

Florida Department of
Environmental Protection

Memorandum

TO: Trina Vielhauer, Bureau of Air Regulation
FROM: Syed Arif, New Source Review Section SA
DATE: March 2, 2010
SUBJECT: Air Permit No. PSD-FL-408
Project No. 0250623-007-AC
Industrial Power Generating Company, LLC (INGENCO)
South Dade Landfill
Landfill Gas Engines

This project is subject to PSD preconstruction review. Attached for your review are the following items:

- Written Notice of Intent to Issue Air Permit;
- Public Notice of Intent to Issue Air Permit;
- Technical Evaluation and Preliminary Determination;
- Draft Permit;
- Appendices; and
- P.E. Certification.

I recommend your approval of the attached Draft Permit package.

Attachments

P.E. CERTIFICATION STATEMENT

APPLICANT

Industrial Power Generating Company, LLC
2250 Dabney Road
Richmond, Virginia 23230

Air Permit No. PSD-FL-408
Project No. 0250623-007-AC
Miami-Dade Solid Waste Management
South Dade Landfill Gas Engines
Miami-Dade County, Florida

PROJECT DESCRIPTION

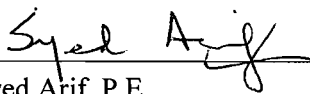
Industrial Power Generating Company, LLC (INGENCO) applied on June 2, 2009 to install twenty-four (24) identical Detroit Diesel Series 60 dual fuel (landfill gas and No. 2 fuel oil and/or biodiesel) internal combustion engines. Each lean-burn engine will be connected to an individual 350 kilowatt (kW) electrical generator. The plant will have the potential to generate 8 megawatts of electricity under base load operating conditions and will be interconnected to the Florida Power & Light distribution network through a nearby power line.

Based on the air permit application, the project will result in potential emissions of: 254 tons per year (TPY) of nitrogen oxides (NO_x); 331 TPY of carbon monoxide (CO); 29 TPY of particulate matter/particulate matter with a mean diameter of 10 microns or less (PM/PM₁₀); 39.9 tons per year of sulfur dioxide (SO₂); 38.6 TPY year of volatile organic compounds (VOC) and 8.1 TPY of hydrogen chloride (HCl). As defined in Rule 62-210.200 of the Florida Administrative Code (F.A.C.), the project results in significant net emissions increases for NO_x, CO, PM and PM₁₀. Therefore, the project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality for these pollutants in accordance with Rule 62-212.400, F.A.C.

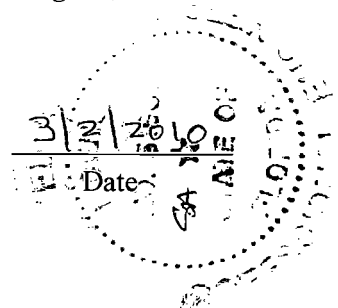
For each PSD-significant pollutant, the Department is required to determine the Best Available Control Technology (BACT) and approve the applicant's Air Quality Analysis regarding ambient impacts due to the project.

CO and NO_x emissions will be controlled through combustor design (lean-burn engine) and good combustion practices (air-to-fuel ratio control). PM/PM₁₀ emissions will be minimized through the pretreatment of the landfill gas prior to combustion and proper equipment maintenance of the engines.

***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, mechanical, structural, hydrological, geological, and meteorological features).*



Syed Arif, P.E.
Registration No. 51861





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 3, 2010

Mr. Robert L. Greene
Environmental Compliance Manager
Industrial Power Generating Company, LLC
2250 Dabney Road
Richmond, Virginia 23230

Re: Air Permit No. PSD-FL-408
Project No. 0250623-007-AC
South Dade Landfill
Landfill Gas Engines

Dear Mr. Greene:

On June 2, 2009, Industrial Power Generating Company, LLC (INGENCO) submitted an application for an air construction permit subject to the preconstruction review requirements for the Prevention of Significant Deterioration of Air Quality. The primary purpose of the project is to construct twenty-four (24) identical Detroit Diesel Series 60 dual fired internal combustion engines. This work will be conducted at Miami-Dade Solid Waste Management South Dade Landfill, which is located in Miami-Dade County at 24000 SW 97th Avenue, Miami, Florida. Enclosed are 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 and 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, Syed Arif, at 850/921-9528.

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

TLV/sa

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

*In the Matter of an
Application for Air Permit by:*

Industrial Power Generating Company, LLC
2250 Dabney Road
Richmond, Virginia 23230

Authorized Representative:
Mr. Robert L. Greene, Environmental Compliance Manager

Air Permit No. PSD-FL-408
Air Permit No. 0250623-007-AC
South Dade Landfill
Landfill Gas Engines
Miami-Dade County, Florida

Applicant: The applicant for this project is Industrial Power Generating Company, LLC (INGENCO). The applicant's authorized representative and mailing address is: Mr. Robert L. Greene, 2250 Dabney Road, Richmond, Virginia 23230.

Facility Location: Miami-Dade Solid Waste Management operates an existing municipal solid waste landfill facility. The South Dade Landfill is located in Miami-Dade County at 24000 SW 97th Avenue in Miami, Florida.

Project: INGENCO applied on June 2, 2009 to install twenty-four (24) identical Detroit Diesel Series 60 dual fuel (landfill gas and No. 2 fuel oil and/or biodiesel) internal combustion engines. Each lean-burn engine will be connected to an individual 350 kilowatt (kW) electrical generator. The plant will have the potential to generate 8 megawatts of electricity under base load operating conditions and will be interconnected to the Florida Power & Light distribution network through a nearby power line. 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, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (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 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

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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.

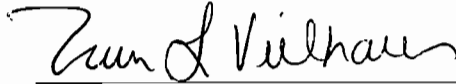
A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; 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.

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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

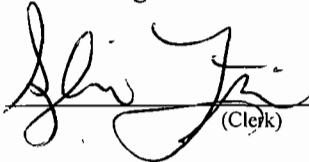
CERTIFICATE OF SERVICE

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) 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 3/3/10 to the persons listed below.

- Robert L. Greene, INGENCO rgreene@ingenco.com
- German Hernandez, Miami-Dade Solid Waste Management germanh@miamidade.gov
- James A. Susan, P.E., Fishbeck, Thompson, Carr & Huber, Inc. jasusan@ftch.com
- Lennon Anderson, DEP-SED lennon.anderson@dep.state.fl.us
- Mallika Muthiah, DERM muthiahm@miamidade.gov
- Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
- Dee Morse, NPS (dee_morse@nps.gov)
- Vickie Gibson, DEP-BAR (victoria.gibson@dep.state.fl.us) (for read file)

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)

3/3/10
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation
Air Permit Number PSD-FL-408 / Project Number 0250623-007-AC
Industrial Power Generating Company, LLC
Miami-Dade Solid Waste Management South Dade Landfill
Miami-Dade County, Florida

Applicant: The applicant for this project is Industrial Power Generating Company, LLC (INGENCO). The applicant's authorized representative and mailing address is: Mr. Robert L. Greene, 2250 Dabney Road, Richmond, Virginia 23230.

Facility Location: Miami-Dade Solid Waste Management operates an existing municipal solid waste landfill facility. The South Dade Landfill is located in Miami-Dade County at 24000 SW 97th Avenue in Miami, Florida.

Project: INGENCO applied on June 2, 2009 to install twenty-four (24) identical Detroit Diesel Series 60 dual fuel (landfill gas and No. 2 fuel oil and/or biodiesel) internal combustion engines. Each lean-burn engine will be connected to an individual 350 kilowatt (kW) electrical generator. The plant will have the potential to generate 8 megawatts of electricity under base load operating conditions and will be interconnected to the Florida Power & Light distribution network through a nearby power line.

Based on the air permit application, the project will result in potential emissions of: 254 tons per year (TPY) of nitrogen oxides (NO_x); 331 TPY of carbon monoxide (CO); 29 TPY of particulate matter/particulate matter with a mean diameter of 10 microns or less (PM/PM₁₀); 39.9 tons per year of sulfur dioxide (SO₂); 38.6 TPY year of volatile organic compounds (VOC); and 8.1 TPY of hydrogen chloride (HCl). As defined in Rule 62-210.200 of the Florida Administrative Code (F.A.C.), the project results in significant net emissions increases for NO_x, CO, PM and PM₁₀. Therefore, the project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality for these pollutants in accordance with Rule 62-212.400, F.A.C.

For each PSD-significant pollutant, the Department is required to determine the Best Available Control Technology (BACT) and approve the applicant's Air Quality Analysis regarding ambient impacts due to the project.

CO and NO_x emissions will be controlled through combustor design (lean-burn engine) and good combustion practices (air-to-fuel ratio control). PM/PM₁₀ emissions will be minimized through the pretreatment of the landfill gas prior to combustion and proper equipment maintenance of the engines.

The applicant submitted an air quality analysis. The following table shows the maximum predicted Class II PSD increments in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and the percent (%) of the allowable increment consumed by sources in the area.

Summary of PSD Class II Increment Analysis

<u>Pollutant</u>	<u>Averaging Time</u>	<u>Allowable Increment</u> <u>($\mu\text{g}/\text{m}^3$)</u>	<u>Increment Consumed</u> <u>($\mu\text{g}/\text{m}^3$)</u>	<u>Percent</u>
NO ₂	Annual	25	18	72
PM ₁₀	24-hour	30	23	77
	Annual	17	3	18

The Class II increments represent the increment consumed in the vicinity of the project. Based on the modeled results, emissions from the project will not significantly contribute to, or cause a violation of, any state or federal ambient air quality standards.

The applicant also provided a Class I increment analysis for the Everglades National Park (ENP). The maximum predicted Class I increment consumption due to the project alone are less than significant.

(Public Notice to be Published in the Newspaper)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

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, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (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 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.

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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

(Public Notice to be Published in the Newspaper)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

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.



**TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION**

APPLICANT
INDUSTRIAL POWER GENERATING COMPANY, LLC (INGENCO)
2250 Dabney Road
Richmond, Virginia 23230

FACILITY
South Dade Landfill
ARMS Facility ID No. 0250623

PROJECT
Facility Modification – Electrical Generating Station
Project No. 0250623-007-AC
Air Permit No. PSD-FL-408

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 Blairstone Road, MS #5505
Tallahassee, Florida 32399-2400
Telephone: 850-488-0114 Fax: 850-921-9533

March 3, 2010

I. GENERAL PROJECT INFORMATION

A. Facility Description and Location

Miami-Dade Solid Waste Management (MDSWM) operates a municipal solid waste landfill located at Black Point in Southern Miami-Dade County. The 167 acre site is delimited by SW 97th Avenue on the west, 248nd Street on the south, Coconut Palm Drive and Black Creek Canal on the northeast. This facility is located at 24000 SW 97th Avenue, Miami, Miami-Dade County, Florida.

Primary Responsible Official: Mr. German Hernandez, Manager Environmental Affairs.

Latitude and Longitude are 25° 32' 39.22" N and 80° 20' 30.21" W respectively. UTM coordinates of the site are: Zone 17, 565.51 km East and 2825.11 km North.

Standard Industrial Classification Codes (SIC)

Major Group Number	49 Electric, Gas, and Sanitary Services
Industry Group Number	495 Sanitary Services
Industry Number	4953 Refuse Systems



Figure 1 – Regional Location



Figure 2 – Facility Location

The South Dade Landfill facility (SDLF) consists of five cells designated as Cells 1 to 5. Cells 1 and 2, located on the eastern half of the landfill is 60 acres and is currently closed; Cell 3, located on the center of the landfill is approximately 46 acres and is currently inactive and due for closure; and Cell 4 is approximately 48 acres and currently active. The MDSWM plans to construct Cell 5, approximately 50 acres, as a landfill expansion in the near future.

