

**REVIEW OF COSTS
PSNH GENERATION**

for the

New Hampshire Public Utilities Commission

December 2012

**CONFIDENTIAL BUSINESS INFORMATION
PUBLIC VERSION**

Docket No. DE 12-292

2013 ENERGY SERVICE RATE

DISCUSSION OF PSNH GENERATION COSTS

1.0 NH PUC INFORMATION REQUEST

As part of its Order No. 25,380 issued June 27, 2012 in Docket No. DE 11-215, Petition for Interim Adjustment to 2012 Default Energy Service Rate, the Commission required that PSNH undertake:

“A systematic review of operation, materials and capital costs, including personnel costs, associated with the operations of its fossil fuel plants given the low capacity factors of these units in recent years and the current expectation of them remaining low over the next few years. The review should also include any costs that are billed to the fossil plants such as engineering and regulatory support. PSNH shall provide details regarding its review and analysis at the time it makes its next energy service rate filing. The Company shall also provide actual cost calculations for calendar year 2011 and develop an updated forecast of costs and expenses associated with the operation of its fossil fuel plants for calendar years 2012 and 2013 for the Commission’s review and evaluation. For the units at Merrimack Station, the directive is limited to non-Scrubber related operations and other costs.”

In response to this request, PSNH provides the following review.

2.0 REGIONAL ENERGY AND NATURAL GAS REVIEW

2.1 Energy Demand

In recent years, two fundamentals in the energy marketplace changed. First, as the United States economy slowed, the regional economy followed. The production of goods, housing starts and employment declined contributing to reduced electrical energy demand. While this reduced demand continues to some extent today, job growth has begun, home prices and sales have stabilized with upward indications, and other economic indicators signal positive trends. In recent presentations, ISO-NE has predicted continued small but steady increases in peak demand over the next ten years. All this shows the bottom of the recent economic trend has begun to reverse, signaling more energy consumption going forward.

2.2 Natural Gas Supply

The second fundamental change involves dramatic variations in the supply, use and price of natural gas both nationally and regionally. New England saw a burst of construction of natural gas combined cycle plants about a dozen years ago. As these plants were completed the price of natural gas went up and the older oil fired plants, like Newington Station, were more economical to operate. With older units operating on oil economically, the new plants were operated as marginally priced units. As a result, several of the new plants went into default and were turned over to the creditors including the Granite Ridge Plant in Londonderry. Other combined cycle gas plants were sold such as the Newington Energy Facility in Newington, NH. During this time, natural gas prices were very volatile. PSNH routinely saw dramatic price increases for gas during high demand periods in both the summer and winter.

In the past few years, new drilling techniques rapidly expanded the production and supply of natural gas nationally. The increase production created a supply imbalance that resulted in a collapse in prices. Gas prices fell below production costs for many gas producers. More recently, New England has experienced a return of natural gas price volatility. Several explanations have been suggested including the increased electric power generation demand and reduced production from a northern gas field (Sable Island). There has also been a dramatic reduction in LNG imports into New England as ships are diverted to the higher priced European and Asian markets. These dynamic market influences have translated into volatile gas price increases resulting in volatile regional energy price increases. In fact, a review of 2012, confirms that 18 of the 30 highest priced energy days in New England for this year occurred in November.

These types of issues regarding regional energy demand and natural gas supply illustrate the fragility of a market with large dependence on natural gas. Many recent trade articles signal concerns about gas prices in the near future and volatile price increases.

2.3 Overview – Capacity Factor Discussion

PSNH's coal and biomass fueled units at Merrimack and Schiller Stations have historically had high capacity factors. "High capacity factor" refers to units that are typically online and that operate at full or high load output levels as economically warranted. In contrast Newington Station, which burns residual oil or natural gas, has historically functioned as an intermediate unit with annual capacity factors in the 10-30% range.

The first PSNH station to be affected by the changes in energy demand and natural gas supply was Newington Station. Newington Station's capacity factor has decreased from highs of 35%-55% about 10 years ago to teen and then single digit values in more recent years. Newington began reducing its maintenance and capital investments years ago in a planned and controlled fashion as its capacity factor changed. Due to the good physical condition of the unit, these changes have been made without a detrimental impact to reliable and efficient operations. Also, as staffing reductions have occurred due to attrition, PSNH looks at options to not fill or defer filling each opening. As a result, PSNH has reduced staff at Newington over the last few years. Should capacity factors increase, open positions will be reviewed. With less wear and tear on equipment due to reduced operating hours, large major overhauls, which were typically conducted every 5-6 years, have been deferred and annual maintenance outage scope has been scaled back. Condition-based maintenance is used to most cost effectively determine outage scopes and budgets. Effective Non-Destructive Examination (NDE) techniques such as lubricant analysis, x-ray, eddy-current, vibration trending, boiler tube inner surface analysis, ultrasound, electrical testing and other methods provide management with key data to make effective decisions. Investments in the plant in the late 1990's and early 2000's have significantly reduced going forward costs through the avoidance of maintenance costs and of the need for periodic maintenance outages. Also, as generating patterns have become more variable, improvements to key operational parameters such as reduced start-up times, faster ramp rates, etc. have enhanced unit dispatch flexibility with ISO-NE and as such has added customer value.

