

**STATE OF NEW HAMPSHIRE  
BEFORE THE  
PUBLIC UTILITIES COMMISSION**

**DOCKET NO. DE 14-238**

**2015 PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE  
RESTRUCTURING AND RATE STABILIZATION AGREEMENT**

**DIRECT TESTIMONY OF WILLIAM H. SMAGULA, P.E.**

Redacted in Support of Litigation Settlement  
(Redacted Testimony Indicated in Gray Highlighting)

**July 6, 2015**

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**Description of the NH Generation Assets to be Divested**

1     **INTRODUCTION AND QUALIFICATIONS**

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

3     A.     My name is William H. Smagula. I am Vice President of Generation for Public  
4           Service Company of New Hampshire (PSNH), d/b/a Eversource. My business  
5           address is 780 North Commercial Street, P.O. Box 330, Manchester, New  
6           Hampshire 03105.

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

8     A.     I received a Bachelor of Science in Mechanical Engineering from the University  
9           of New Hampshire, and a Master of Science in Mechanical Engineering from  
10          Northeastern University. I have worked for Public Service Company of New  
11          Hampshire, Northeast Utilities and now Eversource since 1978. I am a Registered  
12          Professional Engineer in the states of New Hampshire, Connecticut and  
13          Massachusetts. My duties have included Manager of Generation Training for the  
14          PSNH system, Station Manager - Merrimack Station, Steam Production Manager  
15          - PSNH, Director Fossil Generation - The Connecticut Light and Power  
16          Company, and Director, Manage and Operate Services - Northeast Generation  
17          Services Company, Director - PSNH Generation in New Hampshire. In January  
18          2013, I assumed the responsibilities of Vice President of Generation for PSNH.

19    **Q.     Have you ever testified before the New Hampshire Public Utilities**  
20    **Commission (NHPUC or Commission)?**

21    A.     Yes. I have provided testimony in many previous Commission proceedings  
22           regarding the operation of PSNH's fossil-fired, biomass and hydroelectric  
23           generating plants. I have also testified before other agencies including the NH  
24           Site Evaluation Committee, the NH Air Resources Council, the Connecticut  
25           PURA, the Massachusetts DPU, and the Vermont Public Service Board.

1     **Q.     Please describe your responsibilities as Vice President of Generation.**

2     A.     In my present position as Vice President of Generation, I am responsible for the  
3           operation and maintenance of PSNH's generating stations. PSNH maintains a  
4           diversified fuel portfolio including gas, oil and coal-fired units as well as hydro  
5           and renewable biomass stations with a total generation capacity of approximately  
6           1150 MW. I have responsibility for three fossil-fired, steam electric generating  
7           stations, nine hydroelectric generating stations, two remote combustion  
8           turbine/diesel generator sites and a biomass fueled boiler at Schiller Unit 5  
9           (Generation Assets).

10    **Q.     Do you have prior experience with generation asset divestitures?**

11    A.     Yes, I was the Director responsible for sale of all fossil and hydro assets owned  
12          by The Connecticut Light and Power Company. I was also involved in fossil and  
13          hydro asset sales for Western Massachusetts Electric Company. Additionally, I  
14          have experience in due diligence asset assessment activities on a number of  
15          occasions as part of Northeast Generation Services Company, an unregulated  
16          subsidiary of Northeast Utilities.

17    **PURPOSE OF TESTIMONY**

18    **Q.     Please provide an overview of your testimony in this proceeding.**

19    A.     My testimony will focus on several areas; all related to the sale of PSNH's  
20          generation assets as contemplated in the Restructuring and Rate Stabilization  
21          Agreement (Agreement). I will provide a description of the Generation Assets to  
22          be divested and the requirements that will be placed on the Buyer(s) of these  
23          facilities. Additionally, my testimony will provide information on the PSNH  
24          employees who are the key to keeping the Generation Assets running and will  
25          explain the employee protection provisions that are required under New  
26          Hampshire law as a result of the divestiture of the Generation Assets.

1    **GENERATION ASSETS**

2    **Q.     Please provide information concerning the Generation Assets that are**  
3           **described in the Agreement.**

4    A.     The Agreement provides a listing and brief description concerning the Generation  
5           Assets to be sold as part of the asset auction (Generation Asset Auction). A  
6           summary of asset-by-asset detail is included as Attachment WHS-1. Included in  
7           the auction are: 1) a two-unit coal fired fossil steam station (Merrimack), with two  
8           combustion turbines; 2) a two-unit coal/oil and one-unit wood fired steam station  
9           with an associated combustion turbine (Schiller); 3) an oil and natural gas fired  
10          fossil steam station (Newington); 4) nine hydroelectric stations (20 units total);  
11          and 5) two remote combustion turbine sites. In total, these assets combine for  
12          approximately 1,150 megawatts of generating capability.

