



STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

October 23, 2014 - 8:34 a.m. DAY 7
Concord, New Hampshire MORNING SESSION ONLY

**RE: DE 11-250
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE:
Investigation of Scrubber Costs and
Cost Recovery**

PRESENT: Commissioner Martin P. Honigberg, Presiding
Special Commissioner Michael J. Iacopino

F. Anne Ross, Esq., General Counsel

Sandy Deno - Clerk

APPEARANCES:

Reptg. Public Service Co. of N.H.:
Robert A. Bersak, Esq.
Barry Needleman, Esq. (McLane...)
Wilbur A. Glahn, III, Esq. (McLane...)

**Reptg. TransCanada Power Marketing, Ltd.,
and TransCanada Hydro Northeast, Inc.:**
Douglas L. Patch, Esq. (Orr & Reno)
Rachel A. Goldwasser, Esq. (Orr & Reno)

Reptg. Conservation Law Foundation:
Ivy L. Frignoca, Esq.
Thomas R. Irwin, Esq.

Reptg. the Sierra Club:
Zachary M. Fabish, Esq.

LINKED

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

1 APPEARANCES (CONT'D):

2 Reptg. Residential Ratepayers:

3 Susan Chamberlin, Esq., Consumer Advocate
4 James Brennan, Finance Director
Office of Consumer Advocate

5 Reptg. PUC Staff:

6 Suzanne G. Amidon, Esq.
7 Michael J. Sheehan, Esq.
Thomas C. Frantz, Dir. Electric Div.
Leszek Stachow, Asst. Dir. Electric Div.

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WITNESS PANEL: DAVID HARRISON, JR., Ph.D.
NOAH KAUFMAN, Ph.D.

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1 P R O C E E D I N G S

2 CMSR. HONIGBERG: Is there
3 anything we need to do before we resume the
4 questioning of Dr. Harrison and Dr. Kaufman?
5 I see some people not here, although I guess I
6 think we knew Ms. Chamberlin wasn't going to
7 be here first thing, and it looks like some
8 PSNH people aren't here right now. But it
9 looks like all of the lawyers are here.

10 So, Ms. Amidon, are you ready
11 to continue?

12 MS. AMIDON: Yes. Thank you.
13 And this part of my cross-examination, I will
14 also be employing the talents of Mr. Frantz.

15 CROSS-EXAMINATION

16 BY MS. AMIDON:

17 Q. Good morning.

18 A. (Dr. Harrison) Good morning.

19 A. (Dr. Kaufman) Good morning.

20 Q. As we discussed yesterday, when you developed
21 your two forecasts -- I'm talking about the
22 two time frames -- you said you attempted to
23 use information that was contemporaneous to
24 those time frames; is that correct?

1 A. (Dr. Harrison) That's correct.

2 Q. And if I look at, I think it's Attachment 11
3 to your testimony, which is Bates 384, you
4 use an item called "Increasing costs in
5 electric markets." And the date on that is
6 June 19th, 2008. Could you just identify the
7 source of this document.

8 A. (Dr. Harrison) You mean what is this
9 document? It's a presentation made by FERC
10 on June 19th, 2008.

11 Q. And that's the Federal Energy Regulatory
12 Commission?

13 A. (Dr. Harrison) That's correct.

14 Q. And when you developed your forecast for the
15 early 2009 period, did you update this? Did
16 you use an updated version of this report?

17 A. (Dr. Harrison) Well, just to be clear, we
18 used this document for the range of natural
19 gas plant costs. So we used the range that
20 was taken from this document for the cost of
21 building a new natural gas plant in the 2008
22 analysis. So we used the same prices that
23 were reflected here in the early 2009
24 analysis.

1 Q. So you just didn't pay any attention to any
2 of the other information in this report?

3 A. (Dr. Harrison) We did not use any information
4 from this report. As I said, we were looking
5 at this. It provided a source of range of
6 natural gas -- the cost of building a natural
7 gas plant.

8 Q. And were you aware of that FERC issued a
9 State of the Markets Report -- State of the
10 Markets 2008 Report on April 16th, 2009,
11 which is in the time frame of the second
12 scenario, the early 2009 period that you
13 referred to in your testimony?

14 A. (Dr. Harrison) Well, we're aware that they
15 issue those periodically.

16 Q. And did you look at this report?

17 A. (Dr. Harrison) I don't recall looking at this
18 report.

19 MS. AMIDON: Okay. And this is
20 where Mr. Frantz had some questions because he
21 has reviewed the report. And we would like --

22 CMSR. HONIGBERG: Before Mr. --
23 sorry, Ms. Amidon. Before Mr. Frantz starts,
24 are you talking about the document that you --

1 (Court Reporter interrupts.)

2 CMSR. HONIGBERG: So, do we
3 need to, mark it as an exhibit?

4 MS. AMIDON: I was just going
5 to ask that. Thank you.

6 CMSR. HONIGBERG: Then why
7 don't we do that. That will be?

8 HEARINGS CLERK: 128.

9 (The document, as described, was herewith
10 marked as Exhibit 128 for
11 identification.)

12 CROSS-EXAMINATION

13 BY MR. FRANTZ:

14 Q. Good morning, Doctors Kaufman and Harrison.

15 A. (Dr. Harrison) Good morning.

16 A. (Dr. Kaufman) Good morning.

17 Q. I'm Tom Frantz. I'm Director of the Electric
18 Division here at the PUC. I just want to ask
19 some questions about your time frame for your
20 analysis.

21 But actually, before we even get to
22 that, can you just briefly for us describe
23 your methodology for your modeling?

24 A. (Dr. Harrison) Well, I think I tried to

1 provide that yesterday. Essentially what we
2 did was, as I think I mentioned yesterday, we
3 were looking at the cost to PSNH customers of
4 three alternatives: One was to continue with
5 the Scrubber Project and PSNH, and then
6 comparing those costs, going-forward costs,
7 with the cost of providing the same capacity
8 and generation as with the natural gas
9 unit --

10 Q. I'll be more specific.

11 A. (Dr. Harrison) Yes. Okay.

12 Q. I think we all heard that. You didn't use a
13 production-cost simulation model, though, did
14 you? You didn't model the dispatch of the
15 units, an economic dispatch in ISO-New
16 England to actually look at how much they ran
17 and what the value of the plants were to
18 customers, or the revenue they received as --
19 in your methodology, did you? That's the
20 part I didn't get. I didn't quite get --

21 A. (Dr. Harrison) Well, just to be clear, we
22 were looking at forecasts over the period
23 from 2013 to 2027. So what we needed was for
24 forecasts to be available over that period.

1 And so we have done work with production-cost
2 forecasting models, typically using a
3 smaller, more narrow range than -- a range
4 that is more near-term than long-term.

5 Q. But you didn't do it in your analysis in this
6 case; correct?

7 A. (Dr. Harrison) Well, we made the -- as I
8 said, we did not do production-cost
9 forecasting, use a production-cost model to
10 forecast prices because we needed prices over
11 a longer term.

12 Q. Thank you. All right. Now, if we can turn
13 to the document that you received just a few
14 minutes ago, marked as Exhibit 128. Are you
15 familiar with FERC's Office of Enforcement,
16 State of the Markets Report? It's an annual
17 report.

18 A. (Dr. Harrison) Yes, I am.

19 Q. And this one's dated April 16th, 2009;
20 correct?

21 A. (Dr. Harrison) That's correct.

22 Q. And that basically meets what your definition
23 of "early 2009" would be; do you agree?

24 A. (Dr. Harrison) That's correct.

1 Q. In fact, you looked at the 2009 EIA/AEO
2 forecasts for a basis of natural gas prices
3 and other prices; correct?

4 A. (Dr. Harrison) That's correct.

5 Q. So if we could turn to, first, Page 5 of this
6 document, please. And at the top of that
7 document there's a chart entitled "Summer Gas
8 Prices Reach Unprecedented Levels." Do you
9 see that?

10 A. (Dr. Harrison) Yes, I do.

11 Q. Can you read the lines right below that
12 chart, please?

13 A. (Dr. Harrison) Starting with "Natural gas
14 prices increased..."

15 Q. Yes, please.

16 A. (Dr. Harrison) "Natural gas prices increased
17 during the summer of 2008 to levels never
18 before experienced during any previous summer
19 in the United States. Henry Hub prices
20 peaked at \$13.31 per MMBtu on July 3rd. By
21 the end of the year, Henry Hub spot prices
22 had fallen to \$5.71."

23 Q. And then the chart above that shows that peak
24 and also shows the decline after that,

1 starting basically on probably the trading
2 day of July 5th; would you agree?

3 A. (Dr. Harrison) Yeah, that's right.

4 Q. And then into early 2009, as you defined it,
5 January, February, you know, March, April,
6 okay.

7 A. (Dr. Harrison) Yes, I see that.

8 A. (Mr. Kaufman) We have a very similar chart in
9 our testimony also.

10 Q. We've seen charts that look a lot like this
11 one.

12 Now, if we can turn to Page 9. And this
13 is -- again at the top of Page 9 it has a
14 chart, "Unconventional gas fundamentally
15 changes the natural gas market." Do you see?

16 A. (Dr. Harrison) Yes, I do.

17 Q. And just below that it says, "Today natural
18 gas prices are below \$4 per MMBtu"; correct?

19 A. (Dr. Harrison) Yes, that's what it says.

20 Q. Would you read the second paragraph, please,
21 just into the record.

22 CMSR. HONIGBERG: Before you
23 start, I would ask if you're to read
24 something, try to read slowly so the court

1 reporter can get it down. Thank you.

2 A. (Dr. Harrison) "Natural gas production growth
3 has been concentrated in what has been
4 traditionally referred to as 'unconventional
5 gas fields.' These fields include tight
6 sands, coal-bed methane and shale formations,
7 some of which are located near traditional
8 producing basins, while others are located in
9 remote areas. In 2008, unconventional gas
10 production represented 51 percent of total
11 natural gas production and grew 14 percent in
12 2008, while conventional production declined
13 3 percent in 2008."

14 BY MR. FRANTZ:

15 Q. Which is pretty much what the chart shows
16 above that; would you agree?

17 A. (Dr. Harrison) That's right.

18 Q. Now, the next paragraph actually discusses
19 pricing by FERC's Office of Enforcement. And
20 if you would -- and I think for a complete
21 record it's probably better to actually look
22 at that whole paragraph, and I'll -- and then
23 please read the last -- I want you to read
24 the whole paragraph into the record, please.

1 A. (Mr. Kaufman) I'll read this one.

2 Q. Sure.

3 A. (Mr. Kaufman) "These unconventional gas plays
4 have become economic due to innovations in
5 horizontal drilling and fracturing
6 technology. Unfortunately, there is limited
7 information available on prices needed to
8 cover operating and capital costs, including
9 a reasonable return on investment; and the
10 available estimates are disparate. On the
11 low end, break-even prices range from \$3.30
12 per MMBtu to \$5 per MMBtu. On the high end,
13 break-even prices" -- sorry. "On the high
14 end, break-even price estimates for most
15 producing basins are in the range from \$5 per
16 MMBtu to \$7 per MMBtu range."

17 Q. How do those prices compare to what PSNH
18 assumed and what you used in your forecasts?

19 A. (Dr. Harrison) Well, these -- I think
20 what's -- these prices refer to prices in
21 this period. We were looking at forecasted
22 prices. So I think there's -- these are not
23 really completely relevant to what we were
24 describing, as I think other parts of this

1 page indicated.

2 Q. Did those types of analysis give you pause
3 when you actually looked at the forecasts
4 that you used, though, for the increase in
5 unconventional gas play and those types of
6 prices that actually FERC was discussing at
7 that time?

8 A. (Dr. Harrison) No. Actually, I think if you
9 read this page, it gives -- it makes it clear
10 that there was an enormous amount of
11 uncertainty. So if you look at the sentence
12 that was in the first paragraph on this page,
13 it says, "Going forward, a key consideration
14 is whether the natural gas production will be
15 able to get into balance with consumption in
16 a manner that will not lead to an exaggerated
17 boom-bust cycle."

18 And later, the final paragraph describes
19 the issues associated with break-even prices
20 and drilling activity. And it talks about
21 the concern about slowdown in drilling, and
22 it says, "If sustained, the slowdown in
23 drilling will likely lead to much lower
24 production growth, or even production

1 declines, which could in turn lead to much
2 higher prices when industrial gas demand
3 rebounds."

4 So I think it's important to put this in
5 perspective. This report was a description
6 of the large number of uncertainties in 2008
7 and early 2009. And that's -- of course,
8 this is the state of the market in 2008. So
9 it's designed primarily to explain what had
10 happened in 2008.

11 What we were doing, to get to your
12 question about whether this gives us pause --
13 not at all. I think it reinforces the
14 importance of looking at different forecasts.
15 So when we did our analysis, we looked at
16 forecasts, 2013 to 2027, looking at the
17 futures prices, which is one possible source
18 of future estimated future prices, as well as
19 the EIA forecasts. They were taking
20 information like this and trying to develop
21 forecasts for what these developments meant
22 for the future prices of natural gas,
23 electricity and coal going forward.

24 Q. Had you -- in preparing your analysis, had

1 you read or looked at this before you
2 actually filed your testimony and did your
3 analysis, this actual document from the FERC
4 from April 16, 2009?

5 A. (Dr. Harrison) I don't recall looking at this
6 actual document. But there was a lot of
7 commentary similar to this in other
8 documents, including the EIA documents.

9 A. (Dr. Kaufman) Just to add to that, as Dave
10 mentioned, the earlier document is from FERC
11 from 2008 is where we got our capital cost
12 estimate. I recall looking through a bunch
13 of FERC documents from that time period just
14 to see if they had updated their capital cost
15 estimate. So I assume I would have seen
16 this.

17 A. (Dr. Harrison) Yes, just to supplement that,
18 I did see that this describes -- it doesn't
19 have a new capital cost estimate for the
20 price of -- or the cost of building a new
21 natural gas plant. But it does comment that
22 the prices are about 10 percent higher;
23 therefore, we didn't feel, at least based on
24 this, as I think about this, didn't see why,

1 in that sense, it wouldn't have been
2 something that we would have updated our
3 estimates.

4 Q. Thank you.

5 Can you turn to Page 15 now. And at the
6 top of that page is a chart that says, "Low
7 gas prices changed generating plant
8 dispatch." Do you see that?

9 A. (Dr. Harrison) Yes.

10 Q. And below that it says, "Representative
11 Regional Supply Stack: October 2007."

12 A. (Dr. Harrison) Yes.

13 Q. And would you please now read the last
14 paragraph on that page.

15 A. (Dr. Harrison) I'll do it this time.

16 "As fuel costs changed over the course
17 of the year, the merit order of the
18 electricity supply stack changed as well.
19 This graphic shows that, during the first
20 half of 2008, mildly efficient coal-fired
21 generating plants, using coal from
22 essentially any source, enjoyed an operating
23 cost advantage over natural gas-fired
24 generation."

1 Q. And if you'd turn the page over now, please,
2 the title of the next chart on the top of
3 Page 16 is, "Low gas prices changed
4 generating plant dispatch." Do you see that?

5 A. (Dr. Harrison) Yes, I do.

6 Q. Would you read the paragraph just below that
7 chart?

8 A. (Mr. Kaufman) "As this graphic illustrates,
9 as natural gas prices started falling in July
10 and coal prices stayed high, natural
11 gas-fired generation became competitive with
12 plants that use eastern coal. In some
13 regions, particularly the Southeast and the
14 mid-Atlantic, natural gas-fired generation
15 became competitive with any coal plant that
16 did not use Powder River Basin coal."

17 Q. Do you know what coal Merrimack Station uses,
18 by the way?

19 A. (Dr. Harrison) It uses coal.

20 Q. Do you know which coal it uses?

21 A. (Mr. Kaufman) It's a mixture. It's not from
22 one place, from what we understood.

23 Q. Do you understand that it doesn't use any
24 Powder River Basin coal?

1 A. (Dr. Harrison) That's what I would guess.

2 CMSR. HONIGBERG: Let's go off
3 the record.

4 (Discussion off the record)

5 CMSR. HONIGBERG: Go ahead.

6 MR. FRANTZ: I just have one
7 more question.

8 BY MR. FRANTZ:

9 Q. Would you turn to Page 23 of your testimony,
10 please. You list a number of things that
11 PSNH gave you for information to conduct your
12 analysis; correct?

13 A. (Dr. Harrison) That's correct.

14 Q. If you look halfway down, it says "capacity
15 price forecasts." Can you describe exactly
16 what type of information you used for your
17 capacity price forecasts?

18 A. (Mr. Kaufman) Well, we used a projection
19 given to us by PSNH, as this says. So the
20 reason we had to do that is that some of our
21 forecasts for electricity prices only
22 included the energy component. So this was
23 in order to come up to sort of move towards
24 coming up with a proxy for a wholesale

1 electricity price.

2 Q. Do you know if those forecasts included the
3 four capacity market auctions, or were they
4 actual forecasts? Did you actually examine
5 them in detail?

6 A. (Mr. Kaufman) Not in detail. I mean, Dave
7 mentioned yesterday that we've done a lot of
8 work on similar projects. So we looked at
9 the numbers, saw they were sort of close to
10 what we would expect; they were close to what
11 other models in this very proceeding were
12 predicting. So they seemed within the realm
13 of reasonableness.

14 Q. Did they come from PSNH, or was there a
15 source associated with those capacity
16 forecasts?

17 A. (Mr. Kaufman) I don't recall.

18 MR. FRANTZ: That's all I have.
19 I believe Ms. Amidon has perhaps a few more
20 questions. Thank you.

21 CROSS-EXAMINATION (CONT'D)

22 BY MS. AMIDON:

23 Q. Thank you. I'm on the same page where Mr.
24 Frantz left with you. One of the items that

1 PSNH provided you were estimates of the "sunk
2 costs" that ratepayers would have been
3 responsible for, for the Scrubber Project had
4 it been cancelled at either analysis date.
5 So, did you just accept those numbers, or did
6 you do a sanity check to determine whether
7 those numbers stood up?

8 A. (Dr. Harrison) Well, we did look at what
9 the -- the estimates that were provided to
10 us. But what we understood is that they had
11 gone through a rather detailed analysis for
12 the individual contracts to see for each one
13 of the contracts what would be their
14 obligation to pay if they had stopped in any
15 particular -- in any given month. So it
16 seemed like a very, very detailed analysis
17 that would really require looking at the
18 individual contracts, which we, of course,
19 were not able to do. But it did show what
20 you would expect, is that those costs are
21 relatively small in the early years, but they
22 become very large in the later years.

23 Q. What do you mean by "years"? You were
24 looking at two different periods; right?

1 A. (Dr. Harrison) I think they provided... I'm
2 trying to remember the range. But it was
3 across multiple years from when -- I think
4 starting in 2008 to 2011, 2012 or '13. I
5 don't remember what the final date was.

6 A. (Mr. Kaufman) We just used the two numbers
7 from mid-2008 and early 2009 for our
8 analysis.

9 Q. Okay. And when did you get this information?
10 Do you recall?

11 A. (Dr. Harrison) I don't recall the exact date,
12 no.

13 A. (Mr. Kaufman) It was earlier this year.

14 Q. Sometime before you prepared your testimony,
15 obviously.

16 A. (Dr. Harrison) Yes.

17 Q. Okay. The last bullet item on this list --
18 and I'm not going in any particular order
19 here -- talks about assessments of the
20 implications to Merrimack Station of various
21 potential future environmental regulations.
22 Do you recall what those potential future
23 environmental regulations are that they asked
24 you to consider?

1 A. (Dr. Harrison) Well, yes, I recall the
2 various environmental regulations. Yes.

3 Q. And they were such as?

4 A. (Dr. Harrison) Well, one of them had to do
5 with -- and I think we discussed this -- the
6 316(b), water intake regulations. Another
7 had to do with the possibility of adding
8 controls related to potential effluent
9 guideline limitations. I think a third was
10 coal-combustion residuals, and another had to
11 do with air-emission regulations.

12 Q. And did you review those to see if that was a
13 complete list? Did you do your own analysis
14 of potential future environmental
15 regulations?

16 A. (Dr. Harrison) Well, we do a lot of work on
17 environmental regulation. And based on our
18 sense, those were the major potential
19 environmental regulations. Of course, that
20 excludes the CO2 regulations that we talked
21 about.

22 Q. So you just accepted the list as complete,
23 without doing an independent review of
24 potential future environmental regulations?

