from $\$ 500$ to $\$ 1500$ per ton estimates.
A. (Mr. Large) Yes.
Q. And the $S O 2$ price that you used -- it appears that the $S O 2$ price you used in your spring or summer of '08 analysis was $\$ 500$ a ton.
A. (Mr. Large) That's correct.
Q. And that's reflected, for example, in those PowerPoint presentations, I think to the Staff, that either you -- it's written "\$500 a ton," or I think Mr. Mullen wrote a note that someone told him it's $\$ 500$ a ton. Do you recall seeing that?
A. (Mr. Large) That would have been part of my conversation during that presentation or discussion.
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Q. In this presentation in June of '08, you are essentially saying that the Scrubber, as we now understand it, will result -- operation will result in customer benefits.
A. (Mr. Large) Yes.
Q. And did those customer benefits include whatever payments you expected to receive based on $\$ 500$ a ton for SO2?
A. (Mr. Large) In terms of the bus bar cost associated with the Scrubber, it would. But recognize that we were making comparison cases. So, the Scrubber operating and essentially eliminating SO2 emissions, in comparison to a market price, the market price would have whatever consideration for SO2 costs would be in that as well. So it really is a comparison case. So, yes, it's in there. But in terms of it providing benefit, it's a bit diluted because of the comparative nature.
Q. And let me clarify that because I'm not sure I quite followed.

So, the assumption in June of '08 was $\$ 500$ ton. If we were to assume in June of
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'08 it was zero dollars a ton, would that have changed your basic statement that the Scrubber is -- will result in customer benefits?
A. (Mr. Large) No.
A. (Mr. Vancho) No, I don't believe it would. Again, the --
A. (Mr. Large) It would not have changed.
A. (Mr. Vancho) It would not have changed the base-case present value numbers that we shared. And I guess I can explain a little bit.

Following up on Mr. Large, again, we were doing an analysis that compared the "all-in costs" of the plant, what existed at the time plus the new capital dollars associated with the Scrubber, and we were comparing that to market. When the -- in your example, where the SO 2 costs go from $\$ 500$ to zero, in either case, the costs are eliminated from the all-in cost, whether it's because of the Scrubber or because the cost went down. So, in either case, they're not there. We're still comparing that all-in
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cost to market can still be lower. May not be the exact number, but more or less. Not a material change.
Q. And we know now -- well, we know now that, as you said yesterday, the SO2 price did collapse down to effectively zero for the last few years; is that correct?
A. (Mr. Large) Yes, that is true.

MR. SHEEHAN: And to complete the record, $I$ put on everyone's desk and in front of the Commissioners a graph showing the SO2 prices, which I'd like to mark, I believe, 117?

CMSR. HONIGBERG: Right.
(The document, as described, was herewith marked as Exhibit 117 for identification.)

BY MR. SHEEHAN:
Q. And this was in an article $I$ showed you yesterday. And you kindly pulled out the diagram and brought copies of the diagram for me this morning.

And is that your understanding of the SO2 spot price over the years shown in that chart?
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A. (Mr. Large) I believe it to be true, based upon the source information down at the bottom. Zero is zero, that's for sure. But let's recognize that these prices that are shown are in 1995 dollars. So if we're trying to pick data points off this chart, there's a little arithmetic that would be necessary.
Q. Understood. So what you're saying is, we may not be able to put an exact date with an exact dollar amount, but this at least shows the price spiked way above $\$ 1,000$ in '05-ish and went down under $\$ 200$ in '08.
A. (Mr. Large) Yes. The spike shows in 1995 dollars just over $\$ 1200$. In nominal dollars, it was in excess of $\$ 1400$, so...
Q. And the footnote for the source data has Cantor Fitzgerald providing the data through September 11, 2001 when disaster struck. So what you're saying, then, is the report of the summer of '08, your economic analysis that assumed $\$ 500$ a ton, we know about it was still falling, and perhaps a month or two or three later it was way below
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\$500. That does not change your ultimate conclusion of the net economic benefit; is that fair?
A.
(Mr. Large) Well, $I$ agree that it does not change materially, substantially the economic benefit.

But I do want to step back and say that, with the $\$ 500$ SO2 allowance assumption that was made at that point in time, as you see on this graph, many things were going on. In the full report, there's a discussion about what took place in the courts at that juncture in time. And it would be fair to say that there was still full expectation at that point in time that SO 2 allowance prices were not going to tank but instead rise. The expectation that there would continue to be an SO2 cap and trade program of some sort or another and that there were additional limitations on SO2 emissions expected, that was clearly our full expectation. I would say it was our environmental regulators' expectations. I think it would have been everyone's expectations. But it was a result
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of actions and inactions that this market essentially collapsed. I think that's my takeaway from a review of the article.
Q. To be clear, the article I shared with you yesterday gives a historical view of why the prices collapsed. And, as you say, it's many different factors, including courts and other things.

But the point here is, that I'm trying to explore, is the assumption of a $\$ 500$ sO2 price turned out to be wrong. It went basically to zero. And I'm trying to ask, if you had assumed a zero SO2 price for your summer '08 calculation, how that would have affected your net customer benefit. It sounds like you're saying it wouldn't.
A. (Mr. Large) It would not have significantly, no. Not in the least. I'm just -- I apologize if I'm being sensitive to defending our assumptions.
Q. Another assumption in your summer of 2008 report was a continued high capacity factor for Merrimack Station; is that correct?
A. (Mr. Large) Yes. We fully anticipated that
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Merrimack Station would continue to dispatch ahead of natural gas-fired units and that, therefore, would maintain a capacity factor consistent with its history.
Q. And I know some of the numbers have been tossed around. What's your -- what would that approximate capacity factor be?
A. (Mr. Vancho) In the model, it's 86 percent.
Q. Eighty?
A. (Mr. Vancho) Eighty-six.
Q. The last topic I want to turn to is the June '08 meeting with Staff and the --
A. (Mr. Large) Are we finished with this?
Q. Yes.

MR. PATCH: Mr. Chairman, just a minor clarification. I thought it was a July 30th, '08 meeting with Staff. Unless there's a different one in June. Mr. Sheehan referred a couple times to a "June meeting with Staff."

CMSR. HONIGBERG: Mr. Sheehan, you are referring to the same meeting; are you not?

MR. SHEEHAN: Yes. I'm sorry
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July 30. So my prior references to "June" are inaccurate.

BY MR. SHEEHAN :
Q. Mr. Frantz asked me one more question regarding the SO 2 . He has shown me Mr . Nolan's letter of January 12th, 2006, which is Attachment 1 to Mr. Mullen's testimony. You don't need to pull it out unless you have a particular question on what I'm going to read you.

Mr. Nolan wrote: "The use of this technology," meaning the Scrubber, "not only reduces mercury very efficiently (greater than 90 percent in most applications), but it is highly effective in removing sulfur dioxide and small particles." And here's the part that $I$ want you to pay attention to: "This co-benefit of reducing three pollutants simultaneously with the same equipment reduces implementation costs by allowing PSNH to significantly reduce purchasing SO2 emission allowances, saving greater than an estimated $\$ 25$ million per year."

Again, this is part of my confusion. It
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seems like that's $\$ 25$ million a year that will come off the bottom line that you don't have anymore when the SO2 credits collapsed. Why is that -- what am I missing? You see when you read this letter, you understand what it sounds like.
A. (Mr. Large) So, the comparison case in that example, then, is operating Merrimack Station without a Scrubber, continuing to emit SO2 and mercury, and paying those costs. That's not any of the examples considered here.
Q. Okay.
A. (Mr. Large) There was not an option to continue to run Merrimack without the Scrubber and continuing to emit SO2. In order to comply with the law, we needed to install the Scrubber and not emit mercury and SO2 by 2013.
Q. But wouldn't that -- if you don't have to pay that $\$ 25$ million a year, that comes right off your revenue requirement for the plant; right?
A. (Mr. Large) It would if we could have assumed that we saved that money while operating
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Merrimack Station without the equipment, without the addition of the Scrubber. So maybe I'm not explaining it well.

The comparison case from which that savings that Mr . Mullen refers to would be continuing to run Merrimack as it was, continuing to emit SO2 and mercury, continuing to have to buy SO2 allowances. We installed the Scrubber instead -- or the analysis was about installing the Scrubber instead. Therefore, those costs would not occur as SO2 costs -- SO2 emissions cost. But there was no case that we analyzed here that was a base case of "run Merrimack as it was before."
Q. So, let's just -- I have a simplistic example. Let's just take the $\$ 25$ million a year for SO 2 , and let's just say all the rest of the operating costs are $\$ 30$ million. So, before you build a Scrubber under the existing rubric, you're paying $\$ 55$ million a year to run Merrimack Station.
A. (Mr. Large) Yes.
Q. Now you build a Scrubber. Now you don't have
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to pay that $\$ 25$ million a year anymore; so it should cost $\$ 30$ million to run Merrimack Station.
A. (Mr. Large) If I didn't have to do anything else, yes.
Q. Right. And I understand that, the original argument -- or one of the original arguments of the Scrubber Law is we are now spending 30 instead of 55. We can use some of that savings to, in effect, pay for the Scrubber.
A. (Mr. Large) Correct.
Q. So the net result is we have a Scrubber, let's say that cost $\$ 10$ million. So, now we're spending 40 million with the Scrubber rather than spending 55 before. And why is that not -- what's wrong with that? I understand it's very simplistic.
A. (Mr. Large) I think your assessment is accurate. But what's not analyzed in any of the reports that we've prepared is the first scenario that you presented, and that was \$25 million of SO2 emissions costs and $\$ 30$ million of operating costs.
Q. Okay. I think we've --
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SP. CMSR. IACOPINO: I'm sorry. Can you say that again? I missed your statement.

WITNESS LARGE: Certainly.
There is no analysis that we've done and presented here that assumes that there's a case where Merrimack Station ran as it essentially did in 2006, that had, to Mr. Sheehan's example, $\$ 25$ million of SO2 emissions costs and $\$ 30$ million of operating costs. That's not a case that could be analyzed because the law prohibited it.

SP. CMSR. IACOPINO: Thank you. And I'm sorry that I missed the first part of your statement.

WITNESS LARGE: And I
apologize if I've not been clear.
BY MR. SHEEHAN:
Q. But wasn't that $\$ 25$ million savings used as a justification for the Scrubber Law? I mean, at least earlier when the prices are high, I recall, you know, "It will pay for itself," phrases to that effect.
A. (Mr. Large) And there's an exhibit, if you'd
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like for me to find it, that we prepared on -- demonstrated there was a cost associated with installing the Scrubber, assumed to be $\$ 250$ million, and that there would be a net benefit of eliminating SO2 costs, yes. That was the comparison case at that point in time of continuing to run as we were versus what it would be in the Scrubber -- with the Scrubber. When we moved to these analyses, all right, that case of running Merrimack as it was, not removing SO2, that no longer exists.
Q. Because now we have a law that says you have to do it.
A. (Mr. Large) That's correct.
Q. And if you had done the analysis in '08, and one of your options was, "We don't have to follow the law and reduce mercury," this would have been another line item in your comparison. I understand that's a hypothetical.
A. (Mr. Large) And not one that we would have considered, in that it was outside the law.
Q. Okay.
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A. (Mr. Large) If I could, back to -simplistically, back to that graph that I was describing earlier in 2005 and 2006. The line showed that there was an increase in cost for what I called "mercury-only removal." So if there had been no SO2 benefit, that would have been the cost. What's transpired here is fundamentally that: The price of the Scrubber different than what was assumed in that analysis, but fundamentally, that's what we're faced with.
Q. All right. Now turning to the July 2008 meeting with Staff. There's a presentation that $I$ put in front of you. I think what I put in front of you is a -- it's just the attachment in Hachey's testimony, H130, but it's also marked as Exhibit 39, and that is the PowerPoint that was presented to Staff on July 30, 2008.