Merrimack and Schiller coal units had sustained high capacity factors for a number of years following the reductions in Newington's capacity factor. Capacity factors historically had been in the 70-85% range for these units. Now, new operating scenarios result in lower capacity factors. However, in 2011 the units still operated many days during the year with the Schiller coal units and Newington unit operating 45- 50% of the days, Merrimack units 1 and 2 from 60-70% of the days, and Schiller's Unit 5 biomass plant, 85% of the days of the year. Utilizing cost reduction techniques developed at Newington as well as monitoring similar industry tendencies and drawing on knowledge learned from both internal and external sources, PSNH's coal units have been able to operate at reduced capacity factors while maintaining reliability and reducing operations and maintenance costs. Staffing openings are being challenged and staff reductions are made when appropriate. Expense budgets and elective capital investments are

scrutinized, deferred, and reduced to the extent possible while still focusing on high reliability. Sharing of station employees between plants and use of generation maintenance employees had been utilized when possible, and now conducting maintenance work on straight time schedules has been expanded to materially reduce the use of contractors to perform the majority of the maintenance work, thus significantly reducing the contractor labor costs.

In the current operational mode, the units have been and continue to be well maintained. They are prepared to operate at moderate or higher capacity factors, while costs have been reduced to increase the value of the plants to customers. Budgets and management decisions are aligned to best suit changing obligations.

2.4 Summary

PSNH has adopted in timely fashion numerous methods to reduce costs in response to changes in the energy marketplace. Attention has focused on maintenance practices and capital expenditures as well as alternative methods to significantly reduce contractor use.

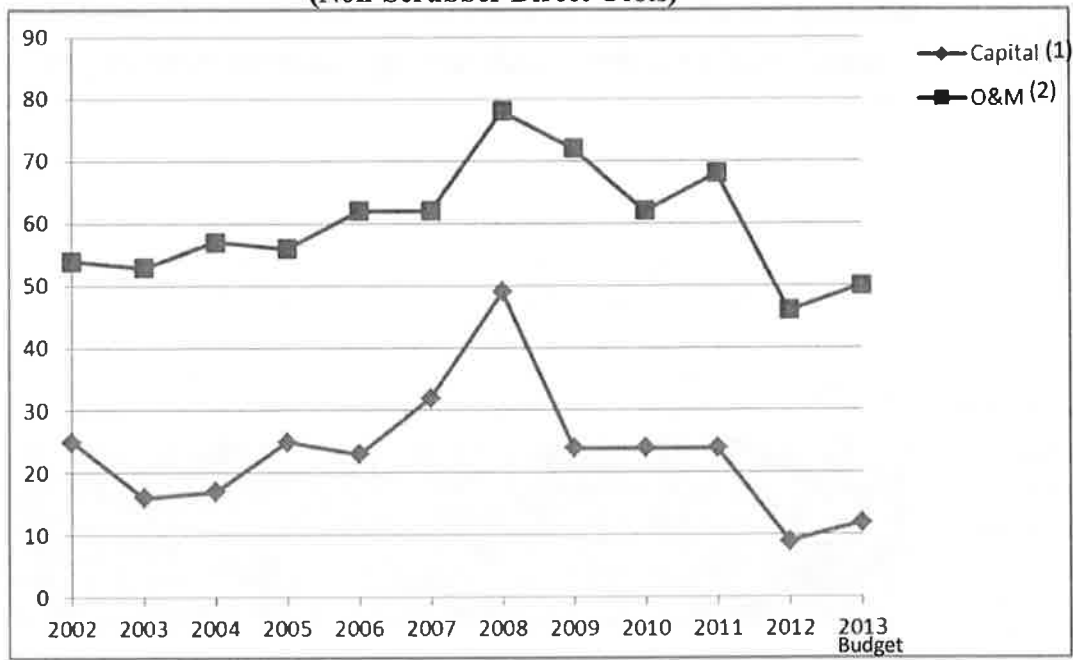
The following discussion on the budgets and cost reduction techniques employed by PSNH should be viewed in the context of not only a changeable energy market with price volatility that can occur in short periods of time, but also the expectation that PSNH's fleet will be called upon to insure system reliability and customers' electricity needs are met.

