Exhibit MDC-1 Resume of Michael D. Cannata, Jr., PE

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Resume of Michael D. Cannata, Jr., PE

Areas of Specialization

Investigations of safety, reliability, and implementation of public policy in the electric and gas industries; facility siting, investigations of unit outage and system outage causes, electric utility operations and planning; bulk power system planning; interconnections; transmission system design.

Relevant Experience

Consulting

- Currently, primary consultant providing transmission and engineering services to the New Hampshire Public Utilities Commission, including a review of the maintenance, planning, construction, and operating practices and procedures of Unitil Energy System's NH distribution companies.
- Assisted the Delaware Public Service Commission Staff in the analysis of major capital expenditures relayed to reliability improvement in the 2012-2013 Delmarva Power and Light rate case.
- Assisted the New Hampshire Public Utilities Commission in its investigation into the prolonged outages resulting from the October 2011 snowstorm.
- Managing consultant on an investigation into the prolonged outage resulting from the October 2011 snowstorm on the Western Massachusetts Electric Company system on behalf of the Massachusetts Attorney General's Office.
- Lead investigator and advisor to the Maryland Public Service Commission in its investigation into the causes for large prolonged outages occurring in 2010 on the Potomac Electric Power Company system.
- Technical consultant to the Maryland Public Service Commission in the merger of First Energy and Allegheny Energy.
- Lead consultant in a review of the transmission system of Nova Scotia Power after the collapse of multiple transmission lines in November 2004 on behalf of the Nova Scotia Utility and Review Board. The review included system maintenance, inspection, structural design, materials, system planning and design, operations, utility communications, call center operations, staffing, outage management system, staffing, and lessons learned, and related matters
- Lead investigator into the reliability and maintenance practices of the Nova Scotia Power T&D system for the Nova Scotia Utility and Review Board.
- Lead investigator in the management audit of Consolidated Edison Company of New York reviewing adequacy of multi-area transmission planning and resource adequacy within the multi-area system for the New York Public Service Commission, which also included a review of the electric and gas system designs.

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- Lead investigator monitoring Commonwealth Edison's implementation of T&D system reliability improvement recommendations resulting from major system outages for the Illinois Commerce Commission.
- Lead investigator in the examination of the prolonged outage of Ameren T&D facilities following severe wind and ice events in 2006 for the Illinois Commerce Commission.
- Lead investigator monitoring Ameren's implementation of T&D system reliability improvement recommendations resulting from major system outages for the Illinois Commerce Commission.
- Lead investigator in the investigation of transmission grid security in Illinois after the August 2003 blackout for the Governor's blue ribbon committee.
- Lead investigator reviewing the adequacy of system interconnection requirements of a major renewable fuel resource for the Nova Scotia Utility and Review Board.
- Technical advisor to the Maine Public Utilities Commission, Vermont Public Service Board, Kentucky Public Service Commission, and the District of Columbia Public Service Commission regarding the public necessity and convenience for a multitude of 345 kV, 230 kV, 161 kV, 138 kV, 115 kV, and 69 kV facilities.
- Lead investigator reviewing the operation and outage of the fossil power plants of Arizona Public Service Company for the Arizona Public Service Commission.
- Lead investigator reviewing the operation and outage of the fossil power plants of Duke Energy-Ohio for the Ohio Public Utilities Commission.
- Lead investigator in the in-depth root cause analysis of a fire at a major Commonwealth Edison substation for the Illinois Commerce Commission.
- Lead investigator in the T&D system reliability reviews of four electric utilities in Maine.
- Investigator of the appropriateness of the proposed Storm Fund Adjustment Factor and the Inspection and Maintenance Program Basis Service Adjustment Mechanism for Power Option, a load aggregator in Massachusetts Electric Company's first delivery rate case in ten years.
- Technical advisor to the Maine Public Utilities Commission regarding the public convenience and necessity of the state-wide Maine Power Reliability Project consisting of 37 separate projects totaling more than 350 miles of 115 kV and 345 kV facilities and evaluation of those projects against non-transmission alternatives across the State of Maine.
- Technical advisor for Structural Bridge Corporation regarding electrical interconnection requirements for its plant expansion, making it the largest bridge manufacturer in North America.
- Lead investigator in the review of distribution and transmission practices at Alabama Power and Georgia Power Company.
- Advisor to the New Hampshire Public Utilities Commission in the merger of National Grid and Key Span and in the sale of Verizon's assets to Fair Point Communications.
- Lead investigator in prudence reviews of major fossil and nuclear plant outages and power purchases for the New Hampshire Public Utilities Commission.
- Principal technical and analytical member in the Seabrook nuclear unit sale team acting for the New Hampshire Public Utilities Commission.
- Investigator of the causes of overlapping unit outages at a major Reliant generation facility.

New Hampshire Public Utilities Commission - Chief Engineer

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- Managed a professional staff of engineers and analysts engaged in investigations regarding safety, reliability, emergency planning, and the implementation of public policy in the electric, gas, telecommunications and water industries.
- Prime architect of the settlement between the State of New Hampshire and Public Service Company of New Hampshire (PSNH) that ended years of litigation and allowed statewide competition in the electric industry to proceed.
- A lead investigator for the Commission in the proposed merger of Consolidated Edison and Public Service Company of New Hampshire.
- Investigated the operation and outages of the fossil and nuclear facilities of the Public Service Company of New Hampshire.
- Advisor to the Commission on utility system and operational issues including those of alternative energy generation.
- Decision-maker on the Site Evaluation Committee responsible for siting major electric and gas production and transmission facilities.
- Decision-maker at the New Hampshire Office of Emergency Management's Emergency Operations Center.
- Re-drafted the state's Bulk Power Siting Statute and facilitated resolution of widespread legislative tensions.
- Sat as designated member for the New Hampshire Public Utilities Commission Chairman on the State Emergency Response Commission.
- Instrumental in achieving quality of service levels among the highest in Verizon's service territory.

Public Service Company of New Hampshire (PSNH)

- As Director - Power Pool Operations and Planning, PSNH
    - Responsible for the operation and dispatch of PSNH transmission and generation facilities through the New Hampshire Electric System Control Center.
    - Core participant in the merger/acquisition team activities culminating in the corporate reorganization of PSNH. Recognized and developed a successful employee retention program used during the acquisition.
    - Core Task Force Member for the DC electrical interconnection between Hydro Quebec and the New England Power Pool.
    - Developed real time integrated transmission system loading capabilities for the New Hampshire Electric System Control Center.
    - Represented PSNH at all major relevant national and regional reliability organizations including:
        - New England Power Pool
            - System planning Committee
            - System Operations Committee
            - All technical planning and operations task forces conducting regional and inter-regional studies and analyses
        - Northeast Power Coordinating Council

- Joint Coordinating Council
- Edison Electric Institute System Planning Committee

- As Director - System Planning/Energy Management, PSNH
    - Coordinated the company's capital planning requirements for generation and transmission, and integrated its load forecasting and energy management activities.
    - A lead participant in the development and implementation of response strategies addressing the negative financial impacts associated with the proliferation of non-utility generation.
    - Ensured that the interconnections of non-utility generation met utility reliability requirements.
    - Re-designed the corporate budgeting system to allocate available resources by economic and need prioritization.
    - Driving force in re-directing corporate economic evaluations towards competitive business techniques.

- As Manager - Computer Department and System Planning, PSNH
    - Responsible for the Engineering Division's computer applications support and transmission system planning functions.
    - Principal in the development, design and implementation of the first-in-the-nation application of 345/34.5 kV distribution. Resolved daytime corporate-wide computer throughput logjam.
    - Integrated the Engineering Department's computer applications into the corporate computer organization.

Education

M.B.A., Northeastern University - 1975
M.S.E.E., Power System Major, Northeastern University - 1970
B.S.E.E., Power System Major, Northeastern University - 1969

Registration

Registered Professional Engineer - New Hampshire #5618

Exhibit MDC- 2   2012 Capacity/Energy Transactions

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2012 Capacity/Energy Transactions

Background

Public Service Company of New Hampshire ("PSNH") retains load-serving responsibility for customers who have not selected a competitive supplier. PSNH's monthly peak load for 2012 ranged from 675 MW in October, to 1,060 MW during July. On-peak monthly energy ranged from 170 GWh in September to 261 GWh in August, and off-peak monthly energy ranged from 158 GWh in October to 240 GWh in January, as highlighted below.

During 2012, PSNH met part of its total system need by purchases from other suppliers including contracts. In 2012, these external supplies ranged from 15% of monthly on-peak energy requirements in December to 70% during September. Off-peak supplies from the market in 2012 ranged from 6% of system need in December to 63% in April and September. For the year, the market supplied a total of 43% of PSNH's on-peak energy requirements and 37% of its off-peak requirements as highlighted below.

Source of 2012 System Monthly Needs [1]

Period	System Peak (MW)	System Monthly Needs (GWh)		Market Supply (Percentage)	
		On-Peak	Off-Peak	On-Peak	Off-Peak
January	924	240	240	17	8
February	841	224	199	31	24
March	828	215	195	44	35
April	727	191	177	68	63
May	694	202	178	60	50
June	1,042	216	189	56	49
July	1,060	252	238	27	38
August	965	261	205	50	49
September	763	170	189	70	63
October	675	195	158	61	52
November	770	202	185	35	35
December	819	202	225	15	6
Total for 2012	**---**	**2,571**	**2,377**	**43**	**37**

1 - Totals may not equal 100% due to rounding.

Accion Group, Inc. ("Accion" or "Accion Group") notes that the market supplied 27% of PSNH's on-peak energy and 18% of off-peak energy for 2010. Those values increased to approximately 49% and 47%, respectively, for 2011, and were approximately 43% and 37% for 2012. Low gas prices

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resulted in very low market energy prices offered by the Independent System Operator – New England ("ISO-NE") resulting in many times when PSNH base-load coal units were placed in economic reserve or run at reduced capacity causing a heavier dependence on energy supplied from the market.

PSNH's Sources of 2012 Energy and Capacity

In 2012 and at summer ratings,[5] PSNH owned approximately 533 MW of coal-fired generation with four units at two stations, 419 MW of oil-fired generation from two units, 57 MW of hydro-electric generation from nine stations, 43 MW of wood-fired generation from a single unit, and 83 MW of combustion turbine generation from five units at four locations. PSNH also purchased 20 MW of nuclear capability[6] from a single unit through March 21, 2012, 2 MW of wind from a single facility, 26 MW from various Public Utilities Regulatory Policy Act ("PURPA")-mandated purchases, and 91 MW (no capacity) from Independent Power Provider ("IPP") and buyout replacement contracts.[7] The PSNH portfolio totals approximately 1,164 MW of summer capability, and 1,227 MW of winter capability.[8]

PSNH must meet its 2012 share of the ISO-NE monthly capacity requirements, which ranged from 1,257 MW in December to 1,416 MW in January. The difference between PSNH resources and the ISO-NE monthly capacity requirement, including reserve requirements, must be met through supplemental capacity purchases. The market supplemental capacity requirement purchases varied from 123 MW during December to 222 MW in June.[9] PSNH also received variable monthly capacity credits from the Hydro Quebec interconnection.

Load obligation requirements were relatively easy to forecast in 2012 due to the persistent low market energy prices. At the beginning of January, approximately 470 MW of PSNH's large customers (34% of PSNH's monthly load) obtained their power supply from the market or self-supplied their energy requirements. By the end of December, the load obligation loss was 532 MW (39 % percent of monthly load). The energy related to customer migration was 256 GWh in January and 299 GWh in December. For the 2012 calendar year, capacity associated with load migration totaled 6,614 MW-months (39% of annual amount) and energy associated with customer migration totaled 3,365 GWh (40% of annual amount). Customer migration ranged between 448 MW and 667 MW on a monthly basis due to the relatively stable and low energy prices in the market in first half of the year with prices drifting higher in the later part of the year. Accion Group notes that in its

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5 In New England, generating units have winter and summer capability ratings. The summer ratings are generally lower to reflect higher ambient and cooling water temperatures.

6 The capacity and capability of a generating unit are different. Capacity refers to the proven rating of a generator under specific conditions while capability refers to the ability of the generator to produce power under actual operating conditions.

7 These figures do not include unit contingent contracts.

8 The units that are owned by PSNH, along with capacity under firm contract are, collectively, referred to as "PSNH Generation" or "own units" in this Exhibit.

9 In July 2010, the ISO-NE revised its capacity requirements so that only the capacity needed for reliability would be supported.

2012 Energy Service ("ES") filings (including the update), PSNH was using the then-current level of migration occurring at the time of each filing. Those assumptions were reasonable, taking into account the relatively stable and low market prices that existed compared to the PSNH ES rates proposed.

In its ES initial and mid-year forecasts, PSNH modeled that 10,051 MW-months of ES capacity and 5,172 GWh of ES energy from all sources would be necessary to serve ES customers. In actuality, 10,191 MW-months of ES capacity and 4,948 GWh of ES energy were required. Accion believes that this is a reasonable correlation of forecast versus actual values.

To conduct business in the ISO-NE energy and capacity markets, PSNH uses the resources of its parent company, Northeast Utilities ("NU"). The table below depicts the number of Full Time Employees ("FTE") charged to PSNH to participate in the New England market.

Time Sheet Allocation of Wholesale Marketing Department FTEs

	2009[(1), (2)]		2010		2011		2012	
Bidding & Scheduling	2.00	1.99	2.00	2.00	2.00	1.97	2.00	2.00
Resource Planning/Analysis	4.00	1.45	4.00	2.46	4.00	2.34	4.00	2.27
Energy & Capacity Purchasing	2.00	0.74	2.00	0.71	2.00	0.70	2.00	0.78
Standard Offer & Default Service Procurement	2.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
Contract Administration	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
Administrative Support	1.00	0.33	1.00	0.28	1.00	0.00	1.00	0.02
Renewable Power Contracts	---	---	---	---	1.00	0.28	1.00	0.23
Management	1.00	0.11	1.00	0.13	1.00	0.09	1.00	0.12
Total	**15.00**	**4.62**	**16.00**	**5.59**[(3)]	**17.00**	**5.38**[(4)]	**17.00**	**5.12**

1 – In 2005 through 2008, PSNH was allocated 4.75 FTEs.
2 – In 2009, FTE allocation by function was by time sheet allocation.
3 – Duplicative manpower was required due to the transition of a new manager.
4 – Additional resources were required to support the Least Cost Integrated Planning (LCIRP) and Newington Continued Unit Operation (CUO) investigations that continued into 2011.

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PSNH's Management of Energy Procurement

PSNH's energy procurement is managed and coordinated by Northeast Utilities Service Company ("NUSCO"). During 2012, NUSCO employed the equivalent of 17 FTEs in the Wholesale Marketing Department. Through 2008, an estimated 4.75 FTEs were allocated to PSNH. In 2009, FTEs were allocated to PSNH based on time sheet reporting and 4.62 FTEs were charged to PSNH. In 2010, 5.59 FTEs were charged to PSNH representing an increase of approximately one FTE due to the transitioning of a new department manager.[10] PSNH stated that it expected the FTE allocation to PSNH to be more representative of historic values (i.e., pre-2010) in the future because the duplicative manpower required during the transition of the new manager in 2010 will not be required. In 2011, 5.38 FTEs were charged to PSNH to support the Least Cost Integrated Resource Plan ("LCIRP") and the Newington Continued Unit Operation ("CUO") investigations that continued into 2011. The remaining FTEs were allocated to two other NU subsidiaries that do not have load-serving responsibilities.

In 2012, 5.12 FTEs were allocated to PSNH. PSNH attributes additional resource requirements for the support of the Alternate Default Energy rate docket (DE 11-216), preparation of renewable power contracts, as well as some LCIRP requirements that continued into 2012. Accion believes that the number of FTEs allocated to New Hampshire does not seem unreasonable given the circumstances.

From an organizational viewpoint, the New Hampshire position reports to a manager in Connecticut. The new manager is spending considerable time in the field at PSNH and, according to PSNH; the field time spent was comparable to historic levels.

PSNH's Reliance on Supplemental Supplies

To meet its load responsibility, PSNH requires supplemental on-peak and off-peak (defined by ISO-NE as weekends, holidays, and weekday hours 1-7 and hour 24) energy purchases that change hourly. In 2012, and during on-peak and off-peak periods, purchases varied by period and expected unit operation. PSNH made purchases that were 50 MW block bilateral purchases or multiples thereof (described in the following paragraph) that best fit PSNH's supplemental needs. Accion considers these requirements to be "fixed," as their requirement is based on the assumed absence of specific contingencies occurring, but does include planned unit maintenance. PSNH stated that the unit capacity value used by PSNH includes a reduction in unit capacity factor reflecting estimated unpredictable forced outages and estimated reserve shutdowns between the planned maintenance periods. The supplemental energy and capacity requirements increase if any part of PSNH's generation portfolio is unavailable when needed to serve load, or if loads are higher than planned due to variations in the weather or customer migration. Likewise, these requirements are reduced when loads are less than planned due to variation in the weather or customer migration. Accion Group considers this portion of the energy supply to be "variable".

[10] A new manager was brought into this area in late 2009 due to the then current manager accepting another position within the NU organization.

In general, PSNH supplemented its generation with 15 monthly bilateral purchases, of which one was for two months, and 68 daily bilateral purchases to meet the "fixed" portion of its supplemental on-peak requirements and used the ISO-NE spot market, combined with daily bi-lateral purchases, to meet the "variable" portion of its supplemental requirements. The table below shows how PSNH's on-peak and off-peak energy requirements were supplied both historically and in 2012 by its own resources and the bilateral and ISO-NE spot markets. Notably, in 2012 PSNH relied more on market energy due to low ISO-NE energy prices. Load migration was relatively constant throughout the year at 35 to 46% of monthly energy requirements. Actual weather and major unit outages can also alter the year-to-year percentages.

Percent Historic and 2012 Supply of PSNH Energy Requirements from PSNH and Market Sources (1)

	PSNH Owned Generation (Percent)		Bilateral and Spot Energy (Percent)	
	On-Peak	Off-Peak	On-Peak	Off-Peak
2008	56	71	44	29
2009	63	73	37	27
2010	74	82	27	18
2011	63	69	37	31
2012	57	63	43	37

1 - Totals may not equal 100% due to rounding.

The following table shows how PSNH's units supplied PSNH's energy requirements for 2012.

Percent of PSNH 2012 On-Peak and Off-Peak Energy Requirements Supplied by PSNH (1)

Source	On-Peak (Percent)	Off-Peak (Percent)
Merrimack	22	22
Schiller	8	9
Hydro	6	7
Vermont Yankee	1	1
IPPs	17	22
Buyout Contracts	1	2
Newington & Wyman (Oil)	2	1
Combustion Turbines	0	0
Bilateral Purchases	25	10
ISO-NE Spot Purchases	19	27
Total	101	102

1 - Totals may not equal 100% due to rounding.

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The following table depicts PSNH's historical and 2012 market purchases and their source by percent.

Historical PSNH Supplemental Purchases and Source[1]

	Sup. Purchases (GWh)	LT Bilateral (%)	ST Bilateral (%)	ISO-NE Spot (%)
On-Peak				
2008	2,046	81	7	12
2009	1,703	90	3	7
2010	1,011	81	5	14
2011	1,114	43	23	34
2012	1,141	40	18	42
Off-Peak				
2008	1,210	64	5	31
2009	1,139	85	2	13
2010	564	41	7	52
2011	820	8	15	77
2012	876	12	16	73

1 - Amounts may not total to 100% due to rounding.

Historic and 2012 PSNH Supply Approach

Historic Energy Supply

PSNH has historically altered its approach to supply procurement each year to deal with changing market conditions. In 2010, PSNH altered its procurement strategy from the longer-term view used in prior years. PSNH used a much shorter-term market focus when making its purchases rather than locking in supplemental supply far in advance. During 2010, PSNH's energy purchases were not from any long-term purchases in advance of delivery except for three 50 MW annual 2010 energy purchases made in 2008 and the Bethlehem and Tamworth unit contingent contracts. Those contracts expired at the end of 2010. Two 50 MW annual 2011 energy purchases also made in 2008 expired at the end of 2011. In 2011, PSNH remained heavily focused on short-term transactions due to decreasing market prices throughout the year. In fact, with exception to the two remaining long-term legacy contracts made in 2008 and described above, PSNH made no transactions longer than a month during 2011 and those transactions were made within a week ahead of projected need.

2012 Energy Supply

In the first half of 2012, PSNH remained focused on short-term transactions because of the very low energy prices. Only six of the 15 longer-term purchases were made during this time. As energy prices drifted upward in the second half of the year, PSNH was more confident that longer-term

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purchases were the correct strategy and made eight one-month and one two-month bilateral purchases. All short-term transactions were made within a week of scheduled delivery. The very long-term legacy contracts terminated at the end of 2011 and five additional wood IPP contracts began during the year.

PSNH conducts biweekly phone calls that include discussion with the generating stations, fuels, operations, and bidding/scheduling personnel. Plant personnel keep capacity/energy planning informed of impending developments at the plants. PSNH used to view Newington as the major unit on its system that interacts with the market. Other former base-load coal units at Merrimack and Schiller have now assumed that role due to the low market energy prices that continued into 2012. All other owned units are either hydro, wood, or long-term resources that are expected to be economic or must-take contracts[11] or peaking units that are rarely expected to run. PSNH's net monthly on-peak energy requirements were three to 104 GWh of bilateral purchases and 20 to 60 GWh of spot market purchases. PSNH's monthly off-peak net energy requirements were 0 to 51 GWh of bilateral purchases and 13 to 87 GWh of spot market purchases. PSNH determines its incremental energy needs from the market based on actual expected weather and actual unit operational conditions rather than the forecasted average weather in the energy forecast.

PSNH made purchases based on monthly analyses that involved modeling hourly forecasts by month including a hydro schedule, hourly load forecast, IPP forecast, and its own resources. PSNH modeled its own resources as follows: Combustion turbines and Wyman-4 were excluded because they have extremely low capacity factors and the market price tends to mimic their cost when they do run[12]. Coal units have planned outages specifically modeled and are derated to their annual forced outage rate for the periods in which they run. PSNH's modeling reduces the unit forced outage rate if the unit is projected to be in reserve shut down, but continues to apply historical forced outage rates to remaining generation. PSNH also discretely models the short planned reliability outages for each unit. Newington costs were modeled as the projected market cost of gas or oil corrected for SO_X and NO_X calculations and at a full load dispatch rate. If the cost of Newington was lower than the blocks of power to be purchased, Newington was run as loaded for that block. It was assumed the spot market would supply the remainder of energy requirements.

In 2012, PSNH purchased 663 GWh of on-peak bilateral energy for $22.9 million and 241 GWh of off-peak bilateral energy for $8.2 million. In 2012, PSNH also spot-purchased 478 GWh of on-peak energy for $20.2 million and 635 GWh of off-peak energy for $20.5 million. Total energy purchases totaled $71.8 million.

PSNH made spot sales into the ISO-NE spot market both from its own units and resale of unneeded purchased energy. PSNH sold 64 GWh of on-peak energy for $3.5 million and 95 GWh of off-peak

[11] PSNH forecasted the energy that would not be produced by its units because they were projected to be in economic reserve in 2012 and its projections were quite accurate when compared to actuals.
[12] In actuality, ISO-NE may call for unit operation regardless of economics for system security and reliability which is not taken into account in the modeling process.

energy for $3.0 million. The amount of purchased energy PSNH resold into the market in 2012 totaled $6.5 million.

Some purchases are made in advance of expected energy needs. If actual loads are lower than expected, surplus energy may result in the system requiring its sale into the market. Very often, the market sold into is the spot market or other short-term markets. Frequently, when there is surplus energy available, the short-term market prices are low because similar factors such as cool weather etc. affect all market participants at the same time. Sales into the market often result in unavoidable losses on the transaction.

Total PSNH sales activity resulted in revenue of $6.5 million. Total PSNH energy purchases cost $71.8 million, resulting in a net cost of energy purchases of $65.3 million, which is significantly lower than the 2011 net cost of $91.4 million.

PSNH determined its 2012 projected unit capacity factors by explicitly modeling planned annual maintenance and through consultation with plant personnel. Short-term planned reliability outages were also discretely modeled and are not included in the overall annualized forced outage factor between outages. The capacity factor tables at the end of this exhibit shows that PSNH base-load units performed near or better than forecasted, except where reserve shutdowns became a factor due to the reduced price of energy in the ISO-NE market. PSNH modeled its units to project reserve shutdowns. PSNH personnel also stated that for 2012, load forecasts and supplemental purchase needs were evaluated during the times at which the December 2011 ES rate and June 2012 ES rate update was prepared and other times during the year.

Historic Capacity Supply

When the Forward Capacity Market ("FCM") transition period rules took effect in December 2006, each load serving entity was responsible for meeting its percentage of the total ISO-NE qualified capacity resources. ISO-NE qualified capacity resources were reduced by their individual forced outage rates. The seasonal capabilities of PSNH's units were also discounted for theirs forced outage rates to determine PSNH'S percentage of the ISO-NE supply obligation. The FCM took effect in December 2006 and was in full effect from 2007 through May 2010 using set transition prices. Through May 2010, ISO-NE was in a surplus capacity situation. The FCM transition price of $4.10/kW-month was also clearing price at that time. In June 2010, the FCM floor price was $4.50/kW-month, which also became the clearing price. The post-June 2010 $4.50/kW-month clearing price was adjusted downward so that only necessary capacity is supported.

2012 PSNH Capacity Supply

Under the FCM rules, PSNH was billed at the capacity rate of $3.60 per kW-month through May 2012, and $2.95 per KW-month from June through December 2012, for its 3.96% to 4.25% monthly share of the 31,418 MW to 34,418 MW of ISO-NE installed capacity requirements. This figure equates to 1,257 MW to 1,416 MW per month, less the value of its own resources. The FCM price

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level for 2012 was adjusted in June of 2012. FCM prices were also adjusted so that only ISO-NE required capacity was supported on a pro-rata basis. The ISO-NE capacity rates as adjusted became the clearing prices and produced a bill for $50.6 million for capacity payment obligations and PSNH unit capacity produced a $44.0 million credit, leaving PSNH with a net $6.7 million capacity cost for 2012 which was a reduction of $3.3 million from 2011 capacity costs, a $5.5 million reduction from 2010 costs, and a $22.3 million reduction from 2009 capacity costs.

PSNH Generation Units' Interrelationship with the 2012 Energy Market

Where much of PSNH's generating units have historically been considered either base-load generation (and generally lower priced) or peaking generation (and more expensively priced than the market, respectively), it was not expected that their operation would be significantly influenced by market prices. This relationship changed in 2011 and continued into 2012. Prices in the ISO-NE market fell to levels not previously experienced. PSNH base-load units at Merrimack and Schiller Stations except for Schiller-5 were at many times placed into economic reserve status. In addition, the in-service requirements of the scrubber testing plus the poor economics of shutting a base-load unit down (due to start-up costs) all contributed to the placement of units into economic reserve status.

The price of energy purchased from the ISO-NE market decreased further in 2012 as additional gas supplies entered the northeast energy market and an extremely warm winter resulted in the drawdown of cavern-stored gas to only the 50% level. The warm winter softened gas prices, but the low drawdown of cavern-stored gas depressed the summer prices of gas. The lower energy prices in 2012 resulted in PSNH's previously base-load coal units (Merrimack-1, Merrimack-2, Schiller-4, and Schiller-6) being placed on economic reserve for many more hours than in previous years, but in line with PSNH forecasts. PSNH changed operations and maintenance practices at its coal units much like it previously did for Newington to maximize operations and minimize costs in a changing marketplace.

In 2012, energy service loads generally were as forecasted by PSNH and PSNH continued to rely on the market for a significant portion of its energy requirements (including during times of system planned maintenance outages) even though approximately 35 to 46 percent of the monthly energy requirements of large customers were met from the market or self-supply, resulting in reduced supplemental purchase requirements. Market prices were low throughout the year. With low market energy prices in 2012, especially in the first half of the year, PSNH continued to be very susceptible to both low market price in relation to the cost of its formerly base-load units, and to fluctuations in the supplemental purchase volume. This was due to changing economic conditions and, to a lesser degree, from customers migrating to and from competitive supply options. As market prices edged lower, however, customer migration appeared steady indicating that those customers who could migrate had already done so and that few, if any, customers returned to PSNH for energy service.

Accion believes that PSNH adequately anticipated the market paradigm changes and adjusted its procurement policies appropriately.

Financial Transmission Rights

PSNH uses Financial Transmission Rights ("FTR") in all hours where it expects its units to run to protect against congestion pricing in the market. In essence, FTRs trade a potentially high and variable congestion price for a known price. FTRs are limited by actual system capability, function much like a hedge, and bring certainty to the price of generation with regard to congestion. FTRs are purchased as needed between the major PSNH generation sources (Vermont Yankee, Merrimack, Newington, Schiller, and the MASS Hub, and collectively known as the source locations) for the months they are expected to run, or in which purchases are made from the market and the New Hampshire load zone (referred to as the sink location). In 2012, PSNH made FTR purchases such that a total of 1,407 GWh of on-peak and off-peak FTRs were purchased. PSNH factored in known outages and expected load into its decision process. No FTR purchases were made for Newington in 2012. The table below shows PSNH's historical and 2012 FTR purchases, their value regarding avoided congestion costs, and their cost to PSNH customers.

PSNH Historical and 2012 FTR Costs and Savings

Year	Auction Cost (Thousands)	Avoided Congestion Costs (Thousands)	Net Cost (Benefit) (Thousands)
2008	827	237	590
2009	10	122	(112)
2010	31	400	(369)
2011	16	(7)	23
2012	27	81	(53)

With the 2012 reduction in market energy prices, PSNH appropriately reduced dependence on FTRs as lower market prices reduce the dependency of movement of energy on the ownership of FTRs.

Historical and Actual Unit Performance

The historical performance of PSNH units is considered when determining when to procure supply from supplemental sources. Heat rates are also a useful tool in tracking how efficiently a unit converts fuel to electrical energy. The table below depicts the historical average heat rates and average heat rates for 2012 for PSNH's major units and the units' current full load heat rates.

PSNH Major Unit Historical, 2012, and Full Load Unit Heat Rates

Unit	Average Annual Heat Rate (BTU/kWh)					Heat Rate (BTU/kWh)
	2008	2009	2010	2011	2012	2012
Merrimack-1	9,933	10,211	10,221	10,435	10,682	9,900
Merrimack-2	9,723	9,919	9,663	9,826	9,853	9,520
Newington	11,690	12,382	13,517	13,429	13,069	10,900
Schiller-4	12,244	13,019	13,073	14,545	13,489	12,900
Schiller-5	16,689	17,122	17,131	15,401	15,552	15,400
Schiller-6	12,072	12,644	12,588	14,195	13,375	12,300

The above table shows stability and improvement in the efficiency of Newington, stability in the efficiency of the coal units at Merrimack and improvements in the efficiency of the Schiller units despite being placed on economic reserve shutdown more often. The ISO-NE more frequently starts, stops, or runs the PSNH four coal units at reduced load. This mode of operation negatively impacts unit efficiency. The actual heat rates are consistent with a reduced mode of operation as dictated by the market and clearly show that PSNH is adapting its market knowledge into the paradigm of its unit operations.

Historic and 2012 Unit Capacity Factors

The table below shows the historical capacity factors and the projected capacity factors used for the 2011/2012 period.[13]

Historic Actual, 2012, and Projected Annual Capacity Factors for PSNH Major Units in Percent (Annual Generation/Winter Rating/8760)

Unit	Actual Capacity Factor (2)					Factor (CF)
	2008	2009	2010	2011	2012	2012
Merrimack-1	79.8	84.1 (1)	67.2	57.9	36.6	45.0
Merrimack-2	72.8	56.1	67.5	47.9	28.8	47.4
Schiller-4	78.5	59.5	53.4	28.8	11.3	24.6
Schiller-5	79.8	79.6	79.0	78.3	90.3	82.8
Schiller-6	80.7	56.9	51.0	25.3	11.2	25.2
Newington	3.3	5.2	6.4	3.6	2.1	4.3

1 - No unit overhaul in this year.

2 – Actuals reflect reserve shut down periods.

[13] Calendar 2012 is in this period.

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In the following table, Accion presents the impact of economic reserve shutdowns on normal capacity factors for the major units.

Reduction of Unit Capacity Factor Due to Economic Reserve Shutdowns (Percent)

Unit	Actual Reduction in Capacity Factor			Projected Reduction in Capacity Factor
	2010	2011	2012	2012
Merrimack-1	9.4	10.9	46.8	50.0
Merrimack-2	9.6	26.6	41.8	41.5
Schiller-4	10.8	46.2	66.2	63.1
Schiller-5	0.1	0.0	0.0	0.0
Schiller-6	20.2	53.4	72.2	63.1
Newington	78.4	85.3	89.7	89.6

If the values of the two tables above are added together on a unit basis, one can see that historic high capacity factors would still be obtained assuming that additional forced outages did not take place if the units were not in economic reserve.

Historical and 2012 Availabilities

Another important measure of the operation of a unit is the availability[14] of that unit to serve load. For base-load units, the availability is a good proxy to answer the question, "Was the unit generating energy economies for customers?", because expected run-time is any time the unit is available to run. For non-base-load units, the availability figure degrades in usefulness as the capacity factor of the unit decreases. For example, a combustion turbine may have an availability of 100 percent, but may never operate for appreciable times during the year. Accion Group believes that a more useful measurement of unit and management performance in a market environment is to look at the highest market priced days during the year.[15] The table below depicts unit and fleet historical availabilities during the 30 highest cost market days during the year as traditionally defined.

[14] Normally, availability figures do not show if a unit was at reduced capability while it was available. The industry uses the availability^{-1} metric for that purpose which is the percentage of time the unit would be available at full load.

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PSNH Major Unit 2012 and Historical Availability on the 30 Highest Priced Energy Days

Unit	30-Day Availability (Percent)				
	2008	2009	2010	2011	2012
MK-1	97.6	98.4	99.2	99.3	99.6
MK-2	99.8	100.0	90.7	89.8	99.5
NEW-1	99.2	99.0	95.2	96.2	99.6
SCH-4	99.9	92.6	97.4	99.1	96.6
SCH-5	99.4	83.8	80.5	96.2	96.3
SCH-6	97.3	100.0	98.6	99.9	100.0
FLEET	98.0	97.4	93.8	94.6	98.2

The table above demonstrates that PSNH's units had high availability on the highest cost days to reduce costs to customers.

Load Migration

With regard to migration, Accion Group concluded that it is not difficult to do realistic forward looking market purchases when approximately 35 to 46% of the monthly energy to be served can come and go at will because of the low market prices that existed throughout the year in 2012. Remaining PSNH energy service customers see higher costs when other PSNH customers migrate away from the system as the departing customers seek lower power costs. Any excess energy resulting from the outward migration is generally of little value when resold because the market price is low enough to have caused the migration. Likewise, customers remaining on the system also see higher costs when migration into the system occurs. This customer migration occurs when migrating customers seek lower power costs. Any shortage of energy resulting from the inward migration is generally worth more when purchased because the market price is higher, and thus caused the migration. In addition, PSNH's lower cost generation at that time is diluted over a larger MWH load. Because customers have such a flexible menu of choices regarding energy supply, customer migration can vary widely in both directions within the calendar year, making the forecast of supplemental energy needs difficult for PSNH depending on ISO-NE market prices. In 2012, energy prices were relatively stable and low throughout the year, resulting in relatively stable customer migration in the amount of approximately 40% of total customer annual energy. In 2012, migration to competitive supply options did not significantly influence on PSNH's market purchases.

Evaluation

Accion Group reviewed the capacity/energy planning testimony filed by PSNH, conducted an on-site interview with knowledgeable personnel responsible for the capacity/energy planning function at

[15] PSNH included an availability metric, which it stated as the "service factor" and defined as the percentage of time the unit was running to serve load at any output level.

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PSNH, submitted follow-up data requests, and reviewed detailed backup information of the summary results supplied by PSNH.

Accion Group concluded that the PSNH filing is an accurate representation of the process that took place in 2012. Accion Group believes that PSNH made sound management decisions with regard to capacity and energy purchases and sales in its market environment, and that PSNH's actions were consistent with its least cost plan as modified on March 28, 2008. Accion Group also concluded that the capacity factor projections used by PSNH in its purchase projections and the hours of economic reserve shut-down of its units projected in its ES filings were reasonable at the time they were made.

Accion concluded that PSNH procured its supplemental energy and capacity supply for 2012 consistent with its LCIRP requirements (2007 LCIRP as amended on March 28, 2008). Accion notes that the Commission did not approve the 2010 LCIRP until January 29, 2013, which is outside of the review period of this docket.

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Exhibit MDC-3 Merrimack Outages for 2012

Merrimack Outages For 2012

This exhibit covers the review of the specific outages that occurred at both Merrimack-1 and Merrimack-2 during 2012, including both forced and planned outages.

The major project at Merrimack Station for 2012 was continued transitioning of station maintenance and operations from prior base load operations to a more cyclical market environment, as well as preparation for high reliability during the high demand periods.

Merrimack Station achieved five years without a lost time accident and has experienced only one lost time accident in 17 years.

Merrimack-1

The following outages occurred at Merrimack-1 during 2012. This unit was previously on a two-year overhaul schedule and had a scheduled overhaul performed in 2010. Since the 2010 overhaul, system economics have placed the unit higher on the dispatch curve, requiring fewer hours of operation and more hours in economic reserve.

A
1/2 – 0.1 days
The unit was operated at reduced load for water box cleaning. The unit reduction actually occurred on January 2, 2013, and not in 2012 as originally recorded. The administrative error has been corrected and this outage will be reviewed in the 2013 Energy Service/Stranded Cost Recovery Charge ("ES/SCRC") review.

B – (Outage Report 2012-1)
1/23 – 4.2 days
During a time when energy prices were low, the unit was taken off-line to perform an air heater wash in anticipation of a required shutdown at a later date, which was indicated by a rising pressure drop across the air heater. While the air heater wash was performed, a cyclone tube leak was repaired and PSNH began investigation of a vacuum leak in the air heater. When the unit returned to service, it was placed in economic reserve status.

C
1/30 – 1.3 days
PSNH had made the unit available for operation over the weekend from Outage 1-B above, but did not resolve the air leak problem. Investigation continued on Monday. The investigation found that scale had accumulated on the steam trap valve in the air ejector,

which draws off non-combustible gases, and that the scale prevented the valve from closing completely. The valve was repaired and the unit returned to service.

D
2/16 – 0.4 days
The unit tripped due to a failure of the air heater 1B drive motor that drives the rotating heat exchange element of the air heater. PSNH found that the drive motor failed due to melting of electric insulation on one of the electrical lines to the drive motor. The electrical failure in turn was caused by deteriorated insulation of a steam line in proximity to the electrical wire.

PSNH states that the location of this line and electrical wire were in an overhead location not easily observed during normal walk through inspections or the inspections performed prior to taking the unit off-line for planned work or low energy prices. The electrical wire was repaired, the electrical conduit was rerouted further from the steam piping, and the unit returned to service.

E – (Outage Report 2012-5)
4/2 – 11.5 days
The Fluidized Gas Desulphurization unit ("FGD" or "Scrubber") has “man safe dampers” at all points where flue gas can be halted for the various operational configurations of the Scrubber and the units. Each of these five man-safe dampers consist of two louver dampers that are sealed with pressurized air introduced by the seal air blower to create an air tight seal when required.

During normal operation, the man-safe dampers are open, the seal air blowers are off, and the seal air blower outlet damper would be closed to prevent flue gas from blowing back through the blower. The seal air blower outlet dampers were a single guillotine damper design and did not provide the desired seal from the beginning of operation. During this outage, these outlet dampers were modified to a double guillotine design with compressed air introduced between them when closed.

The damper manufacturer accepted this to be a warranty item and accepted financial responsibility to install a second damper at each of the 5 locations. The damper work was completed and the unit was returned to service.

F
6/18 – 1.4 days
The unit was in economic reserve status and off-line. A drip was observed on a bottom fill drain valve during a routine inspection. The valve was replaced, and a second similar vintage bottom fill drain valve was also replaced. After the replacement of the valves, the unit returned to economic reserve status.

G – (Outage Report 2012-10)

8/4 – 5.5 days

During a time when energy prices were low, the unit was taken off-line in anticipation of a required shutdown at a later date to perform an air heater wash indicated by a rising pressure drop across the air heater. While the air heater wash was performed, a cyclone tube leak was repaired. When repairs were made, the unit returned to service in economic reserve status.

H

8/9 – 1.0 days

During the air heater wash in Outage 1-G above, the forced draft fan 1B bearing had been inspected, found to be in need of replacement, and was replaced. PSNH decided to test the new bearing on Monday, as no problems are usually found during testing, and returned the unit to economic reserve status. On Monday, PSNH took the unit out of service and conducted additional testing of the 1B forced draft fan inboard bearing. Testing revealed that the newly installed bearing was within proper tolerances, but the fan shaft had uneven wear, resulting in a poor oil film and a high bearing temperature.

A spare bearing was rebabbited to a smaller dimension to accommodate for the worn shaft that was installed, and the unit returned to economic reserve status. PSNH purchased another bearing with a smaller dimension to have a spare for the short-term and reworked the rotor to its original dimensions in 2013.

I – (Outage Report 2012-11)

8/11 – 2.7 days

During a heavy rain event, both Unit 1 and Unit 2 tripped and were declared unavailable when one of the low voltage leads of the power spray module transformer failed in the ventilated bus duct section between the transformer and the low voltage bus.

PSNH's investigation found that the lead insulation was brittle, and being an outside installation, its exposure during a heavy rain event with wind led to the failure. The bus was completely disassembled, cleaned, reinsulated, Megger tested, and reassembled. Before re-energization, the bus was Megger tested again and relay settings were tested. The units returned to service without incident. In addition, PSNH added this transformer to the monthly infrared scan schedule.

J

9/24 – 18.1 days

A full scale maintenance outage was not performed on this unit in 2012 because of reduced operation time. During a time when energy prices were low, PSNH elected instead to perform an extensive reliability outage in its place to ensure the unit's availability and

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integrity while also reducing costs. To that goal, PSNH used in-house people only, conducted the outage on a straight time basis, and drew on other PSNH resources as available.

The Independent System Operator - New England ("ISO-NE") outage window was 25.0 days and the outage was estimated to be 21 days in length. PSNH conducted the outage much like a pre-planned maintenance overhaul in that projects were prioritized; PSNH conducted outage meetings to maintain workforce coordination, and worked off its backlog list. Many activities that are time of operation dependent were done on an "inspect and repair as necessary" basis rather than a mandatory rework basis. The major efforts in the outage related to an inspection of the boiler, refractory repairs, and cyclone repairs all aimed at making the unit available for the upcoming winter season.

K
11/18 – 0.1 days
While on-line, the unit experienced a hot spot (elevated coal temperature) in the feed from coal silo 1C. Normally hot spots are caused by wet coal that cakes, sticks to the sides of the pipes, and causes friction that builds heat. The heat can cause a silo or feed fire if not attended to.

PSNH used water lances (steel 20-foot pipe sections with water as input) to loosen the coal buildup. Before the buildup was penetrated by the water lances, a coal slurry formed behind the buildup. When the buildup was finally penetrated, the slurry was of such a size that it extinguished the fire in cyclone 1C when it entered the furnace. As a result, the unit tripped on low furnace pressure. The size of the slurry buildup was not anticipated by PSNH. The unit was restarted and returned to service.

Merrimack-2

The following outages occurred at Merrimack-2 during 2012. This unit was previously on a one-year overhaul schedule and had a scheduled overhaul performed in 2011. Since the 2011 overhaul, system economics have placed the unit higher on the dispatch curve requiring less hours of operation and more hours in economic reserve.

A - (Outage Report OR-2012-03)
2/16 – 5.4 days
The unit was taken off-line due to excessive water use due to leaks in the 2C, 2E, and 2F cyclones. Whenever the unit is off-line for more than two days, PSNH assesses the need for condenser tube cleaning. The change in temperature across the condenser was measuring less than it should have which indicated fouling. PSNH took the unit off-line to address both issues at a time energy prices were low and were expected to remain low for a period of time.

The condenser was opened and PSNH found that the condenser needed a complete cleaning (11,600 tubes). The cyclone leaks were repaired, the condenser was cleaned, and the unit returned to service.

B - (Outage Report OR-2012-06)
4/2 – 52.0 days
The unit was off-line due to Scrubber damper repairs (See Outage 1-E above). In addition to the damper work, PSNH repaired cracking that had been previously observed in the bottom stainless steel cone sections of coal silos 2A and 2B near the coal vibrators. Once repairs (grinding) commenced, PSNH found that the repairs required were much more extensive than previously expected due to stress cracking and corrosion. Thielsch Engineering was brought in to perform non-destructive examination and assess the required repairs. Thielsch Engineering found that the lower four feet of both coal silos 2A and 2B needed immediate replacement and that coal silo 2C was suitable for operation. PSNH will monitor coal silo 2C. The job was completed on a straight time basis.

C – (Outage Report 2012-08)
6/25 – 4.9 days
The unit was removed from service so that Siemens Environmental Systems could make modifications to the absorber trays to fine tune overall absorber tray performance (the absorber trays increase the area that the flue gas comes in contact with the limestone slurry). Modifications were made by installing absorber trays with slightly different opening areas in the upper most two levels. Modifications to fine tune the scrubber are ongoing to fine tune its operation and some modifications require outages and/or component alteration. When work was completed, the unit returned to service.

D – (Outage Report 2012-11)
8/11 – 3.0 days
Please see the discussion of the Power Spray Module Transformer lead failure in Outage 1-I above. Unit 2 stayed off-line slightly longer to finish punch list work.

E - (Outage Report OR-2011-04)
9/5 – 1.2 days
The unit was off-line and a drip was noticed on the underside of the boiler. The leak was determined to be a water wall leak in the boiler. Scaffolding and stress relief were required to effect the repair. When repairs were complete, the unit returned to service.

F
10/22 – 18.3 days
A full scale maintenance outage was not performed on this unit in 2012 because of reduced operation time. At a time when energy prices were low, PSNH elected instead to perform an extensive reliability outage in its place to ensure the unit's availability and integrity while

also reducing costs. To that goal, PSNH used in-house people only, conducted the outage on a straight time basis, and drew on other PSNH resources as available.

The ISO-NE outage window was 18.5 days and the outage was estimated to be 18.5 days in length based on a similar work plan used in the outage of Unit #1 in Outage 1J above. PSNH conducted the outage much like a pre-planned maintenance overhaul in that projects were prioritized; PSNH conducted outage meetings to maintain workforce coordination, and worked off its backlog list. Many activities that are time of operation dependent were done on a "inspect and repair as necessary" basis rather than a mandatory rework basis. The major efforts in the outage related to an inspection of the boiler, refractory repairs, and cyclone repairs and cyclone repairs all aimed making the unit available for the upcoming winter season.

G
11/26 – 0.2 days
The unit tripped when the 2B booster fan actuator failed and created a low furnace pressure. PSNH's investigation found that the electronics in the 2B booster fan actuator failed and caused the air veins to immediately go from its current 11% open position to a 22% open position. This position shift caused the low furnace pressure. PSNH placed the actuator in manual operation mode and returned the unit to service. The actuator was replaced at a later date (during Outage H below).

PSNH normally has a spare actuator of this type in stock. The spare actuator had been recently used on another fan and reordered. The new spare had not yet arrived at the time of the outage.

H – (Outage Report OR-2012-14)
12/17 – 3.8 days
The unit tripped when the keyboard to the 2A booster fan shut down due to a stuck enter key on the Unit 2 Scrubber control board. The board was replaced, repairs of air leaks in cyclones 2A, 2B, 2F, and 2G were made, and the unit returned to service.

Evaluation for Merrimack

Accion Group reviewed the outages above and found them either to be reasonable and not unexpected for these units and their vintage, or necessary for proper operation of the unit. Accion Group concluded that PSNH conducted proper management oversight during these outages.

Exhibit MDC-4   Newington Outages for 2012

Newington Outages For 2012

Newington-1

No major capital projects occurred in 2012.

Newington achieved a safety record in 2012 of no lost time accidents ("LTA") for the past 11 years. Newington has experienced only one LTA in the last 23 years.

The following outages took place at Newington during 2012:

A
1/5 – 1.1 days
The unit was in reserve shutdown. An operator noticed water on the floor beneath the boiler while making his rounds. A leak was located in the water wall of the boiler. The leak was repaired, the boiler was hydro tested, and the unit returned to reserve status.

B
1/13 – 0.4 days
The unit remained on reserve status since Outage A. While making his rounds, an operator again found water on the floor in proximity to the leak discovered in Outage A (same corner but different walls). Two water wall leaks were discovered and repaired. Again, the unit was hydro tested and returned to reserve status.

C
4/16 – 11.6 days
This planned outage was the annual maintenance and inspection outage for the unit. The Independent System Operator - New England ("ISO-NE") outage window spanned 14 days, and the outage was planned to be 12 days in length. The major project and critical path for this outage was the replacement of two banks of radiators on the station service transformers due to leaks. Furthermore, 14 additional circumferential bands were added to the 84 existing bands on the internal free-standing acid resistant brick chimney due to the widening of the axial cracks that appeared in 1974 when the unit went into operation. An additional 80 feet of the city water supply within the station was also replaced. Because the tube leaks in Outage A and Outage B above were in high stress areas, those tubes were replaced for long-term service considerations.

The outage was performed mostly on straight time, with PSNH personnel as available, and at a time when the plant would not have operated resulting in zero replacement power costs.

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D

6/20 – 0.2 days

The unit was in cold reserve shutdown and the ISO-NE called for the unit to operate. The unit was in the synchronization process when the unit tripped. The synchronization process calls for the opening of the 0451 345kV breaker, opening of the 0163 345kV breaker, closing of the G106 345kV disconnect switch and phasing the unit to the 0163 breaker. This sequence was being performed by an Equipment Operator –A (EO-A)[16] that was in training and was accompanied by a full Equipment Operator ("EO"). The EO-A opened the P2A breaker to the station service breaker, rather than the 0451 345kV breaker, dropping one-half of the station service load and tripping the unit before the EO could halt the action. These two breakers are adjacent to each other on the control board, and are clearly marked. In addition, the P2A breaker is identified with red tape surrounding its location. Proper 3-Part communications[17] were used as required for switching orders.

The individual was counseled.

Newington Station operates with four operating crews consisting of a Shift Supervisor, a Control Room Operator ("CO"), and three equipment operators who provide 24/7 coverage. To minimize overtime requirements and to ensure adequate staffing for situations that require additional COs, during vacations, sickness and retirements, Newington has a goal of training four additional EOs to the CO level, and refers to those individuals as EO-As. At the beginning of 2012, Newington had four COs, two EO-As, and one EO-A in training. At The end of the year, those figures were four, two, and two respectively. PSNH expects to reach its goals in this regard by 2015, as the number of trainees that can be accommodated at one time is limited.

E

6/22 – 0.2 days

The unit was in hot reserve shutdown and the ISO-NE called for the unit to operate. The induced draft fan was running and the forced draft fan was ready to be started. When the forced draft fan was started, the unit tripped on high furnace pressure. The correct start sequence, according to the starting checklist, is to put the induced draft fan in auto mode prior to starting the forced draft fan in order for the induced draft fan to regulate the amount of air flow through the boiler. In this case, an EO-A in training (accompanied by an EO within arm's reach) missed the check off box and did not put the induced draft fan in auto prior to starting the forced draft fan.

[16] An EO-A is an Equipment Operator that is fully qualified to perform Control Operator procedures, but is not normally called upon to do so.

[17] 3-Part communications is an industry wide practice where instructions are repeated back and forth between a system dispatcher and an equipment operator to ensure that the proper operation is being conducted and has been completed.

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PSNH states that the EO-A was following the CO start-up sheet, but missed the "ID Fan Controller and Master in Auto" step. The CO realized that the ID fan was not put in auto and was not able to timely stop the EO-A from starting the forced draft fan.

Because of the extreme dynamic nature of the operation of the station during start-ups, PSNH does not require the use of 3-Part communications. In addition, 3 Part communications are not used during normal operation or training.

The individual was counseled and a plant wide meeting of EOs and EO-As was held to discuss the issue.

F – (Outage Report 2012-13)
11/26 – 3.4 days
This planned outage was taken to replace one of the three 480 volt load center transformers ("1LC"). The original load center transformers were filled with 100% Polychlorinated biphenyl ("PCB") oil. Subsequently the transformers were retro-filled with non PCB oil and the PCB content was reduced to below the 50 ppm requirement. The ongoing oil analysis program of the transformers indicated elevated moisture in the oil and that some insulation degradation had occurred. PSNH decided to replace all three transformers.

The unit takes all its 480 volt service from these three transformers, thus all three cannot be replaced simultaneously. The PSNH plan was to replace one transformer during the current outage and replace the remaining two transformers during the 2013 annual maintenance outage.

Evaluation for Newington Except for Outages D and E

Accion Group reviewed these outages and found them either to be reasonable and not unexpected for this unit and its vintage, or necessary for proper operation of the unit. Accion Group concluded that PSNH conducted proper management oversight during these outages.

Evaluation for Newington Outage D

Accion discusses Outage D to provide a differentiation to Outage E, for which it recommends a disallowance. In Outage D, a fully trained operator who lacked experience in station operations and familiarity with the operation boards, opened a breaker adjacent to the target breaker even though an additional caution barrier was installed for the operator's attention. Accion considered this action to be an operator error, but not the error of the operator in training. Accion believes the senior operator made an error in not pointing out to the trainee that the red caution tape was placed there because of past confusion. Please see Accion's recommendation below.

Evaluation for Newington Outage E

In this outage, an EO-A in training did not place the induced draft fan in auto mode prior to starting the forced draft fan, as required by the start-up checklist. The start-up checklist specifically requires that each action be checked off prior to being performed. In this instance, it is clear that the EO-A was not following the check list as required. Following check lists is a fundamental aspect of operator training. Where the EO-A is a fully trained operating individual, Accion expects that they should have followed basic operating principals. Since such principals were not followed, Accion recommends that replacement power costs for this outage not be recovered.

Recommendation

Accion recommends that PSNH instruct senior operators who are responsible for operator in training actions to familiarize the operators in training of the "potential pitfalls" of operations that have been previously identified in the specific tasks being performed as part of a tail board discussion.

