Title V Air Operation Permit Renewal
FINAL Permit Project No.: 0250314-017-AV

APPLICANT

The applicant for this project is the Miami Dade Water and Sewer Department, Alexander Orr, Jr. Water Treatment Plant. The applicant's name and address are: Miami Dade Water and Sewer Department; and Rafael A. Terrero, P.E., BCEE, M. ASCE, Miami Dade Water and Sewer Department, PO Box 330316, Miami, Miami-Dade County, Florida 33233-0316.

The Alexander Orr, Jr. Water Treatment Plant is located at 6800 SW 87th Avenue, Miami, Miami-Dade County; UTM Coordinates: Zone 17, 565.92 km East, 2843.33 km North; Latitude: 25° 42' 28" North, Longitude: 80° 20' 11" West.

FACILITY DESCRIPTION

Water Treatment Plant

This existing facility consists of a publicly-owned regional water treatment plant that processes up to 241.7 million gallons per day of raw water for public water supply using a lime softening process, which includes softening, recarbonation, disinfection, and filtration. Electrical power necessary for continuous plant operations is provided by a bank of diesel-driven generators. Engine-driven high service pumps convey water to the consumer via the County wide distribution system and provide redundancy and standby capacity to electric motor-driven units.

A rotary kiln recovers the water softening process solids for conversion back to quick lime for process reuse on site. An emergency generator at the kiln and an emergency kiln rotation engine provide redundancy to standby generators for critical functions.

Rotary Kiln

Calcium carbonate from the plant's water treatment process is fed to the lime kiln where it is converted into lime products and carbon dioxide (CO2). The CO2 is recycled into the recarbonation basins at the water treatment plant where it is used to stabilize the water chemically, after the softening process. A venture scrubber at the feed end of the kiln is used to recover lime solids that would otherwise be lost to the atmosphere and also serves to reduce particulate matter emissions from the exhaust. Lime solids are discharged into an integral tube cooler at the firing end of the kiln.

Electrical Power

Standby electrical power for the continuous plant operation is provided from a bank of diesel-driven generators, all engines are General Motors Electro-Motive Diesel (EMD) model 20-645F4B, each with a nominal base load rating of 2.865 megawatts (MW) driven by a 4,000 bhp prime mover. Each prime mover is a 20 cylinder 2-cycle turbocharged diesel fueled engine. The engines burn transportation grade diesel fuel oil with a sulfur content of 0.05 percent or less, by weight Fuel oil consumption for these emissions units is limited to 1,415,000 gallons per year.

These emissions units are subject to regulation under Rule 62-212.400, F.A.C. Prevention of Significant Deterioration (PSD) and are subject to the requirements of the state rules as indicated in the Tile V operation permit renewal.

Unregulated Emissions Units

The following unregulated emissions units are also included in this permit:

005	Engine driving pump rated at 1,500 hp fired with diesel fuel*
006	Engine driving pump rated at 2,113 hp fired with diesel fuel or natural gas *
018	Natural Gas Engine Driven Pump, Caterpillar Model G3512 LE-130. Pump # 3
019	Natural Gas Engine Driven Pump, Caterpillar Model G3512 LE-130 Pump # 4
021	Backup lime kiln generator rated at 250 kW
022	Railcar lime Unloading Rack

* The unregulated emissions units 005 and 006 at the time of the submittal for the renewal of the TV air operation permit renewal application received June 2, 2010, were shut down pending of replacement, and subject to a future construction permit application according to the Rules.

Also included in this permit are insignificant emissions units and/or activities (Appendix I-1)

PROJECT DESCRIPTION

The purpose of this permitting project is to renew the existing Title V air operation permit 0250314-015-AV for the above referenced facility.

PROCESSING SHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Renewal received June 2, 2010
Draft permit issued on September 22, 2010
Public Notice Published on September 28, 2010
Proposed permit issued on November 1, 2010
Final Permit effective on December 26, 2010

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is not identified as a major source of hazardous air pollutants (HAP).

Title IV: The facility does not operate units subject to the acid rain provisions of the Clean Air Act.

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

PSD: The facility is not within the industry included in the list of the 28 Major Facility Categories per Table 212-400-1, F.A.C. Because emissions are greater than 250 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

NSPS: The facility does not operate units subject the New Source Performance Standards (NSPS) of Code of Federal Regulations (CFR 60).

NESHAP: The facility does not operate units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

CAM: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility.

PROJECT REVIEW

Some items were removed from the Insignificant Emissions Unit (Appendix I-1), and two new items were included.
Appendix TV5 was replacement for the new Appendix TV6.

CONCLUSION

This project renews the Title V air operation permit No. 0250314-015-AV which was effective on September 13, 2005. This Title V air operation permit renewal is issued under the provisions of Chapter 403, Florida Statues (FS) and Chapter 62-4, 62-210, 62-213 F.A.C.