

ATTACHMENT 1

PSNH Mercury Compliance Report

to NHDES

July 30, 2014



**Public Service
of New Hampshire**

A Northeast Utilities Company

PSNH Energy Park
780 North Commercial Street, Manchester, NH 03101

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D32974

July 30, 2014

Mr. Craig A. Wright, Director
Air Resources Division
NH Department of Environmental Services
29 Hazen Drive
Concord, NH 03302-0095

William H. Smagula
Vice President - Generation

Public Service Company of New Hampshire
Merrimack Station AFS#3301500026
Mercury Compliance Report

Dear Mr. Wright:

Public Service Company of New Hampshire submits the following Annual Mercury Compliance Report for Merrimack Station as required by Temporary Permit TP-0008, Table 4 Item 13. As noted in Item 13, beginning on July 1, 2013, total mercury emissions from the affected sources shall be at least 80 percent less on an annual basis than the baseline mercury input, as defined in RSA 125-O:112, III. The final mercury baseline input for all affected sources was determined to be 268 pounds of mercury per year. Accordingly, the total mercury emissions from all affected sources shall be at least 80 percent less than 268 pounds or 54 pounds per year beginning July 1, 2013. Affected sources were defined as existing coal burning units Merrimack Unit 1, Merrimack Unit 2, Schiller Unit 4, Schiller 5 and Schiller Unit 6. The current coal burning units are shown below.

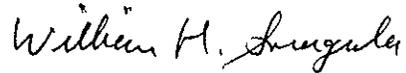
Affected Sources	Mercury Emissions (lbs) 07/01/13-06/30/14	Mercury Baseline Emissions (lbs)
Merrimack #1	1	54
Merrimack #2	3	
Schiller #4	3	
Schiller #6	3	
Total Hg Emissions	10	

Mercury emissions were calculated using hourly heat input rates as reported to the EPA via the Electronic Data Report (EDR) system and mercury stack test emissions data approved by the NH Air Resources Division. The calculation methodology can be found in Appendix A of this submittal.

Should you have any questions regarding this report, please contact Sheila A. Burke, Senior Compliance Consultant, PSNH Generation at (603) 634-2512 or sheila.burke@nu.com.

I am authorized to make this submittal on behalf of the facility for which the submission is made. Based on information and belief formed after reasonable inquiry, I certify that the statements and information in the enclosed documents are to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Sincerely,



William H. Smagula, P.E.

Vice President -- Generation

Enclosure

APPENDIX A

SUPPORTING CALCULATIONS

SUPPORTING CALCULATIONS

Data Sources:

1. Heat Input (mmBtu/hr) – Hourly Electronic Data Reporting values reported to the EPA for compliance with 40CFR75. This data is quality assured, submitted quarterly to the EPA. The EPA conducts a review of the data, confirms the validity and accepts the data as accurate.

Affected Sources	Annual Heat Input (mmBtu) 07/01/13-06/30/14
Merrimack #1	3,890,821
Merrimack #2	9,377,964
Schiller #4	1,532,918
Schiller #6	1,403,008

2. Lbs Hg/TBtu - Stack Test data¹

Stack Test Date	Unit	Mercury (lbs/TBtu)
01/23/13	Common Stack (MK1 and MK2)	0.310
07/16/13	Common Stack (MK1 and MK2)	0.314
02/10/14	Common Stack (MK1 and MK2)	0.245
05/16/13	SR4 and SR6	3.088
08/02/13	SR4 and SR6	2.120
05/20/14	SR4 and SR6	3.140

¹ All tests performed by Eastmount Environmental Services

² Merrimack Station stack test performed on the combined stack (FGD). Schiller Station stack test performed on SR4 stack and result applied to SR6 as the units are identical.

Calculation Methodology

$$\text{lb/hr mercury} = \frac{\text{Hourly heat input (mmBtu/hr)} \times \text{stack test emissions rate (lb Hg/TBtu)}}{1,000,000}$$

The hourly pounds of mercury are summed for annual total pounds of mercury for each affected source. The total annual mercury emissions are summed for all of the affected sources and compared to the annual mercury limit of 54 lbs.

