



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
REGION 1  
1 CONGRESS STREET, SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023

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**October 12, 2006**

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**Executive Office of Environmental Affairs  
100 Cambridge Street, 20th Floor  
Boston, MA 02202**

**Subject:** Proposal to Approve Revisions to Prevention of Significant Deterioration (PSD) Air Quality Construction Permit for Fore River Development, LLC (Fore River Station), 9 Bridge Street, N. Weymouth, MA 02191

**Dear Sir or Madam:**

Enclosed is the public notice for EPA's proposed action to approve revisions to Fore River Station's PSD permit. The public comment period begins October 12, 2006, and concludes November 10, 2006. A public hearing has been scheduled at the following time and location:

**Monday November 20, 2006 - Starting at 7:00 PM  
Meeting Room  
McCulloch Building  
182 Green Street  
North Weymouth, MA 02191**

As indicated in the public notice, electronic copies of the draft permit, fact sheet, and application can be obtained at no cost from EPA's web site at <http://www.epa.gov/NE/communities/nsemissions.html>. Hard copies can be inspected at the location noted in the public notice.

Written comments must be addressed to:

**Brendan McCahill, Environmental Engineer  
U.S. Environmental Protection Agency - New England  
1 Congress Street  
Suite 1100, Attn. CAP  
Boston, MA 02114-2023**

All relevant, timely comments and requests will be considered. To be considered, written comments must be postmarked no later than November 10, 2006.

If you have any questions regarding the public notice or draft permit, please contact  
Brendan McCahill at (617) 918-1652 or at [McCahill.Brendan@epa.gov](mailto:McCahill.Brendan@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel J. Brown", with a long horizontal flourish extending to the right.

Daniel J. Brown, Manager  
Air Permits, Toxics, and Indoor Programs Unit

Enclosure: Public Notice

**PUBLIC NOTICE**  
**PROPOSED REVISIONS TO FEDERAL PREVENTION OF SIGNIFICANT  
DETERIORATION PERMIT**

**FORE RIVER DEVELOPMENT, LLC (Permittee)**  
**FORE RIVER STATION (Facility)**  
**9 BRIDGE STREET**  
**N. WEYMOUTH, MA 02191**

**United States Environmental Protection Agency - Region 1**  
**1 Congress Street, Suite 1100**  
**Boston, MA 02114-2023**

The United States Environmental Protection Agency New England office (EPA Region I) proposes to revise a Prevention of Significant Deterioration (PSD) permit to Fore River Development, LLC (Fore River). Fore River is requesting several minor changes to its PSD permit including a revision that would allow the source to fire additional distillate fuel oil provided certain conditions are met. EPA proposes to approve those revisions pursuant to the Clean Air Act and Title 40 of the Code of Federal Regulations, section 52.21 (40 CFR § 52.21).

**Description of Fore River:**

Since 2003, Fore River has operated a dual fuel combined-cycle electric generating facility in Weymouth, Massachusetts. The station is configured as a main power block generating nominal 775 Megawatts (MW) of electric power. Although the station is capable of burning and permitted to burn both natural gas and distillate fuel oil, to date Fore River has operated only on natural gas.

Fore River Station (Units 11 and 12) includes two Mitsubishi Heavy Industries Model 501G combustion turbine generators (CTGs), two heat recovery steam generators (HRSG) and a steam turbine generator (STG). Each CTG has a nominal generating capacity of approximately 250 MW. The hot exhaust gases from each CTG pass through a HRSG, which uses the heat from these gases to produce steam. These exhaust gases also contain sufficient oxygen to allow the placement of supplemental firing burners in the ducts just upstream of the HRSG equipment. Each HRSG houses an oxidation catalyst for carbon monoxide (CO) control, followed by an ammonia (NH<sub>3</sub>) injection grid and selective catalytic reduction (SCR) catalyst for the control of nitrogen oxides (NO). The steam produced by each HRSG is fed into the single condensing STG. The STG has a nominal generating capacity of approximately 275 MW. An air-cooled condenser is used to condense the steam.

Other auxiliary equipment includes an aqueous ammonia storage tank, a continuous emissions monitoring system (CEMS), an auxiliary boiler and an emergency diesel generator. The auxiliary boiler is designated as Fore River Unit AB and provides steam

for plant startup when both CTGs are off line. The auxiliary boiler has a maximum energy input of 83 million British Thermal Units per hour (MMBtu/hr), Higher Heating Value (HHV). The 1,500 kilowatt emergency generator, (15.4 MMBtu/hr, HHV), is designated as Fore River Unit EDG1 and is required for facility backup power to support shut down of changes operations if no power is available from the grid.

**Description of changes:**

On March 31, 2006 filed an application with the Environmental Protection Agency (EPA) Region 1 office to modify its existing Prevention of Significant Deterioration (PSD) permit. The Massachusetts Department of Environmental Protection (DEP) originally issued the PSD permit and associated State Comprehensive Plan Approval (CPA) (collectively, the PSD/CPA permit) on May 5, 2000 to Fore River for the construction and operation of a 775 MW combined cycle electrical generation utility project.