3.0 REVIEW OF COSTS

Summary O&M and Capital costs for the period 2002-2013 are provided to establish a context for reviewing the 2011-2013 information. Data for the period from 2011-2013 is broken out for Merrimack, Schiller and Newington Stations, PSNH's Hydro Stations (in total), and Staff, Generation Maintenance, etc. A review of the 2011-2013 costs by resource provides further details and trends while providing general explanations. The rigorous and detailed annual prudence reviews that have occurred in the last ten years look at the maintenance and capital work performed and to evaluate whether there has been appropriate management of the units to meet customers' needs. These annual reviews are available on file with the NHPUC to supplement this document. This report takes a modified view of costs and is tailored to be fully responsive to the request referenced in Section 1.0.

To assist in this review, Chart No. 1 below graphs actual Capital Costs and Operations and Maintenance (O&M) costs over the past decade. The 2012 year end forecasts have been updated with actuals through October, and the amounts for 2013 are from the latest budget forecast.

**Chart No. 1
Generation Spending Trend
(Non-Scrubber Direct Costs)**



(1) Does not include Northern Wood Power or Clean Air Projects

(2) O&M budget excludes CAP expenses

3.1 Operations and Maintenance Budget

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Costs reviewed herein for Operations and Maintenance (O&M) are direct costs without any Scrubber-related costs included.

Generation's O&M budget for 2012 was Generation's lowest in 10 years. The 2013 budget forecast is [REDACTED]

The following three tables provide a summary breakdown of Generation's O&M annual totals:

Table No. 1
2011 O&M Actuals – Direct Costs
(\$000)

Location	NU Labor	Materials & Supplies	Outside Services	Contractor Labor ⁽¹⁾	Fees & Payments	Other	Total
Merrimack	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Schiller	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Newington	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Hydro	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Staff, GM & Wyman	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Totals	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	67,726

1. For steam units, peak resource employed during forced outages and planned outages including boilermakers, pipefitters, millwrights, etc. Also specialty contractors (e.g. flyash vacuum services) For hydro units, specialty contractors during planned inspections.
2. Excludes Scrubber costs

Table No. 2
2012 O&M Year End Forecast – Direct Costs
(Year End Forecast includes actuals through October)
(\$1,000)

Location	NU Labor	Materials & Supplies	Outside Services	Contractor Labor ⁽¹⁾	Fees & Payments	Other	Total
Merrimack	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Schiller	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Newington	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Hydro	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Staff, GM & Wyman	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Totals	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	45,145

1. For steam units, peak resource employed during forced outages and planned outages including boilermakers, pipefitters, millwrights, etc. Also specialty contractors (e.g. flyash vacuum services) For hydro units, specialty contractors during planned inspections.
2. Excludes Scrubber costs

Table No. 3
 2013 O&M Budget Forecast – Direct Costs
 (\$000)

Location	NU Labor	Materials & Supplies	Outside Services	Contractor Labor ⁽¹⁾	Fees & Payments	Other	Total
Merrimack							
Schiller							
Newington							
Hydro							
Staff, GM & Wyman							
Totals							50,833

1. For steam units, peak resource employed during forced outages and planned outages including boilermakers, pipefitters, millwrights, etc. Also specialty contractors (e.g. flyash vacuum services) For hydro units, specialty contractors during planned inspections.
2. Excludes Scrubber costs

As can be seen from this data, there is a clear and significant reduction in O&M, and in particular in Contractor Labor, reflecting reduced operating hours.

3.1.1 NU Labor Discussion

PSNH’s Generation segment currently has 301 employees. The Department’s fully staffed complement is 320. Each facility and group is staffed to meet the critical core or valley workload needed to properly support internal and external demands placed upon the division on a daily basis. Currently, with lower operational demands, staffing has been reduced via attrition by values approaching 10%. Also, in an effort to reduce budgets and therefore overall cost, PSNH is reducing the use of contractors and employing every opportunity possible to use only PSNH’s employees for various maintenance or capital tasks. Work is done over lengthened schedules with employees doing the work generally on straight time, resulting in little or no incremental cost. Use of employee resources from other locations/stations continues to be expanded, shifting workers to facilities where higher priority work is needed.

It is important to understand that there is not necessarily a correlation between the number of employees needed for safe and reliable operation at a unit and that unit’s capacity factor (CF) or unit availability data. In fact, use of any such linkage as proxies for the number of employees is not correct.