1 A. (Mr. Kaufman) One other report that we did
2 take a look at was -- it was an ESS Group
3 report. I think it was submitted to this
4 Commission later than this date. But it did
5 sort of go through what the obligations were
6 for Merrimack Station, in terms of
7 environmental compliance, which, in terms of
8 providing a sanity check that we were
9 covering all our basis, we thought was very
10 helpful.

11 Q. And I'm sorry. "ESS" stands for?

12 A. (Mr. Kaufman) I don't know.

13 A. (Dr. Harrison) I don't recall either. But it
14 was an attempt to look across the range of
15 potential environmental control costs.

16 Q. And the costs -- okay. Thank you.

17 And just forgive me if I'm asking a
18 question that has an obvious answer to you.
19 But I wanted to know what the significance is
20 of looking at natural gas transportation
21 adders for Merrimack Station. I look at
22 that, and it doesn't make any sense to me.
23 So, perhaps you could explain to me why PSNH
24 would provide that information in connection

1 with this review that you did.

2 A. (Dr. Harrison) Well, it had to do with the
3 prices that we got were not delivered prices
4 to Merrimack Station. So we had prices that
5 were -- and I think they were delivered to
6 New England; is that right?

7 A. (Mr. Kaufman) Well, we separated it into two
8 source categories. So, when we used futures
9 market prices, which was to sort of get a
10 sense of what the market expectations were at
11 a given time, those were for Henry Hub prices
12 in Louisiana. So, in that case, it was
13 important not to just use the price in
14 Louisiana, but to use the price delivered to
15 Merrimack Station; so that's where the
16 transportation adders came in. We also used
17 EIA natural gas prices as a different source,
18 and those were actually delivered prices to a
19 New England utility; so we wouldn't have
20 needed the adder for that source.

21 Q. Okay. Thank you.

22 MS. AMIDON: I have no further
23 questions. Thank you.

24 CMSR. HONIGBERG: Ms.

1 Goldwasser.

2 CROSS-EXAMINATION

3 BY MS. GOLDWASSER:

4 Q. Good morning, Drs. Harrison and Kaufman. I'm
5 Rachel Goldwasser from the law firm of Orr &
6 Reno. I represent TransCanada in this
7 docket.

8 A. (Mr. Kaufman) Good morning.

9 A. (Dr. Harrison) Good morning.

10 Q. I know this morning you talked a little bit
11 about uncertainties. And I think in your
12 testimony you reference, "extreme
13 uncertainties" in the economy in the summer
14 of 2008 and I guess early 2009; is that
15 right?

16 A. (Dr. Harrison) I don't remember the exact
17 phrasing, but I think we described the fact
18 that there was a great deal of uncertainty.
19 Those who remember the period in 2008 and
20 2009 will probably recall that.

21 Q. And the more uncertainty there is, the
22 broader range of potential outcomes your
23 report looks at to account for the risks; is
24 that fair to say?

1 A. (Dr. Harrison) Well, I guess it's fair to say
2 that when we were looking at developing the
3 parameters to report for our analysis, we
4 wanted to reflect the range of uncertainties
5 that seemed relevant at those time periods.

6 Q. And so, if you look at Page 11 of your
7 testimony, I think that's where you talk sort
8 of generally about uncertainties in natural
9 gas markets, and also you begin to talk about
10 the economy.

11 Is it a fair summary to say that the
12 uncertainty you identify is whether prices
13 would climb back to where they were in the
14 summer of 2008 or whether they would remain
15 low in early 2009, in terms of your 2009
16 analysis? The uncertainty is: Will they go
17 back to where they were in the summer of 2008
18 or higher; or will they, you know, continue
19 to drop or stay low as they were in early
20 2009? Is that fair?

21 A. (Dr. Harrison) Well, it's fair, in the sense
22 that that's the way we were looking at one
23 way of thinking about the uncertainties. But
24 this was just really -- this discussion was

1 really meant to be an introduction to the
2 forecasting, the forecasting that was -- that
3 we looked at. The forecast that we looked
4 at. So we were trying to give here the
5 flavor -- and I think this came across,
6 actually, in the state of the energy markets
7 report that we were just talking about -- the
8 nature of the uncertainties. So it was
9 really -- this discussion wasn't addressing a
10 list of questions that we then answered, but
11 it was meant to be a background on the types
12 of questions that analysts were thinking
13 about at the time.

14 Q. And because there were these questions, it
15 wasn't -- it's not -- it wasn't reasonable to
16 present just one side of the coin. You
17 weren't going to just do a study of, you
18 know, if the analysts say prices are going to
19 go down are right, here's what's going to
20 happen. You present a range of options; is
21 that right?

22 A. (Dr. Harrison) We did provide -- I think we
23 mentioned it. We described developing up to
24 12 scenarios.

1 Q. And those scenarios have a pretty broad
2 scope, in terms of the potential outcome.

3 A. (Dr. Harrison) In terms of the potential
4 parameters, prices and so forth, yes.

5 Q. Let's look at your Exhibit 12. And that's
6 the summary exhibit you were exploring with
7 Attorney Frignoca yesterday. And I just want
8 to understand how to understand this chart or
9 how to use the chart.

10 Say I'm looking in the summer of 2008 at
11 the market purchases scenario. If I said,
12 well, the Scrubber Project is going to save
13 customers \$800 million, is that -- you know,
14 is that a reasonable projection that I could
15 make based on your analyses, without
16 mentioning the other conclusions, the other
17 potential conclusions?

18 A. (Dr. Harrison) I guess I'm not quite sure
19 what question you're asking. In terms of how
20 to characterize these numbers or how to
21 characterize another estimate?

22 Q. No, I'm asking you about how to characterize
23 your numbers -- or how to apply them, really.
24 I mean, can I draw the conclusion that it

1 would be plausible to conclude that the
2 Scrubber would save customers \$800 million
3 over market purchases if I was doing this
4 analysis in the summer of 2008? Or in the
5 alternative -- I'll try to clarify -- would I
6 really have to provide this range of
7 potential outcomes to give a full story?

8 A. (Dr. Harrison) Well, I think we would -- the
9 tenor of our analysis was that it was useful
10 to look at a wide range of possible outcomes.
11 So, as I said, we went through a variety of
12 scenarios versus -- for both of these
13 options. So, we looked at -- in our
14 independent analysis, we thought that would
15 be what would make sense to do, to provide a
16 range under these different sets of
17 assumptions. I think I'm really saying
18 roughly the same thing that you described as
19 your predicate.

20 Q. So I can't, you know, rely on your report to
21 conclude that making a statement like, you
22 know, the Project -- it would have been
23 reasonable to conclude that the Project would
24 save customers, you know, \$400 million or

1 lose customers \$400 million. I can't take
2 the numbers in a vacuum. I have to view them
3 all together. Is that fair?

4 A. (Dr. Harrison) I think that's fair, in the
5 sense that when we looked at the results and
6 drew our conclusions about them, we looked at
7 all the numbers in these various scenarios.

8 Q. On Page 36 of your testimony, which is at
9 Bates Page 320, on Line -- starting on
10 Line 7, you indicate, "While it is not
11 unreasonable to continue to use long-term
12 forecasts developed in late 2007 on the
13 presumption that the changes to the market in
14 2008 might not persist, it is unreasonable to
15 completely ignore the current state of the
16 market and not also consider scenarios that
17 account for the price increases of early
18 2008." Did I read that correctly?

19 A. (Dr. Harrison) Yes, you did.

20 Q. And that's in reference to what forecasts
21 might be applied in the summer of 2008; is
22 that right?

23 A. (Dr. Harrison) Yes, this was in the context
24 of our comments on Mr. Hachey's natural gas

1 forecasts.

2 Q. I'm going to refer you to Attachment 4 to
3 your testimony, which is at Bates Page 377.
4 And that's an average monthly U.S. Natural
5 Gas Wellhead Prices chart.

6 A. (Mr. Kaufman) Right.

7 Q. And so, if you were to apply that to an
8 analysis that would be performed in early
9 2009, you would apply the same sort of
10 standard; right? It wouldn't be unreasonable
11 to use the newer forecasts. But you would
12 need to include the possibility that prices
13 might go back up or that prices might stay
14 low, the same analysis as the one that you
15 applied to the summer 2008 uncertainty; is
16 that right?

17 A. (Dr. Harrison) I guess I'm having trouble
18 understanding exactly what the question is.
19 Remember, what we were doing is we were
20 looking at forecasts of future prices over
21 the period from 2013 to 2027. So, what we
22 were doing in this exhibit is providing a
23 context for that in describing what was
24 happening in 2008 and early 2009.

1 Q. Right. And your criticism of Mr. Hachey is
2 that he doesn't fairly take into
3 consideration the possibility that prices
4 rising in the summer of 2008 could have had a
5 longstanding impact; is that right?

6 A. (Dr. Harrison) Well, I think our major
7 criticism of Mr. Hachey was that he used
8 forecasts that were too narrow a band, that
9 he really didn't provide a range of plausible
10 potential forecasts. We also noted that some
11 of the forecasts that he -- the bases for the
12 forecasts were from an earlier period. But
13 the main point was that his forecasts were in
14 quite a narrow band. And so if you looked at
15 the forecasts in his -- we have a chart in
16 our report that shows -- that compares his
17 forecasts to our forecasts. That shows that
18 his forecasts were in a relatively narrow
19 band; ours were in a wider band. And then we
20 also point out that one of the documents that
21 he provided shows a still wider band.

22 So I think it's -- the context of
23 that -- of our comments on his forecasts were
24 really primarily designed to deal with our

1 concern that his forecasts were too narrow a
2 range.

3 Q. And I think I know what chart you're talking
4 about. You're talking about Attachment 17 at
5 Page 407; is that right?

6 (Witness reviews document.)

7 A. (Dr. Harrison) That's correct.

8 Q. And you compare the forecast Mr. Hachey used
9 with your high and low forecasts, and then
10 with one Energy Security analysis forecast
11 that he provided. Did you look at any of the
12 other Energy Security analyses forecasts that
13 were provided by TransCanada? In other
14 words, was the only one you looked at was
15 June?

16 A. (Dr. Harrison) Well, we wanted one that was
17 relevant for the time period we were
18 concerned about.

19 Q. That's not what I'm asking, though.

20 A. (Dr. Harrison) I think we probably looked at
21 the other ones, but this is the one that we
22 were -- that was relevant.

23 Q. Right. And you didn't look at the ones
24 earlier in the year that would have applied

1 to the time frame that PSNH was talking about
2 yesterday. I think Mr. Large indicated in
3 his testimony that the forecasting that they
4 used was from the winter -- the gas prices
5 that they were using was from the winter of
6 2008. You didn't look at that ESIA forecast
7 information on this chart, did you?

8 A. (Dr. Harrison) No. This chart was relevant
9 to our analysis.

10 Q. And you didn't look at any ESIA data that
11 came after that one June forecast, did you,
12 on this chart?

13 A. (Dr. Harrison) We didn't. This chart only
14 includes June 2008.

15 Q. Would it surprise you to find that Mr. Hachey
16 provided forecasts from March of 2008,
17 September of 2008, December of 2008, and
18 March of 2009?

19 A. (Dr. Harrison) No.

20 Q. And would it surprise you that those
21 forecasts are all much more closely bound to
22 the forecasts that he provided?

23 A. (Dr. Harrison) I haven't seen those
24 comparisons.

1 Q. You answered a couple of questions about
2 cancellation costs. Do you know what number
3 you used for your early 2009 analysis for
4 cancellation costs?

5 A. (Dr. Harrison) I think it was \$142 million.

6 Q. And the higher the cancellation cost you
7 apply, the more economic a coal plant looks,
8 right, because the comparison would be paying
9 the sunk costs and not getting the plant; is
10 that right?

11 A. (Dr. Harrison) That's correct.

12 Q. I'm going to ask a couple follow-up questions
13 about the natural gas prices that you used
14 because I just want to make sure that I also
15 understand how you got to the numbers. And
16 what I'm going to do is hand around -- I'm
17 going to ask Attorney Patch to hand around
18 some of the spreadsheets that you provided in
19 discovery.

20 MS. GOLDWASSER: And I promise
21 we won't get into a line-by-line analysis of
22 those, Mr. Chairman. I'm sure that that is
23 not what you want to do this morning.

24 CMSR. HONIGBERG: A

1 line-by-line analysis is a very unappealing
2 prospect. So we appreciate that. Thank you.

3 BY MS. GOLDWASSER:

4 Q. So the first --

5 CMSR. HONIGBERG: Wait. Ms.
6 Goldwasser, just a minute. Do you want to
7 mark these as an exhibit, or are these just to
8 be a demonstration for charts that already
9 exists?

10 MS. GOLDWASSER: Let's mark
11 them, because this information I don't believe
12 is -- it's clearly in their report.

13 CMSR. HONIGBERG: So this is
14 129. Sorry. Go ahead.

15 (The document, as described, was herewith
16 marked as Exhibit 129 for
17 identification.)

18 BY MS. GOLDWASSER:

19 Q. If you look at the first two pages of the
20 spreadsheet, these are printouts of your 2008
21 and 2009 natural gas assumption sheets. And
22 the only change that I made on this is I put
23 a source line on, and that's why it says
24 "Spring of 2008" instead of "Summer for

1 2008." My apologies for that, but I think
2 you know what I mean, at the top in the
3 center.

4 Do these look familiar to you? These
5 are your analysis sheets that you provided in
6 discovery.

7 (Witness reviews document.)

8 A. (Dr. Harrison) I believe so, yes.

9 Q. And if you look at the bottom of the page, I
10 really just want to make sure I understand
11 where these numbers are coming from. You
12 provide, I think, five different scenarios
13 for gas prices. The first one is the EIA
14 natural gas price delivered to a New England
15 utility. Are those numbers in the EIA
16 report?

17 A. (Dr. Kaufman) So when you say "report" --

18 Q. The EIA spreadsheets that you cite.

19 A. (Dr. Kaufman) That's right.

20 Q. And is it a delivered price to a gas
21 combined-cycle plant, or is it a delivered
22 price for retail? I mean, most utilities in
23 New England don't own combined-cycle plants.
24 So I want to make sure I understand -- or

1 most related utilities don't, anyway. I want
2 to make sure I understand what the assumption
3 is with these numbers.

4 A. (Dr. Harrison) When you say "assumption," who
5 are they -- are they delivered to --

6 Q. Is it the wholesale price? Is it a retail
7 price? Is it delivered to a natural gas
8 combined-cycle plant? I know. I just asked
9 a compound question. So I'll stop.

10 CMSR. HONIGBERG: I think what
11 you were doing was you were giving a range of
12 choices. Is it one of those?

13 MS. GOLDWASSER: I'm trying to
14 understand what -- yeah, I'm trying to
15 understand what this is.

16 A. (Dr. Harrison) These are the prices that
17 would be paid by a plant that burns natural
18 gas.

19 BY MS. GOLDWASSER:

20 Q. Somewhere in ISO-New England, I presume?

21 A. Yes, a New England utility. That's correct.

22 Q. Okay. And does it start with a Boston City
23 Gate price and then inflate it for
24 transportation? How do you get to that

1 number?

2 A. (Dr. Harrison) You mean how did EIA develop
3 its forecasts?

4 Q. Is that what they do? This number is not
5 comparable to a Boston City Gate price, is
6 it?

7 A. (Dr. Harrison) These are prices that were
8 developed by EIA.

9 Q. A Boston City Gate forecast. My apologies.
10 So, in other words, this is not
11 apples-to-apples with the Boston City Gate
12 price forecast, right, because you are
13 including some sort of -- the EIA is
14 including some sort of transportation adder;
15 is that right?

16 A. (Dr. Harrison) I believe that's correct,
17 although I have to look at exactly how they
18 did that forecast.

19 Q. For the natural gas model that you did with
20 these prices, did you assume some additional
21 transportation adder to get the gas up to
22 Bow, New Hampshire?

23 A. (Dr. Kaufman) If you're still talking about
24 the EIA prices --

1 Q. Yeah, just talking about the EIA prices.

2 A. (Dr. Kaufman) Then, no, because this wasn't
3 to any particular place in New England. I
4 think it's meant to be an average.

5 Q. Okay. And the EIA L/W Service case, that's
6 based on the report that was discussed
7 yesterday from summer 2009; is that right?

8 A. (Dr. Harrison) No, I think this was the 2008
9 period. So this would have been the 2008 EIA
10 report that evaluated Lieberman-Warner.

11 Q. Okay. And the NYMEX gas futures prices --
12 this is the next sort of category on this
13 spreadsheet -- it says "June 2008 futures
14 delivered." Are those NYMEX futures prices
15 at Henry Hub, then, with some sort of
16 transportation adder? What's that? "Futures
17 delivered" is what it says.

18 A. (Dr. Kaufman) That's right. I think what
19 this is supposed to be is the Henry Hub
20 prices on one line, followed by the
21 transportation adder on the next line, adding
22 up to the delivered price on the third line.

23 Q. Okay. And so where it says "June 2008
24 futures delivered," that's really just a

1 Henry Hub price?

2 A. (Dr. Kaufman) I believe that's right.

3 Q. Okay. And I'm not an expert in this stuff,
4 so my apologies if I'm asking dumb questions
5 here.

6 Are these prices -- are these the actual
7 prices, the actual NYMEX futures prices going
8 out to 2016 on the first line there, the
9 "June 2008 futures delivered" --

10 A. (Dr. Kaufman) I think what they are --

11 Q. -- in each of those years?

12 A. (Dr. Kaufman) So I believe what we did was we
13 took -- there's daily prices from NYMEX. I
14 think we took June 2008 daily prices and
15 averaged them for each of the years stated
16 here.

17 Q. Okay. So the idea is someone's sitting in
18 their office in June of 2008 and goes on to
19 the NYMEX futures information portal and
20 obtains what futures are trading at in each
21 of those years between 2009 and 2016?

22 A. (Dr. Harrison) That's correct.

23 Q. Okay. And then, after 2016, I think your
24 report indicates you inflate those numbers

1 out at 2.5 percent from there on out; is that
2 right?

3 A. (Dr. Harrison) Yes, for the scenario that
4 involved only using the NYMEX prices, that's
5 right.

6 Q. Okay. And the last -- and that's the bottom
7 line, the futures case 2008; right? We're
8 all on the same page here?

9 A. (Dr. Kaufman) That's right.

10 A. (Dr. Harrison) That's correct.

11 Q. And then for the AEO futures blend and the
12 Lieberman-Warner AEO [sic] futures blend, you
13 used futures prices in the first, looks like
14 three years?

15 A. (Dr. Kaufman) I believe it was two years.

16 Q. Two years. And then, from there on out you
17 used the EIA data. No.

18 A. (Dr. Harrison) That's not quite right. It's
19 easier if you look at one of the attachments
20 we have that shows how the price -- the
21 projectory. So, there we used -- that's what
22 we call the "hybrid case," where we used the
23 futures prices for the near-term prices, and
24 then we had those adjusted so that they were

1 equal to, in the longer run, around 2020,
2 that they're equal to the EIA forecasted
3 price.

4 Q. So you slowly blend them proportionally as
5 you go along in time? Is that fair to say?

6 A. (Dr. Harrison) That's one way of thinking
7 about it.

8 Q. Okay. Thank you. And in terms of the
9 differences between the summer 2008 and the
10 spring 2009 numbers that you applied, the
11 main difference is just that you used the
12 Waxman-Markey service case; right? I mean, I
13 understand that you used different EIA
14 numbers; right? But in terms of modeling
15 differences, you use the Waxman-Markey case
16 instead of the Lieberman-Warner case -- is
17 that fair -- for gas prices?

18 A. (Dr. Harrison) Well, that's right. But
19 remember, I think Dr. Kaufman made the point
20 that we needed to be consistent. So we had a
21 different AEO forecast. EIA had changed its
22 forecast, so we needed to make our CO2 price
23 series consistent with the new AEO 2009
24 forecast. So, even though the provisions of

1 the Lieberman-Warner and Waxman-Markey are
2 very similar, we wanted to use a consistent
3 set of prices.

