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of New Hampshire

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The Northeast Utilities System

August 15, 2008

Debra A. Howland
Executive Director and Secretary
New Hampshire Public Utilities Commission
21 S. Fruit Street, Suite 10
Concord, NH 03301-2429

ORIGINAL

N.P.U.C. Case No.	DE 07-108
Exhibit No.	5
Witness	Panel
DO NOT REMOVE FROM FILE	

Re: Docket No. DE 07-108

Dear Secretary Howland:

Enclosed is the rebuttal testimony of Terrance J. Large, Gilbert E. Gelineau and Stephen R. Hall on behalf of PSNH in Docket No. DE 07-108, Public Service Company of New Hampshire 2007 Least Cost Integrated Resource Plan.

Very truly yours,

Stephen R. Hall, Manager
Rate & Regulatory Services

SRH:kn
Enclosures
cc: Service List

THE STATE OF NEW HAMPSHIRE
BEFORE THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION
REBUTTAL TESTIMONY OF
TERRANCE J. LARGE
GILBERT E. GELINEAU
AND
STEPHEN R. HALL
Docket No. DE 07-108

1 Q. Please state your names, business addresses and positions.

2 A. My name is Terrance J. Large. My business address is PSNH Energy Park, 780
3 North Commercial Street, Manchester, New Hampshire. I am Director- Business
4 Planning and Customer Support Services for PSNH.

5 A. My name is Gilbert E. Gelineau. My business address is PSNH Energy Park, 780
6 North Commercial Street, Manchester, New Hampshire. I am Manager – Marketing
7 Support for PSNH.

8 A. My name is Stephen R. Hall. My business address is PSNH Energy Park, 780
9 North Commercial Street, Manchester, New Hampshire. I am Rate and Regulatory
10 Services Manager for PSNH.

11 Q. Have all of you previously testified before the Commission?

12 A. Yes. We have all testified on numerous occasions before the Commission.

1 Q. Did anyone else assist in the preparation of this testimony?

2 A. Yes. Mr. Richard Labrecque assisted in the preparation of the section of testimony
3 dealing with the wholesale power price forecast. To the extent that there are
4 questions on this section, PSNH requests that Mr. Labrecque be allowed to respond
5 to those questions.

6 Q. What is the purpose of your testimony?

7 A. The purpose of our testimony is to comment on the pre-filed testimony of George R.
8 McCluskey who provided the Staff's position on PSNH's September 28, 2007 Least
9 Cost Integrated Resource Plan (LCIRP). In this rebuttal testimony, we will discuss
10 areas in which we disagree with Mr. McCluskey's specific conclusions along with
11 the rationale for our disagreement. We will also describe why at least some of Mr.
12 McCluskey's conclusions are based on information that became available following
13 the submission of PSNH's LCIRP and thus are not applicable in this proceeding.

14 Framework for Evaluation of Least Cost Planning Process

15 Q. What is the framework under which the Commission should evaluate PSNH's
16 LCIRP?

17 A. As required by RSA 378:39, the Commission must evaluate whether PSNH's
18 planning process is adequate. In performing such an evaluation for adequacy, the
19 Commission should consider whether the LCIRP includes all of the information
20 required by RSA 378:38.

1 Q. Did PSNH include all of the information required by RSA 378:38?

2 A. Yes. In fact, PSNH's LCIRP is organized in the same sequence as the requirements
3 of the law, thus making it easier to determine that PSNH has met each requirement.

4 Q. What are Mr. McCluskey's general criticisms of the PSNH's LCIRP?

5 A. Mr. McCluskey's view is that PSNH did not provide enough information and
6 analysis, and did not revise its plan based on events that occurred following the
7 filing of the plan. We believe his general concern is that PSNH did not fully
8 comply with the items outlined in the partial settlement agreement, and that he
9 disagrees with the conclusions and methodologies that PSNH employed in the
10 LCIRP analysis.

11 Q. Can you respond to those general criticisms?

12 A. Yes, we can. In its review of PSNH's LCIRP, the Commission should keep in mind
13 that the LCIRP represents a "snapshot" of PSNH's planning process based on
14 information available at the time the LCIRP was filed. During the ensuing months,
15 circumstances can and did change dramatically. Mr. McCluskey holds the view that
16 notwithstanding the ever-changing environment in which PSNH operates, the
17 LCIRP should be continually updated to reflect changes as they occur. PSNH's
18 position is that the LCIRP should be evaluated based on the information available at
19 the time the filing was made. In addition, PSNH adhered to the requirements of the
20 law and the partial settlement agreement, and the Commission should accept
21 PSNH's LCIRP based on the requirements of the law.

1 Q. Doesn't it make sense to change one's plans as circumstances change?

2 A. Yes, it does to a certain extent, but that doesn't mean that the LCIRP should be
3 continually revised or evaluated using updated information that becomes available
4 only after the filing is made. If PSNH were to attempt to revise the LCIRP every
5 time there was a change in assumptions or external factors, we would be constantly
6 updating its analyses and would never be in a position to actually implement any
7 plans. The Commission should view PSNH's September 28, 2007 LCIRP in that
8 correct context – it is a planning document, not a decision-making document.
9 PSNH will change its plans as circumstances change, and such changes may not be
10 precisely in conformance with the LCIRP because the document becomes dated as
11 time progresses.

12 Staff's Conclusions About PSNH's LCIRP

13 Q. What were Mr. McCluskey's conclusions in his pre-filed testimony?

14 A. Mr. McCluskey had several conclusions and criticisms of PSNH's LCIRP. His
15 specific conclusions were as follows:

16 1) PSNH failed to perform an assessment of demand-side resources in its service
17 territory;

18 2) PSNH's conclusion that an ISO-NE demand response program should not be
19 implemented was not supported by PSNH's analysis;

20 3) PSNH incorrectly included a benefits adder in its cost-effectiveness test for
21 demand side resources;

22 4) PSNH's assumptions regarding the cost of new generation were deficient;

1 5) PSNH should conduct analyses to determine whether Merrimack Station and
2 Newington Station should be retired.

3 Q. Are you prepared to respond to Mr. McCluskey's conclusions?

4 A. Yes, we are.

5 Demand Side Management

6 Q. Please comment on Mr. McCluskey's conclusion that PSNH did not perform an
7 assessment of the potential for demand-side resources.

