

STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
2010 LEAST COST INTEGRATED RESOURCE PLAN

DOCKET NO. DE 10-261

JOINT REBUTTAL TESTIMONY OF
WILLIAM H. SMAGULA AND ELIZABETH H. TILLOTSON

OCTOBER 26, 2011

Table of Contents

I.	Introduction	1
II.	The Least Cost Planning Process and Environmental Regulation.....	5
III.	Input Assumptions Provided by PSNH for the Newington Continued Operation Study	14
	Attachments WHS/EHT-1 through WHS/EHT-4.....	21-35

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11 **I. Introduction**

12
13 **Q. Mr. Smagula, please state your name, position, employer and**
14 **address.**

15 **A.** My name is William H. Smagula. I am Director of Generation for Public
16 Service Company of New Hampshire, (PSNH), a subsidiary of Northeast
17 Utilities (NU). My business address is 780 North Commercial Street, P.O.
18 Box 330, Manchester, New Hampshire 03105.

19 **Q. Please provide a brief summary of your background.**

20 **A.** I received a Bachelor of Science in Mechanical Engineering from the
21 University of New Hampshire and a Master of Science in Mechanical
22 Engineering from Northeastern University. I have worked for Public
23 Service Company of New Hampshire and then Northeast Utilities since

1 1978. I am a Registered professional Engineer in the states of New
2 Hampshire, Connecticut and Massachusetts. My duties have included
3 Manager of Generation Training for the PSNH system, Station Manager -
4 Merrimack Station, Steam Production Manager - PSNH, Director Fossil
5 Generation - The Connecticut Light and Power Company, and Director,
6 Manage and Operate Services - Northeast Generation Services Company.
7 In June 2001, I assumed the responsibilities of Director - PSNH
8 Generation in New Hampshire.

9 **Q. Please describe your responsibilities as Director - PSNH**
10 **Generation.**

11 **A.** In my present position, as Director - PSNH Generation, I am responsible
12 for the operation and maintenance of PSNH's generating stations. I have
13 responsibility for three fossil-fired, steam electric generating stations,
14 nine hydroelectric generating stations, two remote combustion
15 turbine/diesel generator sites and most recently a new biomass fueled
16 boiler. PSNH Generation maintains a diversified fuel portfolio including
17 gas, oil and coal-fired units as well as hydro and renewable biomass with
18 a total generation capacity of approximately 1150 MW.

19 **Q. Have you ever testified before this Commission?**

20 **A.** Yes. I have testified in many previous Commission proceedings regarding
21 the operation of PSNH's fossil-fired and hydroelectric generating plants.

1 **Q. Ms. Tillotson, please state your name, position, employer and**
2 **address.**

3 **A.** My name is Elizabeth H. Tillotson. I am the Technical Business Manager
4 for the Generation Division of Public Service Company of New Hampshire,
5 (PSNH), a subsidiary of Northeast Utilities (NU). My business address is
6 780 North Commercial Street, P.O. Box 330, Manchester, New Hampshire
7 03105.

8 **Q. Please provide a brief summary of your background.**

9 **A.** I received a Bachelor of Science in Mechanical Engineering from the
10 University of New Hampshire. I have worked for Public Service Company
11 of New Hampshire since 1980. My duties have included Results Engineer
12 – Merrimack Station, Senior Engineer on Staff including serving as the
13 Division's weld engineer, Project Engineer – Merrimack Station's
14 Supplemental Precipitator, Production Manager – Merrimack Station and
15 Station Services Manager at Merrimack Station responsible for the
16 installation of the Merrimack Unit 2 supplemental precipitator and the
17 Merrimack 1 SCR. In February 2002, I assumed the responsibilities of
18 Technical Business Manager - PSNH Generation.

1 **Q. Please describe your responsibilities as Technical Business**
2 **Manger for PSNH Generation.**

3 **A.** In my present position, as Technical Business Manager - PSNH
4 Generation, I am responsible for supporting environmental, regulatory
5 and legislative activities for PSNH's generating stations.