Exhibit MDC-5 Schiller Outages for 2012

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Schiller Unit Outages For 2012

The major projects at Schiller Station in 2012 were the planned maintenance overhaul of Unit #5 included the replacement of the 480V switchgear to meet new Occupational Safety and Health Act ("OSHA") switchgear flashover requirements, replacement of the vortex finders in #1 and #2 cyclones, and general boiler repairs.

There was no planned maintenance overhaul performed on Unit #4 in 2012 due to its reduced operating time.

There was no planned maintenance overhaul performed on Unit #6 in 2012 due to its reduced operating time.

Schiller continues to focus on improving its safety record. To that end, Schiller achieved one-year without a lost time accident in May 2012 and continued lost time accident free throughout the remainder of the year.

Schiller-4

The following outages occurred at Schiller-4 during 2012.

A – (Outage Report 2012-7)
5/2 – 57.5 days
The unit was dispatched and phased normally. At approximately 2 pm, the low pressure ("LP") turbine experienced an abnormal vibration setting off various vibration alarms; however, vibrations were within tolerances. After a few minutes, all vibration alarms reset except for the #3 bearing (on the high pressure and intermediate pressure ("HP/IP") side of the LP turbine) alarm, which remained within vibration tolerance. PSNH installed vibration monitoring equipment to monitor the bearing and fulfilled its commitment to the Independent System Operator-New England ("ISO-NE").

Once off line, PSNH performed tests to insure that the alarm points were accurate and confirmed that they were. At that time, the LP turbine was opened for inspection. Inspection found that a shroud section on row 1R-Gen (generator side of the turbine blades) and 1R-Gov (governor side of the turbine) had failed and passed through the turbine also damaging rows 2R-Gen and 3R-Gen. The turbine was required to be shipped to Charlotte, North Carolina for repairs by Siemens.

The shrouds in this area of the turbine had been repaired a few times over the many years of operation. It appears that one of the earlier weld repairs may have failed. PSNH maintains the old Unit #6 LP rotor as a spare that fits both Units #4 and #5. The spare rotor does not fit Unit #6 as it was upgraded at the time of its replacement. The spare rotor was not in a condition to be directly replaced. PSNH evaluated the market conditions looking forward and determined that the potential economic penalty for extending the outage to have the Unit #4 rotor repaired versus using the spare and shortening the outage was minimal.

One blade group in Row 1R-Gov, along with two blade groups in Row 1R-Gen, were replaced and Row 2R-Gen and Row 3R-Gen were repaired. Siemens met its committed return date to the station of June 11, 2012. During the installation final inspection, it was discovered that the inner steam glands on both ends of the rotor were machined to 16.000 inches. The proper dimension for this component is 15.960 inches plus or minus 0.020 inches.

The Unit #4 LP turbine therefore needed to be repaired and was re-shipped to North Carolina for repair. Repairs were made and the turbine returned to the station on June 21, 2012. The LP turbine was installed and the unit returned to service without incident on June 28, 2013.

PSNH monitors Siemens quality control ("QC") to ensure that QC control is taking place as required. Siemens had misread the drawing and accepted full responsibility for the error because its QC process missed the misread, which was contrary to PSNH contractual requirements. Siemens also paid all labor and material costs including shipping. There were no replacement power costs for this outage.

Since the outage, PSNH has contracted Siemens to evaluate and repair the spare LP rotor to what is considered a two-year operational condition where it can be installed and used for a two-year period, allowing time for significant repairs to be made to the #4 or #5 LP rotors by Siemens.

B
7/25 – 0.0 days
The unit tripped during startup on high drum level. Investigation found nothing that would explain the trip or that indicates the startup procedure was not followed. The unit was restarted without incident.

The initial phase of the unit takes place when the MW level is 3 to 5 MW to satisfy minimum steam flow requirements. The requirement is dynamic, associated with other boiler parameters, and it is left to operator interpretation to act accordingly. Generally, the turbine is brought up to speed and the breaker is closed to phase the unit. Unit control is passed from the control operator to the switchboard operator who is responsible for obtaining a three to five MW load level on the unit. In addition, the control operator and switchboard operator are in different physical locations, making coordination more difficult.

PSNH is investigating the number of "clicks" associated with the opening of the governor valve from the switchboard when the unit is phased. If there is consistency and repeatability associated with the achievement of the three to five MW level, such information will be incorporated into the guidelines for phasing the unit.

C
8/14 – 1.0 days
After startup, a leak developed in the flange of the outlet header safety valve. As operation continued, the leak became more severe and PSNH decided to shut down the unit for repairs. Repairs were made and the unit returned to service.

D
8/17 – 1.2 days
While on line, the unit developed a packing leak in the main steam stop valve. PSNH determined that the leak was manageable and ran the unit to meet its commitment to the ISO-NE. The unit was shut down and the valve was repaired over the weekend. The unit returned to service for Monday morning dispatch.

E
8/20 – 0.0 days
The unit tripped during startup on low drum level. Unit #4 had a new control system installed in 2011. During startup, the Equipment Operator-A ("EO-A[18]") has the ability to control drum level in the manual or automatic mode, by the turbine parameters, or by the boiler parameters. The EO-A did not recognize that the main boiler feed pump was in turbine control mode, which is the default mode hardwired into the control system software by the manufacturer. PSNH generally always uses boiler parameters for control of the drum level. As a result, the unit tripped due to insufficient feedwater flow.

PSNH cannot alter the control system software, but will add a flashing label when the control system is in the turbine parameter mode. This flashing label will ensure that operators are aware when the control is in turbine "default mode".

The operator was counseled.

[18] An EO-A is an equipment operator ("EO") that is fully qualified to perform control operator ("CO") procedures, but is not normally called upon to do so.

F

10/16 – 0.0 days

The unit tripped on loss of condenser vacuum. Generating units require vacuum in the condenser to ensure proper heat transfer characteristics and steam flow. Thirty inches of vacuum is near perfect, 29 inches is very good, and near where units #4 and #6 generally operate, and an alarm is triggered at 27 inches of vacuum. The unit is tripped at 19 inches of vacuum.

To maintain vacuum, air ejectors are utilized. Both Unit #4 and Unit #6 have two sets of air ejectors that run at 600 psi steam each, and can obtain higher steam pressure when both are in operation. (Air ejectors extract air when steam is passed through venture nozzles that create a vacuum that draws air out of the condenser.) Unit #6 runs one air ejector at 600 psi and maintains about 29 inches of vacuum. Unit #4 has developed a vacuum leak and temporarily requires two sets of air ejectors running at 900 psi steam to maintain vacuum that at times can be below the 27 inch alarm point. (Higher steam pressure results in faster steam flow which creates faster air removal and a higher vacuum in the condenser.)

In this case, PSNH did not follow procedure for passing information shift-to-shift because of the temporary nature of the two-ejector condition requirement. PSNH used verbal communications to pass on the information. The operator on duty on the next shift was not aware of the temporary air extractor requirement and only ran one air ejector at 600 psi. Once in alarm, PSNH stated that it had no apparent reason to monitor vacuum for this condition, and as a result, vacuum deteriorated to the trip point. (It is estimated that the deterioration took an hour to take place.) The deteriorating vacuum condition should have been continuously monitored so that further deterioration was known.

To remedy this condition, PSNH placed signage at the air ejector location that both sets of ejectors for Unit #4 need to be running at 900 psi. PSNH also established an additional alarm point at 22 inches of vacuum to act as a LOW-LOW alarm that requires immediate attention.

G

12/7 – 0.0 days

The unit was in startup and tripped when the running station service breaker failed to close while swapping from startup station service (breaker opened as required) to running station service. As a result, the 480V voltage dipped, which in turn decreased the fuel oil pump voltage, which in turn caused the pump to slow down. As the oil pump slowed down, oil flow was reduced to all burners and subsequently reduced flame intensities at all burners (one pump feeds all burners).

The running station service breaker is a trip free breaker as manual operation of the breaker cannot override the breaker's electrical commands. Eaton Electric ("Eaton") was called in to investigate why the breaker did not close when required. Eaton tested the system and

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found that the time period where the running and starting station service was open was about 2.5 seconds. Eaton also found that protection systems operated as expected and no reason for the failure to close could be found. PSNH added a 0.1 second delay to the opening of the starting station service breaker upon closure of the running station service breaker as recommended by Eaton to provide more margin to the protection scheme.

H
12/7 – 0.0 days
The unit was in startup mode from Outage G above and phased when it tripped on high drum level. There are two feedwater valves that operate in parallel and one is larger than the other (main feedwater valve). The normal procedure during startup is to close the main feedwater valve and operate the smaller valve in automatic mode. When feedwater requirements require more water than can be supplied by the smaller valve, the larger valve is opened in a manner that allows the smaller valve in automatic to provide the required flow trim.

In this case, the EO-A responded to a high drum level by placing the main feedwater valve in the manual mode anticipating that the smaller feedwater valve would regulate the feedwater flow in automatic mode. The smaller valve did not regulate the flow of water into the boiler because it was fully open and in manual mode, which was forgotten by the EO-A. The boiler finally tripped on high drum level.

The operator was counseled.

Schiller-5

The following outages occurred at Schiller-5 during 2012.

A
3/12 – 0.0 days
The turbine tripped because of low vacuum, which was caused by low steam pressure. One of the four wood chip slider gates jammed. All four slider gates can only be operated or exercised from the control room of the unit. When operated, the slider gate must reach and contact the limit switch at its final position in order to satisfy control system logic. Failure of one slider gate reduces fuel flow into the unit resulting in a drop of boiler steam pressure. There is a time delay for the field operators to clear chip pluggage under these conditions. The unit operator was able to fire up the gas burner to stabilize the unit, however, that action was insufficient time-wise to prevent a unit trip for the conditions present in the boiler.

Subsequent to this outage, PSNH installed controls in the boiler building that will allow the wood operator to control the slide gates without the time delay of interjecting a control operator into the wood operator loop.

B
3/24 – 20.1 days
This outage was the annual planned maintenance overhaul for the unit. The timing of the outage is constrained by the so-called “mud season” in the logging industry where tree harvesting is all but prohibited. The critical path of the outage was the repair of the brick work in the cyclones. The brick work remained on critical path for the entire outage based on a 6-20 schedule (six days a week, twenty hours per day). The ISO-NE outage window was 24 days beginning on March 24, 2012, the planned outage was 23.3 days, and the actual outage time was 20.1 days.

One of the projects performed during the outage was to provide local control of the wood slide gates. The control of the slide gates is normally a function of the burner management system (BMS) or the control operator. PSNH cannot change the BMS logic because of safety considerations and thus focused its efforts on controlling the wood pluggage as quickly as possible. This decision led to moving additional control to the wood yard operators in the boiler building to clear the pluggage by having the ability to exercise the wood slides locally.

During this outage all 2,880 bags in the bag house were replaced. The original bags were replaced after a few years due to poor performance. All bags were replaced with NOMEX–Hi-Temp (heat resistant bottom) bags. With the injection of urea for nitrogen control, it was found that the urea was interacting with the high temperature portion of the bags. PSNH replaced all bags with the standard bag design which included a wear resistant bottom to address the urea impact problem.

C
4/25 – 0.1 days
The unit tripped due to high furnace pressure. Indication pointed to a fuel pluggage in chute C that when cleared in the wood yard, placed too much fuel in the boiler at once, and thus generated the high furnace pressure trip.

D – (Outage Report 2012-9)
7/15 – 5.7 days
While in operation for 81 days, the unit exhibited chacteristics that an in-bed tube leak was developing. PSNH deduced this fact because of increased water usage and an increase in the amperage of the forced draft fan. PSNH found that one tube had a steam pit leak and had damaged three other tubes. Eight other tubes had outer wear issues. Repairs were made on two shifts at ten hours per day and seven days a week. PSNH repaired the twelve tubes in addition to the significant refractory repair work required. PSNH had completed extensive

testing of these tubes during the annual overhaul by Thielsch Engineering and no evidence of tube weakness was found. (The pitted tube was not one of the tubes sampled.)

The unit had a successful hydro test and returned to service without incident.

E
7/24 – 0.9 days
The unit started up from Outage D above and after a couple of days, the operator noticed a drop in the hydrogen pressure in the generator. There were no generator temperature alarms and PSNH took the unit out of service after it served its ISO-NE commitment requirements.

The PSNH consultant for these matters completed a vacuum test and an eddy current test of the hydrogen coolers. Leaks were found in both coolers and they were either repaired or plugged, as necessary. The unit returned to service.

F
7/27 – 2.5 days
The unit was taken off-line via a controlled shutdown because of an economizer tube leak. The external wall tube leak was repaired and the unit returned to service.

G
12/31 – 1.0 days (total outage time)
The unit tripped due to wood pluggage. As has been adopted convention, outages are considered in the year where the majority of the outage hours occur. Since the majority of the outage hours for this outage occurred in 2013, it will be reviewed in that reconciliation docket.

Schiller-6

The following outages took place at Schiller-6 during 2012.

A
1/15 – 0.2 days
The unit tripped because the voltage regulator tripped. PSNH's investigation found that there was a failure in the adjuster follower module which adjusts the DC control voltage control for the voltage regulator. The EO-A found the balance meter pegged at 15V when the DC voltage should have been 0V.

The EO-A put the DC control in manual mode and the voltage regulator tripped. The correct procedure was for the operator to adjust the DC control voltage manually to 0 V and then put the DC control into manual mode. However, said procedure had not been established at this time.

The operator was counseled and PSNH made specific adjustments to its procedures for this type of equipment failure.

PSNH stated that its operating procedures did not specifically address this event at the time of the occurrence. PSNH subsequently modified its operating procedures to address similar situations.

B – (Outage Report – 2012-2)
2/13 – 32.2 days
The unit was in startup as requested by the ISO-NE. A generator tube failed, ultimately causing the unit to trip due to high furnace pressure. The tube failure caused significant damage to adjacent generator tubes and significant damage to two sections of refractory of the real wall of the boiler.

Repairs were made, adjacent tubes were straightened, and the hydro test was performed (1000 psi for ten minutes versus 1380 psi operating pressure). One leak was found in the secondary super heater and repaired. The second hydro test was performed and five tube leaks were found in the generator tube rolls of the stream drum. The steam drum tube leaks were weld repaired and 13 additional generator tubes were reinforced. The unit was not needed and was returned to service in economic reserve after a successful hydro test of these repairs was completed.

C
6/20 – 0.0 days
The unit tripped when swapping from oil to coal firing. The unit tripped when two out of three flame scanners indicated loss of flame. PSNH found that one of the flame scanners was bad and tripped when one of the other two scanners indicated loss of flame. Repairs were made and the unit returned to service.

D
6/20 – 0.0 days
The unit tripped on low drum level after being on-line for 20 minutes. Drum level readings feed into an Acromag unit which receives drum level signals and determines if the unit should trip. There were no alarms from the Distributed Control System ("DCS") and PSNH investigation found that the Acromag unit was faulty. The Acromag unit was replaced and the unit returned to service.

E
8/14 – 0.0 days
The unit was conducting VAR tests for ISO-NE when it tripped on loss of field indication. The test for leading VARs (removing VARS from the system) was to be performed when the unit was at ISO-NE eco-min levels (27 MW), the lowest economic operating point of the unit. The lowest emergency operating point of the unit is 13 MW. Because of operating parameters at this unit, most facilities are half-sized so that the practical and daily eco-min from a practical perspective is 27 MW, and the lowest emergency operating point is 13 MW.

The test was mistakenly scheduled to be conducted at 13 MW while absorbing of 24 MVAR, the emergency low operating point for the unit. The operator recognized that this was not the proper load level to conduct the test and appropriately scheduled the test to be conducted at 27 MW, but failed to also adjust the MVAR level for the test. The operator also never contacted his manger to confirm his decision. The Shift Supervisor put the voltage regulator in manual and was able to achieve negative 24 MVAR for 45 minutes with the unit at 27 MW when the unit tripped on loss of field.

Operational procedures have been clarified to add the difference between practical daily eco-min and emergency-min unit loadings. In addition, the operator has been counseled.

Evaluation Except for Outage 4F, 4H, and 6E

Accion Group reviewed the outages at Schiller and found them either to be reasonable and not unexpected for these units and their vintage, or found them necessary for proper operation of the units. Accion Group concluded that PSNH conducted proper management oversight for these outages.

Evaluation for Outages 4F, 4H, and 6E

Outage 4F

This outage involved the failure to pass information on from shift-to-shift. Accion believes that this requirement is one of the most core procedures of a 365/24/7 operation. As such, variances from the procedure are not allowed under any circumstances and should be deeply engrained in the operator's actions. In addition, Accion believes that the vacuum level should have been monitored as procedure requires.

Accion recommends that the replacement power costs for this outage not be passed on to customers.

Outage 4H

The normal procedure during unit startup is to close the main feedwater valve and operate the smaller valve in automatic mode. The checklist procedure requires that the smaller pump be placed in automatic control and requires operator to confirm their action prior to performing the action. When feedwater requirements require more water than can be supplied by the smaller valve, the larger valve is closed in a manner that allows the smaller valve in automatic to provide the required flow trim.

There is no procedure requirement for the operator to place the smaller boiler feedwater pump into manual control. Such action suggests that the operator was not as well trained as he should have been, or that insufficient operating time was given during training. Accion recommends that the replacement power costs for this outage not be passed on to customers.

Outage 6E

This outage concerned a unit trip while performing a repeated ISO-NE operational test. ISO-NE testing requirements are clear. It appears that confusion existed at the station between the emergency-min operating points of the unit and the eco-min operating points of the unit. These operating points should be well understood by operators and should be readily available to them when needed. Accion recommends that the replacement power costs for this outage not be passed on to customers.

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Exhibit MDC-6 Hydroelectric Unit Outages for 2012

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Hydroelectric Unit Outages For 2012

The following section describes the outages at Public Service Company of New Hampshire's ("PSNH's") hydroelectric ("hydro") stations during 2012. The outage durations listed have been stated as the actual duration of the total outage regardless of whether there was water to run the unit. Accion Group, Inc. ("Accion" or "Accion Group") indicates water availability during any portion of the outage by a "Y" or "N" next to the outage designation. In order to simplify the outage descriptions, a separate outage description appears as "M" where multiple units were out of service for the same duration and reason. If the multiple unit outages are not returned to service within an hour of each outage, the outages are separated into and reported as single unit outages.

2012 tied for the warmest year on record in New Hampshire. Snowfall was 24 inches less than the long-term average and rainfall was one inch less than the long-term average. The spring of 2012 saw rainfall in excess of the long-term average while the second half of the year was below the long-term average. The PSNH hydro fleet generated 329,964 MWh of energy, which is four percent less than the 343,894 MWh in an average twenty-year water year. Maintenance schedules were revised to accommodate additional flow wherever possible.

In 2012, there were 19 hydro unit outages (four were during Hurricane Sandy) caused by distribution system disturbances. Additionally, there were no independent transmission disturbances that resulted in hydro generation outages in 2012, so the reference to T&D events is to distribution only.

Amoskeag Station

There were no major planned projects at Amoskeag station in 2012.

Multiple Unit Outages

M-A – (Related to a T&D event)
Units #1, #2, and #3
1/19 – 0.1 days – Y
34.5kV SF_6 switchgear failed at 370 Commercial Street on the 364 34.5kV line fed out of the Canal Street Substation. PSNH suspects that mechanical forces during the fault caused two phases of the Canal Street to Eddy 34.5kV line to slap together burning off one phase of the tap into Canal Street. Amoskeag Hydro feeds into the Eddy substation and all units over-tripped for this fault. The units were returned to service when system-operating conditions allowed. Also see Outage M-D below.

M-B
Units #1 and #3
2/27 – 0.1 days – Y

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The emergency generator transfer switch was tested, as units would trip when the station service was transferred from its normal to its emergency feed during weekly tests. The tests were completed and the unit returned to service. PSNH began a repair or replacement plan for this switch at that time.

Note: This switch was replaced in 2013.

M-C **–** (Related to a T&D event)
Units #1 and #3
3/15 – 0.1 days – Y
Amoskeag Hydro feeds into the Eddy substation via the 3540 34.5kV breaker and the 354 and 355 34.5kV lines. PSNH needed to replace the 3540 34.5kV breaker and during this outage planned to have the output from the station temporarily fed to the Eddy substation via the 358 breaker. Connections were made and the units returned to service. Also see Outage E below.

M-D **–** (Related to a T&D event)
Units #1, #2, and #3
3/16 – 0.1 - Y
Another 34.5kV SF_6 switchgear failure occurred at 200 Bedford Street on the 331 34.5kV line and the units again over-tripped. The units were returned to service when system conditions allowed.

PSNH's investigation found that the manufacturer (G&W) was the same as in Outage M-A, above. Further investigation found that the switchgear was defective due to a manufacturing process error. The manufacturer took responsibility to pay for materials and labor to rebuild all similar units on the PSNH system. In addition, PSNH installed rupture disks in the switchgear tanks that will rupture at 30 psi to reduce the energy released during a failure. To reduce fault current in the area, PSNH operates the 34.5kV system with the 358 and 359 34.5kV Rimmon Street – Eddy 34.kV lines open when operating system conditions allow.

M-E **–** (Related to a T&D event)
Units #1, #2, and #3
3/29 – 0.1 days – Y
This planned outage was taken to remove the Amoskeag Hydro feed from the temporary 358 34.5kV breaker position and reinstall the feed to the newly replaced 3540 34.5kV breaker. Connections were made and the units returned to service.

M-F
Units #2 and #3
4/19 – 0.0 days – Y

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This planned outage was taken so that ONAN, the original equipment manufacturer ("OEM") for the generator emergency transfer switch, could evaluate the switch. The control circuit board was found to be bad and needed replacement. The circuit board was replaced and the unit returned to service.

Note: Later in the year, additional maintenance was performed on the switch and PSNH's evaluation indicated that it was more economical to replace the entire switch. The switch was replaced in 2013

M-G **–** (Related to a T&D event)
Units #1, #2, and #3
10/29 – 0.0 days – Y
This outage occurred during Hurricane Sandy. A trip-reclose-trip-reclose fault occurred on the radial 34.5kV line from Eddy to the Blaine Street Substation. Vegetation contact was suspected. The units over-tripped for this fault and were returned to service when cleared to do so.

M-H **–** (Related to a T&D event)
Units #1 and #2
10/29 – 0.0 days – Y
This outage occurred during Hurricane Sandy. The units tripped due to a suspected vegetation contact on the system. Due to the number of vegetation related faults occurring at this time period, no specific fault could be traced to this outage. The units were returned to service.

M-I
Units #1 and #2
11/28 – 0.1 days – Y
These two units were taken out of service to perform annual black start capability tests. The tests were performed and the units returned to service.

(Note: Unit #3 has a motor generator set and needs station service to operate).

Amoskeag - 1

A
1/5 – 0.0 days – Y
The exciter brushes were arcing, requiring a closer inspection and cleaning of the brushes. The unit was taken off-line and another unit was placed in service. The exciter, brushes, and brush holders were cleaned and inspected, one unit at a time. When work was completed, the unit returned to service. All units at Amoskeag had undergone extended run times since exciter brush maintenance was performed. PSNH decided to shut down each unit in sequence to perform maintenance. Also see Outage 2-A and Outage 3-A, below.

B

3/12 – 3.4 days – Y

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was high at this time and the generator could be used for power production. PSNH conducted the outage on straight time and placed the unit in service overnight when possible. The inspection was completed and the unit returned to service.

C

5/30 – 0.0 days – N

The unit was taken out of service to repair a leak in the threads of the flange that connects the thrust bearing oil line to the spider bearing. The flange was replaced and the unit returned to service.

Amoskeag – 2

A

1/5 – 0.0 days – Y

This outage description is the same as in Outage 1-A, above.

B

2/27 – 4.3 days – N

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not required for power production. PSNH conducted the outage on straight time and did not place the unit in service overnight. The inspection was completed and the unit returned to service.

C

9/5 – 0.3 days – N

The unit was shut down when smoke was observed emanating from the governor cabinet. Investigation found that the 65S3 partial shut-down solenoid (keeps unit at proper speed with no load on it) had failed. The coil was replaced and the unit returned to service.

D

9/27 – 29.3 days – N

The weekly inspection was performed on the unit while it was not in service. Inspection found that Babbitt was on the top of the lower guide bearing indicating a bearing problem. Further investigation found that the lower guide bearing temperature probe and the lower

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guide bearing mechanically failed. The unit did not trip for this failure because the bearing was not overheated during the fracture and the fracture crushed the heat sensors. The bearing was sent off-site to be rebuilt (re-poured in mold) and machines. When the bearing returned to the site, it was installed, and the unit returned to service.

E
11/13 – 0.7 days – Y
The unit tripped due to low oil in the lower guide bearing oil reservoir. Water was found mixed with the oil. Inspection of the shaft seals the next morning revealed that the shaft seals had not ruptured. PSNH concluded that the water in the oil was due to normal intrusion through the shaft seals.

When water mixes with oil, the fluid level will rise. A low oil alarm is generated as the float, which drives the alarm and trip functions, sinks in the lower specific gravity froth, thus activating the low oil annunciator. All oil was removed and replaced and the unit returned to service.

Amoskeag – 3

A
1/5 – 0.1 days – N
This outage description is the same as in Outage 1-A, above.

B
2/16 – 0.0 days – N
When the unit was normally shut down, loud squealing noises were heard from the generator brakes. PSNH inspected the brake pads and found metal flakes on two brake pads. PSNH found no contact areas and was unable to determine the source of the metal flakes when the rest of the braking system was inspected. The brake pads were replaced, brakes were tested, and the unit returned to service. The brakes have functioned properly since that time.

C
3/20 – 0.3 days – Y
The unit tripped off-line due to low oil in the lower guide bearing. Investigation found that the lower guide-bearing oil pump motor had failed. A new motor was installed and the unit returned to service.

D
4/19 – 4.2 days – N
This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was

not required for power production. PSNH conducted the outage on straight time and did not place the unit in service overnight. The inspection was completed and the unit returned to service.

Ayers Island

The major planned projects at Ayers Island for 2012 were the replacement of the Unit #3 draft tube and the resurfacing of one-third of the downstream dam face.

Multiple Unit Outages

M-A – (Related to a T&D event)
Units #2 and #3
2/18 – 0.0 days – Y
A fault occurred on the radial 3114X 34.5kV circuit between the Pemigewasset substation and the Alexandria substation just outside the Pemigewasset substation. The PSNH patrol found a limb on the line. Ayers Island is fed radially out of the Pemigewasset substation via the 3149 34.5kV line. The units over-tripped for this fault and were returned to service when repairs were made.

M-B
Units #1, #2, and #3
6/3 – 0.4 days – Y
The station tripped due to numerous targets relating to the station generator step-up transformer TB-8. Multiple alarm resets and restarts were attempted and all resulted in additional trips of the units. The right-of-way between the Ayers Island substation and the Pemigewasset substation and both substations were checked again for abnormalities. Upon restart, the units remained on-line, however, a transducer in the TB-8 overcurrent relay circuit was suspected to cause the overcurrent trip of TB-8. PSNH verified that an open condition existed relating to the transducer in the TB-8 overcurrent protection scheme.

The transducer was bypassed, which only prohibited the Electric-System Control System ("E-SCC") from reading the current readings on TB-8, but allowed the protection scheme to remain in service. Under these conditions, the units were returned to service.

The transducer was later tested and found to be good and a broken PK block (testing block) terminal lug was found. Please see Outage M-C, below.

M-C
Units #1, #2, and #3
6/13 – 0.0 days – Y
Trouble shooting of the Outage M-B, above (TB-8) was continuing when the units tripped. A broken lug in the PK block was found and while bypassing the broken lug, a second circuit PK block lug in this PK block failed (different phase) again tripping TB-8 and the station. The

second circuit was bypassed, the PK block was scheduled for replacement in 2013, and the unit returned to service.

PSNH determined that the PK block terminal lugs were failing due to age and/or metal fatigue. PSNH has begun a program to replace these test devices at all hydro stations as the various systems become available to be worked on.

M-D
Units #1, #2, and #3
7/3 – 0.3 days – Y
The units were taken off line for diver safety to perform an inspection of all generator head gate cables. Head gate cables for Unit #3 failed when it was called upon to operate on June 28, 2012. In addition, the inspection revealed that the head gate cables for Unit #1 also required replacement. After the inspection was completed, the units returned to service. Also see Outage 2-C, below.

M-E
Units #1, #2, and #3
7/20 – 0.3 days – Y
The units were taken off-line to ensure diver safety while replacing the head gate cables for Unit #1. After the cables were replaced, the units returned to service.

M-F – (Related to a T&D event)
Units #1, #2, and #3
8/12 – 0.1 days – Y
A fault occurred on the 338/344 Ashland – Straits Road – Meredith 34.5kV line. Patrols found two separate causes. There was a tree down on the 344 section of the line and there was a broken pole with a tree down on the 338 section of the line. The units over-tripped for this condition. The units were returned to service when system conditions allowed.

Ayers Island – 1

A
2/16 – 8.0 days – N
This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight. PSNH diverted manpower to other locations where outage timing was more important. PSNH's approach increased the time of the outage to perform the work scope.

B

5/24 – 0.1 days – N

While the unit was off-line, an operator observed oil in the wheel pit during a routine inspection. The oil was cleaned up and PSNH searched for a source of the oil intrusion, but none was found. PSNH did suspect that there was a small leak in the middle guide bearing, performed sealing procedures, and returned the unit to service. The leak did not continue.

Ayers Island – 2

A

2/7 – 9.0 – N

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight. PSNH diverted manpower to other locations where outage timing was more important. PSNH's approach increased the time of the outage to perform the work scope.

B

6/19 – 0.2 days – Y

The unit was taken out of service for diver safety so that the work platforms for the Unit #3 draft tube replacement could be floated into place. Once the work platforms were secure, the unit was returned to service.

C

7/19 – 0.4 days – N

The unit was taken off-line for diver safety so that the head gate cables for Unit #3 could be replaced. Once the cables were replaced, the unit returned to service.

Ayers Island – 3

A

1/30 – 8.3 days – N

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight. PSNH diverted manpower to other locations where outage timing was more important. PSNH's approach increased the time of the outage to perform the work scope.

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B

3/18 – 1.1 days – Y

The unit tripped on a multiple of alarms. The operator mechanic tried twice to phase the unit and after a few minutes of operation, the unit tripped again. After the third attempt, the unit remained on-line and personnel left the station at 6 pm on Sunday. The unit tripped for the fourth time at approximately 10 PM on Sunday. PSNH could not determine the cause of the trip and left the unit off-line until the following Monday, when additional assistance would be available. On Monday, PSNH cleaned the multitude of contacts related to the targets displayed during the trips. Once the contacts were cleaned, the unit returned to service without incident.

C

3/21 – 0.2 days – Y

The unit tripped off-line due to the operation of the 67M directional power relay (reverse power). Investigation found that the 65S2X starting auxiliary relay coil had failed. The coil was replaced and the unit returned to service.

Note: The failure of this relay coil was attributed to Outage B directly above. It was not recognized at that time because of only partial failure of the coil.

D

6/19 – 30.4 days – Y

The unit was taken out of service to replace the draft tube of Unit #3. The installation of the draft tube was completed on June 28, 2012, but when the head gate was raised to allow water to flow to the unit, the cable broke. A new cable was installed on July 19, 2012, and the unit returned to service. Please also see Outage 2-C, above.

Canaan

There were no major planned projects completed at Canaan in 2012.

Canaan – 1

A **–** (Related to a T&D event)

4/23 – 0.1 days – Y

A tree caused a fault on the 355X10 34.5kV line out of West Stewartstown and tripped the unit. No disturbance report was generated at Lost Nation as the recorder at Lost Nation had failed prior to the incident. The unit returned to service when cleared to do so.

The recorder was repaired and placed back into service in August 2012.

B

4/23 – 0.0 days – Y

The unit was returning to service from Outage A, above when it tripped due to low lube oil flow. Investigation found that the lube oil flow switch was sticking and that the start/stop relay in the Programmable Local Control cabinet was bad. The relay was replaced, the oil flow switch was lubricated, and the unit returned to service without incident.

C – (Related to a T&D event)

6/26 – 0.0 days – Y

The unit tripped. The disturbance recorder at Lost Nation was out of service for repairs and the recorder at Whitefield registered nothing. PSNH could not find that an outage occurred and no customers called in to report an outage.

D – (Related to a T&D event)

7/4 – 0.1 days – Y

The unit tripped. The Lost Nation disturbance recorder was still out of service; however, the Whitefield recorder did indicate that a disturbance had taken place. The disturbance times indicated that the disturbance was quicker than the times for breaker or recloser operation. After PSNH confirmed that no system operations had taken place and no customers had lost service, the unit was returned to service.

E

7/16 – 11.1 days – Y

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. Once the unit was dismantled, emergent work was required for the turbine bearing. PSNH elected to perform this work on a straight time basis. The water flow was sufficient that the generator could be used for power production, but that it was uneconomic to do so. The inspection was completed and the unit returned to service.

F

12/19 - 0.4 days – Y

The 86 lockout relay operated due to a faulty lube oil switch, but the G1 oil circuit breaker ("OCB") did not open. The oil flow switch mechanism was exercised; PSNH replaced the electrical switch within the oil flow mechanism and manually exercised the OCB. The unit was returned to service without incident; however, further testing was scheduled in Outage G, below.

G

12/20 – 0.3 days – Y

Testing of the G1 OCB was conducted during this planned outage. The unit was shut down and restarted multiple times. The trip coil for G1 OCB was found in need of minor

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adjustment. The adjustment was made in iterations and when proper adjustment was achieved, the unit returned to service.

Eastman Falls

There were no major projects completed at Eastman Falls in 2012.

Multiple Unit Outages

M-A – (Related to a T&D event)
Units #1 and #2
5/1 – 0.0 days – Y
The Electric - System Control Center (“E-SCC”) was performing an annual voltage reduction test as required by the ISO-NE when the units tripped on high reactive output (The voltage reduction is accomplished by fooling the transformer into thinking that the voltage is too high on the low side and needs to be lowered, and a lower voltage reduces the resistive load on the system.). Generation was notified by the E-SCC and no other units were impacted.

The generators have a leading (incoming) reactive power output at which they are designed to trip. Depending on the threshold voltage prior to the test, leading reactive output power can exceed the trip setting.

Eastman Falls-1

A
3/9 – 0.3 days – Y
When phasing at minimum load during startup, the phasing motor operated too fast and cranked the unit to full load too quickly. The unit was taken out of service to adjust the governor for phasing conditions. The governor was adjusted and the unit returned to service. PSNH suspects that a voltage bump occurred in the system during start-up but was not able to verify its suspicions.

B
5/29 – 0.0 days – Y
During a startup initiated by the E-SCC, the unit phased, but immediately tripped on high reactive output. The unit was started manually without incident. PSNH’s investigation did not find a cause for the trip and the condition has not repeated itself.

C
6/20 – 0.0 days – Y
The unit tripped off-line due to high spider bearing (middle guide bearing) temperature. Investigation showed that the spider bearing was at 166°F when the unit tripped when the set point was 172°F. Fans were placed in proximity to the spider bearing to control temperature, and the unit returned to service. Further, investigation was conducted and a solution obtained in Outage D, below.

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D

6/21 – 0.0 days – Y

The unit tripped due to high spider bearing temperature. The trip occurred when the bearing temperature was 166^{o}F, while the set point for a trip was 172^{o}F. PSNH's investigation found that there was a difference in the readings obtained by the mechanical switch and the actual temperature. PSNH further adjusted the mechanical switch from its original adjustment to conform to the more accurate actual readings and the unit returned to service.

E

4/1 – 4.1 days – N

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

F

7/30 – 11.3 days – Y

The unit tripped, due to a high sump pump level. PSNH's investigation found that the packing around the lower guide bearing was not adjusted properly due to loosening of the plastic bearing. The improper adjustment of the packing, although leakage was zero at first, eventually allowed significant water to leak into the wheel pit and the governor room as river flows and water pressure increased. PSNH repaired the packing, checked other stations for similar issues (none were found), and returned the unit to service.

G

9/11 – 0.1 days – Y

The unit was taken off line after the operator noticed a burning smell emanating from the generator room. PSNH's investigation found that the negative generator and exciter connection point had become loose due to thermal cycling and were burning. PSNH repaired the terminal, checked other stations for similar conditions (none were found), and returned the unit to service.

PSNH has added these types of connections to the checklist for the annual inspection.

Note: The connection was replaced with standoffs at a later date.

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Eastman Falls – 2

A

1/5 – 0.1 days – N

The unit was taken out of service to change the hydraulic and lube filters due to a dirty hydraulic filter indication sent to the E-SCC. The filter was changed and the unit returned to service.

Although unit outages due to water intrusion have been markedly reduced with the installation of the new moisture separator, there are times when water intrusion exceeded the system water separation capability of 30 to 50 gallons per day. Final resolution of the issue was accomplished in Outage 2-I below.

B

3/14 – 0.0 days – Y

Identical outage description as that of Outage 2-A, above.

C

3/25 – 0.2 days – Y

The unit was taken out of service due to high hydraulic tank oil level. The high level of water was caused by leakage bypass of the bestobell seal due to higher river water pressure. The water and hydraulic oil were removed, new oil added, filters changed, the bestobell seal was adjusted, and the unit returned to service. PSNH monitored the bestobell seal pressure and adjusted it as required after the unit returned to service.

D

4/27 – 0.0 days – Y

This was identical to the outage described in Outage 2-A, above. In addition oil/water mix was removed, new hydraulic oil added, and the filter on the moisture separator was changed.

E

5/17– 0.0 days – Y

This was identical to the outage described in Outage 2-A, above.

F

6/18 – 17.2 days – Y

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. Once the unit was dismantled, emergent work was required

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for the replacement of the generator bearings, bestobell seal maintenance, and remaining lead abatement in the bestobell seal area. PSNH elected to perform this work on a straight time basis. The water flow was sufficient that the generator could be used for power production. The inspection was completed and the unit returned to service.

G
7/10 – 0.0 days – Y
This was identical to the outage described in Outage 2-A, above. In addition some oil/water mix was removed from the system.

H
7/11 – 0.0 days – Y
This was identical to the outage described in Outage 2-A, above.

I
7/13 – 154.0 days – Y
The unit was taken off-line due to loss of control of the runner hydraulic system. Initial PSNH investigation determined that the issue was a likely failure of a component internal to the runner hydraulic servo system. On July 18, 2012, PSNH contacted Andtriz to be a technical expert and provide support for the outage. Andtriz informed PSNH that it was not able to provide timely support (late September to early October) and recommended Hydro Consulting & Maintenance Services ("HCMS"). An HCMS representative arrived on site to oversee further troubleshooting and repair work on August 21, 2012.

PSNH systematically disassembled the unit runner hydraulic system including the nose cone, servo motor, and hydraulic piping. No major failures were found. Initial determination was that the failure was due to the failure of worn hydraulic seals. While repairs were being made to the seals, the root cause of the failure was identified to be a set screw failure on the hydraulic servo nut. The set screw was designed to provide a flat surface lock of the hydraulic servo nut. The loosening of this set screw allowed the runner shaft to turn two inches and imbalance the hydraulic pressure seal.

The necessary repair required a full disassembly of the hydraulic and runner systems, which had never been performed before. During this outage, PSNH determined the reason for continuing excessive leakage around the bestobell seal was the loose set screw. The set screw was replaced with a pointed set screw so that no slippage could take place.

PSNH has filed an insurance claim of $144,614 for replacement power cost after 60 days as stated in its insurance policy. PSNH also established the need for developing the need of preferred maintenance contractors that can provide support during maintenance outages. The insurance claim process is continuing.

Garvins Falls

There were no planned major projects completed at Garvins Falls in 2012.

Multiple Unit Outages

M-A
Units #1 and #3
4/16 – 0.1 days – Y
The units were taken off-line for diver safety while the fish louvers were being installed for the season. The louvers were partially installed and the units returned to service. The remainder of the work was completed with the units in service.

M-B
Units #3 and #4
11/29 – 0.0 days – Y
The units were taken off-line for diver safety while the fish louvers were being removed for the season. The louvers were removed and the units returned to service.

M-C
Units #3 and #4
12/5 – 0.1 days – Y
The units were taken off-line for diver safety while the floating “shoot” (diverts fish down fish passage) was removed so that repairs could be made over the winter months. The “shoot” was removed and the units returned to service.

Garvins Falls-1

A
2/16 – 0.1 days – N
The unit was taken off-line to replace the oil filter canister system because the indicators on the oil filter canister system were not properly working. The canister was replaced and the unit returned to service.

B
4/17 – 0.0 days – Y
The unit was taken off-line for diver safety while the fish louver installation was completed. The louvers were partially installed and the unit returned to service.

C – (Related to a T&D event)
5/16 – 0.0 days – N
The 396 34.5kV line from the Garvins substation to the Capital District of the Unitil Energy System ("UES") experienced a lightning strike during a storm and tripped. The unit over-tripped for this operation. The unit returned to service when cleared to do so.

The units are protected by single function electro-mechanical relays and although they are protected similarly and some by the same type of equipment, there are tolerances in the equipment that can vary, which will cause one unit to trip while the other doesn't.

D
5/24 – 0.0 days – Y
The unit was taken off-line because the low oil static hub alarm sensor failed due to a lightning strike on May 16, 2012. In the meantime, the alarm was inhibited and the oil checked daily. The oil alarm sensor was replaced and the unit returned to service.

E
10/22 – 0.3 days – Y
The unit was taken out of service for diver safety while installing and sealing the stop panels in preparation for annual maintenance of Unit #2 (common wheel pit). The stop panels were installed and the unit returned to service.

F – (Related to a T&D event)
10/29 – 0.0 days – Y
This outage occurred during Hurricane Sandy. The 396 34.5kV line from the Garvins substation to the Capital District of the UES experienced a vegetation contact and tripped. The unit over-tripped for this operation. The unit returned to service when cleared to do so.

The units are protected by single function electro-mechanical relays and although they are protected similarly and some by the same type of equipment, there are tolerances in the equipment that can vary which will cause one unit to trip while the other doesn't.

G
12/14 – 4.1 days – N
This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

Garvins Falls – 2

A

3.6 – 1.0 day – N

The unit was taken out of service due to an oil leak on the hydraulic governor oil pump shaft seal. The seal was replaced and the unit returned to service.

B

10/22 – 4.3 days – N

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

Garvins Falls – 3

A

1/11 – 0.1 days – N

The unit was taken out of service to repair a leaking turbine bearing oil sight glass. The sight glass was repaired and the unit returned to service.

B

1/19 – 0.1 days – N

The unit failed to automatically start due to an incomplete starting. PSNH found that the contacts on the auto-synchronizing relay needed cleaning. The contacts were cleaned and the unit returned to service.

C

2/7 – 0.1 days – N

This was a planned maintenance outage during low flows and when manpower was available to do a complete inspection of the governor. The governor was inspected and the unit returned to service.

D

2/21 – 0.0 days – N

This planned outage was taken to troubleshoot the intermittent lower guide bearing alarms that were annunciating at the station but not at the E-SCC. PSNH found that during the weekly emergency generator tests, AC power was off long enough (0.004 seconds) to allow the local annunciator to drop but not long enough to trip the unit and alarm at the E-SCC. Time delay relays were installed in Outage E, below to correct the issue.

E

2/22 – 0.1 days – N

This outage was taken to install time delay relays in the lower guide bearing circuit. The relays were installed and the unit returned to service.

F

3/27 – 0.1 days – N

The unit went into condense mode (absorbing reactive or leading) after being automatically shut down. PSNH found that the breaker trip coil had burned out which prevented the generator breaker from operating. PSNH replaced the trip coil, tested the breaker, and the unit was returned to service.

G

6/18 - 4.3 days – N

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

H

6/28 – 12.0 days – N

The unit was taken off-line due to a leak in the scroll case vent (starts water circulating at the wicker gates) allowing water to enter the unit. A contractor was performing lead abatement at the base of the scroll case vent when the needle gun broke through the vent. The scroll case vent was rusty and very thin at its base and therefore weak. An insert was placed inside the scroll case vent and the unit returned to service.

8/27 – 0.0 days – N

The unit was taken off-line for diver safety to facilitate concrete repairs at the gatehouse. The repairs were made and the unit returned to service.

Garvins Falls – 4

A

1/27 – 0.0 days – N

A new safety guard was being installed around the lower guide bearing oil pump motor as required by the Safety Department when the unit tripped. The operators had turned the oil pump off while the guard was being installed so that the motor would not start during installation. The operators believed that they had ample time to install the guard prior to the oil reservoir emptying. The oil level in the reservoir was not being monitored. When repairs were complete, the unit returned to service.

B

2/7 – 0.1 days – N

This was a planned maintenance outage during low flows and when manpower was available to do a complete inspection of the governor. The governor was inspected and the unit returned to service.

C

4/17 – 2.8 days – N

The unit tripped due to a high field temperature. PSNH's investigation found that the insulation had worn off of two wires between the regulator and the regulator heater on the backside of the regulator and shorted out. The wires were replaced and the unit returned to service.

PSNH also replaced similar wires on Unit #3 at this time. Please also see Outage D and Outage I, below.

D

4/20 – 3.3 days – N

The unit again tripped due to a high field temperature. The repairs performed in Outage C, above did not resolve the issue. The cause of the Outage was unknown at this time and further monitoring was scheduled. Please also see Outage I, below.

E

6/18 – 0.0 days – N

The unit was placed in the condense mode to facilitate cindering (sealing) of the unit head gates in preparation for the annual outage. The unit returned to service when the head gates were sealed.

F

6/25 – 4.2 days – N

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

G

7/9 – 2.8 days – N

The dispatcher called the station to notify them of a high sump alarm. PSNH found that the sump float mechanism had risen as required, but that the sump motor at the wheel pit did not start. The sump pump was replaced because of its age.

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PSNH also replaced a similar vintage sump pump at the lower guide bearing. In addition, PSNH added the maintenance of the sump pumps to the annual inspection checklist.

H
10/19 - 0.0 days – Y
The unit was taken out of service to perform annual ISO-NE black start testing. After testing was completed, the unit returned to service.

11/3 – 0.4 days – Y
The unit again tripped due to a high field temperature. After investigation, no succinct cause for the trip could be found. PSNH did replace a 100 Ohm grounding resister in the field breaker which appears to have corrected the problem. The unit returned to service after repairs were made.

Gorham

There were no major planned projects completed at Gorham in 2012.

Multiple Unit Outages
M-A
Units #1 and #2
4/9 – 10.2 days – N
This planned five-day outage was taken to perform the annual inspection of Unit #1 and Unit #2 (common intake). A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

M-B
Units #1and #3
8/29 – 2.4 days – Y
The units were taken out of service to facilitate the replacement of the Unit #3 and Unit #4 generator cables. The common cables were being replaced due to degradation of their insulation. The units were returned to service upon completion of the work.

M-C
Units #3 and #4
9/28 – 0.4 days – Y
The station shut down due to loss of supervisory control. Supervisory control loss was due to a Verizon problem on a T1 communications link between Gorham and Littleton. PSNH made the decision not to man the station due to the low price of power. When supervisory control was re-established, the units were returned to service.

M-D - (Related to a T&D event)
Units #3 and #4
10/8 – 0.1 days – Y
The 352 34.5kV circuit runs from Gorham to Berlin. To accommodate the reconstruction of the East Side substation in Berlin, the 352 34.5kV breaker at the Berlin substation is temporarily in the open position. This configuration is a known uncoordinated configuration. A three-phase fault due to vegetation occurred on the 350X 34.5kV line, which is tapped off of the 352 line. The units over-tripped and were returned to service when cleared to do so.

Accion notes that the incoordination at this location was found in an earlier SCRC review. At that time, PSNH fine-tuned coordination as much as possible and made plans to replace the electro-mechanical relays at Gorham with modern numerical relays. The new relays will be installed in 2013 and will allow coordination for line to ground faults, however, three phase faults will remain uncoordinated when the system is in a contingent configuration.

Gorham – 1

There were no single unit outages of Unit #1 in 2012.

Gorham – 2

There were no single unit outages of Unit #2 in 2012.

Gorham – 3

A
4/5 – 0.1 days – N
The unit tripped due to low actuator oil pressure to the wicket gates. PSNH found that the contactor for the actuator pump had failed. The motor contactor was replaced and the unit returned to service.

B
8/20 – 4.1 days – N
This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

C
8/31 – 0.0 days – N
The unit was taken off-line to troubleshoot the source of an odor of burning electrical equipment. When it was determined that Unit #4 was the source, the unit was returned to service. Please see Outage 4-B, below.

Gorham – 4

A

8/24 – 7.3 days – N

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight. In addition, the unit was dewatered on a Friday, adding a weekend to the outage.

Inspections found that the back wall of the dam had eroded and would require repairs in 2013.

B

8/31 – 0.1 days – N

The unit was taken off line to troubleshoot the source of an odor of burning electrical equipment. PSNH discovered the odor source to be a defective Unit #4 gate lock motor contactor. The contactor was replaced and the unit returned to service.

Hooksett

There were no major planned projects completed at Hooksett in 2012.

Hooksett – 1

A

10/9 – 3.3 days – Y

This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

B

10/12 - 0.1 days – Y

The unit tripped on overspeed. The E-SCC did not receive a no-go alarm with the trip (no lockout). Unable to reach hydro personnel because no one was on call, the E-SCC remotely started the unit per procedure without incident.

C

10/13– 0.1 days – Y

The unit tripped off-line due to overspeed relay operation. PSNH found that the overspeed switch was sticking, lubricated it, and returned the unit to service.

Jackman

There were no major planned projects completed at Jackman in 2012.

Jackman-1

A
1/30 – 0.2 days – N
The unit failed to start due to bus undervoltage with the generator breaker closed. PSNH's investigation found that the contacts on the back side of the generator breaker were not made as they should be thus preventing completion of the start chain. The generator breaker was inspected, had its contacts adjusted and cleaned, and the unit returned to service.

Please also see Outage B,, below.

B
3/29 – 0.0 days – N
When the E-SCC took the unit off-line, it received a no-go alarm. PSNH's investigation again found that the contacts on the backside of the generator breaker were not made as they should be thus preventing completion of the start chain. It appeared that the contacts were being compressed by the in-and-out motion of the breaker. The generator breaker was inspected, the contacts were adjusted and cleaned, and the unit returned to service.

Please also see Outage C, below.

C
7/23 – 16.1 days – N
This planned five-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time and did not place the unit in service overnight.

The contractor inspection of the upper 1200 feet of penstock revealed that it would have to be replaced in 2015 at a cost of $1.5 million. In the current outage, 16 penstock cradles, 203 upper and lower penstock bands, and 521 bottom penstock bands were replaced. PSNH fabricated the replacement bands. Please see Outage D, below.

During this outage, PSNH determined that a washer was missing from the actuator contacts for the generator breaker. The manufacturer stated that the washer was a fiber washer.

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PSNH believes that over time, the washer had broken down and caused the misalignment of the actuator. PSNH replaced the washer with a metal washer and realigned the actuator. Maintenance was completed and the unit returned to service.

D

8/9 – 48.2 days – Y

The unit was taken out of service when a neighbor reported to PSNH that there was a problem with the wooden section of the penstock. PSNH found that multiple upper and lower penstock bands had failed with many of them being ones installed in the outage that ended one day earlier.

PSNH had previously manufactured upper and lower penstock bands for the penstock. PSNH discovered that the manufacturing process for the upper and lower penstock bands was different than that of upper and lower bands that had been previously fabricated.

The bands are coupled together by a “ball and hook” arrangement where the ball end slides into the hook end and is then tightened by threaded adjustors. In the original manufacturing process the “hook” end was screwed on to a threaded rod and welded and nuts were welded on to a threaded rod to form the ball connection. In the recent fabrication process, all materials were the same grade, material, size, and shape. The “hook end of the tightening mechanism also remained the same; however, the “ball” end manufacturing process was changed. In the most recent process, PSNH slipped a hollowed piece of metal over a straight rod and plug welded (welded in the end hole) the “ball”. Welders who are boiler-pressure-vessel certified preformed the welding. No tensile strength of the new “ball” design was performed.

At the beginning of the outage, PSNH ordered new upper and lower penstock bands from the original manufacturer. Those materials were used to repair the penstock. When repairs were completed, the unit was returned to service.

E

10/6 – 0.2 days – N

The unit tripped due to a general bearing annunciator drop that could be either oil or temperature related. PSNH’s investigation could not determine a root cause for the trip. Annunciator alarms were reset and the unit was returned to service in reserve status. Please also see Outage F below.

F

10/7 – 0.1 days – N

The unit tripped due to due to a general bearing annunciator drop that could be either oil or temperature related. PSNH’s investigation could not determine a root cause for the trip and temperatures were normal when the operator arrived. Annunciator alarms were reset and the unit was returned to service. Because two trips had occurred in two days, PSNH returned to the station the next day when the unit was scheduled to run and found that there was no oil flowing through the middle guide bearing oil line.

PSNH adjusted the oil flow switch for the middle guide bearing and oil began to flow. PSNH monitored oil flow and temperatures longer than the time to trip from unit start for the two trips and noted no irregularities.

Note: A new oil system was installed during the annual inspection.

G
10/11 – 0.0 days – N
The normally closed contacts on the unit braking mechanism failed. The contacts were replaced and the braking system was realigned. In order to test the unit braking system, the unit was shut down. When testing was completed, the unit returned to service.

H - (Related to a T&D event)
10/29 – 0.0 days – N
This outage occurred during Hurricane Sandy. A fault occurred on the radial 3140 34.5kV line from Jackman to Antrim due to an insulator failure. The unit over-tripped for this condition. There were too many operations occurring at this time to get useful information from the Jackman disturbance recorder.

Smith

There were no major planned projects completed at Smith in 2012.

Smith-1

A - (Related to a T&D event)
1/10 – 2.3 days – Y
To accommodate the rebuild of the East Side 115kV transmission yard in Berlin, the unit was scheduled out of service so that it could temporarily be tied into the S-136 115kV line to Whitefield. When connections were made, the unit returned to service.

B - (Related to a T&D event)
1/15 – 0.2 days – Y
A 34.5kV capacitor bank at the Harris Wind Farm failed. Although proper protection equipment operated to clear the failed capacitor bank, the unit over-tripped for this fault. PSNH's investigation found no cause for the trip and that there were no disturbances on the 115kV system. The unit was returned to service without incident.

