

**Eversource**

**Removal of Mercury Boilers  
at Schiller Station**

Monthly Status Report

September 2017

**Date:** October 31, 2017  
**Subject:** Schiller Station Units 1 & 2 Mercury Boiler Removal  
Monthly Status Report # 11 – September 2017

### **Summary**

The mercury boiler equipment removal project through June 2017 was proceeding as planned up to June 13, 2017 when an employee of the demolition contractor Manafort Brothers Inc. (“MBI”) voiced concern regarding a potential mercury exposure. At that time, all work related to cutting, burning and handling steel components was stopped to evaluate the situation. As a result, no demolition work related to steel cutting and removal occurred from June 13, 2017 through the end of the August 2017 to allow time for worker safety re-evaluation by the contractor. Manafort resumed mercury impacted metal removal and stack demolition work during late August 2017, and continued with this activity through September 2017.

Actual expenses for the first eleven months of activity continue to be in line with the overall estimated cost range. No environmental concerns have been raised beyond those expected and typical at this time. The potential safety issue noted above is described in more detail below in the Significant Issues Section.

Due to the recent work-stoppage, the expected project completion date of October 15, 2017 will be extended into 2018. The revised schedule reflects the work stoppage for safety re-evaluation, a work transition to orientate several new contractor employees as well as to institute revised procedures to allow a safe return to work. The schedule continues to be reviewed and will likely be finalized along with an updated project cost estimate by late November or early December 2017. This time is needed to evaluate worker productivity while using new work procedures, expand personal protective equipment and new tooling for cutting and removal.

### **Background**

On October 21, 2016 in Order No. 25,956 the Commission approved Eversource’s removal of two mercury boilers and associated equipment located at Schiller generating station as recommended by the Commission’s auction advisor, J.P. Morgan

The Order noted:

“The immediate launching of the Schiller abatement effort offers several advantages within this framework. Eversource has intimate, operationally-developed knowledge of Schiller Station conditions that would enhance the efficiency of the remediation effort. Prompt remediation of the conditions at Schiller Station will tend to make the asset a more attractive acquisition target, and protect potential operational synergies among the Schiller, Newington, and Merrimack Station facilities.”

And the Commission concluded:

“We are also satisfied that the cost-review checks called for by the terms of the Stipulation will enable the Commission, Staff, and the other parties to monitor the effort for cost overruns and other potential issues. We will require that Eversource provide monthly updates on the cost and progress of the removal to Staff and we will require Staff to bring any substantial variances to our attention. We therefore find that undertaking the proposed removal of the two mercury boilers and related equipment from the Schiller generation station is prudent within the framework of the divestiture auction. We will monitor the manner in which Eversource conducts the removal to ensure that the removal is prudently managed.”

## **Status**

### **1.0 Cost**

The total project cost estimate is in the range of \$20 - 30 million based on information provided by Eversource's vendors. The Company has incurred cost through September 2017 of approximately \$10.2 million. As noted above, an updated cost estimate is expected in late November or early December 2017; however, no changes to the overall estimated cost range are expected at this time. Please refer to page 6 and page 7 for details of the actual cost by month.

### **2.0 Schedule**

The anticipated schedule and corresponding status is being reviewed and will be updated by late November or early December 2017.

	<b>Projected Schedule</b>	<b>Schedule Status</b>
Nov 2016	Mobilize & Testing (a)	On Target
Dec 2016	ACM (b)	On Target
Jan 2017	ACM & Demolition (c)	On Target
Feb 2017	ACM & Demolition	Schedule Revised
Mar 2017	ACM & Demolition	On Target
Apr 2017	ACM & Demolition	On Target
May 2017	ACM & Demolition	On Target
Jun 2017	Delay – Safety Re-Evaluation	Delay (d)
Jul 2017	Delay – Safety Re-Evaluation	Under Review
Aug 2017	Delay – Safety Re-Evaluation	Under Review
Sep 2017	ACM & Demolition	Under Review
Oct 2017	Demolition	
Nov 2017	Demolition	
Dec 2017	Demolition	
2018	Demolition/Completion (TBD)	
	<b>Prior target completion date estimate of mid 2018 is under review</b>	

## Notes:

- (a) "Mobilize" includes staging of temporary office trailers, parking, decontamination area, setting up enclosures, and preparing work & safety plans. "Testing" involves *in situ* pre-demolition chemical characterization of materials to determine proper offsite disposal criteria.
- (b) "ACM" = Abatement of Asbestos Containing Material.
- (c) "Demolition" = Demolition of Units 1&2 components over a 9-month period. Components to be removed include: stack, turbines, boilers, control room, coal bunker and all associated piping, lines and conduits.
- (d) Schedule impact due to Safety Re-Evaluation, new employee orientation, revised procedures and gradual start once work proceeds again.

### 3.0 Permitting and Notifications

The existing project permits as described in the November 2016 monthly status report are in good standing with no issues. Those are listed below.