Fore River's application included the following proposed revisions:

- An alternate fuel oil provisions based on use of lower sulfur transportation grade distillate fuel oil (e.g., ultra-low sulfur diesel). The existing PSD permit caps the amount of distillate fuel oil at 0.05% sulfur by weight that may be burned at the facility at approximately 29,000,00 gallons. The new provision would allow Fore River the opportunity to burn additional amounts of cleaner fuel oil above the existing fuel cap provided the sulfur content of the cleaner fuel oil is 0.003% sulfur by weight or less.
- Changes to auxiliary boiler fuel use that would allow Fore River to increase the auxiliary boiler's rolling 12-month fuel quantity to a total of 132,000 MMBtu burning gas and oil with the oil portion of the rolling 12-month fuel quantity limited to 24,000 MMBtu. The auxiliary boiler assists Fore River to start up the CTGs from a cold start. The current provision assumed the facility operating continuously. However, Fore River's actual operations show that the CTGs operate more intermittently than expected and require additional assistance from the auxiliary boiler to support operations.
- Revisions to the minimum normal operating load from 75% power down to 55% power. Fore River's actual operation on natural gas has shown that the facility can comply with the permitted emission limits at lower operating load levels.
- Incorporation of startup/shutdown emission limits. Fore River's existing PSD requires Fore River to conduct initial compliance tests for startup and shutdown operations to determine the maximum allowable emission rate limits for these operations conditions (Condition X.12. of the PSD/CPA). Fore River completed this testing and has submitted the associated CEMS data to EPA for review and approval.

**Control Requirements:**

PSD sources are required to implement BACT emission control strategies. Prior to issuance of the May 2000 PSD/CPA permit, the DEP conducted a BACT analysis for all

emissions at Fore River. These analyses are documented in the PSD/CPA permit. The revisions proposed today do not alter any of these BACT analyses. In fact, the proposed permit revisions, which will facilitate Fore River's ability to burn lower sulfur fuel oil, are expected to decrease the emission rates of SO<sub>2</sub> and PM-10. Accordingly, EPA concludes that the revisions do not affect the existing BACT findings or require additional BACT analysis.

### **Air Quality Impacts:**

The PSD regulations require an ambient air quality impact analysis to determine the impacts of a proposed permit action on ambient air quality. For all regulated pollutants emitted in significant amounts, the analysis must consider whether the proposed project will cause or contribute to a violation of (1) the NAAQS and (2) the applicable PSD increments. 40 CFR 52.21(k), (m).

Prior to issuance of the May 2000 PSD/CPA permit, the DEP conducted the required ambient air quality analysis based, conservatively, on the short-term emission limitations in the permit. These modeling analyses demonstrated that the emission limits satisfied PSD requirements for protection of ambient air quality and increment consumption.

The only proposed permit revision that altered the May 2000 PSD/CPA permit short-term emission limits is the inclusion of the start-up/shutdown emission limits and the longer cold startup period. On October 29, 2003, Epsilon Associates, Inc (Epsilon) submitted to the DEP a modeling report on behalf of Fore River for the new start-up/shutdown emission limits. Based on the results from EPA-approved SCREEN3 dispersion modeling, the report showed that the maximum concentrations for the start-up/shutdown emission limits are below EPA's significant impact limits for all pollutants and averaging periods. EPA reviewed Epsilon's modeling report and concurs with the modeling methodology and results. EPA concludes that the startup/shutdown emission limits will not cause or contribute to a violation of a NAAQS or applicable PSD increment. In addition, the increased cold startup period should not increase total actual emissions since a cold start typically means the facility has not operated and has not emitted pollutants for some extended period of time.

Since the remaining proposed permit revisions do not alter any emission limitations in the PSD permit, the prior air quality modeling analysis carried out for the permit remains applicable. Accordingly, EPA concludes that the remaining proposed permit revisions will not cause or contribute to a violation of a NAAQS or applicable PSD increment.

### **Public Comment Process:**

The public comment period for this proposed action will open on October 12, 2006. Any interested person may submit written comments on the proposed permit during the public comment period. EPA is also soliciting public comment on the methodology employed to determine ambient air quality impacts. EPA will consider all submitted comments in its final decision making process.

Persons who submit comments to EPA should state:

1. Their interest in the draft PSD permit;
2. The action they wish EPA to take, including specific references to the portions of the draft permit they believe should be changed, if any; and
3. The reasons supporting their position, stated with sufficient specificity as to allow EPA to evaluate the merits of the position.

All comments received during the comment period will be included in the administrative record and will be available to the public. The public comment period for the draft PSD permit ends on November 10, 2006. To be considered, written comments should be postmarked no later than November 10, 2006. EPA will, however, consider requests for extending the public comment period for good cause. Comments should be submitted to:

**Brendan McCahill, Environmental Engineer**  
**U.S. Environmental Protection Agency - New England**  
**1 Congress Street**  
**Suite 1100, Attn. CAP**  
**Boston, MA 02114-2023**

In addition, EPA will hold a public hearing on November 20, 2006 at 7.00 PM at the following location:

**Meeting Room**  
**McCulloch Building**  
**182 Green Street**  
**North Weymouth, MA 02191.**

Any person may submit oral or written comments at the public hearing.

Within 30 days after the permit has been issued, any person who filed comments on the draft permit or participated in a public hearing may submit a petition to the Environmental Appeals Board (EAB) to review any condition of the permit decision. The petition shall include a statement of the reasons supporting review, including a demonstration that any issues raised were raised during the public comment period including any public hearing. Where appropriate, the petition should include a showing that the condition in question is based on:

- (1) A finding of fact or conclusion of law which is clearly erroneous, or
- (2) An exercise of discretion or an important policy consideration which the EAB should, in its discretion, review.

All data submitted by the applicant is available as part of the administrative record. The administrative record, including copies of the draft PSD permit, PSD application, fact

sheet, and preliminary technical support document may be viewed between 9:00 a.m. and 4:00 p.m., Monday through Friday, at EPA New England, 1 Congress Street, Suite 1100, Boston, MA 02114-2023 or may be obtained on-line at EPA New England's website at <http://www.epa.gov/NE/communities/nsemissions.html>.

For more information, contact Brendan McCahill at (617) 918-1652 or by e-mail at [McCahill.Brendan@EPA.GOV](mailto:McCahill.Brendan@EPA.GOV).