

ORIGINAL

N.H.P.U.C. Case No. *DE 10-261*

Exhibit No. *OCA #1*

Panel #4

BEFORE THE STATE OF NEW HAMPSHIRE

DO NOT REMOVE FROM FILE

PUBLIC UTILITIES COMMISSION

In the matter of:)
DE 10-261 Public Service Company of New Hampshire)
Least Cost Integrated Resource Plan)

Pre-filed Direct Testimony

of

Kenneth E. Traum

on behalf of
the Office of the Consumer Advocate

Dated: July 27, 2011

Table of Contents

I. Introduction1

II. Adequacy of PSNH’s Planning Process3

III. Newington Station CUO Study18

IV. Demand-Side Analysis35

V. Conclusion39

List of Attachments

Attachment KET-1, Traum Summary of Experience
Attachment KET-2, NESCAUM, “A Primer on Pending Environmental Regulations and their Potential Impacts on Electric System Reliability,” March 30, 2011.
Attachment KET-3, Regulatory Assistance Project, “Preparing for EPA Regulations: Working to Ensure Reliable and Affordable Environment Compliance,” July, 2011.
Attachment KET-4, press release dated May 11, 2011, “Dominion Sets Schedule to Close Salem Harbor Power Station.”
Attachment KET-5, PSNH’s Response to TransCanada 02-005.
Attachment KET-6, “TVA Board Sets Path for Environmental Future,” April 14, 2011.
Attachment KET-7, PSNH Response to CLF 01-002.
Attachment KET-8, PSNH Response to CLF 01-020.
Attachment KET-9, PSNH Response to OCA 02-012.
Attachment KET-10, Excerpt from Northeast Utilities’ 2010 Annual Report page 13.
Attachment KET- 11, PSNH Response to CLF 01-008.
Attachment KET- 12, PSNH Response to CLF 01-009.
Attachment KET-13, PSNH Response to OCA 02-015.
Attachment KET-14, PSNH Response to OCA 01-068, p. 2 of 5.
Attachment KET-15, PSNH Response to Staff 01-036.
Attachment KET-16, PSNH Response to OCA 01-019.
Attachment KET-17, PSNH Response to OCA 02-003.
Attachment KET- 18, PSNH Response to OCA 01-020.
Attachment KET-19, PSNH Response to Staff 01-004, p 2 in DE 11-094.
Attachment KET-20, p. 46 of Testimony of Staff Expert Michael D. Cannata, Jr. in DE 10-121, November 23, 2010.
Attachment KET-21, PSNH Response to OCA 01-067.
Attachment KET-22, PSNH Response to Staff 01-002 in DE 10-160.
Attachment KET-23, PSNH Response to Staff 01-031.
Attachment KET-24, PSNH Response to OCA 02-021.
Attachment KET-25, PSNH Response to OCA 01-014.
Attachment KET-26, PSNH Response to OCA 02-002.
Attachment KET-27, PSNH Response to OCA 01-038.
Attachment KET-28, PSNH 2nd Quarter 2011 Customer Migration Report, 7/12/11.
Attachment KET-29, PSNH Response to OCA 01-023.
Attachment KET-30, PSNH Response to Staff 01-001 in DE 10-257.
Attachment KET-31, PSNH Response to TS 01-001-SP01 (Supplemental).
Attachment KET-32, PSNH Response to TS 02-007.
Attachment KET-33, PSNH Response to OCA 02-023.
Attachment KET-34, PSNH Response to Staff 01-049.
Attachment KET-35, PSNH Response to OCA 02-036.
Attachment KET-36, PSNH Response to OCA 01-066.
Attachment KET-37, PSNH Response to OCA 02-016 in DE 10-257.
Attachment KET-38, PSNH Response to OCA 02-030.
Attachment KET-39, PSNH Response to Staff 02-026.
Attachment KET-40, PSNH Response to OCA 03-002.

Attachment KET-41 PSNH Response to TC 02-013.
Attachment KET-42, PSNH Response to OCA 03-007.
Attachment KET-43, DE 11-094 PSNH Reconciliation filing at p. 127.
Attachment KET-44, PSNH Response to Staff 03-001.
Attachment KET-45, PSNH Response to Staff 01-068.
Attachment KET-46, PSNH Response to OCA 02-033 SP01 (Supplemental).
Attachment KET-47, PSNH Response to OCA-02-017 in DE 10-257
Attachment KET-48, PSNH Response to Staff 01-001 in DE 10-257.
Attachment KET-49, PSNH Response to Staff 03-009.
Attachment KET-50 PSNH Response to Staff 02-008.
Attachment KET-51, PSNH Response to TC 02-006.
Attachment KET-52, “Integrated Resource Plan for Connecticut,” Levitan 1/1/10, p. 1-15.
Attachment KET-53, PSNH Response to OCA 02-033, at p. 2 of 4.
Attachment KET-54, PSNH Response to OCA 02-039.
Attachment KET-55, PSNH Response to OCA 01-041(c).
Attachment KET-56, PSNH Response to OCA 02-013 in DE 10-257.
Attachment KET-57, PSNH Response to OCA 02-003 in DE 10-257.
Attachment KET-58, PSNH Response to OCA 02-024, Attachment B.
Attachment KET-59, “Northern Pass Transmission Project Study,” Charles River Associates
12/7/10 at page 2.

1 **I. Introduction**

2 **Q. Please state your name, business address, and position.**

3 A. My name is Kenneth E. Traum. Until June 24, 2011 I was the Assistant Consumer Advocate
4 for the Office of Consumer Advocate (OCA), which is located at 21 South Fruit Street, Suite
5 18, Concord, New Hampshire 03301. I worked at the OCA for over 21 years, and I am now
6 serving in the role of Consultant to the OCA in this docket.

7
8 **Q. Is a summary of your experience attached to this testimony?**

9 A. Yes, as Attachment KET-1.

10

11 **Q. Have you previously testified before the New Hampshire Public Utilities Commission**
12 **(Commission)?**

13 A. Yes. I have testified before the Commission on behalf of the OCA on many occasions, in
14 proceedings involving electric, natural gas, water, and telecommunications utilities.

15

16 **Q. What is the purpose of your testimony?**

17 A. I provide the OCA's recommendations regarding several aspects of PSNH's 2010 Least Cost
18 Integrated Resource Plan (LCIRP) filing. The issues that I will address are: 1) whether
19 PSNH's long term planning is adequate primarily as it relates to generation; 2) whether the
20 Newington Continuing Unit Operation Study (CUO) as conducted by Levitan & Associates,
21 Inc. on behalf of PSNH is adequate and in compliance with the Commission's Order No.
22 25,061 in DE 09-180 requiring the CUO; and 3) whether PSNH's analysis of the potential for

1 additional demand-side savings during the planning period requires a concrete plan to
2 achieve those additional cost effective savings for customers.

3

4 **Q. What conclusions do you reach?**

5 A. With respect to the first issue, PSNH's longer term planning is lacking in several areas, the
6 most significant of which relates to addressing potential changes in environmental
7 regulations and their cost impacts on PSNH's owned generation. Regarding the second
8 issue, the OCA believes that the Newington CUO study is deficient in a number of ways, the
9 most significant of which are that the study did not accurately model the real world dispatch
10 and costs of the Station, and the study did not evaluate the impact on default service
11 customers of the continuing ownership of Newington compared to retirement or divestiture,
12 as was required by the Commission in its Order No. 25,061 in DE 09-180. Finally, PSNH's
13 analysis of additional demand-side/energy efficiency opportunities shows that significant
14 cost effective opportunities remain, but the filing lacks clarity on how PSNH proposes to take
15 advantage of those opportunities during the planning period. I will discuss each of these
16 issues below.

17

18 **Q. What actions does the OCA recommend that the Commission take to address these**
19 **inadequacies?**

20 A. The OCA recommends the Commission find that PSNH's LCIRP is inadequate. We also
21 respectfully request that the Commission expeditiously retain the services of an expert to
22 conduct independent CUO studies of PSNH's plants, which are increasingly over market and
23 resulting in higher costs for default service ratepayers. At a minimum, Newington Station

1 and the two coal units at Schiller Station should be the subject of such studies. Merrimack
2 Station also likely requires study at this time, but its future is obviously complicated by the
3 fact that the Company has chosen to invest nearly half a billion dollars in a scrubber in order
4 to comply with RSA 125-O. The Commission should require that independent consultants,
5 chosen through a collaborative process, conduct balanced and impartial studies that include
6 an evaluation of whether it is in the interest of default service customers for PSNH to
7 continue operating these plants on customers' behalf, or whether it is appropriate to divest or
8 retire those plants. In addition to considering the costs and benefits of each plant, these
9 studies should take into account reasonably foreseeable changes in environmental
10 regulations, as PSNH should have done in this docket. The all-in costs of the power
11 produced at these plants is increasingly over market, and this is causing significant costs to
12 be borne solely by default energy service customers each year. For example, in PSNH's
13 2010 "reconciliation" or prudence review docket, information has been provided showing
14 that the actual capacity factors of PSNH's fossil fuel fired electric generating plants continue
15 to decline over time because those plants are over market.¹

16
17 **II. Adequacy of PSNH's Planning Process**

18 **Q. Regarding the adequacy of PSNH's planning process, does sufficient guidance exist for**
19 **utilities to understand the scope of a Least Cost Integrated Resource Plan (LCIRP)?**

20 **A.** Yes, and I will name a few sources that provide guidance. As the Commission noted in its
21 Order of Notice opening this docket, with several laws guide the development of an LCIRP,
22 including several sections of RSA 378. That law sets out the state's energy policy in RSA

¹ See e.g., p. 13 of my Testimony and Attachments KET-19 and KET-20, discussed below.