6 **Q. Have you ever testified before this Commission?**

7 **A.** Yes. I have adopted Mr. Smagula's testimony in some energy service
8 charge proceedings and reconciliation proceedings. I also testified for
9 PSNH as part of a panel in the Schiller Conversion proceeding, Docket No.
10 DE 03-166.

11 **Q. What is the purpose of your testimony in this proceeding?**

12 **A.** The purpose of our testimony is to address the environmental claims
13 found in the testimony of Mr. Kenneth E. Traum for the Office of
14 Consumer Advocate, Dr. Ranajit Sahu for New Hampshire Sierra Club
15 and Mr. Douglas Hurley on behalf of Conservation Law Foundation. We
16 will also explain how PSNH Generation plans for and achieves compliance
17 with changes in environmental laws, regulations or standards. We will
18 also address the criticism of certain input assumptions provided by PSNH
19 and comments concerning the Continued Unit Operation study performed
20 by Levitan and Associates, Inc.

1 **II. The Least Cost Planning Process and Environmental Regulation**

2 **Q. Has the issue of PSNH's planning for future environmental**
3 **regulations been raised in this proceeding?**

4 **A.** Yes. In their testimony, the OCA, The Sierra Club, and CLF assert that
5 the Company did not adequately evaluate environmental laws and
6 regulations as part of the Company's least cost planning process. Mr.
7 Traum for the OCA mentioned it at several places in his testimony¹, Mr.
8 Hurley for CLF devotes several pages to this topic², and Dr. Sahu's
9 testimony is devoted to no other topic.

10 **Q. What environmental assessments must be made as part of the**
11 **LCIRP?**

12 **A.** Mr. Large's rebuttal testimony identifies the requirements that govern
13 the Company's LCIRP. Within RSA 378:38, there are two provisions that
14 relate to environmental compliance – one that pertains to compliance with
15 the Clean Air Act Amendments of 1990 and another that requires an
16 assessment of the LCIRP's long-and short-term environmental, economic
17 and energy price and supply impact on the state.

¹ See, Pre-filed Direct Testimony of Kenneth E. Traum at pp. 3, 4, 7 10 and 16

² See, Prefiled Testimony of Douglas Hurley on Behalf of the Conservation Law Foundation at pp. 3 – 6.

1 **Q. Does the Company's LCIRP address these two requirements?**

2 **A.** Yes. Section IX of the LCIRP is devoted to compliance with the Clean Air
3 Act Amendments, and Section XII contains an assessment of the LCIRP's
4 environmental impact on the State, including an assessment of the federal
5 Acid Rain Program, the Ozone Transport Region, the New Hampshire
6 Clean Power Act, the Regional Haze Rule, the Clean Air Transport Rule,
7 the Clean Air Mercury Rule, and the Clean Water Act. LCIRP at 149-155.

8 **Q. In addition to these statutory requirements, has the Commission**
9 **provided any direction to PSNH on its consideration of**
10 **environmental requirements as part of this LCIRP?**

11 **A.** Yes. In its Order accepting PSNH's 2007 LCIRP and the settlement
12 agreement in that case, the Commission found PSNH's LCIRP to be
13 adequate and noted the following:

Nevertheless, we provide further guidance below regarding PSNH's next LCIRP, which we direct PSNH to file one year from the date of this order.

17 . . .

18 7. Merrimack Continued Unit Operation Study.

Early retirement of existing power plants for economic reasons is a practical option for utility planners if continued operation entails the expenditure of significant investment dollars. For this reason, we will require PSNH to include in future LCIRPs an economic analysis of retirement for any unit in which the alternative is the investment of significant sums to meet new emissions standards and/or enhance or maintain plant performance. PSNH will not, however, be required to include an analysis of divestiture in its next LCIRP as set forth in Order No. 24,695.

1 Docket No. DE 07-108, Order No. 24,945 at 13 and 16. *See also* Order
2 24,966 at 7 (noting that header to the cited section above referring to
3 “Merrimack Continued Unit Operation Study” was erroneous and not
4 intended to limit or expand the general statement regarding the conduct
5 of a CUO analysis as part of any future LCIRPs).