8 A. In Order No. 24,695, the Commission directed PSNH to conduct a "systematic
9 evaluation of reasonably available DSM programs", to include "(1) ISO New
10 England-administered energy efficiency and demand response programs that are
11 eligible for capacity payments under the pending Forward Capacity Market, and (2)
12 dynamic retail pricing". In its evaluation, PSNH identified the potential to
13 significantly increase energy and peak demand savings through the expansion of the
14 New Hampshire CORE Energy Efficiency Programs and through the
15 implementation of non-CORE programs, including various demand response and
16 load management programs described in Section IV.C of the LCIRP. The latter
17 non-CORE program assessment included the ISO-New England and dynamic
18 pricing programs described in Order 24,695. PSNH's assessment of demand-side
19 resource potential accordingly consisted of the development of forecasts of peak
20 load and energy reduction under different program implementation scenarios.

1 The program implementation scenarios reflect a broad range of commercially
2 available energy-efficiency and demand-reduction measures delivered via a
3 comprehensive portfolio of customer programs that have a proven track record for
4 the achievement of cost-effective energy and demand savings in New Hampshire
5 and New England. The CORE programs, by design, allow for the expansion of the
6 range of measures that are offered as well as expansion of program participation via
7 more aggressive marketing and financial incentives. Therefore, a key factor in the
8 assessment of reasonably available program potential is the level of available
9 funding.

10 The program implementation scenarios encompassed a range of alternatives,
11 including aggressive efficiency and demand response program funding as well as an
12 economic potential scenario with no funding constraints and stricter codes and
13 standards.

14 It should be apparent from the above discussion of PSNH's efforts that PSNH fully
15 complied with the Commission's order. Mr. McCluskey may have a difference of
16 opinion regarding the methodology that PSNH used to conduct its analysis, but his
17 conclusion that PSNH failed to perform an assessment of the potential for demand-
18 side resources is incorrect.

19 Q. Please comment on Staff's contention that PSNH's conclusion regarding
20 implementation of a demand response program is not supported by its analysis.

1 A. Based on its analysis, PSNH concluded that the potential for cost-effective
2 implementation is uncertain, and that under optimistic assumptions, a significant
3 benefit would not be realized before 2010. The primary source of uncertainty is the
4 amount of the incentive payment that would be required to induce customers to
5 participate. This uncertainty was addressed by an analysis that utilized two
6 alternative incentive scenarios. The results indicated that the optimistic incentive
7 scenario was only marginally cost-effective ($B/C=1.01$) in 2009. We will further
8 address Mr. McCluskey's comments on implementation of a demand response
9 program later in this testimony.

10 Q. Please comment on Staff's contention that PSNH's analysis of a demand response
11 program does not properly account for program costs and benefits.

12 A. PSNH's analysis included incremental program costs for metering and
13 administration. While the details can vary from one installation to another, the
14 typical customer who wishes to participate in the ISO-New England demand
15 response program must add an isolation relay to the meter, a data storage device
16 which maintains usage history for inquiry by the IBCS (Internet Based
17 Communications Service) contractor, and a communications connection (e.g.
18 internet or telephone). Mr. McCluskey's testimony states that the incremental
19 metering cost under a demand response program should be zero. That statement is
20 incorrect.

1 The inclusion of administration costs was based on the experience of The
2 Connecticut Light and Power Company (CL&P). CL&P found that the success of
3 the program was dependent on staff resources that were dedicated to marketing and
4 customer assistance.

5 Avoided transmission and distribution capacity costs were not included as benefits
6 in the analysis because of the contingent nature of demand response (see PSNH's
7 response to NSTF-01, Q-STAFF-016 included as Attachment LGH-1 hereto).

8 Unlike demand reduction from installed energy efficiency measures, demand
9 response is contingent upon instructions to interrupt load issued by ISO-New
10 England in the operation of the Real Time Demand Response (RTDR) program.

11 Transmission and distribution capacity requirements are based on the peak demand
12 on a circuit, which cannot be assumed to occur during hours when demand
13 resources are required to respond.

14 Q. Please comment on PSNH's use of a 15% adder in the TRC test.

15 A. Exhibit IV-17 shows a 15% adder for non-quantified benefits as one of the program
16 benefits typically accounted for by the Total Resource Cost (TRC) test. The
17 inclusion of this benefit is consistent with the definition of the TRC test authorized
18 by Commission Order 23,574. While Section F.2 presents a generic description of
19 the TRC test in response to Order 24,695, which directed PSNH to include a
20 discussion of the appropriateness of the TRC and Rate Impact (RIM) tests, PSNH
21 did not include the 15% adder to avoided costs in its TRC analysis filed as part of

1 the LCIRP. Instead a \$/MWh avoided cost of CO₂ emissions was added to the
2 avoided costs associated with program savings, in compliance with the directive on
3 p. 27 of Order No. 24,695.

4 Q. Please comment on Mr. McCluskey's recommendation to eliminate non-electric
5 resource savings from the TRC test.

6 A. Exhibit IV-17 includes quantifiable resource savings (e.g., water, natural gas, etc) as
7 one of the program benefits accounted for by the Total Resource Cost (TRC) test.
8 The inclusion of this benefit is consistent with the definition of the TRC test
9 authorized by Commission Order 23,574 dated November 1, 2000 in Docket No.
10 DE 96-150. In approving the adder, the Commission stated:

11 "We will accept the cost-effectiveness test as proposed in the Working
12 Group's Report. We do so recognizing that the thresholds of a benefit-
13 cost ratio have changed, and that the test itself now includes spillover
14 benefits and costs not previously included in the cost-effectiveness test, as
15 well as a 15 percent adder to represent environmental and other benefits of
16 energy efficiency/conservation programs. Although the Commission has
17 not previously authorized the use of adders, we will do so here and permit
18 such a mechanism until some material change occurs that would warrant
19 our reconsideration of the adder or its magnitude."

20 The achievement of non-electric resource savings, primarily reduction in fossil fuel
21 consumption, is a significant objective of the Residential Home Energy Assistance,
22 Home Energy Solutions, Energy Star Homes and Energy Star Appliance CORE
23 programs. Under the current program design approved by the Commission in Order
24 No. 24,815, none of these programs would be cost-effective if non-electric savings
25 were not accounted for in the benefit-cost analysis. These programs provide

1 Residential and Low Income customers with significant assistance toward the
2 reduction of their energy cost burden. PSNH is accordingly concerned that this
3 assistance continues to be available especially during a time of rising fuel costs.

4 PSNH also notes that Mr. McCluskey's contention that eliminating non-electric
5 benefits will "reduce the rate impact of energy efficiency programs experienced by
6 non-participating customers" is not supported by the RIM analysis that was filed
7 because some electric measures have an adverse rate impact. Every dollar that is
8 spent on Residential Lighting measures, for example, instead of on non-electric
9 measures, would produce a greater negative rate impact because the lighting
10 measures result in a revenue deficit, whereas the non-electric measures do not.