1 378:37, which calls for meeting the energy needs of the state “at the lowest reasonable cost”
2 while providing for reliability, diversity, and the protection of safety, health and the
3 environment. RSA 378:38 discusses what must be in an LCIRP filing, including an
4 assessment of applicable environmental regulations, and integration of supply and demand
5 resources. RSA 378:39 discusses the Commission’s evaluation of plans, providing an order
6 of priorities that emphasizes demand-side resources and renewable energy, and encouraging
7 the Commission “to consult with appropriate state and federal agencies, alternative
8 renewable fuel industries, and other organizations in evaluating” health, economic and
9 environmental impacts of options for meeting the state’s goals. The Commission also noted
10 that PSNH has other guidance from Order No. 24,945 in the last PSNH LCIRP docket, DE
11 07-108. Finally, in a Secretarial Letter dated December 28, 2010 in this docket, the
12 Executive Director stated:

13 The Commission notes as a general matter that **a sound planning process should**
14 **consider reasonably foreseeable regulatory changes**, recognizing that the
15 threshold at which a potential change in regulatory standards becomes too remote
16 or speculative for a utility to consider will depend on the particular facts and
17 circumstances of the regulatory matter at issue.

18
19 (Emphasis Added).

20
21 **Q. Has the importance of the requirement that a “sound planning process consider**
22 **reasonably foreseeable regulatory changes” been elevated by recent announcements of**
23 **regulatory changes?**

24 **A:** Yes. Although I am not offering expert testimony on the specifics of environmental
25 regulations and what they require, I believe that they are an important part of utility planning
26 as they can significantly impact costs to ratepayers, and that they are especially important in

1 this case due to their potential impacts on PSNH's generation fleet. In considering whether
2 PSNH has sufficiently included consideration of these changes, I bring two resources to the
3 Commission's attention. One resource that the Commission should consider in determining
4 whether PSNH has properly considered new environmental requirements in its planning
5 process is a primer prepared by NESCAUM (Northeast States for Coordinated Air Use
6 Management) titled "A Primer on Pending Environmental Regulations and their Potential
7 Impacts on Electric System Reliability."² Another resource is a recent paper by the
8 Regulatory Assistance Project, "Preparing for EPA Regulations: Working to Ensure Reliable
9 and Affordable Environment Compliance," which in addition to providing an overview of
10 new regulations, also focuses on how utility commissions can work more closely with
11 environmental regulators to protect the interests of utility customers.³

12
13 **Q. Are there recent events that show that other fossil generation owners are making**
14 **changes in their fleets as a result of the new environmental regulations?**

15 A: Yes. One example is Dominion's recent announcement that it will close its Salem Harbor
16 Power Station. David A. Christian, Chief Executive Officer of Dominion Generation stated:
17 "This was a decision we had to make given the significant costs required to keep the station
18 in compliance with pending environmental regulations and the falling margins for coal
19 stations selling electricity in New England."⁴

² See Attachment KET-2, NESCAUM, "A Primer on Pending Environmental Regulations and their Potential Impacts on Electric System Reliability," March 30, 2011, also available at <http://www.nescaum.org/items-of-interest>.

³ See Attachment KET-3, Regulatory Assistance Project, "Preparing for EPA Regulations: Working to Ensure Reliable and Affordable Environment Compliance," July, 2011, also available at <http://www.raponline.org/document/download/id/919>.

⁴ See Attachment KET-4, press release dated May 11, 2011, "Dominion Sets Schedule to Close Salem Harbor Power Station."

1

2 **Q. Have similar concerns about more stringent environmental requirements and their cost**
3 **impacts been raised in other settings recently?**

4 A. Yes, these concerns were raised by Levitan & Associates, Inc. in an economic assessment
5 titled: “Economic Assessment of NSTAR’s Third 345 kV Transmission Line from Carver to
6 Cape Cod” dated June 1, 2010, a link to which was provided in discovery.⁵

7

8 On page 2 of that assessment Levitan stated: “Over the next several years, Canal’s financial
9 challenges will be exacerbated by more stringent environmental restrictions, increasing its
10 costs and requiring significant new capital investment.” Canal Station is a 1,126 MW dual-
11 fuel unit located in Sandwich, Massachusetts. One unit burns only Residual Fuel Oil (RFO),
12 and the other can burn RFO or natural gas. The units were built in 1968 and 1976.⁶

13

14 Another example comes from the Tennessee Valley Authority (TVA), which is “replacing
15 older and less-economical generation with cleaner sourcesin alignment with
16 recommendations in the utility’s Integrated Resource Plan as well as the utility’s vision for
17 cleaner air.”⁷

18

19 **Q. Do you believe that PSNH has undertaken the necessary planning process required,**
20 **which other similarly situated entities are doing?**

⁵ See Attachment KET-5, PSNH’s Response to TransCanada 02-005.

⁶ See <http://www.genon.com/company/stations/canal.aspx>.

⁷ Attachment KET-6, “TVA Board Sets Path for Environmental Future,” April 14, 2011.

1 A. No. Not only is PSNH's LCIRP section that should address issues related to environmental
2 issues mostly boilerplate and lacking in specificity, a number of data responses provided by
3 PSNH in this docket also show that the Company is not using the LCIRP process to protect
4 customers from the potential cost impacts of these changes. For example, in one discovery
5 response PSNH states: "As part of its Least Cost Integrated Resource planning process,
6 **PSNH does not prepare analyses or scenarios based upon possible regulatory rules or**
7 **outcomes.**"⁸ Similarly, when asked what the Company's estimates are for capital and
8 operating costs necessary for compliance with certain environmental regulations, the
9 Company provided the same response.⁹ These statements show that PSNH's LCIRP is not
10 adequate.

11
12 In addition, in another response the Company stated that it "does not prematurely estimate
13 costs of potential changes in environmental regulations."¹⁰ All of these statements clearly
14 show that PSNH has failed to comply with applicable legal requirements for LCIRPs, and
15 has ignored the Commission's Secretarial Letter cited above regarding the scope of the
16 docket.

17
18 By failing to analyze potential incremental capital and operating costs that could result from
19 reasonably foreseeable regulatory changes, PSNH simply cannot evaluate if continued
20 operation of a particular generating unit is in default customers' best interests.

21

⁸ Attachment KET-7, PSNH Response to CLF 01-002 (Emphasis Added).

⁹ See Attachment KET-8, PSNH Response to CLF 01-020.

¹⁰ Attachment KET- 9, PSNH Response to OCA 02-012.

1 **Q. Has the Company indicated in other documents that it sometimes does – and should –**
2 **consider these issues?**

3 A. Yes. Despite the fact that PSNH has said in this docket – the very docket where planning for
4 these changes should take place – that it does not prepare analyses of the impacts of
5 environmental regulation, Northeast Utilities, PNSH’s parent company, raised this issue in its
6 2010 Report to Stockholders. In NU’s 2010 Form 10-K the need for this type of analysis is
7 noted with respect to climate change:

8 “Global Climate Change and Greenhouse Gas Emission Issues

9 Global climate change and greenhouse gas emission issues have received an
10 increased focus from state governments and the federal government, particularly
11 in recent years. The EPA has initiated a rulemaking addressing greenhouse gas
12 emissions and, on December 7, 2009, issued a finding that concluded that
13 greenhouse gas emissions are "air pollution" and endanger public health and
14 welfare and should be regulated. The largest source of greenhouse gas emissions
15 in the U.S. is the electricity generating sector. The EPA has mandated GHG
16 emission reporting beginning in 2012 for 2011 emissions for certain aspects of
17 our business including Stationary combustion, volume of gas supplied to large
18 customers and fugitive emissions of SF-6 gas and methane. **We are continually**
19 **evaluating the risks presented by climate change concerns and issues. Such**
20 **concerns could potentially lead to additional rules and regulations that**
21 **impact how we operate our business, both in terms of the generating facilities**
22 **we own and operate as well as general utility operations.** (See "Air Quality
23 Requirements" in this section for information concerning RGGI) These could
24 include federal "cap and trade" laws, or regulations requiring additional capital
25 expenditures at our generating facilities. In addition, such rules or regulations
26 could potentially impact the prices we pay for goods and services provided by
27 companies directly affected by such rules or regulations. **We would expect that**
28 **any costs of these rules and regulations would be recovered from customers,**
29 **but such costs could impact energy use by our customers.”¹¹**
30

31 This shows that while PSNH fails to do important planning to protect PSNH ratepayers, NU
32 is fully aware that potential changes in regulatory rules impact how they operate their
33 business and are “continually evaluating the risks” in an effort to protect shareholders. This

¹¹ Attachment KET-10, Excerpt from Northeast Utilities’ 2010 Annual Report, p. 13 (Emphasis added).