6 **Q. Were there any new emissions standards applicable to PSNH’s**
7 **generating stations as of the time the Company prepared this**
8 **LCIRP which required the investment of significant sums to meet**
9 **those new standards?**

10 **A.** No. There were no new standards applicable at the time the LCIRP was
11 prepared. As explained in more detail below, with respect to the long
12 term strategies for compliance with standards that have yet to take effect,
13 we did not see any new or emerging standards at the time we prepared
14 the LCIRP which had progressed to a point where PSNH could effectively
15 begin planning to comply with a known and quantifiable standard.

16 **Q. Are you stating that there were no pending regulations at the**
17 **time you provided your input to PSNH’s LCIRP?**

18 **A.** No. We are stating that none of the regulations cited by the witnesses for
19 Staff, OCA, CLF or NHSC had progressed to a point in the regulatory
20 process where PSNH could assess a known standard and conduct
21 meaningful planning to address that standard.

1 **Q. How did you determine that the proposed regulations were not at**
2 **a point in the regulatory process where the Company could**
3 **engage in meaningful planning?**

4 **A.** Collectively, we have more than 50 years of experience monitoring the
5 regulatory environment in order to plan for and implement any
6 environmental regulations that apply to the Company's operations. While
7 neither of us are attorneys, we work in a regulated environment and are
8 constantly monitoring the status of various regulations and have an
9 understanding of how the regulatory process works. As a necessity, we
10 have become very familiar with the regulatory process and in gauging at
11 what point the Company needs to begin to take action to plan for changes
12 in environmental requirements.

13 We would observe that over our many years of experience, the process
14 of developing and implementing environmental regulations has become an
15 incredibly litigious and complicated process, with proposed regulations
16 taking many twists and turns along the way. These twists and turns can
17 have a significant impact on not only whether any given proposed
18 regulation ever takes effect but also the substantive requirements of the
19 final regulation.

1 **Q. Please describe your understanding of the regulatory process as**
2 **it relates to environmental compliance.**

3 **A.** Again, we are not lawyers but we do have an understanding of the various
4 stages of the regulatory process. We have developed a visual depiction of
5 our understanding of the process, which is included here as Attachment
6 WHS/EHT-1.

7 As reflected on Attachment WHS/EHT-1, the regulatory process can be
8 very convoluted and stretch over a long period of time. When a draft rule
9 is promulgated by an agency, it is open for public comment. Those
10 comments are then taken into account by the agency and can change the
11 final form of the rule from what was proposed. It is not uncommon that a
12 significant amount of time goes by from when comments are received on a
13 draft regulation to when an agency responds to those comments in a final
14 rule. Once the agency issues a final rule, that rule can be subject to legal
15 challenge by those that think the rule is too harsh and/or by those that
16 believe the rule is too lenient. Either side may also litigate over whether
17 the agency had the authority to adopt the rule in the first place, which can
18 result in rules going “back to the drawing board” or being completely
19 abandoned. Even once some federal rules are adopted, a state agency
20 such as the New Hampshire Department of Environmental Services may
21 be required to develop a state action plan which would involve input from
22 a variety of stakeholders at the local level to implement the rule.

1 **Q. Are environmental regulations subject to any political pressures?**

2 **A.** Yes. Even since this proceeding began, we have been witness to a
3 dramatic change in the direction of environmental regulation. In
4 September of this year, there was a major roll back of environmental
5 regulations which may have an impact on PSNH's plants. This
6 reassessment is described in a news article included here as Attachment
7 WHS/EHT-2. Significantly, the rules described in this news article
8 include those that Mr. Hurley relied upon to state that PSNH had not
9 adequately planned for EPA's "coordinated multifaceted approach to
10 development of these regulations."