13          The Table below provides an overview of each site.

<b>Plant Name</b>	<b>Capacity (MW)</b>	<b>Primary Fuel</b>	<b>Location</b>
Merrimack	481.6	Coal	Bow, NH
Schiller	158.1	Coal/Oil/Wood	Portsmouth, NH
Newington	400.2	Oil/Gas	Newington, NH
Smith	17.6	Hydro	Berlin, NH
Gorham	2.1	Hydro	Gorham, NH
Canaan	1.1	Hydro	Canaan, VT and Stewartstown, NH
Ayers Island	9.1	Hydro	Bristol, Bridgewater, Ashland, New Hampton, NH

<b>Plant Name</b>	<b>Capacity (MW)</b>	<b>Primary Fuel</b>	<b>Location</b>
Eastman Falls	6.5	Hydro	Franklin, NH
Amoskeag	17.5	Hydro	Manchester, NH
Hooksett	1.9	Hydro	Hooksett, NH
Garvin Falls	12.9	Hydro	Bow, NH
Jackman	3.6	Hydro	Hillsborough, NH
Lost Nation	18	Oil (CT)	Groveton, NH
White Lake	22.4	Jet Fuel (CT)	Tamworth, NH

1 By contractual commitment, PSNH must offer its 12.5% ownership interest in the  
2 Androscoggin Reservoir Company (ARCO), which includes ownership rights in a  
3 reservoir system that regulates water flow to two of PSNH's northern  
4 hydroelectric generating stations (Smith and Gorham), to the other current joint  
5 owners of the project, prior to offering it for sale to other non-owners. To  
6 accommodate this requirement, PSNH will offer for sale its ownership interest in  
7 the ARCO and, initially, keep the process separate from the Generation Asset  
8 Auction. Should the PSNH ownership share not be sold to one or more of the  
9 current joint owners, the 12.5% stake in ARCO will be included in the Generation  
10 Asset Auction.

11 PSNH Generation currently has as part of its organization a maintenance support  
12 department which consists of: 1) a small and flexible mobile maintenance work  
13 force; 2) in-shop and field machining; and 3) fabrication services provided to all  
14 of Eversource Energy's operating companies. This department provides overhaul  
15 planning and rotating equipment repair, technical support (including expert  
16 turbine and generator engineering capability), outage planning and management,

1 and a full line of craft labor to perform a full scope maintenance work for  
2 generation, transmission and distribution assets. A determination of how the  
3 divestiture process will impact this maintenance activity has not yet been made.

4 Finally, as noted in the Agreement, PSNH's minority ownership interest in  
5 Wyman Unit 4 (Wyman 4), will be offered for sale and may be sold outside of the  
6 auction process or dealt with as deemed appropriate by the Commission. PSNH  
7 has a minority interest in this 600 MW unit, amounting to a 3.14% share (18.84  
8 MW). The majority interest in this oil-fired, generator is held by NextEra Energy  
9 Resources. Sale of this minority ownership share in Wyman 4 may take place  
10 outside of the Generation Asset Auction.

11 The auction of the Generation Assets and ownership interests represents the last  
12 major divestiture of generation to occur as part of Electric Utility Restructuring in  
13 New England. The Generation Assets are participating units in the ISO-New  
14 England energy, capacity and reserve markets, with a record of high availability  
15 and high performance, in particular during periods of strained natural gas  
16 supplies. PSNH has been successful at meeting current and emerging strict  
17 environmental air and water emissions regulations and has prepared these  
18 facilities to operate into the future. As a result, these assets may bring a high level  
19 of interest from a wide array of companies who are, or wish to be, owners of  
20 electric generating facilities in New England.

21 **Q. You indicated that you have previous experience with generation divestiture**  
22 **processes in New England. Are you familiar with the divestiture proposal**  
23 **and schedule filed by Non-Settling Staff on June 17?**

24 **A. Yes I am.**



1 **Q. Based upon your experience in past New England generation divestiture**  
2 **processes, do you have any comments on Non-Settling Staff's proposal?**

3 **A.** Yes I do. In my opinion, the divestiture process and schedule proposed by Non-  
4 Settling Staff in its June 17 filing will not result in PSNH receiving the maximum  
5 value possible for its Generation Assets. The proposed schedule contained in the  
6 "Joint Motion for Expedited Approval of Settlement Agreement and Rate  
7 Adjustments" filed on June 10 was vetted by all of the Settling Parties, including  
8 power generators likely to bid on the assets, PSNH which will sell the assets,  
9 environmental interests, consumer advocates, legislators, and Settling Staff. That  
10 proposed schedule best meets the goal of maximizing the value of the assets to be  
11 divested and minimizing the risk of schedule extension. I concur with the  
12 comments and observations contained in the testimony of Mr. John Reed, and  
13 recommend that the Commission adopt the proposed procedural schedule  
14 contained in the Settling Parties Joint Motion.