1 shows a troubling disregard for the potential future costs of operating PSNH's generation,
2 and an ongoing refusal by PSNH to openly consider those impacts on ratepayers. PSNH
3 must not be allowed to continue to ignore these important issues in their planning processes,
4 while causing millions of dollars in costs each year related to their fossil plants to be
5 shouldered by default energy service customers.

6
7 Finally, the section of PSNH's LCIRP that should include a discussion of environmental
8 issues falls short. The last paragraph in Section XII, Environmental Impact, of PSNH's
9 LCIRP states:

10
11 "In summary, air, water, and land-use regulations are frequently reviewed by the
12 regulators, as is the case currently. The outcome of these reviews and the impact
13 of any new regulations are difficult to predict and any costs associated with such
14 regulation even more difficult to predict."
15

16 PSNH LCIRP Petition, at Bates page 155. Again, PSNH seeks to avoid responsibility to plan
17 for the future costs of their plants, which are borne by ratepayers. Although it is not clear
18 who the Company is referring to by "regulators," it seems as though PSNH might be
19 suggesting that because environmental regulators are reviewing the environmental
20 requirements that apply to the plants, the Commission does not need to do so. However,
21 environmental regulators are not charged with reviewing the prudence of investments, and
22 they are not required to balance the interests of ratepayers and shareholders, as the
23 Commission is. Therefore, even if environmental regulators are reviewing issues under their
24 jurisdiction related to PSNH's plants, it does not follow that the Commission should not
25 review the planning and costs of environmental compliance. In fact, RSA 378 requires just
26 that. The fact that it may be challenging to predict the impacts and costs of potential

1 regulations is not sufficient reason to ignore the issue completely. Prudent utilities and other
2 generation owners are planning for reasonably foreseeable regulatory changes, and PSNH
3 must do so as well.

4
5 **Q. Is there other information in this case that reveals gaps in PSNH's planning process?**

6 A. Yes. One data response states "PSNH does not forecast long-term energy and capacity prices
7 because there is no routine business need for such forecasts."¹² I believe that in the current
8 atmosphere of increased customer migration, with its impacts on the remaining default
9 energy service customers, and with looming additional environmental regulations, there is a
10 routine need to include this type of information in analyzing whether to invest additional
11 capital in the existing generating units. Failing to develop these types of forecasts does not
12 serve the best interests of ratepayers.

13
14 Another response states: "PSNH did not use a going forward SO₂ price forecast. For
15 planning purposes PSNH uses an indicative SO₂ price that reflects purchased inventory and
16 federal and state allocations."¹³ When asked for those indicative prices, PSNH provided the
17 following: \$235/ton in 2011, declining to \$110/ton in 2015.¹⁴ In comparison, another
18 response shows the SO₂ price per ton that Levitan used in the Newington CUO study. The
19 response shows \$7/ton in 2011 declining to \$2.90/ton in 2015, and to \$2.70/ton in 2020.¹⁵
20 This significant discrepancy supports our request that the Commission undertake an
21 independent CUO to be conducted for each of PSNH's fossil fuel fired generating units.

¹² Attachment KET- 11, PSNH Response to CLF 01-008.

¹³ Attachment KET- 12, PSNH Response to CLF 01-009.

¹⁴ Attachment KET-13, PSNH Response to OCA 02-015.

¹⁵ Attachment KET-14, PSNH Response to OCA 01-068, p. 2 of 5.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

PSNH also admitted that its “generation projection was not a rigorous analysis, there were no assumed dispatch prices nor a specific market price forecast.”¹⁶ The use of analysis that is not “rigorous” is not acceptable, and does not result in an adequate LCIRP.

PSNH also indicated that for “Forecasted Dispatch Patterns for Fossil Units” they assumed “in general” that Merrimack and Schiller would be economic in all periods outside of planned maintenance periods.¹⁷ However, another data response shows that the percentage of time during which Merrimack Units 1 and 2, as well as Schiller Units 4 and 6, were in Economic Reserve has rapidly increased from 2008 to 2010.¹⁸ PSNH stated that “Economic reserve simply means the resource is available but not being dispatched. It occurs whenever the cost to generate from the resource is greater than the cost of using an alternative resource.”¹⁹ The fact that the units are not economic in all periods also suggests that a more rigorous analysis is necessary.

Similarly, in PSNH’s “reconciliation” or prudence review docket for 2010 (DE 11-094), the Company has shown in discovery that the capacity factors of all of PSNH’s fossil plants are down considerably over time.²⁰ Most notably, both Schiller coal units ran just over 50% of the time during 2010, and both Merrimack units ran about 67% of the time, much less than

¹⁶ Attachment KET-15, PSNH Response to Staff 01-036.
¹⁷ Attachment KET-16, PSNH Response to OCA 01-019.
¹⁸ See Attachment KET-17, PSNH Response to OCA 02-003.
¹⁹ Attachment KET- 18, PSNH Response to OCA 01-020.
²⁰ See Attachment KET-19, PSNH Response to Staff 01-004, p 2 in DE 11-094; and Attachment KET-20, p. 46 of Testimony of Staff Expert Michael D. Cannata, Jr. in DE 10-121, November 23, 2010, also available at <http://www.puc.nh.gov/Regulatory/CASEFILE/2010/10-121/TESTIMONY/10-121%202010-11-23%20EXHIBITS%201-9%20TESTIMONY%20OF%20M%20CANNATA.PDF>.

1 projected by the Company, due largely to lower market costs.²¹ This compares to capacity
2 factors ranging from 76.5% to 90.6% for the Schiller and Merrimack coal units in 2005.²²
3 Newington had a capacity factor of 55.9% in 2003, and it has declined to 5.2% in 2009 and
4 6.4% in 2010.²³

5
6 PSNH also stated they have not performed an analysis of purchasing fuel forward contracts
7 for their plants,²⁴ even though Levitan stated that “PSNH can purchase fuel forward
8 contracts, which are generally recognized as having a lower market risk premium (as a
9 percentage of price) than on-peak power contracts.”²⁵ That type of analysis might have
10 altered PSNH’s past contracting methods, thereby reducing the hundreds of millions of
11 dollars of above market costs which PSNH has paid since 2006 for firm bilateral energy
12 purchases.²⁶

13
14 **Q. Does PSNH only deal with a single supplier of natural gas for Newington Station?**

15 **A.** Yes, as was explained by PSNH Witness White during the June 2011 mid-year default
16 energy service rate update in DE 10-257, PSNH uses one supplier, Emera.²⁷

17
18 **Q. Do you believe that this represents an acceptable procurement practice?**

²¹ See Attachment KET-19.

²² See Attachment KET-20.

²³ See Attachments KET-19 and KET-20.

²⁴ See Attachment KET-21, PSNH Response to OCA 01-067.

²⁵ LCIRP Appendix G, Section E.2.2, Short-Term Hedge Value, Bates page 212.

²⁶ See Attachment KET-22, PSNH Response to Staff 01-002 in DE 10-160.

²⁷ See pages 21-22 of the June 23, 2011 Transcript in DE 10-257, at

<http://www.puc.nh.gov/Regulatory/CASEFILE/2010/10-257/TRANSCRIPTS-OFFICIAL%20EXHIBITS-CLERKS%20REPORT/10-257%202011-07-01%20TRANSCRIPT%20OF%20HEARING%20HELD%20ON%20JUNE%2023,%202011.PDF>.

1 The OCA's position is that for both planning and for actual purchasing decisions, PSNH
2 should utilize competitive procurement processes, rather than sole source agreements, in
3 order to seek the lowest possible fuel prices for default energy service customers.

4 Referencing page 49 of the June 23, 2011 transcript cited above, Mr. White admitted that
5 there were other potential suppliers that might be able to meet PSNH's needs. Unfortunately,
6 PSNH's sole source approach does not allow the Company to investigate what other sources
7 may be least cost. This shows that PSNH is failing to utilize a process aimed at ensuring that
8 customers receive the lowest cost resource.