11 We would also point out that even Staff has not been able to accurately
12 predict when a rule will become final. In his testimony, Mr. McCluskey
13 refers to regulations promulgated by EPA under Section 316(b) of the
14 Clean Water Act. When asked during discovery when those will take
15 effect, Mr. McCluskey stated his understanding that the final rule "is due
16 out November 16, 2011." Staff Response to PSNH 1-40, attached hereto
17 as Attachment WHS/EHT-3. The final rule is now expected in July 2012,
18 though it is conceivable that date could change again.

19 **Q. Even once an environmental rule becomes final, is a compliance**
20 **plan with a rule imminent for a company like PSNH?**

21 **A.** No. In our experience, once a rule is final (meaning any legal challenge is
22 resolved and the rule has taken effect), a date for compliance is set in the

1 future. The final rule may result in separate compliance requirements for
2 particular types of plants. For example, under the same regulation, a fifty
3 megawatt coal-fired boiler may have a different compliance requirement
4 than a 320 megawatt coal-fired cyclone boiler which would be different
5 from requirements for a gas/oil fired unit. In other words, even during the
6 compliance phase, there is not necessarily a “one size fit all” approach.

7 **Q. Why does PSNH need to wait until a final rule is established with**
8 **a compliance date in order to begin planning?**

9 **A.** As depicted on our illustrative flow chart (Attachment WHS/EHT-1), once
10 a final rule is in place, the Company engages in a number of steps that
11 lead up to achieving compliance with the rule. These steps include:

- 12 • An assessment of the mandates of the rule;
- 13 • The development of technical specifications for how the Company will
- 14 meet that mandate;
- 15 • The procurement of resources to meet those technical specifications;
- 16 • Construction of any capital addition necessary to achieve compliance;
- 17 and
- 18 • Determination of an “in service” date for that capital addition to meet
- 19 the regulatory compliance deadline.

20 Each of these steps comes at a financial cost to the Company and its
21 customers. In our view, it would not be prudent to begin to incur these

1 costs until there was certainty that the Company would be required to
2 achieve compliance at a specified level and by a specified date. As a
3 result, while PSNH is constantly monitoring the regulatory arena, be it
4 state or federal, for possible changes in environmental statutes,
5 regulations, and litigation challenging regulations, we do not conduct
6 formal analyses of the numerous possible scenarios that might arise. The
7 reason for this approach is that until a standard is known in final form
8 and a compliance date is prescribed, analysis of PSNH's compliance
9 strategy would be speculative. Planning with several unknowns and
10 without finality would not be a wise use of company resources and
11 expenditures which would ultimately be borne by customers.

12 The recent pull-back of the proposed ozone regulation and the
13 challenges over other EPA rules described in Attachment WHS/EHT-2
14 demonstrates the unpredictability of the environmental regulatory
15 process. If the Company had engaged in planning for the implementation
16 of any of the regulations not yet adopted, as The Sierra Club argued it
17 should have, the Company would have wasted significant resources which
18 would not have provided any benefit to its customers. In fact, incorrect
19 speculation could result in bad planning. During discussions in 2008 and
20 2009, many had suggested that PSNH should assume a federal CO₂ cap
21 and trade program and assign CO₂ compliance costs of as much as \$25
22 per ton. A federal CO₂ program has not been established and those costs

1 have not occurred. The lesson learned is quality planning must be based
2 on final regulation.

3 **Q. In the language quoted above from the order in the last Least Cost**
4 **Planning docket, the Commission required PSNH to provide “an**
5 **economic analysis of retirement for any unit in which the**
6 **alternative is the investment of significant sums to meet new**
7 **emissions standards and/or enhance or maintain plant**
8 **performance.” When would this step take place in the process you**
9 **described above?**

10 **A.** During the process of assessing the mandates of the rule and developing
11 technical specifications for meeting those mandates, the Company would
12 assess the potential costs of possible approaches to compliance. If these
13 alternatives were all very expensive, PSNH would conduct an economic
14 analysis of retirement as an alternative to going forward with
15 procurement of resources.

