Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

March 19, 2010

Mr. Randall R. LaBauve, Vice President
Environmental Services
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408

Re: Draft Air Permit No. PSD-FL-409
Project No. 0250003-013-AC
Turkey Point Power Plant
Cooling Tower Project for Proposed Nuclear Units 6 and 7

Dear Mr. LaBauve:

On June 30, 2009, the Florida Power & Light Company submitted an application for an air construction permit subject to the preconstruction review requirements for the Prevention of Significant Deterioration (PSD) of Air Quality. The project requests authorization to construct six 12-cell circulating water cooling towers, two 2-cell service water cooling towers, diesel tanks and miscellaneous diesel engines to support the proposed new nuclear Units 6 and 7, which will be installed at the existing Turkey Point Power Plant located in Miami-Dade County at 9700 Southwest 344th Street in Homestead, Florida.

The permit package includes the following documents: Written Notice of Intent to Issue Air Permit; Public Notice of Intent to Issue Air Permit; Technical Evaluation and Preliminary Determination; and Draft Permit with Appendices. The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project. If you have any questions, please contact the project engineer, Jeff Koerner, at 850/921-9536.

Sincerely,

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

TLV/jfk/ttm

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an
Application for Air Permit by:

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408

Authorized Representative:
Randall R. LaBauve, Vice President
Environmental Services

Air Permit No. PSD-FL-409
Project No. 0250003-013-AC
Turkey Point Power Plant
Facility ID No. 0250003
Cooling Tower Project for
Proposed Nuclear Units 6 and 7
Miami-Dade County, Florida

Facility Location: The applicant, Florida Power & Light Company, operates the existing Turkey Point Power Plant, which is located in Miami-Dade County at 9700 Southwest 344th Street in Homestead, Florida.

Project: To support the proposed new nuclear Units 6 and 7, the applicant plans to construct and operate six 12-cell circulating water cooling towers, two small 2-cell service water cooling towers, four nominal 4000 kilowatt (kW) standby diesel generators, four nominal 35 kW ancillary diesel generators, two nominal 330 horsepower diesel fire pumps, diesel tanks and miscellaneous general purpose diesel engines to power various support equipment. The project is subject to the preconstruction review requirements of Rules 62-212.300, Florida Administrative Code (F.A.C.) for General Preconstruction Review and 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality for particulate matter emissions. Details of the project are provided in the application and the enclosed Technical Evaluation and Preliminary Determination.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210 and 62-212, F.A.C. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at the address or phone number listed above. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of

publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit and requests for a public meeting for a period of 30 days from the date of publication of the Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 30-day period. In addition, if a public meeting is requested within the 30-day comment period and conducted by the Permitting Authority, any oral and written comments received during the public meeting will also be considered by the Permitting Authority. If timely received comments result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within fourteen 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, the Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination and the Draft Permit with Appendices) was sent by electronic mail with received receipt requested before the close of business on March 19, 2010 to the persons listed below.

Mr. Randall R. LaBauve, FPL (randall_r_labauve@fpl.com)
Mr. Matthew J. Raffenberg, FPL (matthew.raffenberg@fpl.com)
Mr. Kennard F. Kosky, Golder Associates Inc. (kkosky@golder.com)
Mr. Lennon Anderson, SED Office (lennon.anderson@dep.state.fl.us)
Ms. Mallika Muthias, Miami-Dade DERM (muthim@miamidade.gov)
Mr. Mike Halpin, DEP Siting Office (mike.halpin@dep.state.fl.us)
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
Ms. Heather Abrams, EPA Region 4 (abrams.heather@epa.gov)
Ms. Ana M. Oquendo, EPA Region 4 (oquendo.ana@epa.gov)
Mr. Dee Morse, NPS (dee_morse@nps.gov)
Ms. Victoria Gibson, DEP BAR Reading File (victoria.gibson@dep.state.fl.us)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

(Clerk) 3/19/10 (Date)

TECHNICAL EVALUATION

&

PRELIMINARY DETERMINATION

APPLICANT

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408

Turkey Point Power Plant
ARMS Facility ID No. 0250003

PROJECT

Draft Permit No. PSD-FL-409
Project No. 0250003-013-AC

Cooling Towers for Proposed Nuclear Units 6 and 7

COUNTY

Miami-Dade County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
New Source Review Section
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

March 18, 2010

1. GENERAL INFORMATION

State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following Chapters of the F.A.C.: 62-4 (Permitting Requirements); 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference); 62-210 (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms); 62-212 (Preconstruction Review, PSD Review and BACT, and Non-attainment Area Review and LAER); 62-213 (Title V Air Operation Permits for Major Sources of Air Pollution); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures). PSD applicability and the preconstruction review requirements of Rule 62-212.400, F.A.C. are discussed in Section 2 of this report. Additional details of the other state regulations are provided in Section 3 of this report.

Federal Regulations

The Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 identifies New Source Performance Standards (NSPS) for a variety of industrial activities. Part 61 specifies National Emissions Standards for Hazardous Air Pollutant (NESHAP) based on specific pollutants. Part 63 specifies NESHAP provisions based on the Maximum Achievable Control Technology (MACT) for given source categories. Federal regulations are adopted in Rule 62-204.800, F.A.C. Additional details of the applicable federal regulations are provided in Section 3 of this report.

Facility Description and Location

The Florida Power & Light Company (FPL) operates the existing Turkey Point Power Plant, which consists of two separate co-located power plants: the Fossil Plant and the Nuclear Plant. The facility is located at 9700 Southwest 344 Street, in Homestead, Miami-Dade County. The UTM coordinates are Zone 17, 566.59 km East and 2,813.21 km North. The facility is considered an electric service with a Standard Industrial Classification Code No. 4911. The two combined plants are considered one facility for purposes of determining applicability for the Prevention of Significant Deterioration (PSD) of Air Quality and the Maximum Achievable Control Technology (MACT) for hazardous air pollutants (HAP). However, due to the strict requirements of the Nuclear Regulatory Commission (NRC), the facility has chosen to operate these two plants under separate business entities and hold separate Title V air operation permits.

The existing Nuclear Plant consists of two nuclear generating units, Units 3 and 4, with a combined nominal capacity of 1400 megawatts (MW). The two nuclear generating units (no emissions unit ID Nos.) are regulated by the NRC and are not sources of air pollution. There are four emergency diesel generators (EU-005) that supply backup power to the nuclear power plant auxiliary equipment. There are also five other diesel emergency generators (EU-006) that supply backup power to the plant security system, wastewater treatment, water supply and meteorological assessment. All units fire ultra-low sulfur diesel fuel.

Primary Regulatory Categories

- The existing facility is a major source of HAP.
- Units at the existing Fossil Plant are subject to the acid rain provisions of the Clean Air Act.
- The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The existing facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. The project is subject to PSD preconstruction review for total particulate matter (PM) emissions and particulate matter with a mean particle diameter of 10 microns or less (PM_{10}). The project is not subject to PSD preconstruction review for particulate matter with

a mean particle diameter of 2.5 microns or less ($PM_{2.5}$)

- Units at the existing Fossil Plant are subject to applicable New Source Performance Standards (NSPS) in Title 40, Part 60 of the Code of Federal Regulations.

Project Description

On June 30, 2009, the Department received an application from FPL to construct six 12-cell circulating water cooling towers to support the proposed addition of nuclear Units 6 and 7 rated at nominal net capacity of 1100 MW (net) per unit. Large amounts of cooling water will be circulated to cool components of the proposed new nuclear units. For each nuclear unit, the cooling system will consist of three cooling towers with 12 cells per cooling tower. The cooling towers will operate continuously and obtain cooling water from the following sources: reclaimed water from the Miami-Dade South District Wastewater Treatment Plant, which will be further treated by the water treatment facility at the Turkey Point Power Plant; saltwater from radial collector wells, which will recharge from below Biscayne Bay; or a combination of reclaimed water and saltwater. The circulating water flow rate for each nuclear unit (three cooling towers) is 210,367 gallons per minute (gpm) per tower with an estimated design air flow rate of 1,764,500 actual cubic feet per minute (acfm) per cell.

The large cooling towers will transfer heat from the warmed cooling water by direct contact to air exhausted from the towers by large fans. Drift is created when small droplets of cooling water become entrained in the air stream and are carried out of the tower. Salt and solids in the water droplets are emitted as particulate matter (PM and PM_{10}) that escapes as drift from the tower. Drift eliminators are proposed to minimize PM and PM_{10} emissions caused by the cooling tower drift to no more than 0.0005% of the circulating water flow. The project also includes the following new equipment.

- The project will add two 2-cell service water system cooling towers that will operate continuously. The cooling water flow rate for each unit is 10,500 gpm during normal operation. Under startup and cool down, the operation rate may be as high as 21,000 gpm. The design air flow rate is estimated at 1,358,000 acfm per cell. The service water cooling towers will use service (potable) water from Miami-Dade County.
- The project will add four nominal 4000 kilowatt (kW) standby diesel generators, four nominal 35 kW ancillary diesel generators, two nominal 330 horsepower (hp) diesel fire pumps and other miscellaneous general purpose diesel engines; and
- Twelve diesel fuel storage tanks.

All new engines will fire ultra-low sulfur diesel fuel. During construction, the project will also use a temporary concrete batch plant and two temporary construction boilers. The preliminary construction schedule is for Unit 6 to be in commercial operation in 2018 and Unit 7 in 2020.

The following new emissions units will be added by this project.

EU ID	Emission Unit Description
015	Circulating water cooling towers (array of 3 x 12-cells per unit) for Units 6 and 7
016	Service water cooling towers (2-cells per unit) for Units 6 and 7
017	Standby and ancillary diesel generators and fire pump engines
018	Miscellaneous general purpose diesel engines powering support equipment (< 600 hp)
019	Miscellaneous diesel tanks
020	Two temporary construction boilers rated at 110 MMBtu/hour per boiler
021	Temporary concrete batch plant

The existing facility also operates other miscellaneous unregulated and insignificant emissions units and activities.

Processing Schedule

06/30/2009 Department received the application for a PSD air pollution construction permit.
07/21/2009 Department requested additional information.
10/14/2009 Department received additional information.
11/13/2009 Department requested additional information.
12/22/2009 Department received additional information; application complete.

2. PSD APPLICABILITY REVIEW

General PSD Applicability

The Department regulates major stationary sources in accordance with Florida's PSD program pursuant to Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or areas designated as "unclassifiable" for these regulated pollutants. As defined in Rule 62-210.200, F.A.C., a facility is considered a "major stationary source" if it emits or has the potential to emit 5 tons per year of lead, 250 tons per year or more of any PSD pollutant, or 100 tons per year or more of any PSD pollutant and the facility belongs to one of the 28 listed PSD major facility categories. PSD pollutants include: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); Fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds (RSC), including H_2S; and mercury (Hg).

For major stationary sources, PSD applicability is based on emissions thresholds known as the "significant emission rates" as defined in Rule 62-210.200, F.A.C. Emissions of PSD pollutants from the project exceeding these rates are considered "significant" and the Best Available Control Technology (BACT) must be employed to minimize emissions of each PSD pollutant. Although a facility may be "major" for only one PSD pollutant, a project must include BACT controls for any PSD pollutant that exceeds the corresponding significant emission rate. Rule 62-210.200, F.A.C. defines "BACT" as:

An emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant, taking into account:

1. *Energy, environmental and economic impacts, and other costs;*
2. *All scientific, engineering, and technical material and other information available to the Department; and*
3. *The emission limiting standards or BACT determinations of Florida and any other state.*

If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of an emissions unit or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation.

Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60, 61, and 63.

In addition, applicants must provide an Air Quality Analysis that evaluates the predicted air quality impacts resulting from the project for each PSD pollutant.

PSD Applicability for the Project

The project is located in Miami-Dade County, which is in an area that is currently in attainment with the state and federal AAQS or otherwise designated as unclassifiable. According to Table 2-4 of the application, the applicant provides the following PSD applicability analysis summarizing the proposed project emissions.

Table A. Summary of the Applicant's PSD Applicability

Pollutant	Annual Emissions, Tons/Year		Subject to PSD Review?
	Potential from Project	PSD Significant Emissions Rate	
CO	25.20	100	NO
NO_X	35.53	40	NO
PM	947.41	25	YES
PM_{10}	24.20	15	YES
$PM_{2.5}$	1.27	10*	NO
SO_2	0.02	40	NO
VOC	4.03	40	NO

* This is the federal PSD significant emissions rate for $PM_{2.5}$, which Florida has not yet adopted.

