Docket No. DE 13-108
Exhibit No. 3

STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION
DIRECT TESTIMONY OF
WILLIAM H. SMAGULA

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
RECONCILIATION OF ENERGY SERVICE AND STRANDED COSTS FOR
CALENDAR YEAR 2012

I. Introduction

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

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

Q. Please provide a brief summary of your background.

A. I received a Bachelor of Science in Mechanical Engineering from the University of New Hampshire, and a Master of Science in Mechanical Engineering from Northeastern University. I have worked for Public Service Company of New Hampshire and then Northeast Utilities since 1978. I am a Registered Professional Engineer in the states of New Hampshire, Connecticut and Massachusetts. My duties have included Manager of Generation Training for the PSNH system, Station

Manager - Merrimack Station, Steam Production Manager - PSNH, Director Fossil Generation - The Connecticut Light and Power Company, and Director, Manage and Operate Services - Northeast Generation Services Company, Director - PSNH Generation in New Hampshire. In January 2013, I assumed the responsibilities of Vice President - PSNH Generation in New Hampshire.

Q. Have you ever testified before this Commission?

A. Yes. I have provided similar testimony in many previous Commission proceedings regarding the operation of PSNH's fossil-fired, biomass and hydroelectric generating plants.

Q. Please describe your responsibilities as Vice President - PSNH Generation.

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

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

A. The purpose of my testimony is to provide information on all outages that took place at PSNH's fossil-fired, hydroelectric and biomass units and at NextEra Energy Resources, LLC's (formerly FPL Energy) Wyman Station, Unit No. 4 in which PSNH is a minority owner. This information will be for the period January 1, 2012 through December 31, 2012. I shall also provide information on unit equivalent availability achieved by PSNH's steam generating units, consistent with reporting provided in previous years. Unit availability including planned outages

will be calculated consistent with past submittals, as well as similar calculations, without the influence of planned outages.

II. Generating Unit Operation

Q. Please provide an overview of the performance of PSNH's generating units in 2012.

A. PSNH's generating units produced 2,012,658 megawatt-hours (MWH) during 2012. The fleet's availability during the 30 highest-priced days when customers' exposure to high market prices was the greatest was 98.2%. PSNH Generation focused on safe, compliant, reliable, and cost-effective operations and management of the generating fleet to provide benefit to customers. These efforts resulted in the generating stations' aggregate equivalent availability of 86.4% in 2012, an increase of almost 3% from 2011.

PSNH successfully managed planned outages and forced outages during 2012. Merrimack Unit 1 and Unit 2's annual equivalent availability factors were 86.3% and 74.5%, respectively. The Flue Gas Desulfurization system completed its first full calendar year of operation successfully with overall good performance. Merrimack Station also operates four ESP's and two SCR's to significantly reduce flue gas emissions.

At Schiller Station, December 1, 2012 marked the sixth anniversary of the Northern Wood Power biomass unit (Unit 5). In 2012, Unit 5 produced its highest annual generation 337,901 MWH and has generated over 1,830,000 MWH during its 6 years of operation. Northern Wood Power completed a run of 155 consecutive days, the longest run in its history, as well as a run of 101 days. Units 4 and 6 had an equivalent availability factor of 83.6% and 90.21%, respectively.

PSNH's hydroelectric facilities generated 334,761 MWH in 2012.

Newington Station continued to burn a significant amount of natural gas, which accounted for 81% of total generation in 2012. The unit utilized its fuel diversity, blending oil and natural gas to support the system and maximize its value to customers. In 2012, PSNH sold 199,482 barrels of oil, which resulted in a net customer benefit of $8,457,898. PSNH managed the sale of fuel oil to maximize customer benefit without compromising unit availability or reliability. Newington completed the year with a 95.3% equivalent availability.

Q. Please provide a summary of why PSNH's generating units have continued to operate well, with high reliability and high availability.

A. PSNH Generation focuses on four key items important to long-term operational success: the day-in and day-out operation and maintenance of the units; the corrective and preventative maintenance conducted during forced outages; pre-planning and execution of scheduled and planned maintenance outages; and the use of a long-term maintenance outage and capital expenditure planning process. The long-term maintenance plans prioritize reliable plant operations and are founded on equipment history, on-going condition assessment, and industry experience. The generating stations maintain a long-standing preventative maintenance program which allows for proactive management of plant equipment problems to best execute quality maintenance and the operations of the units.