The first question is: Who requested this meeting?
A. (Mr. Large) PSNH management.
Q. Why?
A. (Mr. Large) Would it benefit if $I$ were to
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provide maybe some comprehensive context with respect to this meeting?
Q. Sure. Obviously, it's been the subject of much discussion in this room in the last week.
A. (Mr. Large) All right. Following the board of trustees presentation, which I think was on the 15th of July, the next order of business from senior management at PSNH -PSNH management's perspective -- was the need to alert and advise and inform Staff at the PUC, as well as the OCA, of what was a significant change in the price of the Project. The management team, including me, sat and said: So, what is it that we should present? This team of individuals also included our legal staff, as you can imagine. And with the RaCC and board presentations that we had, that clearly was the foundational information that would make up an appropriate communication to Staff. We, at that point in time, were operating under the cloud of a notice of intent to sue with respect to the Clean Air
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Act requirements. And those kinds of actions clearly sensitized the Company as to what it is that they're going to share, or the means in which they're going to share it.

Additionally, it was discussed that we were moving out of an internal communications phase within the Company to an external communications phase, and that discoverability -- and recognizing that this will in the long term result in a prudence review. I mean, that was known when the Scrubber Law was passed, that there would be prudence review. So that was not some new revelation, and it didn't become some surprise that occurred when the price -- or the cost of the Project changed.

So, we set out with the two presentation documents that we previously utilized, and we worked to, I'll use the word "scale them down" for presentation to an external audience -- a knowledgeable, well-informed, external audience, certainly not informed of the $\$ 457$ million price.

In terms of the information presented on
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the page, you will find that all of the information there is the same as what would have appeared on the others, but that there was less information presented on the page. We were prepared fully to discuss beyond what the information presented on the page. And $I$ think that as we look at Mr. Mullen's response to TransCanada data requests, there are notations of things other than. You know, it was not our intent to enter the room and simply slide the papers under the door. It was about having a conversation, having a discussion.

You'll note at the bottom of the page that we've identified that these materials were produced "privileged and confidential." When we entered the room that day, probably the first five minutes of conversation in that meeting was to advise our concerns, that we felt it was critically important for us to share this information with Staff and OCA at that point in time, but that we were preparing within a few days of this meeting to make an SEC filing, $I$ believe it's a
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102 -- I don't get my letters right often with respect to those filings -- and that we were sharing information that was not yet public and that we were very aware of Freedom of Information requirements, but that we felt it critically important to share this information at this point in time.

I need to step back to the day prior to the presentation. I was responsible for the production of the document. My team actually produced this pile of papers that we brought with us to the July 30 meeting. On the afternoon prior to this discussion, I had a conversation with Mr. McDonald, who was our prime speaker in this discussion on the 30th. And he asked that I, since I had been closer to the information than he, that $I$ be responsible for presenting the financial information -- and so that's Pages 15 and 16, the Project benefits discussed in Pages 15 and 16 -- and I wasn't going to disagree with him.

So we came to the meeting, as I said.
We expressed our concerns with respect to
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confidentiality, and we went through the presentation from the beginning. And clearly, the showstopper with respect to this discussion appears on, I think, Page 13 -- I apologize -- Page 12.

MR. NEEDLEMAN: Could I just clarify for a moment? We're speaking about Exhibit 39-1 -- 39, I think?

MR. SHEEHAN: As I said at the outset, it is 39. And that version of the document is included in Mr. Mullen's data response. And it also has Mr. Mullen's notes on the documents, as well as a few pages of his responses to related questions. I also just noted it's attached to, I think it's Mr. Hachey's testimony. That's the one I grabbed. Anyway...
A. (Mr. Large) So when we came to Pages 15 and 16, it is my recollection that $I$ covered this material here, that $I$ shared the sensitivity analyses that we had prepared; the range of values that we had utilized with respect to coal prices, gas prices; ups and downs with respect to the capital costs associated with
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the Project. There was discussion about how we had come up with a CO2 number, okay, and, as well, $I$ discussed the $\$ 5.29$ coal/gas spread that's alluded to on the last bullet on the page. We moved promptly to the next page, and at that point in time we talked about what the existing spread was at that point in time and that it was PSNH's confidence that coal would dispatch ahead of natural gas. Mr. McDonald took the presentation from Pages 17 and 18, and we concluded. There was -- I will not say there was "robust" conversation during my portion, my brief portion of the discussion, but it is my recollection that I provided that information at that time.
Q. So, this meeting was not part of an existing docket, clearly.
A. (Mr. Large) It was in advance of any docket.
Q. Right. And Staff was not officially conducting any investigation yet.
A. (Mr. Large) Correct.
Q. This was a meeting to, in effect, give Staff and the OCA heads-up of the changes in the
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Project and the information contained in this PowerPoint.
A. (Mr. Large) And more. But to -- the primary purpose was to identify that the Project cost had risen dramatically to $\$ 457$ million. And then the expected follow-up question was: Is it still economic? And we discussed that.
Q. And is it your recollection that the $\$ 5$ spread was specifically discussed in that meeting?
A. (Mr. Large) That is my recollection. I was responsible to provide that.
Q. Do you recall whether the document itself was delivered to Staff and the OCA before, during or after the meeting?
A. (Mr. Large) It was at the meeting. It was not previous.
Q. So you came with them in hand?
A. (Mr. Large) Yes, I did. And I think, in large part, as a result of our concerns voiced, many of the participants in the meeting actually returned the documents to us. I can speak specifically of my recollection of OCA and Assistant OCA giving
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me back their documents. I'm confident that a number of members of Staff provided their documents back to us as well. It's clear that Mr. Mullen did not.
[Laughter]
Q. And you're saying that it was a result of the confidentiality part of your discussion that began the meeting, that they were at least sensitive enough to that, that they'd rather not keep a copy. Is that your --
A. (Mr. Large) Confidentiality concerns about "Right To Know."
Q. Those are all the questions I have, gentlemen. Thank you.
A. (Mr. Large) Thank you.

CMSR. HONIGBERG: Ms.
Chamberlin, are you going next?
MS. CHAMBERLIN: I am. CROSS-EXAMINATION

BY MS. CHAMBERLIN:
Q. Good morning, gentlemen.
A. (Mr. Large) Good morning.
A. (Mr. Vancho) Good morning.
Q. I am starting with your testimony on Page 4
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that lists the economic analyses that NU did regarding the Scrubber Project. And that's Bates 411.
A. (Mr. Large) I have that.
Q. All right. Now, each of those bullets refers to an analysis that you or someone under your direction undertook?
A. (Mr. Large) The first four bullets are specific to economic analyses; the fifth incorporates economic analyses.
Q. And the last economic analyses of the Scrubber Project was completed before September 2nd, 2008; is that true?
A. (Mr. Large) Yes, it is.
Q. And your testimony is that no further studies were required after March 19, 2009?
A. (Mr. Large) None were done.
Q. So it follows that none were done between September 2nd and March 19th, 2009; is that correct?
A. (Mr. Large) Yes.
Q. And there was an update done for the PUC on October 15th, 2010. Do you recall that?
A. (Mr. Large) I do.
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[WITNESS PANEL: LARGE|VANCHO]
Q. And so, there were no economic studies between September 2nd, 2008 and October 15th, 2010; is that correct?
A. (Mr. Large) None that we cannot -- that we conducted, nor that we're aware of that were conducted by Northeast Utilities. Correct.
Q. You are familiar with the NU Capital Project Approval Policy and Procedures; correct?
A. (Mr. Large) Yes.

MS. CHAMBERLIN: I'm going to introduce that as an exhibit.

CMSR. HONIGBERG: This will be 118.
(The document, as described, was herewith marked as Exhibit 118 for identification.)
Q. Now, part of your responsibilities includes complying with the NU Capital Project Approval Policy and Procedures; correct?
A. (Mr. Large) Yes.
Q. And looking at the effective date of May 28th, 2008, this was the policy that was in place when you gave the various presentations in 2008; correct?
A. (Mr. Large) There were presentations that
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predated this. But fundamentally, they're the same, yes.
Q. And to the best of your recollection, this Revision 2 of the procedures is more stringent or requires more information than perhaps vision -- Revision 1? Is that a fair summary?
A. (Mr. Vancho) I would say that's probably fair. I think what we were trying to do with this version -- again, this policy doesn't belong to my group. But I started getting involved in these types of analyses working with RaCC at this time. I think one of the things we wanted to do is put some procedures in place around the type of financial metrics that we do. So a lot of it might -- a lot of what was expended here might be related to that.
Q. So you had procedures in place before, and this was a refinement or -- is that a fair --
A. (Mr. Large) I'd call it an "evolution," yes.
Q. Evolution. All right.

Now, the purpose of the NU Capital
Project Review [sic] and Procedures is to
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provide information to the NU Risk and Capital Committee; correct?
A. (Mr. Large) Yes.
Q. And the rule of the NU Risk and Capital Committee is to "evaluate, monitor and approve"; correct?
A. (Mr. Large) Yes.
Q. And this information is provided for each capital project over $\$ 10$ million.
A. (Mr. Large) Correct.
Q. And the information is provided over the life cycle of the Project.
A. (Mr. Large) The discussion of risks and project progress, yes.
Q. And one element of the Project information that is required is the "Capital Expenditure" category. And I direct your attention to Page 8.
A. (Mr. Large) Is there somewhere in particular?
Q. Yes. At the top of the page, about Line 5 or 6, it says --
A. (Mr. Large) Yes. Thank you.
Q. So that is one element that is required under this proposal?
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A. (Mr. Large) Yes.
Q. And that means whether the Project is discretionary or non-discretionary; correct?
A. (Mr. Large) Yes.
Q. The definition of "discretionary" and "nondiscretionary" is provided on Page 3 of the policy and procedures; correct?
(Witness reviews document.)
Q. Middle of the page, little letter $C$ ?
A. (Mr. Large) I apologize. I'm just reading through it quickly.
(Witness reviews document.)
A. (Mr. Large) Yes.
Q. And PSNH viewed the Scrubber Project as a "non-discretionary project"; correct?
A. (Mr. Large) Yes. It was to comply with the law, as defined in that definition.
Q. Now, the Capital Project Approval Policy and Procedures goes on to require additional information. And I'm back on Page 8. It requires total capital expenditures per year?
A. (Mr. Large) Yes.
Q. And a description of how the Project aligns with the Company's strategic objectives and
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goals?
A. (Mr. Large) Yes, that would tend to be more pertinent in a discretionary project, but would be useful in a non-discretionary project.
Q. The purpose of the Project is required?
A. (Mr. Large) Yes.
Q. The need for the Project is required?
A. (Mr. Large) Yes.
Q. The benefits of the Project is required?
A. (Mr. Large) Yes.
Q. And any possible alternatives to the Project is required?
A. (Mr. Large) As shown here, yes.
Q. I'm sorry?
A. (Mr. Large) As presented in this document, yes.
Q. Yes. Now, under "Project Time Line," which is in the middle of the page --
A. (Mr. Large) Yes.
Q. -- the Approval Policy and Procedures requires PSNH to identify any flexibility in the timing of capital spending; correct?
(Witness reviews document.)
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day? One day you're full steam ahead and the next day you're done?
A. (Mr. Large) Not likely, no.
Q. So, suspending the Project is a possible element of an exit strategy?
A. (Mr. Large) But the decision-making, thinking -- and I'm not speaking specific to the Scrubber Project here -- but the decision-making with respect to is it appropriate to exit a project doesn't necessarily have to cause the Project to be suspended. Work activities can continue while a decision-making path is being undertaken. So, in terms of project construction work, as an example, you could be full steam ahead one day and stopped the next. They aren't contingent upon or dependent upon one another.
Q. Would you say that suspending a project should never be included as a possible element of an exit strategy?
A. (Mr. Large) It would not be fair to say that it should never be included as a possible exit strategy.
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Q. Would selling the Project be an element of a possible exit strategy?
A. (Mr. Large) I'm sorry? I didn't hear.
Q. Selling the Project.
A. (Mr. Large) Selling the Project.
Q. Whatever it may be.
A. (Mr. Large) In the nature of our business as a regulated utility, selling the Project, I think, would be particularly difficult. So I don't know that that would be a likely probable. Does it fall in the case of "possible"? Yes, but that would be well down on the list of --
Q. Selling the Project would transfer whatever risk of the capital construction to another entity, correct, if you sold the Project?
A. (Mr. Large) I think, in a simplistic sense, I agree with that view. But these are fairly highly integrated, not only technically, physically, but operationally, assets.