4 A. (Dr. Kaufman) We also used updated futures
5 prices for March 2009.

6 Q. Right. And I had one other question going
7 back to the NYMEX futures.

8 You obtained the transportation adder
9 that you used with the NYMEX numbers from
10 PSNH; is that right?

11 A. (Dr. Harrison) That's correct.

12 Q. And did you do any fact-checking around that
13 transportation adder that you applied?

14 A. (Dr. Harrison) Well, fact-checked, only in
15 the sense that looking at it, that it seemed
16 reasonable.

17 Q. I'm going to ask you to turn to Attachment 6,
18 Page 1, which is Bates Page 379. If you turn
19 to Note 2... that's really small type. I'm
20 sorry. I don't have a magnifying glass for
21 you. But it says, "Short-term prices are for
22 two years from the analysis date," and then
23 in parentheses it says, "longer futures
24 contracts are often unavailable or highly

1 illiquid"; is that correct?

2 A. (Dr. Harrison) That's correct. That's what
3 it says.

4 Q. So you used the futures prices in your report
5 and then inflated them after five or six
6 years, or whatever the number is, to do one
7 of your scenarios. But then, in your
8 footnote you indicate that futures contracts
9 are "often unavailable or highly illiquid";
10 is that right?

11 A. (Dr. Harrison) Well, that's right. They're
12 unavailable for the years after the years
13 that we used them. But we -- for the
14 futures -- for the scenarios, we use futures
15 prices. They were the best sources of market
16 information.

17 Q. Well, I mean, you say here that short-term
18 prices are for two years from the analysis
19 date, and you seem to indicate that it's less
20 appropriate to use them for additional years.
21 But then, on your spreadsheet you indicate
22 that you applied the actual futures contract
23 prices for seven years or eight years from
24 2008. So I'm just trying to understand how

1 to make sense of those two statements
2 together.

3 A. (Dr. Harrison) Well, I think in terms of
4 the -- this was the reason why we blended
5 these futures prices for the two years. For
6 our -- for the scenario which we used the
7 futures prices, we thought it was appropriate
8 to use all the data that were available.

9 Q. Dr. Harrison, you have a very robust resume.
10 You've done a lot of reports like this. Have
11 you ever employed NYMEX prices with an
12 inflation note like this out to, you know, 15
13 or 20 years? Have you ever done that before?
14 I'm not talking about the blended. I'm just
15 talking about the NYMEX futures option that
16 you applied.

17 A. (Dr. Harrison) Well, usually in a particular
18 case, what we -- I don't recall doing this
19 specifically. But we certainly have used
20 NYMEX futures prices. And we certainly have
21 used them for the period of time that they're
22 available, yes.

23 Q. And did PSNH ask you to do a NYMEX futures
24 option in your report?

1 A. (Dr. Harrison) No, I mean, I think, as we
2 said, ours was an independent analysis. We
3 chose the parameters that we used.

4 Q. Well, they -- you were told to do a gas plant
5 option and a market purchase option; right?
6 I mean, that was within the parameters of
7 your contract.

8 A. (Dr. Harrison) Well, yeah. Just to be clear,
9 the assignment was to compare the Scrubber
10 Project to the two alternatives and then to
11 use those two time periods, 2008 and 2009.
12 But the parameters that we developed and the
13 analysis we developed was ours.

14 Q. So, no one from PSNH asked you to do a NYMEX
15 option in terms of the scenarios that you
16 prepared. But you haven't prepared a
17 scenario like this NYMEX before in another
18 report.

19 A. (Dr. Harrison) I don't think I said that.

20 Q. Okay. Let's try again then.

21 You've used NYMEX prices, as far as they
22 go, before in reports like -- for the number
23 of years that they're available?

24 A. (Dr. Harrison) I don't recall -- I'm sure --

1 as I said before, I remember we've used NYMEX
2 prices to do our analysis, in terms of the
3 range of years that they're available, in
4 several studies.

5 Q. So, "for the years they're available," you're
6 talking about, you know, projecting six or
7 seven years out?

8 A. (Dr. Harrison) That's correct.

9 Q. And have you ever used a 2.5 percent
10 escalator after those years to further
11 predict natural gas prices?

12 A. (Dr. Harrison) I don't recall the specifics
13 of what we did. But oftentimes when we're
14 doing these kinds of analyses, we have model
15 estimates that we develop. So we've
16 sometimes used -- for this, what we wanted to
17 do was get a range of possible natural gas
18 prices and electricity prices. And for that,
19 this seemed like an appropriate methodology.

20 Q. I understand your testimony to be that you
21 weren't asked to analyze what PSNH did. But
22 did you know what PSNH did? Were you
23 familiar with the studies that they
24 performed?

1 A. (Dr. Harrison) They had performed the study,
2 but not with all the details of what they
3 actually had done, no.

4 Q. I'm going to ask you to look at a data
5 request that you provided -- two of them,
6 actually, back-to-back. Again, I'm trying to
7 save time here by doing everything in one
8 swoop. This is TC-6-149 and TC 6-167 SPO1.
9 And I have a really simple question for you,
10 and it's the only question I'm going to ask
11 about this, which is: Are these -- do you
12 recognize these data responses, and are these
13 the ones you provided?

14 (Witness reviews document.)

15 A. (Dr. Harrison) Yes, this looks like what we
16 provided.

17 Q. Great. Thank you.

18 MS. GOLDWASSER: I'd ask that
19 this be marked as exhibit --

20 CMSR. HONIGBERG: Be 130. And
21 I would just note for the record that it is
22 one page, two-sided.

23 (The document, as described, was herewith
24 marked as Exhibit 130 for

1 identification.)

2 Q. I have a couple questions about the natural
3 gas plant option that you considered.

4 You assumed that the gas plant would be
5 sited in Bow, New Hampshire; is that right?

6 A. (Dr. Harrison) I don't think our analysis was
7 specific to a location. It was -- as we
8 talked about yesterday, I think it was a
9 generic natural gas plant that would be
10 developed, provide replacement power for
11 Merrimack Station.

12 Q. In our NYMEX scenario, you used a
13 transportation adder that PSNH provided. So
14 I assumed from that, that the plant would be
15 built in New Hampshire or at the Merrimack
16 Station site. Is that incorrect? Is that an
17 incorrect assumption to make based on that
18 transportation adder?

19 A. (Dr. Harrison) That's right. So we were
20 thinking of something that would be relevant
21 to the Merrimack power.

22 Q. And do you have any sense of whether
23 transportation adders would be lower if a
24 plant were built in some other part of

1 ISO-New England?

2 A. (Dr. Harrison) I don't know the details of
3 the transportation adders in different
4 locations, no.

5 Q. Okay. And you're familiar, generally
6 familiar, with the ISO-New England
7 marketplace for power, I presume, based on
8 your work?

9 A. (Dr. Harrison) Yes.

10 Q. And you know in states other than Vermont, in
11 ISO-New England, competition has been
12 employed. The utilities aren't vertically
13 integrated; right?

14 A. That's correct.

15 Q. And the other states, and even some of the
16 utilities here in New Hampshire, when a
17 utility is going out to get -- to meet its
18 default service obligations, it goes out to
19 bid periodically, is that right, to get that
20 default service met?

21 A. (Dr. Harrison) That's correct.

22 Q. And they go to companies like Constellation
23 that provide delivery of that electricity to
24 the default service customers; is that right?

1 A. (Dr. Harrison) Yes, that's correct.

2 Q. Do those utilities enter into long-term
3 contracts with natural gas combined-cycle
4 plants? Or more specifically, during the
5 2008 and 2009 frame, are you aware of
6 utilities that required electricity to meet
7 their default service needs entering into
8 long-term contracts with combined-cycle
9 plants?

10 A. (Dr. Harrison) Well, I don't recall the
11 specifics. But again, just to be clear about
12 what we did, we were looking at -- in our
13 natural gas plant scenario, we were looking
14 at the possibility that you would get
15 replacement power from a natural gas unit
16 located somewhere in New England. And our
17 specific assumptions were located at the
18 same -- providing the same power as
19 Merrimack.

20 Q. Right. But when we're looking at it from a
21 PSNH ratepayer perspective, I think yesterday
22 it was established that -- and Mr. Frantz
23 testified to this last week -- that New
24 Hampshire law wouldn't permit PSNH to build a

1 combined-cycle plant. You heard that. I
2 know you said you weren't sure you knew that
3 before. But you know that now; right?

4 A. (Dr. Harrison) That's correct. I wasn't here
5 for Mr. Frantz's testimony on that point.

6 Q. So the option would be somebody else building
7 a combined-cycle plant and either feeding
8 that power into the marketplace, into the
9 competitive marketplace somehow; or I think
10 the alternative option that you I think
11 described yesterday was some sort of contract
12 with the utility for the power from the
13 plant. I guess the right term of art would
14 be a "bilateral contract"; is that right?

15 A. (Dr. Harrison) Not exactly. I think what --
16 just to be very clear, what our analysis was,
17 was looking at the possibility of replacing
18 the power at Merrimack with a natural gas
19 combined-cycle. This is sort of a very
20 common kind of analysis that one does when
21 one is looking at a large amount of
22 generation capacity. It would be an
23 alternative to a large amount of generation
24 capacity. So, what you do is you want to

1 look at long-term circumstances.

2 So, in the context of the long term, you
3 say, well, what are the likely additional
4 resources that would be put in place to meet
5 additional demand over the long term? And in
6 the long term, you can't necessarily rely on
7 the facilities that happen to be around at
8 the time. So you want to look at the next
9 additional capacity. And over this period,
10 and frankly, right now as well, that
11 additional capacity is provided by natural
12 gas combined-cycle plants. So, that's really
13 the context of our analysis. It wasn't
14 thinking that there were some concrete,
15 specific assumptions about who was going to
16 do that plant, but that this natural gas
17 combined-cycle plant was a reasonable
18 alternative for providing additional
19 generation capacity in New England over this
20 long-term period.

21 Q. But your testimony doesn't give us any facts
22 about whether, if a gas plant were built, who
23 would be sort of paying for that plant,
24 whether it would be fed into the ISO-New

1 England market and the cost distributed among
2 a lot of people, or if PSNH ratepayers would
3 pay for it via a PPA or something like that.
4 Is that fair? Your analysis doesn't answer
5 that question.

6 A. (Dr. Harrison) I think there's a series of
7 questions in that question. But just to be
8 very clear, we're looking at long-term costs
9 of different plausible alternatives for
10 providing the amount of generation and
11 capacity that's provided by Merrimack
12 Station.

13 Q. You've answered a couple questions about
14 capacity factor, and I want to follow up on a
15 couple things.

16 So, ISO-New England dispatches
17 generating facilities; is that right?

18 A. (Dr. Harrison) That's correct.

19 Q. And it's based on an economic grid. If
20 you're less expensive, you get dispatched; if
21 you're more expensive, you're over the
22 marginal line, you don't get dispatched; is
23 that right?

24 A. (Dr. Harrison) That's a general way of

1 describing the market.

2 Q. Well, keep things simple for me, okay. I
3 don't think we need to get more detailed than
4 that.

5 And when natural gas prices drop -- I
6 think Mr. Frantz or Attorney Amidon asked you
7 some questions -- when natural gas prices
8 drop, a facility is less likely -- a coal
9 facility is less likely to be dispatched; is
10 that right?

11 A. (Dr. Harrison) In any given time period,
12 correct.

13 Q. And you've already said, at least the
14 short-term expectation in the spring of 2009
15 was that natural gas prices were dropping in
16 comparison with other years; is that right?
17 I think your testimony says that.

18 A. (Dr. Harrison) I think what our testimony
19 does is describes the projections that we
20 developed for natural gas prices.

21 Q. And the other question I had is, if there's a
22 carbon cap, if a cap-and-trade program was
23 put into effect, you would also expect coal
24 to be less economic because coal would be

1 more expensive than the alternatives in the
2 ISO-New England stack, setting aside free
3 allowances. I don't want to make this more
4 complicated than it needs to be. But in
5 general, coal would be more expensive and
6 less economic than the alternatives with a
7 cap-and-trade program; is that right?

8 A. (Dr. Harrison) Well, that's correct. And
9 those concepts and that analysis is what's
10 behind the EIA forecasts.

11 Q. And you also, I think, quote somebody
12 important, the head of the IMF, on Page 10 of
13 your testimony, that the financial system was
14 "teetering on the brink of systemic
15 meltdown," and there was a lot of economic
16 uncertainty during the time frame at issue
17 here. Would that also impact demand and
18 potentially also impact how many facilities
19 are dispatched or who gets dispatched?

20 A. (Dr. Harrison) Well, certainly the -- I mean,
21 we described the fact that those conditions
22 at the time did have an effect on electricity
23 demand and other demands.

24 Q. I'm going to ask you -- do you have Exhibit

1 82 up there? I'll bring you mine because I
2 don't want to hold this up.

3 (Ms. Goldwasser hands document to
4 witness.)

5 Q. I'm sorry to stand over you like this, but I
6 think this is the only way that the court
7 reporter isn't going to --

8 MR. NEEDLEMAN: Rachel, what
9 are you looking at?

10 MS. GOLDWASSER: Exhibit 82.

11 MR. NEEDLEMAN: Which is what?

12 MS. GOLDWASSER: It's the
13 Annual Generation and Capacity Factor chart
14 that you handed out last week.

15 Thank you, Chairman.

16 BY MS. GOLDWASSER:

17 Q. So you're looking at a chart that shows
18 percentages, capacity factors and historic, I
19 think, megawatt-hour production for Merrimack
20 Station from 2004 to 2008; is that right?

21 A. (Dr. Harrison) That's right.

22 Q. And I think the blue line is supposed to be
23 the percentage capacity factor; is that
24 right?

1 (Witness reviews document.)

2 A. (Dr. Harrison) That's what it says, yes.

3 Q. And that blue line hovers under... a little
4 under 82 percent in all years but 2008; is
5 that right?

6 (Witness reviews document.)

7 A. (Dr. Harrison) That's right.

8 Q. And the capacity factor that you used in your
9 report is 83 percent?

10 A. (Dr. Harrison) That's correct.

11 Q. And you used the capacity factor of 83
12 percent for all of the years going out from
13 2012 on; is that right -- or 2009 on?

14 A. (Dr. Harrison) 2013.

15 Q. 2013 on. Is that right?

16 A. (Dr. Harrison) That's correct.

17 Q. Did you adjust your capacity factor in your
18 scenarios that assumed a cap-and-trade
19 program?

20 A. (Dr. Harrison) No.

21 Q. You answered a couple questions about SO2
22 prices, and I'm going to ask you to turn to
23 what's hand-numbered spreadsheet "3."

24 CMSR. HONIGBERG: This is on

1 Exhibit 129, the four pages you handed out a
2 few minutes ago?

3 MS. GOLDWASSER: Yes.

4 (Witness reviews document.)

5 BY MS. GOLDWASSER:

6 Q. Am I correct, if I look on the left-hand side
7 of the page, it says "Coal Emissions Cost"
8 and then says "Category." And then, if you
9 look a few lines down, it says, "2008 Price
10 (Nominal Dollars Per Ton)." Do you see what
11 I'm looking at?

12 A. (Dr. Harrison) Let's see. Now, just to be
13 clear, you're looking at the SO₂? Is this on
14 the SO₂ --

15 Q. Yes.

16 A. Yes. I see SO_x -- or the SO₂ emissions price
17 and then nominal dollars per ton, yes.

18 Q. Okay. And the SO₂ price that you applied for
19 your summer 2008 analysis was 194?

20 A. (Dr. Harrison) Well, I think the 194 was
21 2012. That wasn't actually a number that we
22 used in our analysis.

23 Q. Okay. But that's the number you started at,
24 and then you increased going out from there

1 at a percentage; is that right?

2 A. (Dr. Harrison) That's right.

3 Q. Do you remember what percentage you used?

4 A. (Dr. Kaufman) It's constant in real terms.
5 So we just increased it at the assumed rate
6 of inflation.

7 Q. Great. And if you turn to the next page and
8 you look in the same general vicinity, the
9 price that you assumed in the spring of 2009
10 or winter of 2009 is a little over \$50 for
11 2013; is that right?

12 A. (Dr. Harrison) That's correct.

13 Q. Now, your testimony is from the vantage point
14 of what a reasonable utility could have known
15 at the time that decisions might have been
16 made; is that right?

17 A. (Dr. Harrison) Well, just to be clear, we
18 were -- you said we were looking at two time
19 periods, mid-2008 and what we referred to as
20 "early 2009."

21 Q. Right. So, for the summer 2008 analysis, you
22 looked at what a reasonable utility might
23 have known in the summer of 2008 without any
24 knowledge of the future -- not any specific

1 knowledge of the future; right?

2 A. (Dr. Harrison) That's correct.

3 Q. And you provide some information about what
4 happened with carbon regulation since 2009 in
5 your testimony, sort of in parentheses.

6 And that's not really relevant to the
7 analysis, is it?

8 A. (Dr. Harrison) I don't remember that, but --
9 specifically what you're referring to.

10 A. (Dr. Kaufman) I think it's relevant in the
11 sense that, if you say what has happened was
12 or was not predictable as of 2009, then it
13 could be relevant.

14 Q. Okay. I'm a little bit confused. If we're
15 doing this analysis based on what we think a
16 company could or should have reasonably known
17 in 2008, it can't know what we know now in
18 2014; is that right?

19 A. (Dr. Kaufman) No. I'm sorry if that was
20 confusing. The example I had mind was SO2
21 prices. So you could say -- I think the
22 point we make in our testimony specifically
23 is that one of the scenarios we consider are
24 the RGGI price forecasts. And the point we

1 make is that a utility -- that is really the
2 scenario that kind of resembles the cost of
3 SO2 that PSNH would have actually faced to
4 date. And my point was just that, that was
5 somewhat predictable as of 2009, that a
6 federal cap-and-trade bill might not pass.

7 Q. And I think yesterday Attorney Frignoca asked
8 you some questions about the study that was
9 performed in the summer of 2009 that you used
10 to draw conclusions about CO2 prices in the
11 winter of 2009; is that right? Do you
12 remember that?

13 A. (Dr. Harrison) Yes, I do.

14 Q. And the information that you used would not
15 have been available to PSNH even as late as
16 April 2009.

17 A. (Dr. Harrison) Well, yes and no. As I think
18 we mentioned, this had to do with the
19 so-called "Waxman-Markey Bill." And the
20 Waxman-Markey Bill was very similar to the
21 Lieberman-Warner Bill, in terms of its
22 objectives and its predicted CO2 prices. In
23 fact, I think we mentioned that, in February
24 of 2009, Representatives Waxman and Markey

1 asked EIA to do a forecast of what the likely
2 effects of their bill would be. And in April
3 of 2009, EPA estimated what those likely
4 prices were, and they were in the same range
5 as the Lieberman-Warner prices, about \$13,
6 \$17 per ton.

7 So, there was a lot of -- among people
8 who were following it at the time -- this is
9 in 2009 -- there was a lot of information
10 that was available about this particular
11 proposal and its similarities between that --
12 and this was in the House. So at the same
13 time, there was this Lieberman-Warner Bill
14 that was going through the Senate process.

15 So I think that utilities at the time,
16 in early 2009, would have been aware of the
17 Waxman-Markey legislation. They would
18 probably have been aware of the likely prices
19 that were likely to be established under
20 Waxman-Markey as being similar to
21 Lieberman-Warner prices. And again, as I
22 said, there was some analysis in April that
23 confirmed that EPA analysis, in April of
24 2009, that confirmed that.

1 Q. In April. But not in March, but in April. I
2 just want to make sure I got my time line
3 here.

4 A. (Dr. Harrison) Well, yes. But as I said, in
5 February, you know -- this had been
6 discussed, actually, before they made the
7 formal request in February. There was a lot
8 of discussion about what the parameters of
9 those bills would be and what the likely --
10 what the implications would be for CO2
11 prices.

12 Q. I'm going to ask you to turn to Attachment 15
13 to your testimony, which is at Bates Page
14 405.

15 So, for your low, your low case, you
16 assume for dollars going out as the straight
17 dark line at the bottom right above the X
18 axis; is that right?

19 A. (Dr. Harrison) Well, no. Just to be clear,
20 these are prices in nominal dollars. So it's
21 hard to see, but that price actually
22 increases in nominal dollars over the period.
23 And those prices -- as I think Dr. Kaufman
24 pointed out yesterday, those prices are based

1 on the RGGI forecasted prices.

2 Q. Okay. So, basically, it's in whatever year
3 you're in here, it's for dollars in that
4 year's prices, but it would go up over time
5 as a result of economic forces that I
6 probably don't understand; is that right?

7 A. (Dr. Harrison) Well, no. This particular
8 case is quite simple. These are assumed to
9 go up at the rate of inflation.

