

US EPA ARCHIVE DOCUMENT



FPL Energy

October 4, 2007

Northeast Energy Associates, Inc.
92 Depot Street
Bellingham, MA 02019
(508) 966.4872

Mr. Donald Dahl
US EPA, Region 1
One Congress Street
Boston, MA 02114-2023

**Subject: CO Startup and Shutdown Limits
Bellingham Cogeneration Facility**

Dear Mr. Dahl:

In a letter dated June 29, 2007, the Bellingham Cogeneration Facility ("the Facility") requested that EPA Region 1 incorporate the existing Air Plan Approval (#W081465-A1) startup / shutdown mass emission limits, in units of lb/hr over a 2-hour period, into the pending PSD Permit. Concentration limits, in units of pounds per million British thermal units (lb/MMBtu) over a 2-hour period, were also proposed per EPA's request. It is our understanding that EPA is agreeable to the startup / shutdown NO_x limits; however, has proposed to reduce the CO startup / shutdown limit from 1000 lb/hr to 400 lb/hr.

While a 400 lb/hr limit may correspond to the natural gas-fired data provided to EPA in the 6/29/07 letter, we feel it is not an appropriate limit for oil-fired startups and shutdowns. The existing CO startup / shutdown limit of 1000 lb/hr includes oil-fired operations. CO emissions on oil are expected to be significantly higher than on gas. This is demonstrated by comparing the oil-fired and gas-fired steady state limits, which were derived from manufacturer's data. The oil-fired steady state CO limit is over six times higher than the gas-fired limit (810 lb/hr versus 132 lb/hr).

The Facility only has CEMS data for one oil-fired startup on 11/16/2002 (Unit 1), which was not included in the aforementioned 6/29/07 letter. The 11/16/2002 startup abruptly ended when the facility tripped offline; however, the data provides some indication of typical startup/shutdown oil-fired emissions. The average lb/MMBtu emission rate during this startup / shutdown was 0.627 lb/MMBtu. Multiplying this rate by an average startup / shutdown heat input rate of 1236 MMBtu/hr (half of the units' maximum rated heat input capacity on oil) yields a mass emissions rate of 775 lb/hr.

The existing oil-fired steady state limit for CO is 810 lb/hr. The Facility proposes to retain this mass emissions limit as the startup / shutdown CO limit. Dividing this rate by an average startup / shutdown heat input rate of 1236 MMBtu/hr (half of the units' maximum rated heat input capacity on oil) yields 0.655 lb/MMBtu. Both values of 810 lb/hr and 0.655 lb/MMBtu are reasonably close to the estimated startup / shutdown emissions from the 11/16/2002 oil-fired startup.

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Consistent with the NO_x limits, a single set of CO limits is being proposed that is applicable to both gas and oil startup / shutdown operations. Therefore, in lieu of the existing 1000 lb/hr startup / shutdown CO limit, the Facility proposes the following:

- Startup
 - CO average of 0.655 lb/MMBtu over a 2-hour period
 - CO average of 810 lb/hr over a 2-hour period
- Shutdown
 - CO average of 0.655 lb/MMBtu over a 2-hour period
 - CO average of 810 lb/hr over a 2-hour period

If you have any questions, please feel free to contact Sean Gregory at 978-730-9977 or me at 508-966-4872 x225. Thank you for your attention to this matter.

Sincerely,



Peter G. Holzapfel
General Manager

cc: Tom Cusson, MassDEP CERO
Gary Roscoe, MassDEP CERO
James White, FPL Energy
Paul Aronian, FPL Energy
David Burrage, FPL Energy
Tim Oliver, FPL Energy
Sean Gregory, DSG Solutions, LLC
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