Equipment and units operating at a reduced CF still require approximately the same number of skilled shift workers as units are essentially “on-call” to operate on the demand of ISO-NE. Current shift crew staffing allows for safe, efficient and proper operation of sophisticated equipment, while accommodating employee sickness, vacations, etc. Most shift workers are trained in a second skill, which assists the maintenance function by enabling those workers to perform simple tasks during nights and weekends in an effort to reduce cost. This avoids growth of the maintenance department backlog and overtime call-in costs. Also, during planned unit maintenance projects, it is not uncommon to transfer some shift

workers to do day job maintenance tasks they are qualified to perform. In addition, when a shift crew is reduced from its full complement, efforts are made to avoid to the extent possible call-ins and overtime pay for coverage with due consideration for safety and reliability. Physical workers on shift also use any reduced operating periods to catch up on required training, updating station drawings, and other matters. When a unit is called to operate, workers have an obligation to customers, regulators (PUC, environmental, etc.) and shareholders to fulfill that mission without damage to equipment or the environment, and to do so safely. Management experience and the individual stations' designs dictate the proper staffing complement with well trained and experienced personnel. We are challenging these historical staffing levels in certain circumstances but we must manage these assets prudently with competent employees.

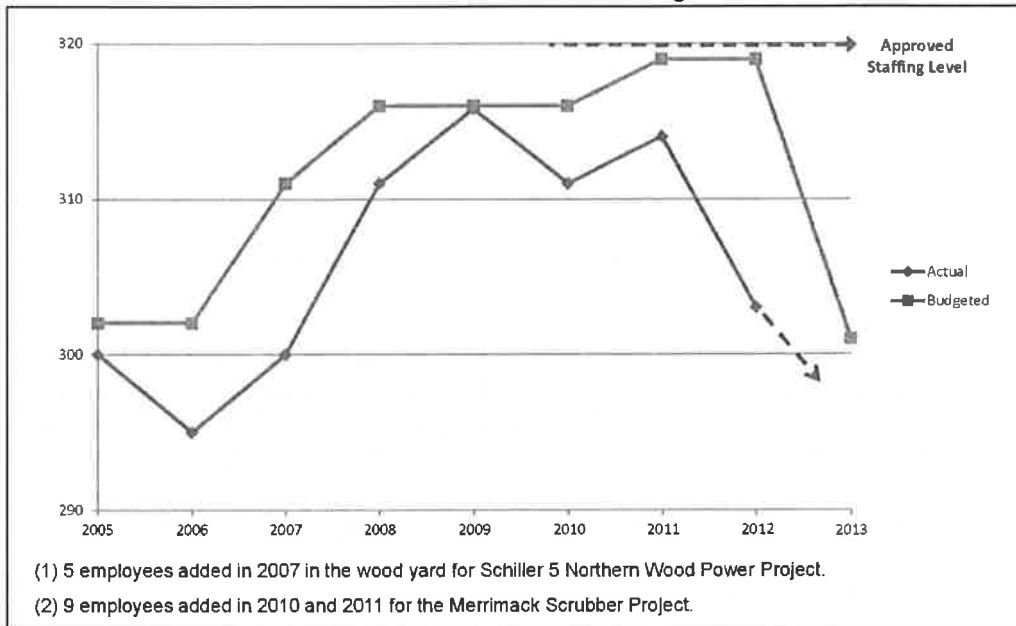
Because a unit can be called upon to operate anytime by ISO, Operations must be ready to start or operate a unit at all times. This important requirement is reiterated in recent ISO rule changes which are clear that units must maintain and satisfy their "ready" status. To insure this "ready" status, equipment has to be run periodically and/or tested by operators on shift. This commitment requires a minimum shift staffing level. However, with reduced capacity factors, PSNH has been able to reduce overtime since full shift complements need not be maintained at all times as in the past. This is the case at all PSNH facilities.

With reduced capacity factors, operations personnel have adjusted and expanded their duties to align more with this new equipment duty. For example, attention has shifted from monitoring temperatures, pressures, vibration, etc. for on-line equipment to monitoring and intermittently operating equipment and systems, such as rotating equipment on turning gear, exercising valves, pumps, etc. Also, since operators have been trained in a second skill such as basic mechanical or electrical repairs, shift workers on duty (24/7) can perform basic maintenance functions without calling in union day workers on overtime. This reduces labor costs.