10 Q. Okay. And your NERA high CO2 price -- and
11 that's the price you apply in your
12 scenarios -- is the squares -- the line with
13 the squares in it, the dark line with the
14 squares in it that starts at, I don't know,
15 \$10 or \$12?

16 A. (Dr. Harrison) Well, just to be absolutely
17 clear, this is labeled "NERA High CO2 Price"
18 and in parentheses "national cap-and-trade,
19 net of free allowances." So this is -- this
20 takes into account the price that was
21 estimated in this particular case for the
22 Waxman-Markey legislation, and then it
23 accounts for the fact that a large portion of
24 the allowances were distributed for free in

1 the early periods. And so it reflects the
2 high CO2 price -- I guess the way we look at
3 it is, this is the price in the high
4 environmental compliance case.

5 CMSR. HONIGBERG: Dr. Harrison,
6 I think we remember that testimony from
7 yesterday. I think all Ms. Goldwasser's
8 trying to get you to is to that line.

9 Right?

10 MS. GOLDWASSER: Right.

11 A. (Dr. Harrison) Okay. Right.

12 MS. GOLDWASSER: And that's
13 okay, because actually he's leading me into
14 what probably will be the next area of
15 questions.

16 BY MS. GOLDWASSER:

17 Q. And the assumption you made, I think you said
18 yesterday, is that you assumed 50-percent
19 free allowances at the beginning of the time
20 frame in question, and you ended up around
21 25-percent free allowances at the end; is
22 that right?

23 A. (Dr. Harrison) Well, I just would -- the only
24 thing I would change in that is we didn't

1 assume it. That was part of the analysis we
2 did.

3 Q. Okay. Well, that's an assumption that played
4 a role in where that line is on the page.

5 A. (Dr. Harrison) That's correct.

6 Q. Right. And is that linear? So, should I
7 assume, then -- say that's \$12 where that
8 first square is in 2013. If I assume that
9 there would be no free allowances, would the
10 high price then be \$24 per allowance in this
11 analysis?

12 A. (Dr. Kaufman) It's not exactly -- I mean,
13 50 percent, I think, is a ballpark estimate,
14 but --

15 A. (Dr. Harrison) Approximately.

16 Q. Yeah. If we assume that it's 50-percent free
17 allowances and -- in your high, but we -- and
18 then say we create another case, and that
19 other case is zero-percent free allowances,
20 under the pricing scenario that you've
21 modeled, the price of compliance would then
22 be \$24 per allowance?

23 A. (Dr. Harrison) That's correct.

24 Q. Okay. I just wanted to make sure I

1 understood that.

2 You also include in this chart a
3 "reference case." Does that reference case
4 get used anywhere in your analysis?

5 A. (Dr. Harrison) Yes, it does.

6 Q. Okay. And where is that?

7 A. (Dr. Harrison) It's used when we commented on
8 Dr. Stanton's analysis.

9 Q. But it's not applied to the models that you
10 present?

11 A. (Dr. Harrison) No. As I said, we had our two
12 cases, our high environmental compliance case
13 and our low environmental compliance case.

14 (Ms. Goldwasser approaches chart on
15 easel.)

16 Q. Okay. And this is the chart we're talking
17 about; right?

18 A. (Dr. Harrison) That's correct.

19 Q. Okay. Arts and crafts.

20 (Ms. Goldwasser drawing on chart.)

21 Q. So this line that I'm pointing at here is
22 your RGGI no-allowances price; right? The
23 darker straight --

24 A. (Dr. Harrison) The RGGI no-allowances --

1 Q. The RGGI, no federal statute case; right? In
2 blue.

3 A. (Dr. Harrison) That's correct.

4 Q. Is that right? Okay.

5 And your high case that you apply in
6 your model is this one here with the squares
7 and the dark line?

8 A. (Dr. Harrison) That's correct.

9 Q. Okay. And Dr. Stanton low case the dashed
10 line without any squares or circles in it?

11 A. (Dr. Harrison) Those were the prices from her
12 testimony.

13 Q. Okay. And her high price is the squares, and
14 her middle price is the circles with the
15 dashed lines?

16 A. (Dr. Harrison) That's correct.

17 Q. Okay. I'm going to highlight those in pink.

18 MS. GOLDWASSER: And I'm going
19 to ask that we mark this poster. I'm going
20 somewhere. I promise.

21 CMSR. HONIGBERG: Fine.

22 MS. GOLDWASSER: Do we have a
23 number?

24 CMSR. HONIGBERG: It's 131.

1 MS. GOLDWASSER: Thank you.

2 (The document, as described, was herewith
3 marked as Exhibit 131 for
4 identification.)

5 Q. I have here a report that was authored by
6 NERA in March 2009 for Nevada Power Company.

7 Mr. Harrison, you do a lot of work with
8 Nevada Power Company, don't you?

9 A. (Dr. Harrison) That's right.

10 CMSR. HONIGBERG: Are you
11 marking this?

12 MS. GOLDWASSER: Yes, please.

13 CMSR. HONIGBERG: 132.

14 (The document, as described, was herewith
15 marked as Exhibit 132 for
16 identification.)

17 BY MS. GOLDWASSER:

18 Q. And do you recall submitting prefiled
19 testimony in March 2009 on behalf of Nevada
20 Power Company?

21 A. (Dr. Harrison) Yes, I do.

22 Q. And do you recognize this report that you
23 submitted with that prefiled testimony?

24 A. (Dr. Harrison) I haven't seen it yet. But if

1 it's the one I'm expecting to have, I do
2 recognize it.

3 Q. Oh, my apologies. I'll bring a copy for Mr.
4 Kaufman as well.

5 (Ms. Goldwasser hands document to
6 witnesses.)

7 Q. Mr. Harrison, you do a lot of work with a
8 number of power-industry companies, like
9 Nevada Power Company, Entergy, AES, Dynegy,
10 all those kinds of companies; is that right?

11 A. (Dr. Harrison) Yes, among other clients.

12 Q. If you look on the inside cover of this
13 report, you're the lead author; is that
14 right?

15 A. (Dr. Harrison) That's correct.

16 Q. And this report would be contemporaneous with
17 the early 2009 analysis that you performed
18 for PSNH in this docket?

19 A. (Dr. Harrison) Yes.

20 Q. And Nevada Power Company is a public utility
21 in Nevada; is that right?

22 A. (Dr. Harrison) Yes, it is.

23 Q. This report assesses the environmental costs
24 and economic benefits associated with certain

1 expenditures that Nevada Power Company was
2 considering in their IRP?

3 A. (Dr. Harrison) I guess I would say it
4 slightly differently. It was designed to
5 evaluate the environmental costs associated
6 with various resource plans.

7 Q. And in assessing those resource plans, you
8 developed a carbon pricing analysis in this
9 report; is that right?

10 A. (Dr. Harrison) That's correct.

11 Q. Okay. I'm going to ask you to turn to
12 Page 11. Can you read to us the first full
13 sentence under where it says "b. CO2
14 Regulation"?

15 A. (Dr. Harrison) Yes. It says, "Most
16 commentators expect the federal government to
17 develop a cap-and-trade program for
18 greenhouse gas (GHG) emissions in the 111th
19 Congress, although there are, of course,
20 uncertainties regarding any prediction of
21 potential future legislation."

22 Q. And do you recall which federal statutes you
23 used to develop this analysis that we're
24 looking at -- I'm sorry, not which federal

1 statute -- which federal bills you used to
2 develop this analysis? Let me try it a
3 different way.

4 A. (Dr. Harrison) I don't -- I would guess that
5 this was Lieberman-Warner, although I would
6 have to check.

7 Q. Okay. So, in March 2009, subject to check,
8 the report that you did for a public utility
9 in Nevada was analyzing Lieberman-Warner.

10 CMSR. HONIGBERG: I note at the
11 top of Page 12 there's a reference to
12 "Lieberman-Warner."

13 MS. GOLDWASSER: I was,
14 actually, Your Honor, just going to ask Mr.
15 Harrison to read the last two sentences of
16 this section on CO2 Regulation, which are at
17 the top of Page 12, beginning with the, "The
18 most recent..."

19 A. (Dr. Harrison) "The most recent version of
20 Lieberman-Warner would have distributed
21 allowances to Nevada Power and Sierra, both
22 as fossil fuel generators and as load-serving
23 entities. Another proposal in the House of
24 Representatives would provide no free

1 allowances to covered entities and would
2 auction all allowances instead."

3 Q. And so, as a result, you did -- of this
4 report, you did an analysis of the various
5 options that -- the proposals that Nevada
6 Power was setting forward; is that right?

7 A. (Dr. Harrison) That's correct. In this, what
8 Nevada Power asked us to do was develop a
9 wide range of alternatives, in terms of
10 potential price projectories, and also
11 potential allowance allocations.

12 Q. Okay. Well, let's start with the allowance
13 allocations. If you turn to Page 59 of the
14 report, which is their Bates Page 425, that
15 wide range of free allocations that this
16 report considers for fossil fuel generators
17 is between zero percent and what looks like
18 maybe 30 percent, at most; is that right?

19 A. (Dr. Harrison) That's correct.

20 Q. And it goes down -- if we're trying to be in
21 the same time frame to 2027, from between
22 zero-percent free allocations and maybe
23 20-percent free allocations?

24 A. (Dr. Harrison) Yes. And just to be clear,

1 this is for fossil fuel generators. There's
2 also another allocation for electricity
3 distribution companies.

4 Q. And to be clear, what we're talking about
5 here is a utility-owned fossil fuel
6 generation analysis; right? So, would you be
7 looking at the allocations for electricity
8 distribution companies in considering the
9 Merrimack Station investment?

10 A. (Dr. Harrison) If they were also a
11 distributor, yes. In other words, when we
12 did this for Nevada Power, what we did is we
13 added together the allowances that they would
14 get as a generator and also as a distributor,
15 because in a regulated utility they would be
16 getting both those revenue streams.

17 Q. And if you apply that to PSNH in this
18 situation, would PSNH get the electricity
19 distribution allowances whether or not it
20 owned Merrimack Station?

21 A. (Dr. Harrison) I believe, yes, they would.
22 In the way in which these bills allocated
23 free allowances, they would.

24 Q. So, the only chart we need to worry about for

1 the purposes of the analysis we're doing
2 today is Figure B-4 on Page 59.

3 A. (Dr. Harrison) No. I think what we would
4 look at is the full set of allocations that
5 the electric utility would get as a result of
6 its activities in the state. And so, in the
7 case of Nevada, we used -- we added both what
8 they would get as a generator and what they
9 would get as a distribution company. And we
10 would do the same thing in the analysis for
11 New Hampshire.

12 Q. I'm a little bit confused I think, because
13 for the purposes of considering the Scrubber
14 as an alternative to another generation
15 facility, why does it matter what allowances
16 they would get as a result of the fact that
17 they're an electricity distribution company?

18 A. (Dr. Harrison) Well, the idea is that you'd
19 be looking at the total amount of electricity
20 that would be both generated and distributed.
21 So, in the context of that, they would be
22 getting the allowances for the distribution
23 as well as the generation.

24 Q. I see. So the allowances that are

1 attributable to electricity distribution
2 companies under these scenarios are a result
3 of where the underlying power comes from; is
4 that right?

5 A. (Dr. Harrison) Well, in this particular case,
6 the allocation -- and we did it as we did it
7 here for Nevada -- we looked at the amount of
8 generation -- in this particular case, fossil
9 fuel/coal generation -- and we used that as
10 the basis for determining the allocations
11 that they got, both as a generator and as a
12 distributor. And that's what was expected in
13 those legislative proposals.

14 Q. Okay. So, tell me something. What
15 percentage range -- what's the highest
16 percentage range that would apply from this
17 report, in terms of free allowances, to
18 consider the Merrimack Station scenario? Is
19 it not around 30 percent?

20 A. (Dr. Kaufman) Can I just point out that these
21 aren't comparable to the percentages that we
22 were giving earlier? This is not the same,
23 at all, metric.

24 Q. Okay. And why is that?

1 A. (Dr. Kaufman) Well, what we had described
2 before were the percentage of Merrimack's CO2
3 emissions that would be covered by free
4 allowances. This is the percentage of the
5 total cap, it says at least, that would go to
6 fossil fuel generators.

7 So, I mean, what we did was we took the
8 total cap. We figured out how many
9 allowances would be applied to fossil fuel
10 generators. We decided, okay, we're going to
11 look at Merrimack's portion of those that are
12 given to fossil fuel generators. And then
13 the percentages that we've been quoting to
14 you are just the percentages of Merrimack's
15 emissions that receive free allowances. That
16 is in no way comparable to these numbers.

17 A. (Dr. Harrison) Yes, and just to be clear,
18 when you're looking at these percentages, the
19 reason that these percentages are relevant is
20 because you're looking at a national bill and
21 figuring out how you're going to allocate
22 allowances to individual categories in the
23 national bill. So as Dr. Kaufman said, these
24 are the building blocks for the analysis of

1 allocations to individual entities, but --
2 and I thought maybe that's where you were
3 going -- but these percentages are not, as he
4 said, comparable to the percentages we're
5 talking about of a given utility's emissions.

6 Q. Well, the scenarios that you considered
7 included a zero-percent free allowance
8 scenario; is that right? In this report.

9 A. (Dr. Harrison) Yes. Nevada Power asked us to
10 provide -- just let me provide quick
11 background.

12 They asked us to provide a very wide
13 range of possible costs to them. And the
14 reason that they wanted that wide range is
15 that they were considering -- they wanted to
16 know whether the assumptions on CO2 costs had
17 an effect on which of these various plans,
18 which one of the various resource plans they
19 decided upon. So what they asked us to do
20 was provide a wide range of price forecasts,
21 provide a wide range of allocation
22 alternatives, so we can see whether the
23 results of the individual generation plants
24 are sensitive to that case. And so that's

1 exactly what we did. And what we found and
2 they used was, when we looked at these widely
3 different assumptions about prices and
4 allocations, that it didn't influence the
5 choice of resource plan.

6 So, it's important to recognize the
7 purpose of the analysis. It was not done in
8 a vacuum. It was done with a specific aim in
9 mind, which is providing a very wide range of
10 alternatives and seeing whether that
11 particular decision, the decision on the
12 resource plan that they would make going
13 forward, was sensitive to both the level of
14 CO2 prices and the allocations. So that's
15 why they asked us to look at a wide range of
16 prices and a wide range of allocations. They
17 did not ask us to look at what our
18 likelihood -- what our best guess would be of
19 the likely allocation or the range of prices.

20 Q. Let's look at the prices that you considered
21 in your wide-ranging analysis. That's on
22 Page 57; is that right?

23 A. (Dr. Harrison) Yes, it is.

24 Q. And this report considered a zero-percent or

1 a free -- you know, zero-percent free
2 allowances. So, in the first instance, let's
3 just get these numbers off from our chart.

4 So, the top graph -- the top line in
5 Figure B-2 is your high estimate. Can you
6 give me a sense of what you think the number
7 is for 2012?

8 A. (Dr. Harrison) I would say it's about, just
9 judging, \$30, \$35.

10 Q. Okay. And this isn't -- I think it says
11 somewhere that this is in metric tons. And
12 that's slightly less than in regular tons.

13 A. (Dr. Harrison) This is actually short tons.

14 Q. Short tons. So we would increase a little
15 bit on our graph; right? But we don't need
16 to do that. It's a one point -- it's a \$1.10
17 conversion?

18 A. (Dr. Harrison) Well, I think these are also
19 short tons, as our analysis was in short
20 tons.

21 Q. Oh, great. Okay. So, 35, something like
22 that.

23 A. (Dr. Harrison) Hmm-hmm.

24 Q. And then, if you go out to 2027, where would

1 that line end up?

2 A. (Dr. Harrison) Oh, about 57.

3 Q. I was thinking more like 70?

4 A. (Dr. Harrison) Did you say 2027?

5 Q. Oh, I'm sorry. Yeah, I was thinking around
6 60. Sorry. My apologies. So, 57, 60,
7 something like that. This is my
8 not-very-scientific line drawing.

9 And your mid-case from the Nevada Power
10 starts at \$25 and goes to \$40-ish?

11 A. (Dr. Harrison) That looks about right.

12 Q. Something like that.

13 And your low case probably goes like
14 12.50 to 24, 23; is that right?

15 A. (Dr. Harrison) That looks about right.

16 Q. See if I can do this.

17 And I've drawn those lines in orange,
18 give or take, on the chart; right?

19 A. (Dr. Harrison) That's right. There's -- in
20 terms of these prices. There's one more
21 price that would be relevant to the analysis
22 that was done, and that is -- when these
23 prices were used in their analysis, they also
24 used a price of -- a zero price -- that is,

1 they have -- they asked us to predict what
2 the prices would be under different CO2 price
3 alternatives. When they actually did the
4 analysis, including both these costs and
5 their resource costs, they included a zero --
6 a no-carbon price.

7 Q. Okay.

8 A. (Dr. Harrison) So, the range of prices that
9 were actually used in the analysis would
10 include zero.

11 Q. Okay. And you used something called "NEMS,"
12 N-E-M-S, to construct this analysis; is that
13 right?

14 A. (Dr. Harrison) That's right.

15 Q. You didn't use NEMS to construct the analysis
16 that you did in the report that you did for
17 PSNH; right?

18 A. (Dr. Harrison) No, no. We used -- no, it is
19 the same model, actually. The EIA forecasts
20 that we used are actually based on the NEMS
21 model.

22 Q. And we've had a little bit of a conversation
23 about how to allocate free allowances. But
24 in the zero-percent analysis, your high case

1 is probably closer to Dr. Stanton's reference
2 case than any of the other options; right?

3 A. (Dr. Harrison) That's what it shows on the
4 graph, yes.

5 Q. And even if you decreased the price linearly
6 with a 50-percent free allowance, your high
7 case that you considered for Nevada Power
8 Company is still higher than the high case
9 that you considered for PSNH; isn't that
10 right?

11 A. (Dr. Harrison) So you're asking me to
12 compare -- again, the equivalent case would
13 be for what we call the high -- our "high
14 environmental compliance case" is equivalent
15 to what there is described as the "mid-case."

16 Q. What I'm asking is, even if you calculated
17 the free allowances that you used in your
18 high case, which was 50-percent free
19 allowances for PSNH in your PSNH high case at
20 the beginning, the high case from Nevada
21 Power would still be higher than your high
22 case that you performed for PSNH.

23 A. (Dr. Harrison) I'm not -- I'm not sure I'm
24 understanding the question. Are you saying

1 if we took the case that's listed there as
2 "high price," and then we adjusted that to
3 reflect the possibility of free allowances --

4 Q. Right.

5 A. (Dr. Harrison) Is that --

6 Q. Right.

7 A. (Dr. Harrison) I can't do the arithmetic
8 exactly. I can't see that very well from
9 here. But is it roughly 50 percent? Yes.

10 (Ms. Goldwasser shows chart to witness.)

11 Q. I'm trying to let everybody see, but I don't
12 know if that's possible.

13 A. (Dr. Harrison) So you're looking at this
14 price. And you're saying, suppose -- roughly
15 along that line right there (indicating).

16 Q. It would be along the line of the Stanton low
17 CO2 Price, give or take, if you gave out free
18 allowances under the Nevada Power Company?

19 A. (Dr. Harrison) I can't be sure, but that
20 looks about right.

21 Q. Okay. Regardless, the prices that you
22 modeled for Nevada Power Company are higher,
23 as shown on that graph, than the prices that
24 you modeled for PSNH.

1 A. (Dr. Harrison) No, I don't think so. As I
2 said, the equivalent -- if we look at those
3 prices, what we were modeling for this
4 analysis was what the prices might be if
5 there was a cap-and-trade program that was
6 established. And so that is roughly
7 equivalent to the mid-case in our analysis
8 that we did for PSNH -- or looking at it from
9 the perspective of PSNH going forward in
10 2009.

11 Q. But you didn't apply the mid-case to your
12 scenarios.

13 A. (Dr. Kaufman) If I could just clarify? What
14 he meant was our high environmental cost case
15 for our PSNH analysis is conceptually
16 equivalent to the mid-case in Dr. Harrison's
17 Nevada analysis.

18 Q. Okay. But it's not conceptually equivalent
19 to the high case that Dr. Harrison prepared
20 for Nevada Power Company. Your high costs
21 for PSNH are not conceptually equivalent to
22 your high costs for Nevada Power Company.

