



January 10, 2014

Mr. James Belsky, Permit Chief
MassDEP Northeast Region
205B Lowell Street
Wilmington, MA 01887

**Re: Major Comprehensive Plan Application No. NE-12-022
Transmittal Number X254064 - Salem Harbor Redevelopment (SHR) Project
Draft PSD Permit and Proposed Air Quality Plan Approval**

Dear Mr. Belsky:

This letter supplements the submission dated December 11, 2013, responding to comments made by the Environmental Protection Agency Region 1 (“EPA”) and the Conservation Law Foundation (“CLF”) on the draft PSD permit and proposed Air Quality Plan Approval for the Footprint Power Salem Harbor Development LP (“Footprint” or “Applicant”) Salem Harbor Redevelopment Project (“Project”). Specifically, this letter provides:

- (1) Updates to the proposed combustion turbine combined cycle startup/shutdown (SU/SD) emissions for PM/PM₁₀/PM_{2.5}, as provided in Appendix C-4 of the December 2012 PSD/Air Plans Application. These revised proposed emissions limits are *reduced* from the limits originally proposed.
- (2) Clarification on the calculation of the SU/SD limits for H₂SO₄.

1. PM Emissions During SU/SD

As was the case with the proposed revised CO emissions rates contained in Footprint’s December 11, 2013 submission, GE also has now also revised its PM emission performance estimates for startup and shutdown. These revised reduced SU/SD emissions estimates are based on GE’s collection of new PM test data for combustion turbine combined cycle units using strict quality control methods for EPA test procedures. Based on these latest data, GE has provided new reduced PM SU/SD performance estimates as follows:

	Emissions (lb/event/unit)	Event Duration (minutes)
Cold Start	7.3 6.60	45
Warm Start	5.0 4.69	32
Hot Start	2.6	18
Shutdown	5.8 3.96	27

(Old values shown with strikethrough and revised values are in bold)

Based on these reduced PM SU/SD emissions estimates, the PM mass emissions during SU/SD will remain *equivalent to or lower than* the PM mass emissions during normal operation.¹

Accordingly, Footprint requests that DEP revise Table 7 of the Proposed Air Quality Plan Approval and Table 2 of the Draft PSD Permit, dated September 9, 2013, by incorporating the revised, reduced values of 6.60 lb/event for startup and 3.96 lb/event for shutdown (for PM/PM₁₀/PM_{2.5}), to replace the prior values of 7.3 lb/event for startup and 5.8 lb/event for shutdown, most recently provided in Attachment 1 of our August 6, 2013 submission to MassDEP.

2. Calculation of H₂SO₄ SU/SD Limits

The proposed Air Quality Plan Approval and the draft PSD permit dated September 9, 2013 include the following proposed limits for H₂SO₄ during SU/SD: 1.3 lb/event for startup and 0.2 lb/event for shutdown.² As is standard practice, the proposed limits for H₂SO₄ were derived by using a ratio to the proposed SO₂ limits.

As provided in the supplemental information letter dated August 20, 2013, the proposed SU/SD limits for SO₂ are 2.0 lb/event for startup and 0.3 lb/event for shutdown. As also documented in the August 20 letter, Footprint employed the following ratio of SO₂ to H₂SO₄ emissions for the combustion turbine combined cycle units: $(0.413)(98/64) = 0.63$.³ Footprint applied this ratio and calculated the resulting H₂SO₄ limits as follows: Multiplying 2.0 lb/event for SO₂ by 0.63 yields 1.3 lb/event for H₂SO₄ for startup; and similarly multiplying 0.3 lb/event for SO₂ by 0.63 yields 0.2 lb/event for H₂SO₄ for shutdown.

We are also providing the H₂SO₄ emissions for SU/SD for warm and hot starts, based on the SO₂ emissions for warm and hot starts as provided in our August 20, 2013 letter to MassDEP:

Warm Start: $(1.5 \text{ lb/event for SO}_2)(0.63) = 0.95 \text{ lb/event for H}_2\text{SO}_4$.

Hot Start: $(0.6 \text{ lb/event for SO}_2)(0.63) = 0.38 \text{ lb/event for H}_2\text{SO}_4$.

If you have additional questions on this letter, please contact either me at (617) 803-7809 or George Lipka at (617) 443-7545.

Sincerely,



Keith H. Kennedy
Senior Consultant – Energy Programs

¹ Accordingly, the validity of the Proponent's SU/SD BACT analysis is unaffected by these new, reduced estimates. See the December 11, 2013 submittal at Attachment 1, page 4-24.

² See Table 7 on page 25 of 59, of the Proposed Air Quality Plan Approval and Table 2 on page 7 of 25 of the Draft PSD Permit.

³ See page 3 of the August 20, 2013 submittal.