The Non-Methane Organic Compound (NMOC) control device (gas collection and control system) is installed according with the requirements of 40 CFR Part 60, Subpart WWW. Methane-rich landfill gas (LFG) produced from the decomposition of the disposed waste materials at both active and capped cells is being collected by a gas recovery system. A gas collection and control system (GCCS) was installed as part of the formal closure of Cells 1 and 2. The GCCS comprise gas extraction wells, gas piping, and a thermal gas destruction unit. Since the solid waste at SDFL was placed above the natural ground surface, the system is intended to capture landfill gas (LFG) which would escape through the cover soil and be transported into the air. The LFG collection system induces a slight negative pressure at the extraction wells, thus reducing the gas pressure gradient, which in turn will reduce the LFG escaping through the landfill surface and migrating off-site.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

A blower station connected to the gas recovery system moves the collected LFG to a central location. LFG is directed to an enclosed flare where methane, NMOC and HAP contained in the gas are destroyed at high temperature. The following figures show the set-up of the enclosed flare at the landfill.



Figure 3 - Flare Propane Tank



Figure 4 - Flare Knock-Out Drum Main Inlet Valve



Figure 5 - Flare Dual Blower



Figure 6 - Flare Flame Arrestor & Louvers



Figure 7 - Flare Control Panel

In order to reduce the amount of LFG wasted by flaring, all or part of the available LFG from the landfill will be supplied to the electrical generation plant (INGENCO) for use as fuel to power the proposed internal combustion (IC) engines for electrical generation plant. While the electrical generation plant will be located

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

on leased land at the South Dade Landfill facility, the electrical generation equipment and processes will be owned and operated by INGENCO.

Nevertheless, the Department presumes one facility located within another facility establishes a “control” relationship. Since INGENCO will be fueled with the methane-rich gas generated by the landfill and under contract with the South Dade Landfill, the Department concludes that the landfill has control over the electrical generation operation of the proposed plant. Therefore, INGENCO is part of the South Dade Landfill and its approved air construction permit will be incorporated into the South Dade Landfill Title V operation permit. The Title V operation permit will have two different sections (one for the landfill operations and one for the electrical generation operation) with a secondary responsible official for the electrical generation plant section; a primary responsible official will be designated for the entire facility that will be responsible for all appropriate reporting and compliance certification on both sections of the facility. The primary responsible official will be the Manager of Environmental Affairs of the Miami-Dade Solid Waste Management.

B. Facility Regulatory Categories

The facility is regulated according to the following categories.

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

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

PSD: 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 and Rule 62-210.200(Definitions), F.A.C. This facility has the potential to emit 250 tons per year or more of a PSD pollutant.

South Dade Landfill is classified as a major source pursuant to Prevention of Significant Deterioration (PSD) regulations and is currently operating under Title V air operation permit No. 0250623-006-AV. The provisions of 40 Code of Federal Regulations (CFR) Part 63 Subpart AAAA, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills, and 40 CFR Part 60 Subpart WWW, Standards of Performance for the Municipal Solid Waste Landfills applies to the designated facility.

C. Processing Schedule

June 2, 2009: Department received the application for an air pollution construction permit.

July 1, 2009: Department requested additional information.

July 2, 2009: Department issued another request for additional information.

October 1, 2009: Applicant submitted a response to the Department’s request for additional information of July 1 and July 2, 2009.

October 21, 2009: Department requested additional information.

November 23, 2009: Applicant submitted a response to the Department’s request for additional information of October 21, 2009.

December 8, 2009: Department requested additional information.

December 9, 2009: Applicant submitted a response to the Department’s request for additional information of December 8, 2009. Application complete.

D. Project Description

The proposed project will consist of 24 Detroit Diesel Series 60 dual fuel engines coupled to electrical generators. The electricity generation plant will consist of:

1. LFG treatment equipment (gas dewatering, filtration and compression equipment and processes).
2. Twenty-four (24) Internal Combustion (IC) engines where each engine will be connected to a 350 kilowatt (kW) electrical generator; the plant will have the potential to generate 8 megawatts (MW) of electricity under base load operating conditions and will be interconnected to the Florida Power and Light distribution network through a nearby power line.
3. Ancillary equipment that supports the electricity generation operation consists of:
 - a. One 30,000-gallon diesel fuel tank to provide diesel oil storage for the engines.
 - b. One 1,000 gallon lube oil tank.
 - c. One 1,000 gallon used lube oil tank, and moisture conditioning equipment.
 - d. According to the applicant in the June 2, 2009 application, if necessary a 0.156 million british thermal units per hour (MMBtu/hr) Burnham boiler for providing heat to the building and a 275 gallon fuel oil tank for the boiler will be installed.
 - e. Cooling towers.

The IC engines will be arranged in four groups of six engines. The engines will be located near the existing LFG collection and control system transmission line, connected from the existing line to a blower/compressor that will be used to draw methane rich gas (fuel) from the landfill gas collection system to the proposed electricity generation plant. The exhausts from each group of six will be ducted together to a single stack. Therefore, there will be a total of four stacks in the electricity generation plant.

A fuel line will draw diesel fuel from the liquid fuel tank farm to a liquid fuel meter before conveying the fuel to the engines.

Each engine will be coupled to a 350 kW electricity generator. The engines are 6 cylinder 12.7 liter total displacement compression ignition, (CI), rated at 550 brake horse power (bhp), and will be arranged in four groups of six engines. However, when coupled with a 350 kW generator, the engine can produce no more than 469 bhp. The engine generators are capable of producing 350 kW of power each with a nominal facility generation of 8 MW. The engines can operate on 100 percent No. 2 fuel oil or biodiesel or mixed amounts of No. 2 fuel oil, or biodiesel, and methane (CH₄) from landfill gas ranging from 1 to 96 percent (%) gas fraction. Gas fraction (GF) is the amount of LFG substituted for liquid fuel and depends on the availability of LFG and the demands for power output. A majority of the operations will be in the range of 81% to 96% GF (with the target being 92 to 94%), which maximizes the use of LFG and generally produces the lowest emission rates at the facility.

The engines are capable of operating 24 hours per day, 365 days per year; however, the operating hours and output will be dependent on the ability of the distribution grid to accept electricity, as well as the supply of LFG. The engines operation will be limited to no more than 500 hours per year on 100% No. 2 fuel oil or biodiesel.

i. Treatment of Landfill Gas

Landfill gas (LFG) consists primarily of methane (CH₄), carbon dioxide (CO₂) and nitrogen (N₂), with varying smaller amounts of oxygen (O₂), hazardous air pollutants (HAP), non-methane organic compounds (NMOC), and sulfur compounds. The size of the energy plant and the number of engines operating at any given time will depend on the available heat input (volume and % CH₄) delivered by the landfill, or the

amount of diesel fuel burned. The engines will typically operate in the single-fuel mode burning only No.2 fuel oil or biodiesel, or in the dual-fuel mode, burning No.2 fuel oil or biodiesel and LFG.

The Landfill gas will be treated by compression, dewatering and filtration through a 1-micron filter. The gas will be compressed to 5 to 15 pounds per square inch guage (psig), filtered through a 1 micron coalescing filter and dewatered in a gas cooler. The gas cooler will be a fin-fan cooler designed to decrease the gas temperature from 265°F to 150°F at ambient temperature of 95°F. The compressed, filtered and dewatered LFG is automatically diverted to the engines for combustion. The facility will be equipped so that the LFG is automatically diverted to the landfill's flare when the gas is not being used by the engines. Components of the specified gas treatment system will not be equipped with atmospheric vents. Therefore, all of the LFG received by INGENCO will be directed to the IC engines for use as a fuel.

ii. Engine/Generator Specifications

Twenty-four (24) identical turbocharged engines (Detroit Diesel Series 60 dual fuel) will be used to power the electricity generators. Each engine:

1. Is designed to fire 100 % fuel oil or biodiesel, or varying amounts of No.2 fuel oil, or biodiesel and LFG ranging from 1 to 96% GF.
2. Will be fueled with LFG generated by and received from the South Dade Landfill Facility. Natural gas will not be used to fuel the engine operations under any conditions.
3. Has a power generation rate of 469 bhp.
4. Will be connected to a 350 kW electricity generator.

The engines are supplied with after-coolers and operate stoichiometrically at 100 % excess air, which also helps to control emissions. NOx emissions are further controlled by the use of LFG, which suppresses the formation of NOx in the engines.

The proposed facility will have a total electricity generation capacity of 8,000 kW (8 MW) with a heat rate of 9,500 Btu /kW in a single fuel mode and 10,500 Btu/kW in a dual fuel mode.

Emissions produced by the combustion of the engines will be released into the ambient air through individual stack (4 stacks total) connected to the bank of each six generators.

iii. Ancillary Equipment

1. A 30,000 gallon tank for diesel oil fuel will be installed to provide fuel oil to the engines.
2. One 1,000 gallon lube oil tank.
3. One 1,000 gallon used lube oil tank.
4. According to the applicant in the June 2, 2009 application, if necessary a 0.156 MMBtu/hr Burnham boiler and a 275 gallon fuel oil tank for the boiler will be installed.
5. Cooling towers. The cooling towers are used to provide non-contact cooling for other engine requirements such as fuel cooling and charge-air cooling in the engine turbo aftercoolers. The cooling towers are evaporative coolers which uses no cooling tower treatment chemicals. The PM emissions from the three cooling towers should be approximately 0.8 tons per year (TPY). These towers are de minimis emissions sources.

II. PROJECT EMISSIONS

POLLUTANT	POTENTIAL EMISSIONS ^(a) (TPY)	REQUESTED/ALLOWABLE EMISSIONS (TPY)		PSD SIGNIFICANT EMISSIONS RATE (TPY)	SUBJECT TO PSD REVIEW?
		Per Engine	All Engines		
PM	29.0	1.2	29.0	25	Y
PM ₁₀ ^(b)	29.0	1.2	29.0	15	Y
PM _{2.5} ^(b)	29.0	1.2	29.0	10 ^(c)	Y ^(c)
SO ₂ ^(d)	39.9	1.7	39.9	40	N
NO _x	819	10.6	254 ^(e)	40	Y
CO	661	13.8	331	100	Y
VOC	38.7 ^(f)	1.6	38.6	40	N

Notes:

- (a) Potential emissions are based on engines operating at 1% gas fraction (GF) and the remainder oil. Maximum CO and SO₂ emissions occur at 29% GF and 96% GF with remainder oil, respectively.
- (b) All front-end PM assumed to also be PM₁₀ and PM_{2.5}.
- (c) Based on Federal Rules which the State of Florida has not adopted yet.
- (d) The Department will require stack testing to show compliance with the emission limit.
- (e) NO_x emission is based on 500 hours of operation on 100% fuel oil and 8,260 hours on 92% GF and remainder fuel oil.
- (f) Potential VOC emissions include 0.03 tpy tank emissions. The Department will require stack testing to show compliance with the emission limit.

Hazardous Air Pollutants

Hazardous Air Pollutants (HAP) as specified in Rule 62-210.200, F.A.C are produced during the combustion of LFG to be used as fuel by the IC engines since:

1. HAP compounds are present in the gas generated by the SDLF and the fuel combustion process is not 100% complete (i.e., a small portion of the HAPs pass through the fuel combustion system).
2. Chlorinated compounds that are present in LFG have the potential to form hydrogen chloride (HCl, a regulated HAP) when they are combusted.

Site-specific HAP content analyses have not been performed on the LFG generated by the Landfill. Therefore, data developed by EPA in AP-42, Section 2.4 were used to estimate the total potential HAP content of the LFG to be used as engine fuel.

Table 2.4-3 of AP-42 provides control efficiencies for LFG constituents and specifies engines typically reduce (control) halogenated species by 93 percent and non-halogenated species by 86.1 percent. These LFG constituent control efficiencies were considered in the HAP potential emission determinations.

The contribution of HCl to the HAP potential emissions of the engines was estimated based on a conversion of the individual chlorinated compound measurements presented in the AP-42 default list of LFG constituents to HCl as a result of the high temperature combustion environment and exhaust processes. The results of this analysis indicate that the HCl exhaust rate of the proposed engines is equivalent to an annual potential emission of 8.1 TPY under base load conditions. Since the modification is below the major source threshold for any single HAP of 10 TPY, a case by case maximum available control technology (MACT) is

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

not required for the IC engine. The Department will require stack testing to show that HCl emissions stay below the threshold limit of 10 TPY.