16 **Q. Are you aware that after the Company filed its LCIRP, the**
17 **Commission, via Secretarial Letter approving a procedural**
18 **schedule in this proceeding, stated:**

19 **“a sound planning process should consider reasonably foreseeable**
20 **regulatory changes, recognizing that the threshold at which a**
21 **potential change in regulatory standards becomes too remote or**
22 **speculative for a utility to consider will depend on the particular**
23 **facts and circumstances of the regulatory matter at issue”**

1 **DE 10-261, Secretarial Letter, December 28, 2011.**

2 **A.** Yes. We are aware of that articulation. For all of the reasons stated
3 above relating to the highly variable and political nature of the regulatory
4 environment, we believe that none of the proposed regulations cited by the
5 OCA, The Sierra Club, and CLF were “reasonably foreseeable regulatory
6 changes” when PSNH was preparing its Least Cost Plan filing.

7 **Q. Do you think it would have been prudent for the Company to**
8 **begin planning for any of those regulations as OCA, The Sierra**
9 **Club, and CLF argue should have occurred?**

10 **A.** No. At the time the Company prepared this LCIRP, it could not, in good
11 faith and with prudence, commit Company resources for planning for any
12 potential future compliance with any of those proposed regulations. To do
13 so would require us to make judgments with certainty about the final
14 outcome of those regulations, which we are not capable of doing given all
15 the potential intervening variables that could change the course of those
16 regulations between the time of filing of our LCIRP and any final date for
17 commencing compliance with them.

18 **III. Input Assumptions Provided by PSNH for the Newington**
19 **Continued Operation Study**

1 **Q. Please explain the reasons for the level of capital investment**
2 **forecasted by the Company and why that is different than**
3 **historical capital investment levels (see OCA testimony 27: 15-17**
4 **and Staff testimony).**

5 **A.** There are two issues that impact the level of capital expenditures for a
6 generating station. The first is operational requirements and the second
7 is environmental mandates. Related to capital linked to operational
8 requirements, Newington Station has had a reduced capacity factor in
9 recent years. Over the past 10 years Newington Station has completed a
10 variety of capital projects as part of an appropriate maintenance program.
11 Also, prior to and during this period when capacity factors decreased,
12 PSNH has made investments to enhance the dispatchability and price in
13 the market by making targeted capital investments in equipment and
14 controls to reduce start times, increase ramp rates, reduce operational
15 costs, increase reliability, etc. With these investments made and the
16 continued lower capacity factors anticipated, the need for large capital
17 investments, which are typically due to aging or unreliable equipment, is
18 not anticipated. We are pleased to note that Newington Station's average
19 availability over the last 5 years is better than 94%. Thus, PSNH believes
20 that the \$500,000 annual capital investment level used in the model is
21 appropriate. We note that, as discussed in Mr. Large's testimony, the
22 Commission Staff's consultant in Docket No. DE 11-094 reached the same

1 conclusion, thus reinforcing the reasonableness of PSNH's capital
2 investment assumptions.

3 There may be unique projects that arise, and there are studies
4 underway that could conclude that some other investments may be
5 warranted; however, no such items have been justified to date for future
6 installation. PSNH also performs maintenance on equipment with both
7 planned activities and as a result of unplanned work. An appropriate
8 maintenance budget is also utilized for Newington Station, but as in the
9 case of the capital budget, the maintenance budget has also been
10 appropriately reduced from historic levels due to Newington Station's
11 reduced capacity factors recently experienced.

12 As for environmental requirements, at the time the Newington CUO
13 study was preformed, there were no reasonably foreseeable environmental
14 regulations that would require large capital investments at Newington
15 Station and therefore the \$500,000 annual capital investment level was
16 appropriate to use for the analysis.

17 **Q. Please address OCA's concern that the assumption of \$10 million of**
18 **oil inventory value in all years is too low (See OCA testimony,**
19 **pages 32:12 to 33:14).**

20 **A.** PSNH has completed the engineering review of the work needed to
21 remove oil from the tank(s) at Newington Station for possible loading into
22 a ship moored at the Schiller dock for sale to a third party. A new valve,

1 required as part of a necessary piping modification, has also been obtained
2 and installed. Oil off loading to a vessel from Newington tanks has never
3 been done. Procedures are being developed factoring in numerous safety
4 and environmental aspects of this task. An assessment of oil usage
5 projections, customer benefit of an oil sale, and near term gas availability
6 and price for Newington will be made as part of the final assessment
7 before unloading from land to a vessel is determined as a viable and
8 beneficial option.