11 ISO-NE Demand Response Program

12 Q. Did Mr. McCluskey have any comments regarding the implementation of demand
13 response programs?

14 A. Yes, he did. Mr. McCluskey criticized PSNH for its failure to implement a demand
15 response program, since PSNH's peaking unit analysis in its supply side assessment
16 showed that there would be significant savings for customers over the life of the
17 unit, and that installing such a unit in 2010 could be beneficial.

18 Q. What is your response to Mr. McCluskey's criticism?

19 A. PSNH believes that his criticism is unfounded. Mr. McCluskey incorrectly
20 characterized what PSNH said in its LCIRP regarding demand response programs.

1 Mr. McCluskey maintained that PSNH recommended that demand response not be
2 implemented at this time and instead that it should be reviewed again as part of the
3 next LCIRP. What PSNH said in the LCIRP was that it was uncertain whether such
4 a program could be cost-effective in New Hampshire, and that PSNH would review
5 the economics of demand response implementation *prior to* its next biennial
6 LCIRP.

7 Q. Why is this distinction important?

8 A. It is important because since the filing of its LCIRP, PSNH has implemented an
9 ISO-NE demand response program. Moreover, as indicated in his response to data
10 request PSNH 1-6 (Attachment LGH-2), Mr. McCluskey was aware that PSNH had
11 implemented a demand response program, yet he ignored that fact when he
12 submitted his testimony.

13 Q. Do you think Mr. McCluskey's comparison of the cost-effectiveness of peaking
14 generation to the cost-effectiveness of a demand response program is appropriate?

15 A. No. Generating assets have long lives (thirty years or longer), and can be counted
16 on to be available when needed. Demand response programs are dependent on
17 customers' willingness to provide load interruption upon request. To the extent that
18 business conditions, the economy, fuel prices or any number of variables change,
19 customers may change their willingness to provide demand response.
20 Additionally, ISO-New England's DSM program is implemented under certain
21 action steps within its Operating Procedure No. 4 (OP4). It is important to note that

1 ISO-New England's implementation of DSM curtailment may not coincide with the
2 specific times when PSNH's system is at peak. Under such conditions, peaking
3 generation would be utilized to support system integrity. For these reasons, it is not
4 correct to suggest that generating assets and demand response should be evaluated
5 using exactly the same criteria.

6 Analysis of New Generation Options

7 Q. Do you agree with Mr. McCluskey's assertion that PSNH's plan is deficient
8 regarding its supply side assessment?

9 A. No, we do not.

10 Q. Please summarize your understanding of Mr. McCluskey's criticisms of PSNH's
11 analysis of new generation options.

12 A. Mr. McCluskey had two general criticisms of PSNH's analysis. First, he disagreed
13 with PSNH's revenue requirements analysis, by stating the following criticisms:

- 14 • revenue requirements estimates for wind and biomass options leave out
15 the cost of transmission;
- 16 • revenue requirements estimates for biomass and peaking plants do not
17 include the cost of land or reflect the need for capital additions;
- 18 • the cost of fuel for biomass and peaking plants is unrealistic in that it is
19 assumed to decline in real terms over the lives of the plants; and

- PSNH included the federal Business Energy Tax Credit (BETC) in its analysis of the solar photovoltaic option, even though the credit is due to expire at the end of 2008.

Second, he maintained that the method PSNH used to rank the new generation options is flawed because it included additional criteria other than just net revenue requirements.

Generic Cost Information Used in Revenue Requirements Analysis

Q. Please provide an overview of PSNH's provision of generic cost information for the construction or acquisition of new generation options.

A. PSNH conducted a review of publicly available information regarding new generation resources and performed, as needed, its own development of data for new generation options it considered as viable to add to its existing portfolio. That information is presented in the LCIRP. PSNH focused on the five-year planning horizon of 2008 through 2012, as allowed by the Commission's Order No 24,695.

Exclusion of transmission costs from revenue requirements analysis

Q. Please discuss Mr. McCluskey's criticism of not including transmission costs in your analysis.

A. Mr. McCluskey's first criticism is with regard to an apparent absence of transmission costs in PSNH's revenue requirements analysis. Mr. McCluskey makes an assumption in his testimony that PSNH's proposal is for addition of biomass or wind resources on the North Country loop, for which it is forecasted that

1 costly upgrades will be required if significant additional generation is
2 interconnected to the line. We disagree with Mr. McCluskey's criticism for several
3 reasons.

4 First, in its plan, PSNH has been particularly careful to avoid specifying a site or
5 location for either a biomass or wind project. Therefore to assume that PSNH's
6 plan is to interconnect to the Northern Loop is very presumptuous. PSNH operates
7 one biomass plant today, and is before the Commission seeking approval of a
8 contract with a wind power developer in New Hampshire. Neither of these projects
9 is in the northern part of the state.

10 Second, as for the analysis of a wind power project, PSNH selected a 24 MW size
11 which we believe could in fact be interconnected, even to the "Northern Loop",
12 without significant transmission infrastructure costs.

13 Finally, as indicated in PSNH's response to Staff request NSTF-01, Q-STAFF-056-
14 F01 pertaining to PSNH's analysis of a Bio-mass project (included as Attachment
15 LGH-3), PSNH added contingency above the costs quoted by its engineers, R. W.
16 Beck, to account for cost escalation and/or other costs not known or measureable at
17 the time of the analysis. Transmission interconnection costs fit into this category as
18 being site dependent, and may range from negligible to significant. For a specific
19 project, if PSNH were to move from a planning stage to an implementation stage,
20 estimates of specific transmission costs would certainly be included in the analysis.
21 For purpose of the generic cost analyses required for this plan, however, they are not
22 explicitly included, and do not need to be.

1 Q. Mr. McCluskey indicates that using the sale of REC's should not be considered as a
2 means to finance the transmission upgrades he suspects would be needed to
3 interconnect a proposed biomass or wind project. Do you have any comments
4 concerning that position?