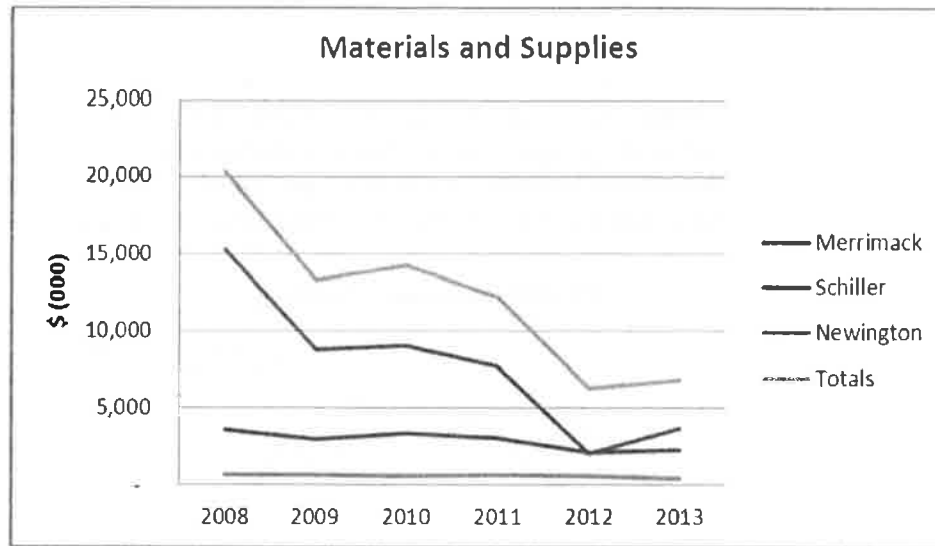
Physical workers on days (mechanics, electricians, instrumentation mechanics, chemists, stockmen, fuel handlers, etc.) have had significant changes in their day-to-day work over the last one to two years. As capacity factors have adjusted downward in recent times, budgets have similarly been reduced to reflect less corrective maintenance due to less wear and tear on equipment and preventative maintenance has been scaled back due to reduced operating hours. As the necessary work has diminished, PSNH has greatly reduced the use of supplemental external buildings trade personnel (boiler makers, millwrights, electricians, etc.) Resources are shared even more between stations, generation maintenance, and central staff. The historic philosophy of staffing for the minimum, sustainable workload and supplementing with temporarily hired contractors has proven to be a good strategy given current activities. With less corrective and preventative maintenance and lower capacity factors, the employees are able to complete this work without the assistance of outside labor.

It is also critical to remember that the skilled worked force at the facilities is a result of many years of training. As an example, the training progression for operators takes over five years. Similarly, instrument and control technicians and chemistry lab technicians take many years of training to become uniquely qualified to perform their job functions. As operating scenarios change, qualified people for these jobs would not be easily found if the work force in these areas was allowed to drop significantly. Many station positions cannot be fulfilled by using contractors or by using newly hired personnel. PSNH management factors the required competency levels into its staffing decisions and actions.

PSNH Generation – Staffing



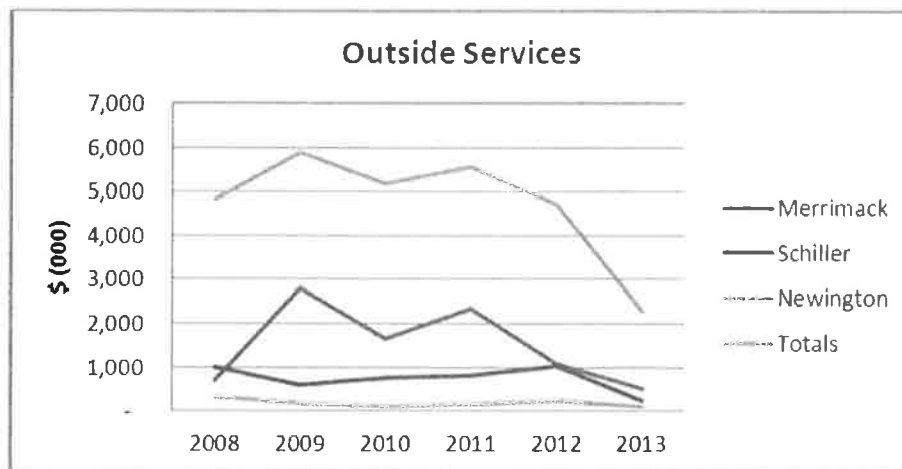
3.1.2 Materials and Supplies



Note- "Totals" in the graph above includes the fossil plants listed as well as hydro, staff, generation maintenance and Wyman.

With reduced planned maintenance and forced outage exposure as well as with targeted repairs during off-line periods, much less materials, parts, lubricants, etc. are used. Other items that fall into this grouping would be certain chemicals and consumables including employee items such as gloves, safety gear, etc. In preceding major planned outage years, this budget category could be as much as \$20 million. Current consumption budgets are significantly reduced.