This emissions summary includes only permanent activities that will remain once the addition of nuclear Units 6 and 7 are complete. It does not include emissions from temporary units needed to construct the project. As shown in the table, the project is subject to PSD preconstruction review for PM and PM_{10} emissions in accordance with the provisions of Rule 62-212.400, F.A.C. Therefore, BACT determinations are required for PM and PM_{10} emissions. An air quality modeling analysis is required only for PM_{10} emissions.

3. PROJECT REVIEW

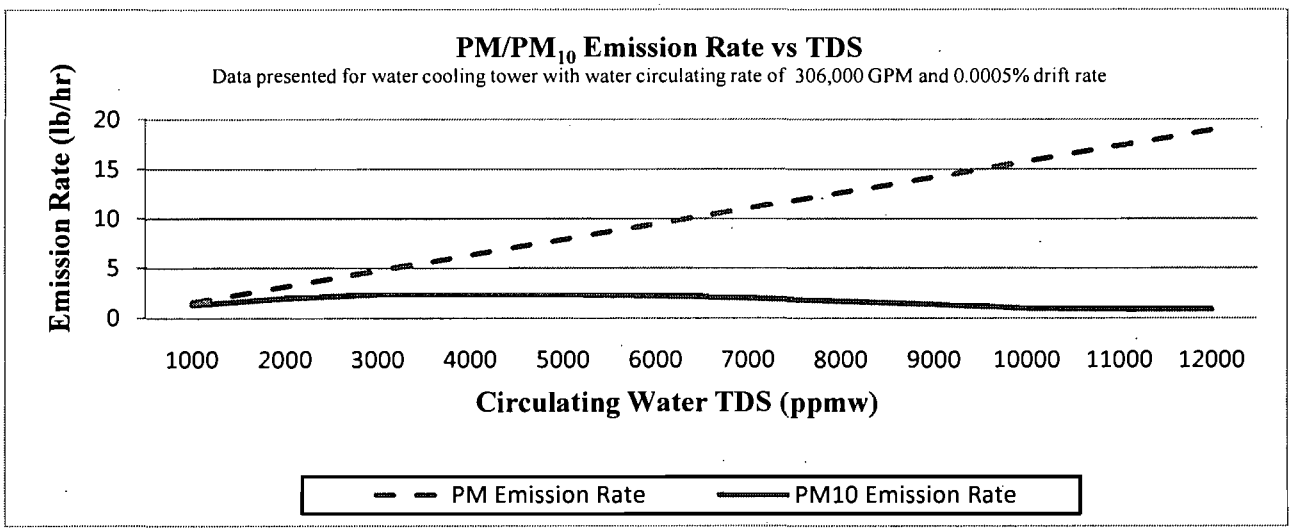
Circulating Cooling Towers (EU-015)

The cooling towers will emit particulate matter resulting from solids in the carryover of the water droplet drift. Total PM emissions include fine particulate (PM_{10} and $PM_{2.5}$) as well. The applicant proposes to control particulate matter with high-efficiency mist eliminators designed for a droplet drift rate of 0.0005% of the circulating water flow rate of the cooling towers. The applicant's estimated PM, PM_{10} and $PM_{2.5}$ emissions are based upon the worst-case operating scenario and the study, "Calculating Realistic PM_{10} Emissions from Cooling Towers" by Joel Reisman and Gordon Frisbie[1]. According to the study, PM, PM_{10} and $PM_{2.5}$ emissions increase with an increase in the concentration of total dissolved solids (TDS) to about 4000 parts per million (ppm). However, at TDS levels greater than 4000 ppm, the PM_{10} and $PM_{2.5}$ emission rate will decrease while the PM emission rate will continue to increase. The paper states that at higher TDS levels, the drift droplets contain more solids and therefore, upon evaporation, result in larger particles for any given initial droplet size. For the circulating water cooling towers, the graph on the following page shows the correlation of PM and PM_{10} emissions rates as a function of: the TDS concentration of the circulating water, the proposed drift rate (0.0005%) from the cooling towers and the maximum circulating water flow rate.

The application indicates that the cooling water will be made up from a combination of water sources. Reclaimed water from the Miami-Dade Water and Sewer Department is identified as the primary source of cooling water for the cooling towers. The secondary water source will come from radial collector wells that will supply saltwater recharged from below Biscayne Bay. The applicant predicts that there is a sufficient supply of reclaimed water to provide the necessary makeup water to the cooling towers. A combination of reclaimed

[1] Reisman, Joel and Frisbie, Gordon; Calculating Realistic PM_{10} Emissions from Cooling Towers; Air & Waste Management Association Conference Paper; Abstract 216, Session no. AM-1b; June 2000.

water and saltwater may be used.



PM Emissions

Based on the report by Reisman and Frisbie, PM emissions will increase linearly as the TDS concentration increases. For the expected primary water source, the expected TDS concentration of the reclaimed water is approximately 580 parts per million by weight (ppmw). At 4 cycles of concentration, the expected TDS concentration in the cooling water would be 2320 ppmw and the resulting annual PM emissions are predicted to be approximately 32.1 tons/year given the maximum circulating water flow rate and the proposed design drift rate.

For saltwater, the expected TDS concentration is approximately 34,000 ppmw, which represents an actual average TDS concentration of water in Biscayne Bay near Turkey Point. At 1.5 cycles of concentration, the TDS concentration would be 51,000 ppmw and the resulting PM emissions are predicted to be approximately 731.5 tons/year given the maximum circulating water flow rate and the proposed design drift rate. To account for the variability of TDS concentrations in Biscayne Bay, the applicant used a conservatively high TDS concentration of 65,000 ppmw for the circulating cooling water to estimate maximum potential PM emissions at 943.3 tons/year.

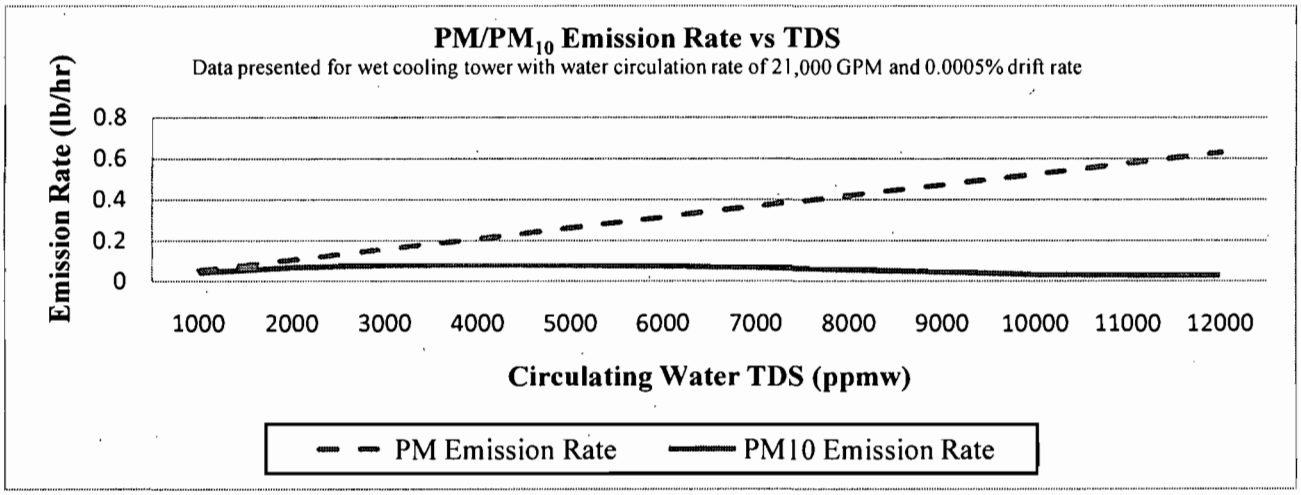
PM_{10} and $PM_{2.5}$ Emissions

For reclaimed water, the expected TDS concentration is 580 ppmw. At 4 cycles of concentration, the expected TDS concentration in the cooling water would be 2320 ppmw and the annual PM_{10} emissions are predicted to be 20.4 tons/year given the maximum circulating water flow rate and the proposed design drift rate. To account for the variability of TDS concentrations in the treated effluent, the applicant used a conservatively high TDS concentration of 4000 ppmw for the circulating cooling water to estimate maximum potential PM_{10} emissions of 21.2 tons/year. For this case, the applicant estimates $PM_{2.5}$ emissions of 0.1 tons/year from the large cooling towers, which represents the highest $PM_{2.5}$ emissions.

For saltwater, the PM_{10} emissions begin to decrease beyond a concentration of 4000 ppmw. PM_{10} emissions are calculated to be less than 10 tons/year for an expected TDS concentration of 51,000 ppmw and given the maximum circulating water flow rate and the proposed design drift rate.

Service Water Cooling Towers (EU-016)

For the smaller service water cooling towers, the following graph shows the correlation of PM and PM_{10} emissions rates as a function of: the TDS concentration of the circulating water flow rate, the proposed drift rate (0.0005%) from the cooling towers and the maximum circulating water flow rate (21,000 gpm).



PM, PM_{10} and $PM_{2.5}$ Emissions

The service water cooling towers will use potable water from Miami-Dade County. For this water supply, the TDS concentration is estimated at 318 ppmw based on an actual sample. Based on 4 cycles of concentration, the TDS concentration in the cooling water would be 1272 ppmw. The expected emissions of both PM/PM_{10} will be approximately 0.29/0.22 tons per year per tower given a TDS concentration of 1272 ppmw, the maximum circulating water flow rate and the design drift rate. However, to account for the variability of TDS concentrations in the treated effluent, the applicant used a conservatively high TDS concentration of 1000 ppmw for the potable water concentrated to 4000 ppmw in the cooling water. The maximum potential emissions are estimated to be 1.84 tons of PM/year and 0.71 tons of PM_{10}/year based on a TDS concentration of 4000 ppmw, the maximum circulating water flow rate and the design drift rate. The applicant estimates negligible $PM_{2.5}$ emissions (0.0002 tons/year) from the small service water cooling towers.

Diesel Engines and Diesel Tanks (EU-017 and EU-018)

The combustion of diesel in engines for the standby and ancillary generators, fire pumps and miscellaneous support equipment will result in PM, PM_{10} and $PM_{2.5}$ emissions. The applicant estimated emissions as: 2.28 tons of PM/year; 2.28 tons of PM_{10}/year; and 1.26 tons of $PM_{2.5}$/year. To minimize particulate matter emissions, the new engines will fire only ultra-low sulfur diesel (0.0015% sulfur by weight, maximum). Other than the PSD requirements, the engines will not be subject to any industry-specific state air quality regulations, but may be subject to applicable federal NSPS and NESHAP provisions depending on the final design, date of manufacture, use and revisions to the federal regulations. The diesel tanks will emit negligible amounts of VOC emissions and are not subject to any state or federal air quality regulations.

NSPS Provisions

The diesel-powered engines for the standby and ancillary generators and fire pumps will likely be subject to applicable NSPS provisions in 40 CFR 60 for Subpart A (General Provisions) and Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines). These regulations establish emissions standards and operating limits for CO, NO_X, PM and hydrocarbons (a surrogate for VOC). Depending on the final design, date of manufacture, use and revisions to the federal regulations, these provisions may consist of only record keeping and reporting requirements if the engine vendor will provide a certification. The draft permit will identify NSPS Subpart A and IIII in the Appendices.

NESHAP Provisions

The diesel-powered engines for the standby and ancillary generators will likely be subject to the applicable NESHAP provisions of 40 CFR 63 for Subpart A (General Provisions) and Subpart ZZZZ (Reciprocating Internal Combustion Engines). Depending on the final design, date of manufacture, use and revisions to the

federal regulations, these provisions may consist of only record keeping and reporting requirements if the engine vendor will provide a certification. The draft permit will identify NESHAP Subpart A and ZZZZ in the Appendices.

HAP Emissions

Based on maximum operation and conservative assumptions, the applicant estimates annual HAP emissions from the large cooling towers to be less than 0.065 tons/year and negligible from the small service water cooling towers. For diesel combustion in the proposed engines, the applicant estimates annual HAP emissions to be less than 0.05 tons/year. Therefore, total HAP emissions are estimated to be less than 0.115 tons/year.