C
2/1 – 0.1 days – Y

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The unit shut down due to a low headwater event. A broken cable on the bascule float on the bascule gate (overflow gate) causes the bascule gate to open thus reducing the upper pond level below its lowest operating level. The cables were last inspected during the previous annual inspection.

The cable was repaired, the float was realigned, and the unit returned to service.

D
2/22 – 0.1 days – Y
The unit tripped and the relay targets were the generator protection and generator step-up transformer protection relay, both with lockout. No cause for the trip could be found and the unit was restarted without incident. Please also see Outage E, Outage F, and Outage G, below.

E
3/20 – 0.1 days – Y
The unit tripped and the targets were the generator protection and generator step-up transformer protection relay, both with lockout. PSNH suspected that the relay setting on the generator step-up transformer neutral (restrictive earth fault setting) was problematic. No cause for the trip could be found and the unit was restarted without incident. Please also see Outage F and Outage G, below.

F
3/26 – 0.2 days – Y
This outage is similar to Outage E, above. Eaton was called in on March 21, 2012 to review the series of trips. See Outage G, below.

G
3/26 – 1.7 days – Y
After returning to service from Outage F, above, the unit tripped again in 5 minutes. Eaton discovered that a last minute change in earth relay setting change occurred when switchgear and control relays were put into service and not included in March 21, 2012 relay change. When the faulted switchgear and control relays were replaced, new digital (not mechanical) relays which had a much lower “earth” setting, were used so that they could pick up small levels of ground current and would clear in a much faster time.

Eaton revised the relay setting and the unit returned to service.

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H - (Related to a T&D event)
8/7 – 0.0 days – Y
The unit was taken out of service to repair a broken guy wire on the S-136 115kV line between Whitefield and Berlin, the units' temporary feed. Repairs were made and the unit returned to service.

9/8 – 12.2 days – Y
This planned twelve-day outage was taken to perform the annual inspection of the unit. A visual inspection, general cleaning, and equipment tests were performed. Both the turbine and generator were inspected. In addition, a complete inspection of all underwater structures was completed. The water flow was low at this time and the generator was not needed to capture the existing flow. PSNH conducted the outage on straight time with limited over time and did not place the unit in service overnight.

J
11/6 – 24.4 days – Y
The unit tripped due to the catastrophic failure of the recently installed 6.6 kV capacitor relating to the 2011 switchgear and controls replacement. The failure was internal and was due to a manufacturing defect. The capacitor bank was replaced with the vendor taking financial responsibility for both labor and materials.

Evaluation for Hydro Unit Outages Except for Outage Eastman 2-I and Outage Jackman 1-D

Accion Group reviewed these outages and found them either to be reasonable and expected for these units and their vintage, or necessary for proper operation of the units. Accion Group concluded that PSNH conducted proper management oversight in the operation of these units.

Evaluation for Outage Eastman 2-I

PSNH experienced a runner control problem at Eastman Falls Unit #2 on July 13, 2012. As a result of restructuring of the electric supply market, PSNH has moved certain capabilities outside of the corporate umbrella and has relied on the market place for certain expertise. In this outage, the market expertise (Andtriz) that PSNH relied upon was not contracted to be available and in fact could not respond to PSNH's needs for approximately two and one-half months. Andtriz was able to provide PSNH with an alternative vendor, HCMS, but that they too had difficulties in a timely response to PSNH as they could not timely locate a qualified field service technician with proper experience.

Accion believes that PSNH did not adequately foresee and plan for outside technical assistance that would be required for expected outage conditions. As a result, qualified personnel could not be on-site for approximately one-month after the outage occurred. Accion does understand that it does take a finite time to prepare for a response to a situation. Accion believes that two weeks would be a reasonable period of time needed to respond to an unexpected outage and, therefore,

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recommends that the last two weeks of replacement power costs for the outage not be recovered from customers.

In addition, Accion recommends that PSNH submit the results of its insurance recovery with its submittal of the 2014 review of 2013 ES/SCRC costs.

Evaluation for Outage Jackman 1-D

PSNH had previously manufactured upper and lower penstock bands for the penstock. PSNH discovered that the manufacturing process for the upper and lower penstock bands was different than that of upper and lower bands that had been previously fabricated.

The bands are coupled together by a "ball and hook" arrangement where the ball end slides into the hook end and is then tightened by threaded adjustors. In the original manufacturing process the "hook" end was screwed on to a threaded rod and welded and nuts were welded on to a threaded rod to form the ball connection. In the recent fabrication process, all materials were the same grade, material, size, and shape. The "hook" end of the tightening mechanism also remained the same; however, the "ball" end manufacturing process was changed. In the most recent process, PSNH slipped a hollowed piece of metal over a straight rod and plug welded (welded in the end hole) the "ball". Welders who are boiler-pressure-vessel certified performed the welding. No tensile strength of the new "ball" design was performed.

Accion understands that the change in the design of the "ball" end design was to facilitate a reduced time response. Although certified welders performed the welds, and the welds were of acceptable quality, Accion believes that PSNH failed to realize that the welded surface area was significantly reduced and made no effort to assess the strength adequacy of the new design.

Accion therefore recommends that the incremental (two weeks at the end of the outage) replacement power costs for this outage not be recovered from customers.

Exhibit MDC-7 Combustion Turbine Outages for 2012

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Combustion Turbine Outages For 2012

The following outages took place at PSNH's combustion turbine units during 2012.

Lost Nation

There was no major work completed at Lost Nation CT-1 during 2012.

Lost Nation – CT-1

A
2/13– 0.4 days
This outage was taken to perform station testing involving the voltage regulator and the sequencer. The testing was performed and the unit returned to service.

B
5/7 – 11.2 days
This scheduled five-day outage was taken to perform the annual maintenance/inspection overhaul. The work performed included a visual inspection, general cleaning, annual equipment tests, servicing the diesel starter engine (only combustion turbine ["CT"] with this type of starter), and testing of the speed sensors. Testing and inspections revealed no abnormalities.

C
8/9 – 7.5 days
During the annual inspection in Outage B above, PSNH tested the speed sensors and they tested okay. Since returning to service from that outage, PSNH had been experiencing problems with the speed sensors. The investigation found problems with the speed sensor computer boards. Repairs and replacements were made and the unit returned to service.

White Lake

There was no major work completed at White Lake CT-1 during 2012.

White Lake – CT-1

A
4/23 – 4.4 days
This scheduled five day outage was taken to perform the annual maintenance and inspection overhaul. The work performed included a visual inspection, general cleaning,

annual equipment tests, and servicing the diesel starter engine. Testing and inspections revealed no abnormalities.

At the end of the annual inspection, PSNH conducted the required Independent System Operator-New England ("ISO-NE") black start ten minute test. The unit passed the test and returned to service.

B
9/25 – 0.1 days
The unit was taken out of service in order to service the fire suppression system because a fire system alarm was received. PSNH's investigation found that moisture had penetrated a waterproof enclosure and corroded an alarm connection. The enclosure cover was repaired and sealed and anti-corrosion protection was applied to all terminations.

In addition, PSNH's investigation revealed that the contractor was checking systems for function only. The contractor was not checking all terminations and junction boxes during its inspections as those items were not on the annual inspection list. PSNH has since added termination and enclosure inspection to the items on the annual inspection list.

Schiller

There were no major projects scheduled at Schiller CT-1 during 2012.

Schiller - CT-1

A
2/2 – 0.1 days
The unit was taken out of service to perform the required Northeast Power Coordinating Council's trip testing requirements. The testing required that the unit be out of service and was performed early in the year to avoid the summer peak period.

B
5/14 – 4.1 days
This scheduled five day outage was taken to perform the annual maintenance and inspection overhaul. The work performed included a visual inspection, general cleaning, annual equipment tests, and servicing the diesel starter engine. Testing and inspections revealed no abnormalities.

At the end of the annual inspection, PSNH conducted the required ISO-NE black start ten minute test. The unit passed the test and returned to service.

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C

9/11 – 5.8 days

Federal gas safety rules require that gas transmission companies assess high consequence areas (assuming a rupture occurs) on a ten-year frequency basis. Granite State Gas Transmission Company contacted PSNH about the test as the gas pipeline that feeds Newington Station passes close to the CT and is near the location where venting would be required. The CT no longer burns gas as it is uneconomic to do so as a retail customer. Granite State originally planned to perform the test in July when gas demand is typically low, but negotiations with PSNH pushed the test off until after the peak electrical demand period. PSNH took the unit out of service for safety considerations. The testing was performed and the unit returned to service.

Merrimack

There were no major projects scheduled at Merrimack CT-1 or CT-2 during 2012.

Merrimack CT-1

A

4/24 – 0.2 days

CT-1 was required to be out of service for replacement of a high-side blown potential transformer fuse on CT-2. CT-1 and CT-2 share a common generator step-up transformer. Please see Outage CT-2A below for the outage description.

B

5/24 – 3.3 days

This scheduled 5-day outage was taken to perform the annual maintenance/inspection overhaul. The work performed included a visual inspection, general cleaning, and annual equipment tests. Testing and inspections revealed no abnormalities.

C

9/6 – 0.2 days

While conducting the fire suppression inspection, pressure in one of the CO_2 bottles was found to be low. The bottle could only be filled in Malden, Massachusetts, requiring that the unit be declared out of service. The bottle was refilled and replaced, and the unit returned to service.

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Merrimack CT-2

A

4/24 – 0.2 days

The unit was taken out of service to replace a blown high voltage potential transformer fuse. The fuse was replaced, the transformer was tested, and the unit was returned to service. As noted above in Outage CT-1A, CT-1 was also taken out of service because of the common step-up transformer. PSNH could not determine the reason why the fuse blew but stated there was no indication that the outage was lightning caused. Merrimack Station continues to monitor the fusing at this location.

B

5/23 – 2.5 days

This scheduled five day outage was taken to perform the annual maintenance and inspection overhaul. The work performed included a visual inspection, general cleaning, and annual equipment tests. Testing and inspections revealed no abnormalities.

C

6/5 – 0.2 days

PSNH visually suspected a shaft seal oil leak was occurring. The unit had to be taken out of service in order to perform the required oil seal testing to determine if a leak was occurring. No leak was found and the unit returned to service.

In addition, PSNH required increased monitoring of this area in further inspections.

D

9/11 – 0.9 days

The unit would not start due to the deteriorated condition of the voltage regulator. PSNH took the unit off-line, put the voltage regulator in manual control, and started the unit. Once running, voltage control was switched to automatic. This voltage regulator was near the end of its useful life. A replacement has been in stock since early 2011, pending previous application to ISO-NE for approval. Approval by the ISO-NE was given on November 8, 2012 to replace the both the CT-1 and CT-2 voltage regulators at Merrimack Station. The CT-2 voltage regulator is scheduled to be replaced in December 2012. Please see Outage CT-2E below.

The voltage regulator was replaced in Outage E below. The station’s intent was to monitor the operation of the CT-2 voltage regulator before replacing the CT-1 voltage regulator to ensure that operational characteristics were acceptable.

Note: Monitoring results were acceptable, but procurement time and planned fall 2013 work indicate that the CT-1 voltage regulator cannot be replaced until the spring 2014 annual inspection outage.

E
12/7 – 1.6 days
The unit was taken out of service to replace the voltage regulator. The voltage regulator was replaced and the unit returned to service.

Evaluation for Combustion Turbine Outages

Accion Group reviewed the outages above and found them either to be reasonable and not unexpected for these units and their vintage, or necessary for proper operation of the unit. Accion Group concluded that PSNH conducted proper management oversight during these outages.

Exhibit MDC-8   W. F. Wyman – 4 Outages for 2012

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W. F. Wyman 4 Outages For 2012

W. F. Wyman Station

The W. F. Wyman Station was sold in the 1990s to a competitive power supplier and competes in the New England competitive market to sell its power. PSNH is a minority owner (approximately three percent) of Unit #4 at the station. Nextera Energy Resources owns the majority of the unit and is responsible for day-to-day operations. As a minority owner, PSNH is aware of how the plant conducts business. However, PSNH has little influence over day-to-day operations of the plant. Accion Group makes this distinction because it believes the extent of outside ownership makes the measurement of prudence different than the measurement used for PSNH’s wholly-owned and controlled units providing energy at cost to PSNH customers. This unit is a high cost oil unit operating under tight environmental restrictions and at an annual capacity factor of less than five percent.

The major projects performed at Wyman 4 in 2012 included the replacement of the superheater header in the boiler, replacement of the precipitator controls, and tying the auxiliary boiler controls into the digital control system in addition to the complete boiler inspection performed during the annual overhaul in Outage B, below.

W. F. Wyman 4

A - (Outage Report 2012-4)
3/18 – 6.0 days
In late 2011, an oil leak developed in the front standard oil seal of the high pressure turbine near the shaft driven permanent magnet generator that supplies power to the voltage regulator. Vibration was tolerable and the leak was considered manageable. In early 2012, management of the leak became more problematic and it was decided to replace the oil seal. The turbine oil seal had not been worked on since the late 1990s. This planned outage was taken to replace the oil seal. The seal was replaced and the unit returned to service without incident.

B
10/6 – 29.7 days
This outage was taken to perform the annual overhaul of the unit. The outage had an Independent System Operator - New England ("ISO-NE") window of 30 days (10/6/12 to 11/4/12) and was internally scheduled for completion in 30 days (10/6/12 to 11/4/12). The critical path throughout the outage was the work associated with the replacement of the superheater header. The superheater header experienced cracking in previous years, and as a result, boiler experts prepared a life expectancy of the header based on number of starts

and hours of operation from that date forward. Replacement was required in this outage as the previously predicted life expectancy of the header was being approached. Other major work during the outage included a complete inspection of the boiler, replacement of the precipitator controls, and tying the auxiliary boiler controls into the digital control system. The work was completed on schedule.

C
11/8 – 0.1 days
The unit was in start-up and the main fuel oil trip solenoid valve did not completely open, causing a pause in the start-up. The solenoid valve was exercised and the unit was started. The solenoid valve was replaced at a later date.

D
12/30 – 0.4 days
The unit tripped when the voltage regulator tripped, which was caused by voltage spikes of both the field and terminal voltages when the field breaker was closed. Investigation found that the manual voltage regulator was at its high set point, and not the low set point where it should have been. The set point of the manual voltage regulator was reset to the low set point, and while the spikes to both the field and terminal voltage remained, they were within tolerance and did not trip the unit. The unit returned to service. A specific cause for the trip could not be specifically determined at that time. Limited troubleshooting continued by a voltage regulator expert while the unit was on-line.

Accion notes that a similar incident occurred on January 1, 2013, and a burnt out resistor in the circuit that transfers relay control from manual to automatic was found in one of the voltage regulator circuit boards. The circuit board was replaced, the issue was corrected, and the unit returned to service.

Evaluation

Accion Group reviewed the above outages and found them either to be reasonable and not unexpected for this unit and its vintage, or necessary for proper operation of the unit. Accion Group concluded that PSNH conducted proper management oversight.

Exhibit MDC-9 Open Stipulation Items from Prior Years

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Open Stipulation Items from the 2012 Review of 2011 Operations

As part of the Stipulation Agreement ("SA") signed at the conclusion of the 2012 review (Docket DE 12-116) of Energy Service/Stranded Cost Recovery Charge ("ES/SCRC") costs and revenues, Public Service Company of New Hampshire ("PSNH") agreed to perform the actions contained in the following recommendations and report on the progress of each in its May 2013 ES/SCRC filing.

Recommendation No. 2012-1 **Re: Scrubber Installation at Merrimack**

Accion stated that due to the installation of the scrubber there are now situations that may exist that could result in failures of both Merrimack units. Accion therefore recommended that, if it has not already done so, PSNH should review the interaction of the scrubber with both units to identify possible failure conditions and determine the need for spare parts or additional redundancy to maximize operational efficiency.

PSNH Action Required

PSNH agreed to continue its review of the new scrubber installation and assess potential failure modes to determine the necessity for spare parts or additional redundancy.

PSNH Action

During the design phase of the scrubber, PSNH worked with an engineering firm to develop an equipment redundancy summary. The evaluation included a review of the absorber, various pumps, tanks, gypsum handling, air compressor system, and ball mills. The final design included redundant systems for all critical equipment.

During the construction phase of the scrubber project, PSNH worked closely with the program manager, URS Corporation ("URS"), in developing a spare parts inventory. URS tasked each of the contractors with providing a recommended inventory list for each scrubber system, reviewed with PSNH the recommended inventory list, and comprehensively conducted a review of those lists to ensure completeness. The final spare parts inventory list for the scrubber consisted of over 500 items and was considered consistent with industry standards for the scrubber system.

PSNH has also developed an ongoing dynamic process to address the adequacy of spare parts, redundancy, parts availability in the marketplace, performance of the scrubber, and inventory level reviews.

Planning and operational considerations were considered in the design of the scrubber project.

Recommendation

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Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

Recommendation No. 2012-2   Re: Planned Outages

Accion noted that during planned outages decisions are made about assumptions used to develop an outage schedule, but that during a planned outage at Merrimack, certain assumptions required refinement during the outage that resulted in planning schedule changes. Accion recommended that PSNH review all planned outage schedules prior to the outage to detect any assumptions that need to be verified.

PSNH Action Required

PSNH agreed to review planned outage schedules to detect assumptions that need to be verified.

PSNH Action

PSNH reviews its outage schedules prior to the outage to ensure that assumptions are correct. In addition, PSNH has always conducted "what if" analysis to determine the flexibility of its outage schedule and to formulate hedging actions as required at the discretion of the outage team. That process has been more formalized in order to open more dialog and anticipatory thinking, planning, and contingency readiness.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

Recommendation 2012-3   Re: Use of Refurbished Equipment

Accion stated its belief that PSNH will be using increased amounts of used or refurbished equipment as its unit fleet ages and recommended that PSNH add the testing performed on such equipment to the history documentation of the equipment. Accion recommended that this be implemented at all stations including the hydro units and that expectations about testing and documentation be made clear to vendors.

PSNH Action Required

PSNH agreed to add testing performed on refurbished parts to the part's history documentation. This will be implemented at each station including the hydro units and testing expectations will be made clear to vendors.

PSNH Action

PSNH understands that used equipment needs to be tested to ensure functionality for its replacement purposes. PSNH has added testing history to its used parts for its power plants and reviewed its testing requirements for used parts.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

Recommendation 2012-4 Re: Start-Up Commitments to Independent System Operator – New England ("ISO-NE")

Accion recommended that in satisfying the needs of the ISO-NE, PSNH make it clear to ISO-NE and all its unit operators that all requested unit starts that are shorter than committed start-up times will be on a best efforts basis and that PSNH is not responsible if the start-up time requested is less than the committed start-up time requirement.

PSNH Action Required

PSNH agreed to make clear to the ISO-NE that all requested unit starts that are shorter than committed start-up times are made on a best efforts basis only and that it is not financially responsible if the start-up time requested is less than the committed start-up time.

PSNH Action

PSNH has reviewed the notification times of its units to ensure accuracy and has communicated this information to the ISO-NE. PSNH has also met with its operators to ensure that PSNH does not commit to accelerated start times. PSNH will continue to be flexible and start the unit as soon as possible when requested, but will not commit to an accelerated start time.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

Recommendation 2012-5 Re: Generator Interconnections

Accion noted that when PSNH was making repairs required by Smith Outage 1C, PSNH was installing a 115 kV breaker where there had not been one before. Accion recommended that PSNH review all generation tie-in configurations to assess the risk of possible failures similar to the one at Smith and address any risks that are discovered.

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PSNH Action Required

PSNH agreed to review its generation tie-in configurations, assess the risk of similar failures, and, as appropriate and economical, address the risks found.

PSNH Action

PSNH completed a review of each generator's tie-in configuration on both the high and low voltage systems. The results of this review led PSNH to conclude that the interconnections are consistent with good utility practice for the type and vintage of these generating units.

In recent years, PSNH has improved reliability and system protection at its generator interconnections if economic to do so. PSNH has installed high side circuit breakers at both Jackman and Smith stations. In addition, PSNH has replaced the low side circuit breaker at Ayers Island, is currently in the process of replacing the step-up transformer at Ayers Island, and has replaced one of the step-up transformers at Garvins Falls.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

<u>Recommendation 2012-6</u> Re: Use of Mercoid Switches

Accion recommended that to avoid unit interruptions caused by outdated Mercoid switches, PSNH develop a program to replace those switches within a finite time at the hydro, and all other, generating facilities.

PSNH Action Required

PSNH agreed to develop a time bounded program approach for replacement of Mercoid switches at its hydro stations and other generating facilities with identified opportunities and submit the switch replacement schedule.

PSNH Action

PSNH recognizes that changing out of Mercoid switches is necessary. PSNH hydro has developed a replacement program that will change out all Mercoid switches with Reed switches at its hydro stations by December 31, 2018.

At PSNH fossil stations, PSNH has more flexibility in the replacement of these devices, as reconfiguration of the original design of the system is not required. As a result, Mercoid switch issues have not been a problem at the fossil stations. PSNH, therefore, has not developed a predetermined schedule to replace Mercoid switches at its fossil stations and will replace them on an as-needed basis.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

Recommendation 2012-7 Re: Date of Hydro Station Seasonal Temperature Setting Changes

Accion recommended that PSNH review and modify the time of year it changes its hydro stations to summer temperature settings to account for early or late season weather events, or that PSNH eliminate the winter temperature period altogether.

PSNH Action Required

PSNH agreed to review the time of year it changes temperature settings to address early or late season temperature changes.

PSNH Action

During the spring, particularly when the building ventilation system is not configured for summertime operation, outages have occurred due to elevated building temperatures.

PSNH readiness for summer-time ventilation operation of its hydro stations requires manual modifications of louvers, etc. To address this issue, PSNH has triggered a discussion that starts on April 15th with hydro personnel that will institute summer-time building ventilation system requirements if weather conditions substantiate such action. In addition, PSNH is considering ventilation controlled by barometric dampers to reduce the chance of high bearing temperature conditions.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item with the caveat listed directly below.

Accion also recommends that PSNH submit the results of its barometric controlled ventilation analysis along with its future plans in this regard in the 2014 review of 2013 ES/SCRC costs and revenues.

Recommendation 2012-8 Re: Replacement with Not In-Kind Equipment

Accion recommended that when PSNH is replacing equipment with new equipment that is not in-kind, a hold should be placed on the replacement until the new equipment is well understood.

PSNH Action Required

PSNH agreed to reinforce to employees (e.g., engineers, operators, and mechanics) the importance of understanding and confirming the appropriateness of a replacement that is not in-kind.

PSNH Action

PSNH completed a training session of employees who would be involved with not in-kind equipment replacements. PSNH further emphasized the need to verify that replacement parts need to be verified that they are consistent with the particular system design. This training is also given to new hires.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

<u>Recommendation 2012-9</u> Re: Compatibility of Materials at Interface Connections

Accion recommended that PSNH review changes in the compatibility of materials used in interface connections and strengthen training for proper installation of various interface-sealing mechanisms at all stations, including hydro operations.

PSNH Action Required

PSNH agreed to review changes in the compatibility of materials used in interface connections and to strengthen its training of proper installation of the various interface sealing mechanisms at all of its stations.

PSNH Action

PSNH now makes a point to discuss workmanship issues during the daily outage meetings at each generating plant. In addition, PSNH has obtained two training documents written by the Electric Power Research Institute titled "Static Seals Maintenance Guide" and "Mechanical Seal Maintenance and Application Guide". These publications are comprehensive technical documents designed to assist plant engineering and maintenance personnel in static and mechanical seal maintenance. These documents have been transmitted to all fossil and hydro station maintenance supervisors and working foremen for their review and future reference.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

<u>Recommendation 2012-10</u> Re: Over Trips on Lower Voltage System, Coordination Studies, and Transient Stability Analysis

Accion noted that PSNH is conducting coordination studies that also require a transient stability analysis. Accion recommended that if the over-trip outages are found to be systemic upon conclusion of the PSNH analysis, that system reliability design incorporates the unit over-trips into system design criteria on a local basis only if other economic remedies are not available.

PSNH Action Required

PSNH agreed to perform coordination studies at its smaller stations. PSNH also agreed to acquire the capability to perform in-house transient stability and perform transient stability studies at Canaan and Jackman hydro areas first before proceeding with other generating locations. In addition, PSNH agreed that subsequent to the completion of these two transient stability analyses, PSNH will identify the most cost-effective next steps. Relative to the extent that systemic issues are identified as associated with over trip outages, PSNH will determine prudent action on an on-going basis using good engineering judgment.

PSNH Action

Since the 2012 update, PSNH has completed a relay coordination study at Smith Station. The study concluded that overlapping zones of protection protected Smith station. In addition, high-speed fault clearing will occur for all phase faults within the facility and that no transmission coordination problems exist. Recommended relay setting adjustments will be completed during the 2013 annual inspection outage for the unit.

In 2012, PSNH also developed the in-house capability to conduct transient stabilities, trained in-house personnel in that expertise, and conducted transient stability studies at Canaan and Jackman stations, the two units most prone to system instability. PSNH modeled both peak and light load conditions and simulated faults in the area of the study unit. The results of those studies generally agree with actual fault scenarios, but not as well as anticipated. The PSNH model included the generator step-up transformer impedance as part of that of the unit. In the Jackman study, some units were netted with load and not dynamically represented. Accion requested that PSNH verify that the model was conservative as stated by PSNH by rerunning some faults with all step-up transformers represented, all generators represented, and an updated load model that PSNH is currently developing.

Recommendation

Accion recommends that this item remain open.

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<u>Recommendation 2012-11</u> Re: Vegetation Outages along Rights-of-Way

Accion recommended that PSNH initiate a five-year distribution vegetation management program that continually addresses danger trees (known as risk trees to PSNH) outside of the rights-of-way as part of its distribution maintenance cycle and that a similar program for the transmission vegetation management cycle also is initiated.

PSNH Action Required

PSNH agreed to conduct a vegetation inspection along the 355 and 355X10 34.5kV circuits connected to the Canaan Hydro Station during the fourth quarter of 2012 in preparation of full right-of-way maintenance in 2013, and a vegetation inspection of the 335/332 34.5kV circuits that are connected to the Hooksett and Garvins Hydro Stations. PSNH transmission further agreed to implement the recently developed transmission plan to remove trees from outside the right-of-way when they pose a risk to the line and the easement allows for removal of such trees, contingent upon funding and available easements. PSNH will notify the New Hampshire Public Utilities Commission ("NHPUC") of the final budgeted amount and the completion of the project versus the transmission right-of-way maintenance program.

PSNH distriburtion agreed to complete a circuit-by-circuit analysis and identify the rights-of-way that contain easements that allow PSNH to address risk trees outside of the right-of-way. PSNH also agreed to continue its full right-of-way clearing program for the duration of the existing Reliability Enhancement Program. PSNH will remove risk trees outside of the right-of-ways when they are identified and the easement allows for removal of such trees. If the easement does not allow removal, a reasonable attempt will be made to contact the property owner for permission to remove the tree.

PSNH Action

PSNH inspected the 355X10 34.5 kV line in 2011 and all hazard trees were removed. The 355 34.5 kV line was patrolled in 2011 and hazard trees were removed in 2012. Additionally, the right-of-way for the 355 34.5 kV line will be mowed in 2013.

PSNH patrolled the 335/332 34.5 kV lines in 2010 and hazard trees were removed in 2011.

PSNH distribution completed a circuit-by-circuit analysis and identified which easements have the authority to remove hazard trees that are outside of the right-of-way. PSNH reports that most of the easements have these tree removal rights. PSNH has incorporated the removal of hazard trees into its scheduled and enhanced vegetation management programs for the duration of the Reliability Enhancement Program.

PSNH transmission also agreed to the removal of hazard trees outside of its rights-of-ways if allowed to do so by easement. In 2013, $600,000 was allocated to New Hampshire transmission rights-of-ways to begin a four-year schedule for hazard tree removal. As of

October 2013, $675,000 was spent for the removal of over 5,550 hazard trees. PSNH also stated that the program was contingent on funding and easements.

Accion confirmed that PSNH transmission is also making a good faith effort to remove hazard trees that are out of the right-of-way where no easement exists. PSNH stated that the program has been included in the 2014 budget, but that budget has not been approved.

Recommendations

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item, except for the limited purposes of tracking results as described in the caveat listed directly below.

Accion also recommends that PSNH submit the results of its transmission and distribution efforts to remove hazard trees as part of its annual filing of ES/SCRC costs and revenues for the next four filings beginning in 2014. At that time the distribution and transmission systems would have a complete cycle finished.

Accion further recommends that Reliability Enhancement Program funding continue to be made available to remove distribution hazard trees and full right-of-way width clearing.

Recommendation 2012-12 Re: Recovery of Insurance Deductible Regarding the 2008 MK-2 Turbine Outage

Accion recommended that where litigation was ongoing, that PSNH track the boiler and machinery insurance deductible recoupment.

PSNH Action Required

PSNH agreed to update the status of the ongoing litigation regarding the MK-2 turbine outage.

PSNH Action

PSNH joined the lawsuit against Babcock and Wilcox in an effort to recover the $1 million boiler and machinery insurance deductible related to the 2008 failure of the new high pressure/intermediate pressure turbine. Litigation activities including depositions are currently under way. PSNH recently re-evaluated its position in this case.

Without regard as to the merits of the suit, PSNH's recent evaluation of the case considered how the case has developed over time, the amount of time and money expended to date, the amount of time and money to be expended, and the projected length of the case. PSNH concluded that the case would be drawn out and that its expenditures would exceed any payment assuming the PSNH suit was successful. PSNH has therefore decided to withdraw from the suit against Babcock and Wilcox.

Recommendation

Accion agrees that PSNH's actions satisfy the intended purpose of the SA and recommends closure of this item.

Summary

Recommendation 2012-1: Close

Recommendation 2012-2: Close

Recommendation 2012-3: Close.

Recommendation 2012-4: Close.

Recommendation 2012-5: Close

Recommendation 2012-6: Close.

Recommendation 2012-7: Close with follow-up filing of barometric damper control findings in 2014 ES/SCRC filing.

Recommendation 2012-8: Close.

Recommendation 2012-9: Close.

Recommendation 2012-10: Remain open and reported on in the 2014 ES/SCRC filing.

Recommendation 2012-11: Close with hazard tree transmission and distribution updates for the 2014-2017 ES/SCRC filings. REP to address continued funding for distribution danger tree removal and distribution full right-of-way clearing.

Recommendation 2012-12: Close.

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Exhibit MDC-10 Data Responses

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Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-001
Page 1 of 2

Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Shelnitz testimony, Attachment MLS-2 (Bates 11): For the planned outages listed on page 10 of Smagula testimony (Bates 75), please supply the replacement power costs calculated in the same manner for the values in MLS-2.

Response:
Please see the attached table.

2011 O&M Actual ($ X 1,000)							
Location	NU Labor	Materials & Supplies	Outside Services	Contractor Labor	Fees & Payments	Other	Total
Merrimack	8,841	7,721	2,330	12,239	1,526	285	32,942
Schiller	6,512	2,999	799	7,827	619	294	19,050
Newington	3,360	675	153	1,310	159	147	5,804
Hydro	2,584	644	1,107	485	341	457	5,618
Staff, GM & Wyman	2,304	162	1,168	115	118	445	4,312
Totals	**23,601**	**12,201**	**5,557**	**21,976**	**2,763**	**1,628**	**67,726**

2012 O&M Actual ($ X 1,000)							
Location	NU Labor	Materials & Supplies	Outside Services	Contractor Labor	Fees & Payments	Other	Total
Merrimack	8,159	2,200	1,309	2,209	614	255.0	14,746
Schiller	6,248	2,400	942	2,935	105	148.0	12,778
Newington	3,319	550	268	1,658	46	144.0	5,985
Hydro	2,716	1,272	804	667	373	613.0	6,445
Staff, GM & Wyman	2,560	184	1,449	42	585	468.0	5,288
Totals	**23,002**	**6,606**	**4,772**	**7,511**	**1,723**	**1,628**	**45,241**

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-002
Page 1 of 3

Witness: **Michael L. Shelnitz, Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Shelnitz testimony, Attachment MLS-4, page 8 (Bates 21). For Merrimack, Schiller and Newington Stations, please provide, by month and fuel type, the monthly per unit delivered fuel costs.

Response:
Please see pages 2 and 3 of this response.

Merrimack Station
2012 Monthly Per Unit Delivered Fuel Costs

	Coal Cost/Ton	#2 Oil Cost/Gallon
January	$ 100.84	$ 3.36
February	109.35	3.49
March	109.49	3.54
April	108.62	3.61
May	111.34	3.59
June	-	2.90
July	-	3.21
August	101.42	3.43
September	88.07	3.69
October	111.35	3.56
November	105.96	3.81
December	113.50	3.38

Newington Station
2012 Monthly Per Unit Delivered Fuel Costs

	#2 Oil Cost/Gallon	Gas Cost/MCFs
January	$ 3.22	$ 8.58
February	3.24	-
March	3.34	8.11
April	-	-
May	-	-
June	2.82	6.89
July	2.92	5.12
August	3.08	4.91
September	-	7.20
October	-	-
November	3.19	6.41
December	-	-

Schiller Station
2012 Monthly Per Unit Delivered Fuel Costs

	Coal Cost/Ton	Wood Cost/Ton	Gas Cost/MCFs
January	$ -	$ 29.53	$ 10.18
February	-	28.62	-
March	-	30.90	12.33
April	-	27.51	14.96
May	-	30.17	-
June	-	30.20	4.28
July	-	30.21	11.18
August	-	30.22	-
September	-	30.18	3.18
October	-	30.15	8.21
November	84.34	30.14	7.48
December	87.32	30.07	24.95

Public Service Company of New Hampshire
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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-003
Page 1 of 2

Witness: **Michael L. Shelnitz**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Shelnitz testimony, Attachment MLS-4, page 10 (Bates 46), line 3. Please provide a detailed listing, by month, of the items included in the ISO-NE Ancillary costs.

Response:
Please see page 2 of 2.

Public Service Company of New Hampshire
Detail of ISO-NE Ancillary Costs
January 2012 -- December 2012
($000s)

	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Total
Account 44770 **(a)**	(7)	(976)	(43)	(80)	(51)	(1)	(16)	(62)	(77)	(31)	(19)	(163)	(1,527)
Account 5554N **(a)**	68	53	39	43	70	146	208	40	187	78	73	208	1,213
Account 44778 **(b)**	(24)	(10)	(10)	(10)	(8)	(8)	(7)	(8)	(10)	(9)	(9)	(9)	(122)
Account 55529 **(b)**	1	6	5	0	0	1	0	3	2	2	3	8	32
Account 57570 ISO Schedule 2 **(c)**	145	160	200	159	146	111	122	132	181	153	114	117	1,739
Account 57571 ISO Schedule 3 **(d)**	67	91	99	94	85	76	76	107	109	95	87	76	1,062
Account 555LR Load Response **(e)**	(2)	2	8	1	2	11	18	14	13	6	7	11	92
Total ISO-NE Ancillary Costs	248	(674)	299	207	244	336	402	226	404	293	255	248	2,488

Amounts shown above may not add due to rounding

(a) Includes miscellaneous ISO charges including but not limited to Regulation, Reserve Market, NCPC - Day Ahead, and NCPC - Real Time.
(b) Includes miscellaneous ISO charges for Auction Revenue Rights (ARR) and Financial Transmission Rights (FTR) activity.
(c) ISO Schedule 2 is the cost of the service provided by ISO for administration of the energy market.
(d) ISO Schedule 3 is the cost of the service provided by ISO for administration of the reliability market.
(e) Load Response includes costs associated with Demand Response programs with retail customers who reduce their electricity consumption during periods of peak demand.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-008

Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Cannata testimony in Docket DE 12-116. Please supply the monthly and annual information required to update the tables in Exhibit MDC-2 through 2012, specifically located on page 42, page 44, page 46 (2 tables), page 47, page 51 (2 tables), page 52, and page 53 (2 tables).

Response:

Please see the attached tables:
Page 42 - see page 2 of 9.
Page 44 - see page 3 of 9.
Page 46-1&2 - see page 4 of 9.
Page 47 - see page 5 of 9.
Page 51-1 - see page 6 of 9.
Page 51-2 - see page 7 of 9.
Page 52 - see page 8 of 9.
Page 53-1 - see page 9 of 9.
Page 53-2 - see Staff-01, Q-Staff-016.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 7/19/13
Q-STAFF-008

Percent of PSNH Energy Requirements Supplied from PSNH and Other Suppliers

2012	Peak MW	ES Load MWh Peak	ES Load MWh Off-Peak	PSNH Owned Generation Peak	PSNH Owned Generation Off-Peak	Other Suppliers Peak	Other Suppliers Off-Peak
Jan	933.1	240,195	239,911	69%	74%	31%	26%
Feb	886.7	224,289	198,940	49%	52%	51%	48%
Mar	828.3	214,952	194,745	34%	38%	66%	62%
Apr	727.2	191,417	177,089	13%	15%	87%	85%
May	698.5	201,593	178,010	18%	22%	82%	78%
Jun	1,042.3	215,934	189,360	25%	23%	75%	77%
Jul	1,059.7	252,381	238,161	59%	53%	41%	47%
Aug	964.6	260,724	204,803	34%	30%	66%	70%
Sep	762.9	169,929	188,683	12%	13%	88%	87%
Oct	675.3	194,860	157,659	16%	19%	84%	81%
Nov	772.4	202,450	184,785	43%	37%	57%	63%
Dec	839.8	202,487	224,523	64%	69%	36%	31%
Total	1,059.7	2,571,213	2,376,669	38%	39%	62%	61%

Public Service Company of New Hampshire
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Data Request STAFF-01
Dated: 7/19/13
Q-STAFF-008
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2012 - Wholesale Power Contracts Work Distribution

Function	Full-Time Employees	Dedicated to PSNH
Bidding & Scheduling	2.00	2.00
Resource Planning/Analysis	4.00	2.27
Energy & Capacity Purchasing	2.00	0.78
Standard Offer & Default Service Procurement	3.00	0.00
Contract Administration	3.00	0.00
Renewable Power Contracts	1.00	0.02
Administrative Support	1.00	0.23
Management	1.00	0.12
Total	17.00	5.42

Additional manpower devoted to ADE & scrubber dockets in 2012, and some LCIRP continued into 2012 (e.g. - hearings).

Percent of PSNH Peak and Off-Peak Energy
Requirements Supplied by PSNH and the Markets

	PSNH Resources		Bilateral and Spot Energy	
Year	Peak	Off-Peak	Peak	Off-Peak
2012	57%	63%	43%	37%

2012 - Percent of PSNH Peak and Off-Peak Energy
Requirements Supplied by PSNH Resources

Source	Peak	Off-Peak
Merrimack	22%	22%
Schiller	8%	9%
Hydro	6%	7%
Vermont Yankee	1%	1%
IPP's	17%	22%
Buyout Contracts	1%	2%
Newington	2%	1%
Wyman	0.03%	0.01%
Combustion Turbines	0.01%	0.00%
Bilateral Purchases	25%	10%
ISO-NE Spot Purchases	19%	27%
Total	100%	100%

PSNH Supplemental Purchases and Sources

2012	Supplemental Purchases MWh	LT Bilateral	ST Bilateral	ISO-NE Spot
Peak	1,141,119	40%	18%	42%
Off-Peak	875,643	12%	16%	73%

2012 FTRs Cost and Savings

		$(000)	
Year	Auction Cost	Avoided Congestion Cost	Net Cost (Benefit)
2012	27	81	(53)

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2012 - PSNH Major Unit Heat Rates

	Btu/kWh	
Unit	Average Annual Heat Rate	Full Load Heat Rate
Merrimack 1	10,682	9,900
Merrimack 2	9,853	9,520
Newington	13,069	10,900
Schiller 4	13,489	12,900
Schiller 5	15,552	15,400
Schiller 6	13,375	12,300

2012 - Actual and Projected Annual Capacity Factors for PSNH's Major Units

Unit	Capacity Factor Actual	Projected
Merrimack 1	36.6%	45.0%
Merrimack 2	28.8%	47.4%
Schiller 4	11.3%	24.6%
Schiller 5	90.3%	82.8%
Schiller 6	11.2%	25.2%
Newington	2.1%	4.3%

2012 - Reductions in Actual and Projected Annual Capacity Factors
Due to Economic Reserve Shutdowns

	Capacity Factor	
Unit	Actual	Projected
Merrimack 1	46.8%	50.0%
Merrimack 2	41.8%	41.5%
Schiller 4	66.2%	63.1%
Schiller 5	0.0%	0.0%
Schiller 6	72.2%	63.1%
Newington	89.7%	89.6%

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-009
Page 1 of 2

Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference White testimony, (Bates 52, lines 7 through 9): Please supply a table that depicts the 2012 customer migration PSNH projected for the on-peak and off-peak periods (in MW and MWh) when planning its procurement of supplemental energy supply for its energy customers. As part of your response, also supply in a similar format the actual customer migration that occurred. If there are any significant discrepancies between the two lists of data, please reconcile.

Response:

Please see the attached table summarizing by month, peak and off-peak actual and "planning" ES loads, net of migration impacts. Planning loads are those utilized when evaluating the need for supplemental purchases and reflect then current migration levels.

Public Service Company of New Hampshire
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Data Request STAFF-01
Dated: 7/19/13
Q-STAFF-009
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	Actual Loads						Planning Loads					
	Peak		Off-Peak		Total		Peak		Off-Peak		Total	
2012	MW	MWh	MW	MWh	MW	MWh	MW	MWh	MW	MWh	MW	MWh
Jan	923.5	240,195	933.1	239,911	933.1	480,106	896.0	253,190	808.6	239,929	896.0	493,120
Feb	840.6	224,289	886.7	198,940	886.7	423,229	864.1	244,657	780.3	201,322	864.1	445,979
Mar	828.3	214,952	782.6	194,745	828.3	409,697	824.1	242,635	716.6	202,652	824.1	445,287
Apr	727.2	191,417	694.6	177,089	727.2	368,506	719.3	217,862	621.7	183,555	719.3	401,417
May	694.4	201,593	698.5	178,010	698.5	379,603	728.4	222,363	626.4	181,665	728.4	404,028
Jun	1,042.3	215,934	838.6	189,360	1,042.3	405,294	968.9	241,472	831.1	186,297	968.9	427,769
Jul	1,059.7	252,381	941.4	238,161	1,059.7	490,542	1,027.8	269,936	801.4	211,280	1,027.8	481,217
Aug	964.6	260,724	952.3	204,803	964.6	465,527	973.7	274,741	900.1	190,401	973.7	465,143
Sep	762.9	169,929	759.5	188,683	762.9	358,612	868.6	210,785	875.5	197,086	875.5	407,871
Oct	675.3	194,860	675.0	157,659	675.3	352,520	662.8	215,382	597.2	172,694	662.8	388,076
Nov	770.0	202,450	772.4	184,785	772.4	387,235	717.0	206,496	641.8	182,016	717.0	388,512
Dec	819.3	202,487	839.8	224,523	839.8	427,011	793.8	211,224	708.5	212,175	793.8	423,399

Notes:
Portfolio positions and supplemental purchases are typically evaluated assuming no unit outages and 100% unit availability.
Supplemental purchase guidelines currently provide for a margin between the total shortfall position and the actual amount purchased.
Monthly supplemental purchases are approved by management at the officer level.
In late March/early April, monthly purchases for April & May were completed.
In mid-late May, monthly purchases for June thru November were completed.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-010
Page 1 of 2

Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference White testimony, (Bates 53, line 12 through page 54, line 2): For the years 2007 through 2012, please list the on-peak purchases and off-peak purchases made by PSNH to furnish supplemental energy to its customers. The list need only contain spot, long-term bilateral or contract annual, bi-lateral monthly or greater, bilateral weekly and daily purchases and should also include total purchases in your response. In a similar format, please supply the sales made by PSNH for the same time period. As part of your response and in the same breakdown as above, please supply the net energy purchases and cost for the years requested.

Response:

Please see the attached tables.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 7/19/13
Q-STAFF-010
Page 2 of 2

2007 - 2012 Summary of PSNH Purchases and Sales Activity

Peak Purchases

Year	Annual Bilateral MWh	Annual Bilateral $(000)	Other Bilateral MWh	Other Bilateral $(000)	Spot Purchases MWh	Spot Purchases $(000)	Total Purchases MWh	Total Purchases $(000)
2007	408,000	43,156	1,026,622	83,863	207,111	17,606	1,641,733	144,626
2008	614,400	51,732	1,180,493	102,041	251,589	23,764	2,046,482	177,537
2009	1,024,000	116,326	564,933	40,822	114,185	5,925	1,703,118	163,074
2010	614,400	57,600	250,909	15,066	146,061	8,737	1,011,370	81,403
2011	408,000	35,292	324,800	15,379	381,632	19,422	1,114,432	70,094
2012	0	0	663,200	22,924	477,919	20,186	1,141,119	43,111

Off-Peak Purchases

Year	Annual Bilateral MWh	Annual Bilateral $(000)	Other Bilateral MWh	Other Bilateral $(000)	Spot Purchases MWh	Spot Purchases $(000)	Total Purchases MWh	Total Purchases $(000)
2007	234,000	18,954	499,322	36,294	211,452	14,571	944,774	69,819
2008	410,400	30,312	420,211	29,221	379,721	30,263	1,210,332	89,796
2009	407,600	46,333	586,765	33,349	144,914	6,025	1,139,279	85,707
2010	0	0	270,568	12,922	293,713	14,031	564,281	26,953
2011	0	0	185,200	7,970	634,770	25,750	819,970	33,719
2012	0	0	240,800	8,183	634,843	20,471	875,643	28,654

Total Purchases

Year	Annual Bilateral MWh	Annual Bilateral $(000)	Other Bilateral MWh	Other Bilateral $(000)	Spot Purchases MWh	Spot Purchases $(000)	Total Purchases MWh	Total Purchases $(000)
2007	642,000	62,110	1,525,944	120,157	418,563	32,177	2,586,507	214,445
2008	1,024,800	82,045	1,600,704	131,262	631,310	54,026	3,256,814	267,333
2009	1,431,600	162,660	1,151,699	74,171	259,099	11,950	2,842,397	248,781
2010	614,400	57,600	521,477	27,988	439,774	22,768	1,575,651	108,356
2011	408,000	35,292	510,000	23,349	1,016,402	45,172	1,934,402	103,813
2012	0	0	904,000	31,107	1,112,762	40,657	2,016,762	71,764

Peak Sales

Year	Annual Bilateral MWh	Annual Bilateral $(000)	* Other Bilateral MWh	* Other Bilateral $(000)	Spot Sales MWh	Spot Sales $(000)	Total Sales MWh	Total Sales $(000)
2007	0	0	0	0	178,578	12,687	178,578	12,687
2008	0	0	0	0	169,193	14,659	169,193	14,659
2009	0	0	131,200	11,341	401,346	17,662	401,346	17,662
2010	0	0	22,400	915	277,863	16,483	277,863	16,483
2011	0	0	0	0	101,908	6,734	101,908	6,734
2012	0	0	0	0	64,064	3,460	64,064	3,460

Off-Peak Sales

Year	Annual Bilateral MWh	Annual Bilateral $(000)	* Other Bilateral MWh	* Other Bilateral $(000)	Spot Sales MWh	Spot Sales $(000)	Total Sales MWh	Total Sales $(000)
2007	0	0	0	0	248,834	13,263	248,834	13,263
2008	0	0	0	0	144,593	9,084	144,593	9,084
2009	0	0	0	0	388,859	14,071	388,859	14,071
2010	0	0	28,000	1,144	252,127	10,195	252,127	10,195
2011	0	0	0	0	120,616	5,827	120,616	5,827
2012	0	0	0	0	95,254	2,952	95,254	2,952

Total Sales

Year	Annual Bilateral MWh	Annual Bilateral $(000)	* Other Bilateral MWh	* Other Bilateral $(000)	Spot Sales MWh	Spot Sales $(000)	Total Sales MWh	Total Sales $(000)
2007	0	0	0	0	427,413	25,949	427,413	25,949
2008	0	0	0	0	313,786	23,743	313,786	23,743
2009	0	0	131,200	11,341	790,205	31,733	790,205	31,733
2010	0	0	50,400	2,059	529,991	26,678	529,991	26,678
2011	0	0	0	0	222,524	12,561	222,524	12,561
2012	0	0	0	0	159,318	6,412	159,318	6,412

* In PSNH's database these sales are netted in Other Bilateral purchases shown above, and are included here for information only.

Net Peak Purchases

Year	Annual Bilateral MWh	Annual Bilateral $(000)	Other Bilateral MWh	Other Bilateral $(000)	Spot MWh	Spot $(000)	Net Purchases MWh	Net Purchases $(000)
2007	408,000	43,156	1,026,622	83,863	28,532	4,920	1,463,155	131,939
2008	614,400	51,732	1,180,493	102,041	82,396	9,105	1,877,289	162,878
2009	1,024,000	116,326	564,933	40,822	(287,161)	(11,737)	1,301,773	145,412
2010	614,400	57,600	250,909	15,066	(131,802)	(7,745)	733,507	64,920
2011	408,000	35,292	324,800	15,379	279,724	12,689	1,012,524	63,360
2012	0	0	663,200	22,924	413,855	16,726	1,077,055	39,650

Net Off-Peak Purchases

Year	Annual Bilateral MWh	Annual Bilateral $(000)	Other Bilateral MWh	Other Bilateral $(000)	Spot MWh	Spot $(000)	Net Purchases MWh	Net Purchases $(000)
2007	234,000	18,954	499,322	36,294	(37,383)	1,308	695,939	56,556
2008	410,400	30,312	420,211	29,221	235,128	21,178	1,065,739	80,712
2009	407,600	46,333	586,765	33,349	(243,946)	(8,046)	750,420	71,636
2010	0	0	270,568	12,922	41,585	3,836	312,154	16,758
2011	0	0	185,200	7,970	514,154	19,922	699,354	27,892
2012	0	0	240,800	8,183	539,589	17,519	780,389	25,702

Net Purchases

Year	Annual Bilateral MWh	Annual Bilateral $(000)	Other Bilateral MWh	Other Bilateral $(000)	Spot MWh	Spot $(000)	Net Purchases MWh	Net Purchases $(000)
2007	642,000	62,110	1,525,944	120,157	(8,850)	6,228	2,159,094	188,495
2008	1,024,800	82,045	1,600,704	131,262	317,524	30,283	2,943,028	243,590
2009	1,431,600	162,660	1,151,699	74,171	(531,106)	(19,783)	2,052,192	217,048
2010	614,400	57,600	521,477	27,988	(90,217)	(3,909)	1,045,660	81,678
2011	408,000	35,292	510,000	23,349	793,878	32,611	1,711,878	91,252
2012	0	0	904,000	31,107	953,444	34,245	1,857,444	65,352

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-011

Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference White testimony, (Bates 53, lines 1 through 3): For 2012 and by month, please list each bilateral purchase made by PSNH (weekly, monthly, etc.), its duration, and MW/MWh amount.

Response:
Please see the attached table.

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Data Request STAFF-01
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2012 - PSNH Bilateral Purchases for Energy

				5x16		2x16		7x16	
Year	Month	Start Date	End Date	MWh/Hr	MWh	MWh/Hr	MWh	MWh/Hr	MWh
2012	1	1/30/12	1/30/12	100	1,600				
		1/31/12	2/3/12	100	6,400				
	2	2/18/12	2/19/12			300	9,600		
		2/20/12	2/20/12	300	4,800				
	3	3/9/12	3/9/12	150	2,400				
		3/10/12	3/11/12			150	4,800		
		3/12/12	3/31/12	150	36,000				
		3/17/12	3/18/12			150	4,800		
		3/24/12	3/25/12			250	8,000		
	4	4/1/12	4/30/12	100	33,600				
		4/2/12	4/6/12	100	8,000				
		4/7/12	4/8/12			100	3,200		
		4/7/12	4/8/12			100	3,200		
		4/9/12	4/13/12	100	8,000				
		4/14/12	4/15/12			100	3,200		
		4/14/12	4/15/12			100	3,200		
		4/16/12	4/16/12	50	800				
		4/16/12	4/30/12	200	35,200				
		4/17/12	4/30/12	50	8,000				
		4/21/12	4/22/12			150	4,800		
		4/21/12	4/22/12			50	1,600		
		4/28/12	4/29/12			150	4,800		
	5	5/1/12	5/31/12	50	17,600				
		5/1/12	5/31/12	50	17,600				
		5/1/12	5/31/12	50	17,600				
		5/5/12	5/6/12			200	6,400		
		5/7/12	5/11/12	100	8,000				
		5/12/12	5/13/12			200	6,400		
		5/14/12	5/18/12	100	8,000				
		5/19/12	5/20/12			200	6,400		
		5/21/12	5/21/12	50	800				
		5/21/12	5/21/12	50	800				
		5/22/12	5/22/12	100	1,600				
		5/23/12	5/23/12	100	1,600				
		5/24/12	5/24/12	50	800				
		5/25/12	5/25/12	50	800				
		5/26/12	5/28/12	100					
		5/26/12	5/28/12	100					
		5/31/12	5/31/12	100	1,600				
	6	6/1/12	6/30/12	100	33,600				
		6/1/12	6/30/12					150	72,000
		6/9/12	6/10/12			100	3,200		
		6/11/12	6/15/12	50	4,000				
		6/16/12	6/17/12			100	3,200		
		6/29/12	6/29/12	100	1,600				
		6/30/12	7/1/12			250	8,000		
	7	7/1/12	8/31/12	50	35,200				
		7/2/12	7/2/12	250	4,000				
		7/4/12	7/4/12	50					
		7/4/12	7/4/12	100					
		7/5/12	7/5/12	100	1,600				
		7/5/12	7/5/12	100	1,600				
	8	8/1/12	8/31/12					200	99,200
		8/11/12	8/12/12			150	4,800		
		8/13/12	8/17/12	150	12,000				
		8/18/12	8/19/12			150	4,800		
		8/25/12	8/26/12			200	6,400		
	9	9/1/12	9/30/12	50	15,200				
		9/1/12	9/30/12	50	15,200				
		9/1/12	9/30/12					150	72,000
		9/1/12	9/3/12			150	7,200		
		9/8/12	9/9/12			200	6,400		
		9/15/12	9/16/12			150	4,800		
		9/17/12	9/17/12	100	1,600				
		9/18/12	9/18/12	100	1,600				
		9/19/12	9/21/12	100	4,800				
		9/22/12	9/23/12			50	1,600		
		9/24/12	9/28/12	100	8,000				
		9/29/12	9/30/12			150	4,800		
	10	10/1/12	10/31/12	50	18,400				
		10/1/12	10/31/12					100	49,600
		10/1/12	10/1/12	150	2,400				
		10/6/12	10/7/12			150	4,800		
		10/9/12	10/9/12	150	2,400				
		10/10/12	10/12/12	150	7,200				
		10/13/12	10/14/12			150	4,800		
		10/15/12	10/15/12	150	2,400				
	11	11/1/12	11/30/12	50	16,800				
		11/1/12	11/30/12					100	48,000
		11/17/12	11/18/12			150	4,800		
	12	12/19/12	12/19/12	250	4,000				
		12/20/12	12/20/12	250	4,000				
		12/21/12	12/21/12	250	4,000				
	Total				423,200		140,000		340,800

Notes: 5x16 is non-holiday weekdays, hours 8 thru 23.
2x16 is weekend days and holiday, hours 8 thru 23.
7x16 is all days, hours 8 thru 23.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-012
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Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference White testimony, (Bates 53, lines 1 through 3): By unit (with CTs as a group) and by month, please show the MWh modeled as on economic reserve shutdown and capacity factor. As part of your response, please supply an additional table that shows actual MWh reserve shutdowns and capacity factor. Please include annual totals for each table.