So let's take a different kind of example in the Company: An electric substation that had environmental risks. There was a leaking transformer, and
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therefore there was oil spilled that needed to be cleaned up. So, technically, yes, we could consider selling that asset. But practically, $I$ don't think it's reasonable or feasible. The example associated with the power plants is different, but $I$ think it has many similarities.
Q. It would be an element to consider for an exit strategy; whether it was appropriate in every instance remains to be seen after consideration.
A. (Mr. Large) It could be. It would be on the list of possibilities, yes. But I value it -- in this instance, $I$ value it quite low.
Q. Again, now I'm just talking about a generic exit strategy.
A. (Mr. Large) Yes.
Q. Requesting relief from a regulatory requirement, that would be another possible element of a exit strategy?
A. (Mr. Large) Well, regulatory requirement as opposed to a law? I'm differentiating, but --
Q. Let's start with regulatory requirement.
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A. (Mr. Large) It would be -- one could include that on a list of exit strategy opportunities, yes. It would depend upon one's understanding of that regulatory requirement.
Q. And recognizing you've made a distinction, including in an exit strategy a plan to make changes in a piece of legislation or a legal requirement as a possible element of an exit strategy.
A. (Mr. Large) I would not think that would be a potential element in an exit strategy for a utility company.
Q. All right. And that is because NU does not attempt to effect change in laws that are currently effective?
A. (Mr. Large) No, it's because we don't -- we aren't a legislature. We don't have the authority to change law.
Q. It's an element that would be out of your direct control; correct?
A. (Mr. Large) I'd go well beyond direct control.
Q. However, it is something that a regulated
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utility can do in response to a law that it wishes to change.
A. (Mr. Large) Maybe said differently. The Company has engaged at the Legislature to attempt to effect legislation, yes.
Q. Now, in your presentation to the Risk and Capital Committee, you did not include an exit strategy for PSNH; is that correct?
A. (Mr. Large) I'll do a quick scan, but I'm confident we did not.
(Witness reviews document.)
Q. And turning back to the Capital Project Approval Policy and Procedures, at the bottom of the page, still on Page 8.
A. (Mr. Large) May I add to my previous response?
Q. I think you've answered the question. So you're -- not at this time.

MR. NEEDLEMAN: Well, he was asking to look before he finished his answer. CMSR. HONIGBERG: I think he had asked to look at the document. He was doing that while you were starting to ask your next question.
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So, Mr. Large, if you have something you want to add after having looked at the document, you may do so.

WITNESS LARGE: Thank you.
A. (Mr. Large) I think examining the information on Page 4 and Page 5 describes why we did not view it appropriate or necessary or right to consider an exit strategy as these presentations were being discussed with Risk and Capital Committee.
Q. I don't have that in front of me. Can you point to what you're looking at?
A. (Mr. Large) Sure.

MR. NEEDLEMAN: Can you identify what you're looking at, Mr. Large? WITNESS LARGE: I apologize. So I am in Attachment 3 of the testimony that Mr. Vancho and I presented, which is 23-3.

CMSR. HONIGBERG: Mr. Large,
is there a page number in the lower right-hand corner?

WITNESS LARGE: And I'm
referring to Pages 4 and 5.
CMSR. HONIGBERG: How about a
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longer, like a six-digit number? WITNESS LARGE: Yes. 000440 and 441 .

CMSR. HONIGBERG: Thank you.
BY MS. CHAMBERLIN:
Q. And looking at those pages, you pulled out portions of the New Hampshire Clean Power Act; correct?
A. (Mr. Large) Specifically the mercury portion of that, yes.
Q. And the second page is the Mercury Reduction Act Specifics; correct?
A. (Mr. Large) I'm sorry?
Q. I'm looking at Page 5, and it's labeled "New Hampshire Mercury Reduction Act Specifics."
A. (Mr. Large) Thank you. I'm sorry. I didn't look at the heading. Yes.
Q. And the last bullet has the phrase from the statute: "The mercury reduction requirements set forth in this subdivision represent a careful, thoughtful balancing of costs, benefits and technical [sic] feasibility and, therefore, the requirements shall be viewed as an integrated strategy of non-severable
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components; correct?
A. (Mr. Large) Yes.
Q. These two pages are not an exit strategy; correct?
A. (Mr. Large) They are not. They're my discussion as to why we did not believe that one was an appropriate element in this case.
Q. Returning to Page 8, at the bottom of the page it says "Monitoring Plan." And this element of the Capital Project Approval Policy and Procedures requires a detailed project-specific monitoring plan; correct?
A. (Mr. Large) Yes.
Q. And this monitoring plan is to occur throughout the development life cycle of each capital project; correct?
A. (Mr. Large) Yes.
Q. All right. Turning to Page 11, Appendix III --
A. (Mr. Large) That pertains specifically to the Project work activities.
Q. I'm sorry?
A. (Mr. Large) That pertains to the Project work activities.
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Q. No. 3 in the middle of the page is labeled "Project Analysis"?
A. (Mr. Large) Yes.
Q. And this paragraph discusses projects that were initially approved as having "adequate financing capability"; correct?
A. (Mr. Large) May I have a moment?
Q. Sure.
A. (Mr. Large) Thank you.
(Witness reviews document.)
CMSR. HONIGBERG: While
Mr. Large is reviewing that, we're going to go another 10, 15 minutes or so and take a break.

MS. CHAMBERLIN: I Can
probably finish.
CMSR. HONIGBERG: Thank you.
BY MS. CHAMBERLIN:
Q. Let me know when you're ready.
A. (Mr. Large) Sorry. It's a long section.
(Witness reviews document.)
Q. In the middle of that paragraph that you just read to yourself -- oh, wait. Before I go on, do you agree with my characterization
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[WITNESS PANEL: LARGE|VANCHO]
that it discusses projects that were initially approved as having "adequate financing capability"?
A. (Mr. Large) Yes.
Q. And in the middle of that paragraph it states, "A current assessment will be made as to whether any significant project, company-specific or macroeconomic, issues have arisen since the last approved forecast or budget that could now constrain capital spending."
A. (Mr. Large) Yes.
Q. I've read that correctly?
A. (Mr. Large) You have.
Q. That essentially means that a project may be reassessed. Is that a fair summary?
A. (Mr. Vancho) This was getting at sort of looking at the Company's five-year forecast and if we had a $\$ 457$ million number with the forecast. And we determined at that time this --
(Court Reporter interrupts.)
A. (Mr. Vancho) So this was looking at it from sort of a forecast and budgeting perspective,
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where we had capital dollars in there. And when it went in, we made an assessment that this is a project that could be financed. And so we were looking at macro conditions, changes in credit markets, or something that would have affected our ability to finance a project, and could we still have this project included in our five-year plan. So that's what we were looking at for that section.
Q. Okay. And it includes examples of relevant issues, such as "deteriorated financial market conditions." Do you see that on the second bullet?
A. (Mr. Large) Yes.
Q. So, for projects that were in your capital budget, deteriorated financial market conditions would trigger a reassessment?
A. (Mr. Large) If that deterioration was expected to have an impact on the Company's ability to finance.
Q. And down at the bottom of the page, if deteriorated financial market conditions occur, the forecast could be rerun with updated assumptions; is that correct?
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[WITNESS PANEL: LARGE|VANCHO]
A. (Mr. Large) And that's essentially what -well, regardless of deteriorating financial conditions, that rerun is fundamentally what occurred in June of 2008.
Q. And if deteriorated finance market conditions occur, one of the questions the Company must ask is: Can the Project be postponed?
A. (Mr. Large) Those are one of the considerations, yes.
Q. Now turning to Bates 437.
A. (Mr. Large) Am I correct that that's the June 25 RaCC presentation?
Q. Yes.
A. (Mr. Large) Thank you.
Q. And this is in the form of a PowerPoint presentation; correct?
A. (Mr. Large) I prefer to refer to them as "discussion documents." Yes.
Q. What's the difference? I hesitate to ask.
A. (Mr. Large) The tool that produced it is PowerPoint, yes. "PowerPoint presentations" certainly have taken on different meanings for different people. This was not a sit in
a room with a slide projector and have people
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sit and watch as slides were put on the screen. That's my typical characterization of a "PowerPoint presentation." A "discussion document" utilizes the same tool but provides information so that people can talk about the information that's contained on the page.
Q. And the goal is to summarize the most important information about the Project for the RaCC Committee; correct?
A. (Mr. Large) Yes.
Q. And it's a clear and easy way to bring out discussion points. Is that --
A. (Mr. Large) Yes.
Q. Now, on Bates 444, there's a chart labeled "Financial Sensitivities."
A. (Mr. Large) Yes.
Q. And you raised this in your discussion with Mr. Sheehan. The first column is the "Assumption Category"?
A. (Mr. Large) Yes.
Q. And there were four areas of sensitivity: Capital cost, gas prices, coal prices and carbon costs; right?
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A. (Mr. Large) Yes.
Q. Now, in June of 2008 , capital costs were not the area of most sensitivity to customer costs; correct?
A. (Mr. Large) In terms of operation of Merrimack Station, that would be true. I'm not certain I follow specifically your question.
Q. In June of 2008, you had a figure of $\$ 457$ million, and there was confidence that that was a good figure, or a fairly robust analysis of the cost; correct?
A. (Mr. Large) Yes.
Q. So, in these assumptions, capital costs was not the most sensitive area; correct?
A. (Mr. Large) That is correct.
Q. And the financial sensitivities are identified in the second bullet as future natural gas and coal prices; correct
A. (Mr. Large) The second and third assumptions discussed are gas prices and coal prices, yes.
Q. And net customer cost is most sensitive to those two assumptions; correct?
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A. (Mr. Large) That is correct.
Q. Now, turning to Bates 470.
A. (Mr. Large) And this is in the board of trustees presentation.
Q. Correct. This chart is labeled "Key Financial Takeaways"; correct?
A. (Mr. Large) Yes.
Q. And this is a summary of the most important financial information about the financial aspects of the Scrubber Project?
A. (Mr. Large) I would say it puts in words the numerical analyses and sensitivity analyses in one place, yes.
Q. And this is the page that's called "Key Financial Takeaways." And you want the NU Board of Trustees to take this information away with them as significant. Is that a fair characterization?
A. (Mr. Large) Well, we want them to take all of the information away as significant. But this is an attempt to highlight or provide a summary.
Q. Now, PSNH did not provide this page of Key Financial Takeaways in the September 2nd,
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2008 comprehensive report; correct?
A. (Mr. Large) We did not.
Q. And this was not provided to the Electric Utilities Restructuring Legislative Oversight Committee in 2008; correct?
A. (Mr. Large) I don't believe so, though I don't know that I participated directly in that process. So I do not believe so, but I can't testify to that.

MS. CHAMBERLIN: Well, I'd
like to offer an exhibit. I have -- well, I don't need to offer it. It's Long Exhibit No. 16, so it's already included as an attachment to the Long deposition. But I can provide it to the witness. It's a data request that says, "Please provide copies of all reports to the Legislative Oversight Committee on Electric Restructuring." And it's a Staff 012 and answered by Mr. Smagula.
(Ms. Chamberlin hands document to Mr . Large.)
A. (Mr. Large) Thank you.
Q. Let me know when you're ready.
(Witness reviews document.)
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A. (Mr. Large) Thank you.
Q. And so your answer to the question: "PSNH did not provide this page of Key Financial Takeaways to the Electric Utility Restructuring Legislative Oversight Committee"?
A. (Mr. Large) Well, I apologize for only having scanned the entire document. But I believe that to be true.
Q. All right. Looking at Bates 467 --
A. (Mr. Large) Ms. Chamberlin, would you like this back?
Q. You can keep that.
A. (Mr. Large) The piles grow.

CMSR. HONIGBERG: I'm sorry,
Ms. Chamberlin. Which page are we looking at?

MS. CHAMBERLIN: Bates 467.
A. (Mr. Large) I have that.
Q. And this is the chart labeled "Financial Sensitivities."
A. (Mr. Large) Yes.
Q. And 467 is the one provided to the NU Board of Trustees; correct?
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A. Yes.
Q. And it's the same chart that was provided to the Risk and Capital Committee; correct?
A. (Mr. Large) There are slight variations, but...
Q. Well, I'll let people review that on their own.