Construction-Related Activities Resulting in Secondary Emissions

Emissions from temporary construction-related activities are considered *secondary emissions*, which are defined in Rule 62-210.200, F.A.C. as, "The emissions which occur as a result of the construction or operation of a facility or a modification to a facility, but which are not discharged into the atmosphere from the facility itself. Secondary emissions may include but are not limited to emissions from ships or trains coming to or leaving a new or modified facility and emissions from any off-site support facility which would not otherwise be constructed or increase its emissions except as a result of the construction or operation of the new or modified facility. Secondary emissions must be specific, well-defined, quantifiable, and impact the same general area as the facility or modification which causes the secondary emissions." As provided in the definition of *potential to emit*, "Secondary emissions are not included when determining the potential to emit of an emission unit or facility." BACT determinations are not required for activities related to construction since emissions will be temporary and occur before the permanent emissions units are fully operational.

Temporary Construction Boilers

During construction of the nuclear units, the facility plans to install and operate two temporary boilers rated at a maximum heat input rate of 110 million British thermal units (MMBtu) per hour per boiler. Each unit will be configured with low-NOx burners and fire propane, natural gas or ultra-low sulfur diesel (ULSD). These temporary units will be used to steam clean piping and tubing during construction of the nuclear units. Package boilers may be rented for this purpose. Depending on the original construction date, the units may be subject to NSPS Subpart Db for industrial-commercial-institutional steam generating units. In addition the boilers will be subject to state Rule 62-296.406, F.A.C. for units with a maximum heat input rate of 250 MMBtu/hour or less.

The maximum requested operation is 2500 hours per year per unit. At a maximum firing rate of 814 gallons per hour per unit, the maximum annual firing rate of ultra-low sulfur diesel would be 4,070,000 gallons per year for both units combined. At a maximum firing rate of 1202 gallons per hour per unit, the maximum annual firing rate of propane would be 6,010,000 gallons per year for both units combined. Based on the maximum annual fuel firing rates, the applicant estimates the potential annual emissions as summarized in Table B. Emissions from natural gas would not exceed any of these estimates.

Table B. Construction Boilers

Pollutant	Propane	ULSD
	Tons/Year	
CO	22.5	10.2
NO_X	39.1	20.4
PM	2.1	6.7
PM_{10}	2.1	6.7
SO_2	0.06	0.5
VOC	2.4	0.4

Once Unit 7 commences commercial operation, the temporary boilers will be permanently shut down and removed. Similar to the temporary concrete batch plant, emissions from the temporary construction boilers are considered secondary emissions. The draft permit will address the operation of the temporary boilers and the applicable state and federal regulations.

Temporary Concrete Batch Plant

During construction of the nuclear units and cooling towers, a temporary concrete batch plant will be operated in accordance with Rule 62-296.414, F.A.C. to provide the necessary concrete for foundations and other structures related to the addition of the nuclear units and cooling towers. The applicant estimates annual emissions as: 4.1

tons of PM per year and 1.2 tons of PM_{10} per year. In accordance with this rule, fabric filters will be used to control dust emissions from the loading and unloading of cement. The draft permit will address the operations and the requirements of Rule 62-296.414, F.A.C.

4. BACT DETERMINATIONS

The project is subject to PSD preconstruction review for PM and PM_{10} emissions. This section documents the BACT review and determination for PM and PM_{10} emissions.

Circulating Cooling Towers (EU-015)

Emissions

The circulating water cooling towers are the primary source of particulate matter emissions from this project. The table summarizes the range of PM and PM_{10} emissions from the large cooling towers. Emissions of PM_{10} will be relatively low given the overall scope of the project (2200 MW). However, total PM emissions will be quite high if saltwater is used as the source of water in the cooling towers. Clearly, project emissions will be minimized by the use of reclaimed water, which is stated as the primary source in the application.

Table. C. Circulating Cooling Towers

Pollutant	Tons/Year	
	Reclaimed Water	Saltwater
PM	33.7	943.3
PM_{10}	21.2	< 10

Identify Control Technologies

The applicant identified the following available control technologies:

- *High-Efficiency Mist Eliminators*: The wet circulating cooling towers will exhaust water droplets containing minerals entrained in the gas stream (drift) exhausted by numerous large fans. High-efficiency mist eliminators can be integrated into the cooling tower to remove the droplets by impaction. Captured droplets are returned to the circulating cooling water.
- *Natural Draft Cooling Towers*: The design and shape of these towers provide the large air flow rates needed without the use of any fans.
- *Air-Cooled Condensers*: Air-cooled condensers could be installed in place of the wet circulating cooling towers. For this technology, the hot water is circulated through a very large, finned-tube water-to-air (non-contact) heat exchanger through which large fans force ambient air to remove heat from the circulating water.

Eliminate Technically Infeasibility Options

- *High-Efficiency Mist Eliminators*: This technology is a commercially available and proven technology that is often used to reduce particulate matter emissions from wet circulating cooling towers. The applicant reviewed EPA's RACT/BACT/LAER Clearinghouse database from 2003 through 2008. For the 19 projects, only drift eliminators were identified as the control technology.
- *Natural Draft Cooling Towers*: These large structures were used on many previous nuclear projects. However, the cooling towers can be over 300 feet high, require a large footprint on the site and may cause undesirable visual impacts.
- *Air-Cooled Condensers*: Initially, the applicant identified this technology as commercially available, but not feasible for this large project due to significant energy and economic penalties in comparison with wet circulating cooling towers. However, energy penalties and other costs are considerations when evaluating BACT. Although this technology is typically used for smaller power projects in cooler and arid climates where water is not available, it is commercially available.

The Department notes that the cooling tower project is only a support facility for a much larger project to

construct nuclear power generating units. The applicant believes that the use of natural draft cooling towers or air-cooled condensers is redefining the source, which is beyond the scope of a BACT analysis. In addition, the applicant states that the NRC certified the Model AP1000 with wet cooling towers and the use of air-cooled condensers would require an NRC recertification that may not be possible.

Rank Remaining Control Technologies by Control Effectiveness

- *Air-Cooled Condensers*: Since air-cooled condensers are non-contact heat exchangers, there are no emissions. This is the top-ranked control technology.
- *High-Efficiency Mist Eliminators*: As indicated in EPA's RACT/BACT/LAER Clearinghouse, BACT has been established for recent projects as a design drift 0.0005% of the circulating water flow rate. Removal efficiencies may exceed 99.99% depending on the droplet size.
- *Natural Draft Cooling Towers*: This technology can also achieve a design drift 0.0005% of the circulating water flow rate.

Select the Top-Ranked Control Option and Evaluate the Energy, Environmental and Economic Impacts

The top-ranked control option is the use of air-cooled condensers in place of circulating water cooling towers. The applicant provided the following estimates of energy, environmental and economic impacts for air-cooled condensers:

Energy Impacts: There would be a large pressure drop across air-cooled condensers. Based on EPA's "Technical Development Document for the Proposed Section 316(b) Phase II Existing Facilities Rule[2]", the applicant estimates an energy penalty of 10.7% for air-cooled condensers in Florida, which means a loss in power generation of more than 100 MW. For wet circulating cooling towers, the energy penalty would be only 1.6%.

Economic Impacts: Based on same EPA Technical Document[2] and assuming $30/MW-hour and continuous operation throughout the year, the energy penalty would cost more than $26 million per year. Ignoring the capital costs of the air-cooled condensers, which tend to be higher than for wet circulating cooling towers, the energy penalty alone results in a cost effectiveness of:

PM = ($26,306,280/year/unit)(1/471.6 tons/year/unit) = $55,781 per ton of PM avoided, and

PM_{10} = ($26,306,280/year/unit)(1/10.6 tons/year/unit) = $2,481,725 per ton of PM_{10} avoided.

Environmental Impacts: The large pressure drop across the air-cooled condensers results in a high energy penalty. For comparison purposes, the applicant assumes that this energy would come from electrical generation produced from clean and efficient gas-fired combined cycle combustion turbines and assumes additional emissions of: 600,000 tons of carbon dioxide (CO_2) per year, 48 tons of NO_X per year, and 32 tons of SO_2 per year. Although there would be a large pressure drop, the resulting energy penalty seems more like a parasitic load on the proposed nuclear units.

Select or Reject the Top-Ranked Control Option

Based on the adverse energy and economic impacts, the applicant rejects air-cooled condensers for this cooling tower project, which supports the addition of 2200 MW of nuclear power. While the Department does not necessarily support the applicant's cost estimates, the energy impacts and costs do appear excessive for this project.

Select the Next Highest Ranked Control Option

The next highest ranked control options would be either high-efficiency mist eliminators for the wet circulating

[2] *Technical Development Document for the Proposed Section 316(b) Phase II Existing Facilities Rule*; EPA Report No. 821-R-02-003; April 2002.

water cooling towers or natural draft cooling towers because each can be designed for a maximum drift rate of 0.0005% of the circulating water flow rate. As mentioned previously, the wet circulating water cooling tower would result in a relatively small energy penalty (approximately 1.6%) while the natural draft cooling towers would have no energy penalty. However, the natural draft cooling tower would incur much higher capital costs. Since each option has been used at existing nuclear plants, the energy and economic impacts must not be excessive. Emission rates from these technologies would be the same.

The Department determines either option is viable and makes a preliminary determination that BACT is a maximum design drift rate of 0.0005% by volume of the circulating cooling water. The draft permit will reference the circulating water cooling towers with high-efficiency mist eliminators as described in the application. Other than the PSD provisions, the large cooling towers are not subject to any industry-specific state or federal air quality regulations.

Discussion of Additional Treatment for Cooling Water

Although extremely costly, it is technically possible to remove solids (chlorides, sulfates, etc.) from saltwater with a reverse osmosis (RO) treatment system. This process would require more than twice as much saltwater for processing (138 million gallons per day) and require the disposal of 79 million gallons per day of RO concentrate by deep well injection or other methods. The applicant estimated a capital cost of nearly $400 million and a total annualized cost of approximately $62 million per year. Assuming the RO system could remove 888 tons of PM/year, the cost effectiveness would be approximately $70,000 per ton of PM removed. Clearly this technology is not cost effective for the project.

Service Water Cooling Towers (EU-016)

The smaller service water cooling towers will use potable water from the county as the water source. Based on the same methodology, the applicant estimates annual PM emissions of 1.8 tons per year and annual PM_{10} emissions of 0.7 tons per year. As such, particulate matter emissions from the service water cooling towers represent only a small fraction of the emissions from this project. Based on high-efficiency mist eliminators, the applicant proposes a maximum design drift rate of 0.0005% of the circulating water flow rate as BACT for these units. The Department notes that the analysis of available control technologies and impacts would be similar to that conducted as for the larger cooling towers with the same outcome. Therefore, the Department makes a preliminary determination that BACT is a maximum design drift rate of 0.0005% by volume of the circulating cooling (potable) water from the service water cooling towers. Other than the PSD provisions, the service water cooling towers are not subject to any industry-specific state or federal air quality regulations.

Diesel Engines (EU-017 and EU-018)

Particulate matter will be generated from the combustion of diesel in the backup electrical generators, fire pump engines and other small diesel engines used as miscellaneous support equipment. The applicant estimates annual PM emissions from the miscellaneous engines as 2.3 tons per year and that all of the PM will be PM_{10}. As such, particulate matter emissions from the diesel-fired engines represent only a small fraction of the emissions from this project. The primary contributor to particulate matter emissions are the ash and sulfur content of the diesel fuel that will be fired. The applicant proposes to fire ultra-low sulfur diesel fuel in all new engines. Ultra-low sulfur diesel contains less than 0.0015% sulfur, which is approximately equivalent to the sulfur content of pipeline natural gas. Ultra-low sulfur diesel also contains negligible amounts of ash (< 0.01% by weight). Based on size, date of manufacture, use and final federal regulation, some of the engines may be subject to NSPS Subpart IIII in 40 CFR 60, which establishes PM standards. The Department makes a preliminary determination that, in addition to any applicable NSPS provisions regulating PM emissions, BACT is the firing of ultra-low sulfur diesel with a maximum fuel sulfur content of 0.0015% by weight.

Small Boiler BACT (EU-020)

As previously mentioned, the temporary construction boilers are subject to Rule 62-296.406, F.A.C. Separate from the PSD preconstruction review BACT determinations, this rule requires a state BACT determination for

PM and sulfur dioxide (SO_2) emissions. The applicant proposes to fire propane or ultra-low sulfur diesel in the temporary construction boilers. The applicant estimates potential annual emissions from these units as 6.72 tons of PM/year and 0.48 tons of SO_2/year. Emissions from firing natural gas would result in similar or lower annual emissions estimates. At these low levels, the addition of pollution controls will be cost prohibitive. Therefore, the Department makes a preliminary determination that BACT for PM and SO_2 emissions from the small boilers is the firing of: natural gas; propane; and ultra-low sulfur diesel with a maximum sulfur content of 0.0015% by weight. This is in addition to any provisions of NSPS Subpart Db, if applicable.