9
10 **Q. Did PSNH's LCIRP include a discussion of Distributed Generation ("DG")?**

11 A. Yes, consistent with the LCIRP requirements, PSNH discussed "Distributed Generation
12 Options" on Bates pages 78 - 79 of the LCIRP. That section included the following
13 statement:

14 The enactment of the New Hampshire Renewable Portfolio Standard and the
15 ISO-New England Forward Capacity Market may increase the use of DG on
16 PSNH's system over the next few years. RPS subsidies may encourage PSNH's
17 customers to consider utilizing green technologies when installing DG to meet
18 their energy needs. Customers participating with renewable generation that
19 qualifies as REC-eligible facilities may help PSNH to meet New Hampshire
20 RPS requirements. Additionally, the ISO-New England Forward Capacity
21 Market provides potential capacity subsidies to DG facilities.
22

23 However, although the LCIRP includes this description of reasons why the use of DG may
24 increase over the next few years, from 127 installations in 2010 with 2,872 KW of Capacity,
25 PSNH has not included any DG in its planning process.²⁸ PSNH also stated that it "did not

²⁸ See Attachment KET-23, PSNH Response to Staff 01-031.

1 account for any DG installations in the kWh sales forecast used in this plan.”²⁹ This is yet
2 another example of the weakness of PSNH’s planning processes. DG should be included in
3 PSNH’s LCIRP, and the Company has failed to do so.

4
5 **Q. Does PSNH recognize the impact of weather variations in its LCIRP?**

6 A. Yes, but they did not use the most recent data. PSNH stated that the 30 year average used for
7 the LCIRP forecast was for the period ending in 2006.³⁰ The Company also stated that
8 “updating the 30-year average weather would not have had a significant impact on the sales
9 forecast.”³¹ However, PSNH also provided information in discovery that shows that use of
10 updated data results in over a 1% difference in Heating Degree Days and a 0.5% difference
11 in Cooling Degree Days.³² Using the most recent weather data would enable PSNH to
12 develop more accurate forecasts, but they failed to do so.

13
14 **Q. Does PSNH include a “base case” migration scenario in its LCIRP?**

15 A. No. PSNH stated in a discovery response that they do not have a base case migration
16 scenario.³³ Since the OCA considers such a scenario crucial for longer term planning to meet
17 default energy service customers’ requirements at the least cost – if PSNH continues to
18 manage its default customers’ needs in the current manner – this is another example of how
19 PSNH’s planning process is insufficient. For example, PSNH should be analyzing the
20 possibility of residential migration in the next few years and its ramifications on the

²⁹ Attachment KET-24PSNH Response to OCA 02-021.

³⁰ See Attachment KET-25, PSNH Response to OCA 01-014.

³¹ Id.

³² See Attachment KET-26, PSNH Response to OCA-02-002.

³³ See Attachment KET-27, PSNH Response to OCA 01-038.

1 requirements for default service. Residential migration could easily push the total migration
2 levels above the 40% high migration level PSNH used for the years 2010-2015 in the filing.
3 In fact, total migration, with minimal residential customer migration, is currently at 37.7% as
4 discussed below, and the OCA is aware of at least one effort by a competitive supplier,
5 Resident Power, to serve residential customers. According to Exhibit III-15 of PSNH's
6 LCIRP, their migration scenarios cap residential customer migration at 0.2%. However, it is
7 not clear what the basis is for this low cap.
8

9 **Q. What is the most recent migration rate for PSNH?**

10 A. On July 12, 2011, PSNH filed an updated Migration Report for the 2nd quarter of 2011,
11 which shows that migration for June is up to 37.73%, an increase from 36.12% in May
12 2011.³⁴ This means that the percentage of retail sales provided by competitive energy
13 providers is continuing to increase. As has been discussed at length in DE 10-160, the
14 migration docket, and more recently in DE 10-257, PSNH's 2011 energy service case,
15 migration of large customers seeking lower market prices is currently resulting in significant
16 cost shifting to small customers who do not have access to competitive choice. This results
17 from PSNH's inadequate planning process, including how it reviews the costs of its owned
18 generation to customers, as well as how default energy service needs are managed by PSNH.
19 These are costs that that customers of other New Hampshire electric distribution utilities do
20 not have to pay.
21

³⁴ Attachment KET-28, PSNH 2nd Quarter 2011 Customer Migration Report, 7/12/11.

1 **Q. Are there other examples of weaknesses in PSNH’s planning process that you wish to**
2 **identify at this time?**

3 A. Yes, PSNH provided an additional example of how its planning process is inadequate in
4 discovery.³⁵ The OCA sought to understand how PSNH’s planning process takes advantage
5 of the ability that the Company has to use System Benefit Charge (SBC) funds to target
6 specific areas with load control and/or energy efficiency to avoid additional capital
7 investments. The response stated that “PSNH is relying on traditional solutions to keep the
8 system reliable and secure.”³⁶ I believe that prudent planning would recognize the targeted
9 use of SBC funds as another important tool to avoid additional capital investments that may
10 result in savings to ratepayers. However, PSNH has failed to use this opportunity, instead
11 only using “traditional solutions.”

12
13 **Q. Please summarize your recommendations regarding PSNH’s planning process.**

14 A. The Commission should reject PSNH’s LCIRP as inadequate because the Company has
15 failed to meet the Commission’s requirement that the Company incorporate “reasonably
16 foreseeable regulatory changes” into its planning process regarding its generation fleet. The
17 planning process simply must be more robust in order to protect ratepayers. CUO studies
18 should be conducted in the near future by an independent entity selected by the Commission,
19 with stakeholder input, for Merrimack, Schiller, and Newington Stations. If at the end of that
20 process, the conclusion is that PSNH should continue to operate one or more of those units in
21 the near term, updated CUO studies should be filed with each succeeding LICRP to ensure
22 that the planning process considers least cost options in each docket. As will be addressed in

³⁵ See Attachment KET-29, PSNH Response to OCA 01-023.

³⁶ Id.

1 the next section of this testimony, those CUO studies should include divestiture as one
2 option.

3
4 More specifically, the planning process must incorporate reasonably anticipated regulatory
5 change impacts on operating and capital costs, fuel forward contracts, estimates on
6 installations of DG, updated 30 year weather data, migration planning, and a review of the
7 costs and benefits of targeted spending/EE for load control, at a minimum.

8
9 **Q. Is the OCA recommending that one or more of PSNH's generating units be divested or**
10 **retired at this time?**

11 A. No. The OCA is simply recommending that truly independent and rigorous CUO studies be
12 conducted prior to reaching any decisions regarding future ownership or operation of plants
13 on behalf of ratepayers. Depending on the market value, if any, of PSNH's generating units
14 or sites, the proceeds from divestiture could reduce or eliminate customers' costs. For
15 example, had all of PSNH's generating units been divested prior to 2011 for an amount
16 equivalent to PSNH's book value, PSNH would have needed to collect \$106,673,000 less in
17 revenues from default energy service customers, just for 2011.³⁷

18
19 **Q. If, as a result of divestiture or retirement, PSNH is left with "stranded costs," is the**
20 **OCA taking a position on the issues of PSNH's ability to recover any such costs?**

21 A. Not at this time.

22

³⁷ Attachment KET-30, PSNH Response to Staff 01-001 in DE 10-257.

1 **Q: Is the OCA also recommending that PSNH use RFPs and other competitive processes,**
2 **rather than sole source agreements?**

3 A: Yes. We believe that the Company should utilize competitive process for procuring fuels for
4 its generating stations, as well as for the procurement of electricity for default service as a
5 general rule. We understand that there could be limited circumstances when this approach is
6 not appropriate, but we believe that those should be the exception to the general rule that
7 competitive processes should be utilized to seek the lowest costs for ratepayers.

8

9 **III. Newington Station CUO Study**

10 **Q. Would you now turn to the second portion of your testimony, the Newington Continued**
11 **Unit Operation (CUO) Study?**

12 A: Yes. Appendix G of PSNH's September 30, 2010 LCIRP filing is the Newington Station
13 CUO Study prepared by Levitan & Associates, Inc.

14

15 **Q: Why did PSNH include the Newington CUO Study in the LCIRP?**

16 A: In DE 09-180, PSNH's 2010 Default Energy Service docket, PUC Staff testified that "In
17 recent years, Newington Station has become increasingly uneconomic and, as a result, its
18 capacity factor has steadily decreased from 55.9% in 2033 to 3.3% in 2008."³⁸ Staff
19 recommended that "In light of the economic circumstances" of the plant, PSNH should
20 "prepare a study regarding the benefits and costs of its continued ownership and operation of
21 Newington Station and whether or not the plant will continue to provide benefits to PNSH

³⁸ See Testimony of Steven E. Mullen, DE 09-180, December 3, 2009, at p. 8, available at <http://www.puc.nh.gov/Regulatory/CASEFILE/2009/09-180/TESTIMONY/09-180%202009-12-02%20STAFF%20TESTIMONY%20OF%20S%20MULLEN.PDF>.