PSNH Generation relies on an experienced management team and a skilled work force utilizing sound practices derived from experience within our facilities, as well as working with suppliers, contractors, experts, and other generating plant peers in the industry. The 2012 capital budget was the lowest since the 1990's and PSNH was able to operate and maintain the generation fleet's reliability while lowering O&M, overtime and capital expenditures. PSNH Generation operating budgets continued to emphasize a proper balance between spending what is necessary in the most critical areas, while being sensitive to the overall cost of production to our customers taking Energy Service, both long term and short term. PSNH Generation

works hard to determine how maintenance projects can be most effectively executed and how capital investments can be best applied to achieve a high level of plant performance. PSNH Generation also continues to integrate into the above management focus consideration and implementation of recommendations by the Commission's consultants.

III. Unit Outages and Availabilities

Q. Please provide a list of all unplanned outages that took place during the period January 1, 2012 through December 31, 2012 for PSNH's fossil, hydro, and biomass units and for NextEra's Wyman Station Unit No. 4.

A. Attachment WHS-1 lists these outages. This listing is similar to the information submitted in the past, as a reporting requirement for the fossil hydro "outage information" resulting from discussion with the Staff in Docket No. DR 91-011.

Q. Is there any additional reporting with respect to outages?

A. Yes. PSNH provides detailed outage reports for all unscheduled outages in excess of two days at either Newington Station or at the two units at Merrimack Station, and in excess of four days at the three units at Schiller Station and at Wyman Unit 4. These Outage Reports are included as Attachment WHS-2.

Q. Please provide a chronological listing of the unplanned outages for which Outage Reports are provided in the testimony.

A. The table below provides the chronological listing along with the start and end dates and times, the duration, and the causes of the unplanned outages.

Report No.		Outage Start Date Time		Outage End Date Time		Duration Days	Reason
OR-1	MK1	1/23	1206	1/27	1600	4.2	Preventative Maintenance Outage - Air Heater
OR-2	SR6	2/13	1026	3/16	1500	32.2	Generator Tube Leak
OR-3	MK2	2/16	1755	2/22	0300	5.4	Condenser Tube Cleaning
OR-4	WY4	3/18	0001	3/23	2359	6.0	Maintenance Outage - Repair lube oil leak
OR-5	MK1	4/2	0700	4/13	1815	11.5	FGD Seal Damper Modifications
OR-6	MK2	4/2	0700	5/24	0730	52.0	FGD Seal Damper Modifications & Coal Silo Repairs
OR-7	SR4	5/2	1053	6/28	2300	57.5	Turbine Repair
OR-8	MK2	6/25	0001	6/29	2125	4.9	Scrubber Tray Modification
OR-9	SR5	7/15	1650	7/21	1045	5.7	Inbed tube leak
OR-10	MK1	8/4	0155	8/9	1347	5.5	Preventative Maintenance Outage - Air Heater
OR-11	MK1	8/11	2236	8/14	1503	2.7	PSMT- Transformer Lead Failure
OR-12	MK2	8/11	2236	8/14	2253	3.0	PSMT- Transformer Lead Failure
OR-13	NT1	11/26	0600	11/29	1601	3.4	Maintenance Outage
OR-14	MK2	12/17	1705	12/21	1318	3.8	Booster Fan Control System Problem

Q. Please discuss the longer outage durations provided in the table.

A. PSNH monitors customer load and the energy market and seeks to provide low cost energy to PSNH's customers. With that, during periods of low electrical demand and low power market prices, PSNH manages the outage schedule to use little overtime. While this practice may extend the duration of the outage, the total outage expense is minimized, which results in cost savings by avoiding overtime.

Q. Please provide a brief summary of each of the Outage Reports discussed above.

A. A summary of the Outage Reports follows:

2012-OR-01

This Merrimack Unit 1 outage was 4.2 days long and began on January 23. The unit was removed from service to clean the air heater. An inspection of the circumferential and radial seals was performed and determined that no seal replacements were needed. An air heater wash was performed after the inspection. The boiler inspection was performed and revealed one cyclone tube leak. The tube leak was repaired with pad welding. Critical path was the air heater wash with additional jobs from the outage backlog also completed.

2012-OR-02

Schiller Unit 6 was taken off line on February 13 due to a tube leak in the generating bank on the rear wall of the boiler. Because electrical demand and power market prices were low, the work was completed without overtime to minimize expense, extending the duration of the outage. A boiler inspection found a single tube leak that caused significant refractory damage and significant misalignment of adjacent tubes. The boiler wall and refractory was removed due to the location and construction of the tubes. Once removal was complete, a thorough inspection of the tubes was performed. Several tubes with localized erosion were repaired. Critical path was the repair of the boiler tubes with additional jobs from the outage backlog also completed. The outage lasted 32 days.

2012-OR-03

This Merrimack Unit 2 outage began on February 16 and was 5.4 days long. The outage was due to pluggage of the east and west main condenser tubes. A boiler inspection was performed and tube leaks were found in 3 cyclones. The tube leaks were repaired in parallel with a needed condenser cleaning. Critical path was the condenser tube cleaning with additional jobs from the outage backlog also completed.

2012-OR-04

This Wyman 4 outage began on March 18 and was 6 days long. Unit 4 was removed from service to make repairs on the oil seal for the Permanent Magnetic Generator (PMG). The PMG is an integral element to the exciter and voltage regulator system and required a unit outage to make the necessary repair. The oil seal that is located on the turbine front standard had failed allowing lube oil to leak from the front standard onto the base and on the piping located below the turbine. Critical path was the oil leak repair with additional jobs from the outage backlog also completed.

2012-OR-05

This Merrimack Unit 1 outage began on April 2 and was 11.5 days long. This outage was planned with ISO-NE to allow for the replacement of ductwork seal air dampers on the mansafe isolation dampers. The original seal air dampers were a single guillotine design and found to leak flue gas when the seal air system was not running. The replacement design included two guillotine dampers with seal air between them. The air packing and J-Seals on three mansafe isolation dampers were replaced and isolation air to the new guillotine seal air dampers was also connected. Critical path was the seal air damper replacement with additional jobs from the outage backlog and CAP backlog also completed. Because electrical demand and power market prices were low, the work was completed without overtime to minimize total outage expense, extending the duration of the outage. Additional jobs from the outage backlog were also completed.

2012-OR-06

This Merrimack Unit 2 outage began on April 2 and was 52 days long. This outage was planned and worked with minimal overtime to minimize total outage expense, since electrical demand and power market prices were low, extending the duration of the outage. Additional jobs from the outage backlog were also completed. During this outage, ductwork seal air dampers were replaced, modifications to the

FGD service water pump house system was completed, and the MK2 coal silos were repaired. The original seal air dampers were a single guillotine design and found to leak flue gas when the seal air system was not running. The replacement design included two guillotine dampers with seal air between them. The air packing and J-Seals on three mansafe isolation dampers were replaced and isolation air to the new guillotine seal air dampers was also connected. During the outage, repairs were also completed to two coal silo lower cone sections. While the anticipated work scope involved the repair of cracks in the lower section of 2A & 2B, coal silos in the vicinity of the silo vibrators, internal and additional external inspections revealed more significant stress corrosion cracking. Thielsch Engineering was consulted for non-destructive examination and guidance on repair procedures. Repairs included replacement of the lower three feet of each of the two silo hoppers and some structural steel members. Material was fabricated locally and installed by PSNH personnel.

2012-OR-07

Schiller Unit 4 was taken off line on May 2. The outage was due to a LP turbine rotor shroud failure. This outage lasted 57.5 days. During the initial inspection of the LP turbine, it was determined that the rotor would need repairs performed by an outside shop. The rotor was shipped from Schiller on May 7 to Siemens' shop in Charlotte, North Carolina. Assessments were performed by Siemens and a repair schedule developed with an expected return date of June 11. The rotor was returned to Schiller and a final inspection was performed. The final inspection determined that the inner steam gland seals on both ends of the rotor required additional machining. The rotor was sent back to Siemens on June 18. Siemens made the additional repairs and the rotor was received at Schiller on June 21. The rotor was installed with overtime used during the critical installation steps and the unit was phased on June 28. Critical path was the LP turbine work with additional jobs from the outage backlog also completed.

2012-OR-08

This Merrimack Unit 2 outage began on June 25 and was 4.9 days long. Unit 2 was removed from service to modify FGD absorber trays. The absorber tray system is an integral component to the scrubber system. The tray system is designed to increase the surface area contact between the flue gas and the absorber slurry. The tray system was modified to balance and tune overall absorber performance. The critical path activity for this outage was the FGD absorber tray modification. In parallel to the critical path activity, a number of backlog jobs were completed.

2012-OR-09

This Schiller Unit 5 outage began on July 15 and was 5.7 days long. Unit 5 was removed from service due to an expected inbed boiler tube leak. The boiler inspection confirmed an inbed tube leak which damaged refractory and three adjacent tubes. Repairs were made to the four tubes and refractory. A hydrostatic test was successfully performed and the unit returned to service on July 21. Critical path was the tube repair work with additional jobs from the outage backlog also completed.

2012-OR-10

Merrimack Unit 1 was taken off line on August 4 for a 5.5 day outage due air heater pluggage. The unit was removed from service to clean the air heater. An inspection of the circumferential and radial seals was performed and determined that no seal replacements were needed. An air heater wash was performed after the inspection. The boiler inspection revealed one cyclone tube leak. The tube leak was repaired with pad welding during the air heater wash. Critical path was the air heater wash with additional jobs from the outage backlog also completed.

2012-OR-11

Merrimack Unit 1 was declared unavailable on August 11 for 2.7 days due to the power spray modules transformer secondary bus failure. Electricians were called to

troubleshoot the problem and determined that during a heavy rainstorm that night, rain water entered the bus duct causing a phase to phase fault, tripping PSMT-1 5 KV breaker. The 6,000 amp bus from the transformer going into the PSM building was removed and disassembled, cleaned, repaired, reinsulated, meggered, reassembled, installed, and meggered again. Eaton Corporation was called to assist with repairs and check the relay setting before re-energizing transformer.

2012-OR-12

Merrimack Unit 2 was declared unavailable on August 11 for 3 days due to the power spray modules transformer secondary bus failure. Electricians were called in to troubleshoot the problem and determined that during a heavy rainstorm that night, rain water entered the bus duct causing a phase to phase fault tripping PSMT-1 5 KV breaker. The 6,000 amp bus from the transformer going into the PSM building was removed and disassembled, cleaned, repaired, reinsulated, tested, reassembled, and installed. Once installed, a final electrical test was completed to ensure the integrity of the circuit. Eaton Corporation was called to assist with repairs and check the relay setting before re-energizing the transformer. Additional outage backlog work was also completed.

2012-OR-13

This Newington Unit 1 outage began on November 26 and was 3.4 days long. This outage was planned to allow the replacement of the station's original 4160/480 volt load center transformer, 1LC. The ongoing oil analysis program indicated problems with all three of the station's original transformers which included elevated moisture levels in the oil and deterioration of the windings insulation. As these three transformers provide all of the 480 volt and lower power, including all lighting panels, within the Station, a decision was made to replace one transformer in 2012 and the other two transformers in the spring of 2013 during an Annual Outage. By scheduling the work in this fashion, it allowed for the temporary transfer of critical loads onto the in-service Load Center transformer. The

replacement of 1LC was determined in large measure due to the relatively easy access to this transformer with the turbine hall gantry crane. The other two transformers are located together in an area that is inaccessible to the overhead crane. Critical path was the load center transformer with additional jobs from the outage backlog also completed.

2012-OR-14

This Merrimack Unit 2 outage began on December 17 and was 3.8 days long. MK2 tripped offline due to high furnace pressure. The immediate cause of the outage was suspected to be a communication issue between the control system and the booster fan. However, troubleshooting revealed the Enter key on the Unit 2 FGD workstation keyboard was depressed or stuck (i.e. constantly active). The active Enter key resulted in a signal to be sent to shut down the booster fan when the control room operator moved the mouse on the screen over the booster fan control panel "off" button. With expected warmer weather and low energy prices, additional outage backlog work was also completed. The additional work was performed to prepare the unit for a long winter run.

Q. Were scheduled outages performed at any of PSNH's fossil and hydro units during the period January 1, 2012 through December 31, 2012?

A. Yes. Attachment WHS-1 contains a list of outages including scheduled maintenance outages for each of PSNH's fossil, biomass, hydro, and combustion turbine units, as well as the Wyman 4 unit. WHS-3 also summarizes the planned maintenance periods for the fossil units.

Q. Please provide a list of scheduled outages at PSNH's fossil units during January 1, 2012 through December 31, 2012.

A. The scheduled maintenance outages are:

Unit	Scheduled Outages
Schiller Unit 5	3/24 – 4/13
Newington Unit 1	4/16 – 4/27
Merrimack Unit 1	9/24 – 10/12
Merrimack Unit 2	10/22 – 11/9

The outages listed in the table above were scheduled to complete routine maintenance.

With low-priced energy available in the wholesale market, the scope of Merrimack Unit 2's scheduled maintenance outage has reduced and performed on straight time to minimize outage costs.

Q. Are these scheduled outages usually reviewed as part of the Reconciliation of Energy Service and Stranded Costs docket?

A. Yes. A review of the scheduled outages has traditionally been completed by the Commission's Staff utilizing an outside consultant. The outside consultant has performed on-site interviews and a review process of the planned outages.

Q. Are there any other reporting requirements associated with this filing?

A. Yes, PSNH is providing updates to prior recommendations, consistent with the requirements of Commission Order 25,466. Those updates are contained in Appendix A which contains all of the recommendations that were included in the December 26, 2012, settlement agreement approved in Docket No. DE 12-116.

Also included is a description of the actions PSNH has taken to address each recommendation.

Q. Does this conclude your testimony?

A. Yes, it does.