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PERMIT TO CONSTRUCT UNDER THE RULES FOR THE  
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. §7470 et. seq., and the regulations promulgated thereunder at 40 CFR §52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

South Broward County Resource Recovery Facility

is, as of the effective date of this permit (PSD-FL-105) authorized to construct a resource recovery facility consisting of three 863 ton per day (maximum capacity) mass burn, municipal solid waste incinerators and appurtenances at the following location:

On a 248 acre tract at the southeast intersection of State Road 84 and U.S. Route 441 in Broward County, Florida.

Upon completion of authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Part I.-Specific Conditions and Part II.-General Conditions.

This permit is hereby issued on MAY 17 1987 and shall become effective thirty (30) days after receipt hereof unless a petition for administrative review is filed with the Administrator during that time. If a petition is filed any applicable effective date shall be determined in accordance with 40 CFR §124.19(f)(1).

If construction does not commence within 18 months after the effective date of this permit, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this permit shall expire and authorization to construct shall become invalid.

This authorization to construct shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and local law.

May 15, 1987  
Date Signed

Jack E. Ravan  
Jack E. Ravan  
Regional Administrator

PART I. - Specific Conditions

1. Emission Limitations

a. Stack emissions from each unit shall not exceed the following:

- Particulate: 0.0150 gr/dscf dry volume corrected to 12% CO<sub>2</sub>.
- Sulfur Dioxide: (1) 0.140 lb/mmBtu heat input and 60 ppm (3-hr rolling average, dry volume, corrected to 12% CO<sub>2</sub>); or
- (2) 65% reduction of uncontrolled SO<sub>2</sub> emissions.\* In no case shall the SO<sub>2</sub> emissions exceed 0.310 lb/mmBtu heat input and 124 ppm (3-hr rolling average, dry volume, corrected to 12% CO<sub>2</sub>).

The 124 ppm limit above shall be modified to reflect a new emission limit (in ppm) from the control device at 65% control efficiency. Within 18 months of start-up of operation, the County shall submit compliance tests that will be used to determine the new SO<sub>2</sub> emission limit (in ppm). The limit will be determined by observed average emission rate ( $\bar{x}$ ) from the submitted compliance tests and will be statistically analyzed using the one tailed student T test ( $t_{.05} = (\bar{x} - u) \sqrt{n}/s$ ) at the 95% confidence level to derive a mean emission rate ( $u$ ), where  $s$  is the standard deviation of observed values  $n$ . The final operating SO<sub>2</sub> emission limit (in ppm) shall be this mean emission rate ( $u$ ). This value shall be restricted to no more than 124 ppm or less than 60 ppm (3-hr rolling average, dry volume, corrected to 12% CO<sub>2</sub>).

Nitrogen Oxides: .560 lb/mmBtu heat input and 350 ppm (3-hr rolling average, dry volume, corrected to 12% CO<sub>2</sub>).

Carbon Monoxide: .090 lb/mmBtu heat input; 400 ppm (1-hr rolling average, dry volume, corrected to 12% CO<sub>2</sub>); and 88 ppm (4-day rolling average, dry volume, corrected to 12% CO<sub>2</sub>).

Lead: .00150 lb/mmBtu

Fluorides: .0040 lb/mmBtu

Beryllium:  $9.30 \times 10^{-7}$  lb/mmBtu

Mercury:  $7.50 \times 10^{-4}$  lb/mmBtu

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\* Uncontrolled SO<sub>2</sub> emissions will be measured at the inlet to the acid gas control device.

Visible Emissions: Opacity of stack emissions shall not be greater than 15% opacity. Excess opacity resulting from startup or shutdown shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess opacity shall be minimized but in no case exceed two hours in any 24-hour period unless specifically authorized by EPA for longer duration.

Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up or shutdown shall be prohibited.

The units are subject to 40 CFR Part 60, Subpart E and Subpart Db, New Source Performance Standards (NSPS), except that where requirements in this permit are more restrictive, the requirements in this permit shall apply.

There shall be no greater than 10% opacity for emissions from the refuse bunker and the ash handling and loadout. The potential for dust generation by ash handling activities will be mitigated by quenching the ash prior to loading in ash transport trucks. Additionally, all portions of the proposed facility, including the ash handling facility, which have the potential for fugitive emissions will be enclosed. Also, those areas which have to be open for operational purposes, (e.g., tipping floor of the refuse bunker while trucks are entering and leaving) will be under negative air pressure.