I'm interested in one column. And the last column is labeled "Net Customer Impact Break-Even Rates."
A. (Mr. Large) Yes.
Q. And am I correct that this column shows the number -- looks like they're dollars -required for each assumption for customers to break even?
A. (Mr. Large) Yes.
Q. So, looking at capital costs compared to the base case, capital costs of the Scrubber could go up about $\$ 200$ million more before reaching the break-even point?
A. (Mr. Large) So, to be clear, that presumes all of the other assumptions are held constant; so it's changing only that one assumption. But what you said is true, with
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that understanding.
Q. Yes. And for natural gas prices, natural gas prices could drop 90 cents before hitting the break-even point?
A. (Mr. Large) Again, all other assumptions being consistent, yes.
Q. And coal prices could go up 47 cents before hitting the break-even amount?
A. (Mr. Large) I think it's more than that.
Q. You can do the math. It's probably -- you're probably better at it than I am. Just comparing the base case and the coal price.
A. (Mr. Large) The right-hand column is $\$ 5.49$, and the base case is \$4.82. So...
Q. Well, I tried to do the math, and this is what I came up with...
A. (Mr. Large) Sixty-seven cents.
Q. Yeah, 67 cents. All right. So, coal prices could go up 67 cents before hitting the break-even amount; correct?
A. (Mr. Large) Yes.
Q. All right. Thank you. That's all I have.

CMSR. HONIGBERG: I think this
is a good time for a break, so we will take
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15 minutes and come back at five minutes to eleven.
(Whereupon a recess was taken at 10:39
a.m., and the hearing resumed at 10:56
a.m.)

CMSR. HONIGBERG: Who's up
next? Mr. Patch.
CROSS-EXAMINATION
BY MR. PATCH:
Q. Good morning, Mr. Large and Mr. Vancho. I'm Doug Patch. I am counsel for the TransCanada affiliates who are intervenors in the docket.
A. (Mr. Large) Good morning, Mr. Patch.
A. (Mr. Vancho) Good morning.
Q. During the time frames that are most at issue in this docket, ' 08 and '09, Mr. Large, you were the Director of Business Planning and Customer Support Services for PSNH; is that correct.
A. (Mr. Large) Yes.
Q. And included in those responsibilities was the preparation of the 2007 LCIRP; is that correct?
A. (Mr. Large) Yes.
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Q. And that's what's been marked as Exhibit 73.
A. (Mr. Large) Mr. Vancho, you were the Manager of Financial Planning and Analysis during that time period; is that correct?
A. (Mr. Vancho) That's correct.
Q. And am I correct that you, I believe, both are the ones who prepared the assumptions about the price of natural gas and the price of coal that were used in the presentations made to the RaCC and the board of trustees in June and July of 2008? Is that correct?
A. (Mr. Large) I had responsibility for that more so than Mr. Vancho.
Q. Okay. Well, I'd like to introduce and show you a copy of a response to a TransCanada data request. It's 6-197. And also 6-196, while we're at it.

CMSR. HONIGBERG: Two separate exhibits?

MR. PATCH: Yes.
CMSR. HONIGBERG: So, 119 and
120.
(The documents, as described, were herewith marked as Exhibits 119, 120
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for identification.)

CMSR. HONIGBERG: So, 119 is TC 6-197 and 120 is TC 6-196.
(Ms. Goldwasser distributes documents.)
MR. BERSAK: Thank you.
BY MR. PATCH:
Q. And do you have those in front of you?
A. (Mr. Large) Yes, we do.
Q. And the question at 197, which has been marked as Exhibit 119 is, were either of you involved in preparing the presentations made to RaCC and the board of trustees, and were either of you present for those presentations. And there's a description there of both of your involvement; correct?
A. (Mr. Large) Yes.
A. (Mr. Vancho) Yes.
Q. And then the next exhibit, Exhibit 120, was a response to 196, 6-196, asking: Did you prepare the assumptions on natural gas prices; and if you did not, who did? Please describe your level of involvement. And as I read that, Mr . Large, you prepared the assumptions on natural gas prices that were
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included in the report presented by PSNH to the Commission in 08-103 and in connection with Senate Bill 152; is that correct?
A. (Mr. Large) Yes, that's what $I$ was trying to say in your initial questions. Yes.
Q. And those assumptions are the same as the ones that are in the documents contained in the response to Staff 2-2, which are the RaCC and the board of trustees presentations; correct?
A. (Mr. Large) Yes. We strove to be consistent throughout the process.
Q. Did you have any conversations with Mr. Long at all about those presentations?
A. (Mr. Large) Oh, absolutely. Mr. McDonald, as well as Mr. Smagula, many others.
Q. Do you know, then, why Mr. Long, during the course of his deposition, would not have been able to identify either of you as the person who did this? And I'm looking at Page 78, Line 20 [sic] of the deposition.
(Witness reviews document.)
SP. CMSR. IACOPINO: Page 78,
Mr. Patch?
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MR. PATCH: Page 78, Line 20. (Witness reviews document.)

BY MR. PATCH:
Q. Do you see on that page where I asked him the question, "Do you know who did this forecast?" Do you see his response?
A. (Mr. Large) I do.
Q. And the response was "No"; correct?
A. (Mr. Large) Response there listed is "No," yes.
Q. And you said you had a number of
conversations with him?
A. (Mr. Large) During this period of time, I was a direct report to Mr . Long. He and I would speak many times a week. During courses of time when we were working on these kinds of analyses, we might speak many times a day. I had extensive discussions and conversations, as I said, with Mr. Long, Mr. McDonald and others. So...
Q. Did you talk with him about what information to put in the various presentations?
A. (Mr. Large) He was a contributor to the development of the discussion documents, yes.
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\approx \quad 1 \quad 1 \quad-\quad-1
$$ others. So...

Q. Did you talk with him about what information
Q. And in particular, I'm focusing on the differences between the presentation to the board and not to the Staff. Did you talk to either of those gentlemen, Mr. McDonald or Mr. Long, about that?
A. (Mr. Large) Yes, I believe I referred to that while discussing things with Mr. Sheehan earlier.
Q. And so you took your direction on what to put in the Staff presentation from both of them; is that correct?
A. (Mr. Large) I think "direction" is an overstatement. They certainly were engaged in the process. They would have had final authority to determine what we did or didn't include. But it would be unfair to say that they told me what to do and I did it.
Q. And you both were present for the RaCC

Committee presentation, as I understand it; correct?
A. (Mr. Vancho) Yes.
Q. And you both worked on the presentation for the board of trustees but were not present for that; correct?
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A. (Mr. Large) Correct.
Q. And Mr. Large, you prepared the presentation to Staff and the OCA that was used for the July 8th meeting with them to discuss the Scrubber. I'm going to ask you to look at Response TC-199.

MR. PATCH: I'd ask that that be marked as well.

CMSR. HONIGBERG: This is 121.
(The document, as described, was herewith marked as Exhibit 121 for identification.)
A. (Mr. Large) To be complete, I along with the management team at PSNH.
Q. And you said, Mr. Large, you were present for that meeting with the Staff on July 30th; correct?
A. (Mr. Large) Yes.
Q. And you've identified I think already the presentations that were made to the RaCC and the board and the Staff that are in the record; correct? We don't need to walk through that again I don't think, do we?
A. (Mr. Large) I'm fully aware of them, if that's what you're asking. I'm sorry.
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Q. You don't have any reason to disagree that what is in the record about those presentations is any different than what was presented to either -- to any of the three of those bodies in the summer of ' 08.
A. (Mr. Large) I'm confident that the discussion documents that are in the record associated with those three meetings is accurate as to what was delivered on those days, yes.
Q. I want to walk you through a couple differences in the presentation to the RaCC and the board. And so $I$ don't know if you could get those two presentations in front of you. I think they're attachments to your testimony. That may be the easiest place to look for it. And in the first instance, I'd ask you to look at the chart on Page 8 of the RaCC presentation.

MR. NEEDLEMAN: Is there a Bates number for that?

CMSR. HONIGBERG: That's 444.
MR. NEEDLEMAN: Thank you.
BY MR. PATCH:
Q. And I would ask you to look at the
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[WITNESS PANEL: LARGE|VANCHO]
presentation there with regard to the downside and upside assumptions for gas prices and coal prices. And on that chart they are plus or minus 5 percent; correct?
A. (Mr. Large) Yes.
Q. Could you compare that with the board presentation, Page 7. And we can get the Bates page number for that --
A. (Mr. Large) I can help you. It's 467.
Q. Thank you. I mean, it looks like those downside and upside assumptions changed to plus or minus 10 percent; correct?
A. (Mr. Large) That is correct, yes.
Q. Could you explain why?
A. (Mr. Large) Certainly. As part of the RaCC
discussion, and recognizing the sensitivities associated with those costs, it was recommended to Mr . Long and Mr . Breed that we consider a broad range of sensitivity associated with coal and gas prices.
Q. That was a discussion with who again?
A. (Mr. Large) Mr. Long and Mr. Breed.

Mr. Long, my boss; Mr. Breed, Mr. Vancho's boss.
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Q. And that was a discussion during the course of the RaCC Committee meeting or subsequent?
A. (Mr. Large) I would say subsequently.
Q. And that change changed the total dollars on the upside and downside; correct?
A. (Mr. Large) They're just corollary numbers.
Q. So, for example: In the RaCC, you know, next to gas prices, if you follow that line across, it's $\$ 213$ million on the downside. Do I have that correct?
A. (Mr. Vancho) That's on the positive side.
Q. I'm sorry. Yup, I have that. $\$ 213$ million on the positive side and $\$ 51$ million on the negative side, for the net present -- under the column "2008 PV of Net Customer Cost." Do I have that correct?
A. (Mr. Vancho) The impact was 81 million up or down, but the resulting change to the NPV was 213 to the positive and 51 to the positive on the other side.
Q. Okay. And then compare that to the board of trustees presentation, Bates 467. What's the difference? What are those numbers that correspond on that chart?
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[WITNESS PANEL: LARGE|VANCHO]
A. (Mr. Vancho) It's just reflecting a higher sensitivity. So, the 81 million is becoming 163 million; so a higher sensitivity. So, the ultimate impact to net present value is obviously different. You have a greater benefit on the board of trustees side on the upside and lower benefit, or a net cost, I guess, on the downside.
A. (Mr. Large) So, simply put: By doubling the band width of the sensitivity from 5 percent to 10 percent on a plus or minus basis, it essentially doubles what the NPV value would be over the life of the Project.
A. (Mr. Vancho) Right.
Q. Now, the board and the RaCC presentations both have historic fuel spread charts; is that correct?
A. (Mr. Large) They do.
Q. And if you could just focus on those for a minute. The board one includes the numbers for the average spread for the last 15 years; correct?
A. (Mr. Large) I'm working my way towards that slide, if $I$ may, Mr. Patch.
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Q. Okay.
(Witness reviews document.)
A. (Mr. Large) I apologize, but I'm not finding it in the RaCC presentation at the moment. Oh, I stopped too soon. I have it now.
Q. Bates Page 469?
A. (Mr. Large) 459, I believe, and 469.
Q. Okay. Good. So, 459 is what was presented to the RaCC, and 469 was what was presented to the board; correct?
A. (Mr. Large) Yes.
Q. And 469 has some numbers on there that weren't presented to the RaCC; am I correct?
A. (Mr. Large) That don't appear on the RaCC document.
Q. So, by making that distinction, you're suggesting that maybe the numbers were actually given to the RaCC, but just not put on the document?
A. (Mr. Large) That's correct.
Q. Is that your specific recollection?
A. (Mr. Large) It is not my specific recollection, no.
Q. You're just saying that's a possibility.
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A. (Mr. Large) Yes.
Q. But there are differences, are there not, between the two presentations, at least that we pointed out?
A. (Mr. Large) The circles and the discussion of average spread are different between the two presentations, yes.
Q. Can you explain why?
A. (Mr. Large) Yes. Yes, I certainly can.

To add additional information to the board of trustees, recognizing that Northeast Utilities is a very large company, and within this very large company, PSNH is the only portion that is a regulated generation entity, we felt it important to try and provide additional context for the board of trustees that deal with these issues less regularly, in a less detailed way than the Risk and Capital Committee.
Q. Mr. Sheehan asked you a similar question yesterday. I'm going to ask it a little bit differently.