The operation of twenty-four (24) engines under base load conditions will result in maximum potential total HAP emissions that are well below the 25 TPY thresholds.

III. RULE APPLICABILITY

A. State Rules

The proposed project was reviewed under Rule 62-210.300(1), F.A.C., Air Construction Permits, the facility is not exempt from permitting pursuant to paragraph 62-210.300(3)(a) or (b), F.A.C. or Rule 62-040, F.A.C., an air construction permit shall be obtained by the owner or operator of any proposed new facility or emissions unit prior to beginning construction.

The emissions units affected by this construction permit shall comply with all applicable provisions of the Florida Administrative Code, specifically, the following Chapters and Rules.

Chapter 62-4	Permits
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.200	Definitions
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration (PSD)
Chapter 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Compliance Test Requirements
Rule 62-297.401	Compliance Test Methods

B. Federal Emission Standards

The proposed project is subject to the applicable provisions of Chapter 403, Florida Status, Chapter 62-210 and 62-4, Florida Administrative Code (F.A.C.) and 40 CFR Part 60. The facility is located in an area designated attainment or maintenance for all criteria pollutants in accordance with Rule 62-204.340, F.A.C.

New Source Performance Standards (NSPS):

40 CFR 60 Subpart III. Since the engines had been manufactured prior to April 1, 2006, and will not be modified or reconstructed with respect to the permit application, the engines will not be subject to the requirements of the NSPS for Stationary Compression Ignition Internal Combustion Engines 40 CFR Part 60 Subpart III, as long as the owner or operator operates and maintain the units according to the manufacturer's written instructions or procedures over the entire life of the engines and the manufacturer keeps its certification.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

National Emissions Standard for Hazardous Pollutants (NESHAP):

40 CFR Part 63 Subpart ZZZZ. 40 CFR 63, Subpart ZZZZ establishes national and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) which are located at major and area sources of HAP. The proposed generator limits are 350 kW per generator, which limits the engine output to 469 bhp. The Detroit Diesel Series 60 engines that INGENCO plans on installing are compression ignition engines, which will meet the definition of "existing engines" pursuant to 40 CFR Part 63, Subpart ZZZZ (63.6590). The engines do not have to meet the requirements of Subpart ZZZZ pursuant to:

63.6590(b)(3). A stationary RICE which is an existing spark ignition 4 stroke rich burn (4SRB) stationary RICE located at an area source, an existing spark ignition 4SRB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source, an existing spark ignition 2 stroke lean burn (2SLB) stationary RICE, an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE, ***an existing compression ignition (CI) stationary RICE***, an existing emergency stationary RICE, an existing limited use stationary RICE, ***or an existing stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, does not have to meet the requirements of this subpart and of subpart A of this part. No initial notification is necessary.*** [Emphasis Added]

IV. BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

A. BACT Determination Procedure:

In accordance with Chapter 62-210.200, F.A.C., a BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines what is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically unfeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from this facility for which a BACT determination is required can be grouped into categories based upon the control equipment and techniques that are available to control emissions from these emission units. Using this approach, the emissions can be classified as indicated below:

- ***Particulate Matter/Particulate Matter less than or equal to 10 microns (PM/PM₁₀)***. Controlled generally by wet scrubbing or filtration.

- **Combustion Products** (CO and NO_x). CO and NO_x controlled generally by good combustion of clean fuels.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the pollutant control equipment and the corresponding energy, economic, and environmental impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "non-regulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., PM₁₀, CO, NO_x, etc.), if a reduction in "non-regulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

In the case of the proposed project at SDF, annual emissions of CO, NO_x and PM/PM₁₀ are above significant emission rates triggering review for these pollutants. Therefore, since the proposed project involves physical modification of the facility, the BACT analysis will address emissions of CO, NO_x and PM/PM₁₀.

B. BACT Analysis

Add-on Emission Controls (General)

LFG contains siloxanes, which are a class of compounds composed of units of the form R₂SiO, where R is a hydrogen atom or a hydrocarbon and Si is silicon. Siloxanes are present in certain landfill waste streams such as toiletries, cosmetics, and other personal grooming items. When combusted, such compounds produce silica (SiO₂) the consequences of which are poisoning of the catalyst in add-on control technologies as listed below.

In many of its previous BACT determinations for combustion turbines, the Department has specified wet injection or lean pre-mix combustion (LPMC) technologies also known as dry low NO_x (DLN) when burning natural gas in simple cycle combustion turbines. The Department often requires add-on catalytic control technologies, especially for combustion turbines operating in combined cycle mode. The technologies include:

- Selective catalytic reduction (SCR) for NO_x control based on NH₃ injection into the combustion gases in the presence of vanadium catalyst; and
- Oxidation catalyst for CO and VOC control.

The following limitations exist to wet injection, DLN and catalytic technologies:

- Fuels like LFG cannot burn in LPMC modes (or do so with difficulty);
- Wet injection further reduces the heating value of LFG that is already of low heating value; and
- A separate treatment system to remove siloxanes is required to avoid adverse effects of SiO₂ deposits on catalysts or certain engine equipment.

The California Air Resource Board (CARB) has developed and published Guidance for the Permitting of Electrical Generation Technologies in July 2002, to assist companies and organizations in the permitting of electrical generating equipment. This CARB guidance document notes the following:

- Recognizes the benefits of generating electricity from waste gases (landfill and digester gas) and provides BACT determinations from reciprocating IC engines fueled with these materials.
- Indicates that waste gases "contain impurities that, if combusted will likely poison catalyst-based post combustion control systems."

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- Determines that additional fuel treatment and post combustion controls have limited success and/or have not been proven to be cost effective in reducing air pollutant emissions from waste combustion applications.

Other state regulatory agencies (FL, TX, RI, and NJ) have made similar determinations with the issuance of permits that specify BACT for LFG-fueled IC engines that do not include the use of add-on emission controls.

Emission standards requiring after treatment controls from such engines have typically not been required due to poisoning of the catalyst leading to poor reduction efficiencies and eventually destroying the add-on control device. The technology that is the basis for the proposed standards for landfill and digester gas engines is the level achieved by new lean-burn engines. Lean-burn engines are the preferred choice for landfill and digester gas applications because these engines have the lowest NOx emissions without add-on control. Information gathered by the Department also shows that the majority of landfill applications use lean-burn engines.

The Department contacted Applied Filter Technology (AFT) which is exclusively in the biogas to energy business since 1996 with 167 biogas to energy systems in operation around the world. Their siloxane removal system which primarily has been associated with turbines is guaranteed to meet preset limits of landfill gas quality for a period of 10 years. The percentage of siloxane removal required for protecting a turbine is much less than the siloxane removal efficiency required for protecting a catalyst. Besides, AFT did not have any experience in using the siloxane removal system for engines and the protection of the catalyst used in add-on control. The siloxane removal system that can protect the engines as well as catalyst is probably on the horizon and should be available in the very near future.

Documented RACT/BACT/LAER Determinations

The USEPA Office of Air Quality Planning and Standards Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate (RACT/BACT/LAER) Clearinghouse (RBLC) emission and control technology data indicate that no add-on emission controls have been established as BACT or LAER for LFG-fueled IC engines. In addition, only one source has been identified which utilizes dual-fuel engines. The RBLC indicates that most LFG engines utilize one or more of the following control methods for controlling NOx and CO: lean burn technology, good combustion practices, air-to-fuel ratio controllers and/or turbo charging. The following control methods were used for controlling particulates: gas pretreatment, proper operation and maintenance and good combustion practices.

The Department issued PSD permits during 2006-2007 to Trail Ridge Energy, LLC, Seminole Energy, LLC and Brevard Energy, LLC for the installation of six (6) LFG-fueled IC engines at each location. No add-on emission controls were required for these projects.

The State of Texas issued PSD permit (PSD-TX-1034) to Bio Energy Texas, LLC on July 23, 2004 for the installation of eight (8) LFG-fueled IC engines. No add-on emission controls were required for this project. The same Caterpillar engines as those proposed for Seminole Energy were installed at Bio Energy Texas.

The State of New Jersey has completed its review of an ozone (NOx) non-attainment area new source review and PSD permit (CO) which was issued to Ocean Energy Corporation, Inc. (a Landfill Energy Systems Company) in 2006 for the installation of six (6) LFG-fueled IC engines. No add-on emission controls were required for this project.

Table 1 lists the sources where no add-on emission controls were required. The list also includes the control methods for controlling NOx and CO.

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TABLE 1

FACILITY (STATE)	ENGINE SIZE			FUEL	CO CONTROL	NO _x CONTROL
	(MW)	(MMBTU/hr)	(bhp)			
Bio-Energy, LLC (OH)	-	15	-	LFG	NA*	Lean Burn Technology
Lorraine County Landfill (OH)	-	-	5500	LFG	NA*	Lean Burn Technology
INGENCO (VA)	12.6 (Total) -	-	-	Dual Fuel (LFG & oil)	Fuel limit	Air to fuel ratio, turbo charging
Sumter Energy (MI)	-	8.6	-	Treated LFG	Good combustion practices	Good combustion
Bio Energy Texas, LLC (TX)	1.6	-	2172	LFG	Operation & Maintenance	Lean Burn Technology
New England Waste Services (VT)	1.6	-	2221	LFG	Low Emission Design	Low Emission Design
Ridgewood Power Management (RI)	-	-	2229	LFG	Good combustion practices	Lean Burn, Air/Fuel ratio, Intercoolers
MM San Bernardino Energy (CA)	-	-	1850	LFG	Turbocharged, intercooled air/fuel controller	Turbocharged, intercooled air/fuel controller
Trail Ridge Energy, LLC (FL)	1.6	-	2233	LFG	Good combustion practices	Good combustion
Burlington County (NJ)	1.5	12.5	-	LFG	NA*	Good combustion
Manchester Renewable (NJ)	-	16.4	-	LFG	NA*	Air/Fuel ratio
Seminole Energy, LLC (FL)	1.6	-	2233	LFG	Good combustion practices	Good combustion
Brevard Energy, LLC (FL)	1.6	-	2233	LFG	Good combustion practices	Good combustion
University of New Hampshire (NH)	1.6	14.3	-	LFG	Good combustion practices	Lean Burn, Air/Fuel ratio, Intercoolers

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

* = Not Available

Table 2 lists the emission rates for CO, NO_x and PM/PM₁₀ as obtained from the USEPA RBLC database.