BACT and Construction Schedules

For projects with BACT determinations, Rule 62-212.400(12), F.A.C. requires construction to commence within 18 months of permit issuance. However, due to the lengthy licensing process for the nuclear units, this will not be possible. Therefore, the draft permit will require the applicant to submit an updated BACT analysis at least 12 months prior to the planned construction date.

5. AIR QUALITY ANALYSIS

This section provides a general overview of the modeling analyses required for PSD preconstruction review followed by the specific analyses required for this project.

Overview of the Required Modeling Analyses

Pursuant to Rule 62-212.400, F.A.C., the applicant is required to conduct the following analyses for each PSD significant pollutant:

- A preconstruction ambient air quality analysis,
- A source impact analysis based on EPA-approved models, and
- An additional impact analyses.

For the purposes of any required analysis, NO_X emissions will be modeled as NO_2 and only PM_{10} emissions will be considered when modeling particulate matter.

Preconstruction Ambient Monitoring Analysis

Generally, the first step is to determine whether the Department will require preconstruction ambient air quality monitoring. Using an EPA-approved air quality model, the applicant must determine the predicted maximum ambient concentrations and compare the results with regulatory thresholds for preconstruction ambient monitoring, known as de minimis air quality levels. The regulations establish de minimis air quality levels for several PSD pollutants as shown in the following table. For ozone, there is no de minimis air quality level because it is not emitted directly. However, since NO_2 and VOC are considered precursors for ozone formation, the applicant may be required to perform an ambient impact analysis (including the gathering of ambient air quality data) for any net increase of 100 tons per year or more of NO_2 or VOC emissions.

PSD Pollutant	De Minimis Air Quality Levels
CO	575 µg/m3, 8-hour average
NO_2	14 µg/m3, annual average
PM_{10}	10 µg/m3, 24-hour average
SO_2	13 µg/m3, 24-hour average
Pb	0.1 µg/m3, 3-month average
F	0.25 µg/m3, 24-hour average
TRS	10 µg/m3, 1-hour average
H_2S	0.2 µg/m3, 1-hour average
RSC	10 µg/m3, 1-hour average
Hg	0.25 µg/m3, 24-hour average

If the predicted maximum ambient concentration is less than the corresponding de minimis air quality level, Rule 62-212.400(3)(e), F.A.C. exempts that pollutant from the preconstruction ambient monitoring analysis. If the predicted maximum ambient concentration is more than the corresponding de minimis air quality level (except for non-methane hydrocarbons), the applicant must provide an analysis of representative ambient air concentrations (pre-construction monitoring data) in the area of the project based on continuous air quality monitoring data for each such pollutant with an Ambient Air Quality Standard (AAQS). If no such standard exists, the analysis shall contain

such air quality monitoring data as the Department determines is necessary to assess ambient air quality for that pollutant.

If preconstruction monitoring data is necessary, the Department may require the applicant to collect representative ambient monitoring data in specified locations prior to commencing construction on the project. Alternatively, the Department may allow the requirement for preconstruction monitoring data to be satisfied with data collected from the Department's extensive ambient monitoring network. Preconstruction monitoring data must meet the requirements of Appendix B to 40 CFR 58 during the operation of the monitoring stations. The preconstruction monitoring data will be used to determine the appropriate ambient background concentrations to support any required AAQS analysis. As a condition of the permit, the Department may require the applicant to conduct post-construction ambient monitoring after completing the project to evaluate actual impacts from the project on air quality.

Source Impact Analysis

For each PSD-significant pollutant identified above, the applicant is required to conduct a source impact analysis for affected PSD Class I and Class II areas. This analysis is to determine if emissions from this project will significantly impact levels established for Class I and II areas. Class I areas include protected federal parks and national wilderness areas (NWA) that are under the protection of federal land managers. The table identifies the Class I areas located in Florida or that are within 200 kilometers in nearby states. Class II areas represent all other areas in the vicinity of the facility open to public access that are not Class I areas.

Class I Area	State	Federal Land Manger
Bradwell Bay NWA	Florida	U.S. Forest Service
Chassahowitzka NWA	Florida	U.S. Fish and Wildlife Service
Everglades National Park	Florida	National Park Service
Okefenokee NWA	Georgia	U.S. Fish and Wildlife Service
St. Marks NWA	Florida	U.S. Fish and Wildlife Service
Wolf Island NWA	Georgia	U.S. Fish and Wildlife Service

An initial significant impact analysis is conducted using the worst-case emissions scenario for each pollutant and corresponding averaging time. The regulations define separate significant impact levels for Class I and Class II areas for CO, NO_2, Pb, PM_{10} and SO_2. Based on the initial significant impact analysis, no additional modeling is required for any pollutant with a predicted ambient concentration less than the corresponding significant impact level. However, for any pollutant with a predicted ambient concentration exceeding the corresponding significant impact level, the applicant must conduct a full impact analysis. In addition to evaluating impacts caused by the project, a full impact modeling analysis also includes impacts from other nearby major sources (and any potentially-impacting minor sources within the radius of significant impact) and evaluates:

- The PSD increments and the federal air quality related values (AQRV) for Class I areas.
- The PSD increments and the AAQS for Class II areas.

As previously mentioned, for any net increase of 100 tons per year or more of VOC or NO_2 subject to PSD, the applicant may be required to perform an ambient impact analysis for ozone including the gathering of ambient ozone data.

PSD Class I and II Area Model

The EPA-approved American Meteorological Society and EPA Regulatory Model (AERMOD) dispersion model was used to evaluate short range impacts from the proposed project in the surrounding Class II Area and also in the Class I area. In November of 2005, the EPA promulgated AERMOD as the preferred regulatory model for predicting pollutant concentrations within 50 kilometers of a source. The AERMOD model is a replacement for the Industrial Source Complex Short-Term model (ISCST3). The AERMOD model calculates hourly concentrations based on hourly meteorological data. The model can predict pollutant concentrations for annual, 24-hour, 8-hour, 3-hour and 1-hour averaging periods. In addition to the PSD Class II modeling, it is also used to model the predicted impacts for comparison with the de minimis ambient air quality levels when

determining preconstruction monitoring requirements.

For evaluating plume behavior within the building wake of structures, the AERMOD model incorporates the Plume Rise Enhancement (PRIME) downwash algorithm developed by the Electric Power Research Institute (EPRI). A series of specific model features recommended by the EPA are referred to as the regulatory options. The applicant used the EPA-recommended regulatory options in each modeling scenario and building downwash effects were evaluated for stacks below the good engineering practice (GEP) stack heights.

Meteorological data used in the AERMOD model consisted of a concurrent five-year period of hourly surface weather observations from the National Weather Service office located at Miami International Airport and twice-daily upper air soundings from Florida International University (FIU) in Miami. The five-year period of meteorological data was from 2001 through 2005. This station was selected for use in the evaluation because it is the closest primary weather station to the project area and is most representative of the project site.

Stack Height Considerations

GEP stack height means the greater of 65 meters (213 feet) or the maximum nearby building height plus 1.5 times the building height or width, whichever is less. Where the affected stacks did not meet the requirements for GEP stack height, building downwash was considered in the modeling analyses. Based on a review of this application, the Department determines that the project complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators.

Additional Impact Analysis

In addition to the above analyses, the applicant must provide an evaluation of impacts to: soils, vegetation, and wildlife; air quality related to general commercial, residential and industrial growth in the area that may result from the project; and regional haze in the affected Class I areas.

PSD Significant Pollutants for the Project

As discussed previously, the project results in PM and PM_{10} emissions increases that exceed the PSD significant emissions rates. For the purposes of any required analysis, only PM_{10} emissions are considered when modeling particulate matter.

Preconstruction Ambient Monitoring Analysis

Using the AERMOD model, the applicant predicted the following maximum ambient impacts from the project.

De Minimis Air Quality Levels				
Pollutant	**Averaging Time**	**Maximum Predicted Impact ($\mu g/m^3$)**	**De Minimis Concentration ($\mu g/m^3$)**	**Greater than De Minimis?**
PM_{10}	24-hr	4.93	10	NO

As shown above, PM_{10} is exempt from preconstruction monitoring because the predicted impacts are less than the de minimis levels.

Source Impact Analysis for PSD Class I Areas

Affected PSD Class I Areas

For PSD Class I areas within 200 kilometers of the facility, the table identifies each affected Class I area as well as the distance to the facility and the number of receptors used in the modeling analysis. Since this Class I area has receptors located within 50

PSD Class I Area	Distance	Receptors Quantity
Everglades National Park	20 km	901

kilometers of the facility and also greater than 50 kilometers from the facility, AERMOD with five years of meteorological data was used to determine the impacts for both types of receptors.

Results of PSD Class I Significant Impact Analysis

Using the AERMOD model, the applicant predicted the following maximum ambient impacts from the project.

Significant Impact Analysis for PSD Class I Areas					
Pollutant	**Averaging Time**	**Maximum Predicted Impact ($\mu g/m^3$)**	**Significant Impact Level ($\mu g/m^3$)**	**Significant Impact?**	**Affected Class I Area**
PM_{10}	Annual	0.002	0.2	NO	Everglades National Park
	24-hour	0.083	0.3	NO	Everglades National Park

As shown, the maximum predicted impacts are less than the corresponding significant impact levels for each pollutant. Therefore, a full impact analysis for the PSD Class I areas is not required.

Source Impact Analysis for PSD Class II Areas

Meteorological Data for PSD Class II Analysis

AERMOD with five years of meteorological data was used to determine predicted impacts in the Class II area in the vicinity of the project. For the preliminary significant impact analysis, the highest short-term predicted concentrations will be compared to the respective significant impact levels. Since five years of data are available, the highest-second-high (HSH) short-term predicted concentrations will be used for any required AAQS and PSD Class II increment analysis with regard to short-term averages. However, for annual averages, the highest predicted annual average will be compared with the corresponding annual level.

Results of the Significant Impact Analysis

The following table shows the results of the preliminary PSD Class II significant impact analysis.

Significant Impact Analysis for PSD Class II Areas (Vicinity of Facility)					
Pollutant	**Averaging Time**	**Maximum Predicted Impact ($\mu g/m^3$)**	**Significant Impact Level ($\mu g/m^3$)**	**Significant Impact?**	**Radius of Significant Impact (km)**
PM_{10}	Annual	0.12	1	NO	---
	24-hr	4.93	5	NO	---

As shown above, the predicted impacts of PM_{10} are below the corresponding PSD Class II significant impact levels and no further analysis is required.

Additional Impacts Analysis

Visibility and Regional Haze Analysis

At the request of the federal land manager, the applicant conducted a visibility and Regional Haze AQRV analysis for the Class I area and the Biscayne National Park Class II area located within 0.5 kilometer of the facility at its closest point. The analysis to determine the potential adverse plume visibility effects in the portions of the Everglades located within 50 kilometers of the facility and the Biscayne National Park were based on Visual Impact Screening and Analysis (VISCREEN) computer model. Both a Level 1 and Level 2 analysis were performed. The federal land manager concluded from the VISCREEN analysis that no significant impact on the Class I area were expected. However, the federal land manager is concerned about the Biscayne National Park. The applicant is mitigating the impacts on this area by limiting the drift rate to 0.0005% of the

circulating water rate. This drift rate has been accepted as BACT for many projects involving wet cooling towers. Ultra-low sulfur diesel fuel will be used in the standby and ancillary generators and fire pump engines that will normally operate for maintenance testing.

A regional haze analysis using the long-range transport model CALPUFF was also conducted for those portions of the PSD Class I area located greater than 50 kilometers from the facility. Among other evaluations, the California Puff (CALPUFF) dispersion model is used to evaluate the potential impacts of the Air Quality Related Values (AQRV) for regional haze in areas greater than 50 kilometers from a project. The CALPUFF model is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area and volume sources. The CALPUFF model has the capability to treat time-varying sources. It is also suitable for modeling domains from tens of meters to hundreds of kilometers and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanisms. Meteorological MM4 and MM5 data used in this model were from 2001 to 2003. Based on the regional haze analysis, the federal land manager concluded that the results showed no significant impact on regional haze in this area.

Growth-Related Impacts Due to the Proposed Project

Little additional industrial, commercial or residential growth is expected from this project. Therefore, there will be no adverse impacts due to growth in plant personnel.