1 customers.”³⁹ Staff went on to recommend that such a study should be submitted with
2 PSNH’s 2010 LCIRP.

3

4 **Q: Did the OCA support this recommendation?**

5 A: Yes.

6

7 **Q: Did the Commission require PSNH to conduct the CUO study?**

8 A: Yes. In Order No. 25,061 on December 31, 2009, the Commission stated:

9 Having reviewed the revenues and expenses related to Newington Station, we
10 agree with Staff that the Company should conduct a study of the costs of
11 **continuing the ownership and operation** of the plant. Because PSNH stated
12 that it will need additional time to conduct the study, and because the status of
13 Newington Station will impact PSNH’s least cost integrated resource plan
14 currently scheduled for filing in May 2010, we direct PSNH to incorporate the
15 study in the LCIRP to be filed no later than September 30, 2010.

16

17 Order No. 25,061 at page 31 (emphasis added).⁴⁰

18

19 It is important to note that the Commission included both continued operation (retirement)
20 and continued ownership (divestiture) of Newington within the scope of the CUO study.

21 Unfortunately, as I discuss below, PSNH failed to include both issues in the scope of the
22 study under consideration in this docket.

23

24 **Q: What did the CUO study find with regard to retirement or divestiture of Newington?**

³⁹ Id. at p. 9.

⁴⁰ Available at <http://www.puc.nh.gov/Regulatory/CASEFILE/2009/09-180/ORDERS/09-180%202009-11-31%20ORDER%20NO%2025,061%20APPROVING%202010%20ENERGY%20SERVICE%20RATE.PDF>.

1 A: The CUO study, which was prepared by Levitan & Associates, Inc. (“Levitan” or “LAI”),
2 concluded that the expected Net Present Value (NPV) of customer benefits due to continued
3 ownership and operation through 2020 was \$152 million⁴¹ I do not believe that this
4 conclusion is supported by the evidence in this docket and others, as I will detail below.

5
6 In addition, as a result of initial discovery and questions at the first Technical Session, PSNH
7 and Levitan realized there were a number of errors in the study and its inputs. By letter dated
8 April 26, 2011 PSNH revised the study and several inputs which reduced the expected NPV
9 of customer benefits due to continued ownership and operation by more than half to \$71.5
10 million. As a result of the revisions, PSNH roughly cut in half the future projected capacity
11 factors and generation from the plant.⁴² These significant revisions also resulted in PSNH
12 having to revise a number of prior discovery responses that were incorrect, which in turn led
13 to additional discovery.

14
15 Again, on July 8, 2011 PSNH made additional revisions to the study and to data responses.
16 Our understanding is these were at least in part due to many issues raised by PUC Staff and
17 its consultant, who spent numerous hours with PSNH and Levitan reviewing the study and
18 the modeling that supports it. The multiple changes and revisions in response to questions,
19 some extremely late in the docket, does not inspire confidence in the quality or usefulness of
20 the CUO, and has made analyzing the study in time for this testimony challenging.

21

⁴¹ See LCIRP Exhibit G.12, Bates page 227.

⁴² See Attachment KET-31, PSNH Response to TS 01-001-SP01 (Supplemental), page 2.

1 Q. **Did Levitan re-run the CUO Study with several data input changes at the request of the**
2 **NHPUC Staff?**

3 A. Yes, and the results, provided on July 12, 2011 further reduced the expected NPV of
4 customer benefits resulting from continued ownership and operation to \$36.8 million.⁴³

5
6 Q. **Do you believe that the data input changes that Staff requested were appropriate?**

7 A. I believe that one adjustment is appropriate, related to the Dracut natural gas premium, as I
8 discuss later in my testimony. The other items relate in large part to information first
9 received on July 12, 2011, so I am not prepared to take a position on them.

10

11 Q. **Do you have other issues with the data used in the study?**

12 A. Yes, and I will discuss them later in this testimony. As I will discuss, the impact of the
13 additional issues results in a further lowering of the NPV.

14

15 Q. **Earlier in this testimony you referenced the Commission's Order No. 25,061, which**
16 **required that PSNH undertake a CUO study for Newington Station. Did the initial**
17 **RFP that PSNH issued seeking a consultant to conduct the CUO study meet the**
18 **requirements of that Order?**

19 A. No. Despite the fact that the Order clearly stated that "continuing the ownership and
20 operation" of Newington was to be evaluated in the CUO study, the initial RFP that PSNH
21 issued only included "continued operation" and did not include "continued ownership"

⁴³ See Attachment KET-32, PSNH Response to TS-02-007.

1 within the Introduction/Objective section of the Scoping Document.⁴⁴ In addition, the RFP
2 states (on the third unnumbered page) “PSNH is seeking assistance to value the flexibility
3 that Newington Station provides to PSNH’s customer and ISO-NE markets,” which is not in
4 line with the Commission’s directive to consider both the costs and benefits of the plant.⁴⁵
5 Levitan, the winning bidder for the CUO study, stated: “LAI did not determine the benefits
6 or costs of retiring, mothballing, or selling the unit as those alternatives are outside of the
7 scope of a continuing unit operations analysis.”⁴⁶ This is an admission that the scope of the
8 CUO clearly fails to meet the Commission’s requirements. As a result, the CUO study
9 should be rejected as insufficient.

10
11 **Q. Do you know how many CUO studies Levitan had conducted prior to this one for**
12 **Newington Station?**

13 A. Levitan had never performed a CUO study prior to this one.⁴⁷ Despite this, they opined as to
14 what is outside the scope of a CUO study, without regard for what the Commission had
15 required of PSNH in this case.

16
17 **Q. Does the OCA support the results of the CUO study?**

18 A. No. We are concerned that there may be additional errors or invalid assumptions in the CUO
19 study beyond those already uncovered. In addition, the OCA views the CUO study as
20 incomplete because the study did not analyze whether divestiture was in the best interests of
21 energy or default service customers. Specifically, PSNH admitted that it “has not performed

⁴⁴ Attachment KET-33, PSNH Response to OCA 02-023.

⁴⁵ Id.

⁴⁶ Attachment KET-34, PSNH Response to Staff 01-049.

⁴⁷ See Attachment KET-35, PSNH Response to OCA 02-036.

1 a divestiture analysis for Newington Station nor are we in the possession of any projections
2 of the market value of Newington Station if PSNH were to divest Newington.”⁴⁸

3
4 **Q. To the best of your knowledge has PSNH changed the approach by which it dispatches**
5 **Newington since 2010?**

6 A. According to a May 27, 2011 data response in PNSH’s 2011 default energy service mid-year
7 update, the answer is no.⁴⁹ PSNH stated: “The approach for the dispatch of PSNH’s
8 generating plants has not changed during 2011.”⁵⁰

9
10 **Q: How was Newington dispatched in 2010?**

11 A: According to PSNH’s “Reconciliation” or prudence review filing in DE 11-094, Newington
12 generation costs continued to be uneconomic, or above market, most of the time. A chart
13 showing the capacity factors for PSNH’s plants from 2001 through 2009 is available in
14 Staff’s expert witness testimony in DE 10-121.⁵¹ The capacity factor for Newington in 2010
15 was just 6.4%, which is slightly above the 5.2% capacity factor in 2009, but down
16 significantly from 55.9% in 2003.⁵²

17
18 **Q. Does the Levitan dispatch simulation model used in the CUO study accurately capture**
19 **PSNH’s actual recent dispatch patterns for Newington Station?**

20 A. Based on a number of data responses from the Company, it appears that it does not.

⁴⁸ Attachment KET-36, PSNH Response to OCA 01-066.

⁴⁹ See Attachment KET-37, PSNH Response to OCA 02-016 in DE 10-257.

⁵⁰ Id.

⁵¹ See <http://www.puc.nh.gov/Regulatory/CASEFILE/2010/10-121/TESTIMONY/10-121%202010-11-23%20EXHIBITS%201-9%20TESTIMONY%20OF%20M%20CANNATA.PDF>.

⁵² See Attachment KET-20.

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

In one response PSNH stated “In 2010 Newington ran in approximately 1,600 hours at an average level of 140 MWh/hr mostly in the real time energy market, and for a significant portion of this time it was dispatched for operating reserves.”⁵³ This points out a significant difference between actual recent dispatching of the plant and the model’s dispatch assumptions. For example, PSNH states that the model “did not include potential ISO-NE dispatch for operating reserves.”⁵⁴ PSNH also indicated that a similar omission exists in the model for the years out to 2020, in that the potential for ISO-NE dispatch for operating reserves is not included.⁵⁵

In addition, the Response states in part: “Models necessarily simplify some aspects of reality. In situations where there are a multiplicity of reasons for why a unit may run despite providing a negative energy margin [a loss], it is preferable to examine the reasons qualitatively rather than simulate the factors within a quantitative model.”⁵⁶

This difference between the model and actual performance has a significant impact on the projected heat rate and net energy revenue margins for Newington, resulting in Levitan’s higher net energy margins and higher NPV, which they cite as reasons to continue ownership and operation of the plant.

