

BEFORE THE STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

In the matter of:)
DE 14-120)
Public Service Company of New Hampshire)
2013 Energy Service Reconciliation)

Direct Prefiled Testimony

Of

James Brennan
Finance Director

On behalf of
The New Hampshire Office of the Consumer Advocate

Dated: **March 18, 2014**

1 **Q. Please state your name, business address and current position.**

2 A. My name is Jim Brennan. I am the Finance Director at the New Hampshire
3 Office of the Consumer Advocate (OCA). My business address is 21 South
4 Fruit Street, Suite 10, Concord, New Hampshire.

5
6 **Q. Please summarize your educational background and work experience.**

7 A. I graduated in 1978 from Saint Bonaventure with a Bachelor of Science degree
8 in Finance. In 1980, I graduated from Syracuse University with an MBA. In
9 1981, I completed a JP Morgan Chase (formerly Chemical Bank) MBA
10 Management Training Program. I have completed courses in business, finance,
11 software development, electric utility regulation, regulatory finance and
12 accounting, and Smart Grid.

13 In my present position at the OCA I perform economic and financial analysis of
14 utility filings across all industries, draft discovery and testimony, and provide
15 guidance on financial policy and regulatory issues.

16 My business career began in banking as First Vice President at Chemical Bank,
17 1980-1989, with responsibilities as analyst, credit department manager, account
18 management, and course designer and instructor of Risk Assessment training. I
19 have experience managing business and technology operations. At TD
20 Waterhouse Securities, 1995-2001, I ran the third largest brokerage statement
21 operation on Wall Street during a period of 400% growth with responsibilities

1 for budget, operations, Information Technology, month end processing and
2 New York Stock Exchange Compliance. Waterhouse's statement was awarded
3 #1 ranking by Smart Money during my assignment. I have experience in IT
4 project management and software design. Experience includes: implementation
5 of paperless technology in Waterhouse Security National Investor Clearing
6 Corporation stock clearing operation (2000); managing launch of an eServices
7 web site providing on-line secure access of brokerage statements to 2.5 million
8 Waterhouse clients (2001); designing Microsoft.NET and SQL Server based
9 software systems for Mathematica Policy Research 2003-2006; directing design
10 testing and launch of cloud based Microsoft Customer Relationship
11 Management (CRM) applications for Southern New Hampshire University
12 (2012-2013). As an Adjunct Instructor I have taught courses in Corporate
13 Finance, Microsoft applications and Microsoft C# programming language.

14
15 **Q. Please summarize the OCAs position in this docket.**

16 A. The OCA's position is that Public Service of New Hampshire (PSNH) should
17 bear some of the risks of operating in a competitive generation market. PSNH
18 owns generation assets that have become significantly more costly and non-
19 economic due to changes in the wholesale energy market. Large capital
20 investments were made to the Merrimack coal fired generation plant at a point
21 when the facility was late in its life cycle and nearing obsolesce. The PSNH
22 filing proposes that all costs be borne solely by current and future default
23 Energy Service (ES) ratepayers. It is unfair and unbalanced when PSNH

1 shareholders earn the full return and revenue deferrals on plant with significant
2 excess capacity and diminished ability to compete. It is unfair for default ES
3 customers to pay all of the costs associated with the risk of competition.

4
5 **Q. What is the purpose of your testimony?**

6 My testimony proposes a return based risk sharing mechanism between PSNH
7 shareholders and its default ES customers. The proposal targets uncompetitive
8 generation plant in long term economic decline - referred to as "Plant in
9 Decline Stage." My testimony focuses on risk sharing specific to Merrimack
10 generation plant as it has the greatest amount of undepreciated plant investment
11 of all the PSNH owned generation assets.