- b. Only distillate fuel oil or natural gas shall be used in startup burners. The annual capacity factor for use of natural gas and oil, as determined by 40 CFR 60.43b(d), shall be less than 10%. If the annual capacity factor of natural gas is greater than 10%, then the facility shall be subject to §60.44b.
- c. None of the three individual municipal solid waste incinerators shall be charged in excess of 323.6 mmBtu/hr and 863 tons per day MSW (115% rated capacity) nor produce in excess of 192,000 lbs/hr of steam (3-hr rolling average).
- d. Compliance Tests
  - (1) a. Annual compliance tests for particulate matter, lead, SO<sub>2</sub>, nitrogen oxides, CO, fluorides, mercury, and beryllium shall be conducted in accordance with 40 CFR 60.8 (a), (b), (d), (e), and (f).
  - b. Compliance with the opacity standard for the incinerator stack emissions in condition 1.a. of this part shall be determined in accordance with 40 CFR 60.11 (b) and (e).

- c. Compliance with the emission limitation for 65% control of total sulfur dioxide emissions shall be determined by using the test methods in condition 1.d.(2) and sampling for SO<sub>2</sub> emissions before and after the acid gas control device. Continuous emissions data shall also be used to demonstrate compliance with the SO<sub>2</sub> concentration limits in condition 1.a. above.
- (2) The following test methods and procedures for 40 CFR Parts 60 and 61 shall be used for compliance testing:
- a. Method 1 for selection of sample site and sample traverses.
  - b. Method 2 for determining stack gas flow rate when converting concentrations to or from mass emission limits.
  - c. Method 3 for gas analysis for calculation of percent O<sub>2</sub> and CO<sub>2</sub>.
  - d. Method 4 for determining stack gas moisture content to convert the flow rate from actual standard cubic feet to dry standard cubic feet for use in converting concentrations in dry gases to or from mass emission limits.
  - e. Method 5 for concentration of particulate matter and associated moisture content. One sample shall constitute one test run.
  - f. Method 9 for visible determination of the opacity of emissions.
  - g. Method 6 for concentration of SO<sub>2</sub>. Two samples, taken at approximately 30 minute intervals, shall constitute one test run.
  - h. Method 7 for concentration of nitrogen oxides. Four samples, taken at approximately 15 minute intervals, shall constitute one test run.
  - i. Method 10 for determination of CO concentrations. One sample constitutes one test run.
  - j. Method 12 for determination of lead concentration and associated moisture content. One sample constitutes one test run.
  - k. Method 13B for determination of fluoride concentrations and associated moisture content. One sample shall constitute one test run.
  - l. Method 101A for determination of mercury emission rate and associated moisture content. One sample shall constitute one test run.
  - m. Method 104 for determination of beryllium emission rate and associated moisture content. One sample shall constitute one test run.

2. Compliance with emission limitations specified in lb/mmBtu in conditions 1.a. and 1.c. of this part shall be determined by calculating an "F" factor in dscf/mmBtu corrected to 12% CO<sub>2</sub> using the boilers' efficiency (as determined by the calorimeter method contained in Attachment A during acceptance testing) and the measured steam production. Data obtained from test methods required in condition 1.d. of this part for compliance testing shall be used for the calculation of the "F" factor required by this condition.
3. Devices shall be installed to continuously monitor and record steam production. These devices shall be adequately maintained and operating during all periods of steam production.
4. The height of each boiler exhaust stack shall not be less than 59.4 meters above ground level at the base of the stack.
5. Each incinerator boiler shall have a metal name plate affixed in a conspicuous place on the shell showing manufacturer, model number, type waste, rated capacity, and certification number.
6. The permittee must submit to EPA and DER, within fifteen (15) days after it becomes available to the County, copies of technical data pertaining to the incinerator boiler design, acid gas control equipment design, particulate control equipment design, and the fuel mix that will be used to evaluate compliance of the facility with the preceding emission limitations.

7. Fuel

The Resource Recovery Facility shall utilize refuse such as garbage and trash (as defined in Chapter 17-7, FAC) but not grease, scum, grit screenings or sewage sludge.

8. Air Pollution Control Equipment

The permittee shall install, continuously operate, and maintain the following air pollution controls to minimize emissions. Controls listed shall be fully operational upon startup of the proposed equipment.