⁵³ Attachment KET-38, PSNH Response to OCA 02-030.
⁵⁴ Attachment KET-39, PSNH Response to Staff 02-026.
⁵⁵ See Attachment KET-40, PSNH Response to OCA 03-002.
⁵⁶ Attachment KET-41 PSNH Response to TC 02-013.

1 We sought additional information about why Newington ran in 2009 and 2010 despite
2 providing negative net energy margins (i.e. losing money for ratepayers), which weren't
3 modeled for future years. According to PSNH, in 2009 and 2010 Newington ran under such
4 conditions related to testing and tuning for approximately 300 hours all with negative net
5 energy margins.⁵⁷ What is significant is that the model excludes future comparable hours
6 with negative net energy margins, and only shows the unit running for 966 hours in 2011 to
7 achieve the expected value.⁵⁸ If the model had included historical levels of hours for testing
8 and tuning on a going forward basis for dispatch outside of economic operation, the result
9 would have been lower net energy margins.

10
11 On May 2, 2011 PSNH made its Reconciliation of Energy Service and Stranded Costs filing
12 for calendar year 2010, docketed as DE 11-094.⁵⁹ That filing includes a graph depicting
13 Newington Station's Historical Performance.⁶⁰ What is most significant about that graph is
14 Newington's heat rate.⁶¹ The higher the heat rate, the less efficient the generating unit is at
15 converting BTU energy input into electricity output. Over the last 3 years Newington's heat
16 rate is reported to have increased by almost 2,000 BTU/kWh to approximately 13,448
17 BTU/kWh in 2010.⁶² By comparison the heat rate used in Levitan's revised study was
18 11,222 BTU/kWh in 2011, which is a significant, but unsupported, improvement over recent

⁵⁷ See Attachment KET-42, PSNH Response to OCA 03-007.

⁵⁸ See Revise LCIRP Exhibit G.17, at Bates page 232.

⁵⁹ See <http://www.puc.nh.gov/Regulatory/Docketbk/2011/11-094.html>.

⁶⁰ See Attachment KET-43, DE 11-094 PSNH Reconciliation filing at p. 127.

⁶¹ Heat rate is defined as "A measurement used in the energy industry to calculate how efficiently a generator uses heat energy. It is expressed as the number of BTUs of heat required to produce a kilowatt-hour of energy. Operators of generating facilities can make reasonably accurate estimates of the amount of heat energy a given quantity of any type of fuel, so when this is compared to the actual energy produced by the generator, the resulting figure tells how efficiently the generator converts that fuel into electrical energy." See http://www.energyvortex.com/energydictionary/heat_rate.html.

⁶² Attachment KET-44, PSNH Response to Staff 03-001.

1 actual performance. This improvement of 17% in the heat rate, and how the unit is
2 dispatched in the model as compared to how it has actually performed recently is yet another
3 reason to question the validity of the Levitan CUO study and its findings.

4
5 **Q. If there are more starts of the plant over a particular year would the heat rate decline?**

6 A. Yes, all other things being held equal. According to PSNH, in 2010 the number of starts was
7 123.⁶³ By comparison, the revised Levitan study in its “expected case” assumes only 39
8 starts on 2011. This drastic reduction in the number of starts again leads to questioning the
9 validity of the study’s results as it relates to dispatching, heat rate and NPV.

10
11 **Q. Could the differences in the number of starts between recent actuals and the model
12 explain the differences in heat rate?**

13 A: It may. And to the extent the difference in the actual dispatching of the plant as compared to
14 the results from the model explain part or all of the reason for the model’s lower heat rates, it
15 may also explain the higher net energy revenues coming out of the model as compared to
16 historical actuals as discussed further below.

17
18 The 2011 Expected Net Energy Revenues (which I define here as Energy Revenues plus
19 Ancillary Revenues less Fuel & Fuel Related O &M and Emission Allowances), were
20 \$4,686,000 according to Exhibit G.12 of the model, as revised on April 26, 2011.⁶⁴ By
21 comparison, the actual results were \$1,750,000 for 2010;⁶⁵ -\$3,406,000 for 2009; -

⁶³ Attachment KET-45, PSNH Response to Staff 01-068.

⁶⁴ LCIRP at Bates p. 227.

⁶⁵ See Attachment KET-46, PSNH Response to OCA 02-033 SP01 (Supplemental).

1 \$1,082,000 for 2008; -\$3,750,000 for 2007; and -\$1,542,000 for 2006, according to Exhibit
2 G.12. Note that 2006-2009 are negative numbers. Each of those years show that the plant
3 cost ratepayers more than any benefits it provided. Each year from 2006 through 2009
4 resulted in losses, and then 2010 resulted in a positive number, which Levitan described as
5 “unique:” “Newington Station 2010 operation reflected a unique solution that included a
6 great deal of operation to provide operating reserves.”⁶⁶

7
8 If the results of 2010 are eliminated from the comparison, the model is showing that the
9 average annual Net Energy Revenues are expected to swing from actual losses of several
10 million dollars annually, to an annual surplus of almost \$5 million. This does not correspond
11 with the actual performance of the plant, and there is no basis for this much of a change in
12 the plant’s performance.

13
14 **Q Was some of the information you just discussed based on recently revised data**
15 **responses?**

16 **A:** Yes. The -\$1,082,000 in costs for 2008 was calculated based on the PSNH’s revised Exhibit
17 G-1 provided on July 8, 2011. That figure also includes a credit as opposed to an expense for
18 2008 for Emission Allowances, which raises other questions that we have not been able to
19 explore due to the fact that we received this new information after the discovery period had
20 ended.

21

⁶⁶ Attachment KET-39, PSNH Response to Staff 02-026.

1 **Q. Are PSNH's estimates of Net Energy Revenues for Newington Station for 2011**
2 **consistent with the result produced by the Levitan model?**

3 A. Not at all. The Levitan Expected Net Energy Revenues are \$4,686,000 for Newington
4 Station in 2011.⁶⁷ However, in DE 10-257, PSNH's 2011 default energy service case, PSNH
5 estimated about one-tenth (1/10) of that amount, or \$478,000 in revenues for 2011.⁶⁸ These
6 additional disparities between the models expected results as compared to actual projections
7 again call into question the validity of the Levitan CUO, and require that the Commission
8 oversee the development of a truly independent CUO.

9
10 **Q. Earlier in this testimony you referred to additional issues with updated data used in the**
11 **model re-run. What are those issues?**

12 A: The first issue relates to natural gas costs as show in the model re-run.⁶⁹ There is a
13 discrepancy between the cost information for natural gas consumed at Newington that PSNH
14 has used as compared with what Levitan used in its model. Exhibit G.3 in the Newington
15 CUO Study includes a column labeled "Newington Average Natural Gas Cost (\$MMbtu)"
16 and another column labeled "Average Natural Gas Spot Price, Dracut (\$MMbtu)."⁷⁰ By
17 comparing those two columns one can see that for 2009 the average gas cost at Newington
18 exceeded the Dracut average price by \$0.82 per MMbtu. That same page shows that for
19 2010 YTD the corresponding excess was \$0.75 per MMbtu. However, according to PSNH,
20 the average 2010 excess for the full calendar year was \$0.65 per MMbtu.⁷¹ In addition,

⁶⁷ Exhibit G. 122, as revised in April 2011.

⁶⁸ Attachment KET- 47, PSNH Response to OCA-02-017 in DE 10-257, and Attachment KET-48, PSNH Response to Staff 01-001 in DE 10-257.

⁶⁹ Attachment KET-32, PSNH Response to TS-02-007(a).

⁷⁰ LCIRP Exhibit G.3 at Bates page 204.

⁷¹ Attachment KET-45, PSNH Response to Staff 01-068.

1 Levitan stated: “LAI modeled the natural gas basis spread as the averages of the Jan-Feb
2 range (\$0.75/Dth) and March-Dec range (\$0.175/Dth) for the escalation base year 2010 and
3 assumed a 2.4% annual escalation rate over the 2010 to 2011 study period.”⁷²

4
5 This illustrates that the model is using a smaller natural gas price adder than recent average
6 history indicates should be used, especially in the months other than January and February.
7 This results in a higher net gas margin and a higher NPV for the plant than is warranted.
8 This is yet another issue that supports my recommendation that an independent CUO study
9 be conducted, which I would expect would use a natural gas price adder more consistent with
10 the assumption in Attachment KET-32.