TABLE 2

FACILITY	ENGINE SIZE	DATE	TYPE	CO g/bhp-hr	NO _x g/bhp-hr	PM/PM ₁₀
University of New Hampshire (NH)	14.3 MMBtu/hr	7/2007	BACT	2.75	0.5	0.1 g/bhp-hr
Brevard Energy, LLC (FL)	2233 HP	3/2007	BACT	2.75	0.6	0.24 g/bhp-hr
Seminole Energy, LLC (FL)	2233 HP	1/2007	BACT	2.75	0.6	0.24 g/bhp-hr
Monmouth County (NJ)	9.81 MMBtu/hr	12/2006	BACT	2.53	0.53	0.0591 lb/MMBtu
Manchester Renewable (NJ)	16.38 MMBtu/hr	10/2006	BACT	2.75	0.5	0.05983 lb/MMBtu
Trail Ridge Energy, LLC (FL)	2233 HP	10/2006	BACT	2.75	0.6	0.24 g/bhp-hr
Burlington County (NJ)	1500 kW	08/2006	BACT	2.5	0.6	0.06 lb/MMBtu
Ocean Energy Corp. (NJ)	2233 HP	2006	BACT/LAER	2.75	0.6	NA
New England Waste Svcs. (VT)	2221 HP	12/21/2005	BACT/LAER	2.75	0.5	NA
Ridgewood Power Mgmt. (RI)	2229 HP	06/24/2005	BACT/LAER	2.75	0.5	NA
Bio Energy Texas, LLC (TX)	2172 HP	07/23/2004	BACT/LAER	2.8	0.6	0.1291 lb/MMBtu
INGENCO (VA)	12.6 MW (Total)	12/17/2003	BACT	3.2 lb/MMBtu	2.1 lb/MMBtu	NA
Northwest Regional Landfill (AZ)	1410 HP	10/27/2003	BACT	2.5	0.6	NA
Bio-Energy, LLC (OH) (Lorraine County Landfill)	1877 HP	04/22/2003	BACT	2.4	1.4	NA
Bio-Energy, LLC (OH) (Carbon Limestone LFG)	1877 HP	04/10/2003	BACT	2.3	1.2	0.0286 lb/MMBtu
MM San Bernardino Energy (CA)	1850 HP	05/16/2002	BACT	2.5	0.6	NA
Northern Tier Landfill (PA)	815 kW	01/29/2002	BACT	3.0	2.0	NA
Reliant Associates (TX)	2343 HP	01/24/2002	BACT	3.0	0.6	NA
Sumpter Energy Associates (MI)	1138 HP	12/20/2001	BACT	2.9	2.0	NA
Bio-Energy (Azusa) LLC (CA)	1850 HP	02/22/2000	LAER	2.0	0.6	NA
Kiefer Landfill (CA)	4230 HP	01/18/2000	LAER	2.7	0.55	NA
MM Hackensack Energy (NJ)	1340 HP	04/09/1998	LAER	2.0	1.0	NA

HP = Horsepower; kW = kilowatt; MMBtu/hr = million british thermal units per hour and NA = Not Available

BACT Emission Limits Proposed By Applicant

POLLUTANT	EMISSION LIMIT	CONTROL TECHNOLOGY
CO	0.86 lb/MMBtu and 3.15 lb/hr/engine	Lean-burn engine with air-to-fuel ratio control
NO _x	0.65 lb/MMBtu and 2.42 lb/hr/engine	Lean-burn engine with air-to-fuel ratio control
PM/PM ₁₀	0.075 lb/MMBtu and 0.27 lb/hr/engine	Treatment of LFG fuel with 10 micron filter

The IC engines that will be installed at SDLF are rated at 469 bhp and 0.35 MW (350 kW) each. The calculated emission limits for CO, NO_x and PM/PM₁₀ for the IC engines at SDLF based on grams per brake horsepower-hour (g/bhp-hr) are as follows: CO – 3 g/bhp-hr; NO_x – 2.34 g/bhp-hr and PM/PM₁₀ – 0.26 g/bhp-hr.

C. Pollutant Analysis

Carbon Monoxide (CO)

It is the Department's position that there is no practicably feasible or cost effective post combustion treatment technology for reducing CO emissions from dual-fueled IC engines for this project. LFG fuel contains impurities (such as siloxanes and other chemicals) that, when combusted, have been shown to poison catalyst based on post-combustion treatment technologies such as an oxidation catalyst and SCR.

Data in the USEPA RBLC were reviewed to identify control technology determinations for the operation of IC engines on dual fuel (LFG and fuel oil). The Department was able to find only one facility (INGENCO-VA) that operated the IC engines on dual fuel. The BACT emission limit established for CO was 3.2 lb/MMBtu. The RBLC results indicate that BACT for CO emissions from IC engines with power ratings less than 2,000 bhp that burn primarily LFG range from 2.3 to 3.0 g/bhp-hr. The corresponding NOx LAER values range from approximately 0.6 to 2.0 g/bhp-hr. The specified NOx LAER and CO BACT determinations are applicable to the operation of lean-burn engines with air-to-fuel ratio control or simply specified as 'clean-burn engine'. Table 2 summarizes the Departments findings.

The applicant has requested that CO emissions due to this project be limited to 331 tons per year for the twenty-four (24) engines. This equates to a BACT emission limit for CO of 0.86 lb/MMBtu (equivalent to 3 g/bhp-hr). The proposed CO emission limit appears higher in terms of g/bhp-hr when compared with the reported data. Most of the reported data is based on engines burning only landfill gas except for the INGENCO (VA) project where the engines were combusting dual fuel. This project in terms of CO emissions in lb/MMBtu considering that the project entails dual fuel combustion is more stringent when compared with the INGENCO (VA) project. Additionally, the engines used for this project are much smaller (350 kW each) compared to the engines in the reported data. The one project (Northern Tier Landfill, PA) where the engine size was 815 kW, the BACT limit for CO was established at 3.0 g/bhp-hr for burning LFG only.

BACT for CO is therefore represented by combustor design (lean-burn engine) and good combustion practices (air-to-fuel ratio control) to minimize CO emissions. The emission limit chosen to represent BACT for CO is:

0.86 lb/MMBtu and 3.15 lb/hr/engine

Nitrogen Oxides (NO_x)

Data in the USEPA RBLC were reviewed to identify control technology determinations issued for the operation of IC engines on LFG fuel. The results of this review indicate that BACT for NOx emissions from IC engines with power ratings less than 2,000 bhp range from 0.5 to 2.0 g/bhp-hr. Table 2 indicates that most of the NOx emissions limits that were less than 0.6 g/bhp-hr were all LAER determinations. The lowest BACT emission limit proposed for NOx has been 0.6 g/bhp-hr. The specified USEPA RBLC NOx BACT determinations are applicable to the operation of lean-burn engines with air-to-fuel ratio control or simply specified as 'clean-burn engine'.

Table 2 provides USEPA RBLC NOx LAER/BACT determination data and supporting information for LFG-fueled IC engine operations.

Due to the presence of siloxanes (and other chemicals) in the LFG fuel, the utilization of NSCR and SCR equipment to control NOx in the exhausts of LFG-fueled IC engines is not technically feasible at this time for IC engines.

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Data in the USEPA RBLC were reviewed to identify control technology determinations for the operation of IC engines on dual fuel (LFG and fuel oil). The Department was able to find only one facility (INGENCO-VA) that operated the IC engines on dual fuel. The BACT emission limit established for NO_x was 2.1 lb/MMBtu.

The applicant has proposed to use diesel as well as bio-diesel in conjunction with LFG as a fuel in the IC engines. The applicant submitted IC engine NO_x emissions from their facility in Virginia. The NO_x emissions varied between 0.8 to 1.78 lbs/MMBtu depending on the mix of the two fuels (bio-diesel and LFG). The NO_x emissions from the IC engines will be affected by the methane content of the LFG and the heat content of the bio-diesel. The heat content of the bio-diesel typically range between 130,000 to 145,000 Btu/gallon.

The applicant has requested that NO_x emissions due to this project be limited to 254 tons per year for the twenty-four (24) engines. This equates to a BACT emission limit for NO_x of 0.65 lb/MMBtu (equivalent to 2.34 g/bhp-hr) which is much lower than the BACT limit established for another INGENCO facility of 2.1 lb/MMBtu. The proposed NO_x emission limit appears consistent with the reported data considering that the project entails dual fuel combustion. This will be achieved through the use of air-to-fuel ratio control technology which minimizes the amount of NO_x emissions produced during the LFG combustion process.

BACT for NO_x is therefore represented by combustor design (lean-burn engine) and good combustion practices (air-to-fuel ratio control) to minimize NO_x emissions. The emission limit chosen to represent BACT for NO_x is:

0.65 lb/MMBtu and 2.42 lb/hr/engine

Particulate Matter/Particulate Matter less than or equal to 10 microns (PM/PM₁₀)

Data presented in the USEPA RBLC for IC engines operated on LFG fuel indicate that:

- Permits issued for LFG-fueled IC engines have limited their PM/PM₁₀ emissions to rates that range from 0.0286 lb/MMBtu to 0.1291 lb/MMBtu.
- LFG (fuel) pretreatment to remove condensate and particulate matter without the use of add-on control equipment has been specified as BACT.

The Department has required the applicant to use 1 micron primary and polishing filters to remove particulate matter from the LFG fuel treatment process. The fuel treatment process includes gas compression (via blowers), liquids removal (via knock-out and chilling) and particulate removal (via 1 micron primary and polishing filters). EPA in the New Source Performance Standards for Landfill (40 CFR 60, Subpart WWW) requires removal of particulate matter down to only 10 microns which is what the applicant had proposed. This additional requirement by the Department to remove particulate matter down to 1 micron will enable the applicant to meet the PM/PM₁₀ BACT limit of 0.075 lb/MMBtu.

In order to mitigate PM_{2.5} impacts, INGENCO will be filtering the LFG before it is combusted in the engines with a 1 micron filter instead of a 10 micron filter. Also, INGENCO will be using ultra low sulfur fuel with a maximum sulfur content of 0.0015 percent to minimize particulate emissions. The Department will add the following requirement in the permit to show compliance with the sulfur content of the fuel:

“No. 2 Fuel oil and biodiesel shall be limited to a maximum sulfur content of 0.0015 percent by weight. The owner or operator shall determine the sulfur content of each delivery of diesel and/or biodiesel fuel received for this emissions unit using ASTM D 4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products and one of the following test methods for sulfur in petroleum products: ASTM D 129-91, ASTM D 2622-94, or ASTM D 4294-90 or a latest version. These methods are adopted by Rule 62-

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297.440, F.A.C. The owner or operator may comply with this requirement by receiving records from the fuel supplier that indicate the sulfur content of the fuel delivered complies with the sulfur limit”.

Catch and burn technologies are typically used for post combustion particulate control. It uses structured catalysts (a monolithic catalyst with bored chambers) that oxidate unburned hydrocarbons and aerosols (condensable particulates) as the exhaust gas diffuses through the wall of the catalyst chambers. Other post combustion particulate control technologies will not be cost-effective for this project. Due to the presence of siloxanes (and other chemicals) in the LFG, the utilization of catch and burn equipment to control particulates in the exhaust of LFG-fueled IC engines is not feasible.

Based on the preceding information, BACT for the control of PM/PM₁₀ emissions from the proposed IC engine operations is treatment of the LFG fuel down to 1 micron and proper equipment maintenance that minimizes the amount of particulate emissions produced during the LFG combustion process and results in maximum PM/PM₁₀ emissions of:

0.075 lb/MMBtu and 0.27 lb/hr/engine

In addition, an opacity standard of 10% will be established as BACT.

D. Compliance Procedures

Compliance with the emission limits shall be in accordance with the following EPA Reference Methods as contained in 40 CFR 60, Appendix A or as otherwise approved by the Department:

EMISSION UNIT	POLLUTANT	EPA REFERENCE METHOD
Twenty-four (24) dual fueled Internal Combustion Engines	PM	5
	PM ₁₀	201
	NO _x	7 or 7E
	CO	10
	Visible Emissions (VE)	9

V. 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.

A. 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 analysis.

For the purposes of any required analysis, NO_x emissions will be modeled as NO₂ and only PM₁₀ 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

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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 Table 3. For ozone, there is no de minimis air quality level because it is not emitted directly. However, since NO₂ and VOC are considered precursors for ozone formation, the applicant may be required to perform an ozone ambient impact analysis (including the gathering of ambient air quality data) for any net increase of 100 tons per year or more of NO₂ or VOC emissions.

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 of 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.

Finally, after completing the project, the Department may require the applicant to conduct post-construction ambient monitoring 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. Table 4 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.

