

US EPA ARCHIVE DOCUMENT



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Mr. Thomas Cusson, Section Chief
Bureau of Waste Prevention
MassDEP, Central Regional Office
627 Main Street
Worcester, MA 01608

Mr. Brendan McCahill
US EPA, Region 1
One Congress Street
Boston, MA 02114-2023

**Subject: Oil-Fired Opacity Evaluation
Bellingham Cogeneration Facility**

Dear Mr. Cusson and Mr. McCahill:

The Bellingham Cogeneration Facility ("the Facility") proposes to conduct an evaluation to minimize and quantify opacity emissions from its combustion turbines during oil-fired startups, shutdowns and fuel transfers. Opacity data received from the manufacturer (i.e. Siemens Westinghouse) suggests that the Facility's turbines will require an alternative opacity limit during such transient operating conditions. This concern with the current opacity limit of "10% at all times" was discussed during a meeting with the Massachusetts Department of Environmental Protection (MassDEP) Northeast Regional Office on May 24, 2007. The Facility is not seeking to change the 10% opacity limit as it applies to all gas-fired operations and oil-fired steady state operations.

The Facility does not have adequate historical oil-fired data to justify an alternative limit at this time and so it is unclear whether the turbines will be able to comply with the 10% opacity limit during transient oil-fired operating scenarios. Therefore, in order to conduct an evaluation without the risk of being in violation of the opacity limit, the Facility requests that the MassDEP and EPA Region 1 grant the Facility temporary relief from the 10% opacity limit as it applies to oil-fired startups, shutdowns and fuel transfers until such time as the MassDEP and EPA Region 1 have reviewed results from the:

- Modern Control Technology Evaluation;
- Standard Operating Procedures Evaluation; and

- **Transient Oil-Firing Opacity Test Program**

as described below. All oil-fired operating data collected during this proposed time period will be used in an effort to minimize and quantify opacity emissions. The Facility will initiate the evaluations/testing program once both agencies have approved the requested temporary opacity exemption. The following is a summary of the proposed opacity evaluation program.

Evaluate Modern Control Technologies

The Facility, in conjunction with a third party combustion expert and the manufacturer, will identify modern control technologies specific to combustion modifications that could be implemented to reduce opacity during oil-fired startups, shutdowns and fuel transfers. Any technically feasible control technologies will be evaluated for cost effectiveness. The Facility may determine based on its review that new control technology(s) will be installed to minimize opacity. The Facility will submit a summary of its findings to the MassDEP and EPA Region 1.

Evaluate Standard Operating Procedures

The Facility, third party combustion expert and manufacturer will also evaluate the turbines' current Standard Operating Procedures (SOPs) for oil-fired startups, shutdowns and fuel transfers to assess whether they could be optimized to reduce opacity. The SOPs include the turbines' automated control logic software in addition to procedures outside of this logic that are executed by the operators. The SOPs will be reviewed in advance of and during the next phase, executing the test program. The SOPs may be optimized to minimize opacity while at the same time operating within the guidelines set forth by the manufacturer to maintain equipment integrity and a safe, stable working environment.

Conduct Transient Oil-Firing Opacity Test Program

The purpose of the test program will be to quantify opacity during oil-fired startups, shutdowns and fuel transfers while also to make as-needed updates to the SOPs. For this evaluation, cold startups will be defined as when the turbine has been offline for more than 24 hours; warm startups will be defined as when the turbine has been offline for between eight and 24 hours and hot startups will be defined as when the turbine has been offline for less than eight hours. While cold startups are anticipated to be the worst-case scenario, the Facility will attempt to collect data during cold, warm and hot startups. Process parameters, Continuous Emission Monitoring System (CEMS) data and opacity analyzer data will be used to identify conditions that pose the greatest risk for opacity.

The Facility does not intend to start the turbines on oil for the sole purpose of collecting data, both for economic and environmental reasons. The Facility intends to notify the MassDEP by phone as soon as possible, but no less than four hours before any oil-fired cold or warm startup and no less than 30 minutes before any oil-fired hot startup. The Facility anticipates it will have collected a representative sample of oil-fired startup, shutdown and fuel transfer data by May 1, 2009. This will provide the Facility two winters to operate on oil and collect data. If the need for an alternative opacity limit is determined, a summary of the final transient oil-firing SOPs will be submitted to the MassDEP and EPA Region 1 by August 1, 2009 along with a proposed alternative opacity limit.

The following table summarizes the milestones of our proposal.

Milestone	Target Date
During the oil-fired data collection period the Facility will submit advanced notification to the MassDEP of oil-fired operations.	Upon approval of test program and opacity waiver.
The Facility submits findings of available control technologies.	Six months after MassDEP and EPA Region 1 approve test program and opacity waiver.
End of the oil-fired data collection period.	May 1, 2009
The Facility submits a report to the agencies summarizing the oil-fired SOP evaluation and proposed alternative opacity limit(s).	August 1, 2009

We look forward to your authorization to proceed. 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: ~~Donald Daily, EPA Region 1~~
James White, FPL Energy
Paul Aronian, FPL Energy
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