12
13 **Q. How is competitiveness of Merrimack measured for purposes of your**
14 **testimony?**

15 A. Capacity factor is used as a proxy for competitiveness relative to prices in the
16 ISO-NE Wholesale Energy Market. I've provided a table containing twenty
17 years (1993-2013) of historical capacity factors for Merrimack 1 and 2. See
18 Exhibit JJB-1. The source of capacity factors used in this testimony is from
19 graphs contained in PSNH filings. See Exhibit JJB-2 – attachments to testimony
20 of Smagula. When Merrimack is competitive it generates and sells power into
21 the energy market. The more frequently PSNH assets are competitive the more
22 these assets may be called on to generate energy, and capacity factor rises.
23 Conversely when PSNH is not competitive and it chooses not to self-dispatch,

the quantity of energy generated falls, and capacity factor declines. Based on capacity factors Merrimack's competitiveness is declining as shown below:

Historical Capacity Factors (Merrimack 1 and 2)

- 73% Historical 20 year average capacity factor
- 69% Historical 10 year average capacity factor
- 62% Historical 7 year average capacity factor
- 42% Historical 3 year average capacity factor
- 36% 2013 capacity factor

Based on calculated average capacity factors Merrimack plant specifically has significant excess capacity.

Q. How does the un-competitiveness of Merrimack impact ratepayers?

A. When Merrimack is uncompetitive reconciled ES rates and revenue deferrals are negatively impacted in two ways:

- 1) Additional Costs from non-economic runs;
- 2) Additional Costs of excess capacity.

Q. What are the costs from non-economic runs?

A. When Merrimack generates energy at costs above market that production run is deemed non-economic. For this discussion, above market costs are the costs that are greater than the average \$/MWH Locational Marginal Price (LMP). Above market energy costs are added to total energy service costs. Fewer and shorter non-economic runs reduce costs. Long duration non-economic runs can result in significant costs. Details of above market energy costs for Merrimack 1 and 2 for all of 2013 operations were provided by PSNH. See Exhibit JJB-3 for response to Q-CLF 1-005. The table below makes use of this operational data.

Two non-economic runs started on 1/5/2013 and 2/23/2013 and lasted 11 days and 12 days respectively. The above market energy costs were \$1,859,967.

Q-CLF 1-005 7/11/2014 pg 8,9 Merrimack 2 (2013)					
Jan 5 to 15 non economic run above market energy costs			Feb 23 to Mar 6 non economic run above market energy costs		
5-Jan	\$	49,290	23-Feb	\$	96,908
6-Jan	\$	70,961	24-Feb	\$	100,889
7-Jan	\$	43,148	25-Feb	\$	45,116
8-Jan	\$	116,626	26-Feb	\$	37,738
9-Jan	\$	119,564	27-Feb	\$	46,547
10-Jan	\$	137,768	28-Feb	\$	19,612
11-Jan	\$	151,287	1-Mar	\$	93,795
12-Jan	\$	95,857	2-Mar	\$	135,199
13-Jan	\$	128,248	3-Mar	\$	119,369
14-Jan	\$	92,924	4-Mar	\$	17,636
15-Jan	\$	80,068	5-Mar	\$	39,707
			6-Mar	\$	21,710
Total	\$	1,085,741		\$	774,226
				Combined cost	\$ 1,859,967

Factors such as generation asset age, design, capabilities and maintenance needs can lengthen the duration of individual non-economic runs beyond what is required for hypothetically normal startup times and normal testing needs. The chart above summarizes two non-economic runs for Merrimack. For both runs the dispatch reason was "Self-schedule for reliable (high pressure heater) & load" implying a potential maintenance issue. The maintenance issues are potentially related to aging plant life, preventing cycle down during a warming period as a contributing factor to these specific runs. For the year 2013, Merrimack 1 and 2 had \$5,477,182 above market energy costs. See Exhibit JJB-4 for response to CLF 2-005 pages 2 and 3.

Q. What are the costs of excess capacity?

Non-economic generation creates excess capacity. Costs of excess capacity are fixed costs and return costs paid on the portion of generation assets with excess capacity. Similar to an airline that on average fills 36 of 100 seats with paying customers, there are fixed costs associated with the 64 empty seats on each flight. While both are unavoidable (you can't run part of Merrimack 1 or fly part of a plane) there are costs to owning more capacity than otherwise needed. PSNH reconciliation filings for years 2009 through 2013 include schedules for Total Energy Service Costs including itemization of fixed costs and return costs. See Exhibits JJB-5, JJB-6, JJB-7, JJB-8 and JJB-9 for cost schedules included in testimonies of Baumann in reconciliation dockets DE 10-121, DE 11-094, DE 12-116 and testimonies of Shelnitz in reconciliation dockets DE 13-108 and 14-120. The table below contains cost data from these dockets. Rows A, B, C, D show levels of fixed costs and return costs and total energy return costs for years 2009 to 2013.

	000's								
	Reconciliation Docket	10-121	11-094	12-116	13-108	14-120			
	Reconciliation year	2009 %	2010 %	2011 %	2012 %	2013 %			
A.	PSNH Fixed Generation Costs (O&M, deprec, tax):	\$ 131,969 20%	\$ 130,998 27%	\$ 139,686 31%	\$ 127,261 32%	\$ 128,921 34%			
B.	PSNH Return Costs on generation (rate base * ret)	\$ 42,838 7%	\$ 41,429 9%	\$ 51,079 11%	\$ 82,727 21%	\$ 80,715 21%			
C.	Fixed + Return Costs (sum of above)	\$ 174,807 27%	\$ 172,427 35%	\$ 190,765 42%	\$ 209,988 52%	\$ 209,636 55%			
D.	PSNH Total Energy Service Costs	\$ 647,751 100%	\$ 486,589 100%	\$ 449,915 100%	\$ 402,647 100%	\$ 379,114 100%			
E.	Capacity Factor - Merrimack only	71%	68%	59%	34%	36%			

Row B reflects a doubling of return costs from approximately \$41 million in 2010 to approximately \$80 million in 2012 and 2013 primarily due to Merrimack expansion coming on line in September 2011. Row B also reflects return costs rising faster than other components of ES. Specifically return costs as a percent

1 of Total Energy Service costs have more than doubled from 9% to 21% during
2 the same periods. The dramatic rise in return costs are due to Merrimack's
3 capital expansion. A portion of these costs are for Merrimack's excess capacity.

4 **Q. Explain the statement that PSNH does not bear competition risk.**

5 A. The two costs outlined above, the cost of non-economic runs and the cost of
6 excess capacity, are borne solely by ratepayers. None are absorbed by the
7 shareholders. Other generators in New Hampshire do absorb the costs of non-
8 economic runs and the costs of excess capacity. The competitive market does
9 not pay owners for uneconomic assets.

10 **Q. Why should PSNH bear some of the risk?**

11
12 A. A utility isolated from risks of competition lacks incentive to invest in efficient
13 assets. It is in the public interest to provide incentive to the utility to own,
14 manage and run an efficient operation. Competition risk keeps the utility
15 focused. The OCA's proposal allocates some of the risk away from the
16 ratepayer and directly onto the shareholders using performance as the key
17 driver.

18 **PROPOSED RISK SHARING MECHANISM:**
19

20 **Q. Summarize the proposed risk sharing mechanism.**

21 A. The OCA proposal allocates a portion of competition risk to PSNH through an
22 adjustment to rate base on Plant in Decline Stage. Plant in Decline Stage is
23 subject to rate base adjustment if its performance ratio is less than or equal to

95% historical performance, using a sliding 20 year period of capacity factor ratio levels.

Q. Define Plant in Decline Stage?

A. Plant in Decline Stage is plant past its useful life. It is in long term decline unable to maintain a competitive advantage. The term "decline" comes from Boston Consulting Group (BGE) research on asset life cycle. According to BCG research, business assets such as product or machines (in this case generation plants) have four stages of life - Birth, Rising Start, Cash Cow, Decline. For PSNH, Merrimack 1 and Merrimack 2 match the definition of an asset in decline. Any new and significant investment made to Plant in Decline Stage does not improve the assets competitive profile or reverse its long term decline. Consequently return on investment on Plant in Decline Stage is lower.

An asset meeting 3 criteria is determined to be Plant in Decline Stage and subject to adjustment to rate base. The 3 criteria which must all be met are as follows:

1. A generating asset late in its life cycle largely depreciated, and
2. Has an increase in net book value of 25% due to new investment, and
3. Has a performance ratio less than or equal to 95% calculated annually.