Response:
Please see the attached tables.

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Data Request STAFF-01
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2012 - Economic Reserve Shutdown MWh and Equivalent Capacity Factor
As Modeled

2012	Merrimack 1 Economic Reserve Shutdown MWh	Merrimack 1 Equiv. CF	Merrimack 2 Economic Reserve Shutdown MWh	Merrimack 2 Equiv. CF	Schiller 4 Economic Reserve Shutdown MWh	Schiller 4 Equiv. CF	Schiller 5 Economic Reserve Shutdown MWh	Schiller 5 Equiv. CF	Schiller 6 Economic Reserve Shutdown MWh	Schiller 6 Equiv. CF	Newington Economic Reserve Shutdown MWh	Newington Equiv. CF	CTs Economic Reserve Shutdown MWh	CTs Equiv. CF
Jan	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	259,330	87.1%	75,814	100.0%
Feb	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	265,733	95.4%	70,922	100.0%
Mar	80,426	100.0%	0	0.0%	35,712	100.0%	0	0.0%	36,144	100.0%	134,467	45.2%	75,814	100.0%
Apr	77,832	100.0%	237,960	100.0%	34,560	100.0%	0	0.0%	34,978	100.0%	285,743	99.2%	73,368	100.0%
May	80,426	100.0%	245,892	100.0%	35,712	100.0%	0	0.0%	36,144	100.0%	297,749	100.0%	75,814	100.0%
Jun	77,760	100.0%	237,600	100.0%	34,200	100.0%	0	0.0%	34,515	100.0%	276,138	95.8%	59,544	100.0%
Jul	0	0.0%	0	0.0%	11,400	32.3%	0	0.0%	11,505	32.3%	237,719	79.8%	61,529	100.0%
Aug	0	0.0%	0	0.0%	9,120	25.8%	0	0.0%	9,204	25.8%	239,320	80.4%	61,529	100.0%
Sep	77,760	100.0%	237,600	100.0%	34,200	100.0%	0	0.0%	34,515	100.0%	288,144	100.0%	59,544	100.0%
Oct	80,426	100.0%	245,892	100.0%	35,712	100.0%	0	0.0%	36,144	100.0%	297,749	100.0%	75,814	100.0%
Nov	0	0.0%	0	0.0%	34,560	100.0%	0	0.0%	34,978	100.0%	288,144	100.0%	73,368	100.0%
Dec	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	279,340	93.8%	75,814	100.0%
Total	474,629	50.0%	1,205,056	41.5%	265,188	63.1%	0	0.0%	268,141	63.1%	3,149,574	89.6%	838,872	100.0%

'Modeled' figures are from the Dec, 2011 ES rate filing.

2012 - Economic Reserve Shutdown MWh and Equivalent Capacity Factor
Actual Results

2012	Merrimack 1 Economic Reserve Shutdown MWh	Merrimack 1 Equiv. CF	Merrimack 2 Economic Reserve Shutdown MWh	Merrimack 2 Equiv. CF	Schiller 4 Economic Reserve Shutdown MWh	Schiller 4 Equiv. CF	Schiller 5 Economic Reserve Shutdown MWh	Schiller 5 Equiv. CF	Schiller 6 Economic Reserve Shutdown MWh	Schiller 6 Equiv. CF	Newington Economic Reserve Shutdown MWh	Newington Equiv. CF	CTs Economic Reserve Shutdown MWh	CTs Equiv. CF
Jan	8,108	10.1%	0	0.0%	27,120	75.9%	0	0.0%	27,642	76.5%	243,322	81.7%	75,610	99.7%
Feb	49,077	65.2%	4,627	2.0%	32,832	98.3%	0	0.0%	14,428	42.7%	278,539	100.0%	70,107	98.9%
Mar	23,998	29.8%	197,970	80.5%	31,584	88.4%	0	0.0%	14,671	40.6%	293,747	98.7%	75,406	99.5%
Apr	44,970	57.8%	10,576	4.4%	31,776	91.9%	0	0.0%	18,218	52.1%	177,289	61.5%	73,062	99.6%
May	80,210	99.7%	61,143	24.9%	960	2.7%	0	0.0%	34,006	94.1%	297,749	100.0%	75,406	99.5%
Jun	62,640	80.6%	184,140	77.5%	0	0.0%	0	0.0%	29,434	85.3%	266,133	92.4%	59,544	100.0%
Jul	0	0.0%	95,370	38.8%	20,758	58.7%	86	0.3%	25,982	72.8%	193,297	64.9%	61,033	99.2%
Aug	47,844	59.5%	130,020	53.0%	20,283	57.4%	0	0.0%	29,769	83.5%	278,539	93.5%	60,619	98.5%
Sep	60,372	77.6%	228,360	96.1%	34,200	100.0%	0	0.0%	34,324	99.4%	283,342	98.3%	58,717	98.6%
Oct	51,023	63.4%	169,216	68.8%	33,648	94.2%	0	0.0%	34,346	95.0%	297,749	100.0%	75,814	100.0%
Nov	16,215	20.8%	129,556	54.4%	17,328	50.1%	0	0.0%	15,060	43.1%	246,123	85.4%	73,164	99.7%
Dec	0	0.0%	331	0.1%	27,840	78.0%	0	0.0%	28,419	78.6%	297,749	100.0%	75,202	99.2%
Total	444,478	46.8%	1,211,663	41.8%	278,151	66.2%	86	0.0%	306,544	72.2%	3,153,576	89.7%	833,524	99.4%

Public Service Company of New Hampshire
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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-013
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Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference White testimony, (Bates 55, lines 11 through 16): Please supply available FCM pricing data for 2013 through 2015.

Response:
Please see the attached table.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 7/19/2013
Q-STAFF-013

Forward Capacity Market Pricing Data

Year	Month	Forward Capacity Auction Clearing Price $/kW-mo
2013	Jan	2.95
	Feb	2.95
	Mar	2.95
	Apr	2.95
	May	2.95
	Jun	2.95
	Jul	2.95
	Aug	2.95
	Sep	2.95
	Oct	2.95
	Nov	2.95
	Dec	2.95
2014	Jan	2.95
	Feb	2.95
	Mar	2.95
	Apr	2.95
	May	2.95
	Jun	3.21
	Jul	3.21
	Aug	3.21
	Sep	3.21
	Oct	3.21
	Nov	3.21
	Dec	3.21
2015	Jan	3.21
	Feb	3.21
	Mar	3.21
	Apr	3.21
	May	3.21
	Jun	3.43
	Jul	3.43
	Aug	3.43
	Sep	3.43
	Oct	3.43
	Nov	3.43
	Dec	3.43

Public Service Company of New Hampshire
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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-014
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Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference White testimony, (Bates 56, line 22 through Bates 57, line 10): Please supply the numerical value and cost of FTRs in MWs purchased for Newington, Schiller, and Merrimack stations by month for the years 2010 through 2012 inclusive. In addition, please show gross and net congestion savings by month and total for 2012.

Response:
The attached file includes Merrimack, Schiller, and Newington data by month for the years 2010, 2011, and 2012; on separate yearly tabs. The final tab summarizes gross and net congestion savings by month for all 2012 FTRs.

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Data Request STAFF-01
Dated: 7/19/2013
Q-STAFF-014
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2010 FTR Activity and Valuation for Merrimack, Schiller and Newington

Source	Month	FTR MW Quantity Peak	Off-Peak		Corresponding Cost and Value of FTRs (Expense) / Revenue FTR Auction $	FTR Value $	Net FTR $
Merrimack	Jan - Dec	0	0		0	0	0
	Jan	325	315		(8,976)	(2,940)	(11,915)
	Feb	325	315		(7,625)	664	(6,962)
	Mar	275	170		(8,368)	258,488	250,120
	Apr	0	0		0	0	0
	May	0	24		(600)	2,695	2,095
	Jun	0	78		(1,723)	23	(1,699)
	Jul	175	175		(15,360)	154	(15,206)
	Aug	175	175		(14,238)	1,209	(13,029)
	Sep	0	0		0	0	0
	Oct	0	0		0	0	0
	Nov	188	167		(8,405)	(397)	(8,802)
	Dec	150	151		(9,646)	176,480	166,834
				Total	(74,940)	436,377	361,437
Schiller	Jan - Dec	30	30		Included in figures below.		
	Jan	120	70		(1,312)	298	(1,014)
	Feb	120	70		(943)	(294)	(1,237)
	Mar	60	30		(416)	2,232	1,815
	Apr	0	0		7	1,524	1,531
	May	40	20		(564)	20,717	20,154
	Jun	40	20		(768)	(44)	(812)
	Jul	50	20		(1,191)	(413)	(1,604)
	Aug	90	50		40	288	328
	Sep	0	0		7	(20)	(13)
	Oct	26	0		(770)	177	(593)
	Nov	40	35		(237)	(103)	(340)
	Dec	120	60		1,222	(6,791)	(5,569)
				Total	(4,925)	17,570	12,645
Newington	Jan - Dec	0	0		0	0	0
	Jan	0	0		0	0	0
	Feb	0	0		0	0	0
	Mar	0	0		0	0	0
	Apr	0	0		0	0	0
	May	0	0		0	0	0
	Jun	0	0		0	0	0
	Jul	0	0		0	0	0
	Aug	0	0		0	0	0
	Sep	0	0		0	0	0
	Oct	0	0		0	0	0
	Nov	0	0		0	0	0
	Dec	0	0		0	0	0
				Total	0	0	0
				Total Above	(79,865)	453,947	374,082

Notes:
Jan.-Dec. FTR cost and value are allocated monthly as per ISO-NE Billing methodology.
FTR Auction $ - this is the amount paid to (-) or received from (+) ISO based on the auction clearing price of awarded FTRs.
FTR Value $ - this is the amount paid to (-) or received from (+) ISO based on the realized value of the awarded FTRs.
Net FTR $ - the sum of the auction dollars and market value of the awarded FTRs.
[FTR Value includes refund of under-funded target allocations via the ISO-NE Congestion Revenue Fund.]

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Data Request STAFF-01
Dated: 7/19/2013
Q-STAFF-014
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2011 FTR Activity and Valuation for Merrimack, Schiller and Newington

Source	Month	FTR MW Quantity Peak	FTR MW Quantity Off-Peak		Corresponding Cost and Value of FTRs (Expense) / Revenue FTR Auction $	FTR Value $	Net FTR $
Merrimack	Jan - Dec	0	0		0	0	0
	Jan	251	200		(12,618)	410	(12,208)
	Feb	285	246		(9,807)	(3)	(9,810)
	Mar	188	90		(5,790)	97	(5,693)
	Apr	0	0		0	0	0
	May	118	0		(9,887)	580	(9,307)
	Jun	86	85		(1,871)	844	(1,027)
	Jul	60	78		(2,253)	(10)	(2,263)
	Aug	160	85		(6,527)	11	(6,516)
	Sep	87	0		(5,856)	(39)	(5,895)
	Oct	0	50		(322)	406	85
	Nov	85	85		(1,227)	2,848	1,621
	Dec	100	50		(1,819)	(21)	(1,840)
				Total	(57,978)	5,124	(52,854)
Schiller	Jan - Dec	0	0		0	0	0
	Jan	120	90		(1,525)	309	(1,216)
	Feb	120	90		(746)	(8)	(755)
	Mar	80	65		(418)	(106)	(523)
	Apr	40	0		106	5	111
	May	0	0		0	0	0
	Jun	40	40		(372)	869	497
	Jul	75	40		(1,642)	(301)	(1,943)
	Aug	90	40		(1,048)	(339)	(1,387)
	Sep	40	40		27	(44)	(17)
	Oct	0	0		0	0	0
	Nov	25	40		(426)	888	462
	Dec	75	25		(803)	(20)	(823)
				Total	(6,846)	1,253	(5,593)
Newington	Jan - Dec	0	0		0	0	0
	Jan	0	0		0	0	0
	Feb	0	0		0	0	0
	Mar	0	0		0	0	0
	Apr	0	0		0	0	0
	May	0	0		0	0	0
	Jun	0	0		0	0	0
	Jul	0	0		0	0	0
	Aug	0	0		0	0	0
	Sep	0	0		0	0	0
	Oct	0	0		0	0	0
	Nov	0	0		0	0	0
	Dec	0	0		0	0	0
				Total	0	0	0
				Total Above	(64,824)	6,377	(58,447)

Notes:
Jan.-Dec. FTR cost and value are allocated monthly as per ISO-NE Billing methodology.
FTR Auction $ - this is the amount paid to (-) or received from (+) ISO based on the auction clearing price of awarded FTRs.
FTR Value $ - this is the amount paid to (-) or received from (+) ISO based on the realized value of the awarded FTRs.
Net FTR $ - the sum of the auction dollars and market value of the awarded FTRs.
[FTR Value includes refund of under-funded target allocations via the ISO-NE Congestion Revenue Fund.]

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2012 FTR Activity and Valuation for Merrimack, Schiller and Newington

		FTR MW Quantity			Corresponding Cost and Value of FTRs (Expense) / Revenue		
Source	Month	Peak	Off-Peak		FTR Auction $	FTR Value $	Net FTR $
Merrimack	Jan - Dec	0	0		0	0	0
	Jan	250	137		(5,908)	(17)	(5,924)
	Feb	150	230		(4,358)	376	(3,982)
	Mar	100	100		(143)	179	36
	Apr	0	0		0	0	0
	May	0	0		0	0	0
	Jun	0	0		0	0	0
	Jul	175	175		(2,228)	(72)	(2,300)
	Aug	0	0		0	0	0
	Sep	0	0		0	0	0
	Oct	0	0		0	0	0
	Nov	0	0		0	0	0
	Dec	250	285		(2,795)	82,527	79,732
				Total	(15,432)	82,994	67,563
Schiller	Jan - Dec	0	25		Included in figures below.		
	Jan	91	45		(339)	(24)	(363)
	Feb	80	15		(1,106)	19	(1,087)
	Mar	40	15		(141)	31	(110)
	Apr	25	0		(216)	(27)	(243)
	May	25	15		(445)	(358)	(803)
	Jun	40	15		(56)	(210)	(266)
	Jul	40	15		(48)	(123)	(171)
	Aug	40	15		(86)	(884)	(970)
	Sep	40	15		(33)	(166)	(199)
	Oct	40	15		(198)	(104)	(302)
	Nov	40	15		(4)	113	108
	Dec	110	15		(96)	(2,445)	(2,540)
				Total	(2,768)	(4,178)	(6,946)
Newington	Jan - Dec	0	0		0	0	0
	Jan	0	0		0	0	0
	Feb	0	0		0	0	0
	Mar	0	0		0	0	0
	Apr	0	0		0	0	0
	May	0	0		0	0	0
	Jun	0	0		0	0	0
	Jul	0	0		0	0	0
	Aug	0	0		0	0	0
	Sep	0	0		0	0	0
	Oct	0	0		0	0	0
	Nov	0	0		0	0	0
	Dec	0	0		0	0	0
				Total	0	0	0
				Total Above	(18,199)	78,816	60,617

Notes:
Jan.-Dec. FTR Auction and Value dollars are allocated monthly as per ISO-NE Billing methodology.
FTR Auction $ - this is the amount paid to (-) or received from (+) ISO based on the auction clearing price of awarded FTRs.
FTR Value $ - this is the amount paid to (-) or received from (+) ISO based on the realized value of the awarded FTRs.
Net FTR $ - the sum of the auction dollars and market value of the awarded FTRs.
[FTR Value includes refund of under-funded target allocations via the ISO-NE Congestion Revenue Fund.]

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2012 Total FTR Activity and Valuation

Source	Month	FTR MW Quantity Peak	FTR MW Quantity Off-Peak		Corresponding Cost and Value of FTRs (Expense) / Revenue FTR Auction $	FTR Value $	Net FTR $
Other FTRs (other than MK, SR, NT)	Jan - Dec	0	0		0	0	0
	Jan	0	0		0	0	0
	Feb	18	6		528	(37)	492
	Mar	10	10		(88)	6	(81)
	Apr	0	10		(43)	(2)	(45)
	May	0	10		(33)	(78)	(111)
	Jun	10	10		25	(81)	(56)
	Jul	25	10		(964)	716	(248)
	Aug	250	6		(1,456)	4,002	2,546
	Sep	210	10		(2,412)	2,327	(86)
	Oct	160	10		(2,363)	807	(1,556)
	Nov	160	10		(2,252)	(5,491)	(7,743)
	Dec	0	7		(8)	(231)	(239)
				Total	(9,064)	1,937	(7,128)

Source	Month	FTR MW Quantity Peak	FTR MW Quantity Off-Peak		FTR Auction $	FTR Value $	Net FTR $
TOTALS for all FTRs (including those above)	Jan - Dec	0	25		Included in figures below.		
	Jan	341	182		(6,246)	(41)	(6,287)
	Feb	248	251		(4,936)	359	(4,577)
	Mar	150	125		(372)	216	(156)
	Apr	25	10		(259)	(29)	(288)
	May	25	25		(478)	(436)	(914)
	Jun	50	25		(31)	(291)	(322)
	Jul	240	200		(3,239)	521	(2,719)
	Aug	290	21		(1,542)	3,117	1,576
	Sep	250	25		(2,445)	2,160	(285)
	Oct	200	25		(2,561)	703	(1,858)
	Nov	200	25		(2,257)	(5,379)	(7,635)
	Dec	360	307		(2,898)	79,852	76,953
				Total	(27,264)	80,753	53,489

Notes:
Other FTR MWs include those that were purchased to address bilateral, Vermont Yankee, and Bio Energy buyout purchases.
Jan.-Dec. FTR Auction and Value dollars are allocated monthly as per ISO-NE Billing methodology.
FTR Auction $ - this is the amount paid to (-) or received from (+) ISO based on the auction clearing price of awarded FTRs.
FTR Value $ - this is the amount paid to (-) or received from (+) ISO based on the realized value of the awarded FTRs.
Net FTR $ - the sum of the auction dollars and market value of the awarded FTRs.
[FTR Value includes refund of under-funded target allocations via the ISO-NE Congestion Revenue Fund.]

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Witness: **Frederick White**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference White testimony, Attachments FBW-2 and FBW-3 (Bates 59 and 60):

Please provide by month for on-peak, off-peak, and total values, and in the form provided in previous SCRC dockets:

a. Information on bilateral purchases and costs, spot purchases and costs, and sales of surplus purchases.
b. Actual bilateral and spot purchase quantities compared to those in the rate request in both tabular and color graphic form.
c. Total supplemental purchases and percent breakdown monthly bilateral, short-term bilateral and spot purchases.
d. Spot sale energy to the ISO-NE and value from PSNH units, from long-term bilateral surplus purchases, and short-term bilateral surplus purchases.

Response:
Please see the attached tables.

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2012 - Summary of PSNH Bilateral Purchases and ISO-NE Spot Purchases & Sales

Peak

2012	Total Bilateral Purchases MWh	Total Bilateral Purchases $000	Ave Price $/MWh	Sales of Surplus Purchases MWh	Percent (%) Sold as Surplus	Profit / (Loss) on Sales $000	Total ISO-NE Spot Purchases MWh	Total ISO-NE Spot Purchases $000	Ave Price $/MWh
Jan	3,200	123	38.50	0	0%	0	38,427	1,898	49.38
Feb	9,600	358	37.25	10	0%	(115)	59,563	2,189	36.75
Mar	38,400	1,098	28.59	10	0%	(72)	57,150	1,722	30.14
Apr	93,600	2,649	28.30	2,615	3%	1,121	39,588	1,203	30.39
May	76,800	2,147	27.96	21	0%	(128)	44,172	1,437	32.53
Jun	89,600	3,030	33.82	1,152	1%	31,150	27,266	1,188	43.55
Jul	24,000	1,133	47.23	866	4%	5,401	44,107	2,209	50.09
Aug	104,000	4,021	38.66	11,456	11%	12,639	38,446	1,977	51.42
Sep	92,000	3,397	36.93	2,106	2%	(17,687)	28,452	1,320	46.40
Oct	69,600	2,581	37.08	232	0%	(1,306)	49,420	2,014	40.76
Nov	50,400	1,899	37.68	10,873	22%	478,837	31,541	1,741	55.19
Dec	12,000	488	40.67	1,626	14%	(2,508)	19,789	1,288	65.08
Totals	663,200	22,924	34.57	30,966	5%	507,330	477,919	20,186	42.24

Off-Peak

2012	Total Bilateral Purchases MWh	Total Bilateral Purchases $000	Ave Price $/MWh	Sales of Surplus Purchases MWh	Percent (%) Sold as Surplus	Profit / (Loss) on Sales $000	Total ISO-NE Spot Purchases MWh	Total ISO-NE Spot Purchases $000	Ave Price $/MWh
Jan	0	0	0.00	0	0%	0	20,120	967	48.06
Feb	9,600	319	33.25	0	0%	0	38,710	1,333	34.44
Mar	17,600	414	23.52	12	0%	(68)	50,612	1,242	24.54
Apr	24,000	648	27.02	0	0%	0	86,766	2,034	23.44
May	19,200	512	26.67	40	0%	(761)	70,371	1,930	27.42
Jun	32,000	1,114	34.81	491	2%	(13,230)	60,621	1,661	27.41
Jul	4,000	248	62.00	7	0%	(252)	63,149	2,481	39.29
Aug	41,600	1,522	36.59	575	1%	(7,110)	58,560	1,904	32.52
Sep	51,200	1,811	35.38	488	1%	(4,596)	68,409	1,886	27.57
Oct	22,400	820	36.60	108	0%	(825)	59,212	2,078	35.09
Nov	19,200	774	40.30	39	0%	(171)	45,433	2,269	49.94
Dec	0	0	0.00	0	0%	0	12,880	685	53.19
Totals	240,800	8,183	33.98	1,760	1%	(27,014)	634,843	20,471	32.25

Total

2012	Total Bilateral Purchases MWh	Total Bilateral Purchases $000	Ave Price $/MWh	Sales of Surplus Purchases MWh	Percent (%) Sold as Surplus	Profit / (Loss) on Sales $000	Total ISO-NE Spot Purchases MWh	Total ISO-NE Spot Purchases $000	Ave Price $/MWh
Jan	3,200	123	38.50	0	0%	0	58,547	2,865	48.93
Feb	19,200	677	35.25	10	0%	(115)	98,273	3,522	35.84
Mar	56,000	1,512	27.00	22	0%	(140)	107,762	2,964	27.51
Apr	117,600	3,298	28.04	2,615	2%	1,121	126,354	3,237	25.62
May	96,000	2,659	27.70	61	0%	(890)	114,543	3,367	29.39
Jun	121,600	4,144	34.08	1,643	1%	17,920	87,888	2,849	32.42
Jul	28,000	1,381	49.34	874	3%	5,149	107,256	4,690	43.73
Aug	145,600	5,543	38.07	12,030	8%	5,529	97,006	3,881	40.01
Sep	143,200	5,209	36.37	2,594	2%	(22,284)	96,861	3,206	33.10
Oct	92,000	3,400	36.96	340	0%	(2,131)	108,631	4,092	37.67
Nov	69,600	2,673	38.41	10,911	16%	478,666	76,974	4,010	52.09
Dec	12,000	488	40.67	1,626	14%	(2,508)	32,668	1,973	60.39
Totals	904,000	31,107	34.41	32,726	4%	480,316	1,112,762	40,657	36.54

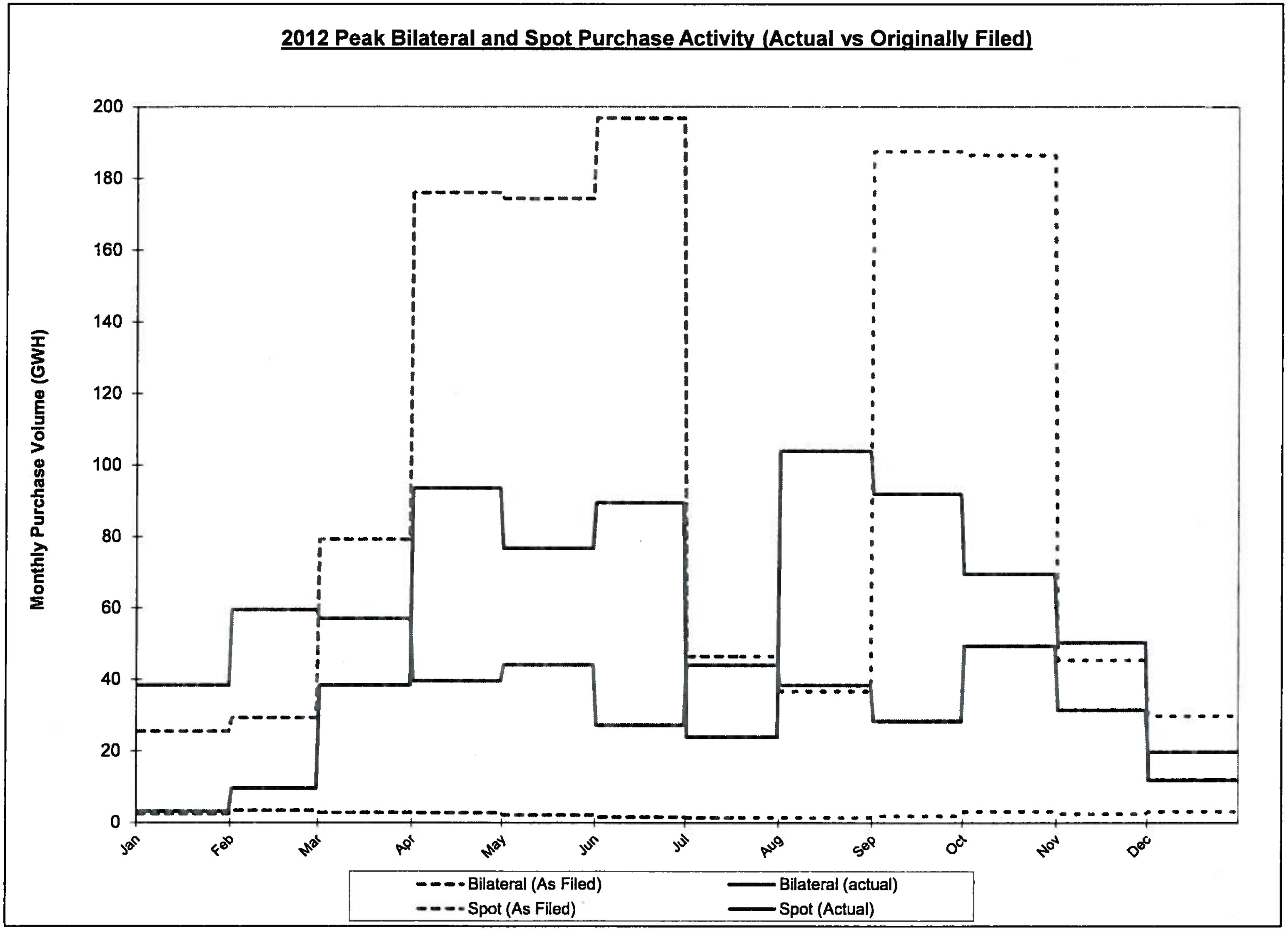
2012 - Summary of PSNH Bilateral and Spot Purchases

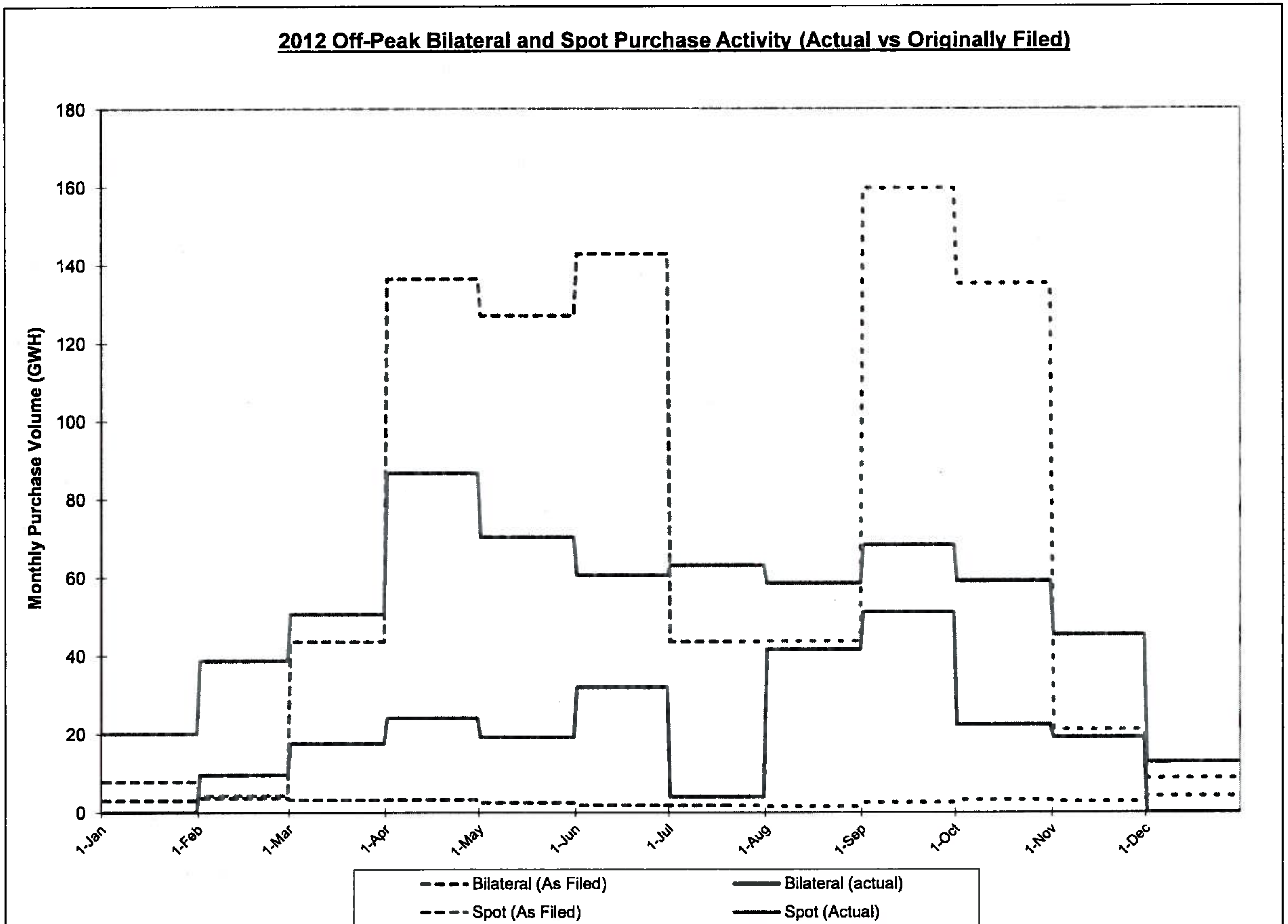
Peak

	Actual 2012 Purchase Quantities		Purchase Quantities Filed with Rate Request	
2012	Total Bilateral Purchases MWh	Total ISO-NE Spot Purchases MWh	Total Bilateral Purchases MWh	Total ISO-NE Spot Purchases MWh
1	3,200	38,427	2,516	25,540
2	9,600	59,563	3,421	29,266
3	38,400	57,150	2,846	79,275
4	93,600	39,588	2,799	176,101
5	76,800	44,172	2,177	174,391
6	89,600	27,266	1,559	196,917
7	24,000	44,107	1,434	46,494
8	104,000	38,446	1,464	36,761
9	92,000	28,452	1,902	187,622
10	69,600	49,420	3,136	186,591
11	50,400	31,541	2,462	45,506
12	12,000	19,789	3,150	29,823
Totals	663,200	477,919	28,866	1,214,288

Off-Peak

2012	Total Bilateral Purchases MWh	Total ISO-NE Spot Purchases MWh	Total Bilateral Purchases MWh	Total ISO-NE Spot Purchases MWh
1	0	20,120	3,055	7,760
2	9,600	38,710	3,665	4,230
3	17,600	50,612	3,170	43,621
4	24,000	86,766	3,198	136,537
5	19,200	70,371	2,424	127,227
6	32,000	60,621	1,782	142,938
7	4,000	63,149	1,742	43,600
8	41,600	58,560	1,495	43,718
9	51,200	68,409	2,603	159,669
10	22,400	59,212	3,204	135,376
11	19,200	45,433	2,814	21,165
12	0	12,880	4,174	8,771
Totals	240,800	634,843	33,327	874,613


2012 Peak Bilateral and Spot Purchase Activity (Actual vs Originally Filed)
Monthly Purchase Volume (GWH)
200
180
160
140
120
100
80
60
40
20
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Bilateral (As Filed)
Bilateral (actual)
Spot (As Filed)
Spot (Actual)


2012 Off-Peak Bilateral and Spot Purchase Activity (Actual vs Originally Filed)
Monthly Purchase Volume (GWH)
180
160
140
120
100
80
60
40
20
0
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Bilateral (As Filed)
Bilateral (actual)
Spot (As Filed)
Spot (Actual)

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Summary of PSNH Supplemental Purchases

	Peak Power				Off-Peak Power			
Month	Total Supplemental Purchases MWh	% Monthly Bilateral Purchases	% Short-Term Bilateral Purchases	% ISO-NE Spot Market Purchases	Total Supplemental Purchases MWh	% Monthly Bilateral Purchases	% Short-Term Bilateral Purchases	% ISO-NE Spot Market Purchases
Jan-08	148,687	62.8%	23.7%	13.5%	71,454	56.0%	1.1%	42.9%
Feb-08	134,171	78.9%	6.0%	15.1%	75,806	47.3%	12.7%	40.0%
Mar-08	146,361	82.7%	9.8%	7.5%	78,824	71.1%	2.5%	26.3%
Apr-08	238,479	99.6%	0.0%	0.4%	150,309	84.3%	0.0%	15.7%
May-08	214,361	99.2%	0.0%	0.8%	153,132	95.1%	0.0%	4.9%
Jun-08	201,567	80.7%	14.3%	5.0%	118,042	50.1%	14.9%	35.0%
Jul-08	215,916	70.6%	12.6%	16.8%	151,912	39.4%	16.3%	44.3%
Aug-08	164,809	87.6%	2.4%	10.0%	84,180	77.7%	0.0%	22.3%
Sep-08	180,327	80.6%	0.0%	19.4%	111,527	41.8%	0.0%	58.2%
Oct-08	157,982	66.1%	0.0%	33.9%	78,611	56.0%	0.0%	44.0%
Nov-08	121,363	70.4%	7.9%	21.6%	74,481	68.5%	0.0%	31.5%
Dec-08	122,458	80.5%	3.3%	16.3%	62,054	73.4%	0.0%	26.6%
Jan-09	101,908	76.5%	9.4%	14.1%	78,400	89.3%	2.0%	8.6%
Feb-09	116,667	60.8%	21.3%	18.0%	93,777	67.6%	9.4%	23.1%
Mar-09	97,466	97.5%	0.0%	2.5%	53,158	94.7%	0.0%	5.3%
Apr-09	153,880	97.9%	0.0%	2.1%	85,719	91.0%	0.0%	9.0%
May-09	102,878	87.7%	0.0%	12.3%	63,863	81.5%	0.0%	18.5%
Jun-09	139,494	96.7%	2.3%	1.0%	59,754	73.8%	16.1%	10.1%
Jul-09	138,618	88.8%	3.5%	7.7%	55,855	80.4%	0.0%	19.6%
Aug-09	208,363	82.4%	2.3%	15.3%	181,439	77.6%	2.6%	19.8%
Sep-09	197,340	99.6%	0.0%	0.4%	136,060	91.1%	0.0%	8.9%
Oct-09	175,107	97.5%	0.0%	2.5%	134,834	93.6%	0.0%	6.4%
Nov-09	156,225	99.2%	0.0%	0.8%	133,936	96.0%	0.0%	4.0%
Dec-09	115,172	86.6%	4.9%	8.5%	62,484	75.5%	0.0%	24.5%
Jan-10	67,439	87.5%	0.0%	12.5%	61,517	23.7%	10.4%	65.9%
Feb-10	71,079	83.3%	6.8%	10.0%	24,877	48.5%	0.0%	51.5%
Mar-10	68,285	99.3%	0.0%	0.7%	17,521	74.7%	0.0%	25.3%
Apr-10	73,397	85.0%	0.0%	15.0%	31,343	34.4%	0.0%	65.6%
May-10	75,573	75.4%	0.0%	24.6%	46,155	22.9%	13.9%	63.3%
Jun-10	72,635	89.0%	0.0%	11.0%	29,674	39.9%	0.0%	60.1%
Jul-10	84,048	74.0%	0.0%	26.0%	62,204	22.9%	11.6%	65.5%
Aug-10	84,106	77.7%	11.4%	10.9%	36,665	38.0%	0.0%	62.0%
Sep-10	86,514	72.0%	12.9%	15.0%	41,542	32.9%	15.4%	51.7%
Oct-10	139,480	44.3%	31.5%	24.1%	111,809	12.5%	37.2%	50.3%
Nov-10	119,323	107.9%	-18.8%	10.8%	83,138	107.1%	-33.7%	26.6%
Dec-10	69,490	97.3%	0.0%	2.7%	17,835	71.8%	0.0%	28.2%
Jan-11	56,857	59.1%	25.3%	15.6%	11,781	0.0%	0.0%	100.0%
Feb-11	36,362	88.0%	0.0%	12.0%	12,867	0.0%	0.0%	100.0%
Mar-11	44,335	83.0%	0.0%	17.0%	25,899	0.0%	0.0%	100.0%
Apr-11	74,639	45.0%	31.1%	23.9%	45,890	0.0%	33.1%	66.9%
May-11	115,474	87.3%	0.0%	12.7%	106,992	57.2%	9.0%	33.8%
Jun-11	90,782	38.8%	6.2%	55.1%	35,780	0.0%	0.0%	100.0%
Jul-11	79,652	40.2%	0.0%	59.8%	84,524	0.0%	0.0%	100.0%
Aug-11	138,455	26.6%	12.1%	61.3%	93,072	0.0%	13.8%	86.2%
Sep-11	148,806	22.6%	40.3%	37.1%	129,557	0.0%	25.3%	74.7%
Oct-11	114,936	29.2%	44.5%	26.2%	106,750	0.0%	27.0%	73.0%
Nov-11	95,498	35.2%	37.7%	27.1%	68,057	0.0%	0.0%	100.0%
Dec-11	118,634	28.3%	42.5%	29.2%	98,800	0.0%	25.1%	74.9%
Jan-12	41,627	0.0%	7.7%	92.3%	20,120	0.0%	0.0%	100.0%
Feb-12	69,163	0.0%	13.9%	86.1%	48,310	0.0%	19.9%	80.1%
Mar-12	95,550	0.0%	40.2%	59.8%	68,212	0.0%	25.8%	74.2%
Apr-12	133,188	25.2%	45.0%	29.7%	110,766	0.0%	21.7%	78.3%
May-12	120,972	43.6%	19.8%	36.5%	89,571	0.0%	21.4%	78.6%
Jun-12	116,866	71.9%	4.8%	23.3%	92,621	23.3%	11.2%	65.5%
Jul-12	68,107	24.7%	10.6%	64.8%	67,149	0.0%	6.0%	94.0%
Aug-12	142,446	64.6%	8.4%	27.0%	100,160	25.6%	16.0%	58.5%
Sep-12	120,452	63.1%	13.3%	23.6%	119,609	22.1%	20.7%	57.2%
Oct-12	119,020	46.4%	12.1%	41.5%	81,612	15.7%	11.8%	72.6%
Nov-12	81,941	61.5%	0.0%	38.5%	64,633	22.3%	7.4%	70.3%
Dec-12	31,789	0.0%	37.7%	62.3%	12,880	0.0%	0.0%	100.0%

Year								
2008	2,046,482	81.3%	6.4%	12.3%	1,210,332	64.1%	4.5%	31.4%
2009	1,703,118	90.2%	3.1%	6.7%	1,139,279	85.1%	2.2%	12.7%
2010	1,011,370	80.9%	4.7%	14.4%	564,281	40.9%	7.1%	52.1%
2011	1,114,432	42.6%	23.1%	34.2%	819,970	7.5%	15.1%	77.4%
2012	1,141,119	40.4%	17.7%	41.9%	875,643	11.5%	16.0%	72.5%

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 7/19/13
Q-STAFF-015d

2012 - Summary of PSNH Spot Sales

Peak

2012	Total ISO-NE Spot Sales MWh	Surplus Sales from Generation MWh	Surplus Sales from Bilateral MWh	Total ISO-NE Spot Sales $000	Ave. Sale $/MWh
Jan	5,733	5,733	0	149	25.94
Feb	1,340	1,329	10	7	5.37
Mar	329	319	10	1	3.59
Apr	2,631	16	2,615	66	25.04
May	21	0	21	1	25.80
Jun	5,421	4,269	1,152	678	125.09
Jul	4,237	3,371	866	210	49.63
Aug	15,870	4,414	11,456	701	44.16
Sep	2,112	6	2,106	33	15.48
Oct	232	0	232	3	11.52
Nov	16,596	5,723	10,873	1,356	81.72
Dec	9,542	7,916	1,626	256	26.85
Totals	64,064	33,098	30,966	3,460	54.02

Off-Peak

2012	Total ISO-NE Spot Sales MWh	Surplus Sales from Generation MWh	Surplus Sales from Bilateral MWh	Total ISO-NE Spot Sales $000	Ave. Sale $/MWh
Jan	23,359	23,359	0	621	26.58
Feb	12,367	12,367	0	245	19.78
Mar	5,477	5,464	12	141	25.74
Apr	0	0	0	0	0.00
May	40	0	40	(2)	(59.70)
Jun	569	78	491	14	25.45
Jul	5,749	5,742	7	121	21.05
Aug	5,015	4,440	575	171	34.01
Sep	488	0	488	10	20.79
Oct	108	0	108	1	6.61
Nov	7,366	7,327	39	459	62.26
Dec	34,715	34,715	0	1,172	33.77
Totals	95,254	93,494	1,760	2,952	30.99

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-016
Page 1 of 2

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 65, lines 6 through 8): Please provide tables, by unit, that support the statements made regarding a) the MWh produced, and b) the availability during the 30 highest priced days. As part of your response, please provide similar tables and values for 2010 and 2011.

Response:

a) The attached table contains generation by unit for the PSNH fleet.

b) The table below provides availability by unit during the 30 highest priced days as discussed in Smagula testimony. This information is also presented in MDC-2 and as requested in Staff-01, Q-Staff-008 updated below to include 2012 data as shown.

Unit	30-Day Availability (Percent)		
	2010	**2011**	**2012**
MK1	99.2	99.3	99.6
MK2	90.7	89.8	99.5
NEW1	95.2	96.2	99.6
SCH4	97.4	99.1	96.6
SCH5	80.5	96.2	96.3
SCH6	98.6	99.9	100.0
FLEET	93.8	94.6	98.2

MDC-10

PSNH Generation Fleet

HYDRO	2010 (mwhrs)	2011 (mwhrs)	2012 (mwhrs)
AMOSKEAG	74,005	104,593	86,519
AYERS ISLAND	44,439	49,888	45,857
CANAAN	7,083	6,016	5,564
EASTMAN FALLS	25,288	28,929	22,749
GARVINS	40,387	53,958	43,772
GORHAM	11,586	12,073	11,966
HOOKSET	6,916	7,911	8,521
JACKMAN	8,760	16,240	8,543
SMITH	117,891	85,464	96,473
STEAM			
MERRIMACK #1	671,207	577,803	344,945
MERRIMACK #2	1,992,960	1,404,855	836,949
SCHILLER #4	224,603	121,967	47,256
SCHILLER #5	316,907	298,105	337,900
SCHILLER #6	217,159	107,413	47,748
NEWINGTON	222,683	125,215	67,808
Combustion Turbines			
MERRIMACK CT-1	153	118	9
MERRIMACK CT-2	77	83	54
SCHILLER CT	462	176	55
LOST NATION CT	7	9	42
WHITE LAKE	31	81	(75)
TOTAL GENERATION:	3,982,604	3,000,894	2,012,657

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-017
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Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Smagula testimony, (Bates 65, lines 10 through 12): Please provide a table that supports the statement made regarding the aggregate equivalent availability. As part of your response, please provide similar tables and values for 2010 and 2011.

Response:

Below is a table that provides the seasonal claimed capability and equivalent availability for each unit for 2012. Also included is the equivalent availability for 2010 and 2011.

Unit	SCC (MW)	Equivalent Availability		
		2010	2011	2012
MERRIMACK 1	108	85.4	79.8	86.3
MERRIMACK 2	330	86.8	84.0	74.5
NEWINGTON 1	400	96.2	93.7	95.3
SCHILLER 4	48	87.1	89.6	83.6
SCHILLER 5	43	86.5	83.9	91.6
SCHILLER 6	49	97.0	91.8	90.2
PSNH FLEET	978	91.0	88.1	86.4

Note that the 3% increase referenced on line 12 was a comparison to 2011's coal/wood units' availability of 83%. The Fleet availability for 2011 was 88.1% as shown above.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-018
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Witness: **William H. Smagula, Michael L. Shelnitz**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 66, lines 1 through 5): Please supply a table that shows the time line of Newington oil inventory levels for 2012. That time line should show oil inventory in bbl., total cost, sales in bbl. and money received, cost of sales (studies plus dock facilities), and ending inventory in bbl. and cost. The table response should support the customer benefit cited in the referenced testimony.

Response:

The table below shows a summary of Newington's #6 oil inventory for 2012. The resale of Newington #6 oil occurred in April and May, 2012. The credits were completed in two separate transactions for a total credit of $8.4 million. The first occurred on April 18, 2012 with gross revenues of $5.5 million; expenses of $2.0 million and realized benefits of $3.5 million. This sale involved 49,543 barrels sold at a price indexed to average New York Harbor daily settlement prices during April 2012. The second occurred on May 4, 2012 with gross revenue of $15.2 million; expenses of $10.3 million and realized benefits of $4.9 million. This sale involved 149,939 barrels sold at a price indexed to average New York Harbor daily settlement prices during May 2012.

	Inventory				
	Quantity	Quantity	Value	Sale quantity	
	Gals	Barrels		Gals	Barrels
January	12,089,273	287,839.83	$ 16,115,702.12		
February	12,089,273	287,839.83	$ 16,115,702.12		
March	11,991,516	285,512.29	$ 15,940,335.84		
April	10,575,962	251,808.62	$ 15,108,265.82	(2,080,795)	49,543
May	4,278,515	101,869.40	$ 4,806,669.01	(6,297,447)	149,939
June	4,262,602	101,490.52	$ 4,790,364.55		
July	3,830,128	91,193.52	$ 4,310,754.85		
August	3,721,128	88,598.29	$ 4,149,817.93		
September	3,721,128	88,598.29	$ 4,149,817.93		
October	3,735,916	88,950.38	$ 4,201,133.03		
November	3,691,170	87,885.00	$ 4,130,658.08		
December	3,667,365	87,318.21	$ 4,093,165.20		

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-019
Page 1 of 1

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Smagula testimony, (Bates 68): For each outage listed in the table of the referenced page, please identify any opportunities PSNH lost to run the unit and if such opportunities were lost, please describe and quantify customer benefits lost.

Response:
As identified in Attachment MLS-2 (Bates 11) only the Schiller 5 outage in July, 2012 (OR-9), had positive replacement power costs (RPC), indicating lost customer benefits. All other outages from the referenced Smagula testimony (Bates 68) had RPC for the outage period which calculated to negative costs, which indicates there was no lost opportunity over the outage period. Negative values occur when energy cost to serve ES load would have been higher had the units generated energy over the term of the outage. However, it is assumed that the unit would not have generated since "replacement" costs in the market were lower, saving money for ES customers. See OCA-01, Q-8 for daily calculation details for each outage identified in Smagula testimony (Bates 68). If one reviews that data, by day, one can see there were some select days during some outages when the RPC calculated to a positive value. For example, during the Merrimack 1 outage in August, 2012 (OR-10), on August 5th and 8th, there were RPC of $11,000 and $4,000, respectively, while the total RPC for the outage was negative $20,000. There are additional individual days with positive RPC identified in that exhibit during subsequent outages.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-020
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Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 71, lines 16 through 28): Please explain why steam seal defects were not discovered by Siemens and the PSNH QC personnel in North Carolina. As part of your response, please detail who paid to make required field corrections.

Response:

Siemens immediately accepted responsibility for a service repair drawing which contained an engineering mistake made in the sizing of the water gland rotor seal diameters on the Schiller 4 Low Pressure (LP) turbine rotor. PSNH discussed this issue with Siemens and the following explanation of what happened and the actions taken to prevent a similar problem in the future was obtained.

The gland seal diameter was machined to the drawing instruction created by Siemens engineering for the service repair. However, this service repair drawing contained an incorrect machining dimension. The incorrect dimension was specified from the assembly drawing due to unfamiliarity with 1950's drawing configuration. The graphic on the gland seal assembly drawing appeared to dimension a seal tip diameter, but the drawing note on the dimension and graphic pointing to another detail drawing for the seal diameter needed to be referenced to obtain the correct dimension.
Siemens also confirmed to PSNH that to prevent this issue from reoccurring the seal drawing was revised with the final size required. Also, because this issue involved an older design configuration, the details of this error were reviewed with all members of the turbine engineering department.

Siemens covered all the cost associated with the subsequent repairs to the rotor gland seals.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-021
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Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Smagula testimony, (Bates 74, lines 7 through 14): Please detail any information that PSNH has to support the conclusion that the keyboard issue is specific to this outage and not generic in nature.

Response:
The Merrimack Station control room workstations are equipped with a number of keyboards, nine used to support Unit 1 operations, eight associated with Unit 2 and one common workstation. The control rooms and keyboards are active 24 hours per day, 365 days per year and have not experienced similar issues that would indicate a systemic problem or concern. Merrimack Station personnel also contacted the Station Services Group that provide technical support to all the stations regarding instrumentation and controls and the associated equipment. This group agreed that they had not seen evidence of a larger problem, but rather this was an isolated incident that could not be repeated; and thus this event did not indicate a generic keyboard / equipment concern. Again, we have seen no repeat incident of this issue.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-022
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Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Smagula testimony, (Bates 74, and Recommendation 2012-1, lines 7 through 14): The response appears to address PSNH's actions prior to its agreement to this item in the Stipulation Agreement in DE 12-116. Please supplement this response with PSNH's actions taken post Stipulation Agreement.

Response:
PSNH continues to work on the Recommendations associated with the Stipulation Agreement in DE 12-116 and a status of these recommendations was provided in testimony. PSNH will continue to discuss these items with the Staff consultant during the review sessions and provide an updated response at the completion of those discussions.

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Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-023
Page 1 of 1

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 78 and Recommendation 2012-2): The response appears to address PSNH's actions prior to its agreement to this item in the Stipulation Agreement in DE 12-116. Please supplement this response with PSNH's actions taken post Stipulation Agreement.

Response:

PSNH continues to work on the Recommendations associated with the Stipulation Agreement in DE 12-116 and a status of these recommendations was provided in testimony. PSNH will continue to discuss these items with the Staff consultant during the review sessions and provide an updated response at the completion of those discussions.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-024
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Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 82 and Recommendation 2012-5): For each generator interconnection, please identify the risk and potential consequences of unsuccessful clearing of faults at or near each generation connection that may result in generator or generator interconnection damage. As part of your response, please supply the fault condition sequence(s) that produces the undesired result.

Response:

PSNH continues to work on the Recommendations associated with the Stipulation Agreement in DE 12-116 and a status of these recommendations was provided in testimony. PSNH will continue to discuss these items with the Staff consultant during the review sessions and provide an updated response at the completion of those discussions.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-025
Page 1 of 1

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 82 and Recommendation 2012-5): Staff understood that all 4 GSUs at Garvins were previously replaced. Please reconcile this statement with the last sentence of paragraph 2 in your response to Recommendation 2012-5 and supply information as to when the GSUs were replaced or are planned to be replaced.

Response:

Garvins Falls currently has two GSUs. All GSUs at Garvins have been replaced.

GSU transformer TB21 is 5/7MVA, 34.5-4.16kV connected to generators G1 and G2 which are 4.16kV units. Transformer TB21 was replaced in the 1980's.
GSU transformer TB36 is 7.5/9.375MVA, 34.5-12kV connected to generators G3 and G4 which are 12kV units. Transformer TB36 replaced two GSU transformer banks, TB36-1 and TB36-2, in 2008.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-026
Page 1 of 1

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 83 and Recommendation 2012-6): PSNH committed to a time-bounded mercoid switch replacement program in Recommendation 2012-6. PSNH complied with its commitment as far as hydro units are concerned, but has not done so at the fossil stations. Please explain why the PSNH position is responsive to its commitment in the Stipulation Agreement.

Response:

PSNH continues to work on the Recommendations associated with the Stipulation Agreement in DE 12-116 and a status of these recommendations was provided in testimony. PSNH will continue to discuss these items with the Staff consultant during the review sessions and provide an updated response at the completion of those discussions.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-027
Page 1 of 1

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Smagula testimony, (Bates 84 and Recommendation 2012-7): Please explain why PSNH does not just operate its unit ventilation schemes on summer time values on a year-round basis so that constant vigilance is not required and unexpected temperature fluctuations are averted.