5 A. Yes, we do. PSNH did not assert in its LCIRP filing that the sale of RECs would be
6 considered a way of financing possible transmission upgrades needed to
7 interconnect a proposed renewable project. All costs and all benefits should be
8 included in a net revenue requirement analysis for a project. RECs, capacity,
9 energy, and production tax credits, are all sources of benefits to offset the capital
10 costs of any potential project. PSNH is unsure as to why RECs are singled out in
11 Mr. McCluskey's testimony. The purpose of the REC market is to provide an
12 additional incentive to developers of proposed renewable projects and therefore
13 should be included as a benefit to a project to offset the cost of the project. Expected
14 benefit from REC sales from any renewable project should and will be included in
15 the net revenue requirement analysis for that project. If a project produces RECs,
16 the value of such RECs must be included in any economic analysis as a credit
17 against the cost of the project.

18 Exclusion of the cost of land and capital additions from revenue requirements
19 analysis

20 Q. Mr. McCluskey is critical of PSNH's revenue requirements analysis for an apparent
21 failure to include the cost of land in the project cost estimate. How do you respond
22 to this point?

1 A. PSNH described a generic project and cost analysis for a potential biomass plant.
2 As stated above, no site or location has been specified by PSNH in the LCIRP. As
3 indicated previously, PSNH has added contingency to the cost estimates provided
4 by our engineers, to care for costs not specifically addressed in the R. W. Beck
5 study. Land cost, like transmission upgrades, is very site-specific and could range
6 from a very low cost to a substantial cost. If substantial, the cost would be factored
7 into an actual plant proposal and analysis before electing to proceed with
8 permitting, approvals and construction.
9 With respect to peaking units, the peaking projects as envisioned in the LCIRP
10 require very little land so that cost component would range from zero, if constructed
11 on land already owned by PSNH, to a nominal amount if land needed to be
12 acquired.
13 Regarding capital additions, PSNH's biomass and peaking units have had limited
14 capital additions over the operating lives of those assets. In particular, over the first
15 5-10 years of operation, PSNH expects that a newly installed biomass or peaking
16 unit would require very little, if any, capital to maintain efficient and reliable
17 operation.

18 Fuel cost for biomass and peaking plants

19 Q. Mr. McCluskey opines that PSNH made a "questionable assumption that the cost of
20 biomass fuel will decline in real terms over the long term", and that this in part

1 “results in revenue requirements estimates that Staff believes are unreasonably low
2 and make the biomass option appear more cost effective than it really is”. Please
3 respond to this assertion.

4 A. PSNH used a non-escalated biomass fuel price in its forecast. A variety of
5 competing market forces will determine over the long term the actual price of
6 biomass wood fuel. Demand for biomass products has certainly diminished in New
7 Hampshire with the closure of the Berlin and, more recently, the Groveton pulp
8 mills. These events should decrease the cost of biomass fuel. Conversely, higher
9 oil prices resulting in higher diesel fuel prices tend to increase the cost of supplying
10 biomass fuel due to higher transportation costs.

11 At the time of the LCIRP filing, PSNH had over 6 months of experience with the
12 procurement of wood to fuel the Northern Wood Power plant. At that time, the
13 delivered price of wood fuel was relatively stable and constant. In view of the
14 conditions that existed when the plan was prepared in late summer 2007, it was a
15 reasonable assumption at that time that future biomass prices would remain flat, and
16 therefore decline in real terms over the long run.

17 Again, PSNH would make an evaluation of a specific project, at a specific site,
18 including all of the potential costs and benefits, before proceeding with permitting,
19 approvals and construction.

20 Q. Please discuss your response to Mr. McCluskey’s disagreement with using a
21 constant fuel price for peaking units in your analysis.

1 A. Mr. McCluskey accurately states that, as a simplifying assumption, PSNH's analysis
2 maintains a constant price for fuel for the peaking unit. In its analysis of peaking
3 generation, PSNH compared the project (using a constant fuel price) against an
4 alternative market price for energy using an annual average market energy price. In
5 the analysis submitted in the LCIRP, there was no energy revenue assumed to offset
6 the fuel costs for the peaking unit, but in reality, PSNH would bid the peaking unit
7 into the ISO-New England energy market using its actual delivered cost of fuel, and
8 the unit would be dispatched by ISO-New England when the market clearing price
9 was equal to or greater than the bid price. These market clearing prices would
10 typically be higher than the annual average market price used in the LCIRP analysis.
11 Therefore, the energy cost benefit to customers from operating the peaking unit
12 would be equal to or slightly greater than, the fuel cost to operate the unit.
13 However, PSNH did not factor this into account in the LCIRP analysis and therefore
14 the analysis is on the conservative side. For a peaking project, it does not matter
15 what the forecasted fuel price, or forecasted "super-peak" energy market price will
16 be in assessing a peaking project. The benefits to customers from a peaking project
17 discussed in the LCIRP are realized through enhanced system reliability and
18 mitigation of peak-related capacity costs.

19 Inclusion of the Business Energy Tax Credit (BETC) in solar photovoltaic analysis

20 Q. Mr. McCluskey offers comments on PSNH's solar photovoltaic project analysis.
21 Please respond.

1 A. Mr. McCluskey criticizes PSNH for including the benefits of the BETC in its
2 revenue requirements analysis. We note here that in the LCIRP, PSNH provided
3 analysis of cases both with and without the BETC to reflect the uncertainty about
4 the potential availability of that tax credit beyond 2008. PSNH believes that it was
5 justified in including the BETC in its analysis as an assumption, and that PSNH
6 took into account the possibility that the BETC would expire by including a revenue
7 requirements analysis without the BETC in the LCIRP.

8 Q. Did Mr. McCluskey have any other comments regarding PSNH's solar photovoltaic
9 analysis?

10 A. Yes. Mr. McCluskey indicates that O&M expenses were excluded from the solar
11 photovoltaic revenue requirements analysis. PSNH has excluded these costs
12 because it views them as insignificant, and certainly not incremental to the cost of
13 operating a Solar PV installation.
14 Additionally, to demonstrate his point, Mr. McCluskey cites a study conducted by
15 Severin Borenstein, characterized as a "renewable energy expert", which suggest
16 that solar photovoltaic costs far outweigh the benefits. In response to data request
17 PSNH 1-22 (Attachment LGH-4), Mr. McCluskey states that the study was
18 performed in January, 2008, which is four months after PSNH submitted its LCIRP.
19 Consequently, it is not clear how PSNH could have taken this study into account in
20 its LCIRP filing when it wasn't even available until four months following PSNH's
21 filing.