If we were to accept PSNH's argument about the law being a mandate, then isn't it
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[WITNESS PANEL: LARGE|VANCHO]
irrelevant whether the Project would be economic for customers?
A. (Mr. Large) Not necessarily in the minds of Company management and the board of trustees. I think they would want to know the impact on customers. They'd want to know the impact on as many entities that we have effect on as is reasonable.
Q. But it's only a matter of informing them. There was no -- was there no break-even point there? Was there any point at which you think the board of trustees, for example, would have chosen not to proceed with the Project or would not have approved the Project?
A. (Mr. Large) I couldn't speculate as to where that would have occurred. If in fact we had a different estimate of any of these elements at the time of the analysis that we conducted, the same process would have transpired, would have taken place. We would have come to the PUC to advise them. We would have responded to all inquiries that were presented to us. What would have
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transpired, $I$ don't know.
Q. But if you look at Page 467, Bates page -and I think Ms. Chamberlin had asked you a couple questions about this. But the number at the top, the $\$ 684$ million in the "Capital Cost" line under "Net Customer Impact Break-Even Rates," assume for a minute that it had been $\$ 700$ million, or something in excess of that. Do you believe the board would have approved at that point in time? Do you believe they had the option not to approve I guess is really the appropriate question? Do you think they had the option to say, No, we're not going to go ahead because it exceeds that amount? I'm asking you to assume hypothetically that it did.
A. (Mr. Large) I understand your request for me to consider it hypothetically. I believe that at those values, the board would have approved, as they did, and that we would have moved forward with the process in very much the same manner that we did at 457.
Q. And if that had happened, what information would you have provided to the Commission or
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the Commission Staff that's any different than what you did provide? Again, assuming that hypothetical.
A. (Mr. Large) Again, I believe that the information presented would have been very consistent with what we've provided.
Q. So you wouldn't have told them about this break-even; you wouldn't have told them about this 684; you wouldn't have told them about the $\$ 5.49$ spread.

MR. NEEDLEMAN: I'll object to the question. Multiple questions. And part of it is contradictory to evidence that's already been presented.

CMSR. HONIGBERG: Why don't
you break it up into multiple questions. MR. PATCH: It's a single -CMSR. HONIGBERG: Well, you asked him a series of questions in there. BY MR. PATCH:
Q. Okay. Let's take them one at a time. What if -- assume, hypothetically, that the number, the $\$ 684$ million, had been higher.

What information would you have presented to
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the Commission or Staff with regard to that particular figure?
A. (Mr. Large) Simply taking the information, the changed information, and inputting into the discussion document that we talked about on July 30 th would have identified that the net present value to customers would have been zero as opposed to a positive number, a positive benefit to customers. We would have shared that information.
Q. With Staff and with the Commission.
A. (Mr. Large) Yes.
Q. And do you think that would have produced a different result if you had presented that?

MR. NEEDLEMAN: Objection.
BY MR. PATCH:
Q. Again, hypothetically, assume for a minute.
A. (Mr. Large) And the answer is: I don't know, in that the process to change the law and our requirement to comply with it was not the Staff's, not the Commission's, and not the Company's.
Q. On Page 3 of your testimony, Line 20, 1 believe it is --
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A. (Mr. Large) Mr. Patch, are we finished with these? I'd just like to reassemble --
Q. Probably not. We'll probably come back to them at some point.
A. (Mr. Large) Just trying to manage the chaos here if I can.
Q. I understand.
A. (Mr. Large) Page 3 did you say?
Q. Page 3 of your testimony. I'm looking at Lines 19 through 24. And this is where you said -- and tell me if $I$ read it correctly -"For such a legislatively-mandated project, economic analysis can be instructive in terms of sanity-checking the investment requirements for budgeting purposes, as well as obtaining a directional understanding of the major drivers of the Project development and execution risk. However, it is not appropriate to consider economic analysis as a stand-alone product to confirm the investment in a project that is required by law, such as the Scrubber." Did I read that correctly?
A. (Mr. Large) Yes, you did.
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Q. So I wonder if you can explain to me "directional understanding of the major drivers of project development and execution risk." What does that mean?
A. (Mr. Large) Certainly. The economics portion is the pages that we've just been speaking to in the RaCC board presentation documents. If something goes up, what does it do? If something goes down, what does it do? Execution risk is not part of that analysis. Execution risk is, are we able to get contractors to build it? Are there engineering firms that can construct it? What if there's a lengthy, snowy winter in New Hampshire? How will that impact your ability to complete the Project on time? Those are my short list. Probably much, much longer list of what execution risk would look like.
Q. So, even though the Project was mandated by law as PSNH has argued in this docket, the board needed to know about the uncertainty and the economics, and they needed to know about the upsides and downsides from the base
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case; correct?
A. (Mr. Large) It was appropriate for them to know. And our corporate policy required that, for a capital investment in excess of $\$ 50$ million, we needed to present that information to them. It would have been appropriate at the $\$ 250$ million original price. Our corporate requirements would have required that.
Q. So the analysis we're talking about that was done -- I mean, there was one analysis done in 2008; correct? That's the one referred to in the RaCC and the board, although it changed a little bit between the two; is that fair to say?
A. (Mr. Large) I don't think the analysis changed. I think the presentation of information borne out of the analysis was different -- as we pointed out, 5 percent versus 10-percent band width. But there, in fact, was a second analysis that was undertaken after the August 22nd Commission secretarial letter -- or additional analysis. I don't want to call it a second.
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Q. And how is it different than the one that was presented to the RaCC and the board?
A. (Mr. Large) In the -- well, Mr. Vancho's probably better able to give those definitions.
A. (Mr. Vancho) Those were the comparisons to building a natural gas facility or a coal facility instead of just the market comparison that we did in the initial analysis.
Q. But the assumptions were basically the same, weren't they? Were any "key assumptions," as you refer to them, in the '08 report any different?
A. (Mr. Large) No. We strove over that few months' period of time to keep the assumptions as consistent -- perfectly consistent -- seemed as though I was going to offer leeway. The assumptions were completely consistent.
Q. And that's the last time you ever did an analysis like that in relation to this Scrubber Project; correct?
A. (Mr. Large) That is true.
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Q. And I want to focus for a minute on the presentation made to Staff and the Consumer Advocate. I think it's in the docket in a few different places. I don't remember if it's attached to your testimony, if that's the easiest place to look for it.
A. (Mr. Large) It is not, but I do have a copy of it with me.
Q. Okay. It's Exhibit 39, I believe, in the record, and then also Exhibit 20-11. And we have marked as Exhibit 43 the response to Data Request TC 6-201, where TransCanada had asked you about differences in the facts that were shared with the Staff as compared to what was presented to the board and the RaCC. And I believe your response was that it was only the presentation format that was different; is that correct?
A. (Mr. Large) No that's not.
Q. Okay. Do you want to read the response? Could you read the response into the record?
A. (Mr. Large) I'd be happy to. Do you have a copy of it?
(Mr. Needleman hands document to witness.)
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WITNESS LARGE: Thank you, Mr.
Needleman.
A. (Mr. Large) The response says, "The facts shared with the PUC Staff and OCA were the same as those shared with the RaCC. The presentation formats were different since the material was being presented to different audiences."
Q. And so I heard you testify in response to, guess it was actually in response from questions from Mr. Sheehan this morning, that it's your recollection that the facts about the $\$ 5.29$ per MMBtu and the fact about the gas/coal spread averaging $\$ 3.18$ over the last 15 years were actually presented orally in that meeting, but were not presented in writing; is that correct?
A. (Mr. Large) They were not presented in writing. And I spoke -- when speaking with Mr. Sheehan, I referred to the $\$ 5.29$ per million Btu coal/gas spread.
Q. So that's why you answered this data request the way you did, because you believe that you presented those facts verbally to the
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Commission Staff and to the OCA.
A. (Mr. Large) That is my testimony.
Q. Now, were you here when I asked Mr. Frantz a couple questions about this earlier in this docket?
A. (Mr. Large) I was.
Q. And I would just -- we do have a transcript of that particular testimony, and I would just like to refer to that. And I asked him a question -- and this is on Page 110 of the afternoon session of October 15th -- 14th sorry.

And I said, "Okay. We'll start with the \$5.29."

And his response was, "We did not receive the \$5.29."

And then I asked him, "And did you receive the $\$ 3.18$, the actual spread over the historical period going back to 1993? Was that a fact you received?"

And his answer was, "Not in the July 30th, 2008 submission."

Do you recall him saying that?
A. (Mr. Large) Not as clearly as you've been
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able to read it back from the record.
MR. GLAHN: Mr. Patch, show us the transcript he's reading from. We don't have it in front of us.

CMSR. HONIGBERG: Nor do we.
MR. PATCH: Well, I can make copies during a break if it would be appropriate. But it's the record of this proceeding.

MR. GLAHN: Just show it to Barry.

CMSR. HONIGBERG: Well, why don't you just show it to Mr. Needleman, since it's a document you're reading from. You want everyone to assume it's been read accurately.
(Ms. Goldwasser hands document to Mr. Needleman)

MR. NEEDLEMAN: Thank you.
BY MR. PATCH:
Q. And I'd ask you to look for a minute at Exhibit 39, which is an exhibit that PSNH introduced when they were doing
cross-examination of Mr. Frantz. And it
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-
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contains Mr. Mullen's copy of the presentation with his notes on the copy of that presentation. I don't know if you've seen that document.
A. (Mr. Large) I have seen it. I don't have one with me today.
(Mr. Sheehan hands document to witness.)
BY MR. PATCH:
Q. I'd ask you to take a look through there and see if you see any notes on there from Mr. Mullen indicating that he or the members of Staff that were present at that meeting were told about the $\$ 5.29$ or the $\$ 3.18$.
(Witness reviews document.)
Q. Do you see any note like that in there? If you do, if you could identify it for the record.
A. (Mr. Large) $I$ see a number of notes from Mr. Mullen. I'll look through the whole thing, if I can.
(Witness reviews document.)
A. (Mr. Large) $I$ do not see a reference. I don't see him having marked $\$ 5.29$ on the page. But I do see that he underlined the
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statement with respect to the third bullet on the page, "most sensitive to the coal/natural gas price spread and far less sensitive to capital cost or RGGI cost increases."
Q. Well, don't you think if you'd given him that information it would have been written right next to where that was underlined?
A. (Mr. Large) No, not necessarily, and the reason being is that we -- as I indicated in previous discussion, we expressed our very significant concerns about discoverability when we were at this early stage in the process.
Q. I think -- have you reviewed Mr. Hachey's testimony that was filed in December of last year in this docket?
A. (Mr. Large) To a very limited extent.
Q. Do you remember that he made an issue of the differences -- in his testimony, the differences between what was in the board presentation and the RaCC and then what was in the Staff presentation? Do you recall that?
A. (Mr. Large) I do not.
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Q. And you filed rebuttal testimony in this docket, what, about six months later?
A. (Mr. Large) I can tell you when we filed the testimony. Its relationship to Mr. Hachey's testimony -- I can do the math, but I don't have that. I'm sorry.
Q. Okay. Well, would you accept, subject to check, that it was about six months later that you filed rebuttal testimony, six months after you would have had his testimony?
A. (Mr. Large) I'm happy to accept that, subject to check.
Q. And you didn't put anything about this in your rebuttal testimony, did you? And when I say "this," what I mean is about the fact that you orally disclosed to Staff the \$3.29 [sic] and the $\$ 3.18$ numbers.
A. (Mr. Large) I did not include it in my rebuttal testimony, no.
Q. Why not?
A. (Mr. Large) I didn't know it was necessary to rebut Mr . Hachey on that point.
Q. Your counsel, in a question to Mr. Hachey, suggested that Staff and the OCA are smart
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people, so they didn't need to have the $\$ 5.29$ spread between the price of natural gas and coal that was required to make the Project economic presented to them. Do you remember him asking that question?

MR. NEEDLEMAN: Well,
before -- could we see the portion of the transcript and allow the witness to read it?

MR. PATCH: I don't have that.
A. (Mr. Large) And I can identify that I was not here during the cross-examination of Mr . Hachey. So, no.
Q. Would you accept, subject to check, or hypothetically, however you want to accept it, that that's in fact a question that your counsel asked of Mr . Hachey?

MR. NEEDLEMAN: I'm sorry.
Could I hear the question again?
CMSR. HONIGBERG: Yeah, I need to hear the question, too.

BY MR. PATCH:
Q. Your counsel, in a question to Mr. Hachey, suggested that Staff and the OCA are smart people, so they didn't have to have the $\$ 5.29$
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spread between the price of natural gas and coal that was required to make the Project economic presented to them.

CMSR. HONIGBERG: Mr. Patch, are you purporting to quote a question there, or is that your notes of a question that was asked? Because I don't remember a question coming out like that. It may have been the implication of a question, but $I$ just don't remember the question being asked like that.

MR. PATCH: Okay. Well, I'm quite sure it was, and we'll come back to that. We'll find a cite.

CMSR. HONIGBERG: Okay.
(Commission conferring)
BY MR. PATCH:
Q. I'm going to ask you to look at the Risk and Capital Committee presentation again, Page 18.
A. (Mr. Large) I have that.
Q. There's a point in that presentation where you indicate that the loss of Merrimack Station "would call into question the viability of operating the remaining
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generating assets as a fleet." Do you recall that?
A. (Mr. Large) I do.
Q. Now, I guess I want to understand why you would even raise that possibility of not operating Merrimack Station if you believed it was a mandate to proceed with the Scrubber Project.
(Witness reviews document.)
A. (Mr. Large) It was feasible that someone could ask: What do you do if you don't have Merrimack? And we were being informative and preemptive in making clear that we viewed the importance of the operation of the fleet, specifically including Merrimack, and that with the requirements of the Scrubber Law, it further integrated the operation of our power generation fleet.
Q. So, if for some reason you hadn't proceeded with Merrimack Station, if Merrimack Station had gone out of operation in the summer of 2013 because the Scrubber Project hadn't been built and you couldn't comply with the law, are you saying that that would have put in
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jeopardy, as you say in that particular bullet, the operation of the rest of the generation fleet?
A. (Mr. Large) Mr. Patch, would you direct me specifically to that bullet? It would be helpful.

CMSR. HONIGBERG: Mr. Patch, if you could give us a Bates number. I'm not sure any of us are on the same page you're looking at.

MR. PATCH: I'm sorry. I'm flipping back and forth, and it's going to take me a minute to find it.
A. (Mr. Large) I think I can help. It's 450. BY MR. PATCH:
Q. Thank you. And it's right at the bottom of that page; correct?
A. (Mr. Large) It is.
Q. So, do you recall my question?
A. (Mr. Large) I'm sorry, no.
Q. My question was: In the event that -- assume hypothetically, I guess I'll begin, that Merrimack Station had not constructed the Scrubber Project, for whatever reason, and
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Merrimack Station no longer operated after July of 2013. Would that have put in jeopardy the rest of the generation assets as a fleet?
A. (Mr. Large) The operation by PSNH of the fleet of generation assets, yes, that's what that phrase is referring to, that the case for continuing to operate them or own them would be diminished absent Merrimack.
Q. Why?
A. (Mr. Large) Clearly, at that point in time, as we were considering these facts, Merrimack Station produced the greatest amount of energy from our operation. It would be fair to say that it included and received the greatest amount of attention from not only PSNH generation management, but from many of the external entities, many of whom are here today. So it was the centerpiece of our operation at that juncture in time. And to have that separated would have made, administratively, things less beneficial for customers, I think, on a cost-per-kilowatt-hour basis. But as well,
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the integrated nature, particularly as it relates to the New Hampshire Clean Power Act, would have made it administratively difficult also.
Q. I think you've already testified that you were involved in the preparation of the information that was submitted to the Commission on September 2nd of '08 in 08-103 docket; correct?
A. (Mr. Large) Yes.
Q. And that filing, which is at Exhibit 20-7, an attachment to the deposition, and I think it may be in one or two other places in the docket -- I'd ask you to get that particular filing in front of you, if you could.
A. (Mr. Large) It's also Attachment 5 to our testimony.
Q. Okay. And that particular filing included a cover letter from Mr. Long of five pages; correct?
A. (Mr. Large) Yes.
Q. And then there's a report of 16 pages; correct?
A. (Mr. Large) Well, I come up with 11 pages of
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report followed by attachments.
Q. Okay. I think you're right. I miscounted because $I$ was assuming the page numbers at the bottom referred to the beginning of the report. But they include the five-page letter; is that fair?
A. (Mr. Large) Yes.
Q. So there are eight attachments, as I understand it. I'll just read them off quickly, and you tell me if I've left anything out.

A Wall Street Journal article from May of '08; FERC's Office of Enforcement's Report from June 19th of '08; a confidential detailed project cost breakdown; a one-page spreadsheet regarding net present value of revenue requirements; an SNL article from July 1, 2008; an SNL article from June 26, 2008; and then a 67-page memorandum of law arguing that the Commission's authority with regard to the Project was limited because the law was a mandate; and then, also included was a motion for protective order on contract and bid information.
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A. (Mr. Large) So, if it's okay that I not count the number of pages in the memorandum of law, I'm happy to agree with your statement.
Q. Okay. Thank you.

What SO2 allowance price assumption did you use for the .03 estimate that was in this filing?
A. (Mr. Large) Five hundred dollars per SO2 allowance.
Q. And what overall kilowatt demand assumption did you use for that estimate?
A. (Mr. Vancho) It would have been about 8.7 million megawatt hours. I can get the exact number.
Q. At Page 6, at the bottom, 1 want to direct your attention to --
A. (Mr. Large) Of the report, Mr. Patch? I'm sorry.
Q. Yes.
A. (Mr. Large) Thank you.
Q. I mean, it's the first page of the report, but it says Page 6 on the bottom on the right. Bates page, on the attachments to your testimony, 486. Let me know when you're
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there?
A. (Mr. Large) I have it, yes. Thank you.
Q. Could you read the last sentence on that page into the record.
A. (Mr. Large) The first portion before "Scrubber Status"?
Q. No, the last, the very last sentence on the page.
A. (Mr. Large) I'm sorry. Okay. It says, "To date, PSNH has spent approximately $\$ 10$ million on the Clean Air Project."
Q. And this report makes numerous references to the need to avoid delays in order to save customers money, I think is the bottom line on it. Is that fair to say? And I can direct you to places in the report that it says that, if that would be helpful. Is that your recollection?
A. (Mr. Large) Absolutely. And having to do with the incentives that Mr . Sheehan and I spoke about earlier, that $I$ think $I$ finally got right, and as well the reduction in accumulated funds used during construction, which would become fairly significant on a
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large project like this.
Q. And then on Page 12 , it says that PSNH has been actively engaging in negotiating contracts, though none have been signed as of then. I mean, it doesn't say "though none have been signed." But I think it says, if you look at $F 1$, the first sentence, "PSNH has been actively engaged in negotiating contracts for various aspects of the Project." Correct?
A. (Mr. Large) That is the first sentence of Section F1, yes.
Q. You don't have any reason to disagree with that statement.
A. (Mr. Large) No.
Q. And then at the top of Page 14, that Paragraph A, I have a couple questions about this. It begins, "PSNH has assured the cost of energy produced by Merrimack Station will remain lower cost for customers than reasonable potential alternatives, even when the costs of the Clean Air Project are included." Did I read that correctly?
A. (Mr. Large) That's what printed there, yes.
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Q. And then, in that same paragraph, it goes on to say that an analysis, the net present value analysis, basically demonstrates the continued economics of installing the Scrubber, and that's what provides the assurance. I didn't read all those words, but isn't that essentially what it says?
A. (Mr. Large) The result of the analysis that we conducted indicated that, with the assumptions that we utilized, operation of the Scrubber at Merrimack Station was in the interest of customers. Yes.
Q. And this is the same analysis that was on Pages 7 and 8 of the July 15 presentation to the board?
A. (Mr. Large) It's clearly built off of that, yes. And I'm quite confident that they're perfectly consistent.
Q. Okay. And so, on Pages 7 and 8, then, if we can look back at that --
A. (Mr. Large) To which, Mr. Patch?
Q. The July presentation.
A. (Mr. Large) Okay. Thank you.
Q. Page 7 and 8 includes the 2012 gas prices; is
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that correct?
A. (Mr. Large) Yes, it does.
Q. And Page 8 includes a reference to the assumed gas prices also; correct?
A. (Mr. Large) All right. I apologize. So, Page 7 and 8 of the board presentation is in agreement with what's shown on Page 14 of the report? Is that what you're asking?
Q. Well, I'm just asking if it's the same analysis that we're talking about there. Isn't the same analysis that we're talking about on Page 14 of the September 2nd, '08 filing the same analysis that's on Pages 7 and 8 of the presentation to the board?
A. (Mr. Large) I'm sorry. I thought I had said that. Yes.
Q. Okay. And then, on Page 14, under Paragraph D, it refers to the sensitivity analyses that were conducted. And again, are these the same ones that are referenced in the board presentation --
A. (Mr. Large) Yes, they are.
Q. -- that are on Page 7?
A. (Mr. Large) Yeah, they are.
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Q. And again, that includes gas and coal prices and an implied gas/coal price spread; correct?
A. (Mr. Large) Yes, it does.
Q. So then, I have to admit I'm a little confused by the response you gave to Mr . Sheehan with a couple of questions he asked yesterday about why you didn't list gas under the primary assumptions and why you didn't list gas under the key assumptions in Paragraph B and D on Page 14 of the ' 08 report filed with the Commission.
A. (Mr. Large) I apologize. I need to retract my statement about gas prices being utilized as part of the discussion in this subset Part III.
Q. So they should have been identified on this page in the report to the Commission you're saying?
(Witness reviews document.)
A. (Mr. Large) The analysis in Roman III was a Merrimack Station-only analysis; so it was not a comparative case. So, in the entirety of this report, there is a gas price
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assumption that's utilized for other analyses, not those, that are Part III.
Q. So the references to "sensitivity analysis" on Page 14, and the reference to "detailed net present value of revenue requirements," those are different analyses than the ones that were done for the board, or are they the same? I don't understand.
A. (Mr. Large) I'll strive to clarify. It's a subset of what was provided to the board. Roman III speaks only to the operation of Merrimack Station with the Scrubber, not a comparison to alternatives. So, the "sensitivities" that are spoken to there -"future price of coal," Merrimack Station burning coal, "far less sensitive to... the capital cost," i.e., the cost to construct the Scrubber, or "CO2 allowances," that would have pertained to Merrimack Station.

Sensitivities associated with the Merrimack Station-only analysis were not contingent or dependent on natural gas prices.
Q. I'm going to ask you to look at Page 16. It's marked as Paragraph H --
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A. (Mr. Large) Yes.
Q. -- of this report. It refers to "comparison and sensitivity analyses" being "conducted using the Scrubber and market purchase plus retirement scenarios."
A. (Mr. Large) Yes.
Q. And it says there, "Under the base-case assumptions" -- which are the ones included in the board presentation; correct? Same ones?
A. (Mr. Large) That is correct. We're now in Roman Section IV of the report.
Q. And it says " $\$ 132$ million benefit on a net present value basis over the depreciable life of the Scrubber"; correct?
A. (Mr. Large) Yes, it does.
Q. "Additional net present value benefit of \$34.2 million is attributable to customers associated with the Scrubber..." and goes on from there. But I don't see any mention in there of natural gas prices. Is there some reason you didn't mention it there?
A. (Mr. Large) It's discussed specifically in Item E.
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Q. Do you see anything about the $\$ 5.29$ spread or the $\$ 3.18$ average over 15 years?
A. (Mr. Large) No, it does not.
Q. Does it say anything about a sensitivity analysis here?
(Witness reviews document.)
A. (Mr. Large) I think if you connect $E$ and $H$ of Roman IV, you get a discussion of sensitivity analyses and associate it with those cases.
Q. So, the expectation was that the Commission would connect $E$ and $H$.
A. (Mr. Large) They're all contained in Section Roman IV. So, yes.
Q. Now, I heard you say yesterday that PSNH, quote, unquote, monitored the two Scrubber bills in 2009; correct?
A. (Mr. Large) Yes.
Q. Do you think it's fair to say that PSNH did a little more than "monitor" those bills?

MR. NEEDLEMAN: Mr. Chairman,
I'll object. I think the Commission has previously ruled that any efforts PSNH made with respect to influencing legislation in any way is beyond the scope of the
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proceeding.
CMSR. HONIGBERG: I'm not sure how much more he might be able to answer, but he can answer that question.
A. (Mr. Large) In that we have presentations that are part of this record associated with those bills, "more than monitored" would be appropriate, yes.

BY MR. PATCH:
Q. And you were involved in the preparation of materials submitted to the Legislature in connection with Senate Bill 152. I think you said that in the response to TransCanada at 6-196 that's in the record; correct?
A. (Mr. Large) I was part of the team that was engaged in that effort, yes.
Q. And I'm going to show you a copy of -- well, actually, it's already been marked as Exhibit 32. But this is a copy of -- we asked for all of the materials that PSNH provided to legislators during the 2009 legislative session. It's Exhibit 32. It's the response to TransCanada 1-9. I don't know if you have that in front of you or...
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[WITNESS PANEL: LARGE|VANCHO]
A. (Mr. Large) I do not. I have a copy of it elsewhere, if you want to give me that time. If it's quicker for you to provide it to me, I'm happy to do it that way.
(Ms. Goldwasser hands document to witness.)

CMSR. HONIGBERG: How much more do you think you have, Mr. Patch?

MR. PATCH: Oh, I'd say probably an hour, hour and a half maybe. CMSR. HONIGBERG: We're not going to finish your questioning of these witnesses then. So we'll plan to go till 12:30.

MR. NEEDLEMAN: Sure.
BY MR. PATCH:
Q. Do you have that in front of you?
A. (Mr. Large) We've been able to locate it, yes. So, just confirming, TransCanada Set 1... no. It's originally TransCanada 1, Question 9.
Q. Yes.
A. (Mr. Large) Thank you.
Q. In the upper right-hand corner of the
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attached pages, I'd ask you to look at Page 3 of 36 .
A. (Mr. Large) Page 3 of 36? Yes.
Q. And in the left-hand column there are sort of three paragraphs under the heading. The third paragraph -- ask you if I have read this correctly: "At Merrimack Station in Bow, we're currently halfway through a six-year project to install 'scrubber technology.'" Did I read that correctly?
A. (Mr. Large) Yes.
Q. So this is what was said to the Legislature in March of '09; correct?
A. (Mr. Large) That's correct.
Q. Page 4 of 36 .
A. (Mr. Large) I have it.
Q. Near the top on the left there's "Facts About Cost." And the first -- not the first arrow, but the first bullet under there says, "The difference between preliminary cost estimates in 2005 and firm price contracts in 2008" is the reference there. Did I read that correctly?
A. (Mr. Large) Yes, you did.
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Q. And that's a little different than what PSNH told the Legislature in 2006, isn't it, where they -- and we have this in the record -where PSNH said -- specifically told different people that it was a "not-to-exceed number" of $\$ 250$ million. So, here we are in 2009, and they're referring -- PSNH is referring to this as "preliminary cost estimates in 2005." Did I read that correctly?

CMSR. HONIGBERG: Wait. There's an objection coming.

MR. NEEDLEMAN: I'm going to object to the characterization of what PSNH supposedly told the Legislature in 2006. If there's a specific document he wants to put in front of Mr . Large, I'd ask that he do so.

CMSR. HONIGBERG: Mr. Patch.
MR. PATCH: Well, I guess I
can do that. I think we all know the documents by now. They're the two Nolan letters and there's the fiscal note on the bill in 2006. And I think Mr. Large knows them pretty well, too. Maybe I'd start
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there?
CMSR. HONIGBERG: Well, I think your question said, "PSNH said to the Legislature..." And what you just referenced are Nolan letters and the fiscal note. As far as I know, neither of those are prepared by PSNH. So the premise of the question $I$ think is where Mr. Needleman has a problem, and I agree with him.

MR. PATCH: Okay. I will
reask the question.
BY MR. PATCH:
Q. Mr. Large, do you recall from the 2006 session that there were two letters from Commissioner Nolan to the Legislature, and both of them referenced the fact that, based on information from PSNH, it was a "not-to-exceed number" of $\$ 250$ million? Do you recall that?
A. (Mr. Large) I would benefit from having the opportunity to see them, if I may.
Q. Okay. We'll do that. What I'm going to put in front of you is Attachment 2 to Mr. Hachey's testimony, and it's a January 12,
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2006 letter and an April 11, 2006 letter; one to the House -- the Chairman of the House Committee and one to The chairman of the Senate Committee. And both letters, I think, have very similar language in them. And on Page 2 of the letter to the House, the January letter -- I'm going to read this. Maybe -- I'm sorry. I'll read this and just ask you if $I$ read it correctly.
"Based on data shared by PSNH, the total capital cost for this" -- I can't read it too well from here -- "redesign will not exceed $\$ 250$ million in 2013 dollars or $\$ 197$ million in 2005 dollars." Did I read that correctly?
A. (Mr. Large) Well, the sentence does go on, but --
Q. Okay. If you want to read more, go ahead.
A. (Mr. Large) So there was a comma after the "\$197 million 2005 dollars." And the rest of the sentence says, "a cost that will be fully mitigated by the savings in -(Court Reporter interrupts.)
A. (Mr. Large) So, following the "\$197 million in 2005 dollars," comma, "a cost that will be
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[WITNESS PANEL: LARGE|VANCHO]
fully mitigated by the savings in SO2 emissions allowances." So that is what is stated there, yes. Certainly there's implied that there's some variability in that. It's $\$ 250$ million, not to exceed, as written there, in 2013 dollars, or $\$ 197$ million in 2005 dollars. So there's escalation and things of that nature.

If the discussion is about the use of the words "not to exceed," I'd be happy to have that debate with you.
Q. Well, and then -- sorry. I'm going to ask you to look at the letter that was provided to the Senate, the Chair of the Senate Committee, about four months later, in April, maybe three months, whatever. And it has a similar reference; does it not?

SP. CMSR. IACOPINO: Who is this letter from?

MR. PATCH: Another one from Commissioner Nolan. Both of these are from Commissioner Nolan.

MR. NEEDLEMAN: Where is this
letter?
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[WITNESS PANEL: LARGE|VANCHO]

MR. PATCH: It's Attachment 2, I think it is, to Mr. Hachey's testimony.

MR. NEEDLEMAN: Thank you.
MR. SHEEHAN: 0039.
BY MR. PATCH:
Q. And we can read all of that wording in there. But is it fair to say that it says something very similar to what you just read? And if you want to read it, you can.
A. (Mr. Large) My quick scan is that it's identical.
Q. And then $I$ would ask you -- see if I can find this. I have in front of you the House Bill 1673 from the 2006 legislative session. There's a fiscal note. This is, I believe, Attachment 1 to Mr. Hachey's testimony. It's the third page of that attachment. And I'm going to read to you a sentence from there. "PSNH estimates that the installation will be at a cost not to exceed $\$ 250$ million in 2013 dollars or $\$ 197$ million in 2005 dollars."
A. (Mr. Large) Yes, it does say that PSNH estimates that the cost will not exceed in
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2013 dollars and 2005 dollars.
I do also want to point out that in the first paragraph defining the "fiscal impact," it says that DES and the PUC state that the bill will have "indeterminable impact." So it raises some level of question as to how this was going to impact customers.
Q. Thank you.

Were you here when the Jacobs witnesses testified?
A. (Mr. Large) I was, yes.
Q. Do you recall an exhibit that I showed to them, which was a PSNH response to a data request which said that PSNH considered the $\$ 250$ million estimate to be all-inclusive?
A. (Mr. Large) I would benefit from having the opportunity to see that. I'm sorry. MR. NEEDLEMAN: Is there an exhibit number?

MR. PATCH: There is, and we're just having a -- taking a minute to find it. Sorry. I'll move on from here. We can come back to it. I think it's in the record and it says what it says.
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A. (Mr. Large) Yes.
Q. And then, above the heading with the Scrubber, there's a bullet or an arrow there that says, "Customers are protected on price because every dollar spent will be scrutinized by New Hampshire Public Utilities Commission before it can be recovered through rates." Is that what it says?
A. (Mr. Large) That's what it says, and that's my understanding of what we're doing here today.
Q. And then, over on the right-hand column under "Senate Bill 152," the second bullet says, "A shutdown of Merrimack Station would mean: Higher energy rates for PSNH customers." Is that what it says?
A. (Mr. Large) That's what it says.
Q. And then, if you go down under the second, sort of bolded area on that page, it says, " $\$ 230$ million (more than half the Project cost) has already been spent or contractually committed." Did I read that correctly?
A. (Mr. Large) Yes.
Q. And it goes on to say, "This cost would have
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to be recovered from PSNH customers whether or not the Scrubber installation is completed"; correct?
A. (Mr. Large) It says that, yes.
Q. Were you involved in the preparation of these materials, too?
A. (Mr. Large) Not that specific one, no.
Q. And then, again on Page 7, there's a reference to the fact that --
A. (Mr. Large) Page 7, Mr. Patch?
Q. Well, I said 7, but I think I got the page number wrong. It's actually 12 of 36 . It says, once again, "PSNH is currently halfway through the six-year project. $\$ 230$ million (over half of the cost to engineer and build the Scrubber) has been spent or contractually committed." Isn't that what it says?
A. (Mr. Large) Yes, it does. And just if $I$ can clarify, "halfway through a six-year project" means that, with the passage of the Scrubber Law in 2006, permitting, detailed engineering, all of the preliminary work that's necessary before you really can put a shovel in the ground was what was
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accomplished. So I'm hearing a sensitivity not to having spent half the money, but identifying that we're halfway through the Project. So I wanted to clarify.
Q. Okay. And then on Page 16 of 36 , it says at the top, "Upon completion, the Clean Air Project will add an average of about three-tenths of one cent to PSNH's Energy Charge"; correct?
A. (Mr. Large) Yes.
Q. And that's the same estimate that was provided to the Commission back in September of 2008; correct?
A. (Mr. Large) Yes.
Q. And here we are in March of 2009. Was that estimate updated at all?
A. (Mr. Large) It was not.
Q. Do you think there was any reason to update that estimate? Had things changed over that period of time?
A. (Mr. Large) A number of things had changed, and a number of things would continue to change.
Q. And then on Page 19 of -- sorry. It's Page
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24 of 36 , but it's 19 in the lower right-hand corner. It says, "At every step of the way, we have affirmed pricing to ensure it is in line with marketplace." Do you see that?
A. (Mr. Large)I do.
Q. And then it refers to "independent firms" being retained to provide market analysis and price benchmarking in five different years, 2005 through 2009; correct?
A. (Mr. Large) Yes.
Q. And "confirmed project costs are consistent with market prices for projects of similar scope and size"; correct?
A. (Mr. Large) Yes.
Q. So, I mean, you were telling the Legislature at that point that you had contracted with a number of independent firms to do market analyses; correct?
A. (Mr. Large) Associated with construction materials, labor. This is associated with the building of the Scrubber.
Q. Nothing to forecast natural gas prices; correct?
A. (Mr. Large) We had not done further analysis
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Q. And you didn't hire any expert on economics at the Project. There was no outside person you hired to evaluate the economics of the Project. That was all done internally; correct?
A. (Mr. Large) Yes, it was. We have the capability to do that work.
Q. On Page 24 --
A. (Mr. Large) Lower right-hand corner, 24?
Q. Yes.
A. (Mr. Large) Thank you.
Q. Upper right-hand corner, 29 of 36 . At the bottom it says, "PSNH customers could be on the hook for $\$ 300$ million in stranded costs, with nothing to show for it." Did I read that correctly?
A. (Mr. Large) Yes, you did.
Q. Two hundred and thirty for Scrubber costs and 63 million for undepreciated cost of Merrimack Station in 2013; correct?
A. (Mr. Large) That's what's shown there. So clearly, we rounded up.
Q. And then on Page 25, the next page, under "What A Study Will Not Do," the third bullet
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is, it will not "provide accurate forecasts for the price of oil, gas, coal or financing rates." Did I read that correctly?
A. (Mr. Large) Yes, you did.
Q. Do you think the assumptions that you did in the summer of '08 provided accurate forecasts?
A. (Mr. Large) They were the best information available and knowable at the time.
Q. Why were those any more accurate than what would have been done if a further study had been done?
A. (Mr. Large) They would have contained the same uncertainty and lack of precision that the assumptions utilized in any of these analyses have.
Q. And then, on Page 26, it says, "The only logical purpose for performing a study is to create momentum to derail the Scrubber installation"; correct?
A. (Mr. Large) That's the fourth bullet. Yes.
Q. Where in the information presented to the Legislature is there any information about the importance of the spread between gas and
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coal?
A. (Mr. Large) I don't see it in this document.
Q. These are all the documents presented to the Legislature; correct? That was the question we asked, and this is what we got.
A. (Mr. Large) May I have the question again, please?
Q. I said, where in the information that PSNH presented to the Legislature is there information about the importance of the spread between gas and coal?
A. (Mr. Large) I don't find it in the documents that we've just reviewed.
Q. Are you aware of any other documents other than these?
A. (Mr. Large) I am not aware of any other documents.
Q. And where in those documents is there any information about the spread required to make the Project economic for customers?
A. (Mr. Large) It's not contained in these documents. And I believe these to be all that we've presented to the Legislature.
Q. In TransCanada 1-2, on June 4th of 2012, we
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had asked PSNH to provide all fuel forecasts available to PSNH at the time of the initial decision to construct the Scrubber. And the response that was provided, after the Commission granted a motion to compel on January 11, 2013, was what has been marked as Exhibit 20-16. This is an attachment to Mr. Hachey's testimony. I guess I'd like to direct your attention to that.
A. (Mr. Large) So, I apologize again. I don't have Mr. Hachey's testimony. I probably have the document in my own materials.
Q. Okay. Could we take a minute to try to locate it?
A. (Mr. Large) Can you describe it?
Q. It's the PSNH response to TransCanada 1-2.

SP. CMSR. IACOPINO: Do you have a Bates Stamp page number, Mr. Patch?

MR. PATCH: No, but I can find it for you.
(Pause in proceedings)
CMSR. HONIGBERG: You're going
to be looking at Mr. Hachey's testimony?
That's what $I$ have in front of me, and that
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has Bates numbers that would be helpful.
MR. PATCH: Yes, I'll try to find that. It begins on Bates Page 159.
A. (Mr. Large) I have that now. Thank you.
Q. I believe, in response to some questions from Mr. Sheehan -- I believe in response to some questions from Mr. Sheehan yesterday you had indicated that the EVA forecasts were marked as Bates Pages 591 through 601.
A. (Mr. Large) I'll agree to that, subject to check. I'm sorry. I just don't remember the specifics of the pages.
Q. I guess that's actually a different exhibit number he was using. But let's see if we can use these Bates page numbers here in the document I'm showing you. I think it would be Bates Pages 162.
A. (Mr. Large) I think you want to go all the way to 172.
Q. Yes.
A. (Mr. Large) That's what Mr. Sheehan and I spoke about, the Boston City Gate prices. And I'm confident that these are from the early 2008 EVA forecasts that we received.
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[WITNESS PANEL: LARGE|VANCHO]
Q. I think you said yesterday, from the February '08 forecasts; correct?
A. (Mr. Large) As I looked through my notes, I was able to find that notation. Yes.
Q. And you said these are EVA forecasts.
A. (Mr. Large) That is correct.
Q. Where on those pages does it say they were done by EVA?
A. (Mr. Large) Unfortunately, it does not.
Q. And where in the response to the data request does it say they were done by EVA?
(Witness reviews document.)
A. (Mr. Large) It doesn't refer specifically to "EVA." It does refer to "industry consultants," who was -- EVA would be one of our industry consultants.
Q. There's another response to a data request, TC 3-6, that I'm going to ask be marked as an exhibit. It's my understanding that this is actually an attachment to your testimony, Bates Page 668.

CMSR. HONIGBERG: So we're not going to need to mark anything? Correct?

MS. FRIGNOCA: Could you
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please identify the exhibit number?
MR. PATCH: It's the rebuttal
testimony of Large and Vancho. And I just don't have the exhibit list right in front of me, so... but it's Bates Page 668 in that exhibit.
A. (Mr. Large) So it could be Exhibit 23-15, if that makes it any easier.
Q. Thank you. And from the footnote on the response to this request on Page 668, it looks like you used the EVA forecast from February of '08 for this purpose as well; correct?
A. (Mr. Large) Yes.
Q. I'm going to show you a response to a Deposition Data Request No. 4 and ask that it be marked.

CMSR. HONIGBERG: This will be
122.

MR. PATCH: We're just having
a problem locating that. I'm sorry. I don't know if this would be a good time to take a break for lunch. Or do you want me to move on and come back to it? I'm sorry. There's
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a lot of documents, and we're doing the best we can.

CMSR. HONIGBERG: We could break now. That's fine.

MR. PATCH: Okay. Thank you.
CMSR. HONIGBERG: So we'll
come back at quarter to two.
SP. CMSR. IACOPINO: Mr.
Patch, are you looking for the TC 13, Attachment 4? If it is, that's on Page 48, the Bates Stamp page 48 of Mr . Hachey's testimony, in the book containing Mr.

Hachey's testimony. Just to help you out if that's what you're looking for. I'm not sure.

MR. PATCH: No. Attachment 4?
SP. CMSR. IACOPINO: Yes.
MR. PATCH: No, it's actually
a response to a deposition data request.
CMSR. HONIGBERG: So we'll
break now and come back at 1:45.
Mr. Needleman.
MR. NEEDLEMAN: After we go
off the record.
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[WITNESS PANEL: LARGE|VANCHO]
CMSR. HONIGBERG: All right. 150 Go off the record.
(Whereupon, a lunch recess was taken at 12:24 p.m., with the afternoon session resuming under separate cover.)
[WITNESS PANEL: LARGE|VANCHO]

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## C E R T I FICATE

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

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


Stsan J. Robidas, LCR/RPR
Licensed Shorthand Court Reporter
Registered Professional Reporter
N.H. LCR No. 44 (RSA 310-A:173)
\{DE 11-250\} [Day 6/MORNING Session ONLY] \{10-22-14\}

DAY 6 - MORNING SESSION ONLY - October 22, 2014
DE 11-250 PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE INVESTIGATION OF SCRUBBER COSTS

| AND COST RECOVERY |  |  |  | $\begin{array}{\|l} \text { 97:15;115:13,16 } \\ \text { analyses (23) } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { 111:1,24;126:1 } \\ & \$ 5.49(2) \end{aligned}$ | 120:3,8 | again (26) |  |
| \$ |  |  | 4:12;7:13;16:12, |  |
|  | 82:13;98:10 | 64:12;71:21,24 | 20;22:8;36:7,13; | 25:20;27:5;29:8; |
| \$1,000 (1) | \$50 (1) | actual (1) | 42:24;46:2;59:10; | 30:13,17;31:22; |
| 38:12 | 102:5 | 106:18 | 66:15;82:5;89:22; | 47:10;53:21;57:1,9, |
| \$10 (3) | \$500 (11) | Actually (11) | 91:21;98:2,4;99:17; | 10,11;59:12;78:12, |
| 45:13;60:9;119:11 | 34:10,14,18,20; | 14:2;52:10;55:22; | 111:18;112:18; | 12;87:17;122:19; |
| \$11 (3) | $\begin{aligned} & 35: 8,24 ; 36: 20 ; 38: 22 ; \\ & 39: 1,8 ; 40: 10 \end{aligned}$ | $\begin{aligned} & \text { 94:18;105:10,15; } \\ & \text { 127:18:138:12; } \end{aligned}$ | $\begin{aligned} & 122: 19 ; 123: 1 ; 136: 6 \\ & 138: 8,13 ; 144: 6 \end{aligned}$ | $\begin{aligned} & 124: 2,6 ; 125: 3 ; 126: 9 \\ & 140: 18 ; 143: 16 \end{aligned}$ |
| 26:16;27:12;33:5 $\mathbf{\$ 1 2 0 0}(1)$ | $\begin{aligned} & \text { 39:1,8;40:10 } \\ & \mathbf{\$ 5 1 ( 1 )} \end{aligned}$ | 127:18;138:12; 146:13;147:20; | 138:8,13;144:6; $145: 10$ | analysis (49) |
| $\begin{gathered} \$ 1200(1) \\ 38: 15 \end{gathered}$ | $\begin{array}{\|c\|} \hline \mathbf{5 5 1}(\mathbf{1}) \\ 92: 13 \end{array}$ | 146:13;147:20; 149:18 | 145:10 ${ }_{\text {against (1) }}$ | 26:7,20;27:3;28:2, |
| \$132 (1) | \$55 (1) | add (4) | 15:3 | 22;30:10;31:3,7; |
| 125:13 | 44:21 | 68:15;69:2;95:10; | agree (7) | 32:10,21;33:20;34:5, |
| \$1400 (1) | \$684 (2) | 139:7 | 39:4;63:15;65:18; | 14;36:14;38:22; |
| 38:16 | 97:5;98:23 | added (1) | 72:24;118:3;131:9; | 44:10;46:5;47:16; |
| \$1500 (1) | \$700 (1) | 32:15 | 146:10 | 48:10;57:6;72:2; |
| 34:10 | 97:8 | addition (2) | agreement (1) | 77:12;84:3;96:19; |
| \$197(5) | [ | $\begin{array}{c\|} \text { 5:12;44:2 } \\ \text { additional (8) } \end{array}$ | $122: 7$ <br> ahead (7) | $\begin{aligned} & 100: 13,19 ; 101: 10 \\ & 102: 10,11,16,18,21 \end{aligned}$ |
| 132:13,19,23; | [ | 8:5;31:1;39:19; | $24: 9 ; 41: 2 ; 54: 9$ | $23 ; 103: 10,22 ; 121: 2,$ |
| $\$ 200(2)$ | [Laughter] (3) | 61:19;95:10,16; | 64:1,16;97:14; | 3,8,13;122:10,11,13; |
| 38:13;81:19 | 15:13;22:9;56:5 | 102:23;125:17 | 132:17 | 123:21,22;124:3,21; |
| \$213 (2) | [sic] (4) | Additionally (1) | Air (4) | 126:5;140:7,24 |
| 92:9,12 | 59:24;70:22;86:21; | 50:5 | 49:24;119:11; | analyzed (4) |
| \$230 (2) | 110:17 | additions (1) | 120:22;139:6 | 32:15;44:13;45:19; |
| 137:20;138:14 |  | :22 | alert (1) | :12 |
| \$25 (8) | A | dress (1) | 49:11 | answered (3) |
| 42:23;43:1,20; |  | 9:2 | aligns (1) | 68:17;79:19; |
| 44:17;45:1,22;46:9, | ability (3) | adequate (2) | 61:23 | 105:22 |
| 19 | 74:6,20;101:16 | 72:5;73:2 | all-in (3) | anticipate (1) |
| \$250 (9) | able (13) | administrative (1) | 36:15,21,24 | 4:11 |
| 47:4;102:7;130:6; | 17:15;19:9;23:7; | 8:20 | all-inclusive (2) | anticipated (1) |
| 131:18;132:13; | 25:8;32:17;38:10; | administratively (2) | 135:15;136:13 | 40:24 |
| 133:5;134:20; | 86:19;101:11;103:4; | 115:22;116:3 | allow (1) | anymore (2) |
| 135:15;136:13 | 107:1;127:3;128:18; | admissibility (1) | 111:8 | 43:3;45:1 |
| \$250- (1) | 147:4 | 19:5 | allowance (4) | apart (1) |
| 136:21 | above (2) | admission (1) | 39:8,15;118:5,9 | 19:1 |
| \$3.18 (5) | 38:12;137:2 | 6:3 | allowances (6) | apologize (12) |
| 105:14;106:18; | absent (1) | admit (1) | 25:2,7;42:22;44:8; | 25:1;40:19;46:17; |
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DE 11-250 PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE INVESTIGATION OF SCRUBBER COSTS


