Docket No. DE 11-XXX
Exhibit No. 2

STATE OF NEW HAMPSHIRE
BEFORE THE PUBLIC UTILITIES COMMISSION

Public Service Company of New Hampshire
Reconciliation of Energy Service and Stranded Costs for
Calendar Year 2010

DIRECT TESTIMONY OF
FREDERICK B. WHITE

I. INTRODUCTION

Q. Please state your name.

A. My name is Frederick B. White.

Q. Mr. White, please provide your business address and title.

A. My business address is 107 Selden St, Berlin, Connecticut. I am a Supervisor in the Wholesale Power Contracts department of Northeast Utilities Service Company (NUSCO).

Q. Mr. White, please describe your responsibilities at NUSCO.

A. NUSCO provides centralized administrative services to Northeast Utilities' principal subsidiaries, including Public Service Company of New Hampshire (PSNH), The Connecticut Light and Power Company (CL&P), and Western Massachusetts Electric Company (WMECO). I primarily supervise and provide analytical support required to fulfill the power supply requirement obligations of PSNH, CL&P, and WMECO. For PSNH, this includes the development of Energy Service rates, evaluation of the need to supplement PSNH's resources for the provision of Energy Service, and PSNH's acquisition of Financial Transmission Rights (FTR) to manage congestion. For CL&P and WMECO, I assist in the design and execution of the power supply sourcing contracts associated with these companies' versions of energy service. I participate in ISO-NE stakeholder meetings and monitor ISO-NE, NEPOOL, and FERC activities to ensure that our operations are up to date.

II. PURPOSE

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to report on how PSNH's generation resources and supplemental purchases were used to meet PSNH's energy and capacity requirements during the period January 1, 2010 through December 31, 2010. As a load-serving entity, PSNH is responsible for having sufficient energy to meet the hourly needs of its customers and is also responsible for its share of the ISO-NE capacity requirement. PSNH meets its requirements through its owned generation, PURPA-mandated purchases under short term rates and long term rate orders, and through supplemental purchases of energy and capacity from the market. I will also discuss PSNH's participation in the FTR auction process.

III. ENERGY REQUIREMENTS

Q. Please summarize the generation resources that were available to meet PSNH's energy requirements.

A. Attachment FBW-1 lists the generation resource portfolio PSNH used to meet its customers' energy requirements as of December 2010. As shown on that Attachment, PSNH's available generation capacity during this time period was about 1,221 MW for the summer months. The portfolio is comprised of the following resource groups: hydroelectric (58 MW from nine stations), nuclear (20 MW from the Vermont Yankee purchased power arrangement), coal and wood (589 MW from Merrimack and Schiller Stations), gas/oil (419 MW from Newington and Wyman 4), combustion turbines (83 MW from five units), and non-utility generation (42 MW from numerous PURPA-mandated purchases and 10 MW from one IPP buyout replacement contract). PSNH's resource portfolio can also be categorized as baseload (719 MW from hydroelectric, nuclear, coal, wood, non-utility IPPs, and the buyout replacement contract), intermediate (419 MW from gas/oil resources), and peaking (83 MW from combustion turbines). PSNH also served a portion of its customers' energy requirements via three (3) unit-contingent power purchase arrangements (Bethlehem, Tamworth, and Lempster Wind).

Q. Please summarize how PSNH's generation resources met PSNH's energy requirements during 2010.

A. Attachment FBW-2 summarizes how PSNH's energy requirements were met and how PSNH's generation resources were utilized by month by on-peak and off-peak periods. During 2010, 74% of on-peak energy requirements and 82% of off-peak energy

requirements were met with the generation resources listed on FBW-1. These figures also include the energy produced by Lempster Wind. The remaining energy needs were met through bilateral or spot market energy purchases. As noted on Attachment FBW-2, the energy procured via the Bethlehem and Tamworth PPAs is included in the bilateral purchase category.

Q. Was PSNH's generation sufficient to meet PSNH's energy requirements in every month?

A. No. PSNH does not own sufficient generating capability to meet its customers' energy requirements in all hours and, therefore, must purchase a portion of its customers' needs. The purchase requirement changes hourly and can range from zero to a significant portion, depending on the availability of PSNH's resources, the level of demand, the migration of customers to competitive energy service options, and the relative economics of PSNH's generation versus purchase alternatives. PSNH's supplemental purchase requirement is heavily influenced by the economics of Newington. When Newington's fuel expense is lower than the cost of purchasing power, the unit can be dispatched and PSNH's supplemental need is significantly reduced. Forced and planned outages of PSNH's generating units also increase the need for supplemental purchases.