1 **Q. Please define the performance ratio.**

2 **A** The Performance Ratio is based on plant performance measured by capacity
3 factor. The numerator is the most recent 10 year average capacity factor. The
4 denominator is the prior 10 year average capacity factor. A decline in capacity
5 factor will result in a performance ration lower than 100%. Below is the
6 definition for the 2013 performance ratio:

$$\begin{array}{c} \text{2013 Performance Ratio} = \frac{\begin{array}{c} \text{Numerator} \\ \text{Avg. Capacity Factors} \\ \text{years 2004 to 2013} \end{array}}{\begin{array}{c} \text{Denominator} \\ \text{Avg. Capacity Factors} \\ \text{years 1994 to 2003} \end{array}} \end{array}$$

7

8 **Q. How is the rate base adjustment calculated using the Performance Ratio?**

9 **A.** (Rate Base unadjusted) X (Performance Ratio) = Adjusted Rate Base.

10

11 **Q. What are Merrimack 1 and 2 Performance Ratios?**

12 **A.** The chart below shows the calculation using data from Exhibits JJB-1 and JJB-
13 2. Together and on average Merrimack 1 and 2 have performance ratios of 95%
14 in 2012 and 87% in 2013

	2012 Performance Ratio			2013 Performance Ratio		
	20 Year	Capacity Factor	Historical Trend	20 Year	Capacity Factor	Historical Trend
	Denominator	Numerator	20 Year	Denominator	Numerator	20 Year
	Avg. Capacity Factors	Avg. Capacity Factors	Performance	Avg. Capacity Factors	Avg. Capacity Factors	Performance
	years 1993 to 2002	years 2003 to 2012	Ratio	years 1994 to 2003	years 2004 to 2013	Ratio
MERRIMACK 1	81.3%	78.2%	96.2%	82.7%	72.8%	88.0%
MERRIMACK 2	73.4%	68.8%	93.7%	73.8%	64.5%	87.4%

15

16

Q. Please show the calculation for rate base adjustment for years 2012 and 2013.

A. Merrimack 1 and 2 are Plant in Decline based on the 3 criteria defined above. They are generation assets in late lifecycle. Net book value increased by more than 25% as a result of Scrubber coming on line in 2011. The performance ratio is 95% or lower. Below is a calculation of the proposed adjustment to rate base. Row D shows Rate Base adjustment reduction of \$23.9 million in 2012 and \$58.3 million in 2013. Line F shows reduced return of \$2.1 million in 2012 and \$5.3 million in 2013.

SAMPLE CALCULATION	2012 Performance Ratio			2013 Performance Ratio		
	20 Year	Capacity Factor	Historical Trend	20 Year	Capacity Factor	Historical Trend
	Denominator Avg. Capacity Factors years 1993 to 2002	Numerator Avg. Capacity Factors years 2003 to 2012	20 Year Performance Ratio	Denominator Avg. Capacity Factors years 1994 to 2003	Numerator Avg. Capacity Factors years 2004 to 2013	20 Year Performance Ratio
MERRIMACK 1	81.3%	78.2%	96.2%	82.7%	72.8%	88.0%
MERRIMACK 2	73.4%	68.8%	93.7%	73.8%	64.5%	87.4%
			2012 adjustment			2013 adjustment
A Plant In Decline Rate Base unadjusted (flat estimate)			\$ 475,000,000			\$ 475,000,000
B Performance Ratio MR1 and 2 (JJB-1, JJB-2) see NOTE #1			95.0%			87.7%
C Rate Base exclusion %			5%			12%
D Rate Base exclusion \$			\$ 23,940,162			\$ 58,359,938
E Return authorized (estimate)			9.10%			9.10%
F Reduced return - competition risk allocation to shareholders			\$ 2,178,554.72			\$ 5,310,754.36
NOTE #1: Performance ratios subject to re-calculation based on receiving numeric values from PSNH. JJB-1 chart is based on graph data						
NOTE #2: Rate Base calculations subject to re-calculation based disaggregated Merrimack 1 and 2 data						

Line F represents costs of competition risk being reallocated from rate payers to the shareholders using OCA's proposed risk sharing mechanism.

Q. What is your recommendation?

A. I recommend the Commission disallow \$5,310,754.36 of return.

Q. Does this conclude your testimony?

A. Yes.