Response:
The summer ventilation scheme is not appropriate for cold weather winter conditions.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-028
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Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Smagula testimony, (Bates 86 and Recommendation 2012-9): The response does not address the commitment PSNH made on this subject matter. Please describe the actions PSNH took to comply with Recommendation 2012-9.

Response:
PSNH continues to work on the Recommendations associated with the Stipulation Agreement in DE 12-116 and a status of these recommendations was provided in testimony. PSNH will continue to discuss these items with the Staff consultant during the review sessions and provide an updated response at the completion of those discussions.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-029
Page 1 of 2

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 87 and 88): Please reconcile the stable results of your stability analysis for all faults on or in proximity to the 355 34.5 kV circuit north of Lost Nation for the years 2010 through 2012. If your results do not agree with the actual outages, please reconcile on a per fault/outage basis.

Response:

During the time period of 2010-2012, there have been over 400 primary faults on or in proximity to the 355 34.5 kV circuit. In that time frame, Canaan Hydro has experienced 13 distribution line related trips. The trips have been attributed to faults on the 376X main line, 355X main line or just beyond the 355X10 recloser. No trips have been attributed to faults on circuits tapped off the main lines. A review of the primary faults revealed 21 events on the 376X, 355X or just beyond the 355X10 recloser. The attached table lists the 21 events; the 13 trips and the 8 additional faults that did not cause a trip of Canaan Hydro. Events where the Unit Trip and Stability Model Trip do not agree are discussed below.

Events #1 and #3

Lightning strikes caused a trip and reclose of the 376X line. Event 1 caused a trip of Canaan Hydro, Event 3 did not. Since the location of the fault is unknown, it is also unknown whether the stability model would have shown a trip of the hydro for these faults.

Event #2

A tree on the 376X line between Lancaster and Portland Pipe caused a trip of Canaan Hydro. The stability model simulation does not show a trip of the hydro for a fault at this location. There is no apparent reconciliation for this disagreement. The disturbance monitor at Lost Nation was out of service at the time of this event. The stability models for the hydro generator and exciter were created with the best available data. Detailed disturbance data is not available from the Canaan site, therefore it is unknown if the unit truly tripped due to stability.

Events #7 through #10

These events were faults on the 355X main line. Since Canaan Hydro is ultimately connected to the system via the 355X, it is expected to trip on undervoltage for these faults and these trips are not stability related.

Events #15, #18, #19 and #21

These events were faults beyond the 355X10 recloser. Canaan Hydro did not trip, however, the type of fault is unknown. The stability model simulation shows a trip of the hydro for a three phase to ground fault at this location. For a single phase to ground, two phase to ground or phase to phase fault at this location, the simulation shows that the hydro remains stable.

Event #	Circuit	Date	DIR#	Truper #	Location of Fault	Unit Trip	Stability Model Trip	Comment
1	376X	05/27/2011	11-05-27-01	None	Unknown	Yes	Unknown	Lightning, trip/reclose
2	376X	06/01/2011	11-06-01-02	273364	Between Lancaster and Portland Pipe	Yes	No	
3	376X	09/04/2011	11-09-04-01	None	Unknown	No	Unknown	Lightning, trip/reclose
4	376X	06/02/2012	12-06-02-01	301734	Between North Umberland and Lancaster	No	No	
5	376X	08/10/2012	12-08-10-01	None	Closer to Whitefield than Lost Nation	No	No	
6	376X	10/29/2012	12-10-29-51	314868	Whitefield side of Lancaster	No	No	
7	355X	02/26/2010	10-02-26-21	Multiple	Multiple	Yes	Not Stability Related	2010 Wind Storm
8	355X	03/18/2011	11-03-18-02	None	Unknown	Yes	Not Stability Related	Trip/reclose
9	355X	04/21/2011	11-04-21-02	None	Beyond Ampad Inc Tap	Yes	Not Stability Related	Trip/reclose
10	355X	05/29/2012	12-05-29-05	301032	Beyond Ampad Inc Tap	Yes	Not Stability Related	
11	355X10	05/06/2010	None	Multiple	Multiple	Yes	Yes (3 phase fault only)	
12	355X10	05/07/2010	None	251543	Between 355X10 and recloser at pole 3/191	Yes	Yes (3 phase fault only)	
13	355X10	08/02/2010	10-08-02-02	256731	Between 355X10 and recloser at pole 3/191	Yes	Yes (3 phase fault only)	
14	355X10	08/23/2010	10-08-23-01	262099	Between 355X10 and recloser at pole 3/191	Yes	Yes (3 phase fault only)	
15	355X10	12/01/2010	None	264099	Between 355X10 and recloser at pole 3/191	No	Yes (3 phase fault only)	
16	355X10	12/28/2010	10-12-28-01	265247	Between 355X10 and recloser at pole 3/191	Yes	Yes (3 phase fault only)	
17	355X10	12/08/2011	None	292923	Between 355X10 and recloser at pole 3/191	Yes	Yes (3 phase fault only)	
18	355X10	12/08/2011	None	292919	Between 355X10 and recloser at pole 3/191	No	Yes (3 phase fault only)	
19	355X10	03/19/2012	None	297678	Between 355X10 and recloser at pole 3/191	No	Yes (3 phase fault only)	
20	355X10	04/23/2012	None	299233	Between 355X10 and recloser at pole 3/191	Yes	Yes (3 phase fault only)	
21	355X10	06/27/2012	None	302903	Between 355X10 and recloser at pole 3/191	No	Yes (3 phase fault only)	

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-030
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Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Smagula testimony, (Bates 90): PSNH states that it only agreed to address danger trees that are outside of its ROWs for the existing REP. Where PSNH has determined that it has the rights to remove said trees and it explicity included those rights in the exercise of its easements, please explain how it would not be good utility practice to do so after the expiration of the existing REP.

Response:
This would be a good utility practice. Hazard tree removal is a component of a strong Vegetation Management program. The funding for additional hazard trees outside of the ROW's was not part of the budget prior to REP. To continue this program after the existing REP expires will require an increase in the Vegetation Management budget.

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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-031
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Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Reference Smagula testimony, (Bates 143): Please supply a similar table that does not include planned outages. As part of your response, please supply unit totals for both tables.

Response:
Attached please find an updated table that does not included planned outages in the data presented. Also, the table in the testimony (Bates page 143), which does include planned outages is also included with the unit totals listed.

MDC-10

PSNH Fossil Steam Unit Availability
With Planned Outages Omitted
January 2012 through December 2012

	Merrimack Unit 1	Merrimack Unit 2	Newington Unit 1	Schiller Unit 4	Schiller Unit 5	Schiller Unit 6
January	81.0%	98.0%	95.0%	99.8%	97.3%	98.4%
February	96.8%	80.0%	99.9%	100.0%	100.0%	42.4%
March	98.7%	98.5%	100.0%	100.0%	99.8%	49.2%
April	61.0%	4.2%	100.0%	100.0%	99.3%	99.0%
May	98.7%	24.4%	100.0%	4.7%	100.0%	99.0%
June	94.2%	82.4%	98.6%	6.8%	100.0%	98.8%
July	98.7%	98.4%	100.0%	99.9%	69.6%	99.0%
August	69.5%	88.8%	100.0%	92.7%	100.0%	98.8%
September	100.0%	94.5%	99.5%	100.0%	99.8%	99.0%
October	100.0%	100.0%	100.0%	99.9%	99.7%	99.0%
November	98.3%	99.2%	88.6%	99.8%	99.8%	99.0%
December	98.9%	86.0%	100.0%	99.8%	99.5%	99.0%
TOTAL	93.9%	81.8%	98.4%	83.6%	96.9%	90.2%

PSNH Fossil Steam Unit Availability

January 2012 through December 2012

	Merrimack Unit 1	Merrimack Unit 2	Newington Unit 1	Schiller Unit 4	Schiller Unit 5	Schiller Unit 6
January	81.0%	98.0%	95.0%	99.8%	97.3%	98.4%
February	96.8%	80.0%	99.9%	100.0%	100.0%	42.4%
March	98.7%	98.5%	100.0%	100.0%	75.1%	49.2%
April	61.0%	4.2%	61.4%	100.0%	58.2%	99.0%
May	98.7%	24.4%	100.0%	4.7%	100.0%	99.0%
June	94.2%	82.4%	98.6%	6.8%	100.0%	98.8%
July	98.7%	98.4%	100.0%	99.9%	69.6%	99.0%
August	69.5%	88.8%	100.0%	92.7%	100.0%	98.8%
September	76.6%	94.5%	99.5%	100.0%	99.8%	99.0%
October	63.3%	67.6%	100.0%	99.9%	99.7%	99.0%
November	98.3%	69.5%	88.6%	99.8%	99.8%	99.0%
December	98.9%	86.0%	100.0%	99.8%	99.5%	99.0%
Totals	86.3%	74.5%	95.3%	83.6%	91.6%	90.2%

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-032
Page 1 of 2

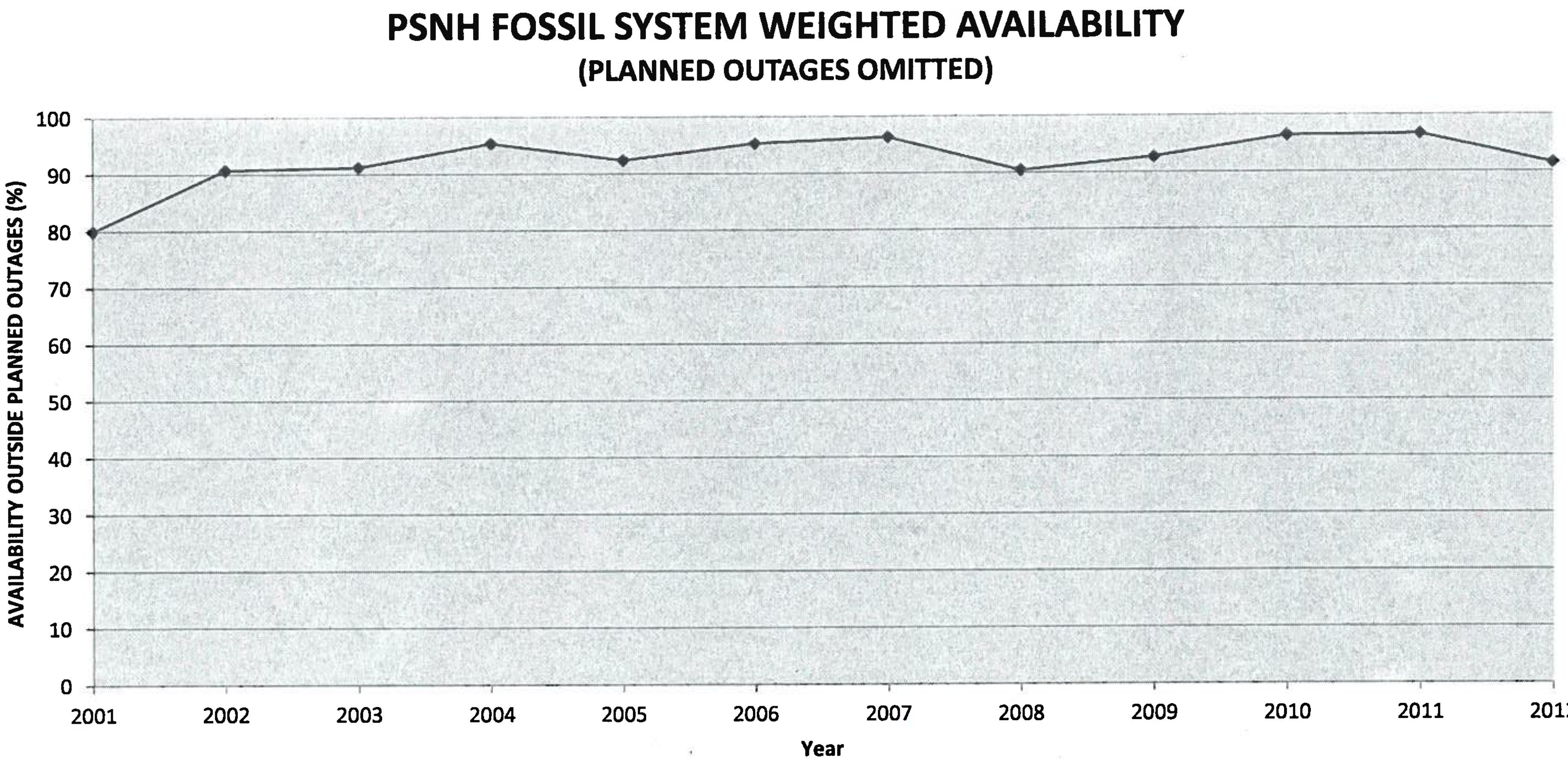
Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Reference Smagula testimony, (Bates 144): Please identify if planned outages are included or excluded from the information presented. Please supply an additional graph that complements the existing graph so that graphs with and without planned outages are available.

Response:

Planned outages are included in the PSNH Fossil system weighted EAF chart included in testimony (Bates p144). Attached is a similar graph with planned outages excluded.


PSNH FOSSIL SYSTEM WEIGHTED AVAILABILITY
(PLANNED OUTAGES OMITTED)
AVAILABILITY OUTSIDE PLANNED OUTAGES (%)
100
90
80
70
60
50
40
30
20
10
0
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Year

Public Service Company of New Hampshire
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Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-033
Page 1 of 1

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Please make available for inspection in Manchester, NH the following materials: Any work planning documents related to the four planned maintenance outages listed in Smagula testimony on Bates page 75; long range O&M and capital plans (and related expenditures) for the PSNH generation fleet including the 5 and/or 10-year maintenance and capital budgets as applicable; the results of stability analyses performed regarding the Canaan Hydro and Lost Nation area of the system, and the internal write-ups describing the circumstances surrounding hydro outages and the White Lake and Lost Nation combustion turbine outages for 2012.

Response:
The information requested above will be available for review by the Staff consultant.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-034
Page 1 of 2

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:
Question regarding Technical Updates for Average Year of Final Retirement (AYFR) with respect to generation assets. This question references the following documents: Exhibit 7 in DE 11-215, PSNH's response to Staff 2-1 in DE 11-215, and the transcript of the June 19, 2012 hearing in DE 11-215.

Referencing the 1998 and 2007 AYFR Technical Updates provided in response to Staff 2-1 in DE 11-215, for each of those updates, please provide a table similar to the one provided in Exhibit 7 in DE 11-215 that shows for the same eight generating stations the then-current AYFR, the assumed AYFR resulting from the Technical Update, the technical basis for the change, and an explanation of the technical basis.

Response:
Please see the attached.

MDC-10

	Station	1998 Technical Update Current	1998 Technical Update Assumed	2007 Technical Update Current	2007 Technical Update Assumed	Technical Basis
1.	Wyman		2011	2011	2011	(1)
2.	Newington		2014	2014	2014	(1)
3.	Lost Nation Jet		2004	2007	2012	(2)
4.	MK Jet		2004	2007	2012	(2)
5.	Schiller Jet		2004	2007	2012	(2)
6.	White Lake Jet		2004	2007	2012	(2)
7.	Merrimack		2005/2007	2005/2007	2023	(3)
8.	Schiller		2002/2005/2007	2002/2005/2007	2020	(4)

Summary of Changes

(1) Original AYFR's associated with the initial installation

(2) AYFR's were identified as clearly too short with respect to the useful values of these units which continue to provide benefit to the system. A management review of the facility infrastructure, systems, and equipment did not find 5 years to be unreasonable.

(3) AYFR's were identified as clearly too short with respect to the useful values of these units which continue to provide benefit to the system. A management review of the facility infrastructure, systems, and equipment did not find 15 years to be unreasonable.

(4) AYFR's were identified as clearly too short with respect to the useful values of these units which continue to provide benefit to the system. A management review of the facility infrastructure, systems, and equipment did not find 15 years to be unreasonable with the investment in the repowered Unit 5 boiler and the ongoing routine maintenance on Units 4 and 6.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request STAFF-01
Dated: 07/19/2013
Q-STAFF-035
Page 1 of 1

Witness: **William H. Smagula**
Request from: **New Hampshire Public Utilities Commission Staff**

Question:

Question regarding Technical Updates for Average Year of Final Retirement (AYFR) with respect to generation assets. This question references the following documents: Exhibit 7 in DE 11-215, PSNH's response to Staff 2-1 in DE 11-215, and the transcript of the June 19, 2012 hearing in DE 11-215.

Considering Mr. Baumann's testimony during the June 19, 2012 hearing in DE 11-215 (transcript p. 24) that the AYFR is a combination of an engineering determination and a review of reasonableness by accountants, please refer to Exhibit 7 in DE 11-215 and provide the following information:

a. Please provide additional engineering analysis supporting the 25-year extension of the AYFR for Newington Station.
b. Please further explain how the non-scrubber "remaining asset" at Merrimack Station was "aligned" with the new assumed AYFR of 2038. What assessment of the "remaining asset" at Merrimack Station led to the conclusion that the 2038 AYFR was "consistent with the condition of the equipment at the facility?" Please provide all relevant documentation.
c. Please explain why there was no change to the AYFR for Schiller Station.
d. How do the differences in Unit 5 vs. units 4 & 6 play into the determination of the AYFR for Schiller Station? Is it conceivable that the units will be retired at different times? Please explain.

Response:

a. An engineering review was completed in 2011 that supported a 10 year extension of the AYFR for Newington Station. Subsequent to the review it was recognized that with the age of the Newington unit and the more recent low capacity factor of the unit an appropriate AYFR extension was 25 years.
b. Merrimack Station's AYFR was 2023. A management review confirmed that with the more recent reduced capacity factors and the routine maintenance completed at the facility, the non-scrubber equipment would be maintained in a condition to be used with the scrubber equipment and thus the AYFR was updated to 2038.
c. Typically changes to AYFR are made due to an approaching AYFR or a large investment in a facility. Schiller Station's current AYFR remains sufficiently into the future and there has been no recent large investment.
d. At this point in time all of the units have the same AYFR. Schiller Station's AYFR was assigned recognizing the new wood boiler on Unit 5 was installed in 2006 and the existing coal units with the more recent lower capacity factor would be maintained in a condition for use during that same period. Yes, it is conceivable that the units would be retired at different times. Schiller 5's boiler remains the newest boiler and could result in a life beyond the two coal units.

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Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-STAFF-002 **Page 1 of 3**
Request from: New Hampshire Public Utilities Commission Staff

Witness: Frederick White, William H. Smagula

Request:
Reference response to Staff 1-9. Please supply column annual totals and customer migration loads in the same format as originally requested.

Response:
Please see the attached document. Page 2 of 3 is the original table provided in Staff-1 Q-9 (ES load), with column totals added. Page 3 of 3 is a table in the same format, of actual and "planning" ES migration load. Planning figures are those utilized when evaluating the need for supplemental purchases and reflect then current migration levels.

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Docket No. DE 13-108

Data Request STAFF-02
Dated: 8/26/13
Q-STAFF-002

	Actual Loads						Planning Loads					
	Peak		Off-Peak		Total		Peak		Off-Peak		Total	
2012	MW	MWh	MW	MWh	MW	MWh	MW	MWh	MW	MWh	MW	MWh
Jan	923.5	240,195	933.1	239,911	933.1	480,106	896.0	253,190	808.6	239,929	896.0	493,120
Feb	840.6	224,289	886.7	198,940	886.7	423,229	864.1	244,657	780.3	201,322	864.1	445,979
Mar	828.3	214,952	782.6	194,745	828.3	409,697	824.1	242,635	716.6	202,652	824.1	445,287
Apr	727.2	191,417	694.6	177,089	727.2	368,506	719.3	217,862	621.7	183,555	719.3	401,417
May	694.4	201,593	698.5	178,010	698.5	379,603	728.4	222,363	626.4	181,665	728.4	404,028
Jun	1,042.3	215,934	838.6	189,360	1,042.3	405,294	968.9	241,472	831.1	186,297	968.9	427,769
Jul	1,059.7	252,381	941.4	238,161	1,059.7	490,542	1,027.8	269,936	801.4	211,280	1,027.8	481,217
Aug	964.6	260,724	952.3	204,803	964.6	465,527	973.7	274,741	900.1	190,401	973.7	465,143
Sep	762.9	169,929	759.5	188,683	762.9	358,612	868.6	210,785	875.5	197,086	875.5	407,871
Oct	675.3	194,860	675.0	157,659	675.3	352,520	662.8	215,382	597.2	172,694	662.8	388,076
Nov	770.0	202,450	772.4	184,785	772.4	387,235	717.0	206,496	641.8	182,016	717.0	388,512
Dec	819.3	202,487	839.8	224,523	839.8	427,011	793.8	211,224	708.5	212,175	793.8	423,399
Total	1,059.7	2,571,213	952.3	2,376,669	1,059.7	4,947,882	1,027.8	2,810,744	900.1	2,361,072	1,027.8	5,171,816

Notes:
Portfolio positions and supplemental purchases are typically evaluated assuming no unit outages and 100% unit availability.
Supplemental purchase guidelines currently provide for a margin between the total shortfall position and the actual amount purchased.
Monthly supplemental purchases are approved by management at the officer level.
In late March/early April, monthly purchases for April & May were completed.
In mid-late May, monthly purchases for June thru November were completed.

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Data Request STAFF-02
Dated: 8/26/13
Q-STAFF-002
Page 3 of 3

	Actual Migration						Planning Migration					
	Peak		Off-Peak		Total		Peak		Off-Peak		Total	
2012	MW	MWh	MW	MWh	MW	MWh	MW	MWh	MW	MWh	MW	MWh
Jan	470.1	135,050	411.4	121,175	470.1	256,224	461.6	130,431	416.6	123,600	461.6	254,031
Feb	447.6	130,792	386.1	105,360	447.6	236,152	445.2	126,035	402.0	103,712	445.2	229,747
Mar	473.2	138,843	375.2	111,897	473.2	250,740	424.5	124,994	369.1	104,396	424.5	229,390
Apr	500.1	131,423	372.5	107,584	500.1	239,007	387.3	117,310	334.8	98,837	387.3	216,147
May	532.2	150,789	399.7	118,075	532.2	268,864	392.2	119,734	337.3	97,820	392.2	217,553
Jun	666.5	156,479	465.5	125,062	666.5	281,542	545.0	135,828	467.5	104,792	545.0	240,620
Jul	643.7	171,161	481.3	145,789	643.7	316,950	629.9	165,445	491.2	129,494	629.9	294,939
Aug	652.6	195,854	489.0	141,235	652.6	337,089	596.8	168,390	551.7	116,698	596.8	285,087
Sep	614.4	149,433	466.2	146,236	614.4	295,669	532.3	129,191	536.6	120,794	536.6	249,985
Oct	548.5	174,156	458.8	131,966	548.5	306,122	441.9	143,588	398.1	115,129	441.9	258,717
Nov	533.1	149,607	453.0	127,593	533.1	277,200	478.0	137,664	427.9	121,344	478.0	259,008
Dec	531.6	148,438	460.8	150,844	531.6	299,282	529.2	140,816	472.4	141,450	529.2	282,266
Total	666.5	1,832,025	489.0	1,532,817	666.5	3,364,842	629.9	1,639,426	551.7	1,378,066	629.9	3,017,493

Notes:
Portfolio positions and supplemental purchases are typically evaluated assuming no unit outages and 100% unit availability.
Supplemental purchase guidelines currently provide for a margin between the total shortfall position and the actual amount purchased.
Monthly supplemental purchases are approved by management at the officer level.
In late March/early April, monthly purchases for April & May were completed.
In mid-late May, monthly purchases for June thru November were completed.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-STAFF-003 **Page 1 of 1**
Request from: New Hampshire Public Utilities Commission Staff

Witness: William H. Smagula

Request:
Reference response to Staff 1-18. What burn time does the 87,318 barrels of oil represent at the end of December? Please explain East Coast fuel oil and barge capabilities/availabilities/shipping times as they exist with reduced fuel volumes being consumed. Please supply PSNH's fuel inventory policy for Newington Station by season in barrels.

Response:
As background, Newington Station has four bulk fuel oil storage tanks that have a combined working capacity of 730,000 barrels. Newington Station utilizes the deep water marine terminal located across the street at PSNH's Schiller Station in Portsmouth, New Hampshire, for the receipt of No. 6 fuel oil. The terminal can accommodate ships carrying up to 250,000 barrels (10.5 million gallons) of oil as well as barges carrying lesser amounts. A piping system interconnects all four tanks, which allows for oil transfer and blending. Fuel oil is transferred on a daily or as needed basis to the Newington on-site day tank, where it is used in Newington's boiler. The capacity of the four oil storage tanks is sufficient to sustain Newington Station's operations at full load, oil only operation mode for a maximum of 50 days.

In 2012, Newington Station targeted a #6 oil inventory between 100,000 and 150,000 barrels. With the oil sales in April and May Newington's inventory remained just over 100,000 barrels. Generation and Fuel management maintained on-going discussions regarding the timing of Newington's next oil purchase. These discussions considered a number of items including usage during the second half of 2012, east coast fuel oil barge delivery windows, and expected early 2013 oil usage. The 2011 and 2012 records confirmed Newington's highest oil use was in the months of January and February. In anticipation of similar usage in January/February 2013, a barge of 70,000 barrels was ordered in December and received early January.

During 2012, Newington Station burned natural gas (NG) and/or oil to support the ISO-NE system; and more specifically, Newington rarely operated on oil only, but rather on NG only or a blend of both oil and NG. In fact, one of the most typical operating scenarios for Newington was to run at 100 MW for system reserve. Depending on unit load, hours of operation per day, and the fuel mix, the quantity of oil burned per day varies widely. As a high end reference using January 2011 for a high oil use month with 60,000 barrels burned, and knowing January 2012 #6 oil burn was less than 20,000 barrels, the end of year inventory of 87,318 plus the December order of 70,000 barrels was reasonable for a range of operating scenarios that could occur during the first few months of 2013.

PSNH continues to monitor barge conditions for the east coast including capabilities, availability and shipping times to assess the changing supply scenarios. This information combined with changing demand scenarios and Newington's fuel mix is managed to insure Newington is always positioned with sufficient fuel inventory and natural gas to operate the plant as requested by ISO and maximize PSNH's customer benefit.

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Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-STAFF-006 **Page 1 of 1**
Request from: New Hampshire Public Utilities Commission Staff

Witness: William H. Smagula

Request:
Reference response to OCA 1-15. Is it a correct understanding of the response that after April 2012 no coal was trucked from Schiller to Merrimack? If not, please explain.

Response:
Yes.

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Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-STAFF-007 **Page 1 of 1**
Request from: New Hampshire Public Utilities Commission Staff

Witness: William H. Smagula

Request:
Reference response to OCA 1-15. Is it a correct understanding of the response that after April 30 there were no more shipments of gypsum trucked off the site, or does the response mean that there were no more gypsum shipments on a "return run?" Please provide the number of gypsum shipments that occurred by month after the April 30 shipment.

Response:
OCA 1-15 states that the first shipment of gypsum to Georgia Pacific (GP) left the Merrimack Station site on April 30, 2012. There were no gypsum shipments off-site prior to April 30. The table below lists the number of truck shipments each month after April.

Year 2012 -	
Month	**Truck Shipments to GP**
April	11
May	305
June	339
July	336
August	275
September	90
October	0
November	39
December	253

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Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-STAFF-008 **Page 1 of 1**
Request from: New Hampshire Public Utilities Commission Staff

Witness: Frederick White, Allen W. Scarfone, Dennis M. Mullen

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Request:
Reference response to OCA 1-16. Please clarify the function of the Lost Nation and White lake combustion turbines as their operation relates to localized reliability.

Response:
The Lost Nation and White Lake combustion turbines can be dispatched by ISO-NE to meet the region's energy needs and are claimed for capacity by PSNH. In addition these combustion turbines can support local distribution and transmission system reliability. For example, under certain system conditions, when a 115-kV transmission line is out of service, these generators can be dispatched, as needed by the PSNH control center, to maintain local area system reliability if contingency events could result in thermal overloads or low system voltages that may adversely impact electric service to PSNH's customers. The PSNH control center can also dispatch these units to ensure reliable electric service to local area loads during times when maintenance on either distribution or transmission facilities is performed.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-STAFF-009 **Page 1 of 1**
Request from: New Hampshire Public Utilities Commission Staff

Witness: Frederick White

Request:
Reference response to OCA 1-37. Please further explain the second sentence of the response: "As such the Core energy efficiency program capacity supply obligations are not used to offset ES capacity load obligations." Why wouldn't ES capacity supply obligations be reduced?

Response:
The revenue received from CORE energy efficiency program capacity supply obligations is not used to offset ES capacity load obligation expense, as essentially happens with capacity supply obligation revenue from ES capacity resources. Rather, the revenue received from CORE energy efficiency program capacity supply obligations is rolled back into the PSNH CORE energy efficiency program.

Having clarified the original answer, it is true that because energy efficiency savings are not reconstituted for cost allocation purposes, to the extent a PSNH CORE program participant is also an ES customer and there are MW reductions occurring at the time of the ISO-NE annual peak load used to allocate the net installed capacity requirement; then PSNH's ES peak load share, the resulting capacity load obligation quantity, and therefore ES capacity expense, are reduced. These impacts are incorporated into the monthly settlement of the ISO-NE forward capacity market, however no reports identify the specific effects of the CORE program.

The CORE program offerings are available to all PSNH distribution customers and paid for by all PSNH distribution customers. Program funding is not targeted to ES customers.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-STAFF-010 **Page 1 of 1**
Request from: New Hampshire Public Utilities Commission Staff

Witness: William H. Smagula

Request:
Reference response to OCA 1-49. Please break your response down into contractor and PSNH overtime.

Response:
PSNH's response in OCA 01-049 represents the maintenance overtime associated with PSNH Labor. When market purchases can be made below the dispatch cost of the unit, thus avoiding replacement power costs, PSNH is able to utilize its own labor force and less overtime resulting in longer outage durations as noted in testimony. Outages may also last longer and be less costly utilizing less contractor labor; however, contractor labor is not specifically tracked as straight time versus overtime, but rather as total contractor cost.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request OCA-01
Dated: 07/19/2013
Q-OCA-008
Page 1 of 5

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Please provide a schedule in the same format as the response to NSTF-1, QSTAFF-001 in DE 08-066 detailing the calculation of replacement power costs. Please explain and differences in the calculation methodology since those provided in DE 08-066.

Response:
Please see the attached table for the requested information. The calculation methodology has been consistently applied in replacement power cost calculations for many years and has not changed since DE 08-066.

Replacement Power Costs - $(000)

Merrimack 1

Date	Total RPC	Spot Purchases	Bilateral Purchases	PSNH Gen	Avoided Fuel
1/23/12	(8)	47	0	0	(54)
1/24/12	(24)	55	0	0	(80)
1/25/12	(23)	59	0	0	(82)
1/26/12	(26)	58	0	0	(84)
1/27/12	(17)	32	0	0	(49)
Subtotal	(99)	251	0	0	(349)
4/2/12	(19)	22	8	0	(49)
4/3/12	(31)	25	8	0	(65)
4/4/12	(29)	26	8	0	(64)
4/5/12	(32)	24	8	2	(66)
4/6/12	(35)	24	8	0	(67)
4/7/12	(37)	21	14	0	(73)
4/8/12	(40)	18	14	0	(72)
4/9/12	(26)	30	9	0	(65)
4/10/12	(27)	27	9	0	(63)
4/11/12	(24)	31	9	0	(65)
4/12/12	(30)	25	9	0	(65)
4/13/12	(29)	21	9	0	(59)
Subtotal	(360)	296	114	2	(772)
8/4/12	(16)	27	0	0	(43)
8/5/12	11	88	0	0	(77)
8/6/12	(6)	17	0	0	(23)
8/7/12	(7)	34	0	0	(41)
8/8/12	4	56	0	1	(52)
8/9/12	(4)	14	0	0	(18)
Subtotal	(20)	235	0	1	(255)
8/11/12	(1)	(14)	15	0	(2)
8/12/12	(12)	27	15	0	(54)
8/13/12	(4)	25	17	3	(49)
8/14/12	(4)	20	17	1	(42)
Subtotal	(21)	58	65	4	(147)

Replacement Power Costs - $(000)

Merrimack 2

Date	Total RPC	Spot Purchases	Bilateral Purchases	PSNH Gen	Avoided Fuel
2/16/12	(22)	58	0	0	(80)
2/17/12	(98)	209	0	0	(307)
2/18/12	(83)	131	0	0	(214)
2/19/12	(93)	124	0	0	(217)
2/20/12	(81)	150	0	0	(232)
2/21/12	(103)	199	0	0	(302)
2/22/12	(14)	17	0	0	(31)
Subtotal	(495)	888	0	0	(1,384)
4/2/12	(85)	95	36	0	(216)
4/3/12	(137)	112	36	0	(285)
4/4/12	(130)	115	36	0	(281)
4/5/12	(143)	106	36	8	(293)
4/6/12	(153)	106	36	0	(294)
4/7/12	(164)	94	64	0	(322)
4/8/12	(175)	81	64	0	(320)
4/9/12	(116)	134	39	0	(289)
4/10/12	(119)	121	39	0	(280)
4/11/12	(107)	139	39	0	(285)
4/12/12	(133)	112	39	0	(285)
4/13/12	(128)	92	39	0	(259)
4/14/12	(155)	64	82	0	(301)
4/15/12	(157)	59	82	0	(298)
4/16/12	(132)	42	119	4	(298)
4/17/12	(122)	37	113	0	(273)
4/18/12	(132)	48	113	0	(293)
4/19/12	(147)	37	113	0	(297)
4/20/12	(144)	39	113	0	(295)
4/21/12	(133)	77	87	0	(297)
4/22/12	(144)	64	87	0	(295)
4/23/12	(138)	29	112	0	(279)
4/24/12	(111)	29	112	2	(253)
4/25/12	(111)	36	111	0	(258)
4/26/12	(108)	29	111	0	(248)
4/27/12	(107)	22	110	0	(239)
4/28/12	(120)	91	77	0	(288)
4/29/12	(132)	76	77	0	(284)
4/30/12	(117)	35	112	0	(264)
5/1/12	(93)	124	0	13	(230)
5/2/12	(95)	102	0	27	(224)
5/3/12	(59)	113	0	44	(215)
5/4/12	(79)	103	0	43	(224)
5/5/12	(118)	47	89	21	(275)
5/6/12	(117)	42	89	20	(267)
5/7/12	(73)	37	45	43	(197)
5/8/12	(83)	42	45	42	(212)
5/9/12	(77)	37	45	42	(201)
5/10/12	(65)	31	45	42	(183)
5/11/12	(61)	20	45	33	(159)
5/12/12	(116)	39	80	31	(266)
5/13/12	(119)	37	80	24	(260)
5/14/12	(77)	26	43	41	(188)
5/15/12	(72)	39	43	42	(196)
5/16/12	(76)	42	43	43	(204)
5/17/12	(65)	26	43	36	(170)
5/18/12	(64)	26	43	40	(173)
5/19/12	(76)	86	87	18	(267)
5/20/12	(80)	79	87	16	(262)
5/21/12	(74)	57	46	43	(220)
5/22/12	(73)	61	50	43	(227)
5/23/12	(78)	79	54	37	(249)
5/24/12	(24)	1	28	8	(61)
Subtotal	(5,713)	3,417	3,364	806	(13,300)
6/25/12	(88)	150	0	0	(237)
6/26/12	(52)	123	0	0	(175)
6/27/12	(34)	127	0	0	(161)
6/28/12	(38)	191	0	0	(229)
6/29/12	5	55	0	115	(165)
Subtotal	(207)	645	0	115	(967)
8/11/12	(7)	(76)	81	0	(12)
8/12/12	(62)	147	81	0	(290)
8/13/12	(21)	134	94	17	(267)
8/14/12	(21)	107	94	4	(226)
Subtotal	(111)	312	349	22	(795)
12/17/12	27	122	0	0	(95)
12/18/12	(66)	218	0	0	(284)
12/19/12	(42)	52	164	0	(258)
12/20/12	(45)	50	164	0	(259)
12/21/12	(38)	(6)	160	0	(192)
Subtotal	(165)	435	488	0	(1,088)

Replacement Power Costs - $(000)

Newington

Date	Total RPC	Spot Purchases	Bilateral Purchases	PSNH Gen	Avoided Fuel
11/26/12	(1)	14	0	0	(14)
11/27/12	0	0	0	0	0
11/28/12	0	0	0	0	0
11/29/12	0	0	0	0	0
Subtotal	(1)	14	0	0	(14)

Schiller 4

Date	Total RPC	Spot Purchases	Bilateral Purchases	PSNH Gen	Avoided Fuel
5/2/12	(14)	13	0	0	(27)
5/3/12	(20)	25	0	0	(45)
5/4/12	(23)	22	0	0	(45)
5/5/12	(26)	20	0	0	(45)
5/6/12	(26)	17	0	0	(43)
5/7/12	(23)	21	0	0	(44)
5/8/12	(26)	18	0	0	(44)
5/9/12	(24)	20	0	0	(43)
5/10/12	(21)	22	0	0	(43)
5/11/12	(21)	14	0	0	(35)
5/12/12	(24)	20	0	0	(45)
5/13/12	(25)	18	0	0	(43)
5/14/12	(27)	16	0	0	(42)
5/15/12	(24)	19	0	0	(44)
5/16/12	(25)	20	0	0	(45)
5/17/12	(18)	19	0	0	(37)
5/18/12	(22)	19	0	0	(41)
5/19/12	2	46	0	0	(44)
5/20/12	(3)	40	0	0	(43)
5/21/12	(21)	24	0	0	(45)
5/22/12	(21)	24	0	0	(45)
5/23/12	(21)	24	0	0	(45)
5/24/12	(18)	27	0	0	(45)
5/25/12	(19)	26	0	0	(45)
5/26/12	(20)	25	0	0	(45)
5/27/12	(25)	20	0	0	(45)
5/28/12	(20)	26	0	0	(45)
5/29/12	(23)	22	0	0	(45)
5/30/12	(17)	29	0	0	(45)
5/31/12	(24)	21	0	0	(45)
6/1/12	(22)	21	0	0	(43)
6/2/12	(27)	18	0	0	(45)
6/3/12	(26)	18	0	0	(44)
6/4/12	(23)	20	0	0	(43)
6/5/12	(24)	17	0	0	(41)
6/6/12	(24)	17	0	0	(41)
6/7/12	(24)	17	0	0	(40)
6/8/12	(22)	19	0	0	(41)
6/9/12	(24)	19	0	0	(42)
6/10/12	(24)	17	0	0	(41)
6/11/12	(14)	22	0	0	(36)
6/12/12	(21)	18	0	0	(39)
6/13/12	(22)	17	0	0	(39)
6/14/12	(20)	15	0	0	(35)
6/15/12	(19)	18	0	0	(37)
6/16/12	(26)	17	0	0	(42)
6/17/12	(25)	16	0	0	(41)
6/18/12	(25)	20	0	0	(45)
6/19/12	(18)	27	0	0	(46)
6/20/12	63	105	0	4	(46)
6/21/12	14	8	0	37	(32)
6/22/12	(16)	(7)	0	15	(25)
6/23/12	(16)	30	0	0	(45)
6/24/12	(22)	23	0	0	(45)
6/25/12	(2)	3	0	0	(4)
6/26/12	(1)	2	0	0	(3)
6/27/12	(1)	2	0	0	(3)
6/28/12	(1)	3	0	0	(4)
Subtotal	(1,030)	1,201	0	57	(2,287)

Schiller 5

Date	Total RPC	Spot Purchases	Bilateral Purchases	PSNH Gen	Avoided Fuel
7/15/12	10	12	0	0	(2)
7/16/12	29	37	0	0	(8)
7/17/12	83	77	0	5	0
7/18/12	55	49	0	0	5
7/19/12	33	35	0	0	(2)
7/20/12	29	25	0	0	4
7/21/12	14	5	0	0	9
Subtotal	254	241	0	5	7

Replacement Power Costs - $(000)

Schiller 6

Date	Total RPC	Spot Purchases	Bilateral Purchases	PSNH Gen	Avoided Fuel
2/13/12	(5)	24	0	0	(29)
2/14/12	(16)	25	0	0	(41)
2/15/12	(13)	23	0	0	(36)
2/16/12	(15)	23	0	0	(37)
2/17/12	(18)	25	0	0	(44)
2/18/12	(5)	5	0	0	(11)
2/19/12	(6)	6	0	0	(12)
2/20/12	(7)	8	0	0	(15)
2/21/12	(20)	26	0	0	(45)
2/22/12	(18)	23	0	0	(41)
2/23/12	3	11	0	0	(9)
2/24/12	(2)	10	0	0	(13)
2/25/12	(2)	7	0	0	(10)
2/26/12	(3)	10	0	0	(12)
2/27/12	(0)	11	0	0	(11)
2/28/12	(2)	7	0	0	(9)
2/29/12	(4)	12	0	0	(16)
3/1/12	(5)	19	0	0	(24)
3/2/12	(3)	20	0	0	(23)
3/3/12	(19)	2	0	0	(21)
3/4/12	(11)	18	0	2	(30)
3/5/12	(3)	23	0	0	(26)
3/6/12	(4)	35	0	0	(39)
3/7/12	(23)	23	0	0	(45)
3/8/12	(23)	23	0	0	(46)
3/9/12	(22)	23	0	0	(45)
3/10/12	(25)	21	0	0	(45)
3/11/12	(23)	20	0	0	(43)
3/12/12	(24)	22	0	0	(45)
3/13/12	(27)	19	0	0	(45)
3/14/12	(27)	18	0	0	(45)
3/15/12	(26)	20	0	0	(45)
3/16/12	(17)	10	0	0	(27)
Subtotal	(415)	572	0	2	(988)

Wyman 4

Date	Total RPC	Spot Purchases	Bilateral Purchases	PSNH Gen	Avoided Fuel
3/18/12	(64)	7	0	0	(71)
3/19/12	(63)	9	0	0	(72)
3/20/12	(70)	8	0	0	(78)
3/21/12	(71)	7	0	0	(78)
3/22/12	(70)	8	0	0	(78)
3/23/12	(71)	7	0	0	(78)
Subtotal	(409)	45	0	0	(455)

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-011
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Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Shelnitz Attachment MLS-2. For each outage listed with no Replacement Power Costs (RPC) shown, please explain why this is the case. Please provide supporting calculations demonstrating that it is appropriate that no RPC should have been included.

Response:
When replacement power costs for an outage calculate to a negative cost they are shown in MLS-2 as zero dollars; that is, there was no additional cost borne by ES customers as a result of the outage. Negative values occur when energy cost to serve ES load would have been higher had the units generated energy over the term of the outage. However, it is assumed that the unit would not have generated since "replacement" costs in the market were lower, saving money for ES customers. See OCA-01, Q-8 for calculation details.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-012
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Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Shelnitz MLS-4 page 8. Please provide a schedule detailing the dates that Newington Station was serving load each month of 2012.

Response:
Newington served ES load on the following dates in 2012:
1/3/12
1/4/12
1/15/12
1/16/12
1/18/12
1/31/12
3/5/12
6/20/12
6/21/12
6/22/12
6/29/12
7/3/12
7/4/12
7/5/12
7/6/12
7/7/12
7/8/12
7/9/12
7/10/12
7/11/12
7/12/12
7/13/12
7/14/12
7/16/12
7/17/12
7/18/12
7/23/12
7/24/12
7/26/12
7/27/12
8/3/12
8/4/12
8/6/12
8/9/12
9/7/12
11/18/12
11/19/12

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Q-OCA-013
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Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Shelnitz Attachment MLS-2, line 31-42. Please identify which PSNH generation units were available for operation during the 7/15/12-07/21/12 Schiller 5 outage. Please state whether these plants provided power during the outage and if so, at what cost. If no PSNH plants provided power during the Schiller 5 outage, please provide the cost /benefit anaylsis behind that decision.

Response:
Merrimack 1 & 2, Schiller 4 & 6, Newington, hydro units, and ICUs were available for operation during the outage term identified, and all provided power during the term, at various times. Merrimack 1 & 2 provided energy at approximately $51/MWh, Schiller 4 & 6 at approximately $57/MWh, Newington at approximately $79/MWh, hydro units at $0/MWh, and ICUs at approximately $327/MWh.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-015
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Reference MLS-4 page 8 “Fossil Energy Costs by Station.” During 2012 what quantity of coal was transferred by truck from Schiller to Merrimack Station? Please provide the tons per month and number of truck shipments. For each month please specify how many of these coal truck shipments returned to the seacoast area transporting gypsum on the “return run.” Please describe the trucking arrangements and costs to provide these services (Company owned vehicles, leased vehicles, non-Company contractor, etc.).

Response:
Below please find the quantity of coal transferred by truck from Schiller Station to Merrimack Station. The table includes both the tons per month and the number of trucks per month.

Coal trucking is currently being contracted to Weaver Brothers Construction. PSNH pays $8.91 per ton for the transfer of coal by truck. Gypsum trucking is the responsibility of GP and currently being sub-contracted to D.W. Little Trucking.

2012	tons/month	# of trucks	Comments
January	13,619	449	
February	15,990	541	
March	5,842	194	
April	418	13	April 13 - last coal truck from SR to MK
May	0	0	April 30 - first truck of gypsum off-site to GP
June	0	0	
July	0	0	
August	0	0	
September	0	0	
October	0	0	
November	0	0	
December	0	0	

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-016
Page 1 of 1

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference MLS-4 page 8 “Fossil Energy Costs by Station.” Are the “Internal Combustion” resources dispatched by ISO-NE to address regional needs or by the Company to manage needs with its service territory?

Response:
Dispatch decisions for internal combustion units are typically made by ISO-NE based on regional and/or locational needs. PSNH makes the decision to dispatch these units only to fulfill required capability and/or environmental testing requirements.

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Data Request OCA-01
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Q-OCA-017
Page 1 of 1

Witness: **William H. Smagula, Jody J. TenBrock**
Request from: **Office of Consumer Advocate**

Question:
Reference Shelnitz MLS-4 page 8 footnote 2. Please provide details of the Newington #6 oil sales including volumes sold, dates the sales took place, gross revenue, expenses related to sales, and net benefit provided to customers.

Response:
Footnote 2 on Shelnitz MLS-4, page 8 references the resale of Newington #6 oil in April and May, 2012. These credits represent two separate transactions for a total credit of $8.4 million. The first occurred on April 18, 2012 with gross revenues of $5.5 million; expenses of $2.0 million and realized benefits of $3.5 million. This sale involved 49,543 barrels sold at a price indexed to average New York Harbor daily settlement prices during April 2012. The second occurred on May 4, 2012 with gross revenue of $15.2 million; expenses of $10.3 million and realized benefits of $4.9 million. This sale involved 149,939 barrels sold at a price indexed to average New York Harbor daily settlement prices during May 2012.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-018
Page 1 of 1

Witness: **Michael L. Shelnitz**
Request from: **Office of Consumer Advocate**

Question:
Reference MLS-4 page 8 “Fossil Energy Costs by Station.” Are there any fuel sales other than those referenced in footnote 2 which occurred in 2012 or for which benefits accruing to ratepayers are being accounted for in this 2012 reconciliation?

Response:
There are no other fuel sales other than those referenced in footnote 2, MLS-4, page 8.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-019
Page 1 of 1

Witness: **William H. Smagula, Jody J. TenBrock**
Request from: **Office of Consumer Advocate**

Question:
Reference Shelnitz MLS-4 page 8 footnote 2. Please detail the cost/benefit analysis undertaken to determine that sale of oil was more cost effective than retaining the oil for future use.

Response:
As discussed in Docket No. DE 11-215, data request Staff 02, Q-Staff-005, PSNH sold oil in inventory at Newington Station during 2012. Specifically in April, 2012 a sale which realized a benefit of $3,511,000 was completed. The second sale occurred in May, 2012 and realized benefits of $4,940,000. Total benefits from both transactions equal $8,451,000.

Prior to the oil sale an evaluation of Newington Station's 2012 operation reconfirmed that burning natural gas was the more economic choice as compared to burning oil. The quantity of barrels to be sold considered retaining a going-forward, on-site oil inventory that could be used in the case of natural gas constraints. The reduction in inventory also allowed the purchase of lower sulfur oil that would provide greater flexibility for environmental compliance. Going forward Newington will burn a lower sulfur oil. In recent years, the premium paid for lower sulfur oils has been reduced or reversed to the point where higher sulfur oil may trade above lower sulfur oils.

With the expected lower cost of natural gas and the associated lower dispatch cost of Newington Station using natural gas (oil was expected to be 2 - 3 times more costly), the opportunity for the use of this oil to provide over $8 million worth of value for customers would not exist for many years. Thus, PSNH sold the oil to provide immediate value to its customers.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-029
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Please describe all efforts the Company made during 2012 to reduce energy consumption related to station service and in its other facilities. For each effort or project described, please identify the source of funds.

Response:
The generating facilities look for opportunities to reduce energy consumption with both their operating and maintenance activities. Like many businesses the generating stations pay attention to lighting, insulation, motor overhauls/replacements to reduce energy usage. In addition, opportunities to adjust instrumentation and control systems can allow for quicker unit responses reducing unit inefficiencies and start up and shut down fuel costs. The stations can also reduce station service peaks during high demand periods. Even avoiding an unplanned outage reduces station service costs. The 2012 efforts have taken a variety of forms as described below.

At Merrimack Station capacitor banks were added at both Unit 1 and Unit 2 circulating water pump motors that allow the motors to be run with lower total power input. Lighting was changed at the Unit 2 flyash conditioning area replacing metal halide with LED lights. An ongoing effort at Merrimack Station is a review operating considerations for some scrubber equipment, e.g., gypsum dewatering and limestone reagent production to minimize station load during peak load periods.

At Schiller Station efficiency lighting projects were completed during 2012 utilizing SBC Funding. Twenty-three (23) areas were involved totaling 386 higher efficiency fixtures with motion detector switches replacing existing less efficient lights. The calculated annual energy savings is 292,470 kwh. The total project cost was $201,512 with an estimated payback period of 6 years.

In addition, with the reduced capacity factor on the coal units, during standby times when the boilers have cooled naturally, inspection of known tube erosion areas are conducted during normal business hours by Station personnel. Weld and tube shield repairs are then completed as necessary to reduce the risk of lost generation during times of high market energy prices when the units are needed for PSNH customers.

During the Fall of 2011, the Unit #4 Distributed Control System (DCS) was completed which allowed for more efficient operation of the unit during 2012. The DCS allows for more effective combustion of fuels due to its automatic operation features.

In early 2013, Turbine roll times have been reduced resulting in less station service.

Newington Station continued to challenge themselves to use less house heat from the auxiliary boilers through enhanced conservation measures which resulted in a substantial reduction in #2 FO consumption.

As noted above, Schiller Station received SBC funding for the efficiency lighting projects; and all other costs (and savings) were part of the station budgets.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-030
Page 1 of 1

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White at page 1 lines 8-19. Is it within your job responsibilities to recommend that PSNH sell or retire some or all of its generation units if, in your professional opinion, it is more economic for PSNH to fulfill its power supply obligations through means other than owning generation? If yes, please explain the chain of command for NUSCO or NU to make the decision regarding sale or retirement of specific plants.

Response:
No.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-031
Page 1 of 1

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White at page 1 lines 8-19. If it is not within your job responsibilities to make recommends that PSNH sell or retire some or all of its generation units for economic reasons, please identify the person or people responsible for making that decision. Please provide their name, position and contact number.

Response:
I do not know who would ultimately make that decision.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-032
Page 1 of 1

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White at page 1 lines 5-17. Please explain the 3 year process at ISO-NE required for a delisting a generation unit.

Response:
Refer to Market Rule 1 section III.13.2.5.2.5.3(d), which is excerpted below, and available at this link: http://www.iso-ne.com/regulatory/tariff/sect_3/mr1_sec_13-14.pdf.

III.13.2.5.2.5.3. Retirement of Resources

(d) A resource that does not operate commercially for a period of three calendar years will be deemed by the ISO to be retired. The interconnection rights for the unit will terminate and the status of the unit will be converted to retired on the date of retirement. Where a generator has submitted an application to repower under Schedule 22 or 23 of the OATT, the current interconnection space will be maintained beyond the three years unless the application under Schedule 22 or 23 is withdrawn voluntarily or by the operation of those provisions. Where an application is withdrawn under Schedule 22 or 23, the three year period will be calculated from the last day of commercial operation of the resource.

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Q-OCA-033
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Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of. White at page 1 lines 5-17. During your career at NU and its operating companies, have you ever submitted a request to delist a generation unit for any reason? If yes, please identify the unit, the date of request and delist. Please describe the process undertaken within the company to reach the decision to delist the unit.

Response:
No.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-034
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Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:

Reference Testimony of White at page 2 lines 5-12. As a load-serving entity, does PSNH have the authority to secure energy, transmission service and related services from market sources other than its owned generation units, when it is economic to do so?

Response:

PSNH objects on the basis that the question calls for the witness to state a legal conclusion. Subject to, and without waiving its objection, PSNH responds as follows:

How PSNH fulfills its ES load obligations is described and reviewed as part of the Least Cost Integrated Resource Plan (LCIRP) process. The Commission has accepted PSNH's LCIRP, so in general, yes, PSNH is authorized to fulfill ES load requirements accordingly, subject to prudence review in each year's reconciliation proceeding. Sections I.C., III.C., and V.B. of PSNH's LCIRP are applicable. PSNH meets its requirements through its owned generation, PURPA mandated purchases under short term rates and long term rate orders, long-term IPP contracts, and through supplemental purchases from the market. Determining supplemental resource needs to meet default energy service requirements is accomplished by comparing the expected economic operation of resources owned or contracted to PSNH, to forecasted energy service needs. Remaining requirements are acquired through bilateral and/or ISO-New England administered markets.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-035
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Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White at page 2 lines 22-33. The testimony refers to "non-utility generation (26MW from numerous PURPA-mandated purchases." Please identify the numerous PURPA-mandated purchases by identifying them on the detailed list of sources at MLS-4 pages 9a – 9l. For each PURPA-mandated source, please specify the end date of the PURPA-mandated obligation.

Response:
Please see the attached table.

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Q-OCA-035

Notes:
(1) All projects shown on pages 9a through 9l are "non-utility generation" selling to PSNH under long-term or short-term rate agreements.
(2) Indeterminate means the project is selling to PSNH at the short term rate on a month to month basis.
(3) The end dates shown are based on the applicable contract or Rate Order.