11
12 **Q. What other issues would you like to raise with the CUO study and its conclusion?**

13 A: First, on page 46 (Bates p 229) of Appendix G of the LCIRP, the Levitan CUO study
14 includes the statement: “The lead time of seven years before any probable losses are expected
15 to occur means that a retirement decision should be deferred until such time that losses begin
16 to occur.” (By “losses” I believe that the Company is referring to economic costs to
17 ratepayers resulting from the annual Incremental Revenue Requirement). I do not agree with
18 their statement.

19
20 As shown on Exhibit G.1 (Bates p 196), which considers the total cost to customers of
21 PSNH’s ownership and operation of Newington Station, the revenues produced by
22 Newington were less than its total Revenue Requirement since at least 2005. Included in the

⁷² Attachment KET-49, PSNH Response to Staff 03-009.

1 total Revenue Requirement, but not in Levitan's model, are items like labor costs,
2 depreciation expenses on existing plant, and return on existing plant. I do not understand
3 why Levitan states that a "lead time of seven years before any probable losses are expected"
4 as the losses are already occurring. In light of the fact that Newington has been losing money
5 for customers since at least 2005, now is the time to consider its retirement or divestiture.
6 There is no need to wait for seven years as Levitan seems to suggest.

7
8 Second, Revised Exhibit G.12 (Bates page 227) shows Levitan's development of
9 \$71,469,000 in "Expected Value of Incremental Revenue Requirements" for Newington
10 Station. In addition to my prior comments regarding dispatching, natural gas price
11 premiums, and heat rates which directly impact the line labeled "Fuel and Fuel Related O &
12 M," and therefore the net energy margins, I also have concerns about the "Incremental Gross
13 Plant Value," which also impacts Depreciation Expense.

14
15 Specifically, the line labeled "Incremental Gross Plant Value" shows the Capital
16 Expenditures to be \$500,000 annually from 2011 through 2020. However, a discovery
17 response shows that the 2009 five-year budget totaled \$12,588,000; the 2008 five-year budget
18 totaled \$12,299,000; the 2007 five-year budget totaled \$13,695,000; and the 2006 five-year
19 budget totaled \$10,010,000.⁷³ If PSNH had provided Levitan with a 5 year capital budget
20 that was more in line with prior years, the Expected Value of Incremental Revenue
21 Requirements in Revised Exhibit G.12 would have been reduced from \$71 million by up to
22 \$15 million. In addition, the \$36.8 million NPV shown on Attachment KET-31 would be

⁷³ Attachment KET-50, PSNH Response to Staff 02-008 (This response was first provided confidentially but is now public as a result of Order No. 25,234).

1 reduced by the same amount. This is yet another reason why I believe that the Levitan CUO
2 does not adequately analyze the costs and benefits to ratepayers of Newington, why I also
3 believe that a truly independent CUO must be conducted.
4

5 **Q. While you just addressed your concerns with the first five years on the Capital budget**
6 **levels in the Levitan model, do you have other concerns with the amounts assumed in**
7 **the later years of the study, which were also \$500,000 per year?**

8 A. Yes, in addition to the general issues previously raised in my testimony regarding the need
9 for PSNH to recognize and consider “reasonably foreseeable regulatory changes,” Levitan
10 stated in response to discovery: “In order to develop the projection of unit retirements that
11 resulted from required capital expenditures on environmental compliance equipment, LAI
12 relied on the Integrated Resource Plan for Connecticut dated January 1, 2010.”⁷⁴ Levitan
13 provided the link to the document cited in the data response, which was prepared by the
14 Brattle Group for PSNH’s sister company, Connecticut Light & Power (CL&P).
15

16 That document included the following statement in a section entitled “Resource Adequacy
17 and Potential Environmental Regulations Requiring Major Capital Expenditures:”

18 ”Newington 1 exemption: Newington 1, a 400 MW steam oil/gas unit in New Hampshire, is
19 supported through Public Service New Hampshire’s (PSNH) Energy Service (ES) rate, and is
20 assumed to provide sufficient value to ES customers to warrant investing in an SCR
21 [Selective Catalytic Reducer] in 2017 and operate in all year.”⁷⁵
22

⁷⁴ Attachment KET-51, PSNH Response to TC 02-006.

⁷⁵ Attachment KET-52, “Integrated Resource Plan for Connecticut,” Levitan, 1/1/10, p. 1-15.

1 My concern is the Capital Cost of the SCR is not included in Revised Exhibit G.12.⁷⁶ As a
2 result, the cost of the SCR is not factored into the cost/benefit analysis of the CUO study. I
3 believe that inclusion of additional capital expenditures such as this in future years will have
4 a significant negative impact on the NPV of Newington. In addition, the cited study uses the
5 word “**assumed**” regarding the value of Newington to PSNH’s customers. The very purpose
6 of the CUO study in this case is to determine whether the plant has sufficient value to
7 customers to warrant continued ownership and operation by PSNH. To simply cite another
8 study that assumes that it does is not sufficient. These are yet additional reasons to find that
9 the Levitan CUO study must be rejected by the Commission.

10
11 **Q. Do you have other issues with other Exhibits in the CUO?**

12 A: Yes. Under Rate Base the table in Exhibit G.12 has a line labeled “Fuel Inventory (year
13 end).” The line shows a cost of \$10,000,000 throughout the period (2011-2020). A
14 discovery response shows that the “Total Fuel Inventory Value” for calendar year 2010 was
15 \$22,339,000.⁷⁷ However, Revised Exhibit G.17 in the CUO shows low levels of oil
16 consumption for a number of years, and another discovery response states: “natural gas was
17 simulated to be 99% of the fuel mix in 2011, and very high shares in all following years.”⁷⁸
18 As a result, I question the validity of a decline in the book value of the oil inventory as soon
19 as 2011 to \$10,000,000, as that would be a reduction of over \$12 million in just one year.
20 The OCA asked for all studies PSNH has conducted regarding selling some of the oil

⁷⁶ See LCIRP Bates page 227, table “Expected Values of Incremental Revenue Requirement.”

⁷⁷ Attachment KET-53, PSNH Response to OCA 02-033, at p. 2 of 4.

⁷⁸ Attachment KET-54, PSNH Response to OCA 02-039.

1 inventory at Newington and the response was that PSNH was “continuing to investigate” the
2 issue.⁷⁹

3
4 PSNH provided additional information about the fuel inventory in a recent response in DE
5 10-257, PSNH’s 2011 default energy service case. One response provided on May 27, 2011,
6 stated in part: “Following a study of selling a portion of Newington Station’s residual fuel oil
7 in order to lower its inventory level, it was decided to retain the oil...”⁸⁰ In addition, another
8 PSNH response in that docket stated that PSNH was forecasting that the fuel oil inventory on
9 December 31, 2011 would be \$18.5 million.⁸¹ This highlights another significant difference
10 between the inputs used in the Levitan model and more recent projected (or actual) data. The
11 difference between Levitan’s \$10 million assumption for oil inventory and PSNH’s projected
12 amount of \$18.5 million for the oil inventory is \$8.5 million. That equates to an annual
13 increase in the Return on Rate Base of about \$1 million, or about a \$7 million increase in
14 NPV Expenses and a \$7 million reduction in the claimed NPV benefit from the CUO Study.
15 This has a significant impact on the CUO and is yet another example of why the study should
16 not be the basis for a decision on the future of Newington Station.

17
18 **Q. Do you have any comments about how the amounts in Exhibit G.12 related to Capacity**
19 **Revenues were developed?**

20 A. Yes, at this time I only wish to comment on one item. In its direction to Levitan on the scope
21 of the CUO study, PSNH told Levitan: “Do not include the proposed Hydro Quebec HVDC

⁷⁹ Attachment KET-55, PSNH Response to OCA 01-041(c).

⁸⁰ Attachment KET-56, PSNH Response to OCA 02-013 in DE 10-257.

⁸¹ Attachment KET-57, PSNH Response to OCA 02-003 in DE 10-257.

1 transmission line in the analysis as it is currently only a proposal.”⁸² However, PSNH has
2 stated in the LCRIP: “Northeast Utilities (“NU”) has studied various options and has
3 proposed a high-voltage direct current transmission tie line with Hydro Quebec” in order “to
4 share in the region’s access to Canada’s projected surplus power.”⁸³

5
6 The OCA is not taking a position on the transmission line in this testimony. However,
7 because the Net Present Value calculation in the CUO study is based on a 10 year planning
8 horizon, we believe that excluding the proposed HQ line completely tends to increase
9 Capacity Revenues, Net Energy Margins, and the NPV for Newington Station.

10
11 In addition , according to the Northern Pass Transmission Project Study prepared for
12 Northeast Utilities by Charles River Associates dated December 7, 2010, “CRA’s analysis
13 shows that as much as 7.7 TWh of energy would be delivered to ISO-NE in 2015, the first
14 year the Line is expected to be operational.”⁸⁴ It also includes the following:

15 Under the base case scenario modeled, the increased net imports to New England
16 would lead to the displacement of generation from fossil-fueled generators totaling
17 5.3 TWh in 2015, most of which will be from gas-fired generating units.⁸⁵
18

19 It is my view that a robust and balanced CUO study with a 10 year horizon cannot ignore
20 Northern Pass, especially in light of the claims made by Northern Pass about the project’s
21 benefits to the region.