1 Notwithstanding this, PSNH notes that its own analysis of solar photovoltaic
2 without BETC case shows the same conclusion as Mr. Borenstein's economic
3 assessment, which also excluded BETC benefit. PSNH's analysis including the
4 benefit of the BETC indicates a positive net benefit in the early years of operation
5 (with the BETC in effect) and higher costs in later years (after the BETC expires).
6 The landscape of incentives, and subsidies for renewable technologies, and in
7 particular solar photovoltaic, is constantly changing, making decisions to invest in
8 solar photovoltaic technologies very dynamic. Extension of the availability of the
9 BETC to include electric utilities remains a topic of debate at the federal level. In
10 the circumstance that it would be extended and made available to electric utilities,
11 PSNH contends that solar photovoltaic would have a positive net revenue
12 requirements impact on its customers.

13 Ranking of Supply Side Options

14 Q. Please respond to Mr. McCluskey's contention that the method PSNH used to rank
15 the new generation options is flawed because it included additional criteria other
16 than just net revenue requirements in the ranking analysis.

17 A. Mr. McCluskey cites Commission Order No. 24,695 as being "clear that the options
18 should be ranked based on their net revenue requirements relative to the cost of
19 market purchases." Mr. McCluskey maintains that the Commission intended that
20 the other criteria be taken into account only when two or more options had the same
21 or similar relative net revenue requirements.

1 While Order No.24,695 does require that the supply side options be evaluated and
2 ranked based on net present value of revenue requirements, it also requires that
3 PSNH should take into account: (1) the environmental compliance costs of each
4 option, (2) fuel diversity benefits of each option, (3) the availability of each option
5 at the time of system peak, and (4) whether each option will promote price stability.
6 The order does not state that these four criteria should only be taken into account
7 when two or more options have the same or similar net revenue requirements.
8 Moreover, the net present value of revenue requirements analysis is provided in the
9 LCIRP, and the details are available in Appendix G. The data presented therein
10 clearly demonstrate which projects have the lowest net revenue requirements, and
11 which have the highest. The fact that the ranking is not based solely on net present
12 value of revenue requirements is an issue that PSNH can easily address in future
13 plan filings.
14 The more difficult task was to consider the other factors defined in the
15 Commission's order, which PSNH accounted for in the ranking provided on page
16 93 of the plan (Exhibit V-15). In that assessment, PSNH weighted the net revenue
17 requirements as the highest weighted factor, in its overall assessment of project
18 ranking. The rankings presented in the plan satisfy the Commission's requirement
19 that these additional factors be taken into account. Mr. McCluskey indicates in his
20 testimony that the LCIRP is deficient in this area because he disagrees with the
21 methodology employed by PSNH. PSNH complied with Order 24,695, but may
22 have interpreted the requirements in a different way than Mr. McCluskey did.

1 Q. Mr. McCluskey criticizes the use of benefits attributable to environmental
2 compliance costs in PSNH's ranking analysis. How do you respond to his
3 criticism?

4 A. The Commission's Order 24,695 indicates that PSNH should take into account
5 environmental compliance costs and availability at time of system peak in its review
6 of new supply options. While at first blush it may appear that including these
7 costs/benefits could produce a multiplying of economic benefits, it nonetheless was
8 indicated as an item to be included in the analysis.

9 The inclusion of these additional factors in Order 24,695 indicates that criteria other
10 than net revenue requirements are considered important by the Commission in
11 evaluating the likely benefit of a project in meeting overall customer requirements
12 for reasonably priced, environmentally responsible, and system-wide efficient
13 power supply.

14 Beyond that, PSNH's ranking analysis includes the five factors specified by Order
15 24,695 in a qualitative way using a High, Medium, Low scale. PSNH judged that
16 the environmental compliance costs for biomass, solar and wind were all low, and
17 therefore were deserving of the highest valued score in that category. For the
18 criterion "Availability at Time of System Peak", the biomass and peaking projects
19 were viewed as having the highest ability to meet that criterion, with solar and wind
20 judged as having medium ability to fulfill that criterion.

21 Q. Mr. McCluskey indicates a basic concern with the ranking analysis, stating "the
22 company is attempting to rank generation projects that have totally different roles in

1 PSNH's generation system" and further that "unadjusted net revenue requirements
2 cannot logically be the basis on which projects that serve different purposes or differ
3 in size are selected". How do you respond to this comment?

4 A. PSNH believes that the different roles served by various types of generation is the
5 primary reason that Commission required that, in addition to net revenue
6 requirements, PSNH should also take into account: (1) the environmental
7 compliance costs of each option, (2) fuel diversity benefits of each option, (3) the
8 availability of each option at the time of system peak, and (4) whether each option
9 will promote price stability in its review of supply projects. This is the analysis that
10 PSNH has presented in its plan.

11 Q. What was Mr. McCluskey's conclusion regarding his criticism of generic cost
12 information?

13 A. Mr. McCluskey concludes that the generic cost information does not support giving
14 PSNH the authority to construct or acquire new generation capacity.

15 Q. Please comment on his conclusion.

16 A. Mr. McCluskey misunderstands the purpose of PSNH's LCIRP filing and also
17 misunderstands what PSNH is requesting in this docket. Consequently, his
18 conclusion is based on an incorrect premise. PSNH filed its LCIRP to comply with
19 the law. PSNH is not seeking authority to construct or acquire new generation
20 capacity in this docket. As stated above, the LCIRP is a planning document, not a
21 decision-making document. Therefore, his conclusion is not valid.

1 Continued Unit Operation Studies

2 Q. Please comment on Mr. McCluskey's opinion that continued unit operation studies
3 for Merrimack and Newington Stations should be conducted to determine whether
4 continued operation of those plants is economic relative to market purchases.

5 A. PSNH does not agree with Mr. McCluskey's opinion, nor is his opinion consistent
6 with the Commission's order in the previous LCIRP docket.

7 Q. Please explain the reason for your conclusion.

8 A. In the last LCIRP docket (Docket No. DE 04-072), Mr. McCluskey argued that RSA
9 369-B:3-a required PSNH to examine divestiture of its generating assets as a
10 supply-side option in its LCIRP. PSNH opposed Mr. McCluskey's
11 recommendation, noting that its low energy service prices relative to other utilities
12 in the region demonstrated the economic benefit to customers of PSNH's ownership
13 of generation. In its Order No. 24,695, the Commission concluded:

14 "We agree with PSNH that it should not be required to evaluate the costs
15 and benefits of divestiture in the context of its LCIRP, inasmuch as the
16 legislature created RSA 369-B:3-a to deal specifically with divestiture of
17 PSNH generation assets."
18

19 RSA 369-B:3-a provides:

20 The sale of PSNH fossil and hydro generation assets shall not take place
21 before April 30, 2006. Notwithstanding RSA 374:30, subsequent to April
22 30, 2006, PSNH may divest its generation assets if the commission finds
23 that it is in the economic interest of retail customers of PSNH to do so, and
24 provides for the cost recovery of such divestiture. Prior to any divestiture of
25 its generation assets, PSNH may modify or retire such generation assets if
26 the commission finds that it is in the public interest of retail customers of
27 PSNH to do so, and provides for the cost recovery of such modification or
28 retirement.