9 **Q. Please address the claims by Staff and OCA that the model does**
10 **not reflect actual operations because it does not include periods**
11 **when the unit runs for reliability (Staff page 8, lines 21-23) or for**
12 **testing purposes (OCA testimony page 25:4).**

13 **A.** The model developed by LAI reflects economic operation only. In reality,
14 there are times when Newington Station will run in an out-of-merit
15 operation mode at the request of ISO-New England in order to protect the
16 overall resource adequacy and transmission security of specific locations
17 or of the entire control area. In those situations, PSNH is paid a Net
18 Commitment Payment Compensation (NCPC). The NCPC is a "make-
19 whole" payment made to a generation resource whose hourly commitment
20 and dispatch by ISO-New England results in a shortfall between the
21 resource's offered value in the Energy and Regulation Markets and the
22 revenue earned from output over the course of the day, based upon the

1 locational marginal prices in the energy market. The exclusion of this
2 out-of-merit operation from the Newington CUO model has no impact on
3 the energy net revenues associated with Newington Station because the
4 NCPC covers any shortfall between Newington's cost and the locational
5 marginal price; therefore, reliability runs are irrelevant to the model.

6 To address the exclusion of testing hours, there are times when
7 Newington Station is required to perform testing to meet operational
8 requirements or environmental requirements as well as confirm proper
9 and reliable operation of new equipment. Typically the amount of testing
10 is a negligible part of overall operations. However, in 2009 and 2010,
11 Newington Station underwent testing operations as a result of switching
12 over from a mainly oil fuel source to a mainly natural gas fuel source and
13 related control system operation. Customarily PSNH tries to perform
14 testing in economic periods when Newington is running under normal
15 dispatch. PSNH made the assumption that the level of testing seen in
16 2009 and 2010 was unlikely to be repeated and therefore did not include
17 an assumed level of uneconomic testing operation in the going-forward
18 modeling.

1 **Q. Does PSNH agree with OCA's assertion that PSNH should**
2 **competitively bid its fuel source needs for Newington Station**
3 **instead of using Emera in a sole source arrangement?**

4 **A.** No. PSNH is a relatively small consumer of natural gas on the Portland
5 Natural Gas pipeline (PNGTS). In addition, because of the intermittent
6 operation of the station, PSNH chooses to purchase natural gas on a day-
7 ahead basis or intra-day basis rather than scheduling supplies in advance.
8 Emera allows PSNH the flexibility to purchase in this manner; therefore,
9 PSNH has found it beneficial to use Emera. In data request TS-02, Q-
10 TECH-014 (Attachment WHS/EHT-4), PSNH noted the reasons for the
11 sole source arrangement. The reasons include the fact that Emera is one
12 of only three major suppliers on the PNGTS delivery pipeline. The other
13 two major suppliers have not demonstrated the resources necessary to
14 support PSNH's requirements of late day and intra-day nominations.
15 Emera has been highly dependable and flexible, which are important
16 attributes to support Newington Station's intermittent and unpredictable
17 needs. In addition, the other suppliers on PNGTS have either been
18 unresponsive to PSNH's request for bids or are small and unable to meet
19 the needs of Newington Station. Furthermore, should a day of operation
20 end with purchased gas not consumed, Emera has offered PSNH the
21 ability of carrying this gas to a future day or they have repurchased the
22 gas rather than lose the purchase. This flexibility provides further

1 positive value to customers. Although PSNH can still purchase gas from
2 other suppliers on the PNGTS, for the reasons stated above, PSNH has
3 chosen to deal exclusively with Emera for the supply of natural gas to
4 Newington Station. OCA has apparently not factored these facts into its
5 comments.

6 **Q. Does this conclude your testimony?**

7 **A.** Yes.

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