- Demolition Permit with the City of Portsmouth
- Abatement Notification to NHDES

### 4.0 Critical Path Items Completed / Underway

Asbestos Abatement – 88% complete

Dismantling/Demolition – 35% complete

Gross asbestos abatement took place over the first 6 months of the project. Dismantling/demolition including integrated asbestos abatement is continuing to take place and is estimated to be completed during mid-2018. The dismantling and integrated asbestos abatement involves 5 elevations in varied locations of the Unit 1 and 2 boiler house area. The work began at the higher elevations and is proceeding to the lower elevations. Where possible, work is being completed in parallel. The asbestos and dismantling work conducted during September included the following:

- Continued dismantling of the mercury boiler stack metal shell, interior gunite, and interior baffle system.
- Began removal of mercury piping systems at El. 11'.
- Began utilizing the ARS HC24 Air Handler connected to the El. 82' and El. 59' containment with additional continuous emissions monitoring of exhaust for mercury.
- Performed maintenance of all existing containments.
- Erected new work area containments at El. 11' and 24'.
- Continued sizing metal pieces within the El. 82' and El. 59' containment via cold cutting for load out.

- Began construction of wooden framing at El. 82' within the El. 82' and El. 59' containment. The frames are planned to be used in the construction of smaller sized boiler containments at El. 59' and El. 82'.
- Disposal of approximately 12 tons of C&D non-hazardous gunite from the mercury boiler stack.
- Disposal of approximately 4896 gallons of hazardous waste water.
- Disposal of approximately 19 tons of scrap metal.
- Disposal of approximately 52 cubic yards of mercury impacted asbestos.
- Disposal of approximately 10 tons of mercury impacted metal with visible mercury for retort.

## **5.0 Significant Issues**

No new significant issues were identified during September.

As reported last month: On June 13, 2017, a Safety Stand-Down was initiated by the contractor MBI, halting all mercury demolition and removal work while MBI began an investigation into potential employee exposure to mercury. This Stand-Down was issued because a MBI employee reported the results of a home mercury urine test to the on-site MBI management staff at the project site. The employee stated he had concerns regarding potential exposure to mercury and provided a photograph of the test result to MBI staff. The MBI staff immediately sent the employee to the Occupational Health Services of Portsmouth Regional Hospital ("PRH") facility for blood analysis of mercury and metals. The results of this test confirmed an elevated level of mercury in the employee's blood. MBI then began sending all of their employees for additional mercury testing. The results of these tests (for some employees) according to MBI's Occupational Health Physicians indicated mercury levels in blood above the normal range but not near the levels required for toxicity or poison. U.S OSHA also investigated this situation during late June through July 2017.

As a result of the blood testing, MBI held an all-hands safety conference that included their subcontractor, Absolute Environmental ("AE"). The safety conference addressed the potential mercury exposure to workers and discussed the signs and symptoms of mercury exposure. MBI presented a plan to better understand and define the potential exposure and discussed a plan that would allow for the completion of the work. Following the safety conference, all MBI and AE crew members and site supervisors completed another round of blood and urine sampling for mercury. MBI's Occupational Health Physicians subsequently reported that the detected

concentrations of mercury in the blood and urine samples were not near levels that would indicate toxicity or symptoms related to poisoning.

Due to the potential exposures described above, MBI conducted a root cause analysis investigation and an evaluation of all mercury related work practices. In addition, MBI developed a return to work plan which was implemented when crews once again started work during early September 2017.

## **6.0 Cost & Schedule Impacts**

The expected completion date of October 15, 2017 is now delayed well into 2018 due to the issues described above in Section 5 above. MBI is now assessing the reduced productivity caused impacts to the schedule given the adjustments necessary in response to these issues. The cost of the project is expected to remain within the original range.

## **7.0 Agency Visits, Inspections & Audits**

On September 11, Eversource and GZA attended a meeting with NHDES and NHPUC in Concord, NH to discuss approval of the Alternative Air Compliance Plan submitted by TRC on behalf of MBI, as well as the above and beyond air compliance alternatives.

On September 20, the Occupational Safety and Health Administration (OSHA) was onsite and performed employee interviews with the Manafort management team.

## **8.0 Next Report Due**

The next monthly report will be submitted to the Commission by November 30, 2017.

