

Florida Department of Environmental Protection

Memorandum

TO: Michael Halpin, Division of Air Resource Management
THROUGH: Trina Vielhauer, Division of Air Resource Management
Jeff Koerner, Permitting and Compliance Section
FROM: Christy DeVore, Permitting and Compliance Section
DATE: May 27, 2011
SUBJECT: Final Air Permit No. 0250623-007-AC
PSD-FL-408
Miami-Dade Solid Waste Management – Miami-Dade County, Industrial Power
Generating Company, LLC (INGENCO)
Installation of Landfill Gas Engines

The final permit for this project is attached for your approval and signature. The project requires a PSD preconstruction review permit to authorize construction of 24 dual-fuel fired compression ignition reciprocating internal combustion engine/generator sets (Detroit Diesel Series 60) for INGENCO. 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. INGENCO's application has been with the Department since June 2, 2009. The INGENCO project was held up due to the timing of the new hourly NO₂ ambient standard. Similar to EPA's reconsideration of the California Avenal project, the Department issued the draft permit based on the air quality modeling analysis presented in an application made complete prior to the new hourly NO₂ ambient standard. Subsequent modeling also showed that emissions from the proposed engine project would meet the new hourly NO₂ ambient standard. The proposed work will be performed at the existing Miami-Dade County Solid Waste Management South Dade Landfill, which is located in Miami-Dade County at 24000 SW 97th Avenue, Miami, Florida. The project is not considered a new source review reform project.

The attached Final Determination summarizes the publication and comment process. There are no pending petitions for administrative hearings or extensions of time in which to file a petition for an administrative hearing. I recommend your approval of the attached final permit for this project.

Attachments

TLV/jfk/scd

**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**

MIAMI DAILY BUSINESS REVIEW

Published Daily except Saturday, Sunday and
Legal Holidays
Miami, Miami-Dade County, Florida

**STATE OF FLORIDA
COUNTY OF MIAMI-DADE:**

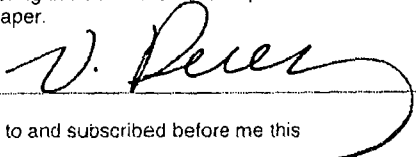
Before the undersigned authority personally appeared V. PEREZ, who on oath says that he or she is the LEGAL CLERK, Legal Notices of the Miami Daily Business Review f/k/a Miami Review, a daily (except Saturday, Sunday and Legal Holidays) newspaper, published at Miami in Miami-Dade County, Florida; that the attached copy of advertisement, being a Legal Advertisement of Notice in the matter of

NOTICE OF INTENT TO ISSUE AIR PERMIT
PERMIT NO. PSD-FL-408 / PROJECT NO. 0250623-007-AC

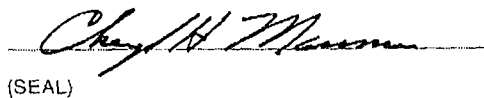
in the XXXX Court,
was published in said newspaper in the issues of

04/26/2011

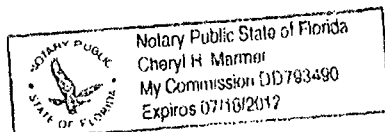
Affiant further says that the said Miami Daily Business Review is a newspaper published at Miami in said Miami-Dade County, Florida and that the said newspaper has heretofore been continuously published in said Miami-Dade County, Florida, each day (except Saturday, Sunday and Legal Holidays) and has been entered as second class mail matter at the post office in Miami in said Miami-Dade County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he or she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.



Sworn to and subscribed before me this
26 day of APRIL, A.D. 2011


(SEAL)

V. PEREZ personally known to me



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, Environmental Compliance Manager, INGENCO, 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 proposes to install twenty-four dual-fuel (landfill gas and No. 2 fuel oil and/or biodiesel) fired compression ignition reciprocating internal combustion engines (Detroit Diesel Series 60). 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 (PM₁₀); 39.9 tons per year of sulfur dioxide (SO₂); 30.6 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 by the combustor design (lean-burn engine) and good combustion practices (air-to-fuel ratio control). PM/PM₁₀ emissions will be minimized by the pretreatment of the landfill gas prior to combustion, filtration and proper maintenance of the engines.