23 A. (Dr. Harrison) That's correct.

24 Q. Okay.

1 CMSR. HONIGBERG: Ms.
2 Goldwasser, how much more do you think you
3 have?

4 MS. GOLDWASSER: Maybe two more
5 questions.

6 CMSR. HONIGBERG: Outstanding.

7 MS. GOLDWASSER: Trying to keep
8 the Chair happy.

9 CMSR. HONIGBERG: I'm more
10 worried about the court reporter right now.

11 BY MS. GOLDWASSER:

12 Q. Would you mind turning to Attachment 12,
13 please, on Page 400. Are you there?

14 A. (Dr. Harrison) Yes.

15 Q. Thanks. In the Spring 2009 analysis that you
16 did for market purchases, the only two
17 scenarios that would be a net benefit to
18 ratepayers is -- are the ones that presume no
19 cap-and-trade and low environmental costs; is
20 that right?

21 A. (Dr. Harrison) That's correct.

22 Q. And the four scenarios that show that benefit
23 to ratepayers if the Scrubber is not
24 installed all consider your high

1 environmental cost analysis, except for the
2 futures, the futures one; is that right?

3 A. (Dr. Harrison) Well, I think your -- well, of
4 course, yes, the futures one does show a
5 net -- a small net loss.

6 MS. GOLDWASSER: I have no
7 further questions.

8 CMSR. HONIGBERG: Commissioner
9 Iacopino.

10 SP. CMSR. IACOPINO: Thank
11 you.

12 INTERROGATORIES BY SP. CMSR. IACOPINO:

13 Q. Good morning.

14 A. (Dr. Harrison) Good morning.

15 Q. I'm just going to go -- I just want to go
16 over some things I heard that I need
17 clarification on for myself.

18 Yesterday, you were asked by Ms.
19 Frignoca about the fact that you only used
20 the cooling tower costs in your high case.
21 Can you explain why?

22 A. (Dr. Harrison) Well, yes. The high
23 environmental case was designed to look at
24 what the situation would be, what the cost

1 would be for the plant if a variety of
2 regulations came to pass, or environmental
3 compliance took various scenarios. And so
4 one of those scenarios is 316(b).

5 So, what we decided was that there was a
6 possibility that cooling towers would be
7 required; so we wanted to include that in the
8 analysis. But there was also significant
9 likelihood that cooling towers would not be
10 required at Merrimack, and so that was our
11 other case. I think if you look at the
12 history of what's happened with 316(b) -- and
13 we've done a number of projects related to
14 316(b) -- I think that's a reasonable range
15 of possibilities.

16 Q. How do you, in putting together your model,
17 determine -- how do you measure likelihood?

18 A. (Dr. Harrison) We didn't. That's why we
19 really did these two cases. So we don't
20 really assess the likelihood of any
21 particular case. That's why we really
22 thought that it was important to have these
23 12 scenarios. And we don't really rank which
24 one is more likely or not.

1 Q. If I understand the purpose that your study
2 should be used for, it would be improper,
3 then, to stick that \$57- to \$67 million
4 cooling tower into each of the scenarios; is
5 that correct? That would be an improper use
6 of your study?

7 A. (Dr. Harrison) That's right, because in the
8 high case it did include a cost for the
9 cooling towers.

10 Q. Ms. Goldwasser asked you earlier today about
11 where you got some of your information. I'm
12 going to ask the question directly. Did
13 Public Service tell you to use NYMEX futures
14 in your analysis?

15 A. No, not at all.

16 Q. At any point in time, did you go to Public
17 Service and say, "Can you give us some good
18 idea on where we should get our cost-of-gas
19 figures?"

20 A. (Dr. Harrison) Certainly not.

21 Q. Okay. Same question with the 2.5-percent
22 inflation. It appears to be that's the rate
23 that you used. We've also heard that used
24 from a prior witness from Public Service.

1 Did they tell you to use that figure?

2 A. (Dr. Harrison) Not at all.

3 Q. Where did you determine that figure from?

4 A. (Dr. Kaufman) That is -- I think that's one
5 of the numbers that, you know, we wanted
6 consistency across the analysis. It doesn't
7 particularly affect the analysis one way or
8 the other if we assume 1.5 percent, 2.5
9 percent, 3 percent, because it affects all
10 the scenarios. But that's one of the handful
11 of assumptions that I don't think we asked
12 PSNH for, but we did use it because they used
13 it themselves.

14 Q. So you did use it because they had used it in
15 their initial --

16 A. (Dr. Kaufman) I think that's right.

17 Q. So it wasn't based on that is the actual
18 inflation rate.

19 A. (Dr. Harrison) No. But the predicted
20 inflation rates I think were in that ballpark
21 at that time.

22 Q. Okay. Now, I understand that you've
23 qualified your testimony by saying that
24 you're not here to determine legal prudence.

1 That's not your area. But if I understand
2 correctly, from an economics standpoint, you
3 say that your study leads to the implication
4 that building the Scrubber was a reasonable
5 economic choice. And I know you've been
6 asked a lot about all the inputs into your
7 study and the make-up of it. But how do
8 you -- how do you come to the conclusion that
9 the implication to draw is that it was a
10 reasonable economic choice?

11 A. (Dr. Harrison) Yeah, I think what we said was
12 that, if you looked across the -- we said it
13 was important to look at uncertainties. And
14 so this was a lot -- there was a lot of
15 uncertainty at the time; so it wasn't really
16 significant to focus on one particular
17 result. And so what we really concluded was,
18 we saw some of those scenarios where the
19 Scrubber option was the least-cost option and
20 others where it was not. And so what we said
21 was, it was reasonable to conclude that the
22 Scrubber option would be the low-cost option,
23 not that it certainly, with a 100-percent
24 probability would be the low-cost option.

1 But it would be a low-cost option. It was
2 reasonable to make that conclusion, in light
3 of the uncertainty that was relevant at the
4 time.

5 Q. And the uncertainty is represented by the
6 range of your scenarios; is that correct?

7 A. That's correct.

8 Q. But did you -- when you determined that it
9 would be reasonable, were you giving more
10 weight to any particular scenarios or -- I
11 guess I'm trying to get to the mechanics of
12 how -- I understand what the study shows.
13 This question is terrible.

14 I understand what the study shows. In
15 some cases it would be the economic thing to
16 do, and in other cases it would not be. But
17 did you tell us to draw the implication that
18 it was a reasonable economic choice because
19 more of them came up to be low cost or what?
20 I mean, I'm trying to get to what the
21 reasoning and the implication is, especially
22 if there's not any particular higher weight
23 given to one versus the other, one scenario
24 versus the other scenario.

1 A. (Dr. Harrison) No, it really was looking at
2 the full range and saying that that's sort of
3 the inference that one would draw, that there
4 was a lot of uncertainty, but that it was
5 reasonable to look at that uncertainty and
6 look at the various options and conclude,
7 yes, it would have been possible to conclude
8 that the Scrubber Project was a low-cost
9 alternative for PSNH ratepayers.

10 Q. Sort of like a Gestalt thing.

11 A. (Dr. Harrison) Yeah, yeah, that's right. I
12 mean, one could -- I suppose one could look
13 at some of the specific results and then ask
14 the question, you know, among the different
15 scenarios, which one might be more likely.
16 We didn't get into that assessment.

17 Q. And if you were actually doing this at the
18 time, you probably could not.

19 A. (Dr. Harrison) That's right. Be very
20 difficult.

21 Q. I just have one other question about free
22 allowances. If I understood correctly, the
23 free allowance situation comes out of the
24 Waxman-Markey scenario only; is that correct?

1 Or are there free allowances in the other,
2 when you considered the other potential bills
3 that were pending?

4 A. (Dr. Harrison) No, the free allowances in the
5 Lieberman-Warner were very similar.

6 Q. Okay.

7 A. (Dr. Kaufman) Really, in all of what we call
8 "prominent proposals" at the time that had a
9 realistic chance of passing through Congress,
10 they had free allowances.

11 A. (Dr. Harrison) Yes. And just to that point,
12 it's true that there were a lot of proposals,
13 some of which did not have any free
14 allowances, but none of the ones that were
15 actually introduced as formal legislative
16 proposals. And you could sort of see that
17 because the EIA was asked to evaluate, and
18 they really only evaluated a Bingaman-Specter
19 earlier law, McCain earlier proposal, and
20 then the Lieberman-Warner and Waxman-Markey
21 proposals. The others were not formally
22 evaluated.

23 Q. I think it was during Dr. Stanton's
24 testimony, she referenced a Markey bill

1 without the Waxman, and I was told when I
2 asked her, that was not the Waxman-Markey
3 bill, that was a different bill. Is that a
4 bill that you believe should have been
5 considered?

6 A. (Dr. Harrison) No, that was an early -- it's
7 interesting to look at the history. That's
8 right. Congressman Waxman and Congressman
9 Markey both had independent bills. It was
10 interesting. I think that one of them had no
11 free allowances. And what's interesting is,
12 once they put together a combined bill, the
13 Waxman-Markey Bill, actually formally put it
14 forth, it had the same free allowance
15 allocations. And this really followed a lot
16 of discussion that had taken place on the
17 cap-and-trade program in the EU that had been
18 developed. And we actually were involved in
19 that. And that developed free allocations.
20 So that was sort of the context that a lot of
21 these bills had, is that they recognized
22 that, in order for these bills to be
23 plausible, they needed to provide free
24 allocation as a way of -- as a transition

1 mechanism.

2 SP. CMSR. IACOPINO: I don't
3 have any further questions, Mr. Chairman.

4 INTERROGATORIES BY CMSR. HONIGBERG:

5 Q. Good morning, gentlemen.

6 A. Good morning.

7 Q. A lot of materials that I might have asked
8 you about has been covered. But would you
9 pull up the Nevada Power Company report that
10 you did, please. Do you have it?

11 A. (Dr. Harrison) This is our testimony --

12 Q. Well, it's--

13 A. (Dr. Harrison) Oh, the Nevada Power Company.

14 Q. The Nevada Power Company report, Exhibit 132.

15 A. (Dr. Harrison) Yes.

16 Q. There's two different graphs I want you to
17 look at: One that Ms. Goldwasser was asking
18 you about on Page 57 of the report, and the
19 other one's earlier in the document, on
20 Page 23.

21 A. (Dr. Harrison) Yes.

22 Q. They're labeled similarly, and the slopes
23 look almost identical, but there are some
24 differences in the words around them. Can

1 you tell me what the difference is between
2 these two graphs?

3 A. (Dr. Harrison) I think that the only
4 difference is the X axis goes for more years.
5 So it's -- the one on Page 23 goes out to
6 2039, and the one on Page 57 goes to 2030. I
7 think that they're the same... let me just
8 check that. I think they're the same graphs,
9 just different years.

10 Q. The question running through my mind is why
11 are they both in here. But it's not really
12 that significant.

13 [Laughter]

14 A. (Dr. Harrison) Yeah, let me clarify that.
15 One is an appendix. So the appendix that
16 describes the methodology we used, and then
17 the other is in the report with the results
18 of the analysis.

19 Q. Fair enough. I don't think I have anything
20 else.

21 CMSR. HONIGBERG: Mr.
22 Needleman, do you have any redirect?

23 MR. NEEDLEMAN: I do.
24 Wondering if we could take a break so I can

1 trim my list down?

2 CMSR. HONIGBERG: Fine with me.

3 So we'll come back in 15 minutes, at 10

4 minutes to 11.

5 (Whereupon a recess was taken at 10:34

6 a.m., and the hearing resumed at 10:55

7 a.m.)

8 CMSR. HONIGBERG: Mr. Needleman.

9 MR. NEEDLEMAN: Thank you.

10 REDIRECT EXAMINATION

11 BY MR. NEEDLEMAN:

12 Q. Actually, just a couple quick questions.

13 Dr. Harrison and Dr. Kaufman, several
14 times while you were questioned, you were
15 asked about this hypothetical gas plant that
16 you created and then compared in terms of
17 prices in your model. Do you recall that?

18 A. (Dr. Harrison) Yes.

19 Q. And you were asked at times about whether you
20 understood that it would not necessarily have
21 been legal for PSNH to construct or own a
22 plant. Do you recall that?

23 A. (Dr. Harrison) Yes.

24 Q. Does the fact that PSNH might have

1 hypothetically been the owner, or any other
2 entity might have been the owner, in any way
3 affect your analysis?

4 A. (Dr. Harrison) No, it does not.

5 Q. Okay. Could you turn to Exhibit 128, please,
6 which you were asked about this morning by
7 Mr. Frantz. Looking at Page 9, the third
8 paragraph --

9 A. (Dr. Harrison) Yes.

10 Q. -- you were asked the question about the gas
11 prices listed in that paragraph. Do you
12 recall that, whether the prices were
13 reasonable for PSNH to consider at the time,
14 something like that? I'm paraphrasing. I
15 may not be getting it exactly right. Do you
16 recall that?

17 A. (Dr. Harrison) Yes, I do.

18 Q. I want to ask you about those prices. Am I
19 correct that the prices listed there are the
20 price to produce that gas at that time?

21 A. (Dr. Harrison) That's right.

22 Q. Those prices don't reflect adders, for
23 example, for transportation; is that correct?

24 A. (Dr. Harrison) That's correct.

1 Q. They don't reflect any increase that the
2 producers or others might add on for profit;
3 is that correct?

4 A. (Dr. Harrison) That's correct.

5 Q. And these are not forecasts. They are actual
6 spot prices at the time; is that correct?

7 A. (Dr. Harrison) That's right. These are
8 break-even prices at the time.

9 Q. Okay. A few minutes ago we spent yet more
10 time on these charts. And I just want to ask
11 you one more thing about this.

12 First of all, when we look at this
13 chart -- and that now is, I think, Exhibit
14 132 -- 131 -- am I correct that the pink
15 lines and the orange lines on that chart do
16 not in any way account for free allowances?

17 A. (Dr. Harrison) That's correct.

18 Q. And you, I think, explained a moment ago, but
19 I wanted to be clear, with respect to the
20 orange lines on that chart, which of those
21 would you say is the one that is most
22 comparable to the analysis that you did here.
23 I'm trying to make this an apples-to-apples
24 comparison.

1 A. (Dr. Harrison) Yes, as I think I mentioned,
2 the one that's relevant to this would be what
3 we referred to in the Nevada case as the
4 "mid-Nevada case" the mid-price case.

5 Q. So that's the middle of the three orange
6 lines on that chart; is that right?

7 A. (Dr. Harrison) That's correct.

8 Q. I'm going to ask you to pop up for a minute
9 and come over here. I'm handing you a red
10 marker, and I'm going to ask you to draw on
11 that chart. Focusing on the middle orange
12 line, I would like you to adjust that for the
13 allocation of free allowances and then
14 indicate with that red line how that would
15 then appear on this chart.

16 (Witness drawing.)

17 A. (Dr. Harrison) Okay. So what -- I'm going to
18 start with this curve, and that's the curve
19 going up. And we said that the allocations
20 were about 50 percent for the early years,
21 going to 25 percent in the later years. So
22 I'll just go down here. This is the middle.
23 So I'll go down here about halfway. And then
24 I'm going to...

1 MR. GLAHN: You can see Dr.
2 Harrison became an economist because his art
3 talents were lacking.

4 [Laughter]

5 WITNESS HARRISON: Yes, I'll
6 plead guilty.

7 BY MR. NEEDLEMAN:

8 Q. So that red line represents what now?

9 A. (Dr. Harrison) So this would be "mid."

10 Q. So, is that red line now, in your best
11 approximation, an apples-to-apples comparison
12 between the Nevada report that we discussed
13 earlier and the prefiled testimony report
14 that you did here?

15 A. (Dr. Harrison) Yes. And just to be clear,
16 so, again, the red line is -- goes up like
17 this. The "mid" is the one with the squares.
18 So it goes up. But for technical reasons,
19 these goes up at different slopes, which I
20 could explain. But this would be the one
21 that would be most comparable. So, the one
22 with the red squares would be comparable with
23 the allowance allocation. So, what I've
24 really done is taken the mid-Nevada case,

1 which is only prices, and adjusted it for the
2 allocation that was expected under the
3 Lieberman-Warner or Waxman-Markey and created
4 something that would be the cost to PSNH and
5 drawn that line. So that's, I would say,
6 similar; higher, lower at different parts,
7 but similar to what we had for our high
8 compliance case.

9 Q. Thank you. Just one more set of questions
10 and I'm be done. You can sit down. Thanks.

11 So I'm going to ask you when you return
12 to your chair to turn to Page 9 of your
13 testimony.

14 A. (Dr. Kaufman) Okay.

15 Q. And I'm looking at Question 13. And you were
16 asked if you had the information necessary to
17 fully evaluate Mr. Hachey's testimony, and
18 you said "No."

19 MS. GOLDWASSER: Objection.

20 CMSR. HONIGBERG: Yes.

21 MS. GOLDWASSER: This isn't in
22 the scope of what was crossed.

23 MR. NEEDLEMAN: It's absolutely
24 in the scope. Questions were specifically

1 asked about Mr. Hachey's gas price forecast,
2 and that's where I'm going.

3 MS. GOLDWASSER: I just asked
4 if they looked at the other forecasts. I
5 didn't get into this.

6 MR. NEEDLEMAN: She asked what
7 he looked. She ran through all of the
8 forecasts that Mr. Hachey produced.

9 MS. GOLDWASSER: I just asked
10 them whether they looked at them. I didn't
11 get into the substance of their --

12 CMSR. HONIGBERG: I don't know
13 what the question is yet.

14 MS. GOLDWASSER: If Attorney
15 Needleman wants to get into this, fine, then I
16 may have a question on redirect -- on recross.

17 CMSR. HONIGBERG: I'm not sure
18 you have a right to do that. But I don't
19 yet -- I want to make sure I understand what
20 the question is.

21 Can you repeat the question, Mr.
22 Needleman? I'm sorry.

23 MR. NEEDLEMAN: I started by
24 asking if they -- the question was: "Did you

1 have all the information necessary to fully
2 evaluate Mr. Hachey's testimony?" And they
3 indicated they did not. And then I was going
4 to point to the last portion of the last line,
5 which said that it would -- that if they had
6 the additional information that was requested,
7 it would have been significant in evaluating
8 Mr. Hachey's testimony.

9 And what I will jump to is
10 that they were specifically, during their
11 exam by Ms. Goldwasser, questioned about the
12 chart, which is Exhibit 17, on Bates Page
13 407, the report, and that's where I'm going.

14 CMSR. HONIGBERG: Well, I don't
15 think you need him to repeat his direct
16 testimony, which I think you've got.

17 MR. NEEDLEMAN: Okay. Well,
18 then I'll skip ahead and simply note there are
19 two other places in their direct testimony --
20 and I won't ask -- but on Pages 34 and then
21 Page 37, Footnote 15, where in all three
22 places they indicate that it would have been
23 helpful to them to have that information.

24 BY MR. NEEDLEMAN:

1 Q. So my question to you, looking at your chart
2 on Page 17, is -- I'm sorry -- Exhibit 17,
3 Page 407, having in mind that you were asked
4 questions earlier about the price bounds on
5 this chart and the reasonableness of those
6 bounds, I want you to assume a hypothetical.

7 Assume that TransCanada has in its
8 possession documents which are directly
9 contrary to the three curves here that show
10 Mr. Hachey's price curves, and in fact, those
11 documents would be more akin to the black
12 line showing the NERA high forecast. If
13 those documents existed and you had them,
14 would that affect your analysis here?

15 A. (Dr. Kaufman) Oh, yes. I mean, we were
16 trying to get a sense for what the
17 expectations and forecasts were at that time.
18 This would be mid-2008. So you can see
19 Hachey's three forecasts in the colored lines
20 here, which is sort of a narrow band that
21 increases over time. The lines outside of
22 that show the range that we used. So I
23 think, if I'm understanding your
24 hypothetical, if we had information showing

1 additional forecasts near the high end of our
2 range, it would certainly have helped to
3 reinforce our conclusion that such a range
4 was reasonable to consider.

5 MR. NEEDLEMAN: And with that,
6 Mr. Chairman, I'm going to ask that adverse
7 inference be drawn that that information
8 exists, and, as a result, it would support the
9 analysis as Dr. Kaufman just indicated.