Impacts to Soils and Vegetation

As previously noted, potential annual PM emissions are 943 tons per year and potential annual PM_{10} emissions are 21 tons per year. As indicated in the air quality analysis, PM_{10} emissions are the regulatory thresholds. The high rate of PM emissions is caused by salt in droplet drift when saltwater is used as the backup source of the cooling water in the wet circulating cooling towers. Potential impacts to vegetation may occur from deposition of this PM. Vegetation may be affected by absorption of salts that accumulate in the soil as well as foliar deposition. Accumulation in soil will occur if the annual deposition rate of salt exceeds the rate which salt is leached from the soil by rainfall. However, the vegetation surrounding the site is dominated by coastal mangroves, specifically the salt-tolerant red mangrove (Rhizophora mangle), which has developed physiological characteristics to allow the plants to survive in highly saline soils and area of salt spray. Rhizophora plants can sustain salinities up to two times concentrated seawater. The area closest to the site border Biscayne Bay and is tidally influenced. The average salinity in Biscayne Bay near the Turkey Point peninsula is approximately 34 parts per thousand (ppt), which is close to the salinity of seawater. During wet periods, the salinity in the Bay is typically below average; during dry periods, the salinity in the Bay is typically above average.

The area where the potential impact of deposition to freshwater vegetation is greatest is the area west of the L-31E Canal. However, the vegetation in the area west of the L-31E Canal is salt tolerant. This area is comprised of sawgrass marsh with strands of forested wetlands classified as mixed wetland hardwoods that are comprised of a variety of native and exotic canopy species, including buttonwood, Austrian pine, cocoplum, red mangrove, Brazilian pepper, and cabbage palm. As these species are salt tolerant, no adverse impacts will occur. Similarly, there will be no adverse impacts of salt drift on wildlife in the vicinity of Turkey Pont Units 6 and 7 since the wildlife in the area is adapted to a saline environment.

In 1971, EPA promulgated primary and secondary National NAAQS for total suspended particulate matter (TSP). The primary TSP standards for the protection of public health were 260 ug/m^3 (a 24-hour average not to be exceeded more than once per year) and 75 ug/m^3 (an annual geometric mean). The TSP secondary standard for the protection of public welfare was 150 ug/m^3 (a 24-hour average not to be exceeded more than once per year). Protection of public welfare included effects on vegetation, ecosystems, visibility, climate, manmade materials, etc.

In 1987[3], EPA replaced the 1971 National AAQS standards for TSP with standards for PM_{10}. While the TSP standards no longer apply, the secondary standards provide information relevant to the protection of vegetation, soils and wildlife. As noted above, the secondary TSP National AAQS was 150 ug/m^3 based on a 24-hour average not to be exceeded more than once per year (also referred to as the "highest, second highest" concentration at any receptor). For the Turkey Point Unit 6 and 7 project, the maximum predicted TSP concentration is estimated to be 36.7 ug/m^3, which represents one-fourth of the former secondary TSP National AAQS that was established to protect vegetation, ecosystems and wildlife. Note that this estimate corresponds to the maximum predicted TSP concentration (highest) and not the "highest, second highest" concentration allowed by the former standard, which would be much lower. This analysis demonstrates that there will be no adverse impacts to soils, vegetation and wildlife as a result of the PM emissions from the project.

Conclusion on Air Quality Impacts

As described in this report and based on the required ambient impact analyses, the Department has reasonable assurance that the proposed project will not cause, or significantly contribute to, a violation of any AAQS or PSD increment.

6. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the Draft Permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Tammy McWade is the project engineer responsible for reviewing the application and drafting the permit conditions. Cleve Holladay is the meteorologist responsible for reviewing and approving the ambient air quality analyses. Jeff Koerner is the Administrator of the New Source Review Section responsible for reviewing and editing the permitting documents. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

[3] National Ambient Air Quality Standards for PM_{10}; EPA; 52 FR 24854; July 1, 1987.

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation

Draft Air Permit No. PSD-FL-409 / Project No. 0250003-013-AC
Florida Power & Light Company, Turkey Point Power Plant
Cooling Tower Project
Miami-Dade County, Florida

Applicant: The applicant for this project is the Florida Power & Light Company. The applicant's authorized representative and mailing address is: Randall R. LaBauve, Vice President, Environmental Services, Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida, 33408.

Facility Location: The Florida Power & Light Company operates the existing Turkey Point Power Plant, which is located in Miami-Dade County at 9700 Southwest 344th Street in Homestead, Florida.

Project: To support the proposed new nuclear Units 6 and 7 at the existing Turkey Point Power Plant, the applicant (Florida Power & Light Company) plans to construct and operate six 12-cell circulating water cooling towers, two 2-cell service water cooling towers, four standby diesel generators, four ancillary diesel generators, two diesel fire pump engines, diesel tanks and miscellaneous general purpose diesel engines to power a variety of support equipment. Large amounts of cooling water will be circulated to cool components of the proposed new nuclear units. The circulating water cooling towers will transfer heat from the warmed cooling water to air exhausted from the towers by large fans. The circulating water cooling towers will use reclaimed water from the Miami-Dade Water and Sewer Department, which will be further treated by the water treatment facility at the Turkey Point Power Plant. As a backup source of cooling water, saltwater can be pulled from radial collector wells. Cooling water will consist of reclaimed water as the primary source, saltwater as a backup source, or a combination of reclaimed and saltwater. The small service water cooling towers will use service (potable) water.

Particles trapped in water droplets may be emitted from the cooling towers as "droplet drift" that is carried out with the warm exhaust air. High-efficiency mist eliminators will be installed to minimize drift. When using reclaimed water, potential emissions from the large cooling towers are estimated to be 32 tons/year of particulate matter (PM) and 20 tons/year of particulate matter with a mean diameter of 10 microns or less (PM_{10}). When using saltwater that contains a much higher solids content as a backup source of cooling water, potential emissions from the cooling towers are estimated to be 943 tons/year of PM and less than 10 tons/year of PM_{10}. The project will also result in the following estimated potential emissions increases from the small service water cooling towers and diesel engines: 25 tons/year of carbon monoxide; 36 tons/year of nitrogen oxides; 4 tons/year of PM, 3 tons/year of PM_{10}; less than 1 ton/year of sulfur dioxide (SO_2); and 4 tons/year of volatile organic compounds (VOC).

The proposed new cooling tower project triggers preconstruction review pursuant to Rule 62-212.400, Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration (PSD) of Air Quality for PM and PM_{10} emissions. In accordance with this rule, the Department is required to make a determination of the Best Available Control Technology (BACT) for PM and PM_{10} emissions. The draft permit includes the following preliminary BACT determinations for PM and PM_{10} emissions: a maximum design droplet drift rate of 0.0005% of the circulating water flow rate from the cooling towers; and the use of ultra low sulfur diesel (0.0015% sulfur by weight, maximum) in the diesel-powered engines.

The project also includes the following temporary equipment that will be used to construct the permanent equipment: two temporary construction boilers and a concrete batch plant. Although this equipment will be subject to industry-specific state and federal regulations, emissions from the temporary equipment are considered secondary emissions and are not included when determining the potential to emit; therefore, BACT determinations are not required for these construction-activities since emissions will be temporary and occur before the permanent emissions units are fully operational.

The Department reviewed the air quality analysis prepared by the applicant. The project has no predicted significant impact for any pollutants either in the PSD Class II area (vicinity of the project) or in the nearest PSD Class I area (Everglades National Park). Therefore, a multi-source modeling analysis for PSD increment was

not required. Based on the air quality analysis, emissions from the project will not significantly contribute to, or cause a violation of, any state or federal ambient air quality standards.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212, F.A.C. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: http://www.dep.state.fl.us/air/emission/apds/default.asp.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit and requests for a public meeting for a period of 30 days from the date of publication of the Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of this 30-day period. In addition, if a public meeting is requested within the 30-day comment period and conducted by the Permitting Authority, any oral and written comments received during the public meeting will also be considered by the Permitting Authority. If timely received comments result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or

identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

DRAFT PERMIT

PERMITTEE

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408

Authorized Representative:
Mr. Randall R. LaBauve
Vice President, Environmental Services

Air Permit No. PSD-FL-409
Project No. 0250003-013-AC
Expires: July 1, 2024
Turkey Point Power Plant
Facility ID No. 0250003
Cooling Tower Project for Units 6 and 7

FACILITY AND LOCATION

This permit authorizes construction of the following permanent equipment: six wet circulating water cooling towers, two service water cooling towers, diesel tanks, standby diesel generators, ancillary diesel generators, diesel fire pumps and miscellaneous general purpose diesel equipment. The project also authorizes the following temporary equipment that will be used to construct the permanent equipment: two temporary construction boilers and a temporary concrete batch plant. The proposed work will be conducted at the existing Turkey Point Power Plant, which is an electric service facility identified by Standard Industrial Classification Code No. 4911. The facility is located in Miami-Dade County at 9700 Southwest 344th Street in Homestead, Florida. The UTM coordinates are Zone 17, 566.59 km East and 2,813.21 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

(Date)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on (DRAFT) to the persons listed below.

Mr. Randall R. LaBauve, FPL (randall_r_labauve@fpl.com)
Mr. Matthew J. Raffenberg, FPL (matthew.raffenberg@fpl.com)
Mr. Kennedy F. Kosky, Golder Associates Inc. (kkosky@golder.com)
Mr. Lennon Anderson, SED Office (lennon.anderson@dep.state.fl.us)
Mr. Patrick Wong, Miami-Dade DERM (wongp@miamidade.gov)
Ms. Mallika Muthias, Miami-Dade DERM (muthim@miamidade.gov)
Mr. Mike Halpin, DEP Siting Office (mike.halpin@dep.state.fl.us)
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
Ms. Heather Abrams, EPA Region 4 (abrams.heather@epa.gov)
Ms. Ana M. Oquendo, EPA Region 4 (oquendo.ana@epa.gov)
Mr. Dee Morse, NPS (dee_morse@nps.gov)
Ms. Victoria Gibson, DEP BAR Reading File (victoria.gibson@dep.state.fl.us)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

(DRAFT)

(Clerk) (Date)

FACILITY AND PROJECT DESCRIPTION

The existing Turkey Point Power Plant consists of two separate, co-located power plants: the Fossil Plant and the Nuclear Plant. The two plants combined are considered a single facility for purposes of the Prevention of Significant Deterioration (PSD) and Maximum Achievable Control Technology (MACT) applicability. However, due to the strict requirements of the Nuclear Regulatory Commission (NRC), the facility has chosen to operate these two plants under separate business entities and hold separate Title V air operation permits.

The Fossil Plant consists of: two electric utility steam generating units (Units 1 and 2) with a nominal rating of 400 megawatts (MW) each that fire natural gas and residual fuel oil; a combined cycle combustion turbine unit (Unit 5) with a nominal rating of 1150 MW that uses natural gas as the primary fuel; and five fuel oil-fired black-start 2.75 MW generators. The Nuclear Plant consists of: two nuclear generating units with a combined nominal capacity of 1400 MW; nine diesel emergency generators; and miscellaneous diesel engines. The nuclear generating units are regulated by the NRC, but are not sources of air pollution. Each plant also includes other miscellaneous activities and sources of air pollution.

This project adds the following new emissions units to the Nuclear Plant.

EU ID	Emission Unit Description
015	Six circulating water cooling towers for Units 6 and 7
016	Two service water cooling towers for Units 6 and 7
017	Standby diesel generators, ancillary diesel generators and diesel fire pumps
018	Miscellaneous general purpose diesel engines powering support equipment
019	Miscellaneous diesel tanks
020	Two temporary construction boilers rated at 110 MMBtu/hour per boiler
021	Temporary concrete batch plant

REGULATORY CLASSIFICATION

- The existing facility is a major source of hazardous air pollutants (HAP).
- Units at the existing Fossil Plant are subject to the acid rain provisions of the Clean Air Act.
- The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The existing facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. The project is subject to PSD preconstruction review for total particulate matter (PM) emissions and particulate matter with a mean particle diameter of 10 microns or less (PM_{10}) emissions.
- Units at the existing Fossil Plant are subject to applicable New Source Performance Standards (NSPS) in Title 40, Part 60 of the Code of Federal Regulations.

