

October 1, 2013

Cosmo Buttaro
Cosmo.Buttaro@State.MA.US
Mass DEP Northeast Region Office
205B Lowell Street
Wilmington, MA 01887

Footprint Salem Harbor Development LP
EFSB 13-1
Application for Certificate of Environmental
Impact and Public Interest
Attachment EFSB-FP-12-5

Dear Mr. Buttaro:

Mitsubishi Power Systems Americas, Inc. (MPSA) has reviewed the Massachusetts Department of Environmental Protection (DEP) Draft Prevention of Significant Deterioration Permit (PSD Permit) submitted by the applicant Footprint Power Salem Harbor Development LP (Ref. Application No. NE-12-022). In this draft PSD Permit, under the Best Available Control Technology (BACT) requirement analysis for particulate emissions, it states the following:

"Pioneer Valley Energy Center (PVEC) (EPA Final PSD Permit No. 052-042-MA15, April 2012) was approved for a PM/PM10/PM2.5 emission rate of 0.004 lb/MMBtu for natural gas firing. Footprint contends that this rate does not represent BACT since it was not demonstrated in practice since the PVEC Project has not yet been constructed, and that it is not consistent with recent test data for the same model turbine. Footprint contends that the MassDEP "top case" BACT precedent identified in the June 2011 BACT Guidance is for the Mystic Station Plan Approval which was approved for 0.011 lb/MMBtu, and that the four Mystic Station MHI 501G units had tested PM emissions ranging from 0.005 to 0.010 lb/MMBtu. Footprint contends that the majority of the tested particulate matter was condensable particulates at Mystic.

Footprint further contends that the PVEC is also based on the MHI 501G turbine, and since the majority of the tested particulate matter was condensable particulates for Mystic, it is not reasonable to expect that the MHI 501G unit at PVEC could reliably achieve 0.004 lb/MMBtu in practice.

Mass DEP has determined that the Footprint position regarding the PVEC emission limit of 0.004 lb/MMBtu has merit and concludes that the PM emission rate of 0.0088 lb/MMBtu represents BACT for PM/PM10/PM2.5."

The DEP's determination that PVEC cannot reliably achieve 0.004 lb/MMBtu and that Footprint's PM emission rate meets BACT for the SHR Project's combined cycle turbines is arbitrary and without merit for the following reasons:

1. The gas turbine (GT) at PVEC is MPSA's M501GAC which utilizes ultra Dry Low NOx (DLN) combustors. The GT's at Mystic utilize an older style DLN combustion system which generate emissions consistent with those stated by the DEP. However, the older combustor type used at the Mystic facility should not be directly compared to the new combustor type which is going to be used at the PVEC facility because the condensable particulates generated with the older style combustor used at Mystic will be higher. It should be noted, however, that the tested emission levels from MPSA's GT's at Mystic were lower than the allowable limit.

2. The calculated particulate matter (PM) emissions for the PVEC facility (0.004 lb/MMBtu) is based on standard industry practice methodology for determining PM. MPSA has re-reviewed the PM calculations for the equipment supplied for the PVEC project and confirms that the value of 0.004 lb/MMBtu for the PM emissions of the equipment is correct.

Should you have any further questions or comments, please let us know.

Thank you.



George Pyros
Mitsubishi Power Systems Americas, Inc.
100 Colonial Center Parkway
Lake Mary, FL 32746
george.pyros@mpshg.com

From: Pyros, George [<mailto:George.Pyros@mpshq.com>]
Sent: Monday, October 07, 2013 9:47 AM
To: Buttaro, Cosmo (DEP)
Subject: RE: Mass DEP Draft PSD Permit Application No. NE-12-022

Dear Mr. Buttaro,

In response to your email below, I offer the following information:

1. We have not yet conducted stack PM emissions testing for our M501GAC gas turbine in combined cycle. However, we have M501GAC units that will be commissioned next year in combined cycle that will provide such data. These units were permitted at PM emission levels that are comparable to the plant at EMI PVEC.
2. The EMI PVEC facility does not include duct firing, so there is no contribution for duct firing in the PVEC particulate matter emissions. As for the fractions between PM, PM10 and PM2.5 emissions, we conservatively assume they are equal (PM = PM10 = PM2.5).

I apologize for the delayed response. If you need further clarification, I can be reached at the below number.

Sincerely,

George N. Pyros
Mitsubishi Power Systems Americas, Inc.
(407) 688-6238

From: Buttaro, Cosmo (DEP) [<mailto:cosmo.buttaro@state.ma.us>]
Sent: Wednesday, October 02, 2013 12:37 PM
To: Pyros, George
Subject: RE: Mass DEP Draft PSD Permit Application No. NE-12-022

Mr. Pyros:

I would like to discuss this matter further with you so it would be helpful if you would provide a phone number as well that I can reach you at.

For now, I have some questions regarding your letter that immediately come to mind. Has there been an installation anywhere of the turbine model type (M501GAC) that you state in your letter and of the size proposed for PVEC or comparable to Footprint's proposed installation? If so, can you provide stack tested PM/PM₁₀/PM_{2.5} emission data for different loads (minimum emissions compliance load to 100% and peak loads) and duct fired and/or unfired cases and percentages? If you don't have stack tested data, can you provide calculated PM data and source/method for the above

turbine and/or duct burner conditions and identify the fractions or assumptions regarding PM, PM₁₀, and PM_{2.5} emissions? I'm particularly interested in the collective fractions of PM, PM₁₀, and PM_{2.5} emissions.

Thanks.

Cosmo Buttarò
205B Lowell Street
Wilmington, Massachusetts 01887
Phone (978) 694-3281
Fax (978) 694-3499
cosmo.buttaro@state.ma.us

From: Pyros, George [<mailto:George.Pyros@mpshq.com>]
Sent: Tuesday, October 01, 2013 4:36 PM
To: Buttarò, Cosmo (DEP)
Subject: Mass DEP Draft PSD Permit Application No. NE-12-022

Dear Mr. Buttarò,

We are contacting you in reference to the Mass DEP Draft PSD Permit Application No. NE-12-022 regarding statements made in this application about Mitsubishi's equipment. Please see attached letter (with hard copy to follow).

Sincerely,

George Pyros
Mitsubishi Power Systems Americas, Inc.

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