The applicant submitted an air quality analysis in accordance with the ambient air quality standards in place at the time the application was deemed complete. The following table shows the maximum predicted Class II PSD increments in micrograms per cubic meter (ug/m³) and the percent (%) of the allowable increment consumed by sources in the area for nitrogen dioxide (NO₂) and PM₁₀.

Summary of PSD Class II Increment Analysis

Pollutant	Averaging Time	Allowable Increment (ug/m ³)	Increment Consumed (ug/m ³)	Percent
NO ₂	Annual	25	18	72
	24-hour	30	23	77
PM ₁₀	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.

FINAL DETERMINATION

PERMITTEE

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

PERMITTING AUTHORITY

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

PROJECT

Air Permit No. 0250623-007-AC
PSD-FL-408, Air Construction Permit
Industrial Power Generating Company, LLC (INGENCO)

This permit authorizes the construction of 24 dual-fuel fired compression ignition reciprocating internal combustion engine/generator sets (Detroit Diesel Series 60) for INGENCO. The proposed work will be performed at the existing Miami-Dade County Solid Waste Management South Dade Landfill, which is located in Miami-Dade County at 24000 SW 97th Avenue, Miami, Florida.

NOTICE AND PUBLICATION

The Department distributed a draft minor air construction permit package on April 20, 2011. The applicant published the Public Notice in the Miami Daily Business Review on April 26, 2011. The Department received the proof of publication on May 9, 2011.

COMMENTS

Applicant

On May 5, 2011, the Department received comments from the applicant. The following summarizes the comments and the Department's response.

Section III

- Comment:* In condition 13, the permittee requested the words, "and the amount flared", be removed. INGENCO states that the landfill gas may go to the flare, to the South Dade Wastewater plant as well as INGENCO. INGENCO will collect the required information and calculate on a monthly basis the amount combusted in INGENCO's engines and provide the semiannual sampling data to the county for any emissions calculations it needs to make. The permittee adds, INGENCO should be responsible for only emissions from its operations.

Response: No change was made to the permit. The HCl emissions are limited in the permit to maintain the facility as a minor hazardous air pollutant (HAP) source. Reporting of the facility's total HCl emissions is required to show this facility is not a major source of HAPs.
- Comment:* In condition 25, the permittee requested the removal of the phrase "and information from the vendor indicating that the engines were designed as stationary engines to fire landfill gas." The permittee reiterates that the engines are standard Detroit Diesel Series 60 engines that will be mated to standard generators. The engines will be those manufactured prior to 2000, probably in the 1996-1998 era, prior to any manufacturer certification for use in landfills. INGENCO has added engine and other controls to allow the engines to operate in the dual fuel mode. The controls have been optimized for landfill gas. Counting the

FINAL DETERMINATION

engines in this application, INGENCO has 17 locations with about 486 similarly configured engines operating in the dual fuel mode on fuel oil and methane derived from landfill gas either permitted or in the permitting process. Emissions from the engines operating on landfill gas have been demonstrated by source testing. Emissions from this site will be demonstrated by source testing.

Response: This change has been made to the permit.

CONCLUSION

The final action of the Department is to issue the permit with the minor changes, corrections and clarifications as described above.



Florida Department of Environmental Protection

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

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

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

Permit No. 0250623-007-AC
PSD-FL-408
Miami-Dade Solid Waste Management
South Dade Landfill Modification
Project: Installation of Landfill Gas Engines
Expires: May 1, 2014

PROJECT AND LOCATION

This is the final air construction permit, which authorizes the installation and operation of 24 dual-fuel landfill gas-fired internal combustion engines with a nominal rated capacity of 8 megawatts 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, which is classified as Standard Industrial Classification No. 4953 for Refuse Systems. UTM coordinates are Zone 17; 565.51 km East and 2825.11 km North.

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, 62-213, 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.

