

ORIGINAL	
F.H.P.U.S. Case No.	D9 09-180
Exhibit No.	# 8
Witness	Baumann + Errickette

## Wood

Wood is the newest fuel procurement effort undertaken by PSNH with the installation of the new wood boiler (Unit 5) at Schiller Station, known as Northern Wood Power. The procurement process begins with an estimation of the fuel requirements of Northern Wood Power on an annual, weekly, and daily basis. Contracts for ten to fifteen percent more volume than the anticipated need are entered into with various suppliers. The surplus volume is required in order to offset delivery disruptions due to inclement weather, mechanical breakdowns, or supplier interruptions. Wood is procured in accordance with the agreement between PSNH and the New Hampshire Timberline Owners Association ("NHTOA"). All wood must meet the NWP boiler specifications and permit obligations. All wood suppliers are required to enter into a purchase and sales contract with PSNH for the delivery of wood and every supplier is given a copy of the city of Portsmouth Truck Management Plan and a copy of the PSNH Random Vehicle Search Procedure.

### **B.5.1. Fuel Inventory Management**

Fuel inventory levels at PSNH's electric generating stations are optimized between fuel supply reliability and carrying costs. The overriding goal is to maintain sufficient supply quantities on hand to meet anticipated generation needs at all times. Merrimack and Schiller Stations' minimum coal inventory levels are targeted to certain levels that are recommended by the New Hampshire PUC. The targeted levels are 45 days and 30 days supply, respectively, for Merrimack and Schiller. PSNH manages Merrimack Station's inventory level by coordinating 90-car train sets, and trucking foreign coal from the New Hampshire coast out of Schiller Station's coal yard and continually projecting the station's capacity factor months in advance.

Ten to twenty days of full-burn equivalent of residual oil is maintained in inventory on-site at Newington Station.

### **B.6. Supplemental Purchase Procurement Strategy**

Section III described the process by which PSNH identifies a targeted set of block purchases to meet the hourly energy and capacity requirements for PSNH's Energy Service customers. This section discusses the general process of procuring the targeted purchase quantities.

PSNH's current procurement plan is focused primarily on the subsequent annual period. For example, during 2007, plans will be developed and executed to manage forecasted power supply needs for 2008. The goal of the plan is to assemble a portfolio of purchases that, when combined with existing generation assets and previously executed fuel and power arrangements, will enable PSNH to establish a fixed annual Energy Service rate that is subject to minimal risk of significant under-recovery or over-recovery.

The initial purchase targets are typically established in March or April of the prior year. The purchase plan is reviewed with PSNH's management and a procurement schedule is developed that typically calls for purchasing to be conducted in multiple phases during May through the filing date of the final rate forecast (normally in November). This purchase

strategy is subject to continuous internal review and may be revised to account for market movement, the availability of supplies, and the forecasted utilization of Newington Station (which fluctuates based on the relative pricing of oil versus purchased power).

The typical products that PSNH utilizes to serve the supplemental requirement are:

1) **Fixed-price, forward bilateral contracts for "strips" of energy** (i.e., a uniform amount of energy in each hour of the relevant contract period). These are procured in on-peak strips (Non-holiday, Mon - Fri from hour-ending 8 am to 11pm), off-peak strips (all other hours), and weekend peak strips (Sat and Sun from hour-ending 8 am to 11pm). Typical contract duration ranges from a single day to multiple months. Monthly or multi-month contracts are typically procured from 3 to 12 or more months prior to contract delivery. Single day and weekly contracts are typically utilized to fine-tune the energy position and are procured within a few days of contract delivery.

2) **Fixed-price, forward bilateral contracts for capacity.** These contracts provide a certain MW quantity of capacity that is used to satisfy PSNH's ISO-New England capacity obligation in a given month. Typical contract duration is a single month, a single calendar quarter, or a calendar year. These contracts are typically procured from 3 to 12 or more months prior to contract delivery. Single month contracts may also be procured in the days or weeks just prior to the delivery month to fine-tune the capacity position. Note: during the Transition Period prior to the Forward Capacity Market (i.e., December 2006 – May 2010) fixed-price, bilateral capacity contracts are no longer applicable. Capacity deficiency charges are incurred via an administrative process that effectively amounts to a fixed charge of \$3,050 per MW-month (December 2006 through May 2008), \$3,750 per MW-month (June 2008 through May 2009) and \$4,100 per MW-month (June 2009 through May 2010).