An initial significant impact analysis is conducted using the worst-case emissions scenario for each pollutant

Table 3. Regulatory Thresholds for Preconstruction Ambient Monitoring

PSD Pollutant	De Minimis Air Quality Levels
Carbon monoxide (CO)	575 µg/m ³ , 8-hour average
Nitrogen dioxide (NO ₂)	14 µg/m ³ , annual average;
Particulate Matter (PM ₁₀)	10 µg/m ³ , 24-hour average
Sulfur dioxide (SO ₂)	13 µg/m ³ , 24-hour average
Lead (Pb)	0.1 µg/m ³ , 3-month average
Fluorides (F1)	0.25 µg/m ³ , 24-hour average
Total reduced sulfur (TRS)	10 µg/m ³ , 1-hour average
Hydrogen sulfide (H ₂ S)	0.2 µg/m ³ , 1-hour average
Reduced sulfur compounds (RSC)	10 µg/m ³ , 1-hour average
Mercury (Hg)	0.25 µg/m ³ , 24-hour average

Table 4. 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

and corresponding averaging time. The regulations define separate significant impact levels for Class I and Class II areas for CO, NO₂, Pb, PM₁₀ and SO₂. 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) as well to determine compliance with:

- 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 NO₂ 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 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

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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.

B. PSD Significant Pollutants for the Project

As discussed previously, the proposed project will increase emissions of the following pollutants in excess of the PSD significant emissions rates: NO_x, CO and PM/PM₁₀. For the purposes of any required analysis, NO_x emissions will be modeled as NO₂ and only PM₁₀ emissions will be considered when modeling particulate matter.

C. Preconstruction Ambient Monitoring Analysis

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

Table 5. De Minimis Air Quality Levels

Pollutant	Averaging Time	Maximum Predicted Impact (µg/m ³)	De Minimis Concentration (µg/m ³)	Greater than De Minimis?
NO ₂	Annual	9.7	14	NO
PM ₁₀	24-hr	19.7	10	YES
CO	8-hr	814	575	YES

As shown above, NO₂ is exempt from preconstruction monitoring because the predicted impacts are less than the de minimis levels. CO and PM₁₀ are not exempt because their predicted impacts are greater than the de minimis levels. In addition, the project results in PSD net emissions increases of 254 tons/year of NO₂, which is above the threshold of 100 tons/year, which requires an ozone ambient impact analysis including the gathering of ambient air quality data. The Department maintains an extensive quality-assured ambient monitoring network throughout the state and data gathered from these monitors can be used to address the ozone, CO and PM₁₀ impacts. Unless otherwise noted, Table 6 summarizes ambient data from 2008 available from existing nearby monitoring locations in Miami-Dade.

Table 6 - Ambient Air Quality Measurements Nearest to the Project Site (2008)

Pollutant	Location	Averaging Period	Ambient Concentration			
			Compliance Period	Value	Standard	Units
Ozone	Perdue Medical Center	8-hour	2007-09	68 ^a	75 ^a	ppb
PM ₁₀	Miami Fire Station	24-hour	2006-08	53	150 ^b	µg/m ³
		Annual	2006-08	26 ^c	50 ^c	µg/m ³
PM _{2.5}	Homestead Fire Station	24-hour	2006-08	24 ^d	35 ^d	µg/m ³
		Annual	2006-08	10 ^e	15 ^e	µg/m ³
NO ₂	Metro Annex	Annual	2008	17	100 ^c	µg/m ³
CO	Metro Annex	1-hour	2008	4,300	40,000 ^f	µg/m ³
		8-hour	2008	2,300	10,000 ^f	µg/m ³

- a. Three year average of the 4th highest daily maximum.
- b. Not to be exceeded on more than an average of one day per year over a three-year period.
- c. Arithmetic mean.

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- d. Three year average of the 98th percentile of 24-hour concentrations.
- e. Three year average of the weighted annual mean.
- f. Not to be exceeded more than once per year.

The existing monitoring data show no violations of any ambient air quality standards. The Department determines that the data collected from these monitors is representative of the air quality in the vicinity of the project and may be used to satisfy the preconstruction monitoring requirements for PM₁₀, CO, NO₂ and ozone. As necessary, the above ambient concentrations will be used as the ambient background concentrations for any required AAQS analysis.

Ozone is a key indicator of the overall state of regional air quality. It is not emitted directly from combustion processes. Rather it is formed from VOC and NO_x emitted primarily from regional industrial and transportation sources. VOC is also emitted from fires and vegetation (e.g. isoprene). These two precursors participate in photochemical reactions that occur on an area-wide basis and are highly dependent on meteorological factors.

There are two ozone monitors in Miami-Dade. Ozone limits and measurements are summarized on three year blocks, rolled annually. The reported value was calculated by taking the maximum 8-hour readings recorded each day during the three years. The fourth highest of the recorded maxima are identified for each year and then the average of those three values is identified as the compliance value. The average of the annual fourth highest measurements (design value) over the period 2007-2009 at the monitor (designated as Perdue Medical Center) recording the highest readings in Miami-Dade is 69 parts per billion (ppb).

The largest NO_x sources in the area are the Florida Power and Light Turkey Point Station approximately 10 km south, the Miami-Dade Resource Recovery facility approximately 30 km north, and Titan Industries Pennsoco Cement about 35 km north of the proposed project. These facilities had annual emissions of 2100, 1300 and 1200 tons, respectively, of NO_x in 2008. These values are significantly less than annual emissions from these sources in 2002, which were 6300, 5000, and 2500 tons, respectively. In addition, for reference, NO_x emissions have greatly decreased from the power plants in the south Florida area since 1998 when annual emissions from NO_x were approximately 46,000 tons. For power plant sources in 2008 these emissions were 12,000 tons, and for 2009 they were even less at 9200 tons. These values represent reductions of 74 percent and 80 percent, respectively.

The Department considered available options for potentially predicting ambient ozone impacts caused by the NO₂ emissions increases (ozone precursor pollutant) from the project. No stationary point source models are available or approved for use in predicting ozone impacts. Although regional models exist for predicting ambient ozone levels, it is unlikely that impact caused by this project could be adequately evaluated because it is so small compared to regional effects. In addition due to the trend of decreasing NO_x emissions, the Department determines that the use of a regional model incorporating the complex chemical mechanisms for predicting ozone formation is not appropriate for this project, and no further modeling is required for ozone impacts.

PM_{2.5} (also known as PM_{fine}) is another key indicator of the overall state of regional air quality. Some is directly emitted as a product of combustion from transportation and industrial sources as well as fires. Much of it consists of particulate nitrates and sulfates formed through chemical reactions between gaseous precursors such as SO₂ and NO_x from combustion sources and ammonia (NH₃) naturally present in the air or added by other industrial sources. In addition to NO_x emissions, SO₂ emissions from power plant sources in the south Florida area have also decreased significantly since 1998 when annual emissions were approximately 110,000 tons. In 2008 these emissions were approximately 13,000 tons, and for 2009 they were even less at approximately 10,000 tons. Other large sources of SO₂ in Miami-Dade have had significant decreases, too.

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These NO_x and SO₂ emissions trends provide insight regarding the likely direction of regional ambient air quality drivers (excluding meteorology) for pollutants like ozone and PM_{2.5} that are formed from precursors such as SO₂ and NO_x.

There are six PM_{2.5} monitors in Miami-Dade. PM_{2.5} limits and measurements are summarized on three year blocks, rolled annually. The reported value for PM_{2.5} given in Table 6 was calculated by taking the average 24-hour readings recorded each day during the three years (2006-2008). The value for each year that exceeds 98% of all daily measurements within that year is identified for each year and then the average of those three numbers is identified as the value compared with the standard. The value calculated in the described manner for PM_{2.5} measured at the Homestead Fire Station is given in Table 6 as 24 micrograms per cubic meter (µg/m³) compared with a standard of 35 µg/m³.

The simple average of all measurements within each three years (2006-2008) was also calculated and then the mean of the three annual averages (10 µg/m³) was reported and compared with the standard of 15 µg/m³. Although the PM_{2.5} stations are not used for official attainment determinations, they accurately reflect regional PM_{2.5} concentrations.

D. Source Impact Analysis for PSD Class I Areas

Affected PSD Class I Areas

For PSD Class I areas within 200 kilometers of the facility, Table 7 identifies each affected Class I area as well as the distance to the facility and the number of receptors used in the modeling analysis.

Table 7. Affected PSD Class I Modeling Identities

PSD Class I Area	Distance	Receptors
Everglades National Park	20	265

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 PSD Class I Significant Impact Analysis

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

Table 8. Significant Impact Analysis for PSD Class I Area

Pollutant	Averaging Time	Maximum Predicted Impact (µg/m ³)	Significant Impact Level (µg/m ³)	Significant Impact?	Affected Class I Area
NO ₂	Annual	0.097	0.1	NO	Everglades National Park
PM ₁₀	24-hour	0.27	0.30	NO	Everglades National Park
	Annual	0.01	0.20	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.

E. Source Impact Analysis for PSD Class II Areas

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

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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

Table 9 shows the results of the preliminary PSD Class II significant impact analysis.

Table 9. Significant Impact Analysis for PSD Class II Areas (Vicinity of Facility)

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu\text{g}/\text{m}^3$)	Significant Impact Level ($\mu\text{g}/\text{m}^3$)	Significant Impact?	Radius of Significant Impact (km)
NO ₂	Annual	9.7	1	YES	3.5
PM ₁₀	24-hour	19.7	5	YES	0.7
	Annual	1.5	1	YES	
CO	1-hour	1,076	2,000	NO	0.7
	8-hour	814	500	YES	

The predicted impacts of NO₂, PM₁₀ and CO for the 8 hour averaging time are greater than the corresponding PSD Class II significant impact levels; therefore, a full impact analysis for each of these pollutants is required within the applicable significant impact area as defined by the predicted radius of significant impact identified above. For NO₂ and PM₁₀ emissions, a PSD Class II increment analysis and an AAQS analysis was conducted. An AAQS analysis only is required for CO.

Receptor Grids for Performing PSD Increments and AAQS Analyses

For the PSD Class II increment and AAQS analyses, receptor grids are normally based on the size of the significant impact area for each pollutant. As shown in the previous section, the predicted radius of significant impact for NO₂, CO and PM₁₀ were 3.5, 0.7 and 0.7 kilometers, respectively.

PSD Class II Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant from a regulatory baseline concentration. For PM₁₀, the baseline concentrations were established in 1977 with a baseline year of 1975 for existing major sources. For NO₂, the baseline concentration was established in 1988 with a baseline year of 1988 for existing major sources. The emission values input into the model for predicting increment consumption are based on the maximum emissions rates from increment-consuming sources at the facility as well as all other increment-consuming sources in the vicinity of the facility. The preliminary analysis indicated NO₂ and PM₁₀ to be significant for this project. The following table summarizes the results of the PSD Class II increment analysis.

Table 10. PSD Class II Increment Analysis

Pollutant	Averaging Time	Maximum Predicted Impacts ($\mu\text{g}/\text{m}^3$)	Allowable Increment ($\mu\text{g}/\text{m}^3$)	Greater than PSD Class II Allowable Increment?
NO ₂	Annual	18	25	NO
PM ₁₀	24-hour	23	30	NO
	Annual	3	17	NO

As shown above, the maximum predicted impacts are less than the allowable PSD Class II increments.

AAQS Analysis

For each pollutant subject to an AAQS analysis, the total impact on ambient air quality is obtained by adding

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an ambient background concentration to the maximum predicted concentration from modeled sources. The ambient background concentration accounts for all sources that are not explicitly modeled. The following table summarizes the results of the AAQS analysis for the affected pollutants.

Table 11. AAQS Analysis

Pollutant	Averaging Time	Modeled Sources ($\mu\text{g}/\text{m}^3$)	Ambient Background Concentration ($\mu\text{g}/\text{m}^3$)	Total Impact ($\mu\text{g}/\text{m}^3$)	AAQS ($\mu\text{g}/\text{m}^3$)	Greater than AAQS?
PM ₁₀	24-hour	23	53	76	150	NO
	Annual	3	26	29	50	NO
NO ₂	Annual	18	26	44	100	NO
CO	1-hour	6,900	4,300	11,200	40,000	NO
	8-hour	4,500	2,300	6,800	10,000	NO

As shown in this table, impacts from the proposed project are not expected to cause or significantly contribute to a violation of any AAQS.

F. Additional Impacts Analysis

Impacts on Soils, Vegetation and Wildlife

The maximum predicted ground-level concentrations of NO₂, CO and PM₁₀ from the proposed project and all other nearby sources are below the corresponding AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils, vegetation or wildlife in the vicinity of the project.

Air Quality Impacts Related to Growth

The proposed modification will not significantly change employment, population, housing, commercial development, or industrial development in the area to the extent that a significant air quality impact will result.

Visibility Analysis

At the request of the federal land manager, the applicant conducted a visibility AQRV analysis for the Class I area and the Biscayne National Park (BNP) Class II area located within 1.1 kilometers 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 BNP 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 BNP. In order to mitigate predicted visibility impacts in the BNP, INGenco will be filtering the LFG before it is combusted in the engines with a 1 micron filter instead of a 10 micron filter. Also, INGenco will be using biodiesel or ultra low sulfur fuel oil with a maximum sulfur content of 0.0015 percent to minimize particulate emissions.

Nitrogen and Sulfur Deposition

Total nitrogen deposition rates on the PSD Class I area was also predicted using AERMOD. The maximum predicted nitrogen deposition rates are below the threshold levels recommended by the federal land manager.

G. 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.

VI. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by Industrial Power Generating Company, LLC (INGENCO) the Department has made a preliminary determination that the proposed project will comply with all applicable state air pollution regulations provided that the Department's Best Available Control Technology Determination is implemented and certain conditions are met. The General and Specific Conditions are listed in the attached draft conditions of approval.

Permit Engineer: Syed Arif, P.E.
Meteorologist: Cleve Holladay

DRAFT PERMIT

PERMITTEE:

Industrial Power Generating Company, LLC (INGENCO)
2250 Dabney Road
Richmond, VA 23230

Secondary Responsible Official (Energy Section):
Mr. Robert L. Greene
Environmental Compliance Manager, INGENCO

Primary Responsible Official:
Mr. German Hernandez, Manager Environmental Affairs
Miami-Dade Solid Waste Management – Miami-Dade County

File No. 0250623-007-AC Permit No. PSD-FL-408 SIC No. 4953 Project: Miami-Dade Solid Waste Management South Dade Landfill Modification – Landfill Gas Engines Expires: March 1, 2012

PROJECT AND LOCATION:

This is the final air construction permit, which authorizes the installation and operation of twenty-four (24) Detroit Diesel Series 60 Dual Fuel 469 brake-horsepower (bhp) landfill gas-fired engines for the generation of up to a total of 8 megawatts (nominal rating) of electricity. The project is located at the Miami-Dade County Solid Waste Management South Dade Landfill at 24000 SW 97th Avenue, Miami, Miami-Dade County. UTM coordinates are Zone 17; 565.51 km E and 2825.11 km N.

This final permit is organized into the following sections: Section I (General Information); Section II (Administrative Requirements); Section III (Emissions Unit Specific Conditions); Section IV (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section IV 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.

(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.

- Robert L. Greene, INGENCO rgreene@ingenco.com
- German Hernandez, Miami-Dade Solid Waste Management germanh@miamidade.gov
- James A. Susan, P.E., Fishbeck, Thompson, Carr & Huber, Inc. jasusan@ftch.com
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- Dee Morse, NPS (dee_morse@nps.gov)
- Vickie Gibson, DEP-BAR (victoria.gibson@dep.state.fl.us) (for read file)

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)

SECTION I – GENERAL INFORMATION (DRAFT PERMIT)

FACILITY DESCRIPTION

Miami-Dade Solid Waste Management South Dade Landfill Facility operates a municipal solid waste (MSW) landfill in Miami, Miami-Dade County which is allocated for Class I MSW. Methane-rich landfill gas produced from the decomposition of disposed waste materials is being collected by a gas recovery system. The collected gas is currently being diverted to the flaring system for control. INGENCO plans to construct and operate an electrical generation plant at the South Dade Landfill Facility. In order to reduce the amount of landfill gas (LFG) wasted by flaring, all available LFG from the landfill will be supplied to INGENCO for use as fuel to power the proposed internal combustion (IC) engine electrical generation plant. As a result of these changes, significant emission increases will occur for carbon monoxide (CO), particulate matter/particulate matter with an aerodynamic diameter of 10 microns or less (PM/PM₁₀) and nitrogen oxides (NO_x).

PROJECT DESCRIPTION

The proposed project will consist of twenty-four (24) identical Detroit Diesel Series 60 dual fuel engines coupled to electrical generators. The electricity generation plant will consist of:

1. LFG treatment equipment (gas dewatering, filtration and compression equipments and processes).
2. Twenty-four (24) IC engines where each engine will be connected to a 350 kilowatt (kW) electrical generator; the plant will have the potential to generate 8 megawatts (MW) of electricity under base load operating conditions and will be interconnected to the Florida Power and Light distribution network through a nearby power line.
3. Ancillary equipment that supports the electricity generation operation consists of:
 - a. One 30,000 gallon diesel fuel tank to provide diesel oil storage for the engines.
 - b. One 1,000 gallon lube oil tank.
 - c. One 1,000 gallon used lube oil tank, and moisture conditioning equipment.
 - d. According to the applicant in the June 2, 2009 application, if necessary a 0.156 million british thermal units per hour (MMBtu/hr) Burnham boiler for providing heat to the building and a 275 gallon fuel oil tank for the boiler will be installed.
 - e. Cooling towers.

The IC engines will be arranged in four groups of six engines. The engines will be located near the existing LFG collection and control system transmission line, connected from the existing line to a blower/compressor that will be used to draw methane rich gas (fuel) from the landfill gas collection system to the proposed electricity generation plant. The exhausts from each group of six will be ducted together to a single stack. Therefore, there will be a total of four stacks in the electricity generation plant.

NEW EMISSION UNITS

This permit authorizes construction and installation of the following new regulated emission units:

ID	Emission Unit (EU) Description
003	Twenty-four (24) Detroit Diesel Series 60 Dual-Fuel Engines each coupled to a 350 kW generator capable of producing 8 MW of electricity

SECTION I – GENERAL INFORMATION (DRAFT PERMIT)

REGULATORY CLASSIFICATION

The South Dade Landfill Facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), or volatile organic compounds (VOC) exceed 100 tons per year (TPY). The landfill facility is also classified as a Title V source since the design capacity of the landfill is greater than 2.5 million cubic meters and megagrams.

The facility is subject to the following regulations:

- 40 Code of Federal Regulations (CFR) 60, Subpart A, New Source Performance Standards (NSPS) General Provisions;
- 40 CFR 60, Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills;
- 40 CFR 60, Subpart Cc, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills;
- 40 CFR 63, Subpart A, General Provisions; and
- 40 CFR 63, Subpart AAAA, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills.

The proposed landfill gas-fueled IC engine electrical generation plant will be subject to Prevention of Significant Deterioration (PSD) review with respect to Rule 62-210.200, F.A.C. due to its potential CO emissions being greater than 250 TPY. Best Available Control Technology (BACT) determinations are required for each pollutant emitted in excess of the Significant Emission Rates listed in Rule 62-210.200, F.A.C. For this project, the permit specifies BACT emissions standards for CO, NO_x and PM/PM₁₀ emissions.

APPENDICES

The following Appendices are attached as 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	Summary of Best Available Control Technology Determinations
Appendix F	NSPS Subpart A and NESHAP Subpart A, General Provisions
Appendix G	NESHAP Subpart AAAA, Municipal Solid Waste Landfills

RELEVANT DOCUMENTS:

The permit request and additional information received to make it complete are not a part of this permit; however, the information is discussed in the technical evaluation which is issued concurrently with this permit.

SECTION II – ADMINISTRATIVE REQUIREMENTS (DRAFT PERMIT)

1. **Regulating Agencies:** All documents related to applications for permits to operate, reports, tests, minor modifications and notifications shall be submitted to the Department’s Southeast District (SED) Office, 400 North Congress Avenue, Suite 200, West Palm Beach, Florida 33401. All applications for permits to construct or modify emissions unit(s) subject to the Prevention of Significant Deterioration or Nonattainment (NA) review requirements should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (FDEP), 2600 Blair Stone Road, MS 5505, Tallahassee, Florida 32399-2400 (phone number 850/488-0114).
2. **Compliance Authority:** All documents related to compliance activities such as reports, tests, and notifications should be submitted to the Department’s Southeast District Office, 400 North Congress Avenue, Suite 200, West Palm Beach, Florida 33401 and a copy to the Department of Environmental Resources Management, Air Quality Management Division, 701 Northwest 1st Court, Suite 400, Miami, Florida 33136.
3. **General Conditions:** The owner and operator are subject to and shall operate under the attached General Permit Conditions G.1 through G.15 listed in Appendix GC of this permit. General Permit Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
4. **Terminology:** The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
5. **Applicable Regulations, Forms and Application Procedures:** Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit 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 Florida Administrative Code Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, 62-297 and the Code of Federal Regulations Title 40, Parts 60 and 63, adopted by reference in the Florida Administrative Code (F.A.C.) regulations. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
6. **Expiration:** The permittee may, for good cause, request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit. However, the permittee shall promptly notify the Department’s Southeast District Office of any delays in completion of the project which would affect the startup day by more than 90 days. [Rule 62-4.090, F.A.C.]
7. **Application for Title V Permit:** This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration, 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 62-213.420, F.A.C.]
8. **Source Obligation:** 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 constructions 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. [Rule 62-212.400(12)(a), F.A.C.].

SECTION II – ADMINISTRATIVE REQUIREMENTS (DRAFT PERMIT)

9. BACT Determination: For phased construction projects, the determination of best available control technology shall be reviewed and modified as appropriate at the latest reasonable time which occurs no later than 18 months prior to commencement of construction of each independent phase of the project. At such time, the owner or operator of the applicable stationary source may be required to demonstrate the adequacy of any previous determination of best available control technology for the source. [40 CFR 52.21(j)(4)]
10. Annual Reports: Pursuant to Rule 62-210.370(3), F.A.C., Annual Operation Reports, the permittee is required to submit annual reports on the actual operating rates and emissions from this facility. Annual operating reports using DEP Form 62-210.900(5) shall be sent to the DEP's Southeast District office by April 1st of each year.
11. Stack Testing Facilities: Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C.
12. 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.]

SECTION III – EMISSION UNIT(S) SPECIFIC CONDITIONS (DRAFT PERMIT)

SUBSECTION A. SPECIFIC CONDITIONS

The Specific Conditions listed in this section apply to the following emission units:

EMISSION UNIT NO.	EMISSION UNIT DESCRIPTION
003	This permit authorizes the installation and operation of twenty-four (24) identical Detroit Diesel Series 60 engines. The engines are dual fuel (Landfill Gas and No. 2 fuel oil and/or biodiesel) each coupled to a 350 kW generator, capable of producing total of 8 MW of power. The engines will be arranged in four groups of six engines: group A, B, C and D. Each group of engines will comprise one stack. The engines are each 6 cylinder, 12.7 liter total displacement compression ignition. The engine generators are capable of producing 350 kW of power each with a nominal facility electricity generation of 8 MW. The landfill gas will go through a gas treatment system prior to combustion in the engines.

A. FUEL SPECIFICATIONS AND WORK PRACTICES

1. This permit authorizes the installation and operation of twenty-four (24) identical Detroit Diesel Series 60 dual fuel (landfill gas and No. 2 fuel oil and/or biodiesel) fired engines for the generation of up to a total of 8 megawatts (nominal rating) of electricity. The maximum power generation rating of each engine shall be 469 brake horsepower (bhp). 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. **[Rule 62-212.400, F.A.C.]**

{Permitting Note: The power generation rating of 469 bhp is based on an average fuel heating value requirement of 536 british thermal units per standard cubic feet (BTU/scf) and landfill gas usage of 114 standard cubic feet per minute (scfm) per engine.}

2. This permit authorizes the installation of a LFG Treatment System including gas compression (via blowers), liquids removal (via knock-out and chilling), and particulate removal (via 1 micron primary and polishing filters). The gas treatment system shall not be equipped with atmospheric vents. **[Rule 62-212.400, F.A.C.]**
3. Unless otherwise indicated, the modification/construction and operation of the Detroit Diesel internal combustion engines shall be in accordance with the capacities and specifications stated in the application. **[Rule 62-210.300, F.A.C.]**
4. The permittee shall provide documentation to the SED Office verifying that the twenty four (24) Detroit Diesel Series 60 internal combustion engines were manufactured prior to April 1, 2006. **[Rule 62-4.070(3), F.A.C.]**

5. Fuel fired in the engines is limited to LFG ranging from 1 to 96% gas fraction and No. 2 fuel oil and/or biodiesel. The use of any other fuel will require a modification to this permit. **[Rule 62-212.400, F.A.C.]**

{Permitting Note: The fuel heating value for diesel fuel is 137,000 british thermal units per gallon (Btu/gal) and the fuel heating value for biodiesel ranges from 130,000-145,000 BTU/gal.}

6. The owner or operator shall install, calibrate, operate and maintain monitoring devices to record the fuel flow (Landfill Gas and/or Diesel) and the hours of operation. **[Rule 62-4.070(3), F.A.C.]**
7. No. 2 Fuel oil and biodiesel shall be limited to a maximum sulfur content of 0.0015 percent by weight. The owner or operator shall determine the sulfur content of each delivery of diesel and/or biodiesel fuel received for this emissions unit using ASTM D 4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products and one of the following test methods for sulfur in petroleum products: ASTM D 129-

SECTION III – EMISSION UNIT(S) SPECIFIC CONDITIONS (DRAFT PERMIT)

91, ASTM D 2622-94, or ASTM D 4294-90 or a latest version. These methods are adopted by Rule 62-297.440, F.A.C. The owner or operator may comply with this requirement by receiving records from the fuel supplier that indicate the sulfur content of the fuel delivered complies with the sulfur limit.

[Rule 62-4.070(3), F.A.C. and Application No. 0250623-007-AC]

8. The maximum sulfur content of the landfill gas shall not exceed 0.039 percent by weight. [Rule 62-210.200, F.A.C.]
9. The permittee shall operate each engine within 0.5% of the oxygen (O₂) content in the exhaust gas at the air-to-fuel ratio that the tested engine demonstrated compliance during the performance test required by Specific Condition C.2 or the most recent performance test if a subsequent performance test is conducted. [Rule 62-4.070(3), F.A.C.]
10. The permittee shall install and maintain an automatic fail-safe block valve on each engine. The fail-safe block valve must stop the flow of LFG in the event of an engine failure. [Rule 62-4.070, F.A.C.]
11. Excess LFG not used as fuel in an engine must be flared in accordance with the requirements of 40 CFR 60 Subpart WWW. [Rule 62-4.070, F.A.C.]
12. Each engine/generator set may operate up to 8,760 hours per year. The permittee is limited to 500 hours per year operation on 100% fuel oil including bio-diesel. [Rule 62-210.200, F.A.C.]

B. EMISSION AND PERFORMANCE REQUIREMENTS

1. **Nitrogen oxides (NO_x):** The emission rate of NO_x from each engine shall not exceed 0.65 pounds per million british thermal unit (lb/MMBtu) and a maximum of 2.42 pounds per hour (lb/hr). Facility wide NO_x emissions shall not exceed 254 tons per year (TPY). [Rule 62-212.400, F.A.C.]
2. **Carbon Monoxide (CO):** The emission rate of CO from each engine shall not exceed 0.86 lb/MMBtu and a maximum of 3.15 lb/hr. Facility wide CO emissions shall not exceed 331 TPY. [Rule 62-212.400, F.A.C.]
3. **Particulate Matter/Particulate Matter less than 10 microns (PM/PM₁₀):** The emission rate of PM/PM₁₀ from each engine shall not exceed 0.075 lb/MMBtu and a maximum of 0.27 lb/hr. Facility wide PM/PM₁₀ emissions shall not exceed 29 TPY. [Rule 62-212.400, F.A.C.]
4. **Sulfur Dioxide (SO₂):** The emission rate of SO₂ from each engine shall not exceed 0.38 lb/hr. Facility wide SO₂ emissions shall not exceed 39.9 TPY. [Rule 62-210.200, F.A.C.]

{Permitting Note: Project avoids PSD review based on permit limits.}

5. **Volatile Organic Compounds (VOC):** The emission rate of total VOC from each engine shall not exceed 0.36 lb/hr. Facility wide total VOC emissions shall not exceed 38.6 TPY. [Rule 62-210.200, F.A.C.]

{Permitting Note: Project avoids PSD review for VOC based on emission limits.}

6. **Hydrogen Chloride (HCl):** The emission rate of HCl from each engine shall not exceed 0.08 lb/hr. Facility wide HCl emissions shall not exceed 8.1 TPY. [Rule 62-210.200, F.A.C. and Appendix 4 of the application]

{Permitting Note: Engines escape case by case maximum available control technology (MACT) determinations since the facility modification is below the major source threshold of 10 TPY for any single hazardous air pollutant (HAP) or 25 TPY for total HAPs.}

7. Visible emissions from each engine/generator set exhaust shall not exceed 10% opacity. [Rule 62-212.400, F.A.C.]

C. TEST METHODS AND PROCEDURES

SECTION III – EMISSION UNIT(S) SPECIFIC CONDITIONS (DRAFT PERMIT)

1. Sampling Facilities:

The permittee shall design each group of six internal combustion engine stacks to accommodate adequate testing and sampling locations in order to determine compliance with the applicable emission limits specified by this permit. Stack sampling facilities shall be installed in accordance with Rule 62-297.310(6), F.A.C. [Rule 62-297.310(6), F.A.C.]

2. Performance Test Methods:

Initial (I), Annual (A) and permit renewal (R) compliance tests shall be performed in accordance with the following reference methods as described in 40 CFR 60, Appendix A and 40 CFR 51 Appendix M, adopted by reference in Chapter 62-204.800, F.A.C. Initial and annual compliance tests shall be conducted on at least one of the six engines from each group. The compliance tests shall be conducted when operating in dual fuel mode. A different engine from each group shall be tested each year such that all engines from the four groups are tested during the six-year cycle. The renewal compliance test shall be conducted on the engine that operated the most during the five year cycle in each group.

- (a) EPA Method 5 – Determination of PM emissions from Stationary Sources (I,A);
- (b) EPA Method 6 or 6C – Determination of SO₂ emissions from Stationary Sources (I,R);
- (c) EPA Method 7 or 7E – Determination of NO_x Emissions from Stationary Sources (I,A);
- (d) EPA Method 9 – Visual Determination of the Opacity of Emissions from Stationary Sources (I,A);
- (e) EPA Method 10 – Determination of CO Emissions from Stationary Sources (I,A);
- (f) EPA Method 18, 25, 25A or 25C – Measurement of Gaseous Organic Compounds Emissions (I,R);
- (g) EPA Method 26 or 26A – Determination of HCl Emissions from Stationary Sources (I,R);
- (h) EPA Method 201 – Determinations of PM₁₀ Emissions (I,A)

EPA Methods 1 through 4 shall be used as necessary to support other test methods. No other test methods may be used for compliance testing unless prior DEP approval is received, in writing, from the Department. [Rule 62-297.310(7), F.A.C.]

3. The permittee shall comply with the following requirements to monitor the sulfur and chlorine content of the landfill gas:

- a. At least 180 days prior to commercial startup of the engines, the permittee shall sample and analyze the landfill gas for sulfur and chlorine content. The gas sample collected for the analyses shall be a composite sample and collected under normal operating conditions (i.e., with valves open for all operating cells). The gas sample collection and analyses for sulfur and chlorine content shall be done annually. Based on the sampling results and Rule 62-297.310(7)(b), F.A.C., the Department may request additional gas sampling and analyses. Results shall be reported as SO₂ and HCl emission factors in terms of lb/MMscf of landfill gas.
- b. During each required compliance test conducted for HCl, the permittee shall sample and analyze the landfill gas for the chlorine content. Results for the compliance test shall be reported in terms of HCl

SECTION III – EMISSION UNIT(S) SPECIFIC CONDITIONS (DRAFT PERMIT)

emissions in lb/hr and the sample analysis result shall be reported as HCl emission factor in terms of lb/MMscf of landfill gas.

- c. Analysis of the chlorine content shall be used to track changes in the landfill gas. Based on the analysis, the Compliance Authority may require additional stack testing for HCl emissions to determine compliance with the emissions standard.
- d. Compliance with the fuel sulfur specification shall be determined based on each analysis for the sulfur content of the landfill gas.

[Rules 62-210.200 and 62-212.400, F.A.C.]

4. The permittee shall sample and analyze the heat content of the landfill gas annually during each required compliance test and provide the results to the Department in the compliance test report. **[Rule 62-4.070, F.A.C.]**
5. Within 60 days of achieving the permitted capacity, but no later than 180 days after initial startup, the subject emissions units as described in Specific Condition C.2 shall be tested for compliance with the applicable emission limits. Subsequent compliance tests (Annual Compliance Tests) shall be run annually during each federal fiscal year (October 1st to September 30th). For the duration of all tests the emission units shall be operating at permitted capacity. Permitted capacity is defined as 90-100 percent of the maximum operating rate allowed by the permit. For this project, the maximum operating rate for each engine is 350 kW (.35 MW). If it is impracticable to test at permitted capacity, then the emission unit may be tested at less than permitted capacity (i.e., 90% of the maximum operating rate allowed by the permit); in this case, subsequent emission unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emission unit is so limited, then operation at higher capacities is allowed for no more than 15 consecutive days for the purposes of additional compliance testing to regain the permitted capacity in the permit. **[Rule 62-297.310, F.A.C.]**

D. RECORDKEEPING, REPORTING AND MONITORING REQUIREMENTS

1. Total landfill gas flow to the engines shall be continuously measured and recorded. **[Rule 62-210.200, F.A.C.]**
2. Gross electrical power generation (kw-hrs) shall be continuously measured and recorded for each engine individually and for the twenty four (24) engines combined. **[Rule 62-210.200, F.A.C.]**
3. Each engine/generator set shall be equipped with a non-resettable elapsed time meter to indicate, in cumulative hours, the elapsed engine operating time. **[Rule 62-210.200, F.A.C.]**
4. The permittee shall maintain the following records on a monthly basis:
 - a. The hours of operation of each engine/generator set for each fuel, including any start-up, shutdown or malfunction in the operations of the engine/generator set; and
 - b. The total landfill gas flow to each engine; and
 - c. Gross electrical power generation in kw-hr for each engine and the twenty four (24) engines combined. **[Rule 62-210.200, F.A.C.]**
5. The permittee shall record and maintain diesel fuel usage records for each generator, and for each group of generators including operation for repairs or maintenance, on a daily basis. The diesel fuel usage records for the generators shall be based on daily fuel meter readings. Within ten days of the end of each month, the owner or operator shall make records of monthly diesel fuel consumption from the daily records, and shall make records of consecutive 12 month diesel fuel consumption. **[Rule 62-4.070(3), F.A.C.]**

SECTION III – EMISSION UNIT(S) SPECIFIC CONDITIONS (DRAFT PERMIT)

6. The owner or operator shall maintain records of sulfur content of each delivery of diesel fuel received for these emissions unit. **[Rule 62-4.070(3), F.A.C.]**
7. The permittee shall submit the results and the corresponding data of the site-specific HCl emission factor and the SO₂ emission factor within 45 days of gas sampling to the Bureau of Air Regulation. The results shall also be submitted to the Southeast District Office. **[Rule 62-210.200, F.A.C.]**

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- Appendix A. Citation Formats and Glossary of Common Terms
- Appendix B. General Conditions
- Appendix C. Common Conditions
- Appendix D. Common Testing Requirements
- Appendix E. Summary of Best Available Control Technology Determinations
- Appendix F. NSPS Subpart A and NESHAP Subpart A, General Provisions
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SECTION IV. APPENDIX A
CITATION FORMATS AND GLOSSARY OF COMMON TERMS

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 CFR 60.7]

Means: Title 40, Part 60, Section 7

GLOSSARY OF COMMON TERMS

° F: degrees Fahrenheit

acfm: actual cubic feet per minute

ARMS: Air Resource Management System (Department’s database)

BACT: best available control technology

Btu: British thermal units

CAM: compliance assurance monitoring

SECTION IV. APPENDIX A
CITATION FORMATS AND GLOSSARY OF COMMON TERMS

CEMS: continuous emissions monitoring system
cfm: cubic feet per minute
CFR: Code of Federal Regulations
CO: carbon monoxide
COMS: continuous opacity monitoring system
DEP: Department of Environmental Protection
Department: Department of Environmental Protection
dscfm: dry standard cubic feet per minute
EPA: Environmental Protection Agency
ESP: electrostatic precipitator (control system for reducing particulate matter)
EU: emissions unit
F.A.C.: Florida Administrative Code
F.D.: forced draft
F.S.: Florida Statutes
FGR: flue gas recirculation
Fl: fluoride
ft²: square feet
ft³: cubic feet
gpm: gallons per minute
gr: grains
HAP: hazardous air pollutant
Hg: mercury
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
O₂: oxygen
Pb: lead

SECTION IV. APPENDIX A
CITATION FORMATS AND GLOSSARY OF COMMON TERMS

PM: particulate matter

PM₁₀: particulate matter with a mean aerodynamic diameter of 10 microns or less

PSD: prevention of significant deterioration

psi: pounds per square inch

PTE: potential to emit

RACT: reasonably available control technology

RATA: relative accuracy test audit

SAM: sulfuric acid mist

scf: standard cubic feet

scfm: standard cubic feet per minute

SIC: standard industrial classification code

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

SO₂: sulfur dioxide

TPH: tons per hour

TPY: tons per year

UTM: Universal Transverse Mercator coordinate system

VE: visible emissions

VOC: volatile organic compounds

SECTION IV. APPENDIX B
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.

SECTION IV. APPENDIX B
GENERAL CONDITIONS

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);
 - b. Determination of Prevention of Significant Deterioration (applicable); and
 - c. Compliance with New Source Performance Standards (not applicable).
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.

SECTION IV. APPENDIX C
COMMON CONDITIONS

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(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.]

{Permitting Note: Rule 62-210.700 (Excess Emissions), F.A.C., cannot vary any NSPS or NESHAP provision.}

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.]

SECTION IV. APPENDIX D
COMMON TESTING REQUIREMENTS

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

SECTION IV. APPENDIX D
COMMON TESTING REQUIREMENTS

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.

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COMMON TESTING REQUIREMENTS

- (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

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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) 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-

SECTION IV. APPENDIX D
COMMON TESTING REQUIREMENTS

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.

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COMMON TESTING REQUIREMENTS

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.]

SECTION IV. APPENDIX E

SUMMARY OF BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATIONS

BACT Determinations for the South Dade Landfill Gas Engines

Industrial Power Generating Company, LLC (INGENCO) has applied to modify Miami-Dade Solid Waste Management South Dade Landfill Facility (Central Disposal Facility) by installing twenty-four (24) identical lean-burn internal combustion (IC) Detroit Diesel Series 60 dual fuel engines. The electrical generation plant will also consist of landfill gas (LFG) treatment equipment (gas dewatering, filtration and compression equipment and processes) and ancillary equipment that supports the electrical generation operations (e.g., engine oil storage tanks and LFG temperature and moisture conditioning equipment).

The twenty-four (24) lean-burn IC engines will be connected to individual electrical generators. Each gas IC engine will be connected to a 350 kilowatt electrical generator. The plant will have the potential to generate 8 megawatts of electricity under base load operating conditions and will be interconnected to the Florida Power & Light distribution network through a nearby power line.

The South Dade Landfill Facility is a major source of air pollution or a Title V source based on Rule 62-210.200, Florida Administrative Code (F.A.C.). Additionally, based on this modification, potential emissions of carbon monoxide (CO) will be greater than 250 tons per year (TPY) making the facility a Major Stationary Source for Prevention of Significant Deterioration (PSD) review with respect to Rule 62-210.200(185)(a)2., F.A.C. The increases in emissions of CO, nitrogen oxide (NOx) and particulate matter/particulate matter less than or equal to 10 microns (PM/PM₁₀) will exceed the significant emission rates listed in Rule 62-210.200, F.A.C. A Best Available Control Technology (BACT) determination is part of the review required for CO, NOx and PM/PM₁₀ by Rule 62-210.200(39), F.A.C.

Descriptions of the process, project, BACT determination, air quality effects, and rule applicability are given in the Technical Evaluation and Preliminary Determination, accompanying the Department's Intent to Issue.

The Department specifies the following as BACT for each engine:

Pollutant	Emission Standard	Averaging Time	Compliance Method	Basis
CO	0.86 lb/MMBtu / 3.15 lb/hr	3 1-hr runs	STACK TEST	BACT
NO _x	0.65 lb/MMBtu / 2.42 lb/hr	3 1-hr runs	STACK TEST	BACT
PM/PM ₁₀	0.075 lb/MMBtu / 0.27 lb/hr	3 1-hr runs	STACK TEST	BACT
	10 percent Opacity	6-minute block	VISIBLE EMISSIONS TEST	

SECTION IV. APPENDIX F

NSPS SUBPART A AND NESHAP SUBPART A - GENERAL PROVISIONS

Emissions units subject to a New Source Performance Standard of 40 CFR 60 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

- § 60.1 Applicability.
- § 60.2 Definitions.
- § 60.3 Units and abbreviations.
- § 60.4 Address.
- § 60.5 Determination of construction or modification.
- § 60.6 Review of plans.
- § 60.7 Notification and Record Keeping.
- § 60.8 Performance Tests.
- § 60.9 Availability of information.
- § 60.10 State Authority.
- § 60.11 Compliance with Standards and Maintenance Requirements.
- § 60.12 Circumvention.
- § 60.13 Monitoring Requirements.
- § 60.14 Modification.
- § 60.15 Reconstruction.
- § 60.16 Priority List.
- § 60.17 Incorporations by Reference.
- § 60.18 General Control Device Requirements.
- § 60.19 General Notification and Reporting Requirements.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

NESHAP - SUBPART A, IDENTIFICATION OF GENERAL PROVISIONS

The provisions of this Subpart may be provided in full upon request. Emissions units subject to a National Emission Standards for Hazardous Air Pollutants of 40 CFR 63 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

- § 63.1 Applicability.
- § 63.2 Definitions.
- § 63.3 Units and abbreviations.
- § 63.4 Prohibited Activities and Circumvention.
- § 63.5 Preconstruction Review and Notification Requirements.
- § 63.6 Compliance with Standards and Maintenance Requirements.
- § 63.7 Performance Testing Requirements.
- § 63.8 Monitoring Requirements.
- § 63.9 Notification Requirements.
- § 63.10 Recordkeeping and Reporting Requirements.

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NSPS SUBPART A AND NESHAP SUBPART A - GENERAL PROVISIONS

§ 63.11 Control Device Requirements.

§ 63.12 State Authority and Delegations.

§ 63.13 Addresses of State Air Pollution Control Agencies and EPA Regional Offices.

§ 63.14 Incorporation by Reference.

§ 63.15 Availability of Information and Confidentiality.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

SECTION IV. APPENDIX G

NESHAP SUBPART AAAA, MUNICIPAL SOLID WASTE LANDFILLS

The South Dade Landfill is subject to the applicable requirements of NESHAP Subpart AAAA for Municipal Solid Waste Landfills. Below is a link to Subpart AAAA.

[NESHAP, Subpart AAAA](#)

Livingston, Sylvia

From: Livingston, Sylvia
Sent: Wednesday, March 03, 2010 3:36 PM
To: 'rgreene@ingenco.com'
Cc: 'germanh@miamidade.gov'; 'jasusan@ftch.com'; Anderson, Lennon; 'muthiahm@miamidade.gov'; 'forney.kathleen@epa.gov'; 'dee_morse@nps.gov'; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)
Subject: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408
Attachments: 0250623-007-AC_Intent.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/0250623.007.AC.D_pdf.zip

Owner/Company Name: MIAMI DADE SOLID WASTE MGMT
Facility Name: MIAMI DADE SOLID WASTE MGMT/SOUT DADE LF
Project Number: 0250623-007-AC/ PSD-FL-408
Permit Status: DRAFT
Permit Activity: CONSTRUCTION
Facility County: MIAMI-DADE
Processor: Syed Arif

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 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

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-9506
sylvia.livingston@dep.state.fl.us

Livingston, Sylvia

From: Robert L. Greene [rgreene@ingenco.com]
Sent: Wednesday, March 10, 2010 11:42 AM
To: Livingston, Sylvia
Subject: RE: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408

I received it

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Wednesday, March 10, 2010 9:54 AM
To: 'rgreene@ingenco.com'
Subject: FW: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408

Dear Mr. Greene:

We have not received confirmation that you were able to access the documents attached to this March 3rd e-mail. Please confirm receipt by opening the attachment and sending a reply to me.

The Division of Air Resource Management is sending electronic versions of these documents rather than sending them Return Receipt Requested via the US Postal service. Your "receipt confirmation" reply serves the same purpose as tracking the receipt of the signed "Return Receipt" card from the US Postal Service. Please let me know if you have any questions.

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
Department of Environmental Protection
850/921-9506
sylvia.livingston@dep.state.fl.us

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.

From: Livingston, Sylvia
Sent: Wednesday, March 03, 2010 3:36 PM
To: 'rgreene@ingenco.com'
Cc: 'germanh@miamidade.gov'; 'jasusan@ftch.com'; Anderson, Lennon; 'muthiahm@miamidade.gov'; 'forney.kathleen@epa.gov'; 'dee_morse@nps.gov'; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)
Subject: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408

Dear Sir/ Madam:

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

http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0250623.007.AC.D_pdf.zip

Owner/Company Name: MIAMI DADE SOLID WASTE MGMT
Facility Name: MIAMI DADE SOLID WASTE MGMT/SOUT DADE LF
Project Number: 0250623-007-AC/ PSD-FL-408
Permit Status: DRAFT
Permit Activity: CONSTRUCTION
Facility County: MIAMI-DADE
Processor: Syed Arif

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Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-9506
sylvia.livingston@dep.state.fl.us

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>>

Livingston, Sylvia

From: Hernandez, German (SWM) [germanh@miamidade.gov]
Sent: Monday, March 08, 2010 3:24 PM
To: Livingston, Sylvia
Subject: RE: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408

Received. Thank you.

German Hernandez, P.G.
Manager, Environmental Affairs
Department of Solid Waste Management
305-514-6673
"Delivering Excellence Every Day"

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Wednesday, March 03, 2010 3:36 PM
To: rgreene@ingenco.com
Cc: Hernandez, German (SWM); jasusan@ftch.com; Anderson, Lennon; muthiahm@miamidade.gov; forney.kathleen@epa.gov; dee_morse@nps.gov; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)
Subject: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408

Dear Sir/ Madam:

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Owner/Company Name: MIAMI DADE SOLID WASTE MGMT
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Permit project documents 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

Livingston, Sylvia

From: Microsoft Exchange
To: 'jasusan@ftch.com'
Sent: Wednesday, March 03, 2010 3:40 PM
Subject: Relayed: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408

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

'jasusan@ftch.com'

Subject: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408

Sent by Microsoft Exchange Server 2007

Livingston, Sylvia

From: Muthiah P.E., Mallika [MuthiM@miamidade.gov]
To: Livingston, Sylvia
Sent: Thursday, March 04, 2010 8:51 AM
Subject: Read: FW: INGENCO - MIAMI DADE SOLID WASTE MGMT/SOUTH DADE LF; 0250623-007-AC/ PSD-FL-408

Your message was read on Thursday, March 04, 2010 8:51:25 AM (GMT-05:00) Eastern Time (US & Canada).