Michael P. Halpin, P.E., Director
Division of Air Resource Management

5-27-11

Date

FINAL PERMIT

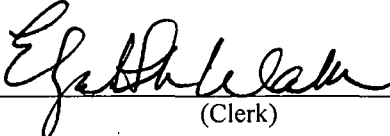
CERTIFICATE OF SERVICE

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 May 27, 2011 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)
Lee Hoefert, DEP-SED (lee.hoefert@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 for reading file (victoria.gibson@dep.state.fl.us)

Clerk Stamp

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



(Clerk)

5/27/11
(Date)

SECTION I. GENERAL INFORMATION

FACILITY DESCRIPTION

Miami-Dade Solid Waste Management (MDSWM) operates the South Dade Landfill Facility, which is a Class I municipal solid waste (MSW) landfill located in Miami, Florida. Methane-rich landfill gas (LFG) produced from the decomposition of disposed waste materials is currently collected by a gas recovery system and combusted flares to reduce non-methane organic compounds (NMOC).

PROJECT DESCRIPTION

Under contract with MDSWM, INGENCO will construct and operate an electrical generation plant at the South Dade Landfill Facility. To recover useful energy from the LFG that is currently flared, available LFG will be diverted to INGENCO to fuel the new electrical generation plant, which will consist of:

- LFG treatment equipment for dewatering, filtration and compression.
- Twenty-four reciprocating internal combustion engines, each coupled to a 350 kilowatt (kW) electrical generator. Under base load operating conditions, the plant will generate a total of 8 megawatts (MW, nominal) of electricity and will be interconnected to the Florida Power and Light distribution network through a nearby power line.
- Unregulated ancillary equipment that supports the electric generation plant consists of:
 - Diesel fuel tanks (preliminary design of two 12,000 gallon tanks) to provide diesel oil storage for the engines.
 - One lube oil tank (approximately 1,000 gallons).
 - One used lube oil tank (approximately 1,000 gallons) and moisture conditioning equipment.
 - If necessary, a package boiler (approximately 0.2 million British thermal units per hour (MMBtu/hr)) for providing heat to the building and a fuel oil tank (approximately 275 gallons) for the boiler will be installed.
 - Evaporative cooling towers.

The engines will be arranged in four groups of six engines. The engines will be located near the existing LFG collection and control system and connect from the existing line to a blower/compressor, which will draw methane-rich LFG from the gas collection system for delivery to the new electrical generation plant. The exhaust from each group of six engines will be ducted together to a single stack. Therefore, there will be a total of four stacks in the electric generation plant.

As a result of this major modification, the project is subject to PSD preconstruction review for carbon monoxide (CO), particulate matter/particulate matter with an aerodynamic diameter of 10 microns or less (PM/PM₁₀) and nitrogen oxides (NO_x).

NEW EMISSION UNITS

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

ID	Emission Unit (EU) Description
003	Twenty four dual-fuel fired compression ignition reciprocating internal combustion engine/generator sets (Detroit Diesel Series 60) with a total nominal electrical generation capacity of 8 MW.

SECTION I. GENERAL INFORMATION

REGULATORY CLASSIFICATION

The existing South Dade Landfill Facility is subject to the following major regulatory classifications.

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility does not operate any units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is an existing Title V major source of air pollution in accordance with Chapter 213, F.A.C. (The facility has a capacity of greater than 2.5 million cubic meters and 2.5 million megagrams and operates under a current Title V air operation permit.)
- The facility is an existing major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

The existing South Dade Landfill Facility is subject to the following federal regulations.