SESD NO.	PROJECT NAME	End date
041	Ashuelot Hydro	Indeterminate
120	Avery Dam	Indeterminate
631	Bath Electric Hydro	Indeterminate
049	Bell Mill/Elm St. Hydro	Indeterminate
052	Briar Hydro	12/31/22
056	Campton Dam	Indeterminate
644	Celley Mill Hydro	Indeterminate
066	Chamberlain Falls	Indeterminate
009	China Mills Dam	Indeterminate
039	Clement Dam	Indeterminate
008	Cocheco Falls	Indeterminate
445	Dunbarton Road Landfill	Indeterminate
628	Eastman Brook Hydro	Indeterminate
189	Errol Dam	12/31/23
2470	Favorite Foods	Indeterminate
118	Fiske Mill	Indeterminate
564	Four Hills Landfill	3/16/16
565	Four Hills Reducer	Indeterminate
001	Franklin Falls	Indeterminate
108	Garland Mill	11/8/12
090	Goffstown Hydro	Indeterminate
060	Goodrich Falls	Indeterminate
033	Great Falls Lower	5/1/14
032	Great Falls Upper	Indeterminate
018	Greggs Falls	Indeterminate
037	Hosiery Mill Dam	Indeterminate
058	Kelleys Falls	Indeterminate
023	Lakeport Dam	Indeterminate
025	Lisbon Hydro	Indeterminate
040	Lochmere Dam	Indeterminate
026	Lower Robertson	Indeterminate
2373	Manch-Boston Airport PV	Indeterminate
028	Marlow Power	Indeterminate
377	Middleton Cogen	Indeterminate
011	Milton Mills Hydro	Indeterminate
019	Mine Falls	Indeterminate
070	Monadnock Paper Mills	Indeterminate
017	Nashua Hydro	12/31/14
376	NE Wood - ZBE-001	Indeterminate
012	Newfound Hydro	8/28/14
091	Noone Falls	Indeterminate
050	Otis Mill Hydro	Indeterminate
106	Otter Lane Hydro	Indeterminate
045	Pembroke Hydro	Indeterminate
055	Penacook Lower Falls	9/25/13
054	Penacook Upper Falls	12/31/21
107	Peterborough Lower Hydro	12/31/17
636	Peterborough Upper Hydro	12/31/17
171	Pettyboro Hydro	Indeterminate
021	Pine Valley Mill	Indeterminate
053	River Bend Hydro	Indeterminate
044	Rollinsford Hydro	9/28/13
110	Salmon Brook Station #3	Indeterminate
642	Spaulding Pond Hydro	Indeterminate
051	Steels Pond Hydro	12/20/14
005	Stevens Mill	Indeterminate
029	Sugar River Hydro	9/30/16
187	Sugar River Hydro #2	Indeterminate
014	Sunapee Hydro	Indeterminate
134	Sunnybrook Hydro #2	Indeterminate
004	Swans Falls Hydro	Indeterminate
496	Turnkey Rochester	Indeterminate
1080	UNH Turbine	Indeterminate
034	Waterloom Falls	Indeterminate
124	Watson Dam	1/24/15
441	WES Claremont MSW	Indeterminate
440	WES Concord MSW	4/18/19
440A	WES Concord MSW ST	Indeterminate
024	West Hopkinton Hydro	10/31/12
128	Weston Dam	Indeterminate
038	Wyandotte Hydro	Indeterminate

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-036
Page 1 of 1

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:

Reference Testimony of White at page 3 lines 6-11. Please describe in detail the means of determining the relative economics of PSNH generation versus purchase alternatives. Please provide an example analysis from real data in 2012 showing the price differential between the market price on a day when the Newington plant was not run to supply PSNH customer needs due to economics.

Response:

PSNH establishes the variable costs of generating energy from its resources based on information provided by the generating stations and from the fuels procurement group; which includes unit operating characteristics (such as heat rate, and start-up and no-load costs), the operational status of the units, the costs of fuels and fuel activities (such as handling, additives, and residual expenses), and variable maintenance and emissions costs. PSNH evaluates the expected economic operation of its units by comparing dispatch costs to forward energy market prices received from brokers in the form of bid/offer quotations gathered from market participants. PSNH reviews generation dispatch and forward market prices, as well as weather and expected ES load, to plan for generation operations on a daily, weekly, and longer term basis.

Regarding Newington and an example from 2012, and specific to natural gas, every business day the fuels purchasing group contacts the natural gas supplier for inter-day prices and uses this information as the initial basis for providing the bidding and scheduling group (B&S) with a natural gas fuel price on which to base the offer/dispatch price for Newington. The fuels group may adjust the price to cover the potential for higher intra-day pricing of natural gas. B&S then uses the fuel price to calculate the offer/dispatch prices that are submitted to ISO-NE, and for comparison to forward energy market purchase alternatives. On May 25, 2012 the price for natural gas delivered to Newington was approximately $3.75/MMBtu. Newington's offer/dispatch price at 100 MW was approximately $50/MWh. Newington was not expected to and did not generate on this day. PSNH made a daily purchase of 50 MWh/Hr of peak energy at the MA Hub for $35.25/MWh to supply ES customer needs.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-037
Page 1 of 1

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:

Reference Testimony of White at page 5 (Bates 55) line 27 – page 6 (Bates 56) line 2. Mr. White lists PSNH's FCM qualified capacity resources but it does not appear that demand resources arising from the Company's Core energy efficiency programs are included in the list. Please explain.

Response:

All revenues received by PSNH Core energy efficiency programs participating in the forward capacity market are folded back into the Core energy efficiency program. As such the Core energy efficiency program capacity supply obligations are not used to offset ES capacity load obligations.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-038
Page 1 of 1

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White at page 7 (Bates 57) lines 6-7. The testimony states “During 2012, PSNH procured via auction, 1,407 GWh of FTRs at a net cost of $27,264.” Please provide a detailed schedule showing the total gross cost of all FTRs acquired, value received upon settlement and all adjustments which result in the net cost (before settlement of FTRs) of $27,264.

Response:
Please refer to Staff-01, Q-Staff-014, pages 4 and 5, which for 2012 details total net expenditures in the FTR auctions, proceeds from settlement of acquired FTRs, and the net FTR value to ES customers of $53,489. The "net cost" description in the referenced testimony refers to the fact that some FTRs acquired in the auctions have a payout to the acquirer, rather than a cost, and the $27,264 is the net from all auction activity. For example, see on page 5 for Other FTRs, in the column labeled "FTR Auction $", positive auction revenues in February and June.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-039
Page 1 of 1

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White at pages 6-7 (Bates 56-57) and the discussion of Financial Transmission Rights (FTRs). The testimony states that the "FTRs resulted in an overall decrease in Energy Service expense of $53,489." Has the Company conducted any cost – benefit analysis to determine the overall value of participating in the FTR market to manage PSNH's congestion risk? If so, please provide details.

Response:
On a monthly basis current and historical congestion costs and FTR auction clearing prices are reviewed, along with expected generation output and outage schedules, and transmission outage schedules. These data form the basis for PSNH's bids into the FTR auctions. The bid prices are set to achieve a balance between risk coverage and minimizing costs for ES customers. In 2010 PSNH incurred FTR auction expenditures of $31,454 to hedge congestion risk, and upon settlement of the FTRs ES customers benefited overall by $368,726. In 2011 PSNH incurred FTR auction expenditures of $15,896 to hedge congestion risk, and upon settlement of the FTRs ES customers incurred costs overall of $22,560. In 2012 PSNH incurred FTR auction expenditures of $27,264 to hedge congestion risk, and upon settlement of the FTRs ES customers benefited overall by $56,489.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-040

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:

Reference Testimony of White at pages 6-7 (Bates 56-57) and the discussion of Financial Transmission Rights (FTRs). If PSNH does not own generation, the need for FTR changes. Using actual data from 2012, please break out the cost of FTRs procured for bilateral purchases between an energy hub and the New Hampshire load zone from the cost of FTRs purchased for congestion between the PSNH major fossil stations (Merrimack, Schiller and Newington) and the New Hampshire load zone.

Response:

Please refer to Staff-01, Q-Staff-014. Pages 4 and 5 of the attachment there show PSNH's 2012 FTR activities (all FTRs are "to" the New Hampshire load zone). On page 5, the section labeled "Other FTRs" shows the FTRs acquired for other than PSNH's major fossil stations. During 2012 "other" FTRs were acquired for supplemental purchases made at the MA Hub, Vermont Yankee purchases, and for the Bio Energy buyout contract at the Seabrook node. The table attached here breaks out PSNH's 2012 FTR activity at the MA Hub.

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Data Request STAFF-01
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Page 2 of 2

2012 FTR Activity and Valuation for MA Hub

		FTR MW Quantity			Corresponding Cost and Value of FTRs (Expense) / Revenue		
Source	Month	Peak	Off-Peak		FTR Auction $	FTR Value $	Net FTR $
MA Hub	Jan - Dec	0	0		0	0	0
	Jan	0	0		0	0	0
	Feb	0	0		0	0	0
	Mar	0	0		0	0	0
	Apr	0	0		0	0	0
	May	0	0		0	0	0
	Jun	0	0		0	0	0
	Jul	25	0		(955)	727	(228)
	Aug	250	0		(1,463)	4,075	2,613
	Sep	200	0		(2,426)	2,372	(54)
	Oct	150	0		(2,315)	840	(1,474)
	Nov	150	0		(2,255)	(5,532)	(7,787)
	Dec	0	0		0	0	0
				Total	(9,412)	2,482	(6,930)

Notes:
Jan.-Dec. FTR cost and value are allocated monthly as per ISO-NE Billing methodology.
FTR Auction $ - this is the amount paid to (-) or received from (+) ISO based on the auction clearing price of awarded FTRs.
FTR Value $ - this is the amount paid to (-) or received from (+) ISO based on the realized value of the awarded FTRs.
Net FTR $ - the sum of the auction dollars and market value of the awarded FTRs.
[FTR Value includes refund of under-funded target allocations via the ISO-NE Congestion Revenue Fund.]

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-041
Page 1 of 1

Witness: **Frederick White, Michael L. Shelnitz**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White Attachment FBW-2. Did Wyman Station provide any energy to meet PSNH obligations during 2012? What was the cost of the Wyman contract to PSNH ratepayers in 2012?

Response:
Yes, Wyman Station did provide energy in 2012. PSNH is a minority owner of Wyman 4. The costs associated with PSNH's ownership interest in Wyman Station in 2012 were $723,000 which translates to an ES charge to customers of approximately $0.00016 (0.016 cents) per kWh for 2012.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-042
Page 1 of 1

Witness: **Frederick White, Michael L. Shelnitz**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White Attachment FBW-5 right-most column which presents “PSNH Net Capacity Expense.” The values in this schedule do not agree with those in Attachment MLS-3 pages 1 and 2 row 38 “Capacity Costs.” Please explain.

Response:
Attachment MLS-3, Pages 1 and 2, line 38, reflects Capacity Costs as recorded on the financial records of PSNH from monthly transactions billed by ISO-NE. The monthly transactions recorded include a current month estimate, a true-up of the prior month estimate to actual and any prior period resettlements billed by ISO-NE. Attachment FBW-5 reflects the latest settlement data available from ISO-NE. Thus, timing differences account for approximately $79,000 of the differences between the Attachments. Additionally, credits for Capacity Transfer Rights (CTR) received from ISO-NE were not included in Attachment FBW-5 for the period June through December 2012 which accounts for approximately $56,000 of the difference. Finally, MLS-3 includes a prior period refund from ISO-NE of approximately $23,000 as a result of FERC Docket No. IN12-3-000, Order Approving Stipulation and Consent Agreement related to Holyoke Gas and Electric Department's failure to report to ISO-NE 3 planned outages of 2 of its generating units consistent with the ISO-NE tariff.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-043
Page 1 of 2

Witness: **Frederick White**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of White FBW-5. Please explain the monthly capacity settlement process for a given month including timelines for when the Company makes its capacity payments and when it receives payment of its monthly capacity revenues.

Response:
ISO-NE settles the capacity market for both expenses and revenues on a monthly basis as part of the billing of hourly and non-hourly services to PSNH on the first Monday after the 10th calendar day of the month following the transaction month. Capacity expenses and revenues are a net component of all currently billed items by ISO-NE. If the net billed of all transactions is owed to ISO-NE by PSNH, it is payable within 2 business days. If the net billed of all transactions is due to PSNH by ISO-NE, it is remitted to PSNH in 4 business days.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-044
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of Smagula at page 2 lines 1-5. During your career at NU and its operating companies, have you ever submitted a request to delist a generation unit for any reason? If yes, please identify the unit, the date of request and delist. Please describe the process undertaken within the company to reach the decision to delist the unit.

Response:
No.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-045
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:

Reference Testimony of Smagula at page 2 lines 10-18. Is it within your job responsibilities to recommend that PSNH sell or retire some or all of its generation units if, in your professional opinion, a units' safety or reliability is below a reasonable or prudent level? If yes, please explain the chain of command for NU, NUSCO or PSNH to make the decision regarding sale or retirement of specific plants.

Response:

In my experience, I have not observed a generating station allow its safety or reliability to drop to a level which would be unacceptable or inappropriate. Because I do not view this hypothetical question as being one which has a likelihood of occurring, what actions that could be undertaken could be numerous in the odd circumstances framed in the question and cannot be speculated.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-046
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:

Reference Testimony of Smagula at page 2 lines 10-18. Is it within your job responsibilities to recommend that PSNH initiate a delist request for a specific unit at the ISO-NE? If yes, please explain the chain of command for the NU, NUSCO or PSNH to make the decision regarding delisting specific plants.

Response:

Any such decision to make a formal request to change the ISO status of a PSNH unit would occur after this question was raised and analyzed by people involved with the operations and energy procurement functions of the company.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-047
Page 1 of 1

Witness: **William H. Smagula, Jody J. TenBrock**
Request from: **Office of Consumer Advocate**

Question:
Reference Testimony of Smagula at page 4 (Bates 66) lines 4-5. The testimony states “In 2012, PSNH sold 199,482 barrels of oil, which resulted in a net customer benefit of $8,457,898.” Please provide complete details of each of the transactions including gross sale price and all adjustments resulting in the net amount stated.

Response:
Please see the response to OCA-01, Q-OCA-017.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-048
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Reference Smagula testimony at page 5 (Bates 67) lines 14-16. Please explain why PSNH uses different standards for providing detailed outage reports for unscheduled outages at its generation units ("in excess of two days at either Newington Station or at the two units at Merrimack Station" but "in excess of four days at the three units at Schiller Station and at Wyman Unit 4").

Response:
The outage information provided in testimony, including the unscheduled outage durations requiring outage reports, are consistent with the same information submitted for this annual filing since the early 1990's and reflects the reporting requirements resulting from discussion with the Staff pursuant to Docket No. DR 91-011. The two day timeframe at Merrimack Station and Newington Station recognized the potential cost to customers with the larger unit outages, while the four day timeframe at the smaller units recognized the lesser replacement power costs associated with the smaller Schiller units and the small entitlement at Wyman.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-049
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Reference Smagula testimony at page 6, (Bates 68) lines 4-6. The testimony states "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." Please provide details on the amount of overtime paid in 2012. Please include a comparison of the 2012 overtime expenses with those included in 2009 (reconciliation docket DE 10-121), 2010 (reconciliation docket DE 11-094) and 2011 (reconciliation docket DE 12-116).

Response:
The table below provides the maintenance overtime spent in Generation during the years shown. The 2012 overtime costs are approximately 45% less than typical historical costs.

	2009	2010	2011	2012
Maintenance Overtime	$1,256,524	$1,273,510	$1,394,528	$695,666

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-050
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Reference Smagula page 7 (Bates 69) lines 11-13 and page 8 (Bates 70) lines 19-22. In both instances, the testimony states "Because electrical demand and power market prices were low, the work was completed without overtime to minimize expense, extending the duration of the outage." For each instance, please provide details of the analysis performed which determined that extending the outage by completing work without overtime was the more cost effective alternative.

Response:
An analysis of a work schedule, including the use of overtime, for an outage considers a number of items. Station personnel assess the work tasks required to be completed and the resources to complete the critical work. Wholesale marketing provides an assessment of the expected energy prices for replacement power recognizing weather forecasts, unit outages in the region and any other items that could impact the PSNH's energy needs, as well as the ISO region. This information allows Generation and Wholesale marketing to construct a plan that results in the lowest cost for customers. Generation and Wholesale marketing conduct both routine calls, as well as additional calls as necessary, to monitor the status of their plans.

For the Schiller 6 outage the expected market price for the weeks February 13, February 20, February 27, and March 6 were all expected to be equal to or less than the cost of Schiller 6 due to the mild winter temperatures and the availability of natural gas with reduced house heating demands. This would result in no replacement power cost for this Schiller 6 outage. Therefore, overtime costs were minimized to lower overall costs associated with the outage. This assessment is consistent with the replacement power costs provided in MLS-2 for this outage.

For the Merrimack 1 outage the expected market price for the weeks April 2 and April 9 were all expected to be equal to or less than the cost of Merrimack 1 due to the mild 2012 winter temperatures which resulted in an overabundance of natural gas in the 2012 spring time frame. The expected market price would result in no replacement power cost for this Merrimack 1 outage. Therefore, overtime costs were minimized to lower overall costs associated with the outage. This assessment is consistent with the replacement power costs provided in MLS-2 for this outage.

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Dated: 07/19/2013
Q-OCA-051
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Reference Smagula (Bates 138) PSNH Outage Report OR-2012-13 regarding replacement of the Newington units 3 original volt load center transformers. Did you undertake a cost/benefit analysis comparing the replacement costs, (including labor) for the transformers to the costs/benefits of Newington retirement? If yes, please provide the cost/benefit analysis. If not please explain why.

Response:
PSNH Outage Report OR-2012-13 is related to the replacement of Load Center Transformer 1LC. Load Center Transformer 1LC was the one load center transformer replaced at Newington Station in 2012. The other two Load Center Transformers. 1LA and 1LB were replaced in 2013.

The replacement was required due to the load centers ages, unacceptable non-destructive test data and the high risk of in-service failure. Furthermore, should any leak develop an environmental exposure would have occurred. All risks have unit reliability and high cost as a likely result.

The cost of replacing the first of the three load Center Transformers was $192,000 including removal and disposal of the original 1LC transformer. Load Center Transformers 1LB and 1LC were replaced in 2013 at a cost of $166,000 and $169,000 respectively. These capital costs are not inconsistent with the capital costs at Newington Station which continue to be maintained at a level of $500,000 annually; and thus no additional cost benefit analysis was completed.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-052
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Reference Smagula (Bates 138) PSNH Outage Report OR-2012-13. Please state the cost, including labor and other associated costs, to replace each of the 3 transformers.

Response:
The cost of replacing Load Center Transformer 1LC was $196,000, the cost of replacing Load Center Transformer 1A was $166,000 and the cost of replacing Load Center Transformer 1LC was $169,000. The costs included labor, engineering, transportation, removal and disposal of the old transformers.

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Data Request OCA-01
Dated: 07/19/2013
Q-OCA-053
Page 1 of 1

Witness: **William H. Smagula**
Request from: **Office of Consumer Advocate**

Question:
Reference Smagula (Bates 138) PSNH Outage Report OR-2012-13. At what level of repair or replacement cost would you consider recommending PSNH file to delist the Newington plant? Please explain.

Response:
In 2010, as part of the Integrated Least Cost Resource Plan, ILCRP, PSNH submitted a Continued Unit Operations Study (CUO) for Newington Station as ordered by the New Hampshire Public Utilities Commission (NHPUC). Included in the CUO submittal was an estimated capital investment/expenditure of $500,000 per year. A specific level or cost of equipment repair or replacement where PSNH would consider recommending that PSNH delist the Newington Station is a dynamic question with many factors that would need to be considered, including the total capital expenditure, the projected remaining life of the facility, oil and natural gas fuel projections, the ISO-NE Forward Capacity Markets projections etc. Until such a time occurs that warrants significant repair or replacement, PSNH is unable to provide a definitive answer to this question.

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Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-003 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: Timothy W. Clark

Request:
Please quantify all costs and expenses of the North Atlantic Energy Corporation allocated to Northeast Utilities Service Corporation and then re-allocated to PSNH during 2012.

Response:
There were no costs or expenses of the North Atlantic Energy Corporation allocated to Northeast Utilities Service Company and then re-allocated to PSNH during 2012.

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Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-004 **Page 1 of 21**
Request from: Office of Consumer Advocate

Witness:

Request:
Please provide a complete copy of the Affiliate Agreement between Northeast Utilities Service Company and Public Service Company of New Hampshire in effect during 2012.

Response:
Attached is the Northeast Utilities Service Company contract in effect during 2012, as referenced in Docket No. DA 12-030.

NORTHEAST UTILITIES SERVICE COMPANY

SERVICE CONTRACT

AGREEMENT made and entered into as of the 5th day of June, 1992, by and between NORTHEAST UTILITIES SERVICE COMPANY (hereinafter referred to as “Service Company”) and PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE (hereinafter referred to as “Associate Company”).

WHEREAS, by order in File No. 37-65, the Securities and Exchange Commission (hereinafter referred to as “SEC”) approved and authorized, under the Public Utility Holding Company Act of 1935 (hereinafter referred to as the “Act”), the organization and conduct of business of Service Company in accordance herewith, as a wholly owned subsidiary service company of Northeast Utilities (hereinafter referred to as “Northeast”); and

WHEREAS, Service Company is willing to render services as provided herein to Northeast and its associated subsidiaries (hereinafter collectively referred to as the System) at cost, determined in accordance with applicable rules and regulations under the Act; and

WHEREAS, economies, increased efficiencies and other benefits will result to the System from the performance by Service Company of services as herein provided:

NOW, THEREFORE, in consideration of the premises and of the mutual agreements herein, it is agreed as follows:

Section 1. Agreement to Furnish Services.

Service Company agrees to furnish to Associate Company if and to the extent requested by Associate Company, and other System companies, upon the terms and conditions herein provided, the services hereinafter referred to in Section 2 hereof at such times and for such periods as may be required, and Service Company will, as and to the extent requested to provide such services to the System, keep itself and its personnel available and competent to render such services to the Associate Company so long as it is authorized so to do by federal and state regulatory agencies having jurisdiction.

For the purpose of providing services as herein provided, Service Company has established various departments, one or more of which will participate in providing particular services hereinafter described. Service Company reserves to itself the privilege, without amendment hereof or express prior agreement by Associate Company or other System companies, from time to time to establish new departments, to subdivide or otherwise reorganize any of the departments established by it, and to reallocate services among various departments.

Service Company will provide for Associate Company such other services not referred to in Section 2 hereof as Associate Company may request and Service Company concludes it is competent to perform and may furnish with economies and increased efficiencies to Associate Company without impairing the services rendered to other System companies by Service Company.

Service Company will also furnish services to other System companies under agreements similar hereto and may also furnish, in Service Company's discretion, services to others, provided that by so doing the cost of services to Associate Company or other System companies will not be increased.

In supplying services hereunder, Service Company may arrange for services of such executives, financial advisers, accountants, attorneys, technical advisers, engineers and other persons as are required for or pertinent to the rendition of such services.

Section 2. Services to be Performed.

Subject to the provisions of Section 1 hereof, Service Company will provide to Associate Company the following services:

(A) General System Management: Executive, administrative, managerial, coordinating and advisory services, particularly with respect to the formulation and effectuation of policies and programs affecting or relating to the System as a whole, including financial, accounting, and economic policies and programs, power supply, public and employee relations, regulation, contractual arrangements, administrative and other proceedings, industry-wide activities and like matters.

(B) Other Functions and Activities: Studying, planning, advice, assistance, guidance, supervision, direction, administration, maintenance, handling, performance and operation, as may be required, in connection with the following functions and activities:

(i) Corporate and Secretarial: Policies and practices relating to the performance of corporate secretarial functions and activities, including the preparation and maintenance of official corporate records, reports, minutes and correspondence in accordance with assigned responsibilities and duties.

(ii) Financial Planning: Financial structures; financial programs to raise funds required to effect savings through refinancing; relations with commercial banks and negotiation of short-term borrowings; relationships with investment bankers, analysts, analyst societies, securities holders, stock exchanges and indenture trustees, transfer agents and registrars; and general treasury, banking and financial matters.

(iii) Accounting: General accounting, customer accounting and related records; depreciation, accounting procedures and practices to improve efficiency; internal auditing, relations with independent auditors and appearances before and requirements of regulatory bodies with respect to accounting matters; and financial and operating reports and other statistical matters and analyses thereof.

(iv) Taxes: Consolidated and other income tax returns and other federal, state and municipal tax returns, and all matters related thereto, including relations with the Internal Revenue Service and other taxing authorities, the examination and processing of tax returns, assessments and claims, and developments in federal, state and municipal taxes.

(v) Insurance: Insurance programs and matters, including pension and other employee benefit plans and programs; and relations with insurance brokers and agents.

(vi) Budgets: Operating, construction and cash budgets, and similar studies or documents, including estimates and other information required therefor or related thereto.

(vii) Data Processing: Computer and other data processing activities.

(viii) Bulk Power Supply: The bulk power supply system from sources of supply through to bulk substations, to achieve reliable service at minimum cost, including forecasts of electric loads; power supply arrangements among System companies; power supply relations with other utilities; design, engineering and scheduling of electric production and transmission facilities; the design, engineering and scheduling of major and unusual distribution facilities; System electric load dispatching operations; and related matters.

(ix) Engineering Research and Standardization: Engineering activities in the fields of research, design, construction and standardization; technical specifications and standard designs for and procedures and methods of utilizing materials, equipment and associated services; and technical support and engineering as required in all areas of the System's operations.

(x) System Operations: Electric operations, including production, transmission and distribution of electricity and gas; the construction, operation and maintenance of electric facilities; and in general all electric construction, maintenance and operating activities.

(xi) Other Administrative Services: Management-union and all other employee relation activities, including the definition of major organizational responsibilities and the translation of those responsibilities into effective organization structures; employee welfare and other programs and problems; business methods and procedures; and transportation activities and matters.

(xii) Purchasing and Stores: The purchasing and handling of materials and supplies, fuel and equipment, including such activities as buying, traffic, expediting and stock control, and scrap and salvage sales; major and long-term purchase contracts pertaining to the foregoing; and contacts with market conditions and principal suppliers.

(xiii) Commercial Activities: Electric and other sales; customer service facilities; rate matters and rate structures; and area development plans and activities.

(C) Officers and other employees of Service Company will, on request of Associate Company, serve, without charge other than as herein provided, as officers or representatives of Associate Company.

Section 3. Agreement to Pay for Services.

Associate Company agrees to pay to Service Company the cost, determined as herein provided, of such services as are requested by Associate Company and are provided by Service Company. It is the intent of this Agreement that the payment for services rendered by the Service Company to the System shall cover all the costs of its doing business (less credits for services to non-System companies and any other miscellaneous income items), including reasonable compensation for necessary capital as permitted by Rule 91 of the SEC under the Act. The methods and procedure for determining the cost of services performed for Associate Company are set forth in Appendix A hereto.

Bills will be rendered for each calendar month on or before the twentieth day of the succeeding month and will be payable on presentation and not later than the last day of that month. Monthly charges may be made in whole or in part for particular expenses on an estimated basis, subject to adjustment, so that all charges for services during a calendar year will be made on an actual basis.

Section 4. Effective Date; Term; and Cancellation.

This Agreement shall become and be effective as of the date hereof and it shall continue in effect, unless sooner terminated as herein provided, to January 1, _____. It may be renewed from time to time for similar one-year periods by mutual agreement. This Agreement shall also be subject to termination and shall terminate, without any action by either of the parties, to the extent and from the time that performance may conflict with the Act or with any rule, regulation or order of the SEC adopted before or after the making hereof.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed, by their respective officers thereunto duly authorized, all as of the day and year first above written.

NORTHEAST UTILITIES SERVICE COMPANY

By: _______________________________
Executive Vice President and
Chief Financial Officer

Attest:

____
Assistant Secretary

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE

BY: ____________________________
Executive Vice President and
Chief Financial Officer

Attest:

____
Assistant Secretary

APPENDIX A

DESCRIPTION OF METHODS AND PROCEDURE
FOR ALLOCATING COST OF SERVICES

JOB OR WORK ORDERS FOR SERVICE

There shall be job or work orders covering services to be performed for Associate Company or other System companies. These orders may be either general or specific. Services of a continuing nature, such as accounting, financial planning and dispatching, will be covered by general job or work orders; specific job or work orders will cover such things as issues of securities, special studies or construction projects. General orders, as well as specific orders, will specify the nature of the services to be performed thereunder in sufficient detail that charges therefor may be determined as herein provided and properly accounted for by the Associate Company under its prescribed Uniform System of Accounts.

CHARGES FOR SERVICES

General

Charges for services rendered to Associate Company and other System companies will be made on the bases of benefits conferred and of actual cost (including reasonable compensation for necessary capital as permitted by Rule 91 of the SEC under the Act), fairly and equitably allocated.

Specific Services

Charges for specific services performed will be made to the appropriate specific job or work order number assigned to accumulate the charges applicable to the particular activity. These charges will include both direct and indirect costs involved in providing the specific services.

General Services

Charges for general services performed will be made to the appropriate general job or work order number assigned to accumulate the charges applicable to the particular activity. These charges will include both direct and indirect costs involved in providing the general services.

NATURE OF CHARGES AND METHOD OF ALLOCATION

Direct Charges

Direct charges consist of those costs which can practicably be recorded separately and identified not only by job or work order number and department but also as to source, such as time reports for each employee, vehicle reports, invoices and other source documents. Time reports will be maintained for each employee, including officers, in such detail as may be appropriate for such employee and the nature of the services performed. Employees (other than stenographic, secretarial, clerical, and other workers engaged in rendering support services) will record on their time reports hours chargeable to the appropriate job or work order numbers and the nature of the work performed.

Northeast will be charged with 25% of the costs chargeable to job or work orders for general services not of an operating or functional nature related primarily to the System subsidiary companies but primarily of benefit to and performed for Northeast and the System as a whole. The balance of the charges to such job or work orders will be allocated to among System subsidiary companies as provided hereafter under "Charges to System Companies - General Services."

Indirect Charges or Overhead Expenses

Indirect charges or overhead expenses consist of all costs of the Service Company, other than direct charges described above. These charges may be classified into the following two general categories:

1. General Service Company Overheads - These charges include costs which cannot be identified as applicable to either a particular job or work order number or department on a fair and equitable basis. The following items are illustrative, and not all-inclusive, of the types of costs which may be so-

allocated to the extent above provided: rents; office supplies and expenses; depreciation; building operation and maintenance; insurance; reasonable compensation for necessary capital; general services, such as stenographic, files, mail, etc., including salaries, employee benefits, and expenses of related employees; and other general overheads.

These overhead costs will be allocated to each department on the basis of functional relationship, such as number of personnel, space occupied, use, etc.

2. Department Overheads - These charges include costs which can be identified as applicable to a particular department but which cannot be directly associated with a particular job or work order number. These costs will consist of the following:

(a) Wages and salaries of stenographic, secretarial, clerical and other workers in the department engaged in rendering support services.

(b) Lost or nonproductive time for vacations, personal time off, sickness, holidays, etc., of all employees in department.

(c) Payroll-related Federal and State taxes and group benefit plans for pension, life insurance, hospitalization and medical, etc., of all employees in department.

(d) Miscellaneous supplies and expense.

(e) General Service Company overheads allocated to the particular department as set forth in item 1 above.

The indirect charges of a particular department, as outlined in this item 2, will be distributed to the active specific or general job or work orders for which work is being performed by that department on the same proportionate basis as the actual direct payroll charges of that department.

CHARGES TO OTHER THAN SYSTEM COMPANIES

Services performed for other than System companies will be billed and paid for by them on an appropriate basis. All amounts so billed will be credited to the appropriate job or work orders before any charges are made therefrom to System companies.

CHARGES TO SYSTEM COMPANIES

Specific Services

Charges for specific services recorded in the appropriate job or work order numbers including overhead items, will be billed to the company or companies for whom the services are performed.

<u>General Services</u>

Charges for general services recorded in the appropriate job or work order numbers, including overhead items, will be allocated among System subsidiary companies on one of the following bases determined on the basis of functional relationship to be the most fair and equitable:

1. <u>Revenues</u> - The relation of each company's gross operating revenues to the sum of the operating revenues of all System companies for the preceding calendar year.

2. <u>Electric Peak Load</u> - The relation of each company's annual electric peak load to the combined electric peak load of all System companies for the preceding calendar year.

3. <u>Peak Day Sendout</u> - The relation of each company's gas peak day sendout to the combined gas peak day sendout of all System companies for the preceding calendar year.

4. Customers Billed - The relation of each company's total customers billed to the combined total customers billed of all System companies for the preceding calendar year.

5. Other - Such other basis or bases as experience may show will provide, on a functional relationship, a more fair and equitable allocation of particular charges than any of the foregoing.

DEPARTMENT COST CONTROLS

Annual operating budgets, on a departmental basis, will be used and costs will be controlled independently for each department so as to maintain a periodic check on the balances, if any, over or under billed to insure that services rendered are being billed at cost. Each department will be charged with all of its expenses, including overhead items allocated to it, and will be credited with amounts billed from the department for services rendered. The accounts of each department will be maintained so as to be substantially in balance at all times. Accordingly, semiannual reviews will be made of balances to determine to what extent the billings should be adjusted to reflect actual cost.

BILLING

Bills will be provided Associate Company in sufficient detail so as to identify the services rendered and permit proper accounting distribution of the charges under the Associate Company's prescribed Uniform System of Accounts. Detail on the bill will include: (1) Department; (2) Function or type of service; (3) Nature of charges, whether direct or indirect (overhead); and (4) Source of charges, if direct.

AMENDMENT AND RENEWAL OF SERVICE CONTRACT NORTHEAST UTILITIES SERVICE COMPANY AND PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

This Amendment and Renewal of Service Contract (""Agreement") is made and entered into as of the 31st of December 2006, by and between Northeast Utilities Service Company ("Service Company") and Public Service Company of New Hampshire ("Associate Company").

WHEREAS, under the terms of the Service Contract by and between Service Company and Associate Company, Service Company is willing to render certain services to Associate Company at cost, determined in accordance with the applicable rules and regulations promulgated by the Securities and Exchange Commission ("SEC") under the Public Utility Holding Company Act of 1935 (the "35 Act"); and

WHEREAS, the 35 Act was repealed in 2006, and jurisdiction over certain of Service Company's activities was transferred from the SEC to the Federal Energy Regulatory Commission ("FERC") under the Federal Power Act, as amended (the "Act"), including the provision of services for affiliated companies at cost; and

WHEREAS, the Service Contract between Service Company and Associate Company expires as of December 31, 2006; and

WHEREAS, both parties deem it to be in the their best interests to renew the Service Contract for an additional period of one year on the same terms and conditions and in accordance with the requirements of FERC.

NOW, THEREFORE, in consideration of the premises and mutual agreements herein contained, it is agreed as follows:

1. Amendment of Service Contract. The Service Contract between Service Company and Associate Company is hereby amended as follows:

    (a) All references to the "Act" in the Service Contract and attachments shall be deemed to refer to the Federal Power Act.

    (b) The reference to the "SEC" in Section 4 of the Service Contract shall be deleted and replaced with "FERC."

    (c) The phrase "Rule 91 of the SEC" contained in Section 3 of the Service Contract and on Appendix A shall be replaced with the phrase "applicable rules and requirements of FERC."

2. Renewal of Service Contract. (a) The Service Contract between Service Company and Associate Company, as heretofore amended, is hereby renewed as of January 1, 2007, for a period of one year.

    (b) Except as modified and amended by this Agreement, all terms and conditions of the Service Contract shall continue in full force and effect during such renewal period.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their respective officers thereunto duly authorized, all as of the date first above written.

NORTHEAST UTILITIES SERVICE COMPANY

Attest:

By: Kerry J Kuhlman
Name: Kerry J. Kuhlman
Title: Vice President-Shared Services and Secretary

O. Kay Comendul
Assistant Secretary

Date: February 26, 2007

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

Attest:

By: Randy Shoop
Name: Randy A. Shoop
Title: Vice President and Treasurer

O. Kay Comendul
Assistant Secretary

Date: February 26, 2007

REDACTED

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013
Request No. Q-OCA-006
Request from: **Office of Consumer Advocate**

Date of Response: 08/26/2013
Page 1 of 22

Witness: **Michael L. Shelnitz**

Request:
Reference response to OCA 1-21. Please explain whether the "Clement Dam" project is in compliance with the terms of its contractual agreement with PSNH when, according to the Company's response "The project suffered a mechanical failure in December 2011 and was offline during all of 2012[.]" Please provide a copy of the contract between PSNH and the "Clement Dam" project owners.

Response:
The project is in compliance with the terms of its contractual agreement (attached).

Please note: due to the confidential nature of the contractual agreement, the NH PUC and OCA will receive the attachment under separate cover.

Pursuant to Puc 203.08(d) and RSA 363:28, VI, PSNH provides this response on a confidential basis to the Commission Staff and the Office of Consumer Advocate. PSNH submits that it has a good faith basis for seeking confidential treatment of the documents in this response and that it intends to submit a motion for confidential treatment of the documents prior to the commencement of any hearing in this proceeding.

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Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-009 **Page 1 of 2**
Request from: Office of Consumer Advocate

Witness: Frederick White

Request:
Reference response to OCA 1-12. Please respond to the following:
a. For each date shown please provide the number of hours that the station was serving load.
b. Of the 37 dates shown, identify on which dates Newington Station was operating in an economic mode having been bid into the ISO-NE day ahead market and been called on to dispatch.
c. Identify the days the Station operated for other reasons and the reason for operation?

Response:
Please see the attached table for the requested information.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request OCA-02
Dated: 8/26/13
Q-OCA-009

Date	Number of Hours Serving Load	Reason for Dispatch
1/3/12	4	Dispatched by ISO-NE for load & reserves.
1/4/12	13	Dispatched by ISO-NE for load & reserves.
1/15/12	13	Dispatched by ISO-NE for load & reserves.
1/16/12	9	Dispatched by ISO-NE for load & reserves.
1/18/12	17	Self-scheduled for ISO-NE capability audit & load.
1/31/12	7	Self-scheduled for NERC bulk system test & load.
3/5/12	9	Dispatched by ISO-NE for load & reserves.
6/20/12	11	Self-scheduled for load.
6/21/12	10	Self-scheduled for load.
6/22/12	8	Dispatched by ISO-NE for load & reserves.
6/29/12	8	Dispatched by ISO-NE for load & reserves.
7/3/12	11	Self-scheduled for load.
7/4/12	11	Dispatched by ISO-NE for load & reserves.
7/5/12	11	Dispatched by ISO-NE for load & reserves.
7/6/12	16	Self-scheduled for load.
7/7/12	17	Self-scheduled for load.
7/8/12	17	Self-scheduled for load.
7/9/12	16	Self-scheduled for load.
7/10/12	17	Self-scheduled for load.
7/11/12	15	Self-scheduled for environmental (RATA) testing & load.
7/12/12	18	Self-scheduled for environmental (RATA) testing, ISO-NE capability audit, & load.
7/13/12	17	Self-scheduled for load.
7/14/12	11	Dispatched by ISO-NE for load & reserves.
7/16/12	14	Self-scheduled for load.
7/17/12	14	Self-scheduled for load.
7/18/12	11	Self-scheduled for load.
7/23/12	13	Dispatched by ISO-NE for load & reserves.
7/24/12	10	Dispatched by ISO-NE for load & reserves.
7/26/12	3	Dispatched by ISO-NE for load & reserves.
7/27/12	5	Dispatched by ISO-NE for load & reserves.
8/3/12	5	Dispatched by ISO-NE for load & reserves.
8/4/12	11	Dispatched by ISO-NE for load & reserves.
8/6/12	10	Dispatched by ISO-NE for load & reserves.
8/9/12	8	Dispatched by ISO-NE for load & reserves.
9/7/12	12	Dispatched by ISO-NE for load & reserves.
11/18/12	14	Dispatched by ISO-NE for load & reserves.
11/19/12	10	Dispatched by ISO-NE for load & reserves.

Self scheduling does not mean that ISO-NE would not have dispatched the unit, absent the self-schedule.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-010 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: William H. Smagula

Request:
Reference response to OCA 1-15. The “Comments” section of the table indicates “April 30 – first truck of gypsum off-site to GP.” Please confirm that this means the first truck of gypsum off-site since the scrubber was declared in service in September 2011.

Response:
Yes.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-011 **Page 1 of 3**
Request from: Office of Consumer Advocate

Witness: William H. Smagula, Jody J. TenBrock

Request:
Reference response to OCA 1-17. Please provide #6 oil inventory records by month beginning January 1, 2009 through December 31, 2012 showing total volume in storage, volume used, volume sold, and volume purchased (added to inventory). Please also provide for each month in the period, the Company's target inventory amount.

Response:
The attached tables provide monthly #6 oil inventory data for the years 2009 through 2012. In 2012, Newington Station targeted a #6 oil inventory between 100,000 and 150,000 barrels. Prior to 2012 there were no sales and the last oil purchases occurred in February 2009.

MDC-10

2009

	Inventory Ending Balance	Burned	Transferred	Sold	Purchased
	(In Gallons)				
January	21,623,904	6,645,209	334,508	-	4,589,654
February	24,634,570	1,179,890	-	-	4,190,556
March	24,530,475	-	104,095	-	-
April	24,430,906	-	99,569	-	-
May	24,373,984	-	56,922	-	-
June	24,292,752	-	81,232	-	-
July	23,870,081	422,671	-	-	-
August	23,327,006	543,075	-	-	-
September	23,259,179	-	67,827	-	-
October	23,024,783	169,660	64,736	-	-
November	21,744,828	1,257,502	22,453	-	-
December	20,972,232	772,596	-	-	-

2010

	Inventory Ending Balance	Burned	Transferred	Sold	Purchased
	(In Gallons)				
January	20,523,906	435,418	12,908	-	-
February	20,103,181	420,725	-	-	-
March	20,068,901	34,280	-	-	-
April	19,837,293	-	231,608	-	-
May	19,833,093	4,200	-	-	-
June	19,659,154	162,279	11,660	-	-
July	18,595,691	1,063,463	-	-	-
August	17,993,393	602,298	-	-	-
September	17,819,159	174,234	-	-	-
October	18,018,553	(199,394)	-	-	-
November	17,926,437	92,116	-	-	-
December	17,431,644	384,164	110,629	-	-

MDC-10

2011

	Inventory Ending Balance	Burned	Transferred	Sold	Purchased
	(In Gallons)				
January	14,850,535	2,526,929	54,180	-	-
February	14,290,786	545,504	14,245	-	-
March	14,271,513	2,205	17,068	-	-
April	14,251,594	-	19,919	-	-
May	14,232,591	-	19,003	-	-
June	14,189,293	-	43,298	-	-
July	13,920,494	227,897	40,902	-	-
August	13,699,967	188,746	31,781	-	-
September	13,556,873	-	143,094	-	-
October	13,526,193	-	30,680	-	-
November	12,888,044	-	638,149	-	-
December	12,888,044	-	-	-	-

2012

	Inventory Ending Balance	Burned	Transferred	Sold	Purchased
	(In Gallons)				
January	12,089,273	781,359	17,412	-	-
February	12,089,273	-	-	-	-
March	11,991,516	-	97,757	-	-
April	10,575,962	-	(665,241)	2,080,795	-
May	4,278,515	-	-	6,297,447	-
June	4,262,602	15,913	-	-	-
July	3,830,128	351,682	80,792	-	-
August	3,721,128	-	109,000	-	-
September	3,721,128	-	-	-	-
October	3,735,916	-	(14,788)	-	-
November	3,691,170	-	44,746	-	-
December	3,667,365	-	23,805	-	-

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013
Request No. OCA-012
Request from: Office of Consumer Advocate

Date of Response: 09/11/2013

Witness: William H. Smagula, Jody J. TenBrock

Request:

Reference response to OCA 1-17. Please provide a detailed account of the expenses incurred relative to the two sales of #6 oil totaling $12.3 million ($2.0 + $10.3). In particular, what amount of these expenditures were capital expenses to facilitate the off-loading of fuel from storage?

Response:

As stated in OCA 01-017,

Sale on April 18, 2012 with gross revenues of $5.5 million; expenses of $2.0 million associated with the sale of 49,543 barrels.

Sale on May 4, 2012 with gross revenue of $15.2 million; expenses of $10.3 million associated with the sale of 149,939 barrels.

	Inventory expense value	Barrels sold	Gallons sold
April Sale	$2.0M	49,543	2.1M
May Sale	$10.3M	149,939	6.3M

Detail of the other specific station expenses are shown here. There were no capital costs associated with the sale of these two oil shipments.

$10,900	Enterprise Engineering Feasibility Study - Determine the feasibility of conducting a fuel oil transfer from the Newington inventory to a vessel at the PSNH dock. PSNH initiated an engineering study of the existing system which was completed by an outside engineering firm experienced with piping systems and fuel oil transfer. The intent of this study was to determine if the existing fuel oil transfer system was capable of completing such an operation and if any modifications were necessary. It was ultimately determined that a fuel oil transfer from the Newington inventory could be completed safely and with no impact to the environment. The final engineering report provided by this engineering firm did recommend, as a precautionary measure, that an upgraded check valve be located on the dock at the inlet to the oil transfer hose manifold.
$7,500	Purchased check valve per recommendation of feasibility study, as well as, additional control measures which included strategically located emergency stop buttons to shut down the oil transfer pumps.
$11,250	Fuel oil transfer procedure - Anchor Marine Services, a Person In Charge (PIC) certified marine service consultant specializing in fuel oil transfer in consult with PSNH developed transfer procedure. The procedure was then submitted to the US Coast Guard (USCG) for approval. In addition to the fuel oil transfer procedure, the USCG required the Terminal Operators Manual be modified to reflect this type of operation.

	The updated manual was also submitted to the US EPA as required under the emergency response Integrated Contingency Plan (ICP) for approval.
$11,439	NU Labor to install check valve, install additional control measures, and complete oil off-loading to an empty vessel consistent with the USCG approved fuel oil transfer procedure.
$41,089	**Total**

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-013 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: Michael L. Shelnitz, William H. Smagula

Request:
Reference MLS-4 page 8. Please explain the negative fuel cost of (152) for Newington in March 2012. Negative amounts for April and May have been explained as being related to fuel sales recorded in those months.

Response:
Newington's actual fuel costs for March were $221,000. A credit of $373,000 was also booked in March for a net fuel cost in March of ($152,000). The credit of $373,000 was a reimbursement of fuel handling costs incurred in 2011. A fuel leak in one of the Newington tanks required the company to clean up the spill, remove contaminated soils from within the dike area, perform ground water monitoring, and cleaning and reinspecting of the the tank. These costs were paid by PSNH and charged to the Fuel Handling Account in 2011.

However, because this tank had been inspected in 2010 by a company that was fully qualified and certified to perform tank inspections, PSNH worked with the vendor to have costs associated with the leak reimbursed as it was PSNH's position that the prior inspection should have discovered the problem. The vendor reimbursed PSNH $373,000 and the credit was applied in March 2012.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-015 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: Frederick White

Request:
Reference response to OCA 1-37. The OCA is aware of, and supports the Company's approach that "[a]ll revenues received by PSNH Core energy efficiency programs participating in the [FCM] are folded back into the Core energy efficiency program[s]." The intent of OCA's request was to determine if and how the energy and demand reductions achieved by the Company's Core programs are used in planning to meet the Company's capacity requirements. With this additional explanation of the original data request, please respond further.

Response:
The revenue received from CORE energy efficiency program capacity supply obligations is not used to offset ES capacity load obligation expense, as essentially happens with capacity supply obligation revenue from ES capacity resources. Rather, the revenue received from CORE energy efficiency program capacity supply obligations is rolled back into the PSNH CORE energy efficiency program.

Having clarified the original answer, it is true that because energy efficiency savings are not reconstituted for cost allocation purposes, to the extent a PSNH CORE program participant is also an ES customer and there are MW reductions occurring at the time of the ISO-NE annual peak load used to allocate the net installed capacity requirement; then PSNH's ES peak load share, the resulting capacity load obligation quantity, and therefore ES capacity expense, are reduced. These impacts are incorporated into the monthly settlement of the ISO-NE forward capacity market, however no reports identify the specific effects of the CORE program.

The CORE program offerings are available to all PSNH distribution customers and paid for by all PSNH distribution customers. Program funding is not targeted to ES customers.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-016 **Page 1 of 2**
Request from: Office of Consumer Advocate

Witness: Frederick White, William H. Smagula

Request:
Reference response to Staff 2-7 in DE 11-215 dated 6-14-12. The response states in part that “Regarding the Merrimack units, for the January through March actual period the units ran serving load for both economics and scrubber shakedown/verification tests.” Please identify the dates when the Merrimack units ran out of economic merit for the purposes of “scrubber shakedown/verification tests” and identify the over-market costs to ratepayers on each day (24 hour period) when out of merit operation occurred.

Response:
PSNH had planned to run the Merrimack units during January through March of 2012 to serve load during the typical high priced winter months. Unusually warm weather developed as we moved through this period leading to a natural gas over-supply and low natural gas and energy prices. It is PSNH’s judgment that the Merrimack units would have run to serve load in January regardless of any required scrubber testing. Then as low energy prices took hold, generation during February and March generally occurred due to scrubber shakedown/verification testing. Attached is a table of daily over-market costs due to Merrimack operations during February and March

The Clean Air Project (Scrubber) at Merrimack Station had been placed in operation in September 2011 with Unit 1. In November 2011 Unit 2 was tied into the scrubber. The initial months of operation with these two units exhausting into the scrubber is the most critical phase in the commissioning of all scrubber equipment and systems. Necessary tuning and testing on hundreds of small and very large items, all in operation as a single large project is needed to complete important performance testing as well as reliability testing. Not performing or delaying testing places risk on the company’s obligations to verify contract commitments and could jeopardize supplier commitments to PSNH and place tens of millions of dollars or more at risk. With such a large and complex project, it is critical for the Project Team to fulfill its obligations and identify any actual or potential deficiencies. These tests span a multi-month period.

During this operation and testing period, certain items were identified as needing to be addressed including the limestone reclaim system, scrubber feed pumps reduction gear, and the absorber anoditic corrosion protection system, all of which were paid for by others. With the effort in February and March repairs could be made or replacement parts or equipment could be ordered and installed to insure reliability for the upcoming summer 2012 higher load period. These systems are all operating well in 2013. Testing, tuning, optimizing and repairs if necessary lead to reliable operation, all steps needed and essential in any large project commissioning and necessary to meet the NH legislative mandate of operation by July 1, 2013.

Daily Over-Market Costs Primarily Due to
Scrubber Operations During January thru March, 2012

Date	Cost $
2/1/12	133,293
2/2/12	129,204
2/3/12	109,507
2/4/12	112,056
2/5/12	117,636
2/6/12	95,313
2/7/12	107,069
2/8/12	79,965
2/9/12	94,601
2/10/12	113,100
2/11/12	70,308
2/12/12	55,453
2/13/12	42,419
2/14/12	115,114
2/15/12	158,971
2/16/12	135,622
2/17/12	47,204
2/22/12	74,531
2/23/12	254,141
2/24/12	247,366
2/25/12	274,190
2/26/12	261,614
2/27/12	223,061
2/28/12	232,093
2/29/12	239,500
3/1/12	261,349
3/2/12	238,050
3/3/12	198,104
3/4/12	161,486
3/5/12	101,294
3/6/12	97,926
3/7/12	42,402
3/8/12	44,976
3/9/12	49,842
3/10/12	48,454
3/11/12	47,429
3/12/12	46,869
3/13/12	54,838
3/14/12	54,680
3/15/12	51,062
3/16/12	56,748
3/17/12	57,817
3/18/12	59,890
3/19/12	51,022
3/20/12	56,599
3/21/12	57,466
3/22/12	38,309

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-017 **Page 1 of 2**
Request from: Office of Consumer Advocate

Witness: Frederick White

Request:
Reference response to Staff 1-8 page 5 of 9. For each of the six "bins" in the schedule, please provide the 2012 average cost of energy acquired. For example, in the top row of the schedule, please provide the average cost of energy for Peak Energy acquired via each of the three methods shown (LT Bilateral, ST Bilateral, and ISO-NE Spot).

Response:
Please see the attached table:

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request OCA-02
Dated: 8/26/13
Q-OCA-017
Page 2 of 2

PSNH Supplemental Purchases - Average Cost - $/MWh

2012	Supplemental Purchases	LT Bilateral	ST Bilateral	ISO-NE Spot
Peak	37.78	34.78	34.09	42.24
Off-Peak	32.72	35.40	32.96	32.25

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-018 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: Frederick White

Request:
Reference responses to OCA 1-39 and Staff 1-8. In the former, the response indicates that in 2012 ES customers benefitted overall by $56,489. However, in the latter, the response indicates that in 2012 customers had a net benefit of $53,000. Please explain the difference.

Response:
The $56,489 figure referenced in OCA 1-39 is a typo and should read $53,489, in agreement with testimony. PSNH apologizes for the error. The $53k figure referenced in Staff 1-8 (pg 6 of 9) is a rounded figure, from $53.489k. Therefore, there is no intended difference between the figures.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-021 **Page 1 of 12**
Request from: Office of Consumer Advocate

Witness: William H. Smagula, Timothy W. Clark

Request:
Does the Company own, operate, and maintain any assets which are already fully depreciated? If so, please identify such assets.