- a. Each boiler shall be equipped with a particulate emission control device for the control of particulates.
- b. Each boiler shall be equipped with an acid gas control device designed to remove at least 90% of the acid gases.

9. Continuous Emission Monitoring

- a. Prior to the date of startup and thereafter, the County shall install, maintain, and operate the following continuous monitoring systems for each boiler exhaust stack:

- (1) Continuous emission monitoring (CEM) systems to measure stack gas opacity and SO<sub>2</sub>, NO<sub>x</sub>, CO, CO<sub>2</sub>, and O<sub>2</sub> concentrations for each unit.

Continuous monitors for SO<sub>2</sub> shall be installed after the acid gas control device for each unit. The systems shall meet the EPA monitoring performance specifications of 40 CFR 60.13 and 40 CFR 60, Appendix B, during initial compliance testing and annually thereafter. Additionally, CEM's shall meet the quality control requirements of 40 CFR 60, Appendix F (Attachment B).

- (2) CEM data recorded during periods of startup, shutdown, and malfunction shall be reported but excluded from compliance averaging periods for CO, NO<sub>x</sub>, and opacity.
- (3) a. CEM data recorded during periods of startup and shutdown shall be excluded from compliance averaging periods for SO<sub>2</sub>.  
b. CEM data recorded during periods of acid gas control device malfunctions shall be excluded from compliance averaging periods for SO<sub>2</sub> provided that the preceeding thirty day period which ends on the last day of the malfunction period meets an average SO<sub>2</sub> emission limit equal to the SO<sub>2</sub> limit specified in condition 1.a. CEM data must be available for 90% of the operating time for this exemption to apply. A malfunction as used in this permit means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.
- b. An excess emissions report shall be submitted to EPA for every calendar quarter. The report shall include the following:
  - (1) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each period of excess emissions (60.7(c)(1)).
  - (2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the furnace/boiler system. The nature and cause of any malfunction (if known) and the corrective action taken or preventive measures adopted shall also be reported (60.7(c)(2)).
  - (3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks, and the nature of the system repairs or adjustments (60.7(c)(3)).
  - (4) When no excess emissions have occurred or the continuous monitoring system has not been inoperative, repaired, or adjusted, such information shall be stated in the report (60.7(c)(4)).

- (5) County shall maintain a file of all measurements, including continuous monitoring systems performance evaluations; all continuous monitoring systems or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this permit recorded in a permanent form suitable for inspection (60.7(d)).
  - (6) Excess emissions shall be defined as any applicable period during which the average emissions of CO, NO<sub>x</sub>, and/or SO<sub>2</sub>, as measured by the continuous monitoring system, exceeds the CO, NO<sub>x</sub>, and/or SO<sub>2</sub> maximum emission limit (in ppm) set for each pollutant in condition 1.a. above.
- c. Excess emissions indicated by the CEM systems shall be considered violations of the applicable opacity limit or operating emission limits (in ppm) for the purposes of this permit provided the data represents accurate emission levels and the CEM's do not exceed the calibration drift (as specified in the respective performance specification tests) on the day when initial and subsequent compliance is determined. The burden of proof to demonstrate that the data does not reflect accurate emission readings shall be the responsibility of the permittee.

#### 10. Reporting

- a. A copy of the results of the compliance tests shall be submitted within forty-five days of testing to the DER Bureau of Air Quality Management, the DER Southeast Florida District Office, Broward County, and EPA Region IV.
- b. Continuous emissions monitoring data shall be reported to the DER Southeast District Office and EPA Region IV on a quarterly basis in accordance with Section 17-2.710, FAC, and 40 CFR 60.7.
- c. Addresses for submitting reports are:

EPA Region IV

Chief, Air Compliance Branch  
U.S. Environmental Protection Agency  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

Florida Department of Environmental Regulation (DER)

Deputy Chief, Compliance and Ambient Monitoring  
Bureau of Air Quality Management  
Florida Department of Environmental  
Regulation (DER)  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32301

Southeast District Office of DER

District Manager  
Department of Environmental Regulation  
3301 Gun Club Road  
P.O. Box 3858  
West Palm Beach, Florida 33402

Broward County

Broward County Environmental Quality  
Control Board  
500 Southwest 14th Court  
Ft. Lauderdale, Florida 33315