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

Installation of the new electrical generation plant is subject to PSD preconstruction review in accordance with Rule 62-210.200, F.A.C. and subject to Best Available Control Technology (BACT) determinations 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 BACT Determinations

SECTION II. ADMINISTRATIVE REQUIREMENTS (FINAL 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 units subject to the Prevention of Significant Deterioration requirements should be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection, 2600 Blair Stone Road, MS 5505, Tallahassee, Florida 32399-2400 (phone number 850/717-9000).
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. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); and Appendix D (Common Testing Requirements); and Appendix E (Summary of BACT Determinations).
4. General Conditions: The owner and operator are subject to and shall operate under the attached General Permit Conditions B.1 through B.15 listed in Appendix B 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.]
5. Terminology: The terms used in this permit have specific meanings as defined in the corresponding chapters of the Florida Administrative Code.
6. 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.]
7. Expiration: Notwithstanding the source obligation requirements in Rule 62-212.400(12)(a), F.A.C., 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. [Rule 62-4.090, F.A.C.]
8. 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.]
9. 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 (FINAL PERMIT)

10. BACT Determination: For phased construction projects, the BACT determination 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 BACT for the source. [40 CFR 52.21(j)(4)]
11. 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 SPECIFIC CONDITIONS (FINAL PERMIT)

Subsection A. LFG Engines (EU-003)

The specific conditions listed in this subsection apply to the following emission unit.

EU No.	Emission Unit Description
003	This emissions unit consists of 24 Detroit Diesel Series 60 dual-fuel fired compression ignition reciprocating internal combustion engines. Each engine is a 6-cylinder engine with a total displacement of 12.7 liters. Each engine has a maximum rating of 550 brake horsepower (bhp) and is coupled to a 350 kW generator (nominal rating) for the generation of up to a total of 8 MW of electricity. Each engine will fire landfill gas with diesel and/or biodiesel. The LFG will be processed by a gas treatment system prior to combustion in the engines. The engines will be arranged in four groups of six engines: groups A, B, C and D. The exhaust from each group of six engines will be ducted together to a single stack, for a total of four stacks.

EQUIPMENT DESIGN AND WORK PRACTICES

1. **Engines:** The permittee is authorized to install and operate 24 Detroit Diesel Series 60 dual-fuel fired compression ignition reciprocating internal combustion engines. Each engine is a 6-cylinder engine with a total displacement of 12.7 liters. Each engine has a maximum rating of 550 bhp and is coupled to a 350 kW generator (nominal rating) for the generation of up to a total of 8 MW of electricity. The maximum rating when coupled to the electrical generator is 469 bhp. Each engine will fire LFG with diesel/biodiesel as a startup and stabilizing fuel. The LFG will pass through a gas treatment system prior to combustion in the engines. The engines will be arranged in four groups of six engines: groups A, B, C and D. Each group of engines will share a common stack.

The maximum heat input rate of each engine is 3.67 million British thermal units (MMBtu) per hour.

[Design and Rule 62-4.070(3), F.A.C.]

2. **LFG Treatment System:** The permittee shall design, install, operate and maintain a LFG Treatment System including equipment for: gas compression (blowers/compressors), de-watering (knock-out and cooling system) and particulate removal (filtration). Specifically, the permittee shall design, install, maintain and operate 1 micron primary and polishing filters to remove particulate matter from the LFG prior to combustion in the engines. The LFG treatment system shall not be equipped with atmospheric vents.. LFG shall be directed to the new engines, the existing flares or some other appropriate treatment or control system. [Rule 62-212.400, F.A.C.]
3. **Ancillary Equipment.** The permittee is authorized to install the following unregulated ancillary equipment to support the electrical generation plant:
 - a. Diesel fuel tanks (preliminary design of two 12,000 gallon tanks) to provide diesel oil storage for the engines.
 - b. One lube oil tank (approximately 1,000 gallons).
 - c. One used lube oil tank (approximately 1,000 gallons) and moisture conditioning equipment.
 - d. If necessary, a package boiler (approximately 0.2 million British thermal units per hour (MMBtu/hr)) for providing heat to the building and a fuel oil tank (approximately 275 gallons) for the boiler will be installed.
 - e. Evaporative cooling towers.

[Application No. 0250623-007-AC]

4. **Fuel Specifications:** The following fuels are authorized for each engine: LFG, diesel and biodiesel. Based on the proposed engine type and design, diesel or biodiesel shall be co-fired with LFG to stabilize combustion. The maximum sulfur content of diesel and biodiesel is 0.0015 % by weight.