10 CMSR. HONIGBERG: We understand
11 the request.

12 MR. NEEDLEMAN: I have nothing
13 further.

14 MS. GOLDWASSER: I have very
15 limited questions on recross.

16 MR. NEEDLEMAN: I object.

17 CMSR. HONIGBERG: I understand
18 why you would object.

19 What is it you would like to
20 ask these witnesses, Ms. Goldwasser?

21 MS. GOLDWASSER: I have one
22 question about the apples-to-apples comparison
23 that Attorney Needleman just had Mr. -- or Dr.
24 Harrison perform on the graph, just to --

1 CMSR. HONIGBERG: And what
2 would that question be?

3 MS. GOLDWASSER: The question
4 is whether the free allowances that they
5 depict on their chart include both the free
6 allowances to distribution companies and the
7 free allowances to generating facilities, the
8 ones that -- the lines that are represented
9 that were already in their testimony. So,
10 whether the lines that are net of free
11 allowances that they presented in their
12 testimony include free allowances to both
13 distribution companies and to generation
14 companies. It's just a factual question.

15 CMSR. HONIGBERG: Wait, wait,
16 wait, Mr. -- I mean Dr. Harrison.

17 Yes, Mr. Needleman.

18 MR. NEEDLEMAN: Before we go
19 there, there are two issues: No. 1, there
20 have been any number of occasions where I
21 think members of our team would have liked
22 additional redirect and have not requested it
23 because we understood that was the end of the
24 questioning; and No. 2, I believe under the

1 Commission rules, as the party with the burden
2 of proof, we are entitled to go last. And so,
3 for those reasons I object to any additional
4 questions.

5 MS. GOLDWASSER: Fine with me
6 if they have additional questions. It's just
7 a factual question. I just want to make sure
8 I understand what they are saying.

9 CMSR. HONIGBERG: Mr. Needleman
10 is correct.

11 Notwithstanding the soundness
12 of the objection, Dr. Harrison, do you
13 understand the question Ms. Goldwasser would
14 like to ask?

15 WITNESS HARRISON: Yes, I do.
16 I'd be glad to answer it.

17 CMSR. HONIGBERG: Please answer
18 it.

19 WITNESS HARRISON: Yes. I
20 believe the allocation only relates to the
21 generation. I believe I may have misspoken
22 earlier. I believe that the allocation that
23 we calculated in the context of Merrimack
24 Station only includes the allocation that

1 would have been provided to Merrimack as a
2 generator.

3 MS. GOLDWASSER: Okay. Well,
4 that opens the door to questions about the
5 testimony that was provided when I was
6 crossing Dr. Harrison with respect to the
7 percentages in the Nevada Power report --

8 CMSR. HONIGBERG: I don't
9 think --

10 (Court Reporter interrupts.)

11 CMSR. HONIGBERG: Ms.
12 Goldwasser, there was another explanation for
13 the problem you identified with those charts,
14 and Dr. Kaufman gave it to you. You, at that
15 point, you could have followed up with Dr.
16 Kaufman as to the problem you had identified
17 and what your -- what the assumption was. I
18 think that, to the extent Dr. Harrison has
19 clarified something he said earlier, I think
20 that the time's passed for that. If you
21 wanted to -- I'll allow you to make an offer
22 of proof as to what you would ask him to
23 clarify at this point.

24 MS. GOLDWASSER: I'm sorry. I

1 don't have my report in front of me.

2 CMSR. HONIGBERG: You want my
3 copy?

4 MS. GOLDWASSER: The offer of
5 proof is merely that the apples-to-apples
6 comparison would be to the allocation to
7 fossil fuel generators that's depicted in
8 Figure B-4 on Page 59 of the Nevada Power
9 report and not to the allocations scenarios
10 that depict both fossil fuel generators and
11 electricity distribution companies.

12 MR. NEEDLEMAN: I'm going to
13 object because I simply don't understand that.

14 CMSR. HONIGBERG: Yeah, I don't
15 either.

16 MS. GOLDWASSER: I can try
17 again. This is a lawyer talking economics.
18 My apologies.

19 CMSR. HONIGBERG: At this
20 point, you're probably not going to be allowed
21 to ask these questions, but I want to make
22 sure you have an opportunity to make the
23 record as to what you would ask. So I think
24 you need to think quickly here as to what

1 those questions would be. Do you want a few
2 minutes to consider that?

3 MS. GOLDWASSER: No, I can
4 reframe my questions.

5 CMSR. HONIGBERG: Okay. Go
6 ahead.

7 MS. GOLDWASSER: In my
8 conversation with Dr. Harrison during
9 cross-examination, he indicated that the free
10 allowances that would apply to the Project in
11 the analysis of the Merrimack Station case
12 would be the free allowances that would be
13 given to a fossil fuel generation facility and
14 to a distribution company.

15 CMSR. HONIGBERG: I think we
16 all recall that. We all recall that.

17 MS. GOLDWASSER: My
18 understanding of what he just said is that the
19 free allowances that would apply are the ones
20 that would apply to generation facilities
21 only.

22 CMSR. HONIGBERG: That is what
23 he said, yes.

24 MS. GOLDWASSER: And I just

1 want to assure myself that I know which chart
2 of free allowances in the Nevada Power Company
3 scenario is the one that would apply in an
4 apples-to-apples comparison of the Merrimack
5 Station case and the Nevada Power Company
6 case, because it sounds like the testimony
7 that he gave before is not exactly his intent.

8 CMSR. HONIGBERG: I think he
9 was just asked specifically that question by
10 Mr. Needleman, and he identified which lines
11 are the apples-to-apples comparison.

12 MS. GOLDWASSER: Not in the
13 report. There's different percentages of free
14 allowances in the report than the percentages
15 that Dr. Harrison applied in the Merrimack
16 Station.

17 CMSR. HONIGBERG: Mr.
18 Needleman.

19 MR. NEEDLEMAN: Whole new line
20 of questioning here. It was Ms. Goldwasser
21 that drew the orange lines on there. And
22 based on the orange lines that she drew, I
23 asked Dr. Harrison to make it into an
24 apples-to-apples comparison. We are now going

1 in a totally different place, and I don't
2 think that's appropriate.

3 CMSR. HONIGBERG: Ms.
4 Goldwasser, anything else?

5 MS. GOLDWASSER: No, sir.

6 CMSR. HONIGBERG: The
7 objection's sustained.

8 MR. NEEDLEMAN: Thank you.

9 CMSR. HONIGBERG: I believe
10 we're done with you gentlemen. Thank you very
11 much.

12 WITNESS HARRISON: Thank you.
13 (Commissioners conferring).

14 CMSR. HONIGBERG: Mr. Reed,
15 come on down.

16 * * * * *

17 (WHEREUPON, JOHN J. REED was duly sworn
18 and cautioned by the Court Reporter.)

19 JOHN J. REED, SWORN

20 CMSR. HONIGBERG: Mr. Glahn.

21 DIRECT EXAMINATION

22 BY MR. GLAHN:

23 Q. Good morning, Mr. Reed. Would you state your
24 name for the record, please.

1 A. Yes. My name is John James Reed.

2 Q. Just briefly for the Commission, Mr. Reed,
3 describe your background and education, et
4 cetera.

5 A. Yes. I've been in the energy utility
6 industry for 38 years. In that time frame
7 I've worked in the industry for a utility,
8 the nation's largest gas utility, where I was
9 chief economist, and in consulting. Over the
10 course of my consulting career, I have done
11 extensive work on the economics and finance
12 of public utilities, including electric
13 generation. I have appeared as an expert in
14 civil, administrative and arbitration cases
15 on more than 150 occasions on the issues of
16 public utility economics and finance.

17 Q. Are those -- is the description of instances
18 in which you've appeared before other boards
19 and commissions attached to your testimony in
20 this case?

21 A. Yes.

22 MR. GLAHN: I would note for
23 the record, before Mr. Reed makes is
24 preliminary statement, that there was a

1 portion of Mr. Reed's testimony that was
2 struck by the Commission in the copy of
3 Exhibit 16 -- or I believe it's Exhibit 16
4 that's in the record has that portion of the
5 testimony identified.

6 BY MR. GLAHN:

7 Q. Mr. Reed, I understand you have a brief
8 opening statement. If you would go ahead and
9 make that at this point.

10 A. Yes, I do.

11 My rebuttal testimony in response to the
12 testimony of Dr. Stanton and that of Mr.
13 Hachey addresses three interrelated issues:
14 First, what I believe is the correct
15 framework for analyzing the prudence of
16 PSNH's decisions regarding the Scrubber
17 Project; second, whether using that
18 framework, PSNH's decision falls within a
19 range of reasonable decisions; and third,
20 whether divestiture or retirement of
21 Merrimack Station would have been a more
22 reasonable and viable option for PSNH in the
23 time frame from mid-2008 to mid-2010.

24 Taking each of these points in sequence,

1 the regulatory standard of prudence, as it
2 has been applied in New Hampshire and
3 elsewhere, calls for the evaluation of a
4 utility's actions relative to a range of
5 reasonable and acceptable conduct. Prudence
6 does not require that a utility's actions
7 produce benefits for customers based on how
8 matters turn out. And it recognizes that, as
9 uncertainty increases, the range of
10 acceptable behavior also increases. There is
11 typically no single prudent decision in any
12 given circumstance. And the standard
13 recognizes that reasonable people can and
14 often do differ in evaluating and choosing
15 from among the options available.

16 In applying this framework to PSNH's
17 actions, I began by recognizing, as has the
18 New Hampshire Public Utilities Commission has
19 recognized, that the Scrubber installation at
20 Merrimack Station does not reflect a utility
21 management choice among a range of options;
22 instead, installation of Scrubber technology
23 at the Merrimack Station is a legislative
24 mandate.

1 The actions of PSNH were based on
2 complying with the Clean Power Act in a
3 cost-effective, timely and reasonable manner.
4 The law allowed for very limited
5 circumstances under which PSNH could request
6 a variance from the requirements of the law:
7 A variance in schedule for or in the level of
8 the reduction requirement. Given that the
9 mandated schedule and emissions level were
10 reasonably achievable, as demonstrated by the
11 Project, PSNH was clearly within the range of
12 acceptable conduct in not seeking either of
13 these variances.

14 While PSNH could also have sought
15 approval for a divestiture of Merrimack
16 Station, thereby transferring to a new owner
17 the obligation of installing the Scrubber,
18 the approval of the divestiture request and
19 process, and the conduct of the divestiture
20 process itself, could not have been
21 accomplished before mid-2010. By that time
22 frame, the market for coal-fired power plants
23 had substantially deteriorated, and it would
24 have been impossible to sell the plant on

1 terms that would have produced a benefit for
2 PSNH's customers. Such a sale would have
3 increased the cost of capital for the plant,
4 increased the assumed cost of completing the
5 Scrubber Project, and increased rates to
6 PSNH's customers.

7 These conclusions are based on my
8 personal experience in managing generation
9 divestiture processes that involved more than
10 75 generating units across the United States,
11 and representing buyers in other such
12 processes. The sales I have managed include
13 all three of the divestiture processes that
14 NSTAR has undertaken and other such processes
15 in New England and New York.

16 PSNH did not pursue the retirement of
17 Merrimack Station prior to installing the
18 Scrubber. This was clearly within a range of
19 reasonable behavior, given the statements
20 made by the New Hampshire Public Utilities
21 Commission and the Legislature in the 2008
22 and 2009 time frame, to the effect that
23 retirement of station was not a valid means
24 of complying with the Clean Air Project.

1 Installation of the Scrubber had been
2 determined by the Legislature to be in the
3 public interest, and it is inconceivable to
4 me that in order to be within a range of
5 reasonable conduct, one could conclude that
6 PSNH needed to challenge that determination
7 that had been made by the Legislature, after
8 the Legislature had reviewed the updated cost
9 estimate and assessment of cost impacts in
10 early 2009.

11 Based on a regulatory standard of
12 prudence, my assessment of PSNH's actions in
13 building the Scrubber have led me to conclude
14 that PSNH's actions were prudent. The Clean
15 Power Act's requirements were clear, and the
16 Legislature's objectives in leaving the
17 requirements of the Act in 2009 unchanged
18 were also clear.

19 The testimony presented by PSNH in this
20 case demonstrates, through numerous analyses
21 based on known and knowable facts at the
22 time, that the installation of the Scrubber
23 was carefully assessed, that the conduct of
24 the Project was capably managed, and that the

1 costs of this Project have been prudently
2 incurred.

3 I recognize that, with the benefit of
4 hindsight, this action may not have produced
5 all of the economic benefits for PSNH's
6 customers that would have been produced if
7 natural gas prices had remained high;
8 however, the prudent standard prohibits the
9 use of hindsight. And the Clean Air Act was
10 based on the pursuit of numerous benefits
11 that went beyond simply securing the lowest
12 price to consumers, including electric
13 reliability, environmental stewardship and
14 jobs.

15 In addition, it is unknowable at this
16 time whether gas prices will once again rise
17 to previous levels and that Merrimack Station
18 will produce even greater benefits than are
19 currently envisioned.

20 The fundamental question before the
21 Commission is this: Were PSNH's decisions
22 outside the range of what reasonable managers
23 would have done at the time? A fair and
24 complete review of these actions and the

1 circumstances under which they were made does
2 not provide any support for the positions of
3 Dr. Stanton and Mr. Hachey that PSNH's
4 decisions were outside of this reasonable
5 range, or that these costs were imprudently
6 occurred.

7 That concludes my opening statement.

8 MR. GLAHN: Mr. Reed is
9 available for cross-examination.

10 CMSR. HONIGBERG: Mr. Sheehan.

11 MR. SHEEHAN: Thank you.

12 CROSS-EXAMINATION

13 BY MR. SHEEHAN:

14 Q. Good afternoon -- morning, still. My name's
15 Mike Sheehan. I'm Staff counsel here.

16 Are you aware of some of the Commission
17 orders that have followed not just your
18 rebuttal testimony, but others, concerning
19 the role that non-lawyer legal testimony will
20 play in this docket?

21 A. Yes, I am.

22 Q. So, understanding you're not a lawyer -- is
23 that correct --

24 A. That's correct.

1 Q. -- I am going to be asking you questions
2 about prudence because that's, in effect,
3 what your testimony is. And I understand
4 what we are getting from you is the opinion
5 of not a lawyer, but someone who's been in
6 the industry and reviewed and made these
7 decisions over the years. Is that fair?

8 A. I would say someone who's been accepted as an
9 expert on the prudent standard in many
10 jurisdictions across North America.

11 Q. Okay. The first question I want to ask you
12 is: As you recognize, there is a statute in
13 this case, the Scrubber Law, that certainly
14 PSNH has characterized as a "legal mandate."
15 I want you to assume for a moment that PSNH's
16 understanding of the law is wrong and that,
17 for whatever reason, the Commission were to
18 decide it is not a legal mandate. In that
19 case, would it ever be prudent for a company
20 to, in effect, misinterpret the law and go
21 down what we now decide is the wrong path?
22 Or stated differently, a reasonable
23 misinterpretation of the law. Could that be
24 prudent? Or does the fact that the law was

1 decided a different way close the door to any
2 further prudence evaluation? Do you follow
3 me?

4 A. I think I do. As I understand your question,
5 is an interpretation of the law that's
6 contrary to the interpretation placed on it
7 by the ultimate finder of fact, or finder of
8 law, mean that you were imprudent in reaching
9 that perspective at the time?

10 Q. You said it much better than me. Thank you.

11 A. I don't think that's the case. I think that
12 the question one needs to ask is: Is the
13 interpretation that, in this case, the
14 Company placed on that legislation at the
15 time based upon facts and circumstances at
16 the time within a range of what a reasonable
17 person would have done? So if the act is
18 capable of being misinterpreted by a
19 reasonable person, and if a reasonable person
20 could have come to the same conclusion that
21 PSNH did in your example, then that conduct
22 would be within a range of reasonable and
23 prudent behavior.

24 Q. A slightly different topic. Managers are

1 confronted, as you say, with a range of
2 options for any particular decision -- and
3 certainly here they were. And let's put
4 aside the statute. Let's assume we've gotten
5 past the statutory question, and the
6 Commission is evaluating the economic
7 decision of whether to go forward with the
8 Scrubber or not. And I assume -- I
9 understand there are a lot of assumptions
10 that get us there that you and the Company
11 may disagree with.

12 So, assume the statute doesn't exist.
13 Assume they're facing the economic decision
14 of do we go forward or not. And placed in
15 front of PSNH were five or six or seven
16 scenarios of what may happen in the future
17 with various prices -- gas prices,
18 construction prices, et cetera. And usually,
19 as I understand it, when you do analyses and
20 do lots of scenarios, there will be an
21 outlier on each end and a clump of results
22 somewhat in the middle, sort of a bell curve
23 of analyses. Is that a fair statement?

24 A. Yes.

1 Q. If the utility were to choose one of the
2 outliers -- again, assuming we can agree that
3 this is an outlier -- would that be a prudent
4 decision? And again, I understand it's a
5 very broad question.

6 A. Again, it is a broad question. As I
7 understand it, you're asking me if they had
8 chosen one of the outliers -- meaning the
9 upper limit of the distribution of those
10 prices or whatever we're looking at in this
11 question -- and relied exclusively on that --

12 Q. Correct.

13 A. -- would that have been imprudent? That's
14 difficult to say. Certainly, I think best
15 practice requires the consideration of
16 uncertainty and a range of outcomes, not a
17 single outcome. But I think in your
18 question, you probably have the answer, which
19 is: You've told me that others produced this
20 range of forecasts, and the estimate that the
21 Company relied on was within that range, even
22 though it's an upper end of that range. I
23 think that speaks to the fact that the
24 assumption made by the Company was within the

1 range of what others would have done. So,
2 unless one could conclude that that outer
3 limit or that upper end of the forecast range
4 was produced by somebody in an unreasonable
5 fashion or by an unreasonable person, then
6 adopting that figure would have been a
7 reasonable result.

8 Q. A different way of asking that question: Is
9 there some obligation to be conservative on
10 the part of the utility managers, so that
11 maybe, again, as a general rule, you should
12 shy away from those, what I call "outliers"?

13 A. Well, in fact, being conservative may mean
14 embracing those outliers. When you're
15 talking about needing to maintain the
16 reliability and security and integrity of the
17 electric system, and ensuring that you can
18 meet demand under a wide range of
19 assumptions, including extraordinary peaks,
20 including peaks in pricing, it may mean, in
21 fact, that you do need to consider that type
22 of extreme event or outlier in order to be
23 conservative. I would not want to equate
24 building a resource plan around an assumption

1 of an extreme event as being anything other
2 than conservative. That's the nature of
3 resource planning with reserve markets and
4 with allowance for uncertainty.

5 Q. Well, let's take that decision to not a
6 resource plan, but a decision whether to
7 invest a lot of money in a capital project.
8 And of the range of options in front of you,
9 one out of six results in an economic
10 benefit. Again, assuming they're all -- you
11 know, that's what economists do: They give
12 you best case, give you worst case and a
13 couple in the middle, and you're putting
14 money at risk. Is it still the case that we
15 would embrace the outlier?

16 A. Again, it's going to depend on the specifics
17 of the circumstance. And it's hard to
18 separate that question from the facts we've
19 all looked at in this case.

20 I'm familiar with very recent cases,
21 current cases, where other utilities are
22 confronted with the same exact question:
23 Should you continue with a project where
24 you've gone from six out of seven cases being

1 favorable to two out of seven cases being
2 favorable in terms of economics alone?
3 I am watching a case right now in
4 Florida that I'm participating in, where
5 Florida Power & Light is facing that exact
6 question with regard to pursuing a new
7 nuclear plant at the south end of Florida.
8 Their view is: Even though the economics
9 have shifted and are now in a situation where
10 the majority of the cases may not produce
11 economic benefits, when you look at
12 reliability of supply, when you look at
13 stability of price, when you look at
14 environmental benefits, all of which are
15 associated with nuclear over coal or natural
16 gas in that market, that continuing with the
17 project makes sense. The Commission, the
18 Florida Commission, has affirmed that
19 decision. It actually reviews that decision
20 each and every year, and has for the last six
21 years. And it has said, even with the
22 deterioration of what I'll call the "price
23 elements of the project," continuing with the
24 project makes sense for other reasons. And I

1 think, as I've said here, there were other
2 reasons present here, too, in terms of
3 reliability, environmental stewardship, even
4 economic development. So, I don't think you
5 would make the decision based on price alone.

6 Q. In the Florida case, it sounds like the
7 utility was regularly updating and reviewing
8 the various changes that were going on with
9 that project. Is that fair to say?

10 A. It was. And under the law in Florida, the
11 utility there has to provide an update once a
12 year to the Commission. I'm aware that there
13 were updates provided here as well. And the
14 Commission and interested parties can
15 participate in that case in Florida.