1 Thus, the same statute that deals with asset divestiture also deals with asset
2 retirement. Since the Commission has already found that examination of asset
3 divestiture is not required in PSNH's LCIRP, the only conclusion that can be
4 reached is that examination of asset retirement is also not required in PSNH's
5 LCIRP, as both issues are dealt with identically in one statute. Moreover, nothing
6 has changed since the last LCIRP with respect to PSNH's energy prices being the
7 lowest in the region. Consequently, Mr. McCluskey's opinion that continued unit
8 operation studies are required is incorrect from both a legal and analytical
9 standpoint.

10 Q. Do you have comments regarding Mr. McCluskey's specific conclusions about
11 continued unit operation studies for Merrimack and Newington Stations?

12 A. Yes, we do.

13 Merrimack Station

14 Q. Mr. McCluskey offers testimony concerning PSNH's plan for compliance with state
15 air emissions laws, and in particular with mercury emissions requirements. Would
16 you please comment on his testimony?

17 A. PSNH indicated in its filing and in subsequent discovery that it was required to
18 meet its obligations to meet mercury reduction requirements under the New
19 Hampshire Mercury Reduction Law by the installation of a Wet Flue Gas
20 Desulfurization system, also known as a scrubber. At the time of the LCIRP filing,
21 the anticipated in-service date of the scrubber was mid-2013. As stated in Order

1 No. 24,695, PSNH was to use a five-year planning horizon in the development of its
2 LCIRP. The LCIRP filed in September 2007 incorporated the five year planning
3 horizon of 2008 through 2012. With the scrubber in-service date expected to be
4 2013, this project fell outside of the planning window specified in the
5 Commission's order. As a result, PSNH saw no need to present scrubber-related
6 cost information in its filing. Furthermore, as this docket was proceeding, PSNH
7 was in the process of refining its cost estimates for the scrubber project, so any data
8 PSNH may have provided regarding scrubber costs at the time the LCIRP was filed
9 would have been quickly outdated. PSNH would not have been able to "update the
10 plan" in a timely manner to keep pace with the new information developed by the
11 PSNH Scrubber team and our engineers.

12 Q. Mr. McCluskey also indicates that he does not agree that the legislature mandated
13 the installation of a wet flue gas desulfurization system at Merrimack. Do you agree
14 with is conclusion?

15 A. No, we do not. The installation of a scrubber at Merrimack Station is expressly
16 required by law. In its enactment of 2006 N.H. Laws, Chapter 106, the General
17 Court plainly and unambiguously has mandated that scrubber technology shall be
18 installed at Merrimack Station no later than July 1, 2013. The General Court has
19 expressly found that:

20 It is in the public interest to achieve significant reductions in mercury emissions at
21 the coal-burning electric power plants in the state as soon as possible. The
22 requirements of this subdivision will prevent, at a minimum, 80 percent of the

1 aggregated mercury content of the coal burned at these plants from being emitted
2 into the air by no later than the year 2013. To accomplish this objective, the best
3 known commercially available technology shall be installed at Merrimack Station
4 no later than July 1, 2013.

5 The installation of scrubber technology will not only reduce mercury emissions
6 significantly but will do so without jeopardizing electric reliability and with
7 reasonable costs to consumers.

8 The installation of such technology is in the public interest of the citizens of New
9 Hampshire and the customers of the affected sources.

10 The mercury reduction requirements set forth in this subdivision represent a
11 careful, thoughtful balancing of cost, benefits, and technological feasibility and
12 therefore the requirements shall be viewed as an integrated strategy of non-
13 severable components.

14 Not only is the installation of a scrubber at Merrimack Station mandated, but the
15 General Court has plainly indicated its intent that such installation be accelerated so
16 that significant reductions in mercury emissions occur as soon as possible.

17 Newington Station

18 Q. Do you have any other comments regarding Mr. McCluskey's testimony regarding
19 Newington Station?

20 A. Yes, we do. Mr. McCluskey's recommendation that PSNH conduct a continued
21 unit operation study for Newington Station is based on the erroneous and potentially
22 misleading testimony that is excerpted below (from pg 30-31):

23 "The Company states in the LCIRP that a recent economic review of
24 Newington operation relative to market purchases indicates customer

1 savings during on-peak hours in the months of January, February, July and
2 August. That conclusion, however, was based on a fuel oil price of
3 \$55/bbl, which Staff understands to be the cost of fuel oil in inventory.
4 This cost is substantially below the current price of fuel oil, which is
5 approximately \$90/bbl for 1 % sulfur content. Since historic prices have
6 no place an [sic] economic analysis of future operations, Staff
7 recommends that PSNH conduct a CUO study for the Newington Station
8 that is based on the forward price of fuel oil.”

9 Q. What portion of the excerpted testimony is erroneous and potentially misleading?

10 A. Mr. McCluskey’s understanding that the noted \$55/bbl fuel oil refers to oil that is
11 or was already in inventory when the filed plan was developed is erroneous and contrary
12 to information that PSNH provided Mr. McCluskey in its response to NSTF-01, Q-
13 STAFF-019 (Attachment LGH-5) which stated that “At the time the plan was prepared
14 the cost of 1% sulfur residual fuel oil was approximately \$55/bbl at New York Harbor”.
15 Mr. McCluskey also refers to the \$55/bbl price as “historic”, which is misleading because
16 the \$55/bbl price was the current price to procure 1% sulfur fuel oil at New York Harbor
17 when the plan was prepared. Mr. McCluskey then recommends a CUO study that is
18 based on the “current” price of oil, which he quotes as \$90/bbl. While Mr. McCluskey is
19 correct that residual fuel oil prices have increased significantly since the plan was filed,
20 he must certainly be aware that natural gas and forward market power prices have also

1 increased dramatically. As described above, the stated basis for Mr. McCluskey's
2 suggested CUO study is flawed. PSNH reiterates that continually updating the plan with
3 new information is not required.

4 Wholesale Power Forecast

5 Q. Did Mr. McCluskey have any comments regarding the wholesale energy and
6 capacity price forecast methodology?

7 A. Yes, he did. Mr. McCluskey criticized PSNH's choice of Transco Zone 6-NY as
8 the natural gas delivery location that formed the basis for approximating the forward
9 price of gas to ISO-New England generators. Mr. McCluskey asserts that Dracut,
10 Massachusetts is a more representative delivery location and that data suggests that
11 Dracut prices are typically \$0.60 per Dth less expensive than Transco Zone 6-NY
12 prices and, therefore, PSNH's "projections of market energy prices may be higher
13 than it ought to be."