Response:
Yes. See the attached list of fully depreciated assets.

asset_location	utility_account	retirement_unit	vintage	Sum of book_cost	Sum of allocated_reserve	Sum of net_book_value
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	COILS *	1960	2,119	2,119	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	COOLER	1960	829	829	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	DETECTION SYSTEM,FIRE *	1960	34,820	34,820	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	DREDGING *	1960	141,325	141,325	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	FAN,EXHAUST	1960	4,804	4,804	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	FENCE	1960	17,713	17,713	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	FIXTURE,LIGHTING,INDOOR	2008	0	0	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	FOUNDATION AND SUBSTRUCTURE	1960	14,546	14,546	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	HEATER,UNIT *	1960	29,680	29,680	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	HYDRANT	1960	28,109	28,109	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	LANDSCAPING *	1960	116,263	116,263	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	LOUVRE,POWER OPERATED *	1960	1,446	1,446	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	MINOR STRUCTURE - PUMP HOUSE	1960	8,210	8,210	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	PIPING *	1960	52,838	52,838	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	PIPING, UNDER 3 INCH	1960	14,957	14,957	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	PUMP	1960	1,534	1,534	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	PUMP *	1960	15,594	15,594	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	ROADWAY *	1960	138,454	138,454	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	ROADWAY *	1962	525	525	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	SINKS,TOILETS,AND URINALS	1960	12,377	12,377	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	STAIRWAY	1960	6,558	6,558	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	STRUCTURE, BUILDING (PLANT ACCOUNTI	1960	552,016	552,016	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	STRUCTURE, BUILDING (PLANT ACCOUNTI	1962	1,475	1,475	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	STRUCTURE, BUILDING (PLANT ACCOUNTI	1964	158	158	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	TANK *	1960	8,771	8,771	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	TANK,GAS OR OIL (FUEL)	1960	17,126	17,126	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	UNCLASSIFIED/ADDITIONS	1960	139,880	139,880	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	WELL	1960	33,007	33,007	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	YARD DRAINAGE SYSTEM - CPRS CONVERS	1960	50,601	50,601	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31189 Other Structures & Improv.	YARD DRAINAGE SYSTEM - CPRS CONVERS	1964	1,597	1,597	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1960	1,720,179	1,720,179	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1964	1,431	1,431	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1960	1,352	1,352	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1966	1,852	1,852	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1960	209,622	209,622	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1962	3,680	3,680	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1963	798	798	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1966	646	646	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1968	188,468	188,468	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1971	47,022	47,022	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1972	9,993	9,993	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1973	998	998	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1974	48,616	48,616	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1975	21,185	21,185	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1976	12,564	12,564	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1977	22,501	22,501	0
A1101 : MERRIMACK COMMON (UNITS 1 & 2) : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1978	30,956	30,956	0
A1102 : MERRIMACK UNIT #1 : Bow	31189 Other Structures & Improv.	UNCLASSIFIED/ADDITIONS	1960	3,502,578	3,502,578	0
A1102 : MERRIMACK UNIT #1 : Bow	31189 Other Structures & Improv.	UNCLASSIFIED/ADDITIONS	1962	1,931	1,931	0
A1102 : MERRIMACK UNIT #1 : Bow	31189 Other Structures & Improv.	UNCLASSIFIED/ADDITIONS	1963	517	517	0
A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	PIPING, UNDER 3 INCH, COMPLETE SY	1960	111,421	111,421	0
A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	SCR REACTOR BOX, Each	1999	0	0	0
A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	TANK, UREA FOR SNCR SYSTEM	1999	0	0	0
A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1960	4,746,356	4,746,356	0
A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1961	11,474	11,474	0
A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1962	13,507	13,507	0
A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1963	3,681	3,681	0
A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1964	419	419	0

A1102 : MERRIMACK UNIT #1 : Bow	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1966	1,906	1,906	0
A1102 : MERRIMACK UNIT #1 : Bow	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1960	4,417,228	4,417,228	0
A1102 : MERRIMACK UNIT #1 : Bow	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1962	118	118	0
A1102 : MERRIMACK UNIT #1 : Bow	31589 Accessory Equipment - Other	BATTERY,STORAGE *	1991	0	0	0
A1102 : MERRIMACK UNIT #1 : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1960	18,620	18,620	0
A1103 : MERRIMACK UNIT #2 : Bow	312 Boiler Plant Equipment	PRECIPITATOR	1999	0	0	0
A1103 : MERRIMACK UNIT #2 : Bow	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1968	4,366,335	4,366,335	0
A1103 : MERRIMACK UNIT #2 : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1968	104,895	104,895	0
A1103 : MERRIMACK UNIT #2 : Bow	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1972	6,981	6,981	0
A1104 : NEWINGTON UNIT 1 : Newington	31189 Other Structures & Improv.	STRUCTURE, BUILDING (PLANT ACCOUNTI	1956	498	498	0
A1104 : NEWINGTON UNIT 1 : Newington	31189 Other Structures & Improv.	STRUCTURE, BUILDING (PLANT ACCOUNTI	1960	598	598	0
A1104 : NEWINGTON UNIT 1 : Newington	31189 Other Structures & Improv.	STRUCTURE, BUILDING (PLANT ACCOUNTI	1961	277	277	0
A1104 : NEWINGTON UNIT 1 : Newington	31189 Other Structures & Improv.	STRUCTURE, BUILDING (PLANT ACCOUNTI	1964	202	202	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	BLOWER,SOOT	1978	44,942	44,942	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	BOILER *	1974	6,570	6,570	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	BURNER (ret only)	1974	199,000	199,000	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	CHEMICAL FEED SYSTEM	1974	203,707	203,707	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	CRANE OR HOIST	1974	289,167	289,167	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	CRANE OR HOIST	1979	1,302	1,302	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	DEMINERALIZER *	1974	368,002	368,002	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	DESUPERHEATER	1974	523,845	523,845	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	DETECTION SYSTEM,FIRE	1974	68,763	68,763	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	FAN OR BLOWER	1974	276,092	276,092	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	FAN OR BLOWER	1979	150,190	150,190	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	FUEL LINE	1974	970,656	970,656	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	FUEL LINE	1977	13,505	13,505	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	FUEL LINE	1978	60,713	60,713	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	HEATER *	1974	16,691	16,691	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	HEATER,AIR	1978	91,133	91,133	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	HEATER,FEEDWATER	1974	195,498	195,498	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	INSTRUMENT RACK	1974	11,424	11,424	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	METER,FLOW	1974	3,833	3,833	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	MINI-COMPUTER	1974	2,185,417	2,185,417	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	MINI-COMPUTER	1979	14,445	14,445	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	MOTOR *	1974	34,457	34,457	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	MOTOR *	1977	2,189	2,189	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	MOTOR,25 HP AND LARGER	1974	817,432	817,432	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	PIPING, UNDER 3 INCH, COMPLETE SY	1974	1,325,260	1,325,260	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	PIPING, UNDER 3 INCH, COMPLETE SY	1979	11,078	11,078	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	PRECIPITATOR *	1974	6,090,555	6,090,555	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	PRECIPITATOR *	1979	381,980	381,980	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	PREHEATER,BOILER EQUIPMENT	1974	186,460	186,460	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	PUMP	1974	401,190	401,190	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	PUMP *	1974	53,831	53,831	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	RECORDER	1947	309,335	309,335	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	RECORDER	1974	319,675	319,675	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	RECORDER	1977	70	70	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	RECORDER	1979	5,653	5,653	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	RECTIFIER	1974	416,343	416,343	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	REHEATER	1974	2,703,656	2,703,656	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	REMOVAL EQUIPMENT	1974	3,075	3,075	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	STACK	1974	1,151,154	1,151,154	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	SUPERHEATER	1974	4,247,578	4,247,578	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	TANK	1974	2,082	2,082	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	TANK *	1974	285,740	285,740	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1947	63,126	63,126	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1974	4,342,002	4,342,002	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	VALVE *	1974	1,768,175	1,768,175	0
A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	VALVE *	1977	3,991	3,991	0

A1104 : NEWINGTON UNIT 1 : Newington	312 Boiler Plant Equipment	VALVE, 3" AND LARGER	1974	811,836	811,836	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	CHLORINATION OR SODIUM HYPOCHLORITE	1974	102,942	102,942	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	CONDENSER *	1974	624,989	624,989	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	COOLER	1974	5,649	5,649	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	DETECTION SYSTEM,FIRE	1974	17,660	17,660	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	EJECTOR	1974	69,080	69,080	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	GATE,INTAKE	1981	45,969	45,969	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	OIL LIFT SYSTEM	1974	20,437	20,437	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	PIPING 3 INCH STEEL	1974	385,674	385,674	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	PIPING, UNDER 3 INCH, COMPLETE SY	1974	173,635	173,635	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	PRIMARY MONITORING OR SENSING DEVIC	1974	14,554	14,554	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	PUMP	1974	394,183	394,183	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	PUMP *	1974	527,137	527,137	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	PUMP *	1978	4,253	4,253	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	PUMP *	1980	2,956	2,956	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	RACKS,TRASH	1974	156,633	156,633	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	RECORDER	1974	50,685	50,685	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	ROTATING TURBINE SPINDLE SECTION	1974	4,552,285	4,552,285	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	SCREEN	1974	274,560	274,560	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	TANK	1974	18,491	18,491	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	TANK *	1974	244,209	244,209	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	TUNNEL *	1974	244,771	244,771	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	TURBO-GENERATOR	1974	2,603,379	2,603,379	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1974	1,224,280	1,224,280	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1980	2,249	2,249	0
A1104 : NEWINGTON UNIT 1 : Newington	314 Turbogenerator Units	VALVE *	1974	1,470,263	1,470,263	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	ANALYZER	1998	9,120	9,120	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	BOOM	1998	36,670	36,670	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	COMPRESSOR,AIR	1990	20,204	20,204	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	COMPUTER	1998	3,788	3,788	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	CRANE OR HOIST,PORTABLE	1974	187,641	187,641	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	DETECTOR	1994	9,800	9,800	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	FIRE PROTECTION EQUIPMENT	1974	232,457	232,457	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	FIRE PROTECTION EQUIPMENT	1976	477	477	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	FIRE PROTECTION EQUIPMENT	1977	5,740	5,740	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	FIRE PROTECTION EQUIPMENT	1981	5,408	5,408	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	INSTRUMENTS,WATER QUALITY	1985	13,184	13,184	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	INSTRUMENTS,WATER QUALITY	1989	2,141	2,141	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	MOTOR,ELECTRIC	1974	27,560	27,560	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	RADIO,PORTABLE	1976	363	363	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	RADIO,PORTABLE	1998	4,376	4,376	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	RECEIVERS,COMMUNICATIONS	1975	522	522	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	SAFETY EQUIPMENT	1990	1,600	1,600	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	SAFETY EQUIPMENT	1992	3,677	3,677	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	SAFETY EQUIPMENT	1994	3,155	3,155	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	TANKS,MISCELLANEOUS GEN PLT	1998	13,658	13,658	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	TOOL SET	1987	6,589	6,589	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	TOOL SET	1990	3,861	3,861	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	TOOL SET	1991	3,900	3,900	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	TOOL SET	1992	1,035	1,035	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1942	447	447	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1972	572	572	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1974	916,537	916,537	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1975	22,262	22,262	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1976	145,779	145,779	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1977	11,402	11,402	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1978	14,764	14,764	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1979	25,694	25,694	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1980	8,554	8,554	0

A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1981	21,056	21,056	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1982	45,950	45,950	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1983	13,199	13,199	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1984	34,388	34,388	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1985	7,501	7,501	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1986	24,520	24,520	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1987	20,701	20,701	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1988	1,301	1,301	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	WELDING MACHINE	1997	1,668	1,668	0
A1104 : NEWINGTON UNIT 1 : Newington	31689 Other Misc Equipment	WORK CENTER	1994	11,649	11,649	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	BULK MEMORY UNIT	1974	10,516	10,516	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	DETECTION SYSTEM,FIRE	1974	85,852	85,852	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	FUEL LINE	1974	840,579	840,579	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	FUEL LINE	1979	19,923	19,923	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	METER,FLOW	1974	37,056	37,056	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	MOTOR *	1974	13,506	13,506	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	PIPING, UNDER 3 INCH	1974	16,717	16,717	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	RECORDER	1974	41,517	41,517	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	SIGNAL CONDITIONING,INDICATING,AND	1974	28,064	28,064	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	SPRINKLER SYSTEM	1974	6,065	6,065	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	TANK *	1974	1,648,296	1,648,296	0
A1104Z : NEWINGTON UNIT 1 : Portsmouth	312 Boiler Plant Equipment	UNCLASSIFIED/ADDITIONS	1974	898,770	898,770	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	312 Boiler Plant Equipment	PIPING, UREA FOR SNCR SYSTEM	1999	0	0	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1952	2,723	2,723	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1958	5,659	5,659	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1962	5,334	5,334	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1964	4,122	4,122	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1975	1,409	1,409	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	316 Misc Equipment	BOOM,OIL CONTAINMENT	1998	1,800	1,800	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	ALIGNMENT SYSTEM, LAZER	1995	10,024	10,024	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	ANALYZER,METALSIN WATER	1999	19,383	19,383	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	BASE STATION	1992	10,224	10,224	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	BOOM,OIL CONTAINMENT	1994	9,736	9,736	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	COMPUTER	1987	69,885	69,885	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	COMPUTER	1993	21,039	21,039	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	COMPUTER,THINKPAD OR NOTEBOOK	1997	5,803	5,803	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	DRILL	1994	1,027	1,027	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	EXTRACTION SYSTEM,SAMPLE	1999	10,218	10,218	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	FIRE PROTECTION EQUIPMENT	1987	102,893	102,893	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	HEATER,PORTABLE	1994	885	885	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	INSTRUMENTS,WATER QUALITY	1987	112,437	112,437	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	METER,FREQUENCY	1995	14,456	14,456	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	METERS,COMMUNICATIONS USE	1994	4,128	4,128	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	MILLING MACHINE	1982	7,770	7,770	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	PUMPS,LABORATORY & TEST	1999	1,483	1,483	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	PUMPS,TOOL,SHOP,GARAGE &	1994	442	442	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	RADIO,MARINE,PORTABLE	1993	2,058	2,058	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	RADIO,PORTABLE	1985	1,200	1,200	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	REELS	1995	8,065	8,065	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	SAFETY EQUIPMENT	1990	2,358	2,358	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	SIGNAL CONDITIONING,INDICATING,AND	1995	1,684	1,684	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	TOOL SET	1985	833	833	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	TOOL SET	1986	24,850	24,850	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	TOOL SET	1987	528	528	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	TOOL SET	1989	42,692	42,692	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	TOOL SET	1990	62,520	62,520	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	TOOL SET	1991	27,317	27,317	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	TOOL SET	1992	2,718	2,718	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1925	12,914	12,914	0

A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1931	311	311	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1950	172,473	172,473	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1951	1,556	1,556	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1952	22,087	22,087	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1953	220	220	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1954	3,014	3,014	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1955	39,168	39,168	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1956	3,341	3,341	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1957	34,890	34,890	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1958	4,585	4,585	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1959	8,496	8,496	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1960	5,182	5,182	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1961	14,539	14,539	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1962	4,126	4,126	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1963	2,662	2,662	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1964	3,014	3,014	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1965	3,216	3,216	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1966	5,217	5,217	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1967	1,591	1,591	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1968	30,466	30,466	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1969	1,607	1,607	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1970	2,170	2,170	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1971	3,104	3,104	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1972	8,764	8,764	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1973	560	560	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1974	3,216	3,216	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1975	8,834	8,834	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1976	10,265	10,265	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1977	7,975	7,975	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1978	18,017	18,017	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1979	16,057	16,057	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1980	15,138	15,138	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1981	15,016	15,016	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1982	53,226	53,226	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1983	2,040	2,040	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1984	22,156	22,156	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1985	87,266	87,266	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1986	39,803	39,803	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1987	60,381	60,381	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1988	1,194	1,194	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1989	11,634	11,634	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	Unspecified	1995	9,560	9,560	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	WELDER	1987	11,877	11,877	0
A1105 : SCHILLER COMMON (UNITS 3,4,5, & 6) : Portsmouth	31689 Other Misc Equipment	WELDING MACHINE	1991	2,441	2,441	0
A1105V : SCHILLER COMMON (UNITS 3,4,5, & 6) : Eliot	31689 Other Misc Equipment	TOWER, AIR	1985	572	572	0
A1106 : SCHILLER UNITS # 1, 2, 3 : Portsmouth	31689 Other Misc Equipment	RADIO,PORTABLE	1998	9,241	9,241	0
A1107 : SCHILLER UNIT 4 : Portsmouth	312 Boiler Plant Equipment	INJECTION SYSTEM, UREA FOR SNCR	1999	0	0	0
A1107 : SCHILLER UNIT 4 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1952	1,573,569	1,573,569	0
A1107 : SCHILLER UNIT 4 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1957	1,594	1,594	0
A1107 : SCHILLER UNIT 4 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1961	9,253	9,253	0
A1107 : SCHILLER UNIT 4 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1962	3,138	3,138	0
A1107 : SCHILLER UNIT 4 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1968	3,975	3,975	0
A1107 : SCHILLER UNIT 4 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1973	6,986	6,986	0
A1107 : SCHILLER UNIT 4 : Portsmouth	31689 Other Misc Equipment	SAFETY EQUIPMENT	1990	4,305	4,305	0
A1107 : SCHILLER UNIT 4 : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1986	25,021	25,021	0
A1107 : SCHILLER UNIT 4 : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1987	50,092	50,092	0
A1107 : SCHILLER UNIT 4 : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1988	3,856	3,856	0
A1108 : SCHILLER UNIT 5 : Portsmouth	312 Boiler Plant Equipment	INJECTION SYSTEM, UREA FOR SNCR	1999	0	0	0
A1108 : SCHILLER UNIT 5 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1955	1,833,778	1,833,778	0

A1108 : SCHILLER UNIT 5 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1962	2,893	2,893	0
A1108 : SCHILLER UNIT 5 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1968	3,975	3,975	0
A1108 : SCHILLER UNIT 5 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1973	6,261	6,261	0
A1108 : SCHILLER UNIT 5 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1976	418,820	418,820	0
A1108 : SCHILLER UNIT 5 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1977	14,130	14,130	0
A1109 : SCHILLER UNIT 6 : Portsmouth	312 Boiler Plant Equipment	INJECTION SYSTEM, UREA FOR SNCR	1999	0	0	0
A1109 : SCHILLER UNIT 6 : Portsmouth	312 Boiler Plant Equipment	SOFA SYSTEM, Each	2001	0	0	0
A1109 : SCHILLER UNIT 6 : Portsmouth	314 Turbogenerator Units	ARMATURE,GENERATOR	1957	1,085,696	1,085,696	0
A1109 : SCHILLER UNIT 6 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1957	421,045	421,045	0
A1109 : SCHILLER UNIT 6 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1962	2,893	2,893	0
A1109 : SCHILLER UNIT 6 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1973	842	842	0
A1109 : SCHILLER UNIT 6 : Portsmouth	314 Turbogenerator Units	UNCLASSIFIED/ADDITIONS	1977	40,518	40,518	0
A1109 : SCHILLER UNIT 6 : Portsmouth	31689 Other Misc Equipment	TOOL SET	1990	1,618	1,618	0
A1109 : SCHILLER UNIT 6 : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1973	1,540	1,540	0
A1109 : SCHILLER UNIT 6 : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1985	1,880	1,880	0
A1109 : SCHILLER UNIT 6 : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1987	27,440	27,440	0
A1109 : SCHILLER UNIT 6 : Portsmouth	31689 Other Misc Equipment	UNCLASSIFIED/ADDITIONS	1988	14,158	14,158	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33105 Structures - Licensed Project	CONDUCTOR-ELECTRICAL SYSTEM	1936	2,550	2,550	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33105 Structures - Licensed Project	ENCLOSURE,UNDERGROUND	1936	188	188	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33105 Structures - Licensed Project	FENCE	1938	639	639	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1936	97,973	97,973	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1938	236	236	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1942	140	140	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	BATTERY,STORAGE	1982	14,971	14,971	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	BUS	1936	2,687	2,687	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	BUS	1937	6,092	6,092	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	CABLE TRAYS	1957	1,887	1,887	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	CIRCUIT BREAKER,AIR 250V 10	1957	23,647	23,647	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	COMPRESSED AIR SYSTEM *	1954	660	660	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1936	2,384	2,384	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1957	9,656	9,656	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	CONDUIT	1936	580	580	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	CONDUIT	1937	212	212	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	CONDUIT	1957	484	484	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	FOUNDATION	1937	60	60	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	GENERATOR SET,AUXILIARY	1957	5,076	5,076	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	LOAD CENTER *	1936	385	385	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	LOAD CENTER *	1957	512	512	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1957	1,834	1,834	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	STRUCTURE, BUS	1937	301	301	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	STRUCTURE, BUS	1942	742	742	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	STRUCTURE, BUS	1957	1,280	1,280	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1936	19,371	19,371	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1937	3,314	3,314	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1939	91	91	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1954	493	493	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1955	316	316	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1957	37,375	37,375	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1972	87,250	87,250	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1975	198	198	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1976	953	953	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1977	2,101	2,101	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1981	188	188	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1982	14,187	14,187	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1983	15,896	15,896	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SWITCHGEAR, METALCLAD 600 AMP 7.5	1937	23,241	23,241	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SWITCHGEAR, METALCLAD 600 AMP 7.5	1957	500	500	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	SWITCHGEAR, METALCLAD 600 AMP 7.5	1978	756	756	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	TRANSFORMER, STATION SERVICE 150	1937	356	356	0

C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	TRANSFORMER, STATION SERVICE 150	1971	1,205	1,205	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1937	1,500	1,500	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1957	931	931	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	COMPRESSOR,AIR *	1970	2,341	2,341	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	CRANE *	1936	7,162	7,162	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	GENERATOR,PORTABLE	1960	3,991	3,991	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	METER,FLOW	1936	845	845	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	METER,FLOW	1964	123	123	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1936	17	17	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1937	504	504	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1950	2,377	2,377	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1952	13	13	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1962	301	301	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1969	1,043	1,043	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1972	412	412	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	UNCLASSIFIED/ADDITIONS	1936	6	6	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	UNCLASSIFIED/ADDITIONS	1960	3,634	3,634	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33505 Hydro Misc Eq-Licensed Proj	UNCLASSIFIED/ADDITIONS	1964	597	597	0
C1401 : AMOSKEAG LICENCED PROJEDT #1893NH (#1,2,&3) : Manchester	33605 Road,Rails&Bridge-Lic. Proj.	ROAD	1968	641	641	0
C1402 : AMOSKEAG NON-LICENSED PROJECT : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1960	30,555	30,555	0
C1402 : AMOSKEAG NON-LICENSED PROJECT : Manchester	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1971	720	720	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33305 Water wheel,turb,gen-Lic Proj	ARMATURE,GENERATOR	1924	30,881	30,881	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33305 Water wheel,turb,gen-Lic Proj	ARMATURE,GENERATOR	1947	27,267	27,267	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33305 Water wheel,turb,gen-Lic Proj	GOVERNOR CONTROL SYSTEM	1925	6,758	6,758	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33305 Water wheel,turb,gen-Lic Proj	TURBINE/WATERWHEEL	1925	54,415	54,415	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33305 Water wheel,turb,gen-Lic Proj	UNCLASSIFIED/ADDITIONS	1949	600	600	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	BUS	1930	2,163	2,163	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1924	734	734	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1961	13,912	13,912	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	CONDUIT	1924	746	746	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	CONDUIT	1961	2,085	2,085	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	LOAD CENTER *	1961	166	166	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1961	1,704	1,704	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1949	142	142	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1955	54	54	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1957	30	30	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1961	126,839	126,839	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	TRANSFORMER, STATION SERVICE 25	1961	2,850	2,850	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	TRANSFORMER, STATION SERVICE 25	1975	198	198	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	TRANSFORMER, STATION SERVICE 25	1977	898	898	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1961	651	651	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1929	118	118	0
C1403 : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : New Hampton	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1949	21	21	0
C1403C : AYERS ISLAND LICENSED PROJECT #2456 (#1 & 3) : Bristol	33405 Hydro Access Equip-Lic Proj	TRANSFORMER, STATION SERVICE 150	1974	22	22	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33105 Structures - Licensed Project	CONDUCTOR-ELECTRICAL SYSTEM	1927	376	376	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33105 Structures - Licensed Project	LANDSCAPING	1934	1,356	1,356	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33105 Structures - Licensed Project	RAILING	1927	379	379	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33105 Structures - Licensed Project	STEEL,STRUCTURAL	1927	1,077	1,077	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1927	24,516	24,516	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1944	2,262	2,262	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33305 Water wheel,turb,gen-Lic Proj	ARMATURE,GENERATOR	1927	24,123	24,123	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33305 Water wheel,turb,gen-Lic Proj	GOVERNOR CONTROL SYSTEM	1939	123	123	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33305 Water wheel,turb,gen-Lic Proj	TURBINE/WATERWHEEL	1927	21,841	21,841	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	BUS	1957	544	544	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1927	2,000	2,000	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1957	1,862	1,862	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	CONDUIT	1927	2,000	2,000	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	CONDUIT	1957	130	130	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1927	11,263	11,263	0

C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1936	81	81	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1939	1,017	1,017	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1941	605	605	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1957	243	243	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1959	769	769	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1927	995	995	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1977	134	134	0
C1405C : VT. CANAAN LICENSED PROJECT #7528 UNIT 1 : Canaan	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1980	150	150	0
C1406 : VT. CANAAN NON-LICENSED PROJECT : Canaan	33105 Structures - Licensed Project	ENCLOSURE,UNDERGROUND	1986	2,869	2,869	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1910	52,126	52,126	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1937	6,496	6,496	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1938	677	677	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1951	303	303	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33105 Structures - Licensed Project	UNCLASSIFIED/ADDITIONS	1937	270	270	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33305 Water wheel,turb,gen-Lic Proj	ARMATURE,GENERATOR	1937	18,784	18,784	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33305 Water wheel,turb,gen-Lic Proj	GOVERNOR CONTROL SYSTEM	1937	5,000	5,000	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33305 Water wheel,turb,gen-Lic Proj	TURBINE/WATERWHEEL	1937	26,242	26,242	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1951	901	901	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1959	6,727	6,727	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	CONDUIT	1937	1,186	1,186	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	CONDUIT	1951	23	23	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	CONDUIT	1959	1,521	1,521	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1937	311	311	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1956	629	629	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1959	4,464	4,464	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1966	683	683	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1937	61	61	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1959	955	955	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1910	4,268	4,268	0
C1407 : EASTMAN FALLS LICENSED PROJECT #2457NH 1 & 2 : Franklin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1949	21	21	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33105 Structures - Licensed Project	ENCLOSURE,UNDERGROUND	1945	1,200	1,200	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33105 Structures - Licensed Project	ENCLOSURE,UNDERGROUND	1946	991	991	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33105 Structures - Licensed Project	FENCE	1942	339	339	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1914	14,730	14,730	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1929	143,761	143,761	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33105 Structures - Licensed Project	UNCLASSIFIED/ADDITIONS	1929	8,204	8,204	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33105 Structures - Licensed Project	VENTILATOR *	1929	822	822	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33305 Water wheel,turb,gen-Lic Proj	ARMATURE,GENERATOR	1929	91,046	91,046	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33305 Water wheel,turb,gen-Lic Proj	TURBINE/WATERWHEEL	1929	101,907	101,907	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	BATTERY,STORAGE	1933	22	22	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	BATTERY,STORAGE	1976	691	691	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	CABLE TRAYS	1964	56	56	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1959	695	695	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1964	16,687	16,687	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1976	8,548	8,548	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	CONDUIT	1964	4,907	4,907	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	FOUNDATION	1946	200	200	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1936	51	51	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1959	73	73	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1974	50	50	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1976	1,691	1,691	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	STRUCTURE, POLE	1938	1	1	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1966	1,379	1,379	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1976	72,966	72,966	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1977	193	193	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	SWITCHGEAR, METALCLAD 600 AMP 5	1964	31,061	31,061	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33405 Hydro Access Equip-Lic Proj	TRANSFORMER, STATION SERVICE 25	1964	5,276	5,276	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33505 Hydro Misc Eq-Licensed Proj	COMPRESSED AIR SYSTEM *	1972	8,617	8,617	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33505 Hydro Misc Eq-Licensed Proj	CRANE *	1929	9,448	9,448	0

C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33505 Hydro Misc Eq-Licensed Proj	CRANE *	1960	793	793	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1964	376	376	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1966	45	45	0
C1409 : GARVINS FALLS LICENSED PROJECT #1983NH 1234 : Bow	33505 Hydro Misc Eq-Licensed Proj	UNCLASSIFIED/ADDITIONS	1974	282	282	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	AIR CONDITIONER	1962	5,741	5,741	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	COMPRESSOR *	1923	6,211	6,211	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	CONDUCTOR-ELECTRICAL SYSTEM	1909	51	51	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	CONDUCTOR-ELECTRICAL SYSTEM	1917	52	52	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	CONDUCTOR-ELECTRICAL SYSTEM	1923	1,138	1,138	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	CRANE OR HOIST	1909	761	761	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	CRANE OR HOIST	1923	1,449	1,449	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	ENCLOSURE,UNDERGROUND	1923	507	507	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	ENCLOSURE,UNDERGROUND	1955	1,277	1,277	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	GRADING	1917	818	818	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	GRADING	1923	1,553	1,553	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	STEEL,STRUCTURAL	1923	176	176	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1909	8,596	8,596	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1917	22,702	22,702	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1923	90,455	90,455	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	TANK,SEPTIC *	1986	3,687	3,687	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	UNCLASSIFIED/ADDITIONS	1909	178	178	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33105 Structures - Licensed Project	UNCLASSIFIED/ADDITIONS	1959	1,593	1,593	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	CANAL	1923	44,607	44,607	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	DAM	1921	896	896	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	DIKE	1922	46,102	46,102	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	DIKE	1923	21,452	21,452	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	FENCE *	1923	3,398	3,398	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	FLASHBOARDS	1926	7,028	7,028	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	RESERVOIR OR POND *	1917	19,392	19,392	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	RESERVOIR OR POND *	1923	821	821	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	RESERVOIR OR POND *	1932	25,936	25,936	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33205 Res. Dam & WW Licensed Proj	TAILRACE	1922	82,072	82,072	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33305 Water wheel,turb,gen-Lic Proj	ARMATURE,GENERATOR	1919	29,001	29,001	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33305 Water wheel,turb,gen-Lic Proj	ARMATURE,GENERATOR	1937	23,507	23,507	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33305 Water wheel,turb,gen-Lic Proj	GOVERNOR CONTROL SYSTEM	1937	1,504	1,504	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33305 Water wheel,turb,gen-Lic Proj	GOVERNOR CONTROL SYSTEM	1959	1,082	1,082	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33305 Water wheel,turb,gen-Lic Proj	TURBINE/WATERWHEEL	1919	31,523	31,523	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33305 Water wheel,turb,gen-Lic Proj	TURBINE/WATERWHEEL	1937	21,625	21,625	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33305 Water wheel,turb,gen-Lic Proj	UNCLASSIFIED/ADDITIONS	1959	2,220	2,220	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	CABLE TRAYS	1959	2,620	2,620	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	CABLE TRAYS	1972	741	741	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1959	19,409	19,409	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1972	1,852	1,852	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	CONDUIT	1959	3,690	3,690	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1959	1,759	1,759	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1986	9,387	9,387	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1959	53,556	53,556	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1972	36,737	36,737	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1978	9,208	9,208	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1982	961	961	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	SWITCHGEAR, METALCLAD 600 AMP 5	1958	524	524	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1981	154	154	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33505 Hydro Misc Eq-Licensed Proj	BUOYS	1978	275	275	0
C1410 : GORHAM LICENSED PROJEACT #2288 COMMON (1, 2, 3, 4) : Gorham	33505 Hydro Misc Eq-Licensed Proj	COMPRESSED AIR SYSTEM *	1948	934	934	0
C1411 : GORHAM NON-LICENSED PROJECT : Gorham	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1937	90	90	0
C1411 : GORHAM NON-LICENSED PROJECT : Gorham	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1959	11,453	11,453	0
C1411 : GORHAM NON-LICENSED PROJECT : Gorham	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1970	472	472	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	CONDUCTOR-ELECTRICAL SYSTEM	1927	1,265	1,265	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	ENCLOSURE,UNDERGROUND	1950	177	177	0

C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	FENCE	1959	819	819	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	GRADING	1927	2,343	2,343	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	GRADING	1959	104	104	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	PIPING *	1927	636	636	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1927	23,701	23,701	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1937	24	24	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33105 Structures - Licensed Project	UNCLASSIFIED/ADDITIONS	1927	695	695	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33205 Res. Dam & WW Licensed Proj	DAM	1927	139,432	139,432	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33205 Res. Dam & WW Licensed Proj	FLASHBOARDS	1927	1,118	1,118	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33205 Res. Dam & WW Licensed Proj	GATE,MINOR	1927	5,940	5,940	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33205 Res. Dam & WW Licensed Proj	HOIST,GATE	1927	7,225	7,225	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33205 Res. Dam & WW Licensed Proj	UNCLASSIFIED/ADDITIONS	1927	83,058	83,058	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33205 Res. Dam & WW Licensed Proj	WALKWAY	1927	527	527	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33405 Hydro Access Equip-Lic Proj	BATTERY,STORAGE	1985	0	0	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33405 Hydro Access Equip-Lic Proj	CONDUIT	1928	610	610	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1928	264	264	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33405 Hydro Access Equip-Lic Proj	SUPERVISORY CONTROL EQUIPMENT	1929	140	140	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1927	25	25	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33505 Hydro Misc Eq-Licensed Proj	COMPRESSED AIR SYSTEM *	1957	5,235	5,235	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33505 Hydro Misc Eq-Licensed Proj	COMPRESSED AIR SYSTEM *	1963	596	596	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33505 Hydro Misc Eq-Licensed Proj	CRANE *	1929	4,486	4,486	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1980	1,954	1,954	0
C1412 : HOOKSETT LICENSED PROJECT #1893 NH UNIT 1 : Hooksett	33505 Hydro Misc Eq-Licensed Proj	UNCLASSIFIED/ADDITIONS	1975	2,364	2,364	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33105 Structures - Licensed Project	CONDUCTOR-ELECTRICAL SYSTEM	1934	1,892	1,892	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33105 Structures - Licensed Project	CRANE OR HOIST	1934	3,643	3,643	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33105 Structures - Licensed Project	ENCLOSURE,UNDERGROUND	1934	274	274	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33105 Structures - Licensed Project	GRADING	1934	5,016	5,016	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33105 Structures - Licensed Project	HEATER,UNIT	1934	2,162	2,162	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33105 Structures - Licensed Project	STRUCTURE, BUILDING (PLANT ACCOUNTI	1934	42,340	42,340	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33105 Structures - Licensed Project	UNCLASSIFIED/ADDITIONS	1934	1,038	1,038	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33105 Structures - Licensed Project	UNCLASSIFIED/ADDITIONS	1935	103	103	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33205 Res. Dam & WW Licensed Proj	DAM	1926	219,077	219,077	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33205 Res. Dam & WW Licensed Proj	DIKE	1926	122,601	122,601	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33205 Res. Dam & WW Licensed Proj	FLASHBOARDS	1926	623	623	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33205 Res. Dam & WW Licensed Proj	HOIST,GATE	1926	548	548	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33205 Res. Dam & WW Licensed Proj	RESERVOIR OR POND *	1926	2,895	2,895	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33205 Res. Dam & WW Licensed Proj	SURGE SYSTEM	1926	19,704	19,704	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33305 Water wheel,turb,gen-Lic Proj	ARMATURE,GENERATOR	1926	24,164	24,164	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33305 Water wheel,turb,gen-Lic Proj	TURBINE/WATERWHEEL	1926	38,780	38,780	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33305 Water wheel,turb,gen-Lic Proj	UNCLASSIFIED/ADDITIONS	1961	16,481	16,481	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33405 Hydro Access Equip-Lic Proj	CONDUCTOR,ALUMINUM INSULATED 15	1928	210	210	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33405 Hydro Access Equip-Lic Proj	PANEL,SWITCHBOARD	1954	285	285	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1926	16	16	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33405 Hydro Access Equip-Lic Proj	UNCLASSIFIED/ADDITIONS	1935	31	31	0
C1413 : JACKMAN LIMITED LIFE : Hillsboro	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1925	1,259	1,259	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	COMPRESSOR,AIR	1948	1,347	1,347	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	CRANE *	1948	59,583	59,583	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1948	422	422	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1952	53	53	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1955	464	464	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1956	4,785	4,785	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1959	22	22	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1961	187	187	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1968	5,539	5,539	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1971	581	581	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1972	230	230	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1975	539	539	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	UNCLASSIFIED/ADDITIONS	1960	8,998	8,998	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33505 Hydro Misc Eq-Licensed Proj	UNCLASSIFIED/ADDITIONS	1965	2,549	2,549	0

C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33605 Road,Rails&Bridge-Lic. Proj.	BRIDGE	1948	11,520	11,520	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33605 Road,Rails&Bridge-Lic. Proj.	BRIDGE	1979	5,929	5,929	0
C1415 : SMITH LICENSED PROJECT #2287 UNIT 1 : Berlin	33605 Road,Rails&Bridge-Lic. Proj.	ROAD	1948	19,448	19,448	0
C1416 : SMITH NON-LICENSED PROJECT : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1967	320	320	0
C1416 : SMITH NON-LICENSED PROJECT : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1971	339	339	0
C1416 : SMITH NON-LICENSED PROJECT : Berlin	33505 Hydro Misc Eq-Licensed Proj	TOOL SET	1973	225	225	0
E1602 : MERRIMACK UNIT # 1 CT : Bow	342 Fuel Holders	UNCLASSIFIED/ADDITIONS	1968	48,439	48,439	0
E1602 : MERRIMACK UNIT # 1 CT : Bow	344 Generators	UNCLASSIFIED/ADDITIONS	1968	1,334,975	1,334,975	0
E1602 : MERRIMACK UNIT # 1 CT : Bow	346 Misc Power Plant Equipment	TANKS,MISCELLANEOUS GEN PLT	1991	1,878	1,878	0
E1602 : MERRIMACK UNIT # 1 CT : Bow	346 Misc Power Plant Equipment	TANKS,MISCELLANEOUS GEN PLT	1992	421	421	0
E1602 : MERRIMACK UNIT # 1 CT : Bow	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1968	274	274	0
E1602 : MERRIMACK UNIT # 1 CT : Bow	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1972	3,097	3,097	0
E1603 : MERRIMACK UNIT # 2 CT : Bow	342 Fuel Holders	UNCLASSIFIED/ADDITIONS	1969	37,354	37,354	0
E1603 : MERRIMACK UNIT # 2 CT : Bow	346 Misc Power Plant Equipment	TANKS,MISCELLANEOUS GEN PLT	1991	1,878	1,878	0
E1603 : MERRIMACK UNIT # 2 CT : Bow	346 Misc Power Plant Equipment	TANKS,MISCELLANEOUS GEN PLT	1992	421	421	0
E1603 : MERRIMACK UNIT # 2 CT : Bow	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1969	306	306	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	34189 Structures - Other	LANDSCAPING *	1969	83,252	83,252	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	34189 Structures - Other	MINOR STRUCTURE	1969	60,649	60,649	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	34189 Structures - Other	MINOR STRUCTURE	1989	68,163	68,163	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	34189 Structures - Other	WELL	1969	2,773	2,773	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	342 Fuel Holders	HEATER *	1969	18,630	18,630	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	342 Fuel Holders	TANK *	1969	20,980	20,980	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	342 Fuel Holders	TANK *	1992	83,508	83,508	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	342 Fuel Holders	UNCLASSIFIED/ADDITIONS	1969	28,456	28,456	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	342 Fuel Holders	UNCLASSIFIED/ADDITIONS	1976	3,179	3,179	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	342 Fuel Holders	UNCLASSIFIED/ADDITIONS	1981	2,264	2,264	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	343 Prime Movers	DRIVE TURBINE	1969	1,199,446	1,199,446	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	343 Prime Movers	STARTING SYSTEM *	1974	738	738	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	346 Misc Power Plant Equipment	BLOWER/THROWER,SNOW	1992	1,017	1,017	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	346 Misc Power Plant Equipment	FIRE PROTECTION EQUIPMENT	1969	5,350	5,350	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1969	1,016	1,016	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1970	568	568	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1982	232	232	0
E1604 : LOST NATION COMBUSTION TURBINE (UNIT 10) : Northhumberland	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1985	4,123	4,123	0
E1605 : SCHILLER COMBUSTION TURBINE 1 (UNIT 10) : Portsmouth	34189 Structures - Other	UNCLASSIFIED/ADDITIONS	1970	39,150	39,150	0
E1605 : SCHILLER COMBUSTION TURBINE 1 (UNIT 10) : Portsmouth	34189 Structures - Other	UNCLASSIFIED/ADDITIONS	1981	2,580	2,580	0
E1605 : SCHILLER COMBUSTION TURBINE 1 (UNIT 10) : Portsmouth	344 Generators	ARMATURE,GENERATOR	1990	8,035	8,035	0
E1605 : SCHILLER COMBUSTION TURBINE 1 (UNIT 10) : Portsmouth	344 Generators	UNCLASSIFIED/ADDITIONS	1970	1,642,968	1,642,968	0
E1605 : SCHILLER COMBUSTION TURBINE 1 (UNIT 10) : Portsmouth	345 Accessory Electric Equipment	BATTERY,STORAGE *	1995	23,286	23,286	0
E1605 : SCHILLER COMBUSTION TURBINE 1 (UNIT 10) : Portsmouth	345 Accessory Electric Equipment	UNCLASSIFIED/ADDITIONS	1970	2,274	2,274	0
E1605 : SCHILLER COMBUSTION TURBINE 1 (UNIT 10) : Portsmouth	345 Accessory Electric Equipment	UNCLASSIFIED/ADDITIONS	1981	3,248	3,248	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	34189 Structures - Other	FENCE	1968	1,011	1,011	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	34189 Structures - Other	LANDSCAPING *	1968	7,897	7,897	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	34189 Structures - Other	MINOR STRUCTURE	1968	25,280	25,280	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	34189 Structures - Other	MINOR STRUCTURE	1969	4,096	4,096	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	34189 Structures - Other	MINOR STRUCTURE	1976	3,613	3,613	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	34189 Structures - Other	MINOR STRUCTURE	1978	2,901	2,901	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	34189 Structures - Other	WELL	1979	3,300	3,300	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	342 Fuel Holders	TANK *	1968	51,592	51,592	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	346 Misc Power Plant Equipment	STARTERS	2001	14,595	14,595	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1968	43	43	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1969	602	602	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1971	1,464	1,464	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1975	361	361	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1976	1,212	1,212	0
E1606 : WHITE LAKE COMBUSTION TURBINE (UNIT 10) : Tamworth	346 Misc Power Plant Equipment	UNCLASSIFIED/ADDITIONS	1978	580	580	0
Grand Total				86,167,131	86,167,131	0

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Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-023 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: William H. Smagula

Request:
Please explain why Schiller station has not been the subject of a delist bid at ISO-NE?

Response:
There was no study which indicated that in 2012 not participating in the forward capacity market through a delist bid and forgoing capacity market revenues was in the public interest of PSNH ES or distribution customers.

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Date Request Received: 08/26/2013 **Date of Response: 08/26/2013**
Request No. Q-OCA-024 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: William H. Smagula

Request:
Please explain why Newington station has not been the subject of a delist bid at ISO-NE?

Response:
There was no study which indicated that in 2012 not participating in the forward capacity market through a delist bid and forgoing capacity market revenues was in the public interest of PSNH ES or distribution customers. Conversely, the Newington Station CUO study requested by the NHPUC confirms benefit to PSNH's customers.

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Date Request Received: 10/01/2013 **Date of Response: 10/01/2013**
Request No. Q-TS-02-001 **Page 1 of 7**
Request from: Conservation Law Foundation

Witness: William H. Smagula, Frederick White

Request:
At the technical session, Mr. White and Mr. Shelnitz stated, in response to a question, that the data provided by PSNH, in its reconciliation filing and in its responses to data requests, do not specify market revenue, including LMPs and NCPC (make whole) payments paid by ISO-NE for the output of its generating units in 2012. For each fossil-fueled unit, please provide weekly output provided into the ISO-NE system and the amount paid for such output by ISO-NE for each week. Please indicate, on a weekly basis, the number of hours in which PSNH received NCPC in addition to LMPs.

Response:
While generation unit energy market revenues are not explicitly shown in PSNH's reconciliation filing, they are included in the bill/invoice rendered by ISO-NE to PSNH which nets many charges and payments, the settlement of which is recorded on the company's books and therefore reflected in PSNH's filing. For example, LMP costs to load are also not explicitly shown in PSNH's filing but are nevertheless "included" in the reconciliation. Please see the attached tables for the requested information.

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Merrimack 1

Week Beginning	Generation MWh	Revenues $(000)	Number of Hours Receiving NCPC
1-Jan-12	18,392	835	0
8-Jan-12	18,173	662	0
15-Jan-12	18,167	803	0
22-Jan-12	3,763	132	0
29-Jan-12	0	0	0
5-Feb-12	0	0	0
12-Feb-12	3,265	70	0
19-Feb-12	9,818	253	0
26-Feb-12	18,106	502	0
4-Mar-12	14,423	446	3
11-Mar-12	14,295	325	4
18-Mar-12	9,668	207	3
25-Mar-12	0	0	0
1-Apr-12	0	0	0
8-Apr-12	0	0	0
15-Apr-12	2,368	146	27
22-Apr-12	0	0	0
29-Apr-12	0	0	0
6-May-12	0	0	0
13-May-12	0	0	0
20-May-12	0	0	0
27-May-12	0	0	0
3-Jun-12	0	0	0
10-Jun-12	0	0	0
17-Jun-12	6,297	588	0
24-Jun-12	3,530	199	0
1-Jul-12	14,585	615	10
8-Jul-12	14,949	603	7
15-Jul-12	15,792	778	0
22-Jul-12	16,669	652	0
29-Jul-12	13,597	530	0
5-Aug-12	0	0	0
12-Aug-12	0	0	0
19-Aug-12	8,794	289	0
26-Aug-12	0	0	0
2-Sep-12	0	0	0
9-Sep-12	0	0	0
16-Sep-12	0	0	0
23-Sep-12	0	0	0
30-Sep-12	0	0	0
7-Oct-12	0	0	0
14-Oct-12	0	0	0
21-Oct-12	0	0	0
28-Oct-12	0	0	0
4-Nov-12	6,088	258	3
11-Nov-12	14,940	741	4
18-Nov-12	15,828	863	1
25-Nov-12	17,541	1,249	0
2-Dec-12	15,811	762	5
9-Dec-12	16,667	635	3
16-Dec-12	14,957	552	8
23-Dec-12	16,024	784	0
30-Dec-12	4,998	360	0

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Merrimack 2

Week Beginning	Generation MWh	Revenues $(000)	Number of Hours Receiving NCPC
1-Jan-12	54,642	2,482	0
8-Jan-12	54,609	1,992	0
15-Jan-12	53,162	2,365	0
22-Jan-12	42,433	1,367	1
29-Jan-12	41,052	1,191	1
5-Feb-12	41,284	1,331	3
12-Feb-12	28,050	906	0
19-Feb-12	24,583	593	0
26-Feb-12	54,283	1,524	0
4-Mar-12	16,968	633	2
11-Mar-12	0	0	0
18-Mar-12	0	0	0
25-Mar-12	0	0	0
1-Apr-12	0	0	0
8-Apr-12	0	0	0
15-Apr-12	0	0	0
22-Apr-12	0	0	0
29-Apr-12	0	0	0
6-May-12	0	0	0
13-May-12	0	0	0
20-May-12	0	0	0
27-May-12	0	0	0
3-Jun-12	0	0	0
10-Jun-12	0	0	0
17-Jun-12	11,894	1,198	0
24-Jun-12	0	0	0
1-Jul-12	0	0	0
8-Jul-12	10,963	483	0
15-Jul-12	44,459	2,216	0
22-Jul-12	47,967	1,883	2
29-Jul-12	45,166	1,784	7
5-Aug-12	33,550	1,478	0
12-Aug-12	0	0	0
19-Aug-12	17,250	560	0
26-Aug-12	0	0	0
2-Sep-12	0	0	0
9-Sep-12	0	0	0
16-Sep-12	0	0	0
23-Sep-12	0	0	0
30-Sep-12	0	0	0
7-Oct-12	0	0	0
14-Oct-12	0	0	0
21-Oct-12	0	0	0
28-Oct-12	0	0	0
4-Nov-12	0	0	0
11-Nov-12	0	0	0
18-Nov-12	0	0	0
25-Nov-12	41,439	3,154	0
2-Dec-12	43,596	1,935	3
9-Dec-12	47,059	1,785	3
16-Dec-12	20,523	603	3
23-Dec-12	47,480	2,311	10
30-Dec-12	14,566	1,057	6

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Week Beginning	Generation MWh	Revenues $(000)	Number of Hours Receiving NCPC
1-Jan-12	2,664	192	9
8-Jan-12	246	21	8
15-Jan-12	2,438	136	39
22-Jan-12	167	6	0
29-Jan-12	0	0	0
5-Feb-12	0	0	0
12-Feb-12	256	22	9
19-Feb-12	0	0	0
26-Feb-12	0	0	0
4-Mar-12	961	68	33
11-Mar-12	0	0	0
18-Mar-12	0	0	0
25-Mar-12	1,472	38	0
1-Apr-12	241	6	0
8-Apr-12	0	0	0
15-Apr-12	643	50	21
22-Apr-12	305	18	9
29-Apr-12	376	28	13
6-May-12	0	0	0
13-May-12	0	0	0
20-May-12	0	0	0
27-May-12	0	0	0
3-Jun-12	0	0	0
10-Jun-12	0	0	0
17-Jun-12	0	0	0
24-Jun-12	1,280	57	0
1-Jul-12	3,218	175	18
8-Jul-12	1,249	81	8
15-Jul-12	3,327	238	8
22-Jul-12	1,814	117	26
29-Jul-12	453	32	0
5-Aug-12	0	0	0
12-Aug-12	1,439	93	20
19-Aug-12	2,838	107	0
26-Aug-12	2,423	97	0
2-Sep-12	0	0	0
9-Sep-12	0	0	0
16-Sep-12	0	0	0
23-Sep-12	0	0	0
30-Sep-12	30	1	0
7-Oct-12	0	0	0
14-Oct-12	275	26	10
21-Oct-12	0	0	0
28-Oct-12	879	76	31
4-Nov-12	3,010	197	8
11-Nov-12	0	0	0
18-Nov-12	3,759	225	33
25-Nov-12	6,758	497	0
2-Dec-12	1,020	80	14
9-Dec-12	271	25	9
16-Dec-12	0	0	0
23-Dec-12	1,718	122	19
30-Dec-12	1,930	146	3

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Week Beginning	Generation MWh	Revenues $(000)	Number of Hours Receiving NCPC
1-Jan-12	6,775	326	0
8-Jan-12	6,909	267	0
15-Jan-12	7,003	326	0
22-Jan-12	6,870	230	0
29-Jan-12	6,879	207	0
5-Feb-12	6,875	229	0
12-Feb-12	6,870	227	0
19-Feb-12	6,893	198	0
26-Feb-12	6,871	196	0
4-Mar-12	6,788	216	0
11-Mar-12	6,827	159	0
18-Mar-12	6,210	137	0
25-Mar-12	0	0	0
1-Apr-12	0	0	0
8-Apr-12	1,394	35	0
15-Apr-12	7,078	191	0
22-Apr-12	6,867	183	0
29-Apr-12	7,089	190	0
6-May-12	7,106	167	0
13-May-12	7,154	173	0
20-May-12	7,137	202	0
27-May-12	7,120	195	0
3-Jun-12	6,989	170	0
10-Jun-12	7,053	171	0
17-Jun-12	7,008	377	0
24-Jun-12	7,039	272	0
1-Jul-12	7,052	291	0
8-Jul-12	7,078	286	0
15-Jul-12	1,097	47	0
22-Jul-12	4,675	192	0
29-Jul-12	5,679	234	0
5-Aug-12	7,231	306	0
12-Aug-12	7,165	292	0
19-Aug-12	7,164	232	0
26-Aug-12	7,111	254	0
2-Sep-12	7,136	247	0
9-Sep-12	7,175	226	0
16-Sep-12	7,198	238	0
23-Sep-12	7,224	215	0
30-Sep-12	7,204	236	0
7-Oct-12	7,262	248	0
14-Oct-12	7,211	286	0
21-Oct-12	7,170	264	0
28-Oct-12	6,972	251	0
4-Nov-12	7,197	374	0
11-Nov-12	7,092	345	0
18-Nov-12	7,147	381	0
25-Nov-12	7,192	511	0
2-Dec-12	7,006	346	0
9-Dec-12	7,066	280	0
16-Dec-12	6,964	264	0
23-Dec-12	6,808	334	0
30-Dec-12	1,820	136	0

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Week Beginning	Generation MWh	Revenues $(000)	Number of Hours Receiving NCPC
1-Jan-12	2,744	194	9
8-Jan-12	471	22	0
15-Jan-12	2,348	127	20
22-Jan-12	0	0	0
29-Jan-12	0	0	0
5-Feb-12	0	0	0
12-Feb-12	3	0	0
19-Feb-12	0	0	0
26-Feb-12	0	0	0
4-Mar-12	0	0	0
11-Mar-12	0	0	0
18-Mar-12	0	0	0
25-Mar-12	1,333	58	18
1-Apr-12	2,505	67	7
8-Apr-12	1,945	54	5
15-Apr-12	738	54	25
22-Apr-12	204	18	8
29-Apr-12	376	28	13
6-May-12	0	0	0
13-May-12	386	29	14
20-May-12	307	24	10
27-May-12	0	0	0
3-Jun-12	0	0	0
10-Jun-12	0	0	0
17-Jun-12	2,425	245	2
24-Jun-12	1,107	69	0
1-Jul-12	3,185	174	17
8-Jul-12	0	0	0
15-Jul-12	2,518	187	0
22-Jul-12	732	52	19
29-Jul-12	407	30	9
5-Aug-12	458	31	11
12-Aug-12	1,974	113	11
19-Aug-12	0	0	0
26-Aug-12	635	44	8
2-Sep-12	0	0	0
9-Sep-12	34	1	0
16-Sep-12	0	0	0
23-Sep-12	0	0	0
30-Sep-12	0	0	0
7-Oct-12	0	0	0
14-Oct-12	249	25	9
21-Oct-12	0	0	0
28-Oct-12	882	73	28
4-Nov-12	3,014	203	8
11-Nov-12	446	38	16
18-Nov-12	4,719	275	57
25-Nov-12	6,735	495	0
2-Dec-12	965	76	25
9-Dec-12	267	23	8
16-Dec-12	0	0	0
23-Dec-12	1,725	123	19
30-Dec-12	1,908	144	2

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Data Request TS-02
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Newington

Week Beginning	Generation MWh	Revenues $(000)	Number of Hours Receiving NCPC
1-Jan-12	2,601	642	19
8-Jan-12	0	0	0
15-Jan-12	8,582	811	18
22-Jan-12	0	0	0
29-Jan-12	678	21	0
5-Feb-12	0	0	0
12-Feb-12	0	0	0
19-Feb-12	0	0	0
26-Feb-12	0	0	0
4-Mar-12	1,104	131	7
11-Mar-12	0	0	0
18-Mar-12	0	0	0
25-Mar-12	0	0	0
1-Apr-12	0	0	0
8-Apr-12	0	0	0
15-Apr-12	0	0	0
22-Apr-12	0	0	0
29-Apr-12	0	0	0
6-May-12	0	0	0
13-May-12	0	0	0
20-May-12	0	0	0
27-May-12	0	0	0
3-Jun-12	0	0	0
10-Jun-12	0	0	0
17-Jun-12	6,831	1,010	7
24-Jun-12	1,282	227	10
1-Jul-12	10,740	722	18
8-Jul-12	19,888	1,050	9
15-Jul-12	6,143	607	1
22-Jul-12	5,416	560	37
29-Jul-12	3,439	425	11
5-Aug-12	2,392	251	17
12-Aug-12	0	0	0
19-Aug-12	0	0	0
26-Aug-12	0	0	0
2-Sep-12	1,002	138	8
9-Sep-12	0	0	0
16-Sep-12	0	0	0
23-Sep-12	0	0	0
30-Sep-12	0	0	0
7-Oct-12	0	0	0
14-Oct-12	0	0	0
21-Oct-12	0	0	0
28-Oct-12	0	0	0
4-Nov-12	0	0	0
11-Nov-12	0	0	0
18-Nov-12	2,517	392	19
25-Nov-12	0	0	0
2-Dec-12	0	0	0
9-Dec-12	0	0	0
16-Dec-12	0	0	0
23-Dec-12	0	0	0
30-Dec-12	0	0	0

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 10/01/2013 **Date of Response: 10/01/2013**
Request No. Q-TS-02-002 **Page 1 of 1**
Request from: - Firm not available -

Witness: William H. Smagula, Frederick White

Request:
Ref OCA-1, Q-OCA-008, please discuss the replacement power analysis currently used. Recognizing the negative replacement power values that can occur, please also discuss any additional operational characteristics that would need to be considered if the current process was further refined.