16 Q. Is it part of a utility's prudence obligation
17 to be candid with such updates and
18 presentations to the regulator?

19 A. Yes. I think being candid with your
20 regulator, especially when you're presenting
21 information in a regulatory proceeding, is
22 important.

23 Q. And is that also true for presentations made
24 to policymakers, such as legislators?

1 A. Yes, I think being candid and forthcoming is
2 important. I'll leave it at that.

3 CMSR. HONIGBERG: Wait, Mr.
4 Sheehan. Let's go off the record for just one
5 second.

6 (Discussion off the record.)

7 CMSR. HONIGBERG: Let's go back
8 on the record.

9 BY MR. SHEEHAN:

10 Q. And as part of that duty of "candor," which
11 is my label, does that include the duty to
12 correct what may be misinformation presented
13 to either a Commission or a legislator?

14 A. In your example, presented by others or by
15 the utility?

16 Q. By others. And I would say -- in this case,
17 I'll be specific. There is evidence that, at
18 the time the Scrubber Law was passed,
19 statements were that it would not exceed
20 \$250 million. And PSNH's position in this
21 case has been, in effect, that was an
22 estimate, a good-faith estimate that changed
23 over time. There's letters from a state
24 Commissioner that says PSNH says it is "not

1 to exceed \$250 million," which could be seen
2 as a mischaracterization of what PSNH
3 actually said.

4 Does PSNH, in that situation, have an
5 obligation to say, No, the Commissioner of X
6 was wrong. It really is an estimate. It's
7 not -- you know, that's the basis for the
8 question.

9 A. Again, you're obviously not asking for a
10 legal opinion here, in terms of a legal
11 obligation or duty.

12 Do I think it's good regulatory practice
13 to keep the record as correct as possible?
14 Yes. If I saw that type of statement made,
15 and I thought it was material to the matter
16 being considered, I would seek to correct it.

17 Q. I'm going to ask you a couple questions about
18 what you think the Commission could do upon
19 findings of imprudence.

20 Let's assume for the moment the
21 Commission were to decide the Company was
22 prudent in going forward with the Project and
23 spending the money it spent,
24 400-and-some-million dollars, but the

1 Commission were to find imprudence in some
2 actions taken along the way. And candor has
3 been one of them that has been discussed in
4 that case.

5 So what we have is it was a prudent
6 decision to go forward; they spent the money
7 well; but there were instances of not being
8 candid or not correcting what should have
9 been corrected, that kind of imprudence that
10 is difficult to tie to a dollar amount. Do
11 you understand the -- so the question is:
12 What options would the Commission have in an
13 ultimate order of, on the one hand they were
14 prudent in spending money, on the other hand,
15 there were actions that were not prudent?

16 MR. GLAHN: This is asked as a
17 pure hypothetical; correct?

18 MR. SHEEHAN: Correct.

19 A. I'm going to answer it, actually, not as a
20 hypothetical, but in the case of a very
21 specific example that I was involved in.

22 As the independent prudence auditor for
23 the nuclear projects in Florida, that issue
24 came before me directly, where I felt that

1 the company -- in that case, Florida Power &
2 Light -- had not been candid and forthcoming
3 with the Florida Commission with regard to a
4 cost estimate. My report to the Commission
5 made that statement that I thought the
6 company had not been fully honest and candid
7 and forthcoming with that information, and I
8 basically chastised the company for that. I
9 indicated that I felt that that action had no
10 impact on the prudence of the costs that had
11 been incurred for the project. It didn't
12 cause the project to be more expensive than
13 it otherwise would have been. But I felt
14 that their conduct had been unacceptable.
15 The Commission approved all of the cost
16 recovery in that case after having heard my
17 evidence and my report, despite the fact that
18 intervenors had asked for a major
19 disallowance on the grounds of what they were
20 labeling as "perjury." The Commission did
21 grant full recovery, did reprimand the
22 company for not having been fully forthcoming
23 with its cost estimates and said don't let it
24 happen again. And that what was the end of

1 it, at least the end it for the time being.

2 It's the kind of issue that can always
3 come back when the company wants to evaluate
4 the quality of management in establishing a
5 return-on-equity allowance in a rate case or
6 something like that. Many states look to
7 management performance as an element in
8 determining what is the appropriate return to
9 be granted. But I've not seen a case in
10 which that type of position led to a
11 disallowance on the grounds of prudence. And
12 in the case I was involved in, where I made
13 the recommendation to pass the cost through,
14 but to note the deficiency, that is what the
15 Commission in Florida did.

16 Q. So you're not aware of a situation where this
17 kind of imprudence resulted in a
18 disallowance.

19 MR. GLAHN: Objection. I don't
20 think there's -- his question wasn't -- I
21 don't understand what he means by "this type
22 [sic] of imprudence." If his question is, is
23 a lack of candor, per se, imprudence, well,
24 then he can ask that question.

1 CMSR. HONIGBERG: I don't think
2 he was even close to that question.

3 Do you want to clarify your
4 question, though, Mr. Sheehan?

5 MR. SHEEHAN: Sure.

6 BY MR. SHEEHAN:

7 Q. You just gave an example of where you
8 recommended a finding of imprudence based on
9 what you said was "perjury" in that case and
10 what may have been considered lack of candor
11 of the facts, some version of the facts in
12 this case. So that was what I say as "this
13 kind of imprudence."

14 My question was: Are you aware of
15 whether there has been -- of a situation
16 where a Commission has made a disallowance
17 based on imprudence of that nature?

18 A. The short answer is no. But since this is a
19 public record, I have to clarify that I did
20 not label the action as "perjury."

21 Q. Understood.

22 A. And I did not label it as "imprudent." I
23 labeled it as a "lack of being forthcoming
24 and being candid." But I am not aware of a

1 situation similar to that where a Public
2 Utilities Commission disallowed an investment
3 or disallowed the recovery of an expense on
4 the grounds of a failure to be candid or a
5 failure to provide the most current
6 information.

7 Q. Are you aware of other steps, other than an
8 admonition, that a Commission have taken in
9 those kinds of situations, such as reducing
10 the rate of recovery or the like?

11 A. I'm not aware of anyone who has disallowed
12 costs or reduced the rate of recovery. I
13 have seen management performance, including
14 staying on top of changes in costs and things
15 like that, as being an element of
16 establishing the allowed return on equity as
17 a management matter in rate cases. That's
18 rare, and it takes a pretty major issue to
19 come before a Commission before they're going
20 to reflect that on a return on equity.

21 MR. SHEEHAN: That's all the
22 questions I had. Thank you.

23 CMSR. HONIGBERG: Who's going
24 next? Ms. Chamberlin.

1 MS. CHAMBERLIN: Yeah. Thank
2 you.

3 CROSS-EXAMINATION

4 BY MS. CHAMBERLIN:

5 Q. Mr. Reed, I'm Susan Chamberlin for the
6 Consumer Advocate for the residential
7 ratepayers. Good morning.

8 A. Good morning.

9 Q. Now, you just went over the Florida case.
10 Did you make a recommendation of a
11 prudence-based disallowance in that case?

12 A. I made a recommendation that there not be a
13 prudence disallowance on the grounds that the
14 conduct of the company that I questioned did
15 not lead to any higher costs or any imprudent
16 action.

17 Q. Going through your past experiences which are
18 listed in JJR1, can you recall a time when
19 you made a financial disallowance
20 recommendation?

21 A. Yes. The largest prudence case ever
22 conducted in the United States was in Texas,
23 which is called "Docket No. 9300." That was
24 a case in which approximately \$16 billion of

1 costs were being reviewed for prudence by the
2 Texas Public Utilities Commission. I was one
3 of two auditors hired by the Commission in
4 that case to conduct the prudence review.
5 One side was on nuclear construction costs;
6 the other side was on gas purchase costs. In
7 that case, which is, I think 1989 maybe --
8 actually, a little bit later, but many years
9 ago -- I recommended a disallowance in excess
10 of \$400 million to the Commission, based upon
11 the conduct of what was called Texas
12 Utilities Fuel Company, which was actually,
13 at that time, the largest gas purchaser in
14 North America. So I worked for the
15 Commission -- or for the Commission Staff and
16 General Counsel, recommended a
17 multi-hundred-million-dollar disallowance.
18 The Commission did disallow about half of
19 that amount on the gas side.

20 Q. And do you recall what behavior led you to
21 conclude that it was due a disallowance?

22 A. Yes. They had made very gross errors in
23 contract practices, in contract management.
24 They had neglected to manage contracts in a

1 timely manner. This includes, for example --
2 contracts in those days had what were
3 referred to as "market out-clauses,"
4 fixed-price gas contracts where you could
5 unilaterally say the market has changed and
6 go back and seek to impose a new cost. I
7 remember vividly one \$30 million contract
8 where, literally, the contract -- they were
9 still using paper contracts and paper
10 contract management systems -- the contract
11 had fallen behind the filing cabinet. And
12 they forgot to exercise their market out,
13 leading to more than \$15 million of higher
14 costs for customers by a clerical omission.
15 That was the kind of thing I thought was
16 clearly imprudent.

17 Q. In your testimony -- it's Bates 239 -- Lines
18 23 and 24, you state that PSNH --

19 A. I'm sorry. What page reference are we on?

20 Q. Bates 239.

21 A. Could you give me the --

22 CMSR. HONIGBERG: It's Page 21
23 of your testimony.

24 THE WITNESS: Thank you.

1 MR. GLAHN: Mr. Reed, it's
2 probable that the copy you have there has
3 Bates numbers in the bottom right-hand corner
4 as well, if that helps.

5 THE WITNESS: It says 000023.

6 MR. GLAHN: That's right.

7 It's --

8 (Court Reporter interrupts.)

9 THE WITNESS: And the last
10 digit is cut off, unfortunately.

11 MR. GLAHN: So, again, what's
12 the Bates number, Susan?

13 MS. CHAMBERLIN: It's 239.

14 MR. GLAHN: It's Page 21 of
15 your testimony.

16 THE WITNESS: Yes, I have that.

17 BY MS. CHAMBERLIN:

18 Q. At the bottom of the page, you state that
19 PSNH concluded that Merrimack would continue
20 to be a cost-effective base-load resource; is
21 that correct?

22 A. Well, specifically, I said that PSNH
23 concluded that pursuit of the Scrubber would
24 allow Merrimack to continue to be a

1 cost-effective base-load resource.

2 Q. And in that instance, "cost-effective" means
3 revenues received are greater than the cost
4 to operate?

5 A. No, not necessarily. That would be
6 equivalent to saying it's going to be a
7 least-cost resource. Cost-effective means
8 that the price you're paying fairly reflects
9 the value you're receiving. So, value can be
10 fuel diversity; it can be energy reliability,
11 instability; it can be price. So, in my
12 mind, cost effective means just what I said,
13 that the value fairly reflects the benefits
14 or attributes you're receiving.

15 Q. So you don't believe that revenues greater
16 than operating costs is the most important
17 element. Or do you believe that it's an
18 element, but not the most important one?

19 A. A comparison of revenues and cost is an
20 element, and I think it's an important
21 element. It is certainly not the only
22 element.

23 Q. Okay. You concluded that -- you've used the
24 phrase "base-load resource." And a

1 reasonable estimate for a capacity factor for
2 a base-load plant would be about 70 percent?
3 Is that a fair estimate?

4 A. Well, maybe even 60. But something north of
5 60.

6 Q. And on Bates Page 248, that's where you
7 discuss divestiture.

8 A. This is paper Page 30?

9 Q. Yes. And are you stating that Merrimack
10 plant was a "weak-performing" or "high-risk"
11 plant?

12 A. Do you have a reference to a specific line
13 number on that page?

14 Q. Yes. You're talking about PPAs. I have it
15 right here. Hold on.

16 A. If I could help? You're probably on Line 8
17 of Page 238?

18 Q. Yes, that's exactly right.

19 A. And my opinion is, in this time frame, which
20 is referenced, actually, on the bottom of the
21 prior page -- that is, the 2010 time frame --
22 I would describe Merrimack at least as being
23 a "high-risk" plant, with regard to
24 environmental regulation and with regard to

1 fuel costs. "Weak-performing" is a relative
2 term. I would have said at that time it was
3 a unit that was "economically challenged" by
4 the significant downturn in gas prices that
5 had occurred in the outlook forecast prices,
6 as well as environmental regulation. But
7 this is -- we're talking about 2010, maybe
8 mid-2010.

9 Q. And you believe that that characterization
10 was different, say a year earlier, in 2009?

11 A. Yes, very definitely different at the time of
12 the legislature's consideration of the
13 alternatives bills and in 2008.

14 Q. So, in 2009, there was not a high risk of
15 environmental compliance costs?

16 A. I think that continued to evolve as the
17 nation considered new approaches to carbon
18 regulation, as well as to haze and
19 particulates, but -- so I would say it
20 increased. To me, the greatest change,
21 though, was not in environmental regulation;
22 it was in the outlook for fuel prices, and,
23 therefore, power prices.

24 MS. CHAMBERLIN: Okay. Thank

1 you. That's all I have.

2 MR. PATCH: No questions.

3 CMSR. HONIGBERG: Mr. Irwin.

4 MR. IRWIN: Yes. Thank you.

5 CROSS-EXAMINATION

6 BY MR. IRWIN:

7 Q. Mr. Reed, my name is Tom Irwin. I represent
8 the Conservation Law Foundation. Good
9 morning.

10 A. Good morning.

11 Q. If I could please direct your attention to
12 Page 12 of your testimony. That's Bates 230,
13 Line 5.

14 A. I have that.

15 Q. Okay. So you say in your testimony,
16 "Prudence decisions cannot be evaluated based
17 on whether they were expected to, or in fact
18 did, provide a 'benefit to ratepayers.'
19 First, whether a project or decision produces
20 'benefits' to ratepayers can only be
21 determined after the fact." Did I read that
22 correctly?

23 A. Yes.

24 Q. Is it your opinion that it's impossible to

1 prospectively assess a project's foreseeable
2 costs or benefits?

3 A. No.

4 Q. So you would agree that a prudent manager can
5 prospectively take into account potential
6 costs, such as regular -- future regulatory
7 costs in assessing the value of an
8 investment.

9 A. You asked can a prudent manager take
10 consideration of potential costs. In that
11 case, yes, it can.

12 Q. So, a prospective analysis can and should be
13 done; correct?

14 A. For what purpose?

15 Q. A prospective analysis of the benefits and
16 costs of an investment in a major capital
17 infrastructure.

18 A. Yes, I believe it's reasonable and important
19 to conduct an analysis of potential future
20 costs and benefits when assessing the
21 appropriateness of a major capital
22 expenditure.

23 Q. Okay. Thank you. Moving on, down at -- I'm
24 sorry -- Line 11 on the same page of your

1 testimony, you state, "The existence of
2 'benefits' may be a subjective matter that is
3 not capable of being examined based on a
4 factual inquiry limited to information that
5 was available at the time for the decision
6 maker." Did I read that correctly

7 (Witness reviews document.)

8 A. Yes.

9 Q. And then you go on to provide an example.
10 You say, "For example: Utilities 'choose' to
11 pay federal income taxes because the law
12 requires that they do so. The decision to
13 comply with this law may not be one that
14 some, or even most ratepayers believe
15 produces 'benefits' for them." Did I read
16 that correctly?

17 A. Yes.

18 Q. Now, did you -- do you interpret Dr.
19 Stanton's testimony to be calling for a
20 subjective analysis of what ratepayers may or
21 may not believe to be beneficial to them?

22 A. Her position calls for an analysis of
23 benefits determined after the fact. Whether
24 that's objective or subjective depends on the

1 analysis being done. But the statement in
2 her evidence is that prudence requires a
3 utility manager to restrict capital expenses
4 for which he or she plans to seek recovery
5 from ratepayers to those projects that are
6 beneficial to ratepayers. So that was the
7 portion of her evidence that I was objecting
8 to. That is the analysis, I believe, her
9 evidence calls for.

10 Q. And you would agree, however, that Dr.
11 Stanton has conducted a cash-flow analysis
12 taking into account reasonably foreseeable
13 factors, such as future regulatory costs and,
14 as you indicated a few moments ago, the very
15 important issue of fuel costs, natural gas
16 costs.

17 A. If we can take the word "reasonable" out of
18 the question, I think I can probably agree
19 with you. I'm not offering an opinion on the
20 reasonableness of her assumptions with regard
21 to environmental costs or fuel costs. I
22 agree that she has conducted a cash flow --
23 or specifically, a discounted cash-flow
24 analysis of the project.

1 Q. If you could please turn to Page 23 of your
2 testimony.

3 A. I have that.

4 Q. So, on Page 23, starting on Line 15, you
5 indicate that the "most reasonable time frame
6 in which the Legislature could have reviewed
7 its decision to require installation of the
8 Scrubber would have been in the
9 2008/early 2009 time frame."

10 Mr. Reed, if you would assume for
11 purposes of this question that a utility
12 manager in the position of PSNH at that time
13 had a responsibility to assess the prudence
14 of making the investment -- so we're setting
15 aside opinions related to whether there's a
16 mandate -- would you agree that that
17 2008/early 2009 time frame was a critical
18 time frame for purposes of such a review?

19 A. Let me make sure I understand your question.
20 You're asking me to assume away any mandate
21 or law that would compel a decision or
22 undertaking with regard to the capital
23 expenditure, and you ask is this time frame
24 of the second half of 2008, the first

1 quarter, perhaps, of 2009, an important time
2 frame for evaluating that decision because of
3 the degree of uncertainty that was occurring.
4 I agree with that. I accept that.

5 There was a large degree, a very large
6 degree of uncertainty with regard to natural
7 gas prices. We saw, of course, there was
8 also a change in the capital cost estimate
9 for the project. Both of those contribute to
10 uncertainty. So, I think it is appropriate
11 and important to conduct analyses that
12 capture that. I think the Company did do
13 that. But you've also asked me to assume
14 some counterfactual elements in your question
15 that I think are just that, counterfactual.

16 Q. Thank you. Turning to Page 19 of your
17 testimony, please.

18 A. I have that.

19 Q. And in particular, the entry on this table
20 dated 12/31/2008.

21 MR. GLAHN: I'm sorry, Tom.
22 What page are you on?

23 MR. IRWIN: I'm sorry. This is
24 Page 19, Bates 237.

1 MR. GLAHN: Thank you.

2 BY MR. IRWIN:

3 Q. The entry dated 12/31/2008 states, "PSNH
4 executes more than \$225 million of the \$340
5 million in contracts for the Scrubber
6 Project."

7 Now, you did not, prior to the
8 preparation of this report, review the
9 contracts at issue; correct?

10 A. The actual construction agreements? That's
11 correct.

12 Q. Okay. In fact, that entry was based on
13 information provided to you by Mr. Smagula of
14 PSNH?

15 A. It was, I believe, developed by Mr. Smagula.
16 It was provided by counsel to me.

17 Q. So I assume it's fair to say, having not
18 reviewed the agreements, that you had not
19 reviewed or didn't have independent knowledge
20 of termination clauses that may have been
21 present in such agreements.

22 A. It's fair to say I relied on the information
23 request/response that was submitted in this
24 case by PSNH, I think developed by

1 Mr. Smagula, which spoke to the different
2 categories of committed costs.

3 Q. If I could turn your attention to Page 34 of
4 your testimony, Bates 252.

5 A. I have that.

6 Q. Starting at Line 10, you state, "First, while
7 Dr. Stanton acknowledges that PSNH had
8 incurred \$23 million" --

9 (Court Reporter interrupts.)

10 Q. "First, while Dr. Stanton acknowledges that
11 PSNH had incurred \$23 million in engineering
12 and planning expenses by March of 2009, she
13 fails to recognize that PSNH had already
14 contractually committed to \$225 million of
15 the \$340 million in contracts for the
16 Scrubber Project by the end of 2008."

17 So, again, those numbers are not based
18 on any independent analysis by you of
19 contracts at issue.

20 A. That's correct. It's based on my review of
21 the information request/response submitted by
22 the Company.

23 MR. GLAHN: And I'd just note
24 that the sentence that Mr. Irwin read has a

1 semi-colon, and the sentence goes on, if you
2 want to read it. But it goes on from there.

3 CMSR. HONIGBERG: The record is
4 clear it's his testimony. People can read the
5 rest of the sentence at their leisure.

6 Mr. Irwin.

7 BY MR. IRWIN:

8 Q. Mr. Reed, when were you retained to assess
9 the prudence of PSNH's investment in the
10 construction of the Merrimack Station
11 Scrubber?