3.1.3 Outside Services

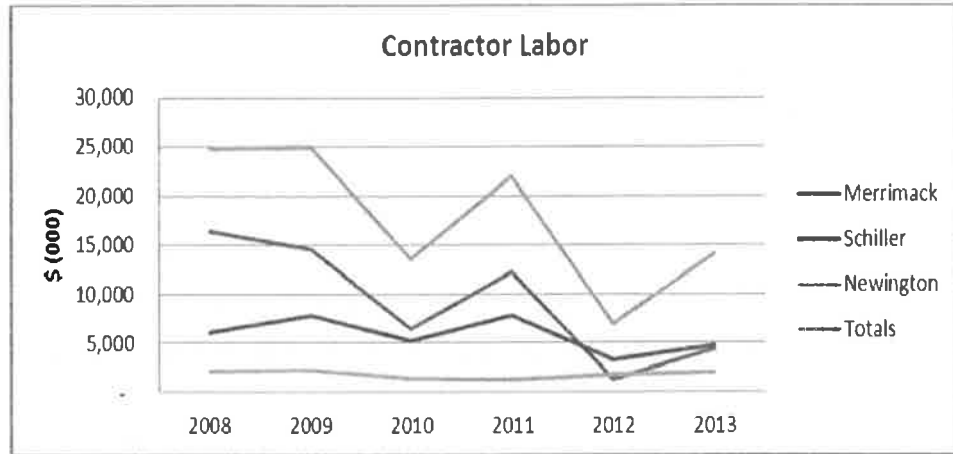


Note- "Totals" in the graph above includes the fossil plants listed as well as hydro, staff, generation maintenance and Wyman.

Outside services are primarily for professional support of targeted work such as targeted non-destructive testing and analysis, specialty engineered solutions to

specific problems, chemistry and water quality management consultants, civil and other engineering disciplines, experts, training, etc. These efforts are typically short in duration require expertise not possessed by PSNH's staff.

3.1.4 Contractor Labor

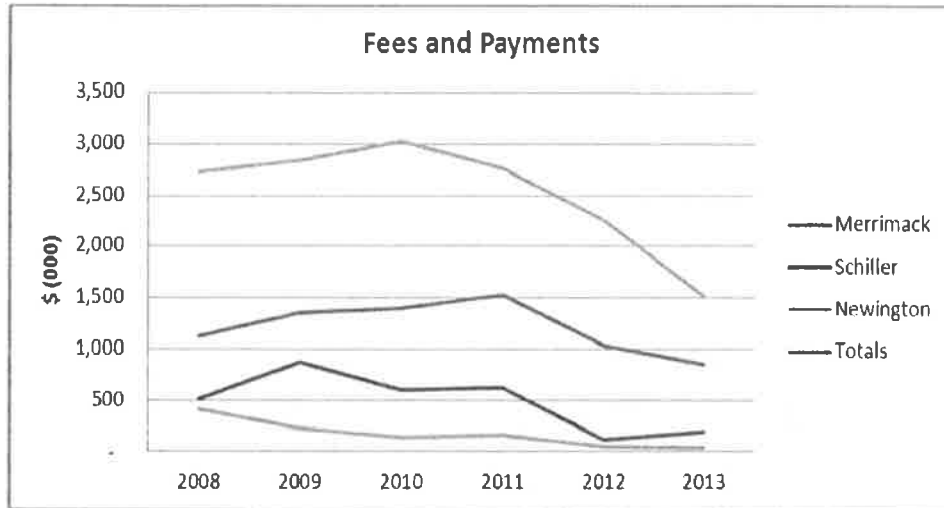


Note- "Totals" in the graph above includes the fossil plants listed as well as hydro, staff, generation maintenance and Wyman.

These charges are generally for building trades craft personnel. This includes boiler makers, electricians, mill wrights, etc. who perform hands-on physical work. This work occurs primarily during planned maintenance outages and also at other times throughout the year (forced outages, specific high manpower tasks, work requiring the special skills, etc.). 2012 was an all-time low in this category with 2013 higher but still much lower than prior years. 2013 work is currently planned to include a small increase in maintenance which cannot be absorbed by employees.

Other essential services in this category include insulation repairs, security, scaffolding, building maintenance, etc.

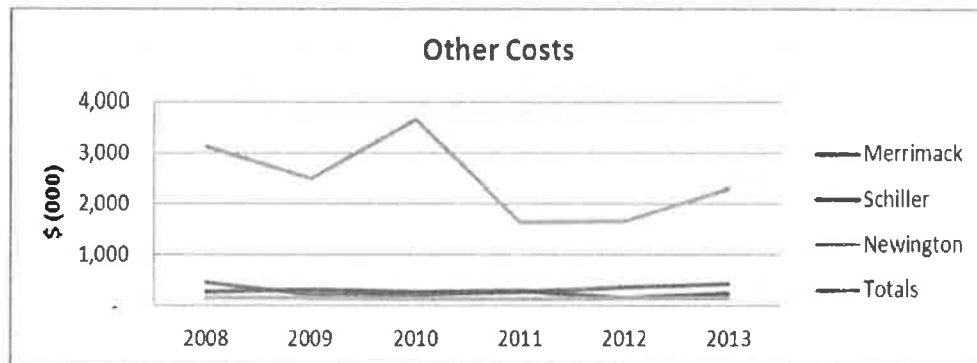
3.1.5 Fees and Payments



Note- "Totals" in the graph above includes the fossil plants listed as well as hydro, staff, generation maintenance and Wyman.