Response:
The method for calculating replacement power cost (RPC), which has been in place for reconciliation filings for many years, is as follows:
The replacement power costs are calculated hourly. For each hour, all supply resources (owned units, IPPs, bilateral purchases and ISO-NE spot purchases) are ordered based on their estimated dispatch prices from lowest cost to highest cost. The hour's actual energy expense is estimated by adding up the expenses of the resources whose output adds up to the load. In a subsequent analysis, the unit out of service is placed back into the supply stack at an assumed availability and at the appropriate place in the dispatch order. The hour's energy expense is then recalculated as if the unit had been available. The replacement power cost is the difference in the cost to serve load between the two analyses. Typically the costs are summarized by unit/outage on a daily basis, and the days are summed to arrive at a (possibly) net figure for each outage.

Generally speaking, due to the low energy prices experienced during 2012, RPC for many days calculated to negative values, offset by some instances of positive days. It should be noted that while more prevalent in 2012 similar instances of negative daily RPCs occurred during 2010 and 2011, which can be seen from a review of DE 11-094 Staff-1 Q-29 and DE 12-116 Staff-2 Q-1, respectively. Using the "net" sum of all the days in an outage is also part of the methodology that has been used for many years.

The calculation is not intended to be an exact valuation (given its "virtual" nature that would be impossible), but rather a rigorous estimation, to provide a reasonable indication of the possible costs to customers due to the outage. Full inclusion of all costs, negative and positive, summarizes for the period an overall indicative value for the period. The methodology also, while rigorous, simplifies the nuances of unique generator operating characteristics; such as start costs, start times, minimum run and down times, and ramp rates. If one wished to "dispatch" the replacement unit across the outage period these parameters would need to be addressed, adding significant effort to an already earnest task, and likely introducing more judgment on the part of the analyst as well. Simply disregarding negative values would disregard real life operating parameters of generating units, and their very real cost implications.

PSNH believes that refinement of the current process is not warranted except in rare, unusual, and unique circumstances, as identified by either party in a particular instance; and only subsequent to a finding of imprudence with regard to a particular outage.

Public Service Company of New Hampshire
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Date Request Received: 10/01/2013
Request No. Q-TS-02-003
Request from: Office of Consumer Advocate

Date of Response: 10/01/2013

Witness: William H. Smagula

Request:
Ref STAFF-2, Q-STAFF-007. For the gypsum shipments occurring in 2012, please provide the cost of shipping, the revenue and the avoided disposal costs.

Response:
Attached is the detail associated with 2012 gypsum shipments as noted in STAFF-2, Q-STAFF-007. In summary, a total of 1648 trucks transported 50,841 tons of gypsum from Merrimack Station to Georgia Pacific in Newington. PSNH pays a net cost of $2.00 per dry ton for a total net cost of $93,202 for 46,601 dry tons of gypsum. The dry tonnage reflects a moisture adjustment ranging between 7.5% and 11%.

Disposal costs were about $90 per ton in 2012 and continue to increase. The sale of gypsum to Georgia Pacific not only saves customers over $4.5 million in disposal costs; but also avoids the environmental impact of land filling over 50,000 tons of material.

YEAR 2012		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
			BUILDING			STOCK PILE			TOTAL	
Month	Truck Shipments to GP	Total Tons to GP =B+E	Tonnage	Moisture Adjustment (%)	Adjusted Dry Tonnage	Tonnage	Moisture Adjustment (%)	Adjusted Dry Tonnage	Total Adjusted Tons =D+G	Total Net Cost =$2*H
April	11	348.23	348.23	8.0	320.34	0.00	8.0	0.00	320.34	$ 641
May	305	9,300.35	3,549.46	8.1	3,261.95	5,750.89	10.8	5,129.79	8,391.75	$ 16,783
June	339	10,464.49	731.89	7.8	674.80	9,732.60	8.4	8,915.06	9,589.86	$ 19,180
July	336	10,380.51	6,544.35	7.7	6,040.44	3,836.16	7.7	3,540.78	9,581.21	$ 19,162
August	275	8,535.29	4,896.15	7.6	4,524.04	3,639.14	8.6	3,326.17	7,850.22	$ 15,700
September	90	2,735.87	0.00	7.6	0.00	2,735.87	8.1	2,514.26	2,514.26	$ 5,029
October	0	-	0.00	0.0	0.00	0.00	0.0	0.00	0.00	$ -
November	39	1,216.16	1,216.16	7.8	1,121.30	0.00	10.0	0.00	1,121.30	$ 2,243
December	253	7,860.90	7,147.21	7.8	6,589.73	713.69	10.0	642.32	7,232.05	$ 14,464
TOTALS	1648	50,841.80	24,433.45		22,532.60	26,408.35		24,068.39	46,600.99	$ 93,202

Total Net Cost *(I): gypsum is sold at a positive price; however, the transaction is net of trucking costs. The result of the sale of gypsum and trucking costs results in a cost of $2.00 per dry ton.*

Public Service Company of New Hampshire
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Date Request Received: 10/01/2013 **Date of Response: 10/01/2013**
Request No. Q-TS-02-004 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: Timothy W. Clark

Request:
See OCA-02. Q-OCA-002, recognizing allocation costs were split for 2012 between both NUSCO and NSTAR provide the costs from each of the service companies (NUSCO and NSTAR service company). As a comparison, also provide the allocation costs in 2011 from NUSCO service company. Please note any differences in scope of services provided.

Response:
Included in the costs under review in this Docket are approximately $900,000 that were allocated from the NSTAR service company and approximately $11.7M and $12.2M that were allocated from NUSCO in 2011 and 2012, respectively. The increase in the NUSCO allocated amounts is primarily due to higher allocation rates to PSNH as certain allocations are based on gross plant assets, which increased in 2012 due to the inclusion of the Merrimack scrubber costs.

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Docket No. DE 13-108

Date Request Received: 10/01/2013 **Date of Response: 10/01/2013**
Request No. Q-TS-02-005 **Page 1 of 1**
Request from: Conservation Law Foundation

Witness:

Request:
With reference to PSNH's response to OCA Set 2, Request 4: does the referenced Affiliate Agreement govern the allocation of PSNH staff time to PSNH affiliate, Northern Pass Transmission LLC? If not, please provide a copy of the governing agreement(s). Please provide a list of, and breakout of hours allocated to Northern Pass Transmission LLC by, each PSNH or NU employee whose time was allocated to Northern Pass Transmission LLC and to PSNH Energy Service in 2012.

Response:
Objection: PSNH objects to the request in the third sentence, namely: "Please provide a list of, and breakout of hours allocated to Northern Pass Transmission LLC by, each PSNH or NU employee whose time was allocated to Northern Pass Transmission LLC and to PSNH Energy Service in 2012." The request seeks information on "hours allocated to Northern Pass Transmission LLC" which is outside the scope of the docket and its therefore not relevant and not reasonably calculated to lead to the discovery of evidence admissible in this proceeding. Moreover, the request seeks information on each PSNH or NU employee whose time was "allocated" to Northern Pass and Energy Service, which would include, for example, each of Northeast Utilities' executives whose time may be "allocated" to different entities within the Northeast Utilities System. Accordingly, in addition to any "allocations" to Northern Pass not being relevant to the subject docket, the request is overly broad. Subject to, and without waiving this objection, PSNH will respond to the remainder of the question in conformance with the schedule in this docket.

The referenced agreement is an agreement between PSNH and Northeast Utilities and, as such, does not govern allocations to Northern Pass Transmission, LLC. There is no agreement that governs allocations as between PSNH and Northern Pass Transmission, LLC.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 10/01/2013 **Date of Response: 10/01/2013**
Request No. Q-TS-02-006 **Page 1 of 1**
Request from: Office of Consumer Advocate

Witness: William H. Smagula

Request:
Ref OCA-02, Q-OCA-009, please provide items the company considers when self-scheduling Newington Station.

Response:
Listed below are a number of examples as to why Newington Station would be self-scheduled to serve load. These examples serve to reduce risk, lower costs, satisfy compliance requirements, etc.

I. When extreme temperatures are occurring or expected the unit may be self-scheduled overnight for reliability, eliminating the risk of the unit having problems during start-up for the morning load.
II. When Merrimack (most typically MK2) is off the unit may be self-scheduled to protect customers against the volatility of the market.
III. When there is limited gas supply, or limited supply is expected, the unit may be self-scheduled to avoid the risk of no gas availability or significantly higher gas prices in the intra-day market.
IV. When the unit is required to perform environmental and ISO-NE audits and/or compliance testing, the unit may be self-scheduled.
V. When weather conditions suggest higher demand, natural gas may be purchased inter-day vs intra-day to avoid the premium and the unit may be self-scheduled consistent with the natural gas purchase.

Public Service Company of New Hampshire
Docket No. DE 13-108

Date Request Received: 10/01/2013 **Date of Response: 10/01/2013**
Request No. Q-TS-02-007 **Page 1 of 16**
Request from: Conservation Law Foundation

Witness: William H. Smagula, Frederick White

Request:
With reference to PSNH's response to OCA Set 2, Request 9, please provide tables presenting the same data (i.e., Date, Number of Hours Serving Load, Reason for Dispatch) as is presented for Newington, using the same or similar format, for each of PSNH's fossil-fuel generation units in 2012.

Response:
Please see the attached tables for the requested information. In addition to the reasons for dispatch identified in the tables, during a given operating period various other considerations may have included scrubber shakedown and verification tests, contract performance verification testing, environmental/emissions tests, fuel inventory management, plant equipment operating requirements affecting reliability, and ISO-NE operating directives; as reasons for dispatch are not mutually exclusive and many factors could influence a given operating period.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request TS-02
Dated: 10/1/13
Q-TS-02-007

Merrimack 1

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
1/1/12	17	Self-scheduled for load.
1/2/12	17	Self-scheduled for load.
1/3/12	20	Self-scheduled for load.
1/4/12	24	Self-scheduled for load.
1/5/12	22	Self-scheduled for load.
1/6/12	20	Self-scheduled for load.
1/7/12	18	Self-scheduled for load.
1/8/12	17	Self-scheduled for load.
1/9/12	19	Self-scheduled for load.
1/10/12	19	Self-scheduled for load.
1/11/12	20	Self-scheduled for load.
1/12/12	19	Self-scheduled for load.
1/13/12	19	Self-scheduled for load.
1/14/12	20	Self-scheduled for load.
1/15/12	24	Self-scheduled for load.
1/16/12	24	Self-scheduled for load.
1/17/12	22	Self-scheduled for load.
1/18/12	20	Self-scheduled for load.
1/19/12	24	Self-scheduled for load.
1/20/12	19	Self-scheduled for load.
1/21/12	24	Self-scheduled for load.
1/22/12	24	Self-scheduled for load.
1/23/12	10	Self-scheduled for load.
2/14/12	6	Self-scheduled for Clean Air Project testing & load.
2/15/12	21	Self-scheduled for Clean Air Project testing & load.
2/16/12	8	Self-scheduled for Clean Air Project testing & load.
2/22/12	22	Self-scheduled for Clean Air Project testing & load.
2/23/12	17	Self-scheduled for Clean Air Project testing & load.
2/24/12	17	Self-scheduled for Clean Air Project testing & load.
2/25/12	16	Self-scheduled for Clean Air Project testing & load.
2/26/12	16	Self-scheduled for Clean Air Project testing & load.
2/27/12	17	Self-scheduled for Clean Air Project testing & load.
2/28/12	17	Self-scheduled for Clean Air Project testing & load.
2/29/12	18	Self-scheduled for Clean Air Project testing & load.
3/1/12	19	Self-scheduled for Clean Air Project testing & load.
3/2/12	18	Self-scheduled for Clean Air Project testing & load.
3/3/12	17	Self-scheduled for Clean Air Project testing & load.
3/4/12	19	Self-scheduled for Clean Air Project testing & load.
3/5/12	19	Self-scheduled for Clean Air Project testing & load.
3/6/12	24	Self-scheduled for Clean Air Project testing & load.
3/7/12	24	Self-scheduled for Clean Air Project testing & load.
3/8/12	24	Self-scheduled for Clean Air Project testing & load.
3/9/12	24	Self-scheduled for Clean Air Project testing & load.
3/10/12	24	Self-scheduled for Clean Air Project testing & load.
3/11/12	23	Self-scheduled for Clean Air Project testing & load.
3/12/12	24	Self-scheduled for Clean Air Project testing & load.
3/13/12	24	Self-scheduled for Clean Air Project testing & load.
3/14/12	24	Self-scheduled for Clean Air Project testing & load.
3/15/12	24	Self-scheduled for Clean Air Project testing & load.
3/16/12	24	Self-scheduled for Clean Air Project testing & load.
3/17/12	24	Self-scheduled for Clean Air Project testing & load.
3/18/12	24	Self-scheduled for Clean Air Project testing & load.
3/19/12	24	Self-scheduled for Clean Air Project testing & load.
3/20/12	24	Self-scheduled for Clean Air Project testing & load.
3/21/12	24	Self-scheduled for Clean Air Project testing & load.
3/22/12	18	Self-scheduled for Clean Air Project testing & load.
4/16/12	13	Dispatched by ISO-NE for load.
4/17/12	17	Dispatched by ISO-NE for load.
6/20/12	19	Dispatched by ISO-NE for load.
6/21/12	24	Dispatched by ISO-NE for load.
6/22/12	24	Dispatched by ISO-NE for load.
6/23/12	1	Dispatched by ISO-NE for load.
6/29/12	17	Dispatched by ISO-NE for load.
6/30/12	24	Self-scheduled for load.
7/1/12	24	Self-scheduled for load.
7/2/12	24	Self-scheduled for load.
7/3/12	24	Self-scheduled for load.

Merrimack 1

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
7/4/12	24	Self-scheduled for load.
7/5/12	24	Self-scheduled for load.
7/6/12	24	Self-scheduled for load.
7/7/12	24	Self-scheduled for load.
7/8/12	24	Self-scheduled for load.
7/9/12	24	Self-scheduled for load.
7/10/12	24	Self-scheduled for load.
7/11/12	24	Self-scheduled for load.
7/12/12	24	Self-scheduled for load.
7/13/12	24	Self-scheduled for load.
7/14/12	24	Self-scheduled for load.
7/15/12	24	Self-scheduled for load.
7/16/12	24	Self-scheduled for load.
7/17/12	24	Self-scheduled for load.
7/18/12	24	Self-scheduled for load.
7/19/12	24	Self-scheduled for load.
7/20/12	24	Self-scheduled for load.
7/21/12	24	Self-scheduled for load.
7/22/12	20	Self-scheduled for load.
7/23/12	24	Self-scheduled for load.
7/24/12	24	Self-scheduled for load.
7/25/12	19	Self-scheduled for load.
7/26/12	18	Self-scheduled for load.
7/27/12	18	Self-scheduled for load.
7/28/12	24	Self-scheduled for Clean Air Project testing & load.
7/29/12	24	Self-scheduled for Clean Air Project testing & load.
7/30/12	23	Self-scheduled for load.
7/31/12	21	Self-scheduled for load.
8/1/12	24	Self-scheduled for load.
8/2/12	24	Self-scheduled for load.
8/3/12	24	Self-scheduled for load.
8/4/12	2	Self-scheduled for load.
8/20/12	14	Self-scheduled for Clean Air Project & environmental testing, & load.
8/21/12	23	Self-scheduled for Clean Air Project & environmental testing, & load.
8/22/12	16	Self-scheduled for Clean Air Project & environmental testing, ISO-NE capability audit, & load.
8/23/12	17	Self-scheduled for Clean Air Project & environmental testing, & load.
8/24/12	2	Self-scheduled for Clean Air Project & environmental testing, & load.
11/7/12	12	Dispatched by ISO-NE for load.
11/8/12	24	Self-scheduled for load.
11/9/12	24	Self-scheduled for load.
11/10/12	24	Self-scheduled for load.
11/11/12	24	Self-scheduled for load.
11/12/12	24	Self-scheduled for load.
11/13/12	24	Self-scheduled for load.
11/14/12	24	Self-scheduled for load.
11/15/12	24	Self-scheduled for load.
11/16/12	24	Self-scheduled for load.
11/17/12	24	Self-scheduled for load.
11/18/12	22	Self-scheduled for load.
11/19/12	24	Self-scheduled for load.
11/20/12	24	Self-scheduled for load.
11/21/12	24	Self-scheduled for load.
11/22/12	24	Self-scheduled for load.
11/23/12	24	Self-scheduled for load.
11/24/12	24	Self-scheduled for load.
11/25/12	24	Self-scheduled for load.
11/26/12	23	Self-scheduled for load.
11/27/12	17	Self-scheduled for load.
11/28/12	17	Self-scheduled for ISO-NE capability audit & load.
11/29/12	17	Self-scheduled for load.
11/30/12	18	Self-scheduled for load.
12/1/12	24	Self-scheduled for load.
12/2/12	20	Self-scheduled for load.
12/3/12	19	Self-scheduled for load.
12/4/12	19	Self-scheduled for load.
12/5/12	20	Self-scheduled for load.
12/6/12	18	Self-scheduled for load.

Merrimack 1

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
12/7/12	19	Self-scheduled for load.
12/8/12	18	Self-scheduled for load.
12/9/12	17	Self-scheduled for load.
12/10/12	18	Self-scheduled for Clean Air Project testing & load.
12/11/12	17	Self-scheduled for Clean Air Project testing & load.
12/12/12	17	Self-scheduled for Clean Air Project testing & load.
12/13/12	19	Self-scheduled for Clean Air Project testing & load.
12/14/12	19	Self-scheduled for Clean Air Project testing & load.
12/15/12	18	Self-scheduled for load.
12/16/12	19	Self-scheduled for load.
12/17/12	20	Self-scheduled for load.
12/18/12	24	Self-scheduled for load.
12/19/12	24	Self-scheduled for load.
12/20/12	24	Self-scheduled for load.
12/21/12	23	Self-scheduled for load.
12/22/12	16	Self-scheduled for load.
12/23/12	15	Self-scheduled for load.
12/24/12	16	Self-scheduled for load.
12/25/12	16	Self-scheduled for load.
12/26/12	17	Self-scheduled for load.
12/27/12	17	Self-scheduled for load.
12/28/12	15	Self-scheduled for load.
12/29/12	15	Self-scheduled for load.
12/30/12	15	Self-scheduled for load.
12/31/12	17	Self-scheduled for load.

Public Service Company of New Hampshire
Docket No. DE 13-108

Data Request TS-02
Dated: 10/1/13
Q-TS-02-007

Merrimack 2

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
1/1/12	24	Self-scheduled for load.
1/2/12	24	Self-scheduled for load.
1/3/12	24	Self-scheduled for load.
1/4/12	24	Self-scheduled for load.
1/5/12	24	Self-scheduled for load.
1/6/12	24	Self-scheduled for load.
1/7/12	24	Self-scheduled for load.
1/8/12	24	Self-scheduled for load.
1/9/12	24	Self-scheduled for load.
1/10/12	24	Self-scheduled for load.
1/11/12	24	Self-scheduled for load.
1/12/12	24	Self-scheduled for load.
1/13/12	24	Self-scheduled for load.
1/14/12	24	Self-scheduled for load.
1/15/12	24	Self-scheduled for load.
1/16/12	24	Self-scheduled for load.
1/17/12	24	Self-scheduled for load.
1/18/12	24	Self-scheduled for load.
1/19/12	24	Self-scheduled for load.
1/20/12	24	Self-scheduled for load.
1/21/12	24	Self-scheduled for load.
1/22/12	24	Self-scheduled for load.
1/23/12	24	Self-scheduled for load.
1/24/12	24	Self-scheduled for load.
1/25/12	24	Self-scheduled for load.
1/26/12	24	Self-scheduled for load.
1/27/12	24	Self-scheduled for load.
1/28/12	24	Self-scheduled for load.
1/29/12	24	Self-scheduled for load.
1/30/12	24	Self-scheduled for load.
1/31/12	24	Self-scheduled for load.
2/1/12	24	Self-scheduled for Clean Air Project testing & load.
2/2/12	24	Self-scheduled for Clean Air Project testing & load.
2/3/12	24	Self-scheduled for Clean Air Project testing & load.
2/4/12	24	Self-scheduled for Clean Air Project testing & load.
2/5/12	24	Self-scheduled for Clean Air Project testing & load.
2/6/12	24	Self-scheduled for Clean Air Project testing & load.
2/7/12	24	Self-scheduled for Clean Air Project testing & load.
2/8/12	24	Self-scheduled for Clean Air Project testing & load.
2/9/12	24	Self-scheduled for Clean Air Project testing & load.
2/10/12	24	Self-scheduled for Clean Air Project testing & load.
2/11/12	24	Self-scheduled for Clean Air Project testing & load.
2/12/12	24	Self-scheduled for Clean Air Project testing & load.
2/13/12	24	Self-scheduled for Clean Air Project testing & load.
2/14/12	24	Self-scheduled for Clean Air Project testing & load.
2/15/12	24	Self-scheduled for Clean Air Project testing & load.
2/16/12	18	Self-scheduled for Clean Air Project testing & load.
2/22/12	7	Self-scheduled for Clean Air Project testing & load.
2/23/12	24	Self-scheduled for Clean Air Project testing & load.
2/24/12	24	Self-scheduled for Clean Air Project testing & load.
2/25/12	24	Self-scheduled for Clean Air Project testing & load.
2/26/12	24	Self-scheduled for Clean Air Project testing & load.
2/27/12	24	Self-scheduled for Clean Air Project testing & load.
2/28/12	24	Self-scheduled for Clean Air Project testing & load.
2/29/12	24	Self-scheduled for Clean Air Project testing & load.
3/1/12	24	Self-scheduled for Clean Air Project testing & load.
3/2/12	24	Self-scheduled for Clean Air Project testing & load.
3/3/12	24	Self-scheduled for Clean Air Project testing & load.
3/4/12	24	Self-scheduled for Clean Air Project testing & load.
3/5/12	24	Self-scheduled for Clean Air Project testing & load.
3/6/12	24	Self-scheduled for Clean Air Project testing & load.
6/21/12	22	Dispatched by ISO-NE for load.
6/22/12	24	Dispatched by ISO-NE for load.
7/13/12	23	Self-scheduled for load.
7/14/12	24	Self-scheduled for load.
7/15/12	24	Self-scheduled for load.
7/16/12	24	Self-scheduled for load.

Merrimack 2

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
7/17/12	24	Self-scheduled for load.
7/18/12	24	Self-scheduled for load.
7/19/12	24	Self-scheduled for load.
7/20/12	24	Self-scheduled for load.
7/21/12	24	Self-scheduled for load.
7/22/12	24	Self-scheduled for load.
7/23/12	24	Self-scheduled for load.
7/24/12	24	Self-scheduled for load.
7/25/12	24	Self-scheduled for load.
7/26/12	24	Self-scheduled for load.
7/27/12	24	Self-scheduled for load.
7/28/12	24	Self-scheduled for Clean Air Project testing & load.
7/29/12	24	Self-scheduled for Clean Air Project testing & load.
7/30/12	24	Self-scheduled for load.
7/31/12	24	Self-scheduled for load.
8/1/12	24	Self-scheduled for load.
8/2/12	24	Self-scheduled for load.
8/3/12	24	Self-scheduled for load.
8/4/12	24	Self-scheduled for load.
8/5/12	24	Self-scheduled for load.
8/6/12	24	Self-scheduled for load.
8/7/12	24	Self-scheduled for load.
8/8/12	24	Self-scheduled for load.
8/9/12	24	Self-scheduled for load.
8/10/12	3	Self-scheduled for load.
8/21/12	9	Self-scheduled for Clean Air Project & environmental testing, & load.
8/22/12	24	Self-scheduled for Clean Air Project & environmental testing, ISO-NE capability audit, & load.
8/23/12	24	Self-scheduled for Clean Air Project & environmental testing, & load.
8/24/12	3	Self-scheduled for Clean Air Project & environmental testing, & load.
11/25/12	1	Self-scheduled for load.
11/26/12	21	Self-scheduled for load.
11/27/12	24	Self-scheduled for load.
11/28/12	24	Self-scheduled for load.
11/29/12	24	Self-scheduled for load.
11/30/12	24	Self-scheduled for load.
12/1/12	24	Self-scheduled for load.
12/2/12	24	Self-scheduled for load.
12/3/12	24	Self-scheduled for load.
12/4/12	24	Self-scheduled for load.
12/5/12	24	Self-scheduled for load.
12/6/12	24	Self-scheduled for load.
12/7/12	24	Self-scheduled for load.
12/8/12	24	Self-scheduled for load.
12/9/12	24	Self-scheduled for load.
12/10/12	24	Self-scheduled for Clean Air Project testing & load.
12/11/12	24	Self-scheduled for Clean Air Project testing & load.
12/12/12	24	Self-scheduled for Clean Air Project testing & load.
12/13/12	24	Self-scheduled for Clean Air Project testing & load.
12/14/12	24	Self-scheduled for Clean Air Project testing & load.
12/15/12	24	Self-scheduled for load.
12/16/12	24	Self-scheduled for load.
12/17/12	18	Self-scheduled for ISO-NE capability audit & load.
12/21/12	11	Self-scheduled for load.
12/22/12	24	Self-scheduled for load.
12/23/12	24	Self-scheduled for load.
12/24/12	24	Self-scheduled for load.
12/25/12	24	Self-scheduled for load.
12/26/12	24	Self-scheduled for load.
12/27/12	24	Self-scheduled for load.
12/28/12	24	Self-scheduled for load.
12/29/12	24	Self-scheduled for load.
12/30/12	24	Self-scheduled for load.
12/31/12	24	Self-scheduled for load.

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Data Request TS-02
Dated: 10/1/13
Q-TS-02-007

Schiller 4

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
1/1/12	7	Dispatched by ISO-NE for load.
1/2/12	8	Dispatched by ISO-NE for load.
1/3/12	16	Dispatched by ISO-NE for load.
1/4/12	17	Self-scheduled for load.
1/5/12	16	Self-scheduled for load.
1/14/12	11	Dispatched by ISO-NE for load.
1/15/12	17	Dispatched by ISO-NE for load.
1/16/12	17	Dispatched by ISO-NE for load.
1/17/12	16	Dispatched by ISO-NE for load.
1/25/12	9	Self-scheduled for vibration testing & load.
2/13/12	12	Dispatched by ISO-NE for load.
3/4/12	12	Dispatched by ISO-NE for load.
3/5/12	10	Dispatched by ISO-NE for load.
3/6/12	18	Dispatched by ISO-NE for load.
3/26/12	20	Self-scheduled for environmental (RATA) testing & load.
3/27/12	24	Self-scheduled for environmental (RATA) testing & load.
4/5/12	19	Self-scheduled to suport station service testing at SR5.
4/16/12	15	Dispatched by ISO-NE for load.
4/21/12	12	Dispatched by ISO-NE for load.
4/24/12	12	Dispatched by ISO-NE for load.
5/1/12	16	Dispatched by ISO-NE for load.
6/28/12	1	Dispatched by ISO-NE for load.
6/29/12	24	Dispatched by ISO-NE for load.
6/30/12	24	Self-scheduled for load.
7/1/12	24	Self-scheduled for load.
7/2/12	24	Self-scheduled for load.
7/3/12	12	Dispatched by ISO-NE for load.
7/4/12	12	Dispatched by ISO-NE for load.
7/5/12	12	Dispatched by ISO-NE for load.
7/6/12	13	Dispatched by ISO-NE for load.
7/7/12	13	Dispatched by ISO-NE for load.
7/11/12	13	Dispatched by ISO-NE for load.
7/13/12	12	Dispatched by ISO-NE for load.
7/14/12	14	Dispatched by ISO-NE for load.
7/15/12	14	Dispatched by ISO-NE for load.
7/16/12	24	Self-scheduled for load.
7/17/12	24	Self-scheduled for ISO-NE capability audit & load.
7/18/12	24	Self-scheduled for load.
7/20/12	10	Dispatched by ISO-NE for load.
7/23/12	12	Dispatched by ISO-NE for load.
7/24/12	10	Dispatched by ISO-NE for load.
7/25/12	15	Self-scheduled for load.
7/26/12	13	Dispatched by ISO-NE for load.
7/27/12	11	Dispatched by ISO-NE for load.
8/3/12	12	Dispatched by ISO-NE for load.
8/13/12	11	Dispatched by ISO-NE for load.
8/14/12	4	Dispatched by ISO-NE for load.
8/16/12	18	Self-scheduled for environmental (RATA) testing & load.
8/17/12	20	Self-scheduled for environmental (RATA) testing & load.
8/20/12	23	Self-scheduled for environmental (RATA) testing & load.
8/21/12	22	Self-scheduled for environmental (RATA) testing & load.
8/22/12	10	Self-scheduled for environmental (RATA) testing & load.
8/23/12	14	Self-scheduled for environmental (RATA) testing & load.
8/24/12	21	Self-scheduled for environmental (RATA) testing & load.
8/27/12	18	Self-scheduled for load.
8/28/12	24	Self-scheduled for load.
8/29/12	24	Self-scheduled for load.
8/30/12	18	Self-scheduled for load.
10/1/12	4	Self-scheduled for VAR testing & load.
10/16/12	10	Dispatched by ISO-NE for load.
10/17/12	2	Dispatched by ISO-NE for load.
10/30/12	17	Dispatched by ISO-NE for load.
10/31/12	10	Dispatched by ISO-NE for load.
11/1/12	11	Dispatched by ISO-NE for load.
11/5/12	11	Dispatched by ISO-NE for load.
11/6/12	18	Self-scheduled for load.
11/7/12	24	Self-scheduled for load.

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Data Request TS-02
Dated: 10/1/13
Q-TS-02-007

Schiller 4

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
11/8/12	24	Self-scheduled for load.
11/9/12	24	Self-scheduled for load.
11/19/12	17	Dispatched by ISO-NE for load.
11/20/12	18	Dispatched by ISO-NE for load.
11/21/12	24	Dispatched by ISO-NE for load.
11/22/12	1	Dispatched by ISO-NE for load.
11/23/12	19	Dispatched by ISO-NE for load.
11/24/12	24	Dispatched by ISO-NE for load.
11/25/12	24	Dispatched by ISO-NE for load.
11/26/12	17	Dispatched by ISO-NE for load.
11/27/12	5	Self-scheduled for ISO-NE capability audit & load.
11/28/12	5	Dispatched by ISO-NE for load.
11/29/12	4	Dispatched by ISO-NE for load.
11/30/12	5	Dispatched by ISO-NE for load.
12/1/12	13	Dispatched by ISO-NE for load.
12/3/12	10	Dispatched by ISO-NE for load.
12/6/12	9	Dispatched by ISO-NE for load.
12/7/12	2	Dispatched by ISO-NE for load.
12/14/12	9	Dispatched by ISO-NE for load.
12/28/12	3	Dispatched by ISO-NE for load.
12/29/12	3	Self-scheduled for load.
12/30/12	4	Self-scheduled for load.
12/31/12	3	Self-scheduled for load.

Schiller 5

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
1/1/12	24	Self-scheduled for load.
1/2/12	24	Self-scheduled for load.
1/3/12	24	Self-scheduled for load.
1/4/12	24	Self-scheduled for load.
1/5/12	24	Self-scheduled for load.
1/6/12	24	Self-scheduled for load.
1/7/12	24	Self-scheduled for load.
1/8/12	24	Self-scheduled for load.
1/9/12	24	Self-scheduled for load.
1/10/12	24	Self-scheduled for load.
1/11/12	24	Self-scheduled for load.
1/12/12	24	Self-scheduled for load.
1/13/12	24	Self-scheduled for load.
1/14/12	24	Self-scheduled for load.
1/15/12	24	Self-scheduled for load.
1/16/12	24	Self-scheduled for load.
1/17/12	24	Self-scheduled for load.
1/18/12	24	Self-scheduled for load.
1/19/12	24	Self-scheduled for load.
1/20/12	24	Self-scheduled for load.
1/21/12	24	Self-scheduled for load.
1/22/12	24	Self-scheduled for load.
1/23/12	24	Self-scheduled for load.
1/24/12	24	Self-scheduled for load.
1/25/12	24	Self-scheduled for load.
1/26/12	24	Self-scheduled for load.
1/27/12	24	Self-scheduled for load.
1/28/12	24	Self-scheduled for load.
1/29/12	24	Self-scheduled for load.
1/30/12	24	Self-scheduled for load.
1/31/12	24	Self-scheduled for load.
2/1/12	24	Self-scheduled for load.
2/2/12	24	Self-scheduled for load.
2/3/12	24	Self-scheduled for load.
2/4/12	24	Self-scheduled for load.
2/5/12	24	Self-scheduled for load.
2/6/12	24	Self-scheduled for load.
2/7/12	24	Self-scheduled for load.
2/8/12	24	Self-scheduled for load.
2/9/12	24	Self-scheduled for load.
2/10/12	24	Self-scheduled for load.
2/11/12	24	Self-scheduled for load.
2/12/12	24	Self-scheduled for load.
2/13/12	24	Self-scheduled for load.
2/14/12	24	Self-scheduled for load.
2/15/12	24	Self-scheduled for load.
2/16/12	24	Self-scheduled for load.
2/17/12	24	Self-scheduled for load.
2/18/12	24	Self-scheduled for load.
2/19/12	24	Self-scheduled for load.
2/20/12	24	Self-scheduled for load.
2/21/12	24	Self-scheduled for load.
2/22/12	24	Self-scheduled for load.
2/23/12	24	Self-scheduled for load.
2/24/12	24	Self-scheduled for load.
2/25/12	24	Self-scheduled for load.
2/26/12	24	Self-scheduled for load.
2/27/12	24	Self-scheduled for load.
2/28/12	24	Self-scheduled for load.
2/29/12	24	Self-scheduled for load.
3/1/12	24	Self-scheduled for load.
3/2/12	24	Self-scheduled for load.
3/3/12	24	Self-scheduled for load.
3/4/12	24	Self-scheduled for load.
3/5/12	24	Self-scheduled for load.
3/6/12	24	Self-scheduled for load.
3/7/12	24	Self-scheduled for load.

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Data Request TS-02
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Schiller 5

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
3/8/12	24	Self-scheduled for load.
3/9/12	24	Self-scheduled for load.
3/10/12	24	Self-scheduled for load.
3/11/12	23	Self-scheduled for load.
3/12/12	24	Self-scheduled for load.
3/13/12	24	Self-scheduled for load.
3/14/12	24	Self-scheduled for load.
3/15/12	24	Self-scheduled for load.
3/16/12	24	Self-scheduled for load.
3/17/12	24	Self-scheduled for load.
3/18/12	24	Self-scheduled for load.
3/19/12	24	Self-scheduled for load.
3/20/12	24	Self-scheduled for load.
3/21/12	24	Self-scheduled for load.
3/22/12	24	Self-scheduled for load.
3/23/12	24	Self-scheduled for load.
3/24/12	8	Self-scheduled for load.
4/11/12	1	Self-scheduled for load.
4/13/12	15	Self-scheduled for load.
4/14/12	24	Self-scheduled for load.
4/15/12	24	Self-scheduled for load.
4/16/12	24	Self-scheduled for load.
4/17/12	24	Self-scheduled for load.
4/18/12	24	Self-scheduled for load.
4/19/12	24	Self-scheduled for load.
4/20/12	24	Self-scheduled for load.
4/21/12	24	Self-scheduled for load.
4/22/12	24	Self-scheduled for load.
4/23/12	24	Self-scheduled for load.
4/24/12	24	Self-scheduled for load.
4/25/12	23	Self-scheduled for load.
4/26/12	24	Self-scheduled for load.
4/27/12	24	Self-scheduled for load.
4/28/12	24	Self-scheduled for load.
4/29/12	24	Self-scheduled for load.
4/30/12	24	Self-scheduled for load.
5/1/12	24	Self-scheduled for load.
5/2/12	24	Self-scheduled for load.
5/3/12	24	Self-scheduled for load.
5/4/12	24	Self-scheduled for load.
5/5/12	24	Self-scheduled for load.
5/6/12	24	Self-scheduled for load.
5/7/12	24	Self-scheduled for load.
5/8/12	24	Self-scheduled for load.
5/9/12	24	Self-scheduled for load.
5/10/12	24	Self-scheduled for load.
5/11/12	24	Self-scheduled for load.
5/12/12	24	Self-scheduled for load.
5/13/12	24	Self-scheduled for load.
5/14/12	24	Self-scheduled for load.
5/15/12	24	Self-scheduled for load.
5/16/12	24	Self-scheduled for load.
5/17/12	24	Self-scheduled for load.
5/18/12	24	Self-scheduled for load.
5/19/12	24	Self-scheduled for load.
5/20/12	24	Self-scheduled for load.
5/21/12	24	Self-scheduled for load.
5/22/12	24	Self-scheduled for load.
5/23/12	24	Self-scheduled for load.
5/24/12	24	Self-scheduled for load.
5/25/12	24	Self-scheduled for load.
5/26/12	24	Self-scheduled for load.
5/27/12	24	Self-scheduled for load.
5/28/12	24	Self-scheduled for load.
5/29/12	24	Self-scheduled for load.
5/30/12	24	Self-scheduled for load.
5/31/12	24	Self-scheduled for load.
6/1/12	24	Self-scheduled for load.

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Data Request TS-02
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Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
6/2/12	24	Self-scheduled for load.
6/3/12	24	Self-scheduled for load.
6/4/12	24	Self-scheduled for load.
6/5/12	24	Self-scheduled for load.
6/6/12	24	Self-scheduled for load.
6/7/12	24	Self-scheduled for load.
6/8/12	24	Self-scheduled for load.
6/9/12	24	Self-scheduled for load.
6/10/12	24	Self-scheduled for load.
6/11/12	24	Self-scheduled for load.
6/12/12	24	Self-scheduled for load.
6/13/12	24	Self-scheduled for load.
6/14/12	24	Self-scheduled for load.
6/15/12	24	Self-scheduled for load.
6/16/12	24	Self-scheduled for load.
6/17/12	24	Self-scheduled for load.
6/18/12	24	Self-scheduled for load.
6/19/12	24	Self-scheduled for load.
6/20/12	24	Self-scheduled for load.
6/21/12	24	Self-scheduled for load.
6/22/12	24	Self-scheduled for load.
6/23/12	24	Self-scheduled for load.
6/24/12	24	Self-scheduled for load.
6/25/12	24	Self-scheduled for load.
6/26/12	24	Self-scheduled for load.
6/27/12	24	Self-scheduled for load.
6/28/12	24	Self-scheduled for load.
6/29/12	24	Self-scheduled for load.
6/30/12	24	Self-scheduled for load.
7/1/12	24	Self-scheduled for load.
7/2/12	24	Self-scheduled for load.
7/3/12	24	Self-scheduled for load.
7/4/12	24	Self-scheduled for load.
7/5/12	24	Self-scheduled for load.
7/6/12	24	Self-scheduled for load.
7/7/12	24	Self-scheduled for load.
7/8/12	24	Self-scheduled for load.
7/9/12	24	Self-scheduled for load.
7/10/12	24	Self-scheduled for load.
7/11/12	24	Self-scheduled for load.
7/12/12	24	Self-scheduled for load.
7/13/12	24	Self-scheduled for load.
7/14/12	24	Self-scheduled for ISO-NE capability audit & load.
7/15/12	17	Self-scheduled for load.
7/16/12	0	Self-scheduled for load.
7/21/12	14	Self-scheduled for load.
7/22/12	24	Self-scheduled for load.
7/23/12	24	Self-scheduled for load.
7/24/12	20	Self-scheduled for load.
7/25/12	7	Self-scheduled for load.
7/26/12	24	Self-scheduled for load.
7/27/12	21	Self-scheduled for load.
7/30/12	16	Self-scheduled for load.
7/31/12	24	Self-scheduled for load.
8/1/12	24	Self-scheduled for load.
8/2/12	24	Self-scheduled for load.
8/3/12	24	Self-scheduled for load.
8/4/12	24	Self-scheduled for load.
8/5/12	24	Self-scheduled for load.
8/6/12	24	Self-scheduled for load.
8/7/12	24	Self-scheduled for load.
8/8/12	24	Self-scheduled for load.
8/9/12	24	Self-scheduled for load.
8/10/12	24	Self-scheduled for load.
8/11/12	24	Self-scheduled for load.
8/12/12	24	Self-scheduled for load.
8/13/12	24	Self-scheduled for load.
8/14/12	24	Self-scheduled for load.

Schiller 5

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
8/15/12	24	Self-scheduled for load.
8/16/12	24	Self-scheduled for load.
8/17/12	24	Self-scheduled for load.
8/18/12	24	Self-scheduled for load.
8/19/12	24	Self-scheduled for load.
8/20/12	24	Self-scheduled for load.
8/21/12	24	Self-scheduled for load.
8/22/12	24	Self-scheduled for load.
8/23/12	24	Self-scheduled for load.
8/24/12	24	Self-scheduled for load.
8/25/12	24	Self-scheduled for load.
8/26/12	24	Self-scheduled for load.
8/27/12	24	Self-scheduled for load.
8/28/12	24	Self-scheduled for load.
8/29/12	24	Self-scheduled for load.
8/30/12	24	Self-scheduled for load.
8/31/12	24	Self-scheduled for load.
9/1/12	24	Self-scheduled for load.
9/2/12	24	Self-scheduled for load.
9/3/12	24	Self-scheduled for load.
9/4/12	24	Self-scheduled for load.
9/5/12	24	Self-scheduled for load.
9/6/12	24	Self-scheduled for load.
9/7/12	24	Self-scheduled for load.
9/8/12	24	Self-scheduled for load.
9/9/12	24	Self-scheduled for load.
9/10/12	24	Self-scheduled for load.
9/11/12	24	Self-scheduled for load.
9/12/12	24	Self-scheduled for load.
9/13/12	24	Self-scheduled for load.
9/14/12	24	Self-scheduled for load.
9/15/12	24	Self-scheduled for load.
9/16/12	24	Self-scheduled for load.
9/17/12	24	Self-scheduled for load.
9/18/12	24	Self-scheduled for load.
9/19/12	24	Self-scheduled for load.
9/20/12	24	Self-scheduled for load.
9/21/12	24	Self-scheduled for load.
9/22/12	24	Self-scheduled for load.
9/23/12	24	Self-scheduled for load.
9/24/12	24	Self-scheduled for load.
9/25/12	24	Self-scheduled for load.
9/26/12	24	Self-scheduled for load.
9/27/12	24	Self-scheduled for load.
9/28/12	24	Self-scheduled for load.
9/29/12	24	Self-scheduled for load.
9/30/12	24	Self-scheduled for load.
10/1/12	24	Self-scheduled for load.
10/2/12	24	Self-scheduled for load.
10/3/12	24	Self-scheduled for load.
10/4/12	24	Self-scheduled for load.
10/5/12	24	Self-scheduled for load.
10/6/12	24	Self-scheduled for load.
10/7/12	24	Self-scheduled for load.
10/8/12	24	Self-scheduled for load.
10/9/12	24	Self-scheduled for load.
10/10/12	24	Self-scheduled for load.
10/11/12	24	Self-scheduled for load.
10/12/12	24	Self-scheduled for load.
10/13/12	24	Self-scheduled for load.
10/14/12	24	Self-scheduled for load.
10/15/12	24	Self-scheduled for load.
10/16/12	24	Self-scheduled for load.
10/17/12	24	Self-scheduled for load.
10/18/12	24	Self-scheduled for load.
10/19/12	24	Self-scheduled for load.
10/20/12	24	Self-scheduled for load.
10/21/12	24	Self-scheduled for load.

Schiller 5

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
10/22/12	24	Self-scheduled for load.
10/23/12	24	Self-scheduled for load.
10/24/12	24	Self-scheduled for load.
10/25/12	24	Self-scheduled for load.
10/26/12	24	Self-scheduled for load.
10/27/12	24	Self-scheduled for load.
10/28/12	24	Self-scheduled for load.
10/29/12	24	Self-scheduled for load.
10/30/12	24	Self-scheduled for load.
10/31/12	24	Self-scheduled for load.
11/1/12	24	Self-scheduled for load.
11/2/12	24	Self-scheduled for load.
11/3/12	24	Self-scheduled for load.
11/4/12	25	Self-scheduled for load.
11/5/12	24	Self-scheduled for load.
11/6/12	24	Self-scheduled for load.
11/7/12	24	Self-scheduled for load.
11/8/12	24	Self-scheduled for load.
11/9/12	24	Self-scheduled for load.
11/10/12	24	Self-scheduled for load.
11/11/12	24	Self-scheduled for load.
11/12/12	24	Self-scheduled for load.
11/13/12	24	Self-scheduled for load.
11/14/12	24	Self-scheduled for load.
11/15/12	24	Self-scheduled for load.
11/16/12	24	Self-scheduled for load.
11/17/12	24	Self-scheduled for load.
11/18/12	24	Self-scheduled for load.
11/19/12	24	Self-scheduled for load.
11/20/12	24	Self-scheduled for load.
11/21/12	24	Self-scheduled for load.
11/22/12	24	Self-scheduled for load.
11/23/12	24	Self-scheduled for load.
11/24/12	24	Self-scheduled for load.
11/25/12	24	Self-scheduled for load.
11/26/12	24	Self-scheduled for load.
11/27/12	24	Self-scheduled for ISO-NE capability audit & load.
11/28/12	24	Self-scheduled for load.
11/29/12	24	Self-scheduled for load.
11/30/12	24	Self-scheduled for load.
12/1/12	24	Self-scheduled for load.
12/2/12	24	Self-scheduled for load.
12/3/12	24	Self-scheduled for load.
12/4/12	24	Self-scheduled for load.
12/5/12	24	Self-scheduled for load.
12/6/12	24	Self-scheduled for load.
12/7/12	24	Self-scheduled for load.
12/8/12	24	Self-scheduled for load.
12/9/12	24	Self-scheduled for load.
12/10/12	24	Self-scheduled for load.
12/11/12	24	Self-scheduled for load.
12/12/12	24	Self-scheduled for load.
12/13/12	24	Self-scheduled for load.
12/14/12	24	Self-scheduled for load.
12/15/12	24	Self-scheduled for load.
12/16/12	24	Self-scheduled for load.
12/17/12	24	Self-scheduled for load.
12/18/12	24	Self-scheduled for load.
12/19/12	24	Self-scheduled for load.
12/20/12	24	Self-scheduled for load.
12/21/12	24	Self-scheduled for load.
12/22/12	24	Self-scheduled for load.
12/23/12	24	Self-scheduled for load.
12/24/12	24	Self-scheduled for load.
12/25/12	24	Self-scheduled for load.
12/26/12	24	Self-scheduled for load.
12/27/12	24	Self-scheduled for load.
12/28/12	24	Self-scheduled for load.

Schiller 5

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
12/29/12	24	Self-scheduled for load.
12/30/12	24	Self-scheduled for load.
12/31/12	21	Self-scheduled for load.

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Schiller 6

Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
1/1/12	9	Dispatched by ISO-NE for load.
1/2/12	7	Dispatched by ISO-NE for load.
1/3/12	17	Dispatched by ISO-NE for load.
1/4/12	17	Self-scheduled for load.
1/5/12	17	Self-scheduled for load.
1/6/12	0	Dispatched by ISO-NE for load.
1/14/12	14	Self-scheduled for load.
1/15/12	16	Dispatched by ISO-NE for load.
1/16/12	18	Dispatched by ISO-NE for load & ISO-NE capability audit.
1/17/12	16	Dispatched by ISO-NE for load.
2/13/12	2	Dispatched by ISO-NE for load.
3/26/12	18	Self-scheduled to support SR5 outage.
3/27/12	9	Dispatched by ISO-NE for load.
3/30/12	15	Dispatched by ISO-NE for load.
3/31/12	24	Self-scheduled for station steam & load.
4/1/12	24	Self-scheduled for station steam & load.
4/2/12	24	Self-scheduled for station steam & load.
4/3/12	24	Self-scheduled for station steam & load.
4/4/12	24	Self-scheduled for station steam & load.
4/5/12	24	Self-scheduled for station steam & load.
4/6/12	24	Self-scheduled for station steam & load.
4/7/12	24	Self-scheduled for station steam & load.
4/8/12	24	Self-scheduled for station steam & load.
4/9/12	24	Self-scheduled for station steam & load.
4/10/12	24	Self-scheduled for station steam & load.
4/11/12	24	Self-scheduled for station steam & load.
4/12/12	24	Self-scheduled for station steam & load.
4/13/12	15	Self-scheduled for station steam & load.
4/16/12	17	Dispatched by ISO-NE for load.
4/21/12	14	Dispatched by ISO-NE for load.
4/24/12	11	Dispatched by ISO-NE for load.
5/1/12	15	Dispatched by ISO-NE for load.
5/14/12	15	Dispatched by ISO-NE for load.
5/20/12	11	Dispatched by ISO-NE for load.
6/20/12	20	Self-scheduled for load.
6/21/12	24	Self-scheduled for load.
6/22/12	21	Dispatched by ISO-NE for load.
6/29/12	15	Dispatched by ISO-NE for load.
6/30/12	24	Self-scheduled for load.
7/1/12	24	Self-scheduled for load.
7/2/12	24	Self-scheduled for load.
7/3/12	14	Dispatched by ISO-NE for load.
7/4/12	10	Dispatched by ISO-NE for load.
7/5/12	14	Dispatched by ISO-NE for load.
7/6/12	13	Dispatched by ISO-NE for load.
7/7/12	12	Dispatched by ISO-NE for load.
7/16/12	17	Self-scheduled for ISO-NE capability audit & load.
7/17/12	24	Self-scheduled for load.
7/18/12	24	Self-scheduled for load.
7/26/12	13	Dispatched by ISO-NE for load.
7/27/12	12	Dispatched by ISO-NE for load.
8/3/12	12	Dispatched by ISO-NE for load.
8/9/12	13	Dispatched by ISO-NE for load.
8/13/12	16	Dispatched by ISO-NE for load.
8/14/12	24	Self-scheduled for environmental (RATA) testing & load.
8/15/12	24	Self-scheduled for environmental (RATA) testing & load.
8/17/12	11	Dispatched by ISO-NE for load.
8/26/12	11	Dispatched by ISO-NE for load.
8/27/12	11	Dispatched by ISO-NE for load.
9/13/12	4	Self-scheduled for VAR testing & load.
10/16/12	11	Dispatched by ISO-NE for load.
10/30/12	16	Dispatched by ISO-NE for load.
10/31/12	9	Dispatched by ISO-NE for load.
11/1/12	11	Dispatched by ISO-NE for load.
11/5/12	11	Dispatched by ISO-NE for load.
11/6/12	19	Self-scheduled for load.
11/7/12	24	Self-scheduled for load.

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Date	Number of Hours Serving ES Load	Reason for Dispatch (See Page 1 - Additional factors could influence dispatch decisions.)
11/8/12	24	Self-scheduled for load.
11/9/12	24	Self-scheduled for load.
11/11/12	10	Dispatched by ISO-NE for load.
11/12/12	10	Dispatched by ISO-NE for load.
11/19/12	18	Dispatched by ISO-NE for load.
11/20/12	19	Dispatched by ISO-NE for load.
11/21/12	24	Dispatched by ISO-NE for load.
11/22/12	24	Dispatched by ISO-NE for load.
11/23/12	24	Dispatched by ISO-NE for load.
11/24/12	24	Dispatched by ISO-NE for load.
11/25/12	24	Dispatched by ISO-NE for load.
11/26/12	19	Dispatched by ISO-NE for load.
11/27/12	7	Dispatched by ISO-NE for load.
11/28/12	6	Dispatched by ISO-NE for load.
11/29/12	6	Dispatched by ISO-NE for load.
11/30/12	6	Dispatched by ISO-NE for load.
12/1/12	16	Dispatched by ISO-NE for load.
12/6/12	9	Dispatched by ISO-NE for load.
12/7/12	10	Dispatched by ISO-NE for load.
12/14/12	10	Dispatched by ISO-NE for load.
12/28/12	4	Dispatched by ISO-NE for load.
12/29/12	5	Self-scheduled for load.
12/30/12	7	Self-scheduled for load.
12/31/12	4	Self-scheduled for load.