As noted above, PSNH's goal is to establish a relatively firm power supply and to file an accurate forecast of the cost to provide energy service for the coming year. As such, PSNH's general approach is to minimize spot market purchases by procuring fixed-price supplemental power and avoiding exposure to spot market uncertainty and volatility. This approach is discussed and reviewed in the applicable rate setting proceeding.

The decision to buy forward for a future period or to purchase from the spot market requires a qualitative assessment of a number of uncertain factors, including:

- Available market intelligence regarding anticipated commodity price movement
- Historical and expected spot market volatility within the future period
- Forecasted purchase requirement
- Risk-tolerance of the purchaser
- Availability of competitively priced supply options

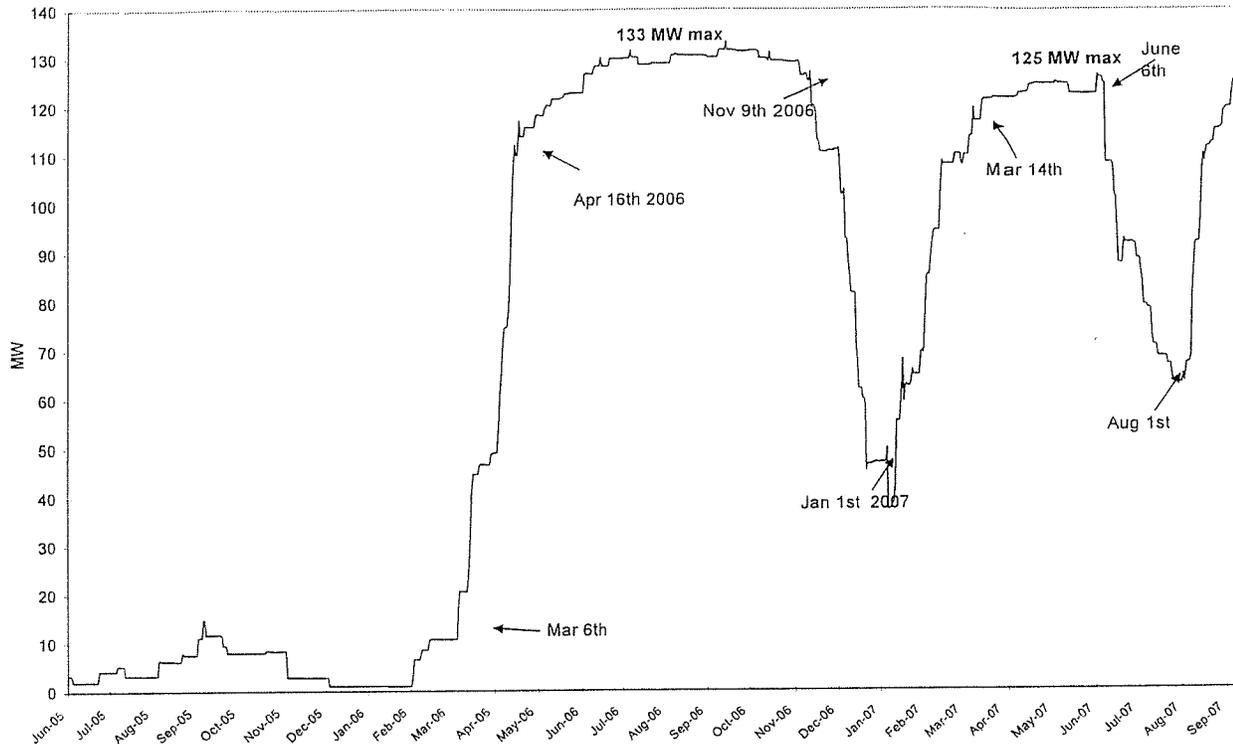
Periodic meetings are held with PSNH's senior management to review all of these factors and to make decisions regarding how PSNH will supply energy during upcoming periods. Such review includes discussions of whether to operate Newington Station or to purchase energy for particular months to replace Newington's output, and the amount and duration of purchases.