Q. Please summarize how supplemental purchases were used to meet PSNH's energy requirements.

A. Attachment FBW-3 summarizes the purchases made to supplement PSNH's generating resources. Approximately 865 GWh of on-peak energy were purchased bilaterally at an average cost of $83.98 per MWh (a total expense of $72.7 million). 79% of the on-peak bilateral energy was procured via fixed-price monthly contracts to address forecasted supplemental requirements and planned unit outages. 16% was procured via fixed-price, unit-contingent contracts with the Bethlehem and Tamworth generating plants. The remaining on-peak bilateral energy (5%) was procured via fixed-price short-term arrangements (e.g. daily, weekly) to address unplanned outages and higher load periods. In addition, approximately 146 GWh of on-peak energy were procured via the ISO-NE hourly spot market at an average cost of $59.82 per MWh (a total expense of $8.7 million).

Approximately 271 GWh of off-peak energy were purchased bilaterally at an average cost of $48.36 per MWh (a total expense of $13.1 million). 28% of the off-peak bilateral energy was procured via fixed-price monthly contracts. 57% was procured via fixed-price, unit-contingent contracts with the Bethlehem and Tamworth generating plants. The remaining off-peak bilateral energy (15%) was procured via fixed-price short-term

arrangements (e.g. daily, weekly). In addition, approximately 294 GWh of off-peak energy were procured via the ISO-NE hourly spot market at an average cost of $47.77 per MWh (a total expense of $14.0 million). The combined expense for all supplemental energy purchases was $108.5 million.

Q. Were there any hours in which PSNH's supply resources exceeded PSNH's energy needs?

A. Yes. Attachment FBW-3 also summarizes the hours in which supply resources, including supplemental bilateral purchases, exceeded energy requirements resulting in sales to the ISO-NE spot market. Approximately 278 GWh of on-peak energy were sold at an average price of $59.32 (total revenues of $16.5 million). In addition, approximately 252 GWh of off-peak energy were sold at an average price of $40.43 (total revenues of $10.2 million). The combined revenue for all surplus energy sales was $26.7 million.

Q. Please summarize how commodity prices (oil, natural gas, and energy) varied during 2010.

A. Attachment FBW-4 is a chart of the 2010 daily prices for residual oil (1% sulfur at New York Harbor), natural gas (delivered to Algonquin Gate), and bilateral energy (peak hours at the Mass. HUB). The chart shows the range of commodity and energy market prices in 2010. The chart also shows the continuing correlation between natural gas prices and bilateral energy purchase prices in New England.

Q. Please summarize the impact of commodity market volatility on the cost of serving PSNH's energy requirement.

A. During 2010, approximately 64% of PSNH's energy requirements were met with coal, wood, hydro, and nuclear resources. Newington is capable of operating on either residual fuel oil or natural gas. Because of the diversity of its supply portfolio, PSNH is largely insulated from volatility in the natural gas market. Even during periods of high and volatile natural gas prices, PSNH's resource mix provides price stability.

IV. CAPACITY REQUIREMENTS

Q. Please describe the cost impact to PSNH's customers associated with the Installed Capacity Transition Period and Forward Capacity Market during 2010.

A. Attachment FBW-5 summarizes PSNH's monthly capacity activity. Approximately 86% of PSNH's capacity need was met with generation resources (including PSNH-owned assets, non-utility IPPs, the Vermont Yankee PPA, and the Hydro-Quebec Interconnection Capacity Credits). The remaining 14% was procured via ISO-NE at a total net cost of $12.9 million.

Q. Please summarize the ISO-NE capacity market rules that were in effect during 2010.

A. The Forward Capacity Market (FCM) Settlement Agreement, which was approved by the Federal Energy Regulatory Commission (FERC) on June 16, 2006, included an "Installed Capacity Transition Period" during which all qualified capacity resources are paid a negotiated fixed rate (the "Installed Capacity Transition Rate") according to the schedule below.