22

⁸² Attachment KET- 58, PSNH Response to OCA 02-024, Attachment B.

⁸³ See LCIRP filing at Bates page 112.

⁸⁴ Attachment KET-59, “Northern Pass Transmission Project Study,” Charles River Associates, 12/7/10 at page 2.

⁸⁵ Id.

1 **IV. Demand-Side Analysis**

2 **Q: Did PSNH include a review of the potential for cost effective energy efficiency in the**
3 **LCIRP?**

4 A: Yes. Section IV of PSNH’s LCIRP is titled “Assessment of Demand-Side Energy
5 Management Programs.” On page 47 of the LCIRP PSNH cites Order No. 24,945 from
6 PSNH’s last LCIRP (DE 07-108). PSNH states that the Order “directed PSNH to base its
7 assessment of demand-side resources on” the 2009 GDS Associates study “Additional
8 Opportunities for Energy Efficiency in New Hampshire” (“GDS Study”) that was prepared
9 under the direction of the Commission.

10

11 **Q: What is your understanding of how PSNH considered the potential for cost effective**
12 **efficiency as part of the resource mix in the LCIRP?**

13 A: Starting on page 47, in Subsection B.1, PSNH goes into detail on their methodology “to
14 quantify the annual costs and benefits that can be achieved through concerted programmatic
15 efforts” to increase the installation of energy efficient measures by customers. My
16 understanding is that broadly speaking, PSNH started their analysis with the “Potential
17 Obtainable Scenario” from the GDS Study, which reflects “the realistic penetration over time
18 . . . taking customer behavior into consideration,” and would require “a concerted, sustained
19 campaign involving aggressive programs and market interventions.”⁸⁶

20

21 According to the LCIRP, PSNH built upon that GDS scenario to create a “Market Potential
22 Scenario,” which the Company believes reflects the increases in energy efficiency that can be

⁸⁶ LCRIP filing at Bates p. 48.

1 achieved over the LCIRP planning horizon. The Company sets out its approach to
2 translating the GDS scenario to their own on pages 49 - 54 of the LCIRP, and utilizes the
3 existing “CORE” efficiency programs funded by ratepayers and administered by the utilities
4 as the foundation for expanded programs.

5
6 **Q: What are the results of PSNH’s analysis?**

7 A: PSNH presents its results in Subsection B.2. My understanding is that the high level findings
8 are that there are cost effective programs and measures available that support steadily
9 increasing efficiency spending, so that the budget in 2015 is approximately 2.5 times the
10 2010 CORE expenditures (projected at the time of the LCIRP filing). One chart shows the
11 difference between continuing programs at current projected program levels, as compared to
12 modestly increasing spending to take advantage of additional cost effective measures.⁸⁷ In
13 the pages that follow, PSNH discusses the specific measures and programs that they believe
14 can be implemented by customer class.

15
16 **Q: Does PSNH provide information about the benefits of this increase in efficiency
17 investments for customers?**

18 A: Yes. PSNH states that based on 2009 CORE program results, PSNH “saved energy at an
19 average cost of 2.4 cents per lifetime kWh – as compared to the current [August 2010]
20 statewide average retail price of a kWh of 14.65 cents,” according to OEP.⁸⁸ PSNH points

⁸⁷ LCIRP filing, at Bates p. 56 Exhibit IV-9.

⁸⁸ LCIRP filing at Bates p. 42.

1 out that this results in a cost benefit ratio of more than 6:1, meaning that efficiency is much
2 cheaper for customers than purchasing electricity.⁸⁹

3
4 **Q: Does PSNH provide its economic analysis of the potential for additional cost effective**
5 **efficiency programs and measures?**

6 A: Yes, in Subsection C the Company provides its “Economic Analysis Methodology”
7 beginning on p. 65. The Company utilizes the Total Resource Cost (“TRC”) test to analyze
8 their proposed scenario, which is consistent with the cost effectiveness test used for the
9 CORE programs review. The Company also provided its estimates of the costs to achieve
10 the scenario it proposes.⁹⁰ Sector-specific costs are provided in Exhibit IV-14 for
11 Commercial & Industrial customers, and Exhibit IV-18 for residential customers.

12
13 PSNH also provides cost information in Section G.2. The Company notes that if the System
14 Benefits Charge (SBC) is the only source of funding for expanded programs, it would need to
15 be increased by 140% by 2015. PSNH briefly mentions other sources of funding such as the
16 American Reinvestment and Recovery Act (ARRA), the Regional Greenhouse Gas Initiative
17 (RGGI) or private funding, but does not consider funding efficiency through other rate
18 mechanisms.

19
20 **Q: Does the OCA support the implementation of PSNH’s Market Potential Scenario**
21 **proposal?**

⁸⁹ Id.

⁹⁰ LCIRP filing at Bates p. 55, Exhibit IV-7.

1 A: We are generally pleased to see that PSNH utilized the analysis in the GDS Study, and that
2 the Company recognizes that cost effective energy efficiency programs cost customers
3 significantly less than electricity itself. The OCA has supported cost effective ratepayer
4 funded energy efficiency programs for more than ten years.

5
6 However, we do not take a position with respect to the specific measures that the Company
7 has included in its Market Potential scenario, nor do we take a position at this time as to
8 whether the levels of increased spending are adequate to take advantage of the remaining cost
9 effective energy efficiency in PSNH's service territory. We believe that such details should
10 be explored further in a separate proceeding, either in conjunction with the CORE programs,
11 or in a new docket, in order to allow for the full consideration of various approaches. Such a
12 process would also allow interested parties to more fully explore potential funding sources to
13 allow customers to benefit from increased energy efficiency.

14
15 Finally, we strongly recommend that any process to consider increases in energy efficiency
16 funding and programs consider the analysis and recommendations in the study currently
17 underway that was required by the legislature in Chapter 335, NH Laws of 2010 (Senate Bill
18 323). The SB323 study, currently in draft form, will be finalized this Fall. It includes
19 specific recommendations for how New Hampshire can take steps to increase efficiency and
20 sustainable energy in the state. It should be a resource when considering any new or
21 expanded efficiency programs.

22

1 **V. Conclusion**

2 **Q: Please briefly summarize your recommendation to the Commission in this docket:**

3 A: I recommend that the Commission:

- 4 1. Find that PSNH's LCIRP is incomplete for the reasons set forth above;
- 5 2. Reject the CUO Study of Newington Station due to the numerous errors and omissions
6 that I have discussed in this testimony;
- 7 3. Expeditiously begin the process of conducting a Commission-supervised and truly
8 independent CUO study for Newington Station with the engagement of the parties;
- 9 4. Require CUO studies, with the engagement of the parties, for PSNH's other fossil fuel
10 fired generating plants that are increasingly over market, face major costs related to
11 environmental regulations in the near future, and which are resulting in significant cost
12 shifting to smaller captive customers; and
- 13 5. Require PSNH to participate in a docket to develop concrete proposals, in the CORE
14 efficiency docket or in a new proceeding, in order to achieve the significant additional
15 cost effective energy efficiency and demand side savings that they have said they could
16 help customers achieve. Such a proposal should take into consideration the
17 recommendations and findings in the SB323 Study, and should provide clear direction to
18 PSNH that its planning processes should move toward achieving all cost effective energy
19 efficiency, keeping in mind the resources needed to do so.

20

1 **Q. Why do you urge the Commission to undertake CUO studies of the fossil plants**
2 **expeditiously?**

3 A: Largely because the costs of PSNH's owned generation and migration are major cost drivers
4 affecting PSNH's default energy service rates. The Company first acknowledged this in
5 2009, when it stated that some of its costs of providing energy service are being carried only
6 by the small captive customers. Today, PSNH's default energy service rate is 8.89
7 cents/kWh, while Unitil's rate for small customers is 7.27 cents, Grid's is 6.68 cents, and
8 NHEC's is 7.83 cents. Those utilities do not own generation.

9
10 Based on the rates listed above, I have calculated that the average PSNH residential customer
11 is paying approximately \$10.00 more per month for default energy service than customers of
12 the other electric utilities. Average residential customers are paying \$3.60 per month just
13 from the cost shifting resulting from migration of PSNH's large customers. There is no cost
14 shifting resulting from migration for customers of other utilities. This cannot be allowed to
15 continue. A full, open and robust reexamination of the continued ownership of PSNH's
16 generation, starting with truly independent CUOs, is appropriate and necessary at this time.

17

18 **Q. Does this complete your testimony?**

19 A. Yes.

20