### B.6.1. Customer Migration

Another factor that must be considered in the procurement plan is customer migration to competitive supply. Exhibit V-14 is a graph of the MWs of annual peak demand associated with the specific customers that were not receiving Energy Service from PSNH. As shown, there have been two recent periods during which competitive suppliers were able to sign contracts with customers representing a significant quantity of PSNH's energy requirements. The first period began in late winter of 2006 and the majority of the contracts appear to have expired prior to the end of 2006 as shown by the rapid decrease in the migrated megawatts during November and December 2006. The second opportunity occurred in early winter 2007. During both periods, the total migrated demand was in the range of 125 to 133 MW, representing close to 8 percent of PSNH's peak demand. The exhibit also shows the return to Energy Service that occurred during June and July of 2007. It is not yet known the extent of this return and/or whether the future pattern of migration will be predictable.

## Exhibit V-14: Energy Service Customer Migration History

MW of PSNH Customers taking Competitive or Self-Supply Options  
June 1, 2005 – September 10, 2007



### B.6.2. PSNH's Hedging Strategy

PSNH seeks to limit exposure to the ISO-New England hourly spot market, both as a purchaser and as a seller. For example, if PSNH were to fully hedge 100 percent of the forecasted supplemental energy requirement with fixed-price bilateral contracts, and subsequently experienced significant customer migration; PSNH would be surplus in many hours. The surplus power would be resold into the ISO-New England spot market; perhaps at a loss if the resale price is lower than initial purchase price. In fact, a loss on resale is the most likely result, as migration activity is more apt to accelerate during a softening of the energy market.

To address this risk during 2007, PSNH elected to hedge a portion of the forecasted supplemental requirement with an energy call option, rather than with a fixed-price bilateral purchase. In exchange for a negotiated premium, a call option provides the buyer with the right, but not the obligation, to purchase forward energy contracts on a certain future date at a negotiated, fixed strike price. In this way, the buyer can delay the purchase decision, but still obtain price certainty. On the call option expiration date, the buyer would elect to exercise the purchase if the current market price for such power was higher than the strike price. In the case of PSNH, if customer migration had occurred, the power would not be needed to serve customers, but could be immediately resold for a profit

that would recover a portion of the premium. If migration had not occurred, PSNH would retain the power to serve customers at the fixed price. PSNH will pursue the call option and other alternatives to address potential migration in future planning periods.

## B.7. New Generation Supply Options

PSNH's energy consumption is expected to grow about 2.3 percent per year while PSNH's system peak demand is expected to grow 2.5 percent per year over the planning period. In addition, the newly enacted New Hampshire Renewable Portfolio Standard requires PSNH to supply a portion of its customers' energy requirements from renewable sources and the percentage of renewable sources increases over time through 2025. However, PSNH owned generation resources are presently fixed due to State policy restrictions on the expansion of utility-owned generation resources and expiring purchased power contracts. As a result, PSNH will become increasingly more dependent on the market to meet its customers' needs.

To meet the projected energy requirements, PSNH will need to purchase 4-5 million MWh per year in the open market over the planning period and will need to procure between 900 and 1,000 MW per year of capacity either in the ISO-New England Forward Capacity Market or through bilateral capacity contracts over the planning period. Additionally, PSNH will be increasingly short of supply of RECs to meet New Hampshire's Renewable Portfolio Standard requirements and will be required to either purchase RECs from qualified facilities or make Alternative Compliance Payments to the state for the renewable resource deficiency. See section X for a more detailed discussion of PSNH's compliance with the New Hampshire Renewable Portfolio Standard.

There are a few ways in which these resource gaps can be filled. ISO-New England recently issued its own "New England Electricity Scenario Analysis<sup>17</sup>", which identified a comprehensive array of options to meet future New England resource requirements. While many parallels exist between the ISO-New England's scenario report and PSNH's resource requirement situation, PSNH feels that some of the options defined by ISO-New England are not feasible for PSNH, given the current permitting environment in New Hampshire, environmental regulations, or desire to finance, own and operate a facility of that nature.

The list of supply options that could be used, with supportive State policy, to fill the resource gap include:

- Nuclear base load power plant
- Coal-fired base load power plant
- 50 MW wood-fired base load power plant
- Natural gas-fired combined-cycle intermediate duty plant

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<sup>17</sup> ISO-New England's "New England Electricity Scenario Analysis", August 2, 2007 - [http://www.iso-ne.com/committees/comm\\_wkgrps/othr/sas/mtrls/elec\\_report/scenario\\_analysis\\_final.pdf](http://www.iso-ne.com/committees/comm_wkgrps/othr/sas/mtrls/elec_report/scenario_analysis_final.pdf)