December 1, 2006 to May 31, 2007	$3.05/kW-month
June 1, 2007 to May 31, 2008	$3.05/kW-month
June 1, 2008 to May 31, 2009	$3.75/kW-month
June 1, 2009 to May 31, 2010	$4.10/kW-month

The Installed Capacity Transition Period ended on May 31, 2010. The FCM Settlement Agreement also implemented for subsequent periods Forward Capacity Auctions (FCA) during which capacity resources offer MWs into ISO-NE administered auctions to "procure" the lowest cost resources necessary to meet the ISO-NE Installed Capacity Requirement and to establish the market value of capacity. The first such auction was conducted in February, 2008 for the Capacity Commitment Period June 1, 2010 to May 31, 2011. The capacity price established during this auction was $4.50/kw-month. Additional components of the FCM which occur after the FCA, including

Reconfiguration Auctions and monthly Peak Energy Rent adjustments, result in adjustments to Capacity Supply Obligations, the overall rate paid to capacity, and the rate paid by load for capacity. In both the transition period and the "FCM" period, resources are paid for providing capacity, and the total payments for capacity resources in each month are charged to ISO-NE load serving entities based on their relative share of the prior year's peak demand.

Q. Please summarize the supply resources that were used to meet PSNH's capacity requirements.

A. During 2010, a total of 428,814 MW-months of capacity qualified for credits in the ISO-NE capacity market (this equates to a monthly average of 35,735 MWs). PSNH was allocated 4.48% (19,198 MW-months) of this capacity obligation. PSNH's supply resources qualified for 16,437 MW-months of capacity; comprised of owned generation (13,681 MW-months), non-utility IPPs (1,219 MW-months including Bethlehem, Tamworth, & Lempster), the Vermont Yankee purchase agreement (248 MW-months), and Hydro-Quebec Interconnection Capacity Credits (1,289 MW-months). For 2010, PSNH had a net capacity obligation of 2,761 MW-months. Attachment FBW-5 provides additional details

Q. Can you estimate the ES customers' capacity credit associated with PSNH's owned generation resources during 2010?

A. Yes. As noted above, for 2010, PSNH's owned resources provided 13,681 MW-months of capacity to ISO-NE. This created over $53.4 million in revenue credited to the Energy Service rate.

Q. Are there any capacity market changes expected and how might the cost to PSNH's customers be affected?

A. At this time, there are no fundamental structural changes to the capacity market planned or expected. ISO-NE has and will continue to conduct periodic competitive auctions to solicit a quantity of capacity resources that is sufficient to satisfy reliability standards. PSNH's generation resources will continue to provide significant customer value as an important hedge against the uncertainty related to future auction clearing prices and changes to FCM rules.

V. FINANCIAL TRANSMISSION RIGHTS

Q. What is a Financial Transmission Right (FTR)?

A. An FTR is a financial instrument available to participants seeking to manage congestion costs or those wishing to speculate on the difference in congestion costs between two locations. These instruments have been available since the introduction of the ISO-NE Standard Market Design. All FTRs are defined by a MW amount, a source location and a sink location (e.g. a participant may own 100 MW of FTRs that are sourced at the Merrimack node and sink at the New Hampshire load zone). For each MW of FTR, the owner will receive a credit or a charge from ISO-NE equal to the difference in the congestion component of the hourly LMP between the sink and the source. If the sink location congestion price exceeds the source location price, the FTR will have a positive value, i.e. a credit to that participants' ISO-NE settlement in that hour. Similarly, if the sink location price is less than the source location price, the owner will be charged the difference.

Q. Please summarize PSNH's participation in the ISO-NE FTR auction process.

A. PSNH has participated in these auctions as a method of hedging the congestion price differential between the major fossil stations (Merrimack, Schiller, and Newington) and the New Hampshire load zone. PSNH has also procured FTRs to hedge the differential between the source location of bilateral purchases (e.g. the Massachusetts HUB) and the New Hampshire load zone. PSNH's generation resources and bilateral purchases provide an effective hedge against the energy component of the zonal LMP, but they do not guard against a congestion component differential. Therefore, even in an hour in which PSNH had sufficient resources to serve its energy requirement, it would be exposed to potential congestion charges. By owning an FTR, PSNH exchanges a variable, unknown expense (i.e. the hour-by-hour difference in the applicable LMP congestion component), for a fixed, known payment (i.e. the cost of the FTR). During 2010, PSNH procured via auction 1,866 GWh of FTRs at a net cost of $31 thousand. The FTRs eliminated $400 thousand of congestion charges. Thus, the net impact was a decrease in Energy Service expense of $369 thousand.

Q. Will PSNH continue to participate in the FTR auction process in order to hedge against unpredictable congestion costs?

A. Yes. FTRs serve as an insurance policy against unanticipated congestion costs. If PSNH did not purchase FTRs and there was a problem on the system that resulted in congestion, the cost could be several times the cost of the FTR. Therefore, it makes sense to continue to purchase FTRs to manage the potentially large downside exposure to congestion costs.

Q. Does that complete your testimony?

A. Yes it does.