14 Q. What is your response to Mr. McCluskey's criticism?

15 A. PSNH was clear in its filing that Transco Zone 6-NY was selected because forward
16 contracts for this delivery location, unlike Dracut or any other location within New
17 England, are traded at the New York Mercantile Exchange (NYMEX). Therefore,
18 public forward pricing information is available to serve as a basis for a proxy New
19 England gas price. In discovery, PSNH asked Mr. McCluskey to provide support
20 for his claim that Dracut, Massachusetts natural gas contracts are transacted at
21 NYMEX (see the response to PSNH 1-23, included as Attachment LGH-6). In that

1 same request, Mr. McCluskey was further asked to provide forward prices for
2 NYMEX Dracut gas contracts consistent with the Transco Zone 6-NY prices
3 contained in Exhibit G-9 of the filed plan. Mr. McCluskey offered as evidence a
4 reference to a set of confidential results from an EnergyNorth Natural Gas RFP for
5 long-term gas supply to Dracut. In response to the request for actual forward prices,
6 Mr. McCluskey instead offered a reference to daily spot gas prices delivered to
7 Dracut on June 26, 2008. Neither of these documents supports Mr. McCluskey's
8 criticism and neither could serve as a valid basis for developing a forward natural
9 gas price projection. Mr. McCluskey seems to be confusing daily gas deliveries to
10 Dracut with the availability of publicly traded forward gas contracts that can serve
11 as the basis for a price projection.

12 Q. Did Mr. McCluskey have any additional criticisms of the wholesale energy price
13 forecast results?

14 A. Yes. Mr. McCluskey commented on PSNH's planning assumption that forecasted
15 energy prices will escalate with inflation during years 2013 through 2041. Mr.
16 McCluskey states that production cost simulation models are typically utilized to
17 project long-term prices and that "without an in-depth analysis of these and other
18 market drivers, there can be little confidence that the long-term forecast of energy
19 prices is reasonable and provides a sound basis for the revenue requirements
20 analyses."

21 Q. How do you respond to Mr. McCluskey's criticism?

1 A. During discovery, PSNH asked Mr. McCluskey if he believed that developing and
2 maintaining a production cost simulation model is appropriate and necessary to
3 comply with the requirements of least cost planning and Order 24,695 (see the
4 response to PSNH 1-25, included as Attachment LGH-7). Mr. McCluskey's
5 response noted that, rather than develop a simulation model, "a reliable long-term
6 energy price forecast can be obtained for a fee". Mr. McCluskey further responded,
7 however, that "absent a determination to acquire new generation resources or to
8 undertake unusually large capital expenditures on the maintenance of existing
9 generation, Staff does not believe that the expense to purchase reliable long-term
10 price forecasts would be justified." In light of this response, PSNH reiterates that
11 the long-term energy price projection in Exhibit G-13 *is* reasonable and *does*
12 provide a sound basis for the revenue requirements analyses.

13 Q. Did Mr. McCluskey have any objections to the long-term forecast of capacity
14 market prices?

15 A. Yes. Mr. McCluskey questioned the reasonableness of using \$7.50/kw-mo as the
16 forecasted capacity market price during the first year of the Forward Capacity
17 Market (June 2010 – May 2011). He noted that the capacity market auction for that
18 year produced a market price of \$4.50/kw-mo.

19 Q. How do you respond to this criticism?

20 A. As Mr. McCluskey noted in his response to data request PSNH 1-26 (Attachment
21 LGH-8), the capacity market auction that produced the \$4.50/kw-mo price was

1 conducted February 4-6, 2008. That information was not available at the time the
2 LCIRP was prepared and filed with the Commission, so it could not have been used
3 by PSNH in the preparation of the LCIRP. As noted therein, the forecasted price of
4 \$7.50/kw-mo was based on the “cost of new entry”, a market benchmark
5 determined by ISO-New England. At the time of the filing, this was a reasonable
6 forecast. As noted elsewhere in this testimony, PSNH does not believe that
7 continually updating the plan with new information is required, nor is it productive.

8 Q. What additional comments do you have regarding Mr. McCluskey’s criticism of the
9 wholesale energy and capacity price forecast methodology?

10 A. PSNH would like to make clear that neither the energy and capacity price forecast
11 results provided in Exhibit G-13 and G-15 of the filed plan, nor the methodology
12 that generated those results, were submitted to the Commission for any reason other
13 than to enable PSNH to comply with the requirement to file a least cost plan. As
14 stated above, the LCIRP is a planning document, not a decision-making document.

15 Conclusion and Recommendation

16 Q. Please summarize your recommendation to the Commission.

17 A. The Commission should assess PSNH’s LCIRP in the appropriate context. Mr.
18 McCluskey obviously has a different view than PSNH on several items contained in
19 the plan, but that difference is based on a different perception of the purpose and
20 intent of the plan and a general disagreement in the methodologies used to comply
21 with the requirements for the LCIRP. PSNH is not requesting approval at this time

1 to move forward with the recommendations and conclusions contained in the plan.
2 Rather, the LCIRP was filed to comply with a legal and regulatory requirement, and
3 it represents the state of PSNH's thinking at the time that it was developed. When
4 viewed in that context, the Commission should accept PSNH's plan as adequate.

5 Q. Does this complete your testimony?

6 A. Yes, it does.

Public Service Company of New Hampshire
Docket No. DE 07-108

Data Request NSTF-01
Dated: 04/18/2008
Q-STAFF-016
Page 1 of 1

Witness: **Gilbert E. Gelineau Jr**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Chapter IV. - Ref. page 57. The filing states that the "primary program benefits are capacity savings." Does the Company mean reduced Forward Capacity Market payments? If so, is it the Company's position that there are no transmission and distribution costs avoided by such programs? If the answer is yes, please provide the basis for that opinion.

Response:

Yes, the capacity savings represent reduced Forward Capacity Market payments. Avoided transmission and distribution capacity costs were not included as benefits in the analysis because of the contingent nature of demand response. Unlike demand reduction from installed energy efficiency measures, demand response is contingent upon instructions to interrupt load issued by ISO New England in the operation of the Real Time Demand Response Program. Transmission and distribution capacity requirements are based on the peak demand on a circuit, which cannot be assumed to occur during hours when demand resources are required to respond. Consequently, these costs cannot be avoided and are not included in the benefit/cost analysis.