This category is for permits and other payments such as State water use fees and State air emissions fees which is the largest annual item in this category. Other expenses include miscellaneous dues, EPRI fees, etc.

3.1.6 Other



Note- "Totals" in the graph above includes the fossil plants listed as well as hydro, staff, generation maintenance and Wyman.

Costs in this category include employee expenses, vehicle fees, and rents and leases.

3.1.7 Station's Variable Cost Discussion

These costs are in multiple budget categories but are appropriate to comment on.

With reduced capacity factors, capacity-factor based costs are reduced. These costs include items such as the use of chemicals and additives for water treatment and fuel combustion, and emissions treatment additives.

Company budgets estimate the costs for many items used when a unit operates. In recent years, budgets have been reduced to best align projected operations with forecasted capacity factors. In addition to physical consumables, costs in this area include overtime and contractor use. As a result, there are reduced exposures to emergency call-ins or mobilization of external craft labor to repair equipment on a 24/7 basis.

3.1.8. Other Support Services for Generating Stations

Various personnel provide support to generation plants. These assistance efforts span many disciplines and all facilities. They include a machine shop facility and code certified welders, engineering, environmental engineers, budget and cost management, energy bidding and unit scheduling, compliance, regulatory, and management.

A discussion is provided for the functions that are part of the Generation Division:

PSNH Generation has a group of employees who perform cost effective repairs for all the company's generating stations often at significant savings as compared to a vendor or contractor. This group also manufactures parts for all the facilities when they can do so at costs lower than OEM provided costs or to meet a required shorter time frame. When parts are not available in the market this group is able to reverse-engineer replacement items.

The PSNH Generation Maintenance Group (GM) is comprised of about two dozen employees, the majority of whom are either certified machinists and/or certified welders. They perform cost effective repairs and parts manufacturing to support all generating facilities as well as all other departments in PSNH. Examples of their areas of expertise are: certified welding in boilers, manufacturing of pump shaft and casings, boiler feed pump overhauls and rebuilding. They also provide very sophisticated bus welding support for various PSNH hi-yard repairs and new construction, maintenance and corrective repairs to all PSNH emergency generators, etc. These employees displace higher priced contracting individuals and firms. The group also includes a turbine generator expert and an outage and project scheduling and planning professional.

While there are a few engineers located at Merrimack and Schiller Stations, there is a three member engineering group based out of Manchester (portion of staff) that provides support to all generating facilities on both maintenance and repair

functions and capital project management. This group of highly versatile engineers is able to displace much higher priced independent engineering companies.

A small contingent of environmental engineers is based in Manchester (portion of staff) that complements and works with an Environmental Coordinator located at each of PSNH's three fossil facilities. These professionals have expertise in water and waste management, air emissions, and other regulatory requirements of both New Hampshire and Federal agencies. They are involved in compliance, permitting and other regulatory activities including the management of the continuous emissions monitoring systems at PSNH's fossil facilities as well as permits relating to all emergency generators for PSNH. The workload associated with compliance in these areas continues to grow. This small group has been able to manage all obligations to support internal and external requirements associated with expense and capital budgets. Also one main office coordinator and three station-based budget coordinators are necessary to ensure all information is properly recorded and accounted for internal and external use. These individuals track actual costs, oversee contract administrative functions, process invoicing, and complete a number of other tasks required to support the management and monitoring of all costs.

Monitoring unit dispatch prices and supporting the input of bidding and scheduling data to ISO-New England on a daily basis is performed by two people in Manchester as well as numerous managers through the Generation group. These people work in concert with wholesale marketing personnel based in Connecticut.

Also, there are other personnel within the company who provide support resources that are not part of the direct PSNH Generation budget, but are charged to Generation cost accounts either fully or partially via allocation methods. These groups include fuel procurement, energy bidding and unit scheduling, and energy procurement.