1. Permitting Authority: The Permitting Authority for this project is the Bureau of Air Regulation in the Division of Air Resource Management of the Department. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. Copies of all documents related to applications for permits shall also be submitted to the Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Southeast District Office and Miami-Dade County Environmental Resources Management (DERM). The mailing address and phone number of the Southeast District Office is: 400 North Congress Avenue, Suite 200, West Palm Beach, Florida 33401. The mailing address and phone number of the Miami-Dade County Environmental Resources Management (DERM) is: 701 Northwest 1st Court, Suite 200, Miami, Florida 33136.
3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); Appendix D (Common Testing Requirements); Appendix E (Final BACT Determinations); Appendix F (NSPS Provisions); and Appendix G (NESHAP Provisions).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Source Obligation:
   (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.
   (b) Because of the lengthy licensing process for the nuclear units, it is unlikely that construction will commence within 18 months of issuance of this air construction permit. For this case, the permittee shall submit an updated BACT analysis at least 12 months prior to the planned construction date. After review, the Department may determine that a permit revision is unnecessary or require the submittal of an application for a revised air construction permit.

   [Rule 62-212.400(12), F.A.C.]
8. Title V Permit Revision: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a revised Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A. Cooling Towers (EU-015 and EU-016)

This subsection of the permit addresses the following emissions unit.

ID No.	Emissions Unit Description
015	Six circulating water cooling towers for Units 6 and 7
016	Two service water cooling towers for Units 6 and 7

{Permitting Note: In accordance with Rule 62-212.400(PSD), F.A.C., the above emission units are subject to Best Available Control Technology (BACT) determinations for particulate matter (PM and PM_{10}). The final BACT determinations are presented in Appendix E of this permit.

EQUIPMENT

1. Cooling Towers: The permittee is authorized to construct and operate the following new cooling towers (Westinghouse AP1000 or equivalent equipment):

   a. Three circulating water cooling towers per nuclear unit with the following nominal design characteristics *per cooling tower*: 12 cells with cooling fans; a height of approximately 67 feet; an air exhaust flow rate of 21,174,000 acfm; an air exit temperature of 104.7° F; a circulating water flow rate of 210,367 gpm; and high-efficiency mist eliminators designed for a drift rate of no more than 0.0005% of the circulating water flow rate. These large cooling towers shall use reclaimed water as the primary source of cooling water and may use saltwater from radial collector wells as the backup source of cooling water or a combination of reclaimed water and saltwater.

   b. One new service water cooling tower per nuclear unit with the following nominal design characteristics *per cooling tower*: 2 cells with cooling fans; a height of approximately 63 feet; an air exhaust flow rate of 2,716,000 acfm; an air exit temperature of 96.9° F; a circulating water flow rate of 21,000 gpm; and high-efficiency mist eliminators designed for a drift rate of no more than 0.0005% of the circulating water flow rate. These cooling towers shall use service water as the source of cooling water.

   [Design; Application No. 0250003-013-AC; and Rule 62-212.400, F.A.C. (BACT for PM and PM_{10})]

2. Hours of Operation: The new cooling towers may operate continuously (8760 hours per calendar year). [Application No. 0250003-013-AC]

PERFORMANCE SPECIFICATIONS AND REPORTING REQUIREMENTS

3. Cooling Tower Design Drift Rate: All new cooling towers shall be designed with high-efficiency mist eliminators to achieve a maximum droplet drift rate of no more than 0.0005% of the circulating water flow rate. Within 60 days of commencing operation, the permittee shall notify the compliance authority that the cooling towers were constructed to achieve this droplet drift rate specification. [Design; Application No. 0250003-13-AC; and Rule 62-212.400, F.A.C. (BACT for PM and PM_{10})]

4. Circulating Water Flow Rate: The applicant shall provide a means for determining the circulating water flow rate through the new cooling tower. The actual flow rates shall be used to estimate particulate matter emissions. [Rule 62-4.070, F.A.C.]

5. Emissions Report: PM and PM_{10} emissions from the cooling towers shall be reported as part of the annual operating report. [Rules 62-212.400(BACT) and 62-210.370(3), F.A.C.]

B. Permanent Diesel Engines (EU-017 and EU-018) and Diesel Tanks (EU-019)

This section of the permit addresses the following emissions units.

ID No.	Emission Unit Description
017	Standby diesel generators, ancillary diesel generators and diesel fire pumps
018	Miscellaneous general purpose diesel engines powering support equipment
019	Miscellaneous diesel tanks

EQUIPMENT

1. New Equipment: The permittee is authorized to construct:
   a. Four nominal 4000 kW standby diesel generators (EU-017);
   b. Four nominal 35 kW ancillary diesel generators (EU-017);
   c. Two nominal 330 hp diesel fire pumps (EU-017);
   d. Miscellaneous general purpose diesel engines (EU-018) powering support equipment.
   e. Four nominal 60,000 gallon diesel tanks (EU-019) associated with the standby diesel generators;
   f. Four nominal 1300 gallon diesel day tanks (EU-019) associated with the standby diesel generators;
   g. Two nominal 650 diesel tanks (EU-019) associated with the ancillary diesel generators; and
   h. Two nominal 240 gallon diesel tanks (EU-019) associated with the diesel fire pumps.

   The total capacity of the miscellaneous general purpose diesel engines (EU-018) shall not exceed 600 horsepower (hp). The stated capacities of the diesel tanks are approximate. Additional small tanks may be required for the miscellaneous general purpose diesel engines. Since potential emissions of volatile organic compounds (VOC) from all diesel tanks are negligible (estimated at less than 0.01 tons per year), the permittee may update the final tank capacities in the revised Title V application to add these emissions units. [Application No. 0250003-013-AC]

2. Hours of Operation: Each diesel engine may operate as necessary to support emergency operations including a loss of power or fire at the facility. As requested in the application, each generator and fire pump may operate for up to 96 hours per year of non-emergency operation to ensure that the units remain in working order. [Application No. 0250003-013-AC]

PERFORMANCE SPECIFICATIONS AND REPORTING REQUIREMENTS

3. Authorized Fuel: All of the diesel-powered engines for the following new equipment shall fire only ultra-low sulfur diesel with a maximum sulfur content of 0.0015% by weight: standby generators, ancillary generators and fire pumps (EU-017); and miscellaneous general purpose diesel engines powering support equipment (EU-018). [Application No. 0250003-013-AC; and Rule 62-212.400, F.A.C. (BACT for PM and PM_{10})]

4. Applicable NSPS Provisions: Depending on the final equipment selection, date of manufacture, use and final federal regulations, the diesel-powered engines identified in this subsection may be subject to applicable provisions in NSPS Subpart A (General Provisions) and Subpart IIII (Stationary Compression Ignition Internal Combustion Engines) of 40 CFR 60, which are identified in Appendix F of this permit. The engines shall comply with the applicable provisions in NSPS Subparts A and IIII. [NSPS Subparts A and IIII in 40 CFR 60; and Rule 62-204.800, F.A.C.]

5. Applicable NESHAP Provisions: Depending on the final equipment selection, date of manufacture, use and final federal regulations, the diesel-powered engines identified in this subsection may be subject to

applicable provisions in NESHAP Subpart A (General Provisions) and Subpart ZZZZ (Reciprocating Internal Combustion Engines) of 40 CFR 63, which are identified in Appendix G of this permit. The engines shall comply with the applicable provisions in NESHAP Subparts A and ZZZZ. [NESHAP Subparts A and ZZZZ in 40 CFR 63; and Rule 62-204.800, F.A.C.]

6. Operational Records: For purposes of the Annual Operating Report, the permittee shall maintain records of the hours of operation and fuel consumption of the diesel-powered engines for the standby generators, ancillary generators and fire pumps in this subsection (EU-017). [Rules 62-4.070(3) and 62-210.370(3), F.A.C.]

C. Temporary Construction Boilers (EU-020)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
020	Two temporary construction boilers rated at 110 MMBtu/hour per boiler

{Permitting Note: The equipment specified in this subsection have been identified by the permittee as temporary equipment related to construction of the permanent equipment associated with proposed new nuclear Units 6 and 7. Once the new nuclear units are in operation, the temporary equipment will be permanently shut down and removed from the site. As such, emissions from the temporary equipment are considered secondary emissions; however, the boilers are subject to Rule 62-296.406, F.A.C., which requires a state BACT determination for PM and SO_2 emissions and may be subject to applicable provisions in NSPS Subpart Db}.

EQUIPMENT

1. Temporary Construction Boilers: The permittee is authorized to install and operate two temporary construction boilers (EU-020) rated at 110 MMBtu/hour per boiler. The temporary boilers will be used to steam clean piping and tubing during the construction of proposed new nuclear Units 6 and 7. Once Units 6 and 7 commence operation, the temporary construction boilers shall be permanently shut down and removed from the site. [Design and Application No. 0250003-013-AC]

PERFORMANCE RESTRICTIONS

2. Permitted Capacity: The maximum heat input rate to each boiler is 110 MMBtu per hour.
3. Authorized Fuels: Each boiler shall fire only: natural gas; propane; or ultra-low sulfur diesel with a maximum sulfur content of 0.0015% by weight. [Application No. 0250003-013-AC; and Rule 62-296.406(BACT), F.A.C.]
4. Restricted Operation: The maximum heat input to both boilers (combined) shall not exceed 550,000 MMBtu during any consecutive 12 months. [Rule 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

5. Visible Emissions: Visible emissions from the boilers shall not exceed 20% opacity except for one 6-minute period per hour during which opacity shall not exceed 27%. [Rule 62-296.406, F.A.C.]
6. Particulate Matter: In addition to any applicable emissions standard in NSPS Subpart Db, emissions of particulate matter shall be controlled by firing only the following authorized fuels: natural gas; propane; and ultra-low sulfur diesel with a maximum sulfur content of 0.0015% by weight. [Rule 62-296.406(BACT), F.A.C.]
7. Sulfur Dioxide: In addition to any applicable emissions standard in NSPS Subpart Db, emissions of sulfur dioxide shall be controlled by firing only the following authorized fuels: natural gas; propane; and ultra-low sulfur diesel with a maximum sulfur content of 0.0015% by weight. [Rule 62-296.406(BACT), F.A.C.]

TESTING REQUIREMENTS

8. Initial Compliance Tests: Each boiler shall be tested to demonstrate initial compliance with the visible emissions standard. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]
9. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), each boiler shall be tested to demonstrate compliance with the visible emissions standard. [Rule 62-297.310(7)(a)4, F.A.C.]
10. Test Requirements: Compliance with the visible emissions standard shall be determined by EPA Method 9.

The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(7)(a)9, F.A.C.]

MONITORING REQUIREMENTS

11. Operational Records: For purposes of the Annual Operating Report, the permittee shall maintain records of the hours of operation and fuel consumption of each boiler in this subsection. [Rules 62-4.070(3) and 62-210.370(3), F.A.C.]

RECORDS AND REPORTS

12. Visible Emissions Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test, the report shall also indicate the heat input rate of the boiler. [Rule 62-297.310(8), F.A.C.]

13. Fuel Records: The permittee shall maintain monthly records of all fuel usage to demonstrate compliance with the heat input limit in the subsection. For ultra-low sulfur diesel fuel, the permittee shall maintain the records necessary to demonstrate compliance with the fuel sulfur specification. A vendor certification of the fuel sulfur content for each as-delivered shipment is sufficient. The vendor certification shall identify the quantity of fuel delivered, the heating value, the fuel sulfur content and the methods used to determine the fuel sulfur content. Rule 62-4.070(3), F.A.C.]

FEDERAL NSPS PROVISIONS

14. Applicable NSPS Provisions: Depending on the final equipment selection, date of manufacture, use and final federal regulations, the temporary construction boilers may be subject to applicable provisions in NSPS Subpart A (General Provisions) and Subpart Db (Industrial-Commercial-Institutional Boilers) of 40 CFR 60, which are identified in Appendix F of this permit. [NSPS Subparts A and Db in 40 CFR 60; and Rule 62-204.800, F.A.C.]

D. Temporary Concrete Batch Plant (EU-021)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
021	Temporary concrete batch plant

{Permitting Note: The equipment specified in this subsection have been identified by the permittee as temporary equipment related to construction of the permanent equipment associated with proposed new nuclear Units 6 and 7. Once the new nuclear units are in operation, the temporary equipment will be permanently shut down and removed from the site. As such, emissions from the temporary equipment are considered secondary emissions and were not reviewed for BACT.}

EQUIPMENT

1. Concrete Batch Plant: The permittee is authorized to install a temporary 3-unit, fully-automatic concrete batch plant (EU-021) with a capacity of 250 cubic yard per hour per each unit (two operating units and one standby unit). Once Units 6 and 7 commence operation, the temporary concrete batch plant shall be permanently shut down and removed from the site. [Design and Application No. 0250003-013-AC]
2. Fabric Filters: The permittee is authorized to install fabric filters as necessary to comply with the visible emission standards of this permit. [Rule 62-4.070(3), F.A.C.]

PERFORMANCE RESTRICTIONS

3. Restricted Operation: The hours of operation of are not limited (8760 hours per year). [Rule 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

4. Stack Emissions: Emissions from silos, weigh hoppers (batchers) and other enclosed storage and conveying equipment shall be controlled to the extent necessary to limit visible emissions to 5% opacity. [Rule 62-296.414(1), F.A.C.]
5. Unconfined Emissions: The owner or operator shall take reasonable precautions to control unconfined emissions from hoppers, storage and conveying equipment, conveyor drop points, truck loading and unloading, roads, parking areas, stock piles and yards as required by paragraph 62-296.320(4)(c), F.A.C. For concrete batch plants, the following shall constitute reasonable precautions:
   a. Management of roads, parking areas, stock piles and yards, which shall include one or more of the following:
      (1) Paving and maintenance of roads, parking areas and yards.
      (2) Application of water or environmentally safe dust-suppressant chemicals when necessary to control emissions
      (3) Removal of particulate matter from roads and other paved areas under control of the owner or operator to mitigate re-entrainment, and from building or work areas to reduce airborne particulate matter.
      (4) Reduction of stock pile height or installation of wind breaks to mitigate wind entrainment of particulate matter from stock piles.
   b. Use of spray bar, chute or partial enclosure to mitigate emissions at the drop point to the truck.

   [Rule 62-296.414(2), F.A.C.]

TESTING REQUIREMENTS

6. Test Methods and Procedures: All emissions tests performed pursuant to the requirements of this subsection shall comply with the following requirements.

   a. Visible emissions test shall be conducted in accordance with EPA Method 9, as described in Appendix A of 40 CFR 60, incorporated by reference at Rule 62-204.800, F.A.C.

   b. Test procedures shall conform to the procedures specified in Rule 62-297.310, F.A.C. All test results shall be reported to the Department in accordance with the provisions of Rule 62-297.310, F.A.C. See Appendix D of this permit.

   c. Visible emissions tests of silo dust collector exhaust points shall be conducted while loading the silo at a rate that is representative of the normal silo loading rate. The minimum loading rate shall be 25 tons per hour unless such rate is unachievable in practice. If emissions from the weigh hopper (batcher) operation are also controlled by the silo dust collector, the batching operation shall be in operation during the visible emissions compliance test. The batching rate during the emissions test shall be representative of the normal batching rate and duration. Each test report shall state the actual silo loading rate during emissions testing and, if applicable, whether or not batching occurred during emissions testing.

   d. If emissions from the weigh hopper (batcher) operation are controlled by a dust collector which is separate from the silo dust collector, visible emissions tests of the weigh hopper (batcher) dust collector exhaust point shall be conducted while batching at a rate that is representative of the normal batching rate and duration. Each test report shall state the actual batching rate during emissions testing.

   [Rule 62-296.414(4), F.A.C.]

7. Initial Compliance Tests: No later than 30 days after commencing operation of the concrete batch plant, the owner or operator shall have initial compliance tests conducted for visible emissions from each dust collector exhaust point. [Rules 62-4.070(3) and 62-296.414(4), F.A.C.]

8. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), the owner or operator shall have compliance tests conducted for visible emissions from each dust collector exhaust point. [Rules 62-296.414(4) and 62-297.310(7)(a)4, F.A.C.]

MONITORING REQUIREMENTS

9. Operational Records: For purposes of the Annual Operating Report, the permittee shall maintain records of the hours of operation and tons of concrete produced. [Rules 62-4.070(3) and 62-210.370(3), F.A.C.]

RECORDS AND REPORTS

10. Visible Emissions Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test, the report shall also indicate concrete batching rate and truck loading rate as applicable. [Rule 62-297.310(8), F.A.C.]

CONTENTS

CITATION FORMATS

The following illustrate the formats used in the permit to identify applicable requirements from permits and regulations.

Old Permit Numbers

Example: Permit No. AC50-123456 or Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number for that county
"001"identifies the specific permit project number
"AC" identifies the permit as an air construction permit
"AF" identifies the permit as a minor source federally enforceable state operation permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a major Title V air operation permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the preconstruction review requirements of the Prevention of Significant Deterioration of Air Quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project number

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CRF 60.7]

Means: Title 40, Part 60, Section 7

GLOSSARY OF COMMON TERMS

° F: degrees Fahrenheit
µg: microgram
AAQS: Ambient Air Quality Standard
acf: actual cubic feet
acfm: actual cubic feet per minute
ARMS: Air Resource Management System (Department's database)
BACT: best available control technology
bhp: brake horsepower
Btu: British thermal units
CAM: compliance assurance monitoring
CEMS: continuous emissions monitoring system
cfm: cubic feet per minute
CFR: Code of Federal Regulations

CAA: Clean Air Act

CMS: continuous monitoring system

CO: carbon monoxide

CO_2: carbon dioxide

COMS: continuous opacity monitoring system

DARM: Division of Air Resource Management

DEP: Department of Environmental Protection

Department: Department of Environmental Protection

dscf: dry standard cubic feet

dscfm: dry standard cubic feet per minute

EPA: Environmental Protection Agency

ESP: electrostatic precipitator (control system for reducing particulate matter)

EU: emissions unit

F: fluoride

F.A.C.: Florida Administrative Code

F.A.W.: Florida Administrative Weekly

F.D.: forced draft

F.S.: Florida Statutes

FGD: flue gas desulfurization

FGR: flue gas recirculation

ft^2: square feet

ft^3: cubic feet

gpm: gallons per minute

gr: grains

HAP: hazardous air pollutant

Hg: mercury

hp: horsepower

I.D.: induced draft

ID: identification

kPa: kilopascals

lb: pound

MACT: maximum achievable technology

MMBtu: million British thermal units

MSDS: material safety data sheets

MW: megawatt

NESHAP: National Emissions Standards for Hazardous Air Pollutants

NO_X: nitrogen oxides

NSPS: New Source Performance Standards

O&M: operation and maintenance

O_2: oxygen

Pb: lead

PM: particulate matter

PM_{10}: particulate matter with a mean aerodynamic diameter of 10 microns or less

ppm: parts per million

ppmv: parts per million by volume

ppmvd: parts per million by volume, dry basis

QA: quality assurance

QC: quality control

PSD: prevention of significant deterioration

psi: pounds per square inch

PTE: potential to emit

RACT: reasonably available control technology

RATA: relative accuracy test audit

RBLC: EPA's RACT/BACT/LAER Clearinghouse

SAM: sulfuric acid mist

scf: standard cubic feet

scfm: standard cubic feet per minute

SIC: standard industrial classification code

SIP: State Implementation Plan

SNCR: selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)

SO_2: sulfur dioxide

TPD: tons/day

TPH: tons per hour

TPY: tons per year

TRS: total reduced sulfur

UTM: Universal Transverse Mercator coordinate system

VE: visible emissions

VOC: volatile organic compounds

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the F.S. or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, F.S.. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology* (applicable for PM and PM_{10});
    b. Determination of Prevention of Significant Deterioration (applicable for PM and PM_{10}); and
    c. Compliance with New Source Performance Standards (potentially applicable for Subparts A, Db and IIII on 40 CFR 60).

    {Permitting Note: Pursuant to Rule 62-296.406, F.A.C., this permit also constitutes a determination of Best Available Control Technology for SO_2 emissions from the two construction boilers.}

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing: (1) best operational practices to minimize emissions are adhered to, and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. Rule 62-210.700 (Excess Emissions), F.A.C., cannot vary any federal NSPS or NESHAP provision. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

RECORDS AND REPORTS

10. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least 5 years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
11. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(3), F.A.C.]

Unless otherwise specified in the permit, the following testing requirements apply to all emissions units at the facility.

COMPLIANCE TESTING REQUIREMENTS

1. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

2. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]

3. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

4. Applicable Test Procedures

   a. *Required Sampling Time.*

      (1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.

      (2) Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

         (a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.

         (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.

         (c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

   b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

d. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

[Rule 62-297.310(4), F.A.C.]

5. Determination of Process Variables

a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

6. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must also comply with all applicable Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.

b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.

c. *Sampling Ports.*

(1) All sampling ports shall have a minimum inside diameter of 3 inches.

(2) The ports shall be capable of being sealed when not in use.

(3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.

(4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.

(5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

d. *Work Platforms.*

(1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.

(2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.

(3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.

(4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

(1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.

(2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

f. *Electrical Power.*

(1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.

(2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

(1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.

(a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.

(b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.

(c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.

(2) A complete monorail or dual rail arrangement may be substituted for the eyebolt and bracket.

(3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

[Rule 62-297.310(6), F.A.C.]

7. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

a. *General Compliance Testing.*

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.

3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

   (a) Did not operate; or

   (b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,

4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

   (a) Visible emissions, if there is an applicable standard;

   (b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

   (c) Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.

6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.

7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.

8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.

9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.

10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.

b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the

Department.

c. *Waiver of Compliance Test Requirements.* If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of paragraph 62-297.310(7)(b), F.A.C., shall apply.

[Rule 62-297.310(7), F.A.C.]

RECORDS AND REPORTS

8. Test Reports:

a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.

b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.

c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information.

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.

16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

MISCELLANEOUS

9. Stack and Duct: The terms "stack" and "duct" are used interchangeably in this rule. [Rule 62-297.310(9), F.A.C.]

SUMMARY OF BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATIONS

PROJECT DESCRIPTION

FPL operates the existing Turkey Point Plant, which is located in Miami-Dade County at 9700 Southwest 344 Street in Homestead, Florida. FPL proposes to add the following permanent emissions units to support proposed new nuclear Units 6 and 7: six large wet circulating water cooling towers; two service water cooling towers; miscellaneous diesel tanks; and diesel engines powering standby generators, ancillary generators, fire pumps and miscellaneous engines for support equipment. The project is subject to PSD preconstruction review for PM and PM_{10} emissions.

FINAL BACT DETERMINATIONS

In accordance with Rule 62-212.400, F.A.C., the Department makes the following final BACT determinations.

- All new cooling towers (EU-015 and EU-016) shall be designed with high-efficiency mist eliminators to achieve a maximum drift rate of 0.0005% of the circulating water flow rate.
- In addition to any applicable PM standards specified in NSPS Subpart IIII, all new diesel engines (EU-017 and EU-018) shall fire only ultra low sulfur diesel with a maximum fuel sulfur content of 0.0015% by weight.

In accordance with Rule 62-296.406, F.A.C., the Department makes the following final BACT determinations for the construction boilers (EU-020): In addition to any applicable emissions standards in NSPS Subpart Db of 40 CFR 60, emissions of PM and SO_2 shall be controlled by firing only the following authorized fuels: natural gas; propane; and ultra-low sulfur diesel with a maximum sulfur content of 0.0015% by weight.

NSPS PROVISIONS

This section indentifies the federal New Source Performance Standards (NSPS) in 40 CFR 60 that may be applicable to emissions units regulated by this project.

NSPS SUBPART A - GENERAL PROVISIONS

In accordance with Rule 62-204.800, F.A.C., the following federal regulation in Title 40, Part 60 of the Code of Federal Regulations (CFR) was adopted by reference.

Federal Revision Date: January 28, 2009
State Rule Effective Date: November 18, 2009
Standardized Conditions Revision Date: February 5, 2010

Potentially Affected Emissions Units

The following emissions units may be subject to the corresponding federal NSPS provisions depending on the final equipment selection, date of manufacture, use and final federal regulations.

EU ID	Emission Unit Description
NSPS Subpart IIII for Stationary Compression Ignition Internal Combustion Engines	
017	Standby generators, ancillary generators and fire pump engines
018	Miscellaneous general purpose diesel engines powering support equipment
NSPS Subpart Db for Industrial-Commercial-Institutional Boilers	
020	Two temporary construction boilers rated at 110 MMBtu/hour per boiler

Emissions units subject to a federal NSPS Subpart are also subject to the applicable general provisions in Subpart A of 40 CFR 60, which may be obtained from: http://www.depstate.fl.us/air/emission/writertools/t3nsps.htm.

NSPS SUBPART Db - STANDARDS OF PERFORMANCE FOR INDUSTRIAL-COMMERCIAL-INSTITUTIONAL STEAM GENERATING UNITS

In accordance with Rule 62-204.800, F.A.C., the following federal regulation in Title 40, Part 60 of the Code of Federal Regulations (CFR) was adopted by reference.

Federal Revision Date: January 28, 2009
State Rule Effective Date: November 18, 2009
Standardized Conditions Revision Date: February 3, 2010

Potentially Affected Emissions Units

The following emissions units may be subject to applicable NSPS Subpart Db provisions depending on the final equipment selection, date of manufacture, use and final federal regulations.

EU ID	Emission Unit Description
020	Two temporary construction boilers rated at 110 MMBtu/hour per boiler

The NSPS Subpart Db provisions may be obtained from: http://www.depstate.fl.us/air/emission/writertools/t3nsps.htm.

NSPS SUBPART IIII - STANDARDS OF PERFORMANCE FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES

In accordance with Rule 62-204.800, F.A.C., the following federal regulation in Title 40, Part 60 of the Code of Federal Regulations (CFR) was adopted by reference.

Federal Revision Date: July 11, 2006
Rule Effective Date: January 8, 2007
Standardized Conditions Revision Date: August 4, 2009

Potentially Affected Emissions Units

The following emissions units may be subject to applicable NSPS Subpart IIII provisions depending on the final equipment selection, date of manufacture, use and final federal regulations.

EU ID	Emission Unit Description
NSPS Subpart IIII for Stationary Compression Ignition Internal Combustion Engines	
017	Standby generators, ancillary generators and fire pump engines
018	Miscellaneous general purpose diesel engines powering support equipment

The NSPS Subpart IIII provisions may be obtained from: http://www.depstate.fl.us/air/emission/writertools/t3nsps.htm.

NESHAP SUBPART A – GENERAL PROVISIONS

In accordance with Rule 62-204.800, F.A.C., the following federal regulation in Title 40, Part 63 of the Code of Federal Regulations (CFR) was adopted by reference. The original federal rule numbering has been retained.

Federal Revision Date: May 16, 2007
State Rule Effective Date: October 1, 2007
Standardized Conditions Revision Date: January 29, 2008
Source: 59 FR 12430, Mar. 16, 1994, unless otherwise noted.

Potentially Affected Emissions Units

The following emissions units may be subject to applicable NESHAP Subpart ZZZZ provisions depending on the final equipment selection, date of manufacture, use and final federal regulations.

EU ID	Emission Unit Description
017	Emergency generators and fire pump engines
018	Miscellaneous general purpose diesel engines powering support equipment

Emissions units subject to a federal NESHAP Subpart are also subject to the applicable general provisions in Subpart A of 40 CFR 63, which may be obtained from: http://www.dep.state.fl.us/air/emission/writertools/t3neshap.htm.

NESHAP SUBPART ZZZZ - NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

In accordance with Rule 62-204.800, F.A.C., the following federal regulation in Title 40, Part 63 of the Code of Federal Regulations (CFR) was adopted by reference.

Federal Revision Date: January 18, 2008
Rule Effective Date: July 1, 2008
Standardized Conditions Revision Date: February 2, 2009
Source: 69 FR 33506, June 15, 2004, unless otherwise noted.

Potentially Affected Emissions Units

The following emissions units may be subject to applicable NESHAP Subpart ZZZZ provisions depending on the final equipment selection, date of manufacture, use and final federal regulations.

EU ID	Emission Unit Description
017	Emergency generators and fire pump engines
018	Miscellaneous general purpose diesel engines powering support equipment

The NESHAP Subpart ZZZZ provisions may be obtained from: http://www.depstate.fl.us/air/emission/writertools/t3nsps.htm.

Florida Department of Environmental Protection

Memorandum

TO: Trina Vielhauer, Bureau of Air Regulation

FROM: Jeff Koerner, New Source Review Section
Tammy McWade, New Source Review Section

DATE: March 19, 2010

SUBJECT: Draft Air Permit No. PSD-FL-409
Project No. 0250003-013-AC
Florida Power & Light, Turkey Point Power Plant
Cooling Tower Project for Proposed Nuclear Units 6 and 7

The Florida Power & Light Company operates the existing Turkey Point Power Plant, which is located in Miami-Dade County at 9700 Southwest 344th Street in Homestead, Florida. To support the proposed new nuclear Units 6 and 7, this project authorizes construction of the following: six 12-cell mechanical draft cooling towers; two 2-cell service water cooling towers; four nominal 4000 kilowatt (kW) standby diesel generators; four nominal 35 kW ancillary diesel generators; two nominal 330 horsepower (hp) fire pump engines; diesel tanks; and miscellaneous general purpose diesel engines powering various support equipment. Based on the annual potential emissions, the project is subject to the preconstruction review requirements of Rule 62-212.400, Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration (PSD) of Air Quality for emissions of particulate matter (PM) and particulate matter with a mean particle diameter of 10 microns or less (PM_{10}). Details of the project are provided in the Technical Evaluation and Preliminary Determination issued with the draft permit package.

I recommend your approval of the attached draft PSD permit package.

Attachments

P.E. CERTIFICATION STATEMENT

APPLICANT

Florida Power & Light Company
700 Universe Boulevard
Juno Beach. FL 33408

Air Permit No. PSD-FL-409
Project No. 0250003-013-AC
Turkey Point Power Plant
Cooling Tower Project for Units 6 and 7
Miami-Dade County, Florida

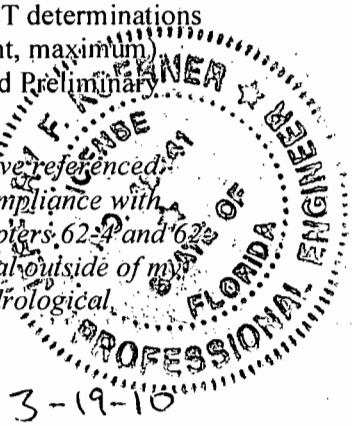
PROJECT DESCRIPTION

Florida Power & Light Company operates the existing Turkey Point Power Plant, which is located in Miami-Dade County at 9700 Southwest 344th Street in Homestead, Florida. To support the proposed new nuclear Units 6 and 7, this project authorizes the following construction: six 12-cell circulating water cooling towers; two 2-cell service water cooling towers; four nominal 4000 kW standby diesel generators; four nominal 35 kW ancillary diesel generators; two nominal 330 hp fire pump engines; diesel storage tanks; and miscellaneous general purpose diesel engines. In addition to the general preconstruction review requirements of Rule 62-212.300, F.A.C., the proposed cooling tower project triggers preconstruction review pursuant to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality for PM/PM_{10} emissions. The primary source of PM/PM_{10} emissions will be from the cooling towers, which will be controlled by high-efficiency mist eliminators. Due to the difficulties with conducting representative emissions tests on the cooling towers, the Department determines the preliminary PM/PM_{10} BACT to be, "All new cooling towers (EU-015 and EU-016) shall be designed with mist eliminators to achieve a maximum drift rate of 0.0005% of the circulating water flow rate."

The other sources of PM/PM_{10} emissions are diesel engines powering miscellaneous support equipment, which represent less than 4 tons/year of PM/PM_{10} emissions. Depending on the final size, date of manufacture, use and final federal regulations, some of the diesel engines will be subject to NSPS Subparts A and IIII as well as NESHAP Subparts A and ZZZZ. The Department determines the preliminary PM/PM_{10} BACT to be, "In addition to any applicable PM standards specified in NSPS Subpart IIII, all new diesel engines (EU-017 and EU-018) shall fire only ultra low sulfur diesel with a maximum fuel sulfur content of 0.0015% by weight."

The project also includes the following temporary equipment that will be used to construct the permanent equipment: two temporary construction boilers (subject to Rule 62-296.406, F.A.C. and potentially NSPS Subpart Db in 40 CFR 60) and a concrete batch plant (subject to Rule 62-296.414, F.A.C.). Emissions from the temporary equipment are considered secondary emissions and are not included when determining the potential to emit; therefore, BACT determinations pursuant to Rule 62-212.400, F.A.C. are not required for these construction-related activities since emissions will be temporary and occur before the permanent emissions units are fully operational. Pursuant to Rule 62-296.406, F.A.C., BACT determinations are required for the two temporary construction boilers for PM and SO_2 emissions. The preliminary PM and SO_2 BACT determinations are the firing of: natural gas; propane; or ultra low sulfur diesel fuel (0.0015% sulfur by weight, maximum). Details of the project are provided in the application and the enclosed Technical Evaluation and Preliminary Determination.

I HEREBY CERTIFY *that the air pollution control engineering features described in the above-referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, civil, mechanical, structural, hydrological, geological, and meteorological features).*



Jeffery F. Koerner, P.E.
Registration No. 49441

3-19-10
(Date)

Walker, Elizabeth (AIR)

From: Walker, Elizabeth (AIR)
Sent: Friday, March 19, 2010 3:12 PM
To: 'randall_r_labauve@fpl.com'
Cc: 'matthew.raffenberg@fpl.com'; 'kkosky@golder.com'; Anderson, Lennon; 'Muthiah, Mallika (DERM)'; Halpin, Mike; 'Forney.Kathleen@epamail.epa.gov'; 'Oquendo.Ana@epamail.epa.gov'; 'abrams.heather@epamail.epa.gov'; 'dee_morse@nps.gov'; Gibson, Victoria; Livingston, Sylvia; Koerner, Jeff; McWade, Tammy
Subject: TURKEY POINT POWER PLANT; 0250003-013-AC/PSD-FL-409
Attachments: Written_Notice_with_Signatures_409.pdf

Dear Sir/ Madam:

Attached is the official **Notice of Intent to Issue** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).

Click on the following link to access the permit project documents:

http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0250003.013.AC.D_pdf.zip

Owner/Company Name: FLORIDA POWER and LIGHT (PTF)
Facility Name: TURKEY POINT POWER PLANT
Project Number: 0250003-013-AC/PSD-FL-409
Permit Status: DRAFT
Permit Activity: CONSTRUCTION
Facility County: MIAMI-DADE

Processor: Tammy McWade/Jeff Koerner

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Access these documents by clicking on the link provided above, or search for other project documents using the "*Air Permit Documents Search*" website at http://www.dep.state.fl.us/air/emission/apds/default.asp.

Permit project documents are addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Bureau of Air Regulation

Elizabeth Walker
Bureau of Air Regulation
Division of Air Resource Management (DARM)
(850)921-9505

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html

Tracking:

Recipient	Delivery	Read
'randall_r_labauve@fpl.com'		
'matthew.raffenberg@fpl.com'		
'kkosky@golder.com'		
Anderson, Lennon	Delivered: 3/19/2010 3:12 PM	Read: 3/22/2010 9:46 AM
'Muthiah, Mallika (DERM)'		
Halpin, Mike	Delivered: 3/19/2010 3:12 PM	
'Forney.Kathleen@epamail.epa.gov'		
'Oquendo.Ana@epamail.epa.gov'		
'abrams.heather@epamail.epa.gov'		
'dee_morse@nps.gov'		
Gibson, Victoria	Delivered: 3/19/2010 3:12 PM	
Livingston, Sylvia	Delivered: 3/19/2010 3:12 PM	Read: 3/22/2010 9:41 AM
Koerner, Jeff	Delivered: 3/19/2010 3:12 PM	Read: 3/19/2010 3:13 PM
McWade, Tammy	Delivered: 3/19/2010 3:12 PM	

Walker, Elizabeth (AIR)

From: LaBauve, Randall R [Randall.R.LaBauve@fpl.com]
To: Walker, Elizabeth (AIR)
Sent: Friday, March 19, 2010 3:19 PM
Subject: Read: TURKEY POINT POWER PLANT; 0250003-013-AC/PSD-FL-409

Your message was read on Friday, March 19, 2010 3:19:07 PM (GMT-05:00) Eastern Time (US & Canada).

Walker, Elizabeth (AIR)

From: Mail Delivery System [MAILER-DAEMON@mx1.golder.com]
To: kkosky@golder.com
Sent: Friday, March 19, 2010 3:12 PM
Subject: Relayed: TURKEY POINT POWER PLANT; 0250003-013-AC/PSD-FL-409

Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:

kkosky@golder.com

Subject: TURKEY POINT POWER PLANT; 0250003-013-AC/PSD-FL-409

Walker, Elizabeth (AIR)

From: Microsoft Exchange
To: 'randall_r_labauve@fpl.com'; 'matthew.raffenberg@fpl.com'
Sent: Friday, March 19, 2010 3:12 PM
Subject: Relayed: TURKEY POINT POWER PLANT; 0250003-013-AC/PSD-FL-409

Delivery to these recipients or distribution lists is complete, but delivery notification was not sent by the destination:

'randall_r_labauve@fpl.com'

'matthew.raffenberg@fpl.com'

Subject: TURKEY POINT POWER PLANT; 0250003-013-AC/PSD-FL-409

Sent by Microsoft Exchange Server 2007