SECTION III – EMISSION UNIT SPECIFIC CONDITIONS (FINAL PERMIT)

Subsection A. LFG Engines (EU-003)

{Permitting Note: For this type of compression ignition dual-fuel engine, the LFG fraction target range is 92% to 94%, with the remainder being diesel or biodiesel. The permittee expects a minimum LFG fraction of 90% with an upper level LFG fraction of 98%. The LFG fraction can be adjusted by the number of engines in operation. The estimated LFG heating value is 536 Btu per standard cubic feet (scf) and landfill gas usage of 114 scf per minute (scfm) per engine. The approximate heating value for diesel is 137,000 Btu/gallon and for biodiesel the range is 130,000 to 145,000 Btu/gallon.} [Rule 62-212.400, F.A.C.]

5. **Fuel Monitors:** The permittee shall install, calibrate, operate and maintain monitoring devices to record the flow (with totalizer) of each authorized fuel and the hours of operation (non-resettable elapsed time meter). [Rule 62-4.070(3), F.A.C.]
6. **LFG Flaring:** 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. Excess LFG not used as fuel in an engine must be flared or directed to some other appropriate treatment or control system in accordance with the requirements of NSPS Subpart WWW in 40 CFR 60. [Rule 62-4.070, F.A.C.]

EMISSION LIMITING AND PERFORMANCE REQUIREMENTS

7. **Hours of Operation:** The hours of operation for the engines are not limited (8,760 hours per year). [Rule 62-210.200, F.A.C.]
8. **LFG Fraction:** Upon completing startup of each engine, the engines shall operate at a LFG fraction of at least 90%. [Rules 62-4.070(3) and Rule 62-212.400(BACT), F.A.C.]
9. **Nitrogen Oxides (NO_x):** The emission rate of NO_x from each engine shall not exceed 0.8 lb/MMBtu and 2.9 lb/hour (equivalent to 2.8 grams/bhp-hour). [Rule 62-212.400(BACT), F.A.C.]
10. **Carbon Monoxide (CO):** The emission rate of CO from each engine shall not exceed 1.0 lb /MMBtu and 3.7 lb/hour (equivalent to 3.6 grams/bhp-hour). [Rule 62-212.400, F.A.C.]
11. **Particulate Matter/Particulate Matter less than 10 microns (PM/PM₁₀):** Emissions of PM/PM₁₀ shall be minimized by the following work practice standards: installing, maintaining and operating the LFG Treatment System that meets the filtration specification; the firing of diesel/biodiesel that meets the maximum sulfur specification; and, as determined by EPA Method 9, visible emissions from each engine exhaust shall not exceed 10% opacity. *{Permitting Note: Based on these work practice standards, the expected maximum PM/PM₁₀ emissions from each engine is 0.075 lb/MMBtu, 0.28 lb/hour and 0.26 grams/bhp-hour.}* [Rule 62-212.400(BACT), F.A.C.]
12. **Sulfur Dioxide (SO₂):** Sulfur dioxide emissions from all engines shall not exceed 39.0 tons during any consecutive 12 months. Emissions shall be calculated based on the representative sulfur content of each fuel and the actual monthly fuel consumption rate of each fuel based on the following:
 - a. **LFG:** The representative sulfur content for a given month shall be the sulfur content determined from sampling and analysis within the same semiannual period.
 - b. **Diesel/Biodiesel:** The representative sulfur content for a given month shall be the permitted maximum sulfur content or the actual sulfur content if provided for the most recent fuel delivery.
 - c. **Fuel Consumption:** The monthly fuel consumption shall be determined from the fuel flow monitors.Compliance with the SO₂ emissions cap shall be determined by summing the calculated monthly SO₂ emissions from each fuel based on stoichiometry for a given 12-month period. *{Permitting Note: The project avoids PSD review based on this emissions cap.}* [Rule 62-212.400(12)(Source Obligation), F.A.C.]
13. **Hydrochloric Acid (HCl):** Hydrochloric acid emissions from the facility shall not exceed 8.1 tons during any consecutive 12 months. Emissions shall be calculated based on the representative chlorine content of LFG and the actual monthly fuel consumption rate of the engines and the amount flared based on the following:

SECTION III – EMISSION UNIT SPECIFIC CONDITIONS (FINAL PERMIT)

Subsection A. LFG Engines (EU-003)

- a. LFG: The representative chlorine content for a given month shall be the chlorine content determined from sampling and analysis within the same semiannual period.
- b. Fuel Consumption: The monthly fuel consumption shall be determined from the fuel flow monitors on the engines as well as the flares.