15 **GENERATION MANAGEMENT AND ASSET MANAGEMENT**

16 **Q. How will PSNH manage the Generating Assets going into the divestiture**  
17 **process?**

18 **A.** PSNH management will ensure that the assets being divested are properly  
19 operated and maintained to provide reliable resources to the new owner(s).

20 **Q. Please discuss actions that may be required or will be taken up through the**  
21 **potential financial closing on the sale of the Generation Assets.**

22 **A.** During this transition period, PSNH Generation will continue to prudently operate  
23 and maintain the units consistent with past practice. That is, as contemplated by  
24 the Agreement, PSNH will be responsible for continuing to perform maintenance

1 and sustain proper management of all Generation Assets, and continue to actively  
2 manage the generation-related entitlements and purchase obligations in which it  
3 retains an interest until such time as they are sold or transferred to another entity,  
4 retired, or purchase obligations terminate.

5 Within 45 days of the Commission's approval of the Agreement, but no later than  
6 February 15, 2016, PSNH shall file with the Commission an annual plan for its  
7 Generation Assets related capital and maintenance expenditures for the period  
8 ending with the sale of the Generation Assets. PSNH shall update the plan  
9 annually. PSNH shall not increase or decrease expenditures by more than 20%  
10 from the plan as filed, without prior Commission approval.

11 Also during this period, the capacity and energy provided by these assets and  
12 agreements will be used to supply PSNH's energy service customers or sold in the  
13 market. PSNH's generating assets assumed a capacity supply obligation in the  
14 most recent forward capacity auction held in February 2015. This obligates  
15 PSNH (or the new owner) to provide capacity from these assets during the  
16 "delivery period" of June 2018 through May of 2019. PSNH or the new owner  
17 could attempt to sell this obligation in a subsequent auction or through a bilateral  
18 arrangement, but there is no guarantee of the ability to transfer the obligation, nor  
19 the cost that would be incurred to transfer the obligation. The next annual auction  
20 will be held in February, 2016 for the June 2019 through May 2020 delivery  
21 period. Consistent with the Agreement, PSNH is planning to submit its  
22 generating assets in this auction to preserve the value of those assets . If these  
23 assets assume a capacity obligation, they will be committed to supplying capacity  
24 during the 2019 – 2020 timeframe unless the obligation from these assets is  
25 transferred as described above. The revenues and costs for this capacity will be  
26 credited to customers as part of the Company's energy service rate until the  
27 Generation Assets are divested.

1 Furthermore, during this period, PSNH will preserve the Generating Assets  
2 flexibility in terms of its contracting strategy by executing short term fuel and rail  
3 contracts if, and as necessary.

4 **Q. Are there other activities that will be taken between now and the time of**  
5 **Commission approval of the Agreement?**

6 A. Yes, during this period, all land to be sold as part of the Generation Asset Auction  
7 will be assessed by a registered licensed professional engineering company. An  
8 ASTM Phase 1 Environmental Site Assessment (ASTM ESA) will be completed  
9 at each of the Generation Assets to assess their environmental conditions. The  
10 purpose of the ASTM ESA is to identify recognized environmental conditions at  
11 each site. The environmental professional that PSNH will hire to perform the  
12 ASTM ESA will inspect each site under the ASTM Standard rules, interview the  
13 plant manager and environmental specialists at PSNH, review all available  
14 environmental documentation and historical records for each site and finally  
15 review the geologic conditions of the sites.

16 PSNH believes that the Generation Assets properties are in reasonably good  
17 environmental condition and typical for long-term power generating stations.  
18 Environmental assessments have been completed at these facilities for a variety of  
19 state or local project needs. We believe the ASTM ESA will provide important  
20 relevant environmental data needed for the Generation Asset Auction.

21 **BUYER OBLIGATIONS**

22 **Q. Please discuss some of the requirements that PSNH may place on the**  
23 **Buyer(s) of the Generation Assets.**

24 A. In general, it is expected that the Buyer(s) will take ownership and responsibility  
25 for all facets of the Generation Assets' future operation, including employment of

1 those individuals working to manage, operate, maintain and support the facilities  
2 at the time of financial closing. The Buyer(s) will be required to enter into  
3 agreements with PSNH for operation of and access to shared or common  
4 facilities. The Buyer(s) will be required not adversely impact the PSNH  
5 Electrical System.

6 Additionally, PSNH expects the Key Terms of Sale to address the following:

- 7 • Asset Boundaries and Cross Easements
- 8 • Interconnection and Operation Agreement
- 9 • Environmental Issues
- 10 • Real Property Interests
- 11 • Interim Period Operations
- 12 • Transmission Access
- 13 • Local Area Support

14 These requirements will be developed in parallel with this regulatory proceeding,  
15 so that should the Commission approve the Agreement, PSNH would be able to  
16 commence divestiture activities expediently.

17 Ultimately, the final Purchase and Sales Agreement will set forth and control the  
18 obligations of both the seller (PSNH) and the buyer(s) of the Generation Assets.

1    **EMPLOYEE OVERVIEW AND EMPLOYEE PROTECTIONS**

2    **Q.     Please provide a general overview of the Generation Assets' workforce.**

3    A.     The Generation Assets' workforce consists of approximately 280 employees.  
4           About 165 are bargaining unit employees and the remainder or 115 are non-  
5           bargaining unit employees. In addition, there are a small number of Eversource  
6           Energy Service Company employees whose duties are primarily related to the  
7           support of the Generation Assets. Union employees are represented by the  
8           International Brotherhood of Electrical Workers (IBEW) Local 1837.

9    **Q.     Please provide a general overview of issues concerning the employees of the**  
10   **Generation Assets (Generation Employees).**

11   A.     New Hampshire law requires that all employees affected by the divestiture or  
12           retirement of any or all of PSNH's generation assets shall be provided with  
13           employee protections. RSA 369-B:3-b, "Employee Protections," was added  
14           during the 2014 Legislative session as part of 2014 N.H. Laws, Chapter 310.  
15           During the 2015 Legislative session, Senate Bill 221 amended this statute to read  
16           as follows:

17                   In the event of divestiture or retirement of any or all of PSNH's  
18                   generation assets, employee protections no less than those set forth  
19                   in the then-current collective bargaining agreement shall be  
20                   provided to affected employees.

21           Senate Bill 221 (which is attached to the Settlement Agreement as Appendix A)  
22           was passed by the Legislature and is awaiting signature by the Governor.

23           As part of the plan to divest of its Generation Assets, the Law and the Agreement  
24           references certain commitments to both its represented and non-represented  
25           employees. PSNH is a party to a Collective Bargaining Agreement ("CBA") with

1 IBEW Local 1837 in New Hampshire. The Buyer(s) will be required to assume  
2 PSNH's obligations under the IBEW-PSNH Generation CBA as modified by the  
3 "Memorandum of Agreement Extending Current CBA Upon Divestiture by  
4 PSNH of any Generating Asset" (Appendix B to the Settlement Agreement) at the  
5 closing of the Generation Asset Auction. The Law and Agreement set forth the  
6 minimum employee protections that any employee affected by the divestiture or  
7 retirement of PSNH's generation assets is entitled to.

8 **Q. Please discuss the employee protections set forth in the CBA governing**  
9 **PSNH's represented Generation Employees.**

10 A. PSNH has completed negotiations with IBEW Local 1837 which represents the  
11 bargaining unit employees serving the Generation Assets. These agreements are  
12 documented in a Collective Bargaining Agreement which was effective June 1,  
13 2013 with an expiration date of May 31, 2017 as supplemented by a  
14 Memorandum of Agreement dated May 20, 2015. Amongst other things, that May  
15 2015, Memorandum of Agreement extends the CBA two years beyond the date of  
16 sale and sets forth specific employee protection benefits. Wages and benefits for  
17 the two year extension period are not specified at this time; however, it is noted  
18 that the represented employees will be entitled to be same annual wage  
19 adjustments and benefits in the extended period as established by any succeeding  
20 CBA between PSNH and the IBEW Local 1837 Utility Group. Examples of the  
21 employee protections contained in the current CBA include:

22 a. Notification to Union on Staffing Expectations

23 Best efforts will be made to have the buyer(s) provide staffing plans at least  
24 120 days prior to financial closing.

25 If the new owner does not intend to retain or hire all of the employees at a  
26 particular site, management will attempt to obtain the new owner's agreement

1 to offer jobs in each classification according to the provisions outlined in the  
2 Collective Bargaining Agreement.

3 b. Service Recognition

4 The Buyer will agree that it will recognize an employee's service with  
5 PSNH/NU/Eversource for purposes of qualifying for benefits described in the  
6 NH Generation/IBEW Memorandum of Agreement within the Buyer  
7 programs and plans including those established to provide benefits described  
8 in the Collective Bargaining Agreement.

9 c. Severance Plan

10 Any employee who is (1) terminated by Eversource as a result of generation  
11 asset sale or shut-down, (2) is not offered a position with buyer at his/her  
12 current location and pay rate, or (3) is hired by, and works for the Buyer of the  
13 generation assets and is terminated as a result of a reduction in force or change  
14 in operational practices during the term of the existing Collective Bargaining  
15 Agreement, (as extended by the Memorandum of  
16 Agreement), will be entitled to the following benefits in addition to those  
17 termination benefits outlined in Article IX of the CBA:

- 18 ■ Out placement assistance - such as the Lee Hecht Harrison workshop  
19 which has been provided to PSNH employees in prior years.
- 20 ■ Severance pay of 52 weeks for employees with between 1 and 26 years of  
21 service. Employees with more than 26 years of service will get an  
22 additional one week of pay for every additional six months of service.
- 23 ■ Up to \$5,000 in tuition assistance for job/career related educational  
24 courses or training programs begun within twelve months from the date of  
25 termination and concluded within thirty-six months of that date.
- 26 ■ Health benefits at the Buyer's expense (excluding employee contributions)  
27 for a period based on the number of weeks equal to the severance pay with  
28 a maximum of one year.

- 1           ▪ Employee Assistance Program counseling for the term of the health
- 2           benefits.
- 3           ▪ In the event of a workforce reduction, volunteers who are eligible for
- 4           retirement will be permitted to take their severance and benefits in
- 5           addition to their normal retirement benefits.

6           d. Benefits

7           Any Buyer of the NH Generation assets will maintain a benefit package that  
8           provides the same level of value to the employee as the PSNH portfolio, the  
9           coverage to include vacation, health care, holidays, sick leave, and other  
10          provisions described in the Collective Bargaining Agreement. Coverage will  
11          not be denied as a result of any preexisting medical condition that exists at the  
12          time of the transfer of assets.

13          e. Pension

14          As a condition of sale, when employees who are hired by the buyer retire, they  
15          will receive a pension benefit from the buyer (or subsequent buyers) which, in  
16          combination with their Eversource Energy pension benefit, will provide them  
17          with a total pension benefit equal to at least that of the plan they qualified for  
18          at the time of the transfer of assets.

19          f. Job/Bid Security

20          If an employee is offered a position with the Buyer at that employee's current  
21          location and pay rate, that employee will no longer be eligible for severance  
22          benefits under the Eversource plan. However, if, as a result of a reduction in  
23          force resulting in a change in operations or staffing levels, the employee is  
24          terminated within twelve months of the transfer date, the employee will be  
25          given priority consideration for any open position at NH Eversource which  
26          has not been filled internally and for which he/she meet the minimum entry  
27          level qualifications for a period not to exceed eighteen months from the  
28          termination date.



1           g. Successors and Assigns

2           The Agreement shall be binding on any and all successors and assigns of the  
3           Buyer, or any other entity acquirer, whether by sale, transfer, merger,  
4           acquisition, consolidation or otherwise. The Buyer shall make it a condition  
5           of any such transfer that any such successor or assigns or any other entity  
6           acquirer shall be bound by the terms of this Agreement.

7       **Q.     Are non-represented employees entitled to similar employee protections?**

8       A.     Yes. RSA 369-B:3-b requires that employee protections be offered to all affected  
9           employees. Consistent with this overarching legal requirement, the Agreement  
10          defines “Affected Employees” to include all employees “whose primary  
11          employment duties support PSNH’s Generation assets and whose employment is  
12          terminated or significantly negatively affected as a direct result of the divestiture  
13          of the PSNH’s generating assets”.

14          As a matter of law, RSA 369-B:3-b as amended by SB 221 requires that any non-  
15          represented “Affected Employee” is entitled to receive “employee protections no  
16          less than those set forth in the then-current collective bargaining agreement”  
17          during the term of that CBA. Hence, non-represented employees will be entitled  
18          to the employee protections outlined above, except for those which by their nature  
19          only apply to Union members (such as seniority rights in the event of a reduction  
20          in force).

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

22       A.     Yes it does.

ATTACHMENT WHS-1

DESCRIPTION

OF

NH GENERATION ASSETS

TO BE DIVESTED

## 1. Thermal Facilities

### a. Merrimack Station

Merrimack Station is located along the Merrimack River in Bow, New Hampshire.

#### Merrimack Station Generating Facility

Unit	Load role	Fuel	Seasonal claimed capability (winter) (MW)	Year installed
Unit 1	Base/ Intermediate	Coal	108.1	1960
Unit 2	Base/ Intermediate	Coal	330.5	1968
CT-1	Peaking	Jet	21.7	1968
CT-2	Peaking	Jet	21.3	1969
Total			481.6	

Merrimack Station has a combined generating capacity from the two coal-fired, steam units and two jet fuel-fired Combustion Turbine units of 481.6 net MW and is PSNH's highest energy producer. The two coal-fired units are operated by personnel onsite 24 hours a day, seven days a week. The units are designed to operate 24 hours/7 days a week during high-priced market periods; and are reduced in output or placed in reserve status during lower-priced market periods. With this capability, these units can provide capacity, energy and reserve products transacted through the ISO New England power markets.

The two combustion turbine units mainly serve a peaking role, operating during periods of highest seasonal peak demand or when generation is needed quickly to maintain electrical system stability. These units typically serve the capacity and reserve markets, and not the energy market. In addition to these units, the Merrimack site includes numerous outbuildings, including the Coal Unloading System and Coal

1 Crusher House, office and storage facilities, a wet Scrubber, as well as a fly ash  
2 disposal area.

3 **b. Newington Station**

4 Newington Station is located on a site along the banks of the Piscataqua River in  
5 Newington, New Hampshire. Newington and Schiller Station are within a quarter  
6 mile of each other, separated by a public road that ends at the Schiller plant. The  
7 marine terminal and the bulk fuel oil storage, and oil transfer lines for Newington  
8 Station are located on the Schiller site.

9 **Newington Station Generating Facility**

Unit	Load role	Fuel	Seasonal claimed capability (winter) (MW)	Year installed
Unit 1	Intermediate /peaking	Oil and gas	400.2	1974

10 Newington Station is operated as required by the ISO to meet base, intermediate or  
11 peaking demand requirements. It is the largest single unit in the fossil/hydro system  
12 with capability of 400.2 net MW.

13 Newington Station is a dual fuel unit capable of burning oil and/or natural gas making  
14 it adaptable to changing fuel markets.

15 **c. Schiller Station**

16 Schiller Station is located east of Newington Station on the shore of the Piscataqua  
17 River in Portsmouth, New Hampshire. All of the No. 6 oil and coal for Schiller  
18 Station, all of the No. 6 oil for Newington Station, and ocean transported coal for  
19 Merrimack Station are received by ship or barge at the main dock at Schiller Station.

### Schiller Station Generating Facility

Unit	Load role	Fuel	Seasonal claimed capability (winter) (MW)	Year installed
Unit 4	Base/intermediate	Coal or oil	48.0	1952
Unit 5	Base	Wood	43.0	1955/2006
Unit 6	Base/intermediate	Coal or oil	48.6	1957
CT-1	Peaking	Jet or gas	18.5	1970
Total			158.1	

Schiller's steam units have historically served a base load or intermediate load role for the ISO. The units have the capability of starting up and shutting down daily if needed, and can also effectively serve in the base load role during high-priced market periods. Schiller's deep water docks make it an attractive site for generation.

Completed in 1949, Schiller Station is PSNH's third largest generating plant. The four generating units combine for a total output of 158.1 net MW. Units 4 and 5 were originally designed to burn coal, and did so for the first six months of their operation. Both were then converted to burn oil as the primary fuel in the 1950's. Unit 6 was designed to burn coal but burned oil initially.

In 1984, Units 4, 5 and 6 were converted to burn lower-priced coal allowing all three units to burn coal and/or oil as boiler fuel, and making them adaptable to changing fuel markets.

In 2006, Unit 5 was changed to 100% wood firing. The unit began commercial operation December 1, finalizing a multi-year repowering project which replaced the original boiler to a new state-of-the-art fluidized bed design

In addition to the steam units, Schiller also has a separate combustion turbine (CT-1) capable of producing 18.5 net MW. CT-1 is an aero-derivative jet engine capable of burning either A V Jet Kero II or natural gas.

## 2. Hydro Facilities

### a. Smith Station

Smith Station is located on the Androscoggin River in Berlin, Coos County, New Hampshire near the confluence of the Dead River and the Androscoggin River. The Station operates one unit with a rated capacity of 17.6 MW.

#### Smith Station Generating Facility

Station	Load role	Network Resource Capability (MW)	Units	Year unit installed
Smith	Run-of-river	17.6	1	1948

The project operates in a run-of-river mode. High capacity factors are achieved at Smith Station due to large upstream reservoirs which maintain consistent water flows to the station throughout the year. Pond level is maintained within a narrow band by using a float control mechanism to control generator output. The station has a concrete dam and a steel penstock conveying water from the dam reservoir to the unit.

### b. Gorham Station

Gorham Station is located on the Androscoggin River in the Town of Gorham, Coos County, New Hampshire, near the confluence of the Peabody River and the Androscoggin River. The unmanned Station operates four units with an aggregate rated capacity of 2.1 MW.

#### Gorham Station Generating Facility

Station	Load role	Network Resource Capability (MW)	Units	Year last unit installed
Gorham	Run-of-river	2.1	4	1923

1 This run-of-river plant operates automatically as a base load station generating power  
2 from any combination of its units to match river flows. Gorham benefits from the  
3 same reservoir system that supplies water to the upstream Smith Station. Gorham  
4 Station consists of a wooden crib dam and adjacent canal gatehouse, a power canal  
5 and a four-unit powerhouse. Limited ponding capability exists. Gorham Station  
6 employs an automatic pond level control system to maximize generator output and  
7 maintain pond level within a narrow band.

8 **c. Androscoggin Reservoir Company (ARCO)**

9 Smith and Gorham Stations on the Androscoggin River receive headwater benefits  
10 pursuant to the Headwater Benefits Agreement by FERC Order No. H22-92-2 (June  
11 30, 1992) and ARCO. PSNH owns a 12.5 percent of the outstanding shares of  
12 ARCO, a Maine S Corporation. The majority of ARCO's shareholdings are  
13 ultimately controlled by Brookfield Renewable Energy Partners L.P. By contractual  
14 commitment, PSNH must offer its 12.5% ownership interest in the Androscoggin  
15 Reservoir Company (ARCO) to the other current joint owners of the project, prior to  
16 offering it for sale to other non-owners.

17 ARCO was created in order to develop an additional storage reservoir for the  
18 Androscoggin Reservoir system, the Aziscohos Lake in Maine. A subsidiary of  
19 Brookfield Renewable Energy Partners L.P. serves as operator for ARCO as well as  
20 the water storage sites, managing river flows to maximize utilization of the water for  
21 electrical generation downstream.

22 Through this managed operation of headwater, PSNH facilities at Smith and Gorham  
23 are targeted to receive a minimum flow of 1,550 cfs throughout the year, except in  
24 rare circumstances during exceptionally dry weather.

25 **d. Canaan Station**

26 Canaan Station is located on the northern Connecticut River in the towns of Canaan,  
27 Vermont and Stewartstown (West Stewartstown Village) New Hampshire. It is

1 located 10 miles below the large Murphy Dam at Lake Francis and 82 miles above  
2 Moore Dam, at river mile 370. The plant was built in 1927 and operates one unit  
3 with a rated capacity of 1.1 MW.

4 **Canaan Station Generating Facility**

Station	Load role	Network Resource Capability (MW)	Units	Year unit installed
Canaan	Run-of-river	1.1	1	1927

5 The unmanned Station is operated as a run-of-river plant and is operated  
6 automatically as a base load unit. The original unit is still in service; however, the  
7 penstock has recently been replaced. Pond level is maintained within a narrow band  
8 by using a float control mechanism to control flows and resultant generation.

9 **e. Ayers Island Station**

10 Ayers Island Station is located on the Pemigewasset River approximately 12 miles  
11 upstream from the U.S. Army Corps of Engineers' Franklin Falls Flood Control Dam  
12 in the Towns of Bristol, Bridgewater, Ashland and New Hampton, New Hampshire.  
13 Small land rights associated with the station are in the towns of Ashland and  
14 Bridgewater. The station operates three units with an aggregate rated capacity of 9.08  
15 MW. The plant was originally constructed in 1924 and redeveloped in 1931.

16 **Ayers Island Station Generating Facility**

Station	Load role	Network Resource Capability (MW)	Units	Year last unit installed
Ayers Island	Run-of-river	9.1	3	1931

17 Ayers Island Station operates as a run-of-river facility with a daily ponding  
18 capability. Pond level is maintained within a narrow band by using a float control  
19 mechanism to control generator output, automatically. The main dam was recently  
20 refurbished for stability purposes to withstand earthquake damage.



**f. Eastman Falls Station**

Eastman Falls Station is on the Pemigewasett River in Franklin, New Hampshire. The station operates two units with an aggregate rated capacity of 6.5 MW. The project was originally constructed in 1901 and redeveloped in 1937 and 1983.

**Eastman Falls Stations Generating Facility**

Station	Load role	Network Resource Capability (MW)	Units	Year last unit installed
Eastman Falls	Run-of-river	6.5	2	1983

Eastman Falls Station is operated as an unmanned run-of-the-river plant. Eastman Falls is presently in the FERC relicensing process, with a final license expected to be issued in mid-2017. Pond level is maintained within a narrow band by using a float control mechanism to control generator output.

**g. Amoskeag Station**

Amoskeag Station is the southernmost of the three sites comprising the Merrimack River Project. The station is located on the Merrimack River in Manchester, New Hampshire, downstream from Hooksett Station. Amoskeag operates three units with an aggregate rated capacity of 17.5 MW.

**Amoskeag Station Generating Facility**

Station	Load role	Network Resource Capability (MW)	Units	Year last unit installed
Amoskeag	Run-of-river	17.5	3	1924

Amoskeag Station is operated as a run-of-the river plant in times of higher water flow and as a daily peaking facility at other times. Pond level is maintained automatically within a narrow band by using a float control mechanism to control generator output.

**h. Hooksett Station**

Hooksett Station is part of the Merrimack River Project and is located on the east side of the Merrimack River in Hooksett, New Hampshire, downstream from the Garvins Falls Station and Merrimack Station, and upstream from Amoskeag Station. The Station operates one unit with a rated capacity of 1.9 MW.

**Hooksett Station Generating Facility**

Station	Load role	Network Resource Capability (MW)	Units	Year unit installed
Hooksett	Run-of-river	1.9	1	1927

The Hooksett Station is an automated site and is operated as a run-of-the-river facility. In addition to providing power to the New England transmission grid, Hooksett provides a reservoir from which water is taken for condenser cooling at Merrimack Station located a few miles upstream.

**i. Garvins Falls Station**

Garvins Falls is part of the Merrimack River Project and is located on the Merrimack River in Bow, New Hampshire. The Station operates four units with an aggregate rated capacity of 12.9 MW.

**Garvins Falls Station Generating Facility**

Station	Load role	Network Resource Capability (MW)	Units	Year last unit installed
Garvins Falls	Run-of-river	12.9	4	1981

The discharge capability of the headgate structure is sufficient to operate all four units at full load. For high flows, the units are operated so as to utilize as much of the available water as possible. During times of moderate and low flows, operation is scheduled to obtain the maximum on-peak energy based on available head and relative overall unit efficiency. The newly installed Units 1 and 2 are operated for as

1 long as possible to take advantage of their greater efficiency, while Units 3 and 4 are  
2 operated at times of higher flow.

3 **j. Jackman Station**

4 Jackman Station consists of a dam, located on Franklin Pierce Lake, and a penstock,  
5 surge tank and powerhouse, located in Hillsborough, New Hampshire. The lake and  
6 project are fed from the North Branch of the Contoocook River. The facility  
7 discharges to the receiving water named Beards Brook, a Class B water. This project  
8 is not subject to FERC jurisdiction because it is not classified as a navigable  
9 waterway. The Station was constructed in 1926 and operates one turbine with a rated  
10 capacity of 3.6 MW.

11 **Jackman Station Generating Facility**

Station	Load role	Network Resource Capability (winter) (MW)	Units	Year unit installed
Jackman	Run-of-river	3.6	1	1926

12 Jackman Station is operated in an essentially run-of-river mode, automatically by a  
13 float or pond level control mechanism at the dam. The Station operates as a base load  
14 unit whenever adequate water flows are available.

15 **3. Remote Combustion Turbines:**

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16 **a. Lost Nation Combustion Turbine**

17 The Lost Nation Combustion Turbine is located in the town of Groveton, in northern  
18 New Hampshire. Lost Nation serves primarily as a peaking unit, operating during the  
19 periods of highest seasonal peak demand. Additionally this unit is called upon when  
20 a quick response is needed for additional generation to maintain electrical system  
21 stability. While capable of providing several ISO-NE Market products, the unit  
22 typically serves the capacity and reserve markets, but not the energy market.

1

### Lost Nation CT Generating Facility

Station	Load role	Fuel	Seasonal claimed capability (winter) (MW)	Units	Year installed
Lost Nation	Peaking	No.2 Oil	18.0	1	1969

### 2 b. White Lake Combustion Turbine

3 The White Lake Combustion Turbine is located in the town of Tamworth, in northern  
4 New Hampshire. White Lake serves primarily as a peaking unit, operating during the  
5 periods of highest seasonal peak demand. Additionally this unit is called upon when  
6 a quick response is needed for additional generation to maintain electrical system  
7 stability. While capable of providing several ISO-NE Market products, the unit  
8 typically serves the capacity and reserve markets, but not the energy market.

9

### White Lake CT Generating Facility

Station	Load role	Fuel	Seasonal claimed capability (winter) (MW)	Units	Year installed
White Lake	Peaking	Jet	22.4	1	1969