Specifically, one group provides procurement and logistical support for the procurement of fuels to support the fossil facilities. These individuals negotiate and manage contractual issues and monitor and track loading, shipments, and arrival periods for rail and ship movements of coal and are available 24 hours a day to make purchases of natural gas as needed. There is also a number of fuel, accounting, and management processes that require support on a daily basis. Individuals in our wholesale marketing group provide strategic and planning support for business decisions on a daily basis regarding unit operations versus unit maintenance activities. They also monitor the energy markets on a daily basis and develop the data and strategies for bidding units in order to provide maximum customer value. Interface of this group with station operations is critical to make sure the best informed decisions are made. In addition, the procurement of energy to meet daily, weekly, or longer range periods of time are

assessed and executed as needed to best align with market prices and customer needs.

In addition to these direct support functions, there are numerous other areas of the company that provide various levels of necessary support to Generation as is the case for all other departments in Northeast Utilities. These groups include Human Resources, Payroll, Environmental, and Legal consultation and actions. Clearly in the last few years, costs associated with legal activity have grown for numerous reasons including regulatory activities and legal actions outside of the company in various venues.

3.2 CAPITAL BUDGET REVIEW

As with reduced planned maintenance work due to reduced capacity factors, there are also reduced capital expenditures. Units are in reasonably good condition and with less wear and tear; less capital investment is necessary.

Table No. 4
2011 Capital Costs
2011 Capital Actual

Location	Budget (\$ X 1,000)
Merrimack	6,994
Schiller	6,534
Newington	1,056
Hydro	8,922
Staff, Wyman & Gen. Maint.	106
Total excluding CAP	23,611

In 2011, targeted outages were conducted on fossil units based on equipment condition or other determinant factors in order to insure safe, reliable, efficient, and compliant operations. Tie-in outages occurred with the Merrimack units and the Clean Air Project so reliability focused work was a priority – no Scrubber costs are included in these actual expenditures. Schiller 5 had a planned large outage after having the wood boiler operating for five years. The equipment installed and/or replaced included valves, expansion joints, load centers, conveyor elements, boiler elements, chutes, and hoppers, motors, pumps, etc. Also in 2011, FERC required significant structural work was completed on the Ayers Island Hydro Station dam as well as other tasks in the hydro fleet.

Table No. 5
2012 Capital Costs

2012 Year End Estimate (includes actuals through October)	
Location	Budget (\$ X 1,000)
Merrimack	4,208
Schiller	2,381
Newington	490
Hydro	800
Staff, Wyman & Gen. Maint.	243
Total excluding CAP	8,122

2012 was a very lean year due to reduced capacity factors and good unit conditions. Funds are targeted to specific areas where higher risks existed. Equipment installed and/or replaced includes tanks, motors, pumps, control equipment, valves, expansion joints, partial roof replacement, tools, and batteries.

Table No. 6
2013 Capital Costs

2013 Capital Budget	
Location	Budget (\$ X 1,000)
Merrimack	6,276
Schiller	3,158
Newington	480
Hydro	1,593
Staff, Wyman & Gen. Maint.	529
Total excluding CAP	12,036

The 2013 capital budget remains low compared to historical levels. There is an increase from the record low in 2012 due to the need to do targeted work based on observations in 2012. Examples of equipment include expansion joints, valves, belts, controls for targeted systems, coolers, load centers, etc.

4.0 SUMMARY AND CONCLUSIONS

The energy marketplace has changed dramatically in the last ten years. PSNH's generation fleet provides a known backstop to volatility and higher energy prices. Concern for market stability is increasing. Numerous industry and regional signals identify the risk associated with the over reliance on natural gas as reported by ISO-NE:

"New England gas price spikes highlight generation reliability risk going into winter. Coal and oil-fired power generation will be relied upon in the New England markets to maintain system reliability amid concerns that natural gas generation will be limited by fuel availability, already evidenced in the incongruent price of natural gas at key Northeast delivery points."

"ISO New England has raised concerns about the region's reliance on natural gas as part of our broader Strategic Planning Initiative efforts," said Vamsi Chadalavada, executive vice president and COO of ISO New England Inc. "And while we currently are working on several mid- and long-term solutions with stakeholders, including changes to the wholesale electricity markets, these will take time to implement. In the meantime, the ISO will continue to turn to coal- and oil-fired generation when necessary to ensure that the power needed to meet consumer demand and maintain grid reliability is available this winter."

PSNH Generation has provided cost effective energy and customer value with reliable and efficient energy service to its customers as has been demonstrated in numerous reviews by the Commission of PSNH's operations, maintenance, and decision making over many years. With changes in market forces and market conditions due to economic changes in the country and the world, as well as the continuing evolution of gas markets, PSNH has adjusted its management of its fleet to appropriately suit the needs of customers. In doing so, PSNH's has adjusted its capacity factors, expenses, and staffing in order to continue to provide ongoing customer value at the lowest possible cost. Appropriate efforts and adjustments will continue going forward. As energy market conditions change, PSNH plants are being maintained and are ready to serve at a full range of operating scenarios.