**PSNH Least Cost Integrated
Resource Plan
DE 07-108**

**Data Request PSNH 1-6
Dated: July 3, 2008
Page 1 of 1**

**Witness: George McCluskey
Request from: Public Service Company of New Hampshire**

Question: Page 11, lines 17 – 19. Is Staff aware that PSNH has implemented an ISO-NE demand response program this summer?

Response:

Yes.

Public Service Company of New Hampshire
Docket No. DE 07-108

Data Request NSTF-01
Dated: 04/18/2008
Q-STAFF-056-F01
Page 1 of 1

Witness: Terrance J. Large
Request from: New Hampshire Public Utilities Commission Staff

Question:

Technical Session Discovery - Ref. Response to TS-001, page 6 of 87. Please describe the biomass technology and provide all support for: (i) the capital cost estimates; (ii) the 90% capacity factor; and (iii) the \$50 per MWh REC price projection for 2007.

Follow-Up Question: Please provide a breakdown by cost component of the cost difference between the \$175 million capital cost for a biomass plant that PSNH used in its generic analysis and the capital cost for a biomass plant contained in the R. W. Beck Study. Please provide support for individual cost estimates.

Response:

The difference between the capital cost stated in the R.W. Beck report and the capital cost used in the revenue requirements analysis is due to an allowance for costs that were not included in the installed cost estimate stated in the R.W. Beck report. Page 9 of the RW Beck report states "The indicative installed cost estimate is in constant January 2007 dollars and does not include taxes, licensing fees, and owner costs (such as land, management and administration costs, owner's contingency, AFUDC, legal fees, development costs, financing costs, utility tie-ins, O&M equipment, capital spares, operator training, and commercial test runs)." In the analysis, PSNH included costs for spare materials, O&M, taxes and financing costs. The additional amount covers costs such as approvals, licensing, permitting, infrastructure improvements, electrical interconnection, startup/commissioning, management and administration costs, AFUDC, and contingency. PSNH did not develop a detailed line item analysis for the additional costs, but rather made a subjective decision to increase the cost over and above the amount provided in the report to allow for items not included in the base cost provided in the report.

**PSNH Least Cost Integrated
Resource Plan
DE 07-108**

**Data Request PSNH 1-22
Dated: July 3, 2008
Page 1 of 1**

**Witness: George McCluskey
Request from: Public Service Company of New Hampshire**

Question: Page 24, line 14. Please provide the date of the Severin Borenstein study referenced in your testimony.

Response:

January, 2008

Public Service Company of New Hampshire
Docket No. DE 07-108

Data Request NSTF-01
Dated: 04/18/2008
Q-STAFF-019
Page 1 of 1

Witness: Richard C. Labrecque
Request from: New Hampshire Public Utilities Commission Staff

Question:

Chapter V. - Ref. pages 81. Please provide a copy of the comparative economic analysis of Newington generation costs and market-based purchases.

Response:

At the time the plan was prepared the cost of 1% sulfur residual fuel oil was approximately \$55/bbl at New York Harbor. Under various assumptions for adders (fuel delivery, emissions, handling, etc.) the average cost of production at Newington would be in the range of \$95 - \$100 per MWH. This was compared to the forward prices for energy provided in Exhibit G-7 (e.g. \$91 for the winter of 2008 and \$89 for the summer of 2008). Based on this review and prior operating experience, the planning assumption was that Newington would be dispatched by ISO-NE during periods of higher loads and prices, e.g. summer and winter. The annual production totals in Exhibit D-2 equate to capacity factors of 5% to 8%, consistent with the assumed operational duty.

**PSNH Least Cost Integrated
Resource Plan
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**Data Request PSNH 1-23
Dated: July 3, 2008
Page 1 of 1**

**Witness: George McCluskey
Request from: Public Service Company of New Hampshire**

Question: Page 27, lines 1-2. You state that "significant quantities of natural gas are delivered to New England hubs, including Dracut, Massachusetts under NYMEX contracts". Please provide supporting evidence that the New York Mercantile Exchange (NYMEX) offers forward gas contracts for delivery at Dracut, including the amounts that are delivered that you characterize as "significant quantities". Also, please provide the forward prices for the NYMEX Dracut gas contracts consistent with the Transco Z6 prices contained in Exhibit G-9 of the filed plan.

Response:

Evidence of the availability of forward gas contracts for delivery at Dracut was provided in Docket DG 07-101, EnergyNorth Natural Gas, Concord Lateral Upgrade. The contract offers or bids were in response to an RFP issued by ENGI for long-term gas supplies delivered to Dracut associated with the proposed expansion of the Concord Lateral. Although the results of the RFP are confidential, most bids comprised a commodity charge based on the NYMEX Henry Hub LDS plus a fixed basis differential.

Regarding the second question, please see page 6 of the June 27, 2008 edition of Gas Daily. The table headed Natural Gas Hub flow; June 26 shows the quantity of gas delivered to Dracut on June 26, 2008 in thousands of MMBtus.

Regarding the third question, Staff does not have the requested information.

PSNH Least Cost Integrated
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Data Request PSNH 1-25
Dated: July 3, 2008
Page 1 of 1

Witness: George McCluskey
Request from: Public Service Company of New Hampshire

Question: Page 27, lines 10-18. You suggest that a reasonable long-term forecast of energy prices requires an in-depth analysis of various market drivers and is typically performed using a production cost simulation model. Does Staff have any estimate of the initial and ongoing cost of developing and maintaining such a production cost simulation model? Does Staff believe that methodology and the associated expense is appropriate and necessary to comply with the requirements of least cost planning and Order 24,695?

Response:

Staff did not suggest or recommend that the Company develop and maintain a production cost model. Rather, Staff believes that a reliable long-term energy price forecast can be obtained for a fee from a firm with the appropriate experience and expertise in the modeling of ISO-NE's market.

Regarding the last question, absent a determination to acquire new generation resources or to undertake unusually large capital expenditures on the maintenance of existing generation, Staff does not believe that the expense to purchase reliable long-term price forecasts would be justified

**PSNH Least Cost Integrated
Resource Plan
DE 07-108**

**Data Request PSNH 1-26
Dated: July 3, 2008
Page 1 of 1**

**Witness: George McCluskey
Request from: Public Service Company of New Hampshire**

Question: Page 28, line 2. Please provide the date when the Forward Capacity Auction referenced in your testimony was conducted.

Response:

The first auction was conducted February 4-6, 2008.