

TECHNICAL EVALUATION  
AND  
PRELIMINARY DETERMINATION

Miami-Dade County Department of Solid Waste Management

Miami-Dade County Resource Recovery Facility  
Miami-Dade County

Increase in Carbon Monoxide Emission Limit

DEP File No. 0250348-008-AC

Department of Environmental Protection  
Division of Air Resource Management  
Bureau of Air Regulation  
Permitting South Section

August 17, 2007

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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## 1.0. GENERAL INFORMATION

### 1.1. APPLICANT NAME AND ADDRESS

Miami-Dade County Department of Solid Waste Management  
2525 Northwest 62<sup>nd</sup> Street, 5<sup>th</sup> Floor  
Miami, Florida 33147

Responsible Official: Mr. Tom Morello, Facility Manager, Veolia Environmental Services

### 1.2. REVIEW AND PROCESS SCHEDULE

March 30, 2005	Permit application received
October 19, 2006	Application deemed complete (Awaited adoption of rule by Department)
August 17, 2007	Distributed Intent to Issue package

## 2.0. FACILITY INFORMATION

The facility is located at 6990 Northwest 97<sup>th</sup> Avenue, Miami, Florida 33178-6430, better described as approximately 0.5 mile north of Northwest 58<sup>th</sup> Street immediately west of Northwest 97<sup>th</sup> Avenue, Miami, Miami-Dade County. UTM Coordinates: Zone 17, 564.30 km East and 2857.40 km North; Latitude: 25° 50' 06" North and Longitude: 80° 21' 30" West.

SIC codes are:

Industry Group No.	49	Electric, Gas and Sanitary Services
Industry No.	4953	Refuse Systems

The Miami-Dade County Resource Recovery Facility (the facility) consists of four identical Zurn Refuse Derived Fuel (RDF) Spreader Stoker Combustion Units 1 thru 4, with auxiliary burners, and a cooling tower. The existing four RDF boilers were rebuilt in 1987-1989. The facility's primary activities are: garbage and trash receiving and processing (including a metals recovery system); fuel handling and storage; biomass production and export; RDF, natural gas, and propane combustion; ash storage and processing, including a monofill ash landfill; and maintaining ancillary support equipment.

During the 1990s, the facility upgraded air pollution control systems. The modifications included changes to the overfire air systems, fuel feed systems, and associated fuel distribution systems. The electrostatic precipitators were replaced with fabric filters, spray dryer absorbers and activated carbon injection units. Selective non-catalytic reduction systems were also installed.

The facility is designed to process 3,000 tons/day, 18,000 tons/wk, and 936,000 tons/yr of municipal solid waste (MSW), i.e., trash and garbage, into RDF and saleable extractables (e.g., metals). The biomass fuel preparation system processes up to 400,000 tons per year of the bulky solid waste into biomass, which is either transported off-site for use in biomass-fired cogeneration units, or combusted on-site.

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

## 3.0. PROJECT DESCRIPTION

The applicant proposes to increase the applicable short term carbon monoxide (CO) limit from 200 to 250 parts per million by volume, dry basis, and corrected to 7 percent oxygen (ppmvd).

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### 4.0. PROJECT EMISSIONS & RULE APPLICABILITY

The original value of 200 ppmvd was set in an enforceable permit in 1994 pursuant to a New Source Performance Standard that was subsequently replaced withdrawn. The subsequent rule was published in 1995 at 40 Code of Federal Regulations Part 60, Subpart Cb - Emissions Guidelines and Compliance Plans for Large Municipal Waste Combustors That are Constructed Before September 20, 1994. It carried over the same 200 ppmvd requirement as the predecessor rule that was known as "Subpart Ca"...

On May 10, 2006 the Environmental Protection Agency (EPA) modified the CO emissions limits in Subpart Cb to 250 ppmvd to specifically address the type of RDF units at the facility. The changes apply to:

*Combustion units that were converted from a wet refuse-derived fuel process to a dry refuse-derived fuel process, and because of constraints in the design of the system, include a low furnace height (less than 60 feet between the grate and the roof) and a high waste capacity-to-undergrate air zone ratio (greater than 300 tons of waste per day (tpd) fuel per each undergrate air zone).*

This change was adopted by reference by the Department of Environmental Protection (Department) on May 31, 2007 into its rules at Section 62-204.800, Florida Administrative Code (F.A.C.).

The applicant estimated emissions from the facility in recent years and selected the years 2003-2004 for calculations of baseline actual emission of CO. The applicant also estimated emissions into future years for comparison with the baseline actual emissions. The basis for the table was the annual operating report (AOR) that in turn is based on continuous emissions monitoring system (CEMS) CO emissions records maintained by the applicant. Total CO emissions are expected to increase by 41 TPY as a result of the change in the limit.

Baseline Actual CO Emissions, in TPY (adjusted for PSD definitions)					
	Unit 1	Unit 2	Unit 3	Unit 4	Total
2003	129.2	127.2	125.0	141.0	522.4
2004	115.7	98.2	98.6	137.5	450.0
Average	122.5	112.7	111.8	139.3	486.2
Future Actual CO Emissions, in TPY (adjusted for PSD definitions)					
Average	135.7	125.8	116.6	149.5	527.2
Net Emission Increase, in TPY (future actual CO emissions – past baseline actual emissions)					
Average	13.2	13.1	4.8	10.2	<b>41.0</b>

This change constitutes a minor modification to the facility because the CO emission increase is less than 100 TPY. Therefore, the change is not subject to review under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) and a best available control technology (BACT) determination is not required.

The previous limit of 200 ppmvd was contained in a modification of an earlier PSD permit that did not address CO emissions. The selected value was based on the since withdrawn Subpart Ca and the since revised Subpart Cb. The revised value of 250 ppmvd based on the most recent version of Subpart Cb is not a BACT determination. For reference, the facility will continue to comply with an annual limit of 267.7 TPY of CO per unit that is a requirement of previous construction permits and the facility Title V Air Operation Permit.

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### **5.0. CONCLUSION**

Based on the foregoing technical evaluation of the application, and additional information submitted by the applicant and other available information, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations. The Department will issue a draft air construction permit to the applicant that provides for the above change.