Example SR4

Date/Hr	SR4 HR Rate (mmBtu/hr)	HR Stack Test (lb/TBtu)	lbs Hg Unit
07/04/2013 12	221.7	3.088	6.846E-04
08/26/2013 06	372.9	2.120	7.905E-04
05/20/2014 06	399.7	3.140	1.255E-03

Example SR6

Date/Hr	SR6 HR Rate (mmBtu/hr)	HR Stack Test (lb/TBtu)	lbs Hg Unit
07/04/2013 13	245.9	3.088	2.507E-04
11/25/2013 16	554.7	2.120	5.213E-04

Example MK1 and MK2

Date/Hr	HR Rate (mmBtu/hr)						
07/05/2013 00	313.7	313.7	627.4	0.310	9.725E-05	9.725E-05	1.945E-04
01/18/2014 17	1460.1	252.7	1720.8	0.314	4.610E-04	7.935E-05	5.403E-04
04/24/2014 21	512.8	0	512.8	0.245	1.256E-04	0.000E+00	1.256E-04

Compliance Report Cover Sheet

This cover sheet can be used to identify reports being submitted to the DES Air Resources Division's Compliance Bureau as a condition of a permit or any state or federal rule or regulation. Please identify the report type(s) being submitted and if a report is an original or revised report.

<u>Report Types</u>	<u>Original</u>	<u>Revised/Re-Submitted</u>
1. Title V Annual Compliance Certification	<input type="checkbox"/>	<input type="checkbox"/>
2. Title V Semiannual Permit Dev./Mon. report	<input type="checkbox"/>	<input type="checkbox"/>
3. Annual Part 60 CEM Relative Accuracy Test Audit (RATA)	<input type="checkbox"/>	<input type="checkbox"/>
4. Annual/Semi-Annual Part 75 CEM RATA	<input type="checkbox"/>	<input type="checkbox"/>
5. Quarterly CEM (Excess) Emissions Report	<input type="checkbox"/>	<input type="checkbox"/>
6. Quarterly CEM Cylinder Gas Audit	<input type="checkbox"/>	<input type="checkbox"/>
7. Quarterly CEM Opacity Audit	<input type="checkbox"/>	<input type="checkbox"/>
8. Quarterly CEM Relative Accuracy Audit (RAA)	<input type="checkbox"/>	<input type="checkbox"/>
9. Flow Monitor Transducer Check	<input type="checkbox"/>	<input type="checkbox"/>
10. Annual Opacity 7-Day Drift Test	<input type="checkbox"/>	<input type="checkbox"/>
11. Quarterly CEM Acid Rain Linearity Audit	<input type="checkbox"/>	<input type="checkbox"/>
12. Initial CEM Monitoring Plan	<input type="checkbox"/>	<input type="checkbox"/>
13. Annual CEM QA/QC Plan Review	<input type="checkbox"/>	<input type="checkbox"/>
14. Annual Emissions Statement/Report	<input type="checkbox"/>	<input type="checkbox"/>
15. Annual NOx Statement/Report	<input type="checkbox"/>	<input type="checkbox"/>
16. Annual VOC Statement/Report	<input type="checkbox"/>	<input type="checkbox"/>
17. Fuel Usage Report	<input type="checkbox"/>	<input type="checkbox"/>
18. Material Usage Report	<input type="checkbox"/>	<input type="checkbox"/>
19. Ammonia Usage Report	<input type="checkbox"/>	<input type="checkbox"/>
20. Monthly Cost and Quality of Fuels	<input type="checkbox"/>	<input type="checkbox"/>
21. Quarterly Pollutant Emissions Inventory	<input type="checkbox"/>	<input type="checkbox"/>
22. NSPS Landfill Surface Emission Monitoring	<input type="checkbox"/>	<input type="checkbox"/>
23. Monthly Landfill Gas Sulfur Content	<input type="checkbox"/>	<input type="checkbox"/>
24. Annual Odor Report	<input type="checkbox"/>	<input type="checkbox"/>
25. Hydrogen Sulfide Ambient Air Monitoring	<input type="checkbox"/>	<input type="checkbox"/>
26. Landfill NMVOC Annual Report	<input type="checkbox"/>	<input type="checkbox"/>
27. NSPS Reporting Requirements	<input type="checkbox"/>	<input type="checkbox"/>
28. Other Report type: <u>Mercury Compliance Report¹</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
29. Other Report type: _____	<input type="checkbox"/>	<input type="checkbox"/>
30. Other Report type: _____	<input type="checkbox"/>	<input type="checkbox"/>

Please submit reports to: NH DES Air Resources Division
 29 Hazen Drive
 P.O. Box 95
 Concord, NH 03302-0095
 Attention: Compliance Bureau

¹ TP-0008 Table 4 Item 13