12 MR. GLAHN: Objection. I'm not
13 sure that that's exactly what he said he was
14 retained to do. It's clear in his report, and
15 he talks about prudence of --

16 CMSR. HONIGBERG: The real
17 question is, "When were you retained?" Right?

18 MR. IRWIN: Yes. Strike that.

19 BY MR. IRWIN:

20 Q. I'll just ask -- you weren't retained to
21 assist in the management decisions as they
22 were being made by PSNH with respect to the
23 Scrubber; correct?

24 A. That is correct.

1 Q. So you were retained after the fact to
2 provide opinions retrospectively on the
3 prudence of PSNH's actions.

4 A. That's correct.

5 MR. IRWIN: Thank you. I have
6 no further questions.

7 CMSR. HONIGBERG: Thank you.

8 Mr. Fabish.

9 MR. FABISH: Just a couple
10 questions.

11 CROSS-EXAMINATION

12 BY MR. FABISH:

13 Q. My name is Zach Fabish. I'm an attorney with
14 the Sierra Club.

15 Without getting into -- strike that.

16 So, your testimony talks about, in part,
17 some options that may or may not have been
18 available to PSNH as it concerns the
19 development of the Scrubber Project; correct?

20 A. It does, yes.

21 Q. Are you familiar with the rebuttal testimony
22 filed by PSNH from Bill Smagula?

23 A. Yes, I am.

24 Q. Are you familiar with Page 29 of that

1 testimony?

2 A. I don't have that document up here with me.

3 (Mr. Sheehan hands document to witness.)

4 MR. GLAHN: Zach, what's the
5 number? Is it 29?

6 MR. FABISH: Yeah, 29.

7 MR. GLAHN: Do you have a Bates
8 number for it?

9 MR. FABISH: Bates No. 000029.

10 MR. GLAHN: Bunch of zeros and
11 29.

12 A. Just to be clear -- I'm sorry. Is this the
13 direct or the rebuttal?

14 BY MR. FABISH:

15 Q. This is the rebuttal.

16 A. Okay. Let me find that document. Give me
17 just a moment.

18 CMSR. HONIGBERG: Let's go off
19 the record for a minute.

20 (Discussion off the record)

21 CMSR. HONIGBERG: Let's go back
22 on the record.

23 BY MR. FABISH:

24 Q. So, do you have that in front of you?

1 A. I do.

2 Q. Great. Could you take a look down around
3 Lines 20 through 22. Do you see where the
4 testimony indicates that there was testing of
5 activated carbon injection at Merrimack that
6 achieved mercury reduction, with peak
7 reduction levels of 50 to 60 percent? Do you
8 see that?

9 A. I see testimony that I believe was stricken
10 to that effect.

11 Q. Oh, was it? My apologies.

12 MR. GLAHN: That's what my
13 notebook shows as well.

14 BY MR. FABISH:

15 Q. Okay. Well, then, as a hypothetical --

16 CMSR. HONIGBERG: I'm sorry.
17 What's the hypothetical then? Assume for a
18 moment what?

19 MR. FABISH: Assume for a
20 moment that PSNH tested activated carbon
21 injection technology at Merrimack Station and
22 was able to achieve some level of mercury
23 reduction.

24 CMSR. HONIGBERG: Okay. That's

1 the assumption. What's the question?

2 BY MR. FABISH:

3 Q. Did you consider as one of the alternatives
4 in your testimony, reducing some of the
5 mercury in conjunction with the Scrubber
6 through ACI technology?

7 MR. GLAHN: I mean, I think
8 we're at a point now where, if they want to
9 ask this stuff -- they moved to strike it out.

10 MR. FABISH: I didn't --

11 MR. GLAHN: If they want to
12 open this door, it seems to me it comes back
13 in.

14 CMSR. HONIGBERG: Well, I think
15 others might want to weigh in on this.

16 Mr. Fabish is asking a
17 hypothetical question that is based on
18 testimony that was struck at the request of
19 another party. So, Ms. Chamberlin, do you
20 want to weigh in on this at all?

21 MS. CHAMBERLIN: Yes. I
22 certainly don't believe it brings the
23 testimony back in. The Commission has ruled
24 that it's stricken, and it's stricken. If he

1 wants to argue that it's irrelevant, the
2 question is relevant or improper, that's fine,
3 but it does not open the door to bring the
4 testimony back in.

5 CMSR. HONIGBERG: Does anyone
6 else want to weigh in?

7 (No verbal response)

8 CMSR. HONIGBERG: Mr. Fabish, I
9 think you can ask the hypothetical.

10 MR. FABISH: Should I reask
11 or --

12 BY MR. FABISH:

13 Q. Mr. Reed, do you --

14 CMSR. HONIGBERG: Do you have
15 the question, Mr. Reed?

16 THE WITNESS: I need the
17 question again.

18 BY MR. FABISH:

19 Q. Okay. Did you evaluate as part of your
20 testimony an option in which PSNH, in
21 conjunction with the Scrubber, reduced some
22 of the mercury reduction prescribed by the
23 Legislature through the use of activated
24 carbon injection?

1 A. I'm glad I had the question read back because
2 there's no mention of a "hypothetical" in
3 that question. So I'll answer it the way you
4 asked it.

5 I was aware of that. I did not consider
6 one of the alternatives that was available to
7 the Company after the passage of the Clean
8 Power Act to be the use of a technology other
9 than a wet scrubber. From my perspective, I
10 viewed that as being one of the mandates of
11 the Act and not being subject to substitution
12 by the Company on its own.

13 Q. So, for purposes of your testimony, your
14 understanding of the Clean Power Act was that
15 the only permissible way to reduce mercury at
16 the affected units was through the use of a
17 wet scrubber?

18 A. Again, I'm not going to offer a legal
19 opinion. It is my view that the Act called
20 for that technology. And I'll just leave it
21 at that.

22 Q. Okay. Can you take a look at your testimony
23 at Page 18, which would also be Bates 000236.

24 A. I have that.

1 Q. Okay. Just looking at the question and
2 answer at Lines 9 through 10, I just want to
3 clarify that's what you meant with your
4 answer to the preceding question.

5 (Witness reviews document.)

6 A. It's the same Act, if that's what you mean.

7 Q. No, that's not what I mean. That's fine,
8 though. Let me move on to the next question.

9 So, consistent with your testimony, your
10 understanding is that the only thing the
11 Clean Power Act allowed for reduction of
12 mercury was construction of a wet scrubber.

13 A. Yes, that is my understanding.

14 Q. Okay. So, hypothetically speaking, using
15 coal -- in addition to building a wet
16 scrubber, using a coal that contained less
17 mercury and thereby achieving some level of
18 mercury reduction by burning a slightly
19 cleaner blended fuel, that was not an
20 allowable alternative under the Clean Power
21 Act?

22 A. We need to go back to the beginning of that
23 question. I thought you said, "in addition
24 to using a wet scrubber" --

1 Q. Correct.

2 A. -- which means you would supplement the use
3 of a wet scrubber with fuel substitution to a
4 different quality or tech spec for coal?

5 Q. Correct.

6 A. I think that probably would have been a
7 possible action. It doesn't relieve the need
8 to build the Scrubber. But I think you could
9 supplement the Scrubber with a fuel
10 substitution.

11 Q. Okay. Could you supplement the Scrubber with
12 activated carbon injection?

13 A. That goes beyond my expertise.

14 Q. Okay.

15 MR. FABISH: All right. I
16 think that's all the questions I have. Thank
17 you very much.

18 CMSR. HONIGBERG: Commissioner
19 Iacopino.

20 INTERROGATORIES BY SP. CMSR. IACOPINO:

21 Q. Mr. Reed, I believe I heard you testify in
22 your opening statement that, as the range of
23 uncertainty increases, the range of
24 reasonable responses increases. Is that

1 correct?

2 A. Yes, that is my statement. I think that's an
3 important point and one very relevant to the
4 circumstances of 2008 and 2009.

5 Q. Well, have you ever heard the phrase, "the
6 devil you know...?"

7 A. I have.

8 Q. And generally, I mean, that stands for the
9 proposition that in times of uncertainty, you
10 would stick with what you have and not look
11 at a broad range of things; isn't that
12 correct?

13 A. No, I don't accept that.

14 Q. Well, tell me why.

15 A. I think that the nature of uncertainty -- if
16 you're seeking to maximize welfare or achieve
17 a desired result, what that suggests to me is
18 that the "devil you know" or the "status
19 quo," which may have been acceptable and
20 satisfactory in terms of the results it
21 produced before, may no longer produce
22 satisfactory results because the environment
23 is changing. And from my 38 years in utility
24 planning, when you have created uncertainty,

1 whether it's inflation -- I remember days
2 when inflation was 16 and 17 percent -- or
3 whether it's uncertainty about natural gas
4 prices or equipment prices, that is when
5 reasonable people tend to differ most with
6 regard to the response they want to make. It
7 is that range of what reasonable people do
8 that define the acceptable range of prudent
9 or reasonable conduct. So, because
10 everyone -- when you have a dramatic change
11 in circumstances, everyone perceives those
12 circumstances differently. They perceive
13 changes differently. They perceive the
14 likely path forward differently. So, at
15 least in my experience, under those
16 circumstances, the responses that people make
17 and the choices they make tend to diverge
18 from a sort of central or normal tendency.
19 That's why I say the range of reasonable
20 behavior expands as the degree of uncertainty
21 expands.

22 SP. CMSR. IACOPINO: I have no
23 other questions.

24 CMSR. HONIGBERG: I have no

1 questions.

2 Mr. Glahn, do you have any
3 redirect?

4 MR. GLAHN: I do.

5 REDIRECT EXAMINATION

6 BY MR. GLAHN:

7 Q. Mr. Reed, let me first go back to Mr.
8 Fabish's questions. All the questions he
9 asked you, I think, assumed that the Scrubber
10 would also be installed along with activated
11 carbon.

12 Were you aware that in 2005 and 2006,
13 PSNH evaluated the use of activated carbon at
14 Merrimack Station?

15 A. Yes, I am aware.

16 MS. CHAMBERLIN: Your Honor, I
17 object. That's the stricken testimony.

18 CMSR. HONIGBERG: Sustained.

19 BY MR. GLAHN:

20 Q. Okay. Let's go back to square one, which is,
21 both the Staff and Mr. Irwin asked you to
22 assume that the law didn't exist. Do you
23 think that a prudent utility making the
24 decisions that PSNH made in constructing the

1 Scrubber was entitled to assume the law
2 didn't exist?

3 A. No. I don't think any manager has the
4 ability to assume away existence of a law.

5 Q. And I think you were asked by the Staff to
6 make a conclusion or to -- you were asked
7 whether a -- what would happen to a utility
8 that made a reasonable misinterpretation of
9 the law. Do you recall that?

10 A. Yes.

11 Q. I want you now to assume something a little
12 bit different.

13 On the issue of installation of the
14 Scrubber, do you think a prudent utility
15 could assume that the Scrubber need not be
16 installed when the body responsible for
17 regulating the utility indicated that the
18 Legislature had passed a law that did not
19 establish an alternative to installing the
20 technology? In other words, same assumption,
21 but now the utility has to interpret the law.
22 But the body responsible for regulating the
23 utility at the time that they're making the
24 decision says there's no alternative to

1 installing it.

2 A. I think that type of statement by a utility's
3 regulator is the type of statement that the
4 utility could reasonably rely upon.

5 Obviously, if someone were to determine later
6 that that interpretation was incorrect, it
7 might represent detrimental reliance. But it
8 is the type of statement I believe a utility
9 manager is properly able to rely upon.

10 Q. And if it also was the case that the
11 regulator's decision went to the Supreme
12 Court in the state in which the regulator
13 sat, and the Supreme Court refused to review
14 the regulator's decision, would that, in your
15 view, influence the prudence of the utility's
16 action?

17 A. Yes. I think it would strengthen the ability
18 to rely quite heavily on that type of a
19 statement.

20 Q. Now, you were asked a question about lack of
21 candor and imprudence. Do you recall that?

22 A. I do.

23 Q. Okay. To your knowledge, based on what
24 anyone has told you in this case, is there

1 any evidence in this case that there was a
2 lack of candor on the part of this utility,
3 in this situation?

4 A. Well, my answer actually goes beyond what
5 people have told me. But what I have seen
6 myself with regard to the documents and the
7 evidence in front of the Commission on this
8 case, I have seen no lack of candor by PSNH.

9 Q. Okay. Now I want you to assume that you are
10 sitting as a prudent auditor, in effect, as
11 you said you've done down in Texas, okay.
12 And I want you to assume something else:
13 That one of the issues of whether the utility
14 was prudent was whether the utility actually
15 explained to the -- told the regulator what
16 the break-even point between gas and coal --
17 the spread between gas and coal was, okay.
18 Do you have that in mind?

19 A. I do.

20 Q. Now I want you to assume that the utility --
21 that the staff of the utility -- or the staff
22 of the regulating body said there was no lack
23 of candor, okay. Take that into account as
24 well.

1 A. Okay.

2 Q. And that the gas assumption and the coal
3 assumption had been given to the staff of the
4 regulator and to the regulator, and that the
5 utility told the staff that their model was
6 highly sensitive to the gas/coal price
7 spread. And there's a dispute actually as to
8 whether the spread -- just assume those
9 facts, okay.

10 A. I have that.

11 Q. Now, in that situation, as a prudence
12 auditor, would you say that there had been a
13 lack of candor?

14 A. Certainly not on those points, no.

15 Q. Now let's talk a little further about lack of
16 candor. I want you to assume that there was
17 a lack of candor, but that there were
18 proceedings before the regulatory body in
19 which there was an ability to ask the utility
20 any questions the regulators wanted, about
21 anything they wanted. Would that influence
22 your decision as to whether the conduct of
23 the utility was imprudent, even if there was
24 a lack of candor?

1 A. As I understand your question, you asked me
2 to assume that there was a lack of candor?

3 Q. Assume there was a lack of candor, but then
4 there were proceedings in which the decision
5 around which the lack of candor was
6 addressed, was subject to review by both the
7 regulator -- start with the regulator.

8 A. Okay. I have that in mind. And your
9 question is how does that influence my
10 judgment on whether the utility was prudent
11 or imprudent?

12 Q. Yes.

13 A. Again, I define "prudence" as being conduct
14 within a range of reasonable behavior. If a
15 reasonable person under those circumstances
16 could expect and understand that the
17 information was going to come into the record
18 through others, through intervenors, through
19 cross-examiners, through either an
20 administrative body or legislative body
21 asking questions, then I don't see that
22 conduct as being very problematic. Beyond
23 that, though, there's also the question of
24 causation. You know, is the failure to

1 disclose that information going to lead to
2 any type of imprudent cost being incurred or
3 any, again, detrimental effect? It's not
4 enough to simply say someone failed to
5 disclose information. You also have to look
6 at what's the effect of that disclosure, if
7 any. As I said, in Florida, I was quite
8 critical of the company's failure to
9 disclose; yet, I, as the independent expert
10 in that case, did not conclude that there
11 were any cost consequences of that. And
12 that's frequently the case. You don't see an
13 expenditure or a resource plan decision
14 typically turn on one piece of information.

15 Q. Speaking of "one piece of information," I
16 want you to make another assumption for the
17 moment, and that is, that a utility bases its
18 fuel price projections -- let's take the case
19 of natural gas fuel price projections -- on
20 just one price. I just want to you assume
21 that's the assumption for the moment.

22 CMSR. HONIGBERG: Mr. Glahn,
23 did anybody cross the witness on this topic?

24 MR. GLAHN: I think they asked

1 him about prices and whether there were
2 expected -- and specifics of relying on one
3 decision.

4 CMSR. HONIGBERG: Go ahead.

5 A. I have that in mind.

6 BY GLAHN:

7 Q. Assuming that were true, would that be, per
8 se, imprudent?

9 A. No.

10 Q. For example: Would reliance on NYMEX futures
11 prices, even if that were the sole basis for
12 the decision, be, per se, imprudent?

13 A. No, not at all. NYMEX futures prices are
14 actually very reliable information, and
15 information that many utilities do rely on.

16 Q. Do you know, for example, whether TransCanada
17 relies on those prices?

18 MS. CHAMBERLIN: Your Honor, I
19 object. This really wasn't gone into on
20 direct.

21 CMSR. HONIGBERG: Sustained.

22 BY MR. GLAHN:

23 Q. To go back to Commissioner Iacopino's
24 question about the "devil you know," there

1 was a great deal of uncertainty in the
2 marketplace in the fall of 2008 and the early
3 part of 2009; is that correct? I think we've
4 all agreed to that.

5 A. Yes.

6 Q. Have you seen anything in this case that
7 would cause you to believe that PSNH was --
8 acted imprudently in going forward to
9 construct the Scrubber, notwithstanding the
10 uncertainties in the market, based on what it
11 knew or could have known in the fall or
12 spring of 2008?

13 A. No. To the contrary, my investigation and
14 analysis led me to conclude the contrary,
15 that the Company was prudent.

16 Q. I want you to make another assumption about
17 prudent behavior and the law.

18 If you were advising a utility in the
19 fall of 2008, and the law that exists in this
20 case existed -- now I want to assume the real
21 case -- that, in fact, a utility was acting
22 under the -- whether it's a mandate, whether
23 it's a constraint, doesn't matter what we
24 call it; the law is there. The utility comes

1 to you and says, "I'm considering retiring
2 the plant." What advice would you give that
3 utility?

4 A. I would have said that I don't think that
5 option is available to you. I would have
6 said, even without the law, retirement of a
7 unit in New England is something that
8 requires ISO-New England's approval. And
9 that's a long and often bitterly fought
10 proposition. But beyond that, I see the law
11 as requiring the installation of this
12 Scrubber. So I don't see that retiring the
13 unit is a valid means of complying with the
14 law. It certainly, to me, seems to thwart
15 the Legislature's intent or -- I won't say
16 "intent," but the Legislature's statements
17 with regard to the Scrubber being in the
18 public interest.

19 MR. IRWIN: Your Honor, I
20 object and move to strike on the grounds that
21 this was not the subject of cross-examination
22 and that the witness is getting into issues
23 regarding interpretation of the law. The
24 Commission has made clear that it will address

1 those legal issues without benefit of witness
2 testimony.

3 CMSR. HONIGBERG: Mr. Glahn.

4 MR. GLAHN: This witness has
5 been asked a whole series of questions to
6 assume that certain facts that in fact do
7 exist, didn't exist. I think it's fair to ask
8 the witness, given what did exist, what in his
9 view should a prudent utility have done.

10 CMSR. HONIGBERG: And that is
11 the subject of his testimony. I think we've
12 got the subject of testimony. And asking him
13 to repeat the direct testimony that he's given
14 isn't particularly useful. People were -- I
15 think other parties, intervenors, Staff, were
16 probing, "well, assume certain other things,
17 how would that change." I think the witness
18 has answered those questions thoroughly. If
19 all you're doing is asking him to go back to
20 his direct testimony, we don't need to do
21 that.

22 So, is there something beyond
23 that you want to do that was the subject of
24 cross-examination?

1 MR. GLAHN: Let me take one
2 minute.

3 (PSNH Counsel confer.)

4 MR. GLAHN: I withdraw my
5 question, and we're all done.

6 CMSR. HONIGBERG: Thank you
7 very much. Thank you, Mr. Reed.

8 I think that's all we're going
9 to do for now. We'll break until... let's
10 come back at quarter to two. That's an hour
11 and twenty minutes from now. We'll go off
12 the record.

13 (Whereupon the MORNING Session of Day 7
14 recessed at 12:24 p.m. The AFTERNOON
15 Session of Day 7 is contained under
16 separate cover so designated.)

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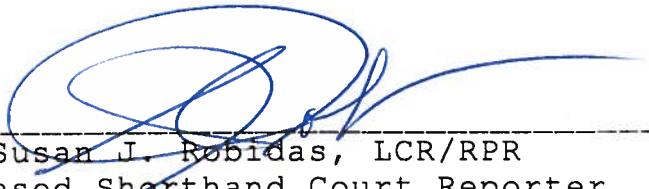
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[WITNESS: REED]

C E R T I F I C A T E

1
2 I, Susan J. Robidas, a Licensed
3 Shorthand Court Reporter and Notary Public
4 of the State of New Hampshire, do hereby
5 certify that the foregoing is a true and
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11 I further certify that I am neither
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