**Public Service Company of New Hampshire d/b/a Eversource Energy**  
**Removal of Mercury Boilers Deferred Costs**  
**Monthly Status Report for September 2017**

Line #	Description	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	Total 2017
1	<b>Internal Cost:</b>													
2	-Employee Labor	\$ 34,463	\$ 31,022	\$ 32,376	\$ 32,105	\$ 35,099	\$ 34,447	\$ 43,593	\$ 36,304	\$ 27,789	\$ -	\$ -	\$ -	\$ 307,197
3	-Employee Misc. Expense	105	225	254	142	386	248	254	229	370	-	-	-	2,213
4	-Materials & Supplies	-	-	-	-	-	-	-	-	-	-	-	-	-
5														
6	<b>Vendor Cost:</b>													
7	-O'Connor Corp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8	-William Scotsman Inc.	1,510	1,510	1,510	834	2,430	590	2,430	1,510	1,510	-	-	-	13,834
9	-Mohlin & Company	12	-	-	-	-	-	-	-	-	-	-	-	12
10	-GZA GEO Environmental Inc.	51,358	39,130	59,349	49,738	51,517	55,687	30,903	94,612	7,725	-	-	-	440,020
11	-Ayer Electric Inc.	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-Manafort Brothers	1,065,685	240,929	2,065,674	969,690	2,242,510	(471,604)	97,743	625,126	532,282	-	-	-	7,368,036
13														
14	<b>Monthly Total</b>	1,153,133	312,817	2,159,162	1,052,509	2,331,942	(380,631)	174,923	757,781	569,677	-	-	-	8,131,312
15														
16	<b>Balance</b>	\$ 2,965,812	\$ 3,278,629	\$ 5,437,791	\$ 6,490,300	\$ 8,822,241	\$ 8,441,610	\$ 8,616,533	\$ 9,374,314	\$ 9,943,991	\$ -	\$ -	\$ -	
17														
18	Average Balance	\$ 2,389,246	\$ 3,122,221	\$ 4,358,210	\$ 5,964,045	\$ 7,656,270	\$ 8,631,926	\$ 8,529,071	\$ 8,995,423	\$ 9,659,153	\$ -	\$ -	\$ -	
19	Tax Impact @ 40.330%	(963,583)	(1,259,192)	(1,757,666)	(2,405,299)	(3,087,774)	(3,481,256)	(3,439,774)	(3,627,854)	(3,895,536)	-	-	-	
20	Average Investment	\$ 1,425,663	\$ 1,863,029	\$ 2,600,544	\$ 3,558,746	\$ 4,568,497	\$ 5,150,670	\$ 5,089,297	\$ 5,367,569	\$ 5,763,616	\$ -	\$ -	\$ -	
21	Stipulated Rate of Return	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	
22	<b>Interest</b>	\$ 9,546	\$ 12,475	\$ 17,413	\$ 23,877	\$ 30,652	\$ 34,558	\$ 34,216	\$ 36,087	\$ 38,750	\$ -	\$ -	\$ -	\$ 237,574
23														
24	<b>Monthly Total Including Interest</b>	1,162,679	325,291	2,176,575	1,076,386	2,362,594	(346,073)	209,139	793,868	608,427	-	-	-	
25														
26	<b>Cumulative Total Including Interest</b>	2,982,530	3,307,821	5,484,395	6,560,782	8,923,375	8,577,303	8,786,441	9,580,310	10,188,737	10,188,737	10,188,737	10,188,737	

**Public Service Company of New Hampshire d/b/a Eversource Energy**  
**Removal of Mercury Boilers Deferred Costs**  
**Monthly Status Report for 2016**

Line #	Description	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016	Total 2016
1	<b>Internal Cost:</b>													
2	-Employee Labor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,510	\$ 34,490	\$ 69,001
3	-Employee Misc. Expense	-	-	-	-	-	-	-	-	-	-	230	243	473
4	-Materials & Supplies	-	-	-	-	-	-	-	-	-	-	9,889	183	10,072
5														
6	<b>Vendor Cost:</b>													
7	-O'Connor Corp.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 23,000	\$ 33,058	\$ (149)	\$ 55,909
8	-William Scotsman Inc.	-	-	-	-	-	-	-	-	-	-	4,993	1,510	6,503
9	-Mohlin & Company	-	-	-	-	-	-	-	-	-	-	10,100	1,838	11,938
10	-GZA GEO Environmental Inc.	-	-	-	-	-	-	-	-	-	-	23,000	33,809	56,809
11	-Ayer Electric Inc.	-	-	-	-	-	-	-	-	-	-	46,941	(11,238)	35,703
12	-Manafort Brothers	-	-	-	-	-	-	-	-	-	-	680,010	886,262	1,566,272
13														
14	<b>Monthly Total</b>	-	-	-	-	-	-	-	-	-	23,000	842,732	946,948	1,812,679
15														
16	<b>Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 23,000	\$ 865,732	\$ 1,812,679	\$ 1,812,679
17														
18	Average Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,500	\$ 444,366	\$ 1,339,206	
19	Tax Impact @ 40.330%	-	-	-	-	-	-	-	-	-	(4,638)	(179,213)	(540,102)	
20	Average Investment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,862	\$ 265,153	\$ 799,104	
21	Stipulated Rate of Return	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%	0.67%
22	<b>Interest</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 46	\$ 1,775	\$ 5,350	\$ 7,171
23														
24	<b>Monthly Total Including Interest</b>	-	-	-	-	-	-	-	-	-	23,046	844,507	952,298	
25														
26	<b>Cumulative Total Including Interest</b>	-	-	-	-	-	-	-	-	-	23,046	867,553	1,819,851	