Compliance with the HCl emissions cap shall be determined by summing the calculated monthly HCl emissions from LFG based on stoichiometry for a given 12-month period. *{Permitting Note: This emissions cap ensures that the facility remains an area source of HAP emissions with regard to NESHAP Subpart ZZZZ in 40 CFR 63 (less than 10 tons per year of any single HAP and less than 25 tons per year for the combination of all HAP)}*. [Applicant Request and Rule 62-4.070(3), F.A.C.]

EXCESS EMISSIONS

14. Excess Emissions Allowed: Excess CO and NOx emissions (as specified in this subsection) resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing best operational practices to minimize emissions are adhered to and:
 - a. To the extent practicable, the operator shall strive to complete engines startups within 30 minutes;
 - b. Upon completing startup, each engine shall operate with a LFG fraction at 90% or greater; and
 - c. The duration of excess emissions due to malfunctions shall be minimized but in no case exceed two hours in any 24-hour period.

[Rule 62-210.700(1), F.A.C.]

TEST METHODS AND PROCEDURES

15. Stack Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Note: The method shall be based on a continuous sampling train.}
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; and Appendix A of 40 CFR 60]

16. LFG Composition Analysis: The following methods shall be used to satisfy the sampling/analysis of LFG:
 - a. Methane Content: Portable analyzer.
 - b. Sulfur Content: ASTM Method D5504-01 or equivalent.
 - c. Chlorine Content: Modified EPA Method TO-15 or equivalent.
 - d. The LFG shall be collected and transported in an appropriate canister (e.g. SUMMA®, Bottle-Vac Sampler or equivalent).

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[Rule 62-4.070(3), F.A.C.]

17. **Initial Compliance Tests:** Within 60 days of achieving the permitted capacity, but no later than 180 days after initial startup (first fire), the permittee shall have emissions tests conducted on the engines to demonstrate compliance with the CO, NO_x and opacity standards of this permit. To demonstrate compliance with the standards, the permittee shall test one group of engines. All engines that are available and physically capable of operating at the required LFG fraction shall be operating for the test. During the initial compliance tests, the permittee shall take a representative sample of LFG as described below, which shall be analyzed for the methane content, sulfur content and chlorine content. The heating value shall be calculated from the methane content measured by the portable analyzer. The analytical data on the heating value, sulfur content and chlorine content shall represent the LFG fired for that semiannual period. [Rules 62-4.070 and 62-297.310(7), F.A.C.]
18. **Annual Compliance Tests:** During each federal fiscal year (October 1st to September 30th), the permittee shall have emissions tests conducted on the engines to demonstrate compliance with the CO, NO_x and opacity standards of this permit. To demonstrate compliance with the standards, the permittee shall test one engine group of six engines. Annual tests shall be rotated such that each engine group is tested before a group is repeated. All engines that are available and physically capable of operating at the required LFG fraction shall be operating for the test. The results of the most recent annual compliance conducted within the appropriate time period may be used to satisfy the requirement to test prior to renewal of the operation permit. During the annual compliance tests, the permittee shall take a representative sample of LFG as described below, which shall be analyzed for methane content, sulfur content and chlorine content. The analytical data on the heating value, sulfur content and chlorine content shall represent the LFG fired for that semiannual period. [Rules 62-4.070 and 62-297.310(7), F.A.C.]
19. **Engine Test Conditions:** The required compliance tests shall be conducted when operating at permitted capacity in dual-fuel mode with a LFG gas fraction of at least 90%. Permitted capacity is defined as 80% to 100% of the maximum electrical production rate for each engine (350 kW). [Rule 62-297.310, