Wheelabrator North Broward, Inc.
North Broward Waste-to-Energy Facility

Title V Air Operation Permit Renewal
Permit No. 0112120-013-AV

APPLICANT

The applicant for this project is Wheelabrator North Broward, Inc. The applicant's responsible official and mailing address are: Mr. Jim Epsilantis, Plant Manager, Wheelabrator North Broward, Inc., North Broward Waste-to-Energy Facility, 2600 Wiles Road, Pompano Beach, Florida, 33073.

FACILITY DESCRIPTION

The applicant operates the North Broward Waste-to-Energy Facility, which is located in Broward County at 2600 NW 48th Street, Pompano Beach, Florida.

This facility consists of three municipal solid waste combustors (Unit Nos. 001, 002 and 003) with auxiliary burners, lime storage and processing facilities, ash storage and processing facilities, a cooling tower and ancillary support equipment. The nominal (i.e., generator nameplate) electric generating capacity of the facility is 67.6 megawatts (MW), which is sold to the local utility company. Each of the combustor units at the facility includes an acid gas, air toxics, and particulate matter emissions control system consisting of a lime spray dryer and baghouse. Nitrogen oxides are controlled by a urea injection system that operates under the principle of selective non-catalytic reduction (SNCR). There is a metals recovery system which is a potential source of fugitive emissions.

Also included in this permit are miscellaneous insignificant emissions units and/or activities.

PROJECT DESCRIPTION

The purpose of this permitting project is for the revision of the existing Title V air operation permit for the above referenced facility to incorporate the provisions of air construction permit No. 0112120-012-AC/PSD-FL-112D, in particular the installation of an activated carbon injection system; changing the testing frequency of mercury from semi-annually to annually upon operation of the activated carbon injection system; and, the removal of beryllium as a regulated pollutant.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Revision and Application for Concurrent Air Construction/PSD Permit Revision was received on November 20, 2012.
Draft Air Construction Permit Revision clerked (issued) on Month day, 2012.
Draft/Proposed Title V Air Operation Permit Renewal posted onto web site on Month day, 2012.
Public Notice published on Month day, 2012.
Notification to U.S. EPA Region 4 of Publication of Public Notice on Month day, 2012.

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

Siting: Units 001, 002 and 003 were originally certified pursuant to the power plant siting provisions of Chapter 62-17, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility. The emission limits for regulated pollutants for the three municipal waste combustors and auxiliary burners are equal to the NSPS, 40 CFR Subpart Cb limits, with the exception of beryllium and fluoride. Because emissions limits for the following pollutants were taken directly from Subpart Cb, CAM is not applicable for the control devices for particulate matter, cadmium, lead, dioxins/furans, mercury, nitrogen oxides, sulfur dioxide, and hydrogen chloride.

The PSD permit also contains beryllium and fluoride emission limits. However, the applicant has provided justification which demonstrates that the uncontrolled potential to emit (PTE) the respective pollutants are significantly less than ten (10) tons per year. This finding is consistent with the Annual Operating Report data submitted for 2009 for the facility. Thus, CAM does not apply to the control devices for these pollutants. The PSD permit also contains a carbon monoxide emission limit. But, since there is no control device at the facility for this pollutant, CAM does not apply.

The Title V permit contains a particulate matter (PM) emission limit for the lime silo baghouse (Unit 004). The applicant has provided justification demonstrating that the uncontrolled potential to emit PM is less than 100 tons per year for this emissions unit. This finding is consistent with the Annual Operating Report data submitted for 2009 for the facility. Therefore, CAM does not apply.

PROJECT REVIEW

The purpose of this permitting project is for the revision of the existing Title V air operation permit for the above referenced facility to incorporate the provisions of air construction permit No. 0112120-012-AC/PSD-FL-112D, in particular the installation of an activated carbon injection system; changing the testing frequency of mercury from semi-annually to annually upon operation of the activated carbon injection system; and, the removal of beryllium as a regulated pollutant.

The following permit conditions are revised as indicated. ~~Strikethrough~~ is used to denote the deletion of text. Double-underlines are used to denote the addition of text. All changes are emphasized with yellow highlight. Changes to the permit made as part of this revision are shown below:

1. Section I - Facility Information, Subsection C – Applicable Regulations is changed, as follows:

State Rule Citations	
Rule 62-4, Florida Administrative Code (F.A.C.) (Permitting Requirements)	001, 002, 003, 004, 005
Rule 62-204, F.A.C. (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference)	
Rule 62-210, F.A.C. (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms)	
Rule 62-213, F.A.C. (Title V Air Operation Permits for Major Sources of	

Air Pollution)	
Rule 62-296, F.A.C. (Emission Limiting Standards)	
Rule 62-297, F.A.C. (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures)	
PSD-FL-112(~~B~~D)	
PA 86-22	

2. The third and fourth paragraphs of the emissions unit description for emissions Unit I.D. Nos. -001, -002 and -003 in Section III, Subsection A are changed, as follows:

   Units 001, 002 and 003 began commercial operation on June 13, June 23 and July 31, 1991, respectively. Particulate matter, some metals (i.e., lead (Pb)~~,~~ and mercury (Hg) ~~and beryllium (Be)~~), sulfur dioxide (SO_2) and acid gas emissions from Units 001, 002 and 003 are controlled by separate baghouses and spray dry absorbers, while carbon monoxide (CO) and nitrogen oxides (NO_X) emissions are controlled by good combustion controls. Mercury emissions are reduced by ~~pre-combustion waste separation~~ an activated carbon injection system. Odor is controlled by drawing combustion air from the refuse tipping area. Units 001, 002 and 003 share a common stack and turbine containing one flue for each unit. Stack height = 195 feet, exit diameter = 7.5 feet, volumetric flow rate = 51,281 dry standard cubic feet per minute (dscfm).

   All three units are retrofitted with selective non-catalytic reduction (SNCR) NO_X controls to comply with New Source Performance Standards (NSPS) – 40 Code of Federal Regulations (CFR) 60, Subpart Cb requirements. The limits imposed in Subpart Cb are more stringent than corresponding PSD-FL-112 limits for SO_2, PM, visible emissions (VE), NO_X and Pb emissions from each unit. Pollutants regulated by Subpart Cb that were not regulated in PSD-FL-112 for all three units are cadmium (Cd), hydrogen chloride (HCl), Hg, and dioxins/furans. Pollutants regulated in PSD-FL-112 that are not regulated by Subpart Cb are ~~Be and~~ fluorides (Fl).

3. Section III, Subsection A, Specific Condition **A.11.** is changed, as follows:

   A.11. Mercury. The emission limit for mercury contained in the gases discharged to the atmosphere shall not ~~exceed any of the following:~~
   a. ~~*NSPS.*~~ 50 micrograms per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.
   b. ~~*PSD.* 70 micrograms per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85-percent reduction by weight or volume), corrected to 7 percent oxygen, whichever is less stringent~~.

   [40 CFR 60.33b(a)(3) and PSD-FL-112(~~B~~D)]

4. Section III, Subsection A, Specific Condition **A.21.** is changed, as follows:

   A.21. ~~Beryllium. The emission limit for beryllium contained in the gases discharged to the atmosphere from each unit shall not exceed 0.001 mg/dscm, corrected to 7 % O_2. [PSD-FL-112(B)]~~ RESERVED

5. Section III, Subsection A, Specific Condition **A.30.** is changed, as follows:

A.30. Test Methods. Required tests shall be performed in accordance with the following reference methods:

Method	Description of Method and Comments
1, 2 and 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
3, 3A or 3B	Gas Analysis for the Determination of Dry Molecular Weight
5	Method for Determining Particulate Matter Emissions
6, 6A or 6C	Determination of Sulfur Dioxide Emissions from Stationary Sources
7, 7A, 7C, 7D or 7E	Determination of Nitrogen Oxides Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10, 10A, or 10B	Determination of Carbon Monoxide Emissions from Stationary Sources {Note: The method shall be based on a continuous sampling train.}
13A or 13B	Method for Determining Total Fluoride Emissions
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)
22	Determination of Fugitive Dust Emissions
23	Method for Determining Dioxins/Furans Emission Concentration
26 or 26A	Method for Determining Hydrogen Chloride Emissions
29	Method for Determining ~~Beryllium,~~ Cadmium, Lead and Mercury Emissions

The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [40 CFR 60.38b, 40 CFR 60.58b; 62-297.401, F.A.C.; and PSD-FL-112(~~B~~D)]

6. Section III, Subsection A, Specific Condition **A.33.** is changed, as follows:

A.33. Compliance Tests Prior To Renewal. Compliance tests shall be performed for ~~beryllium and~~ total fluorides once every 5 years. The tests shall occur prior to obtaining a renewed operating permit to demonstrate compliance with the emission limits in Specific Condition ~~**A.21. and**~~ **A.22.** [Rules 62-210.300(2)(a) and 62-297.310(7)(a), F.A.C.]

7. Section III, Subsection A, Specific Condition **A.35.** is changed, as follows:

A.35. Mercury Emissions Testing. Mercury emissions testing shall be conducted semiannually until such time as the activated carbon injection system becomes operational at which time mercury emissions testing shall be conducted annually. Mercury stack tests shall be performed downstream of control devices or upstream and downstream of the control

devices when determining compliance with the alternative removal requirement. [PSD-FL-112(~~B~~D)]

8. Section III, Subsection A, Specific Condition **A.37.** is changed, as follows:

~~**A.37.** Beryllium. The test method for beryllium emissions shall be EPA Method 29, adopted and incorporated by reference in Rule 62-204.800, F.A.C. One sample shall constitute one test run. [PSD-FL-112(B)]~~ RESERVED

CONCLUSION

This project revises Title V Air Operation Permit No. 0112120-009-AV, which was effective on February 21, 2011. This Title V air operation permit renewal is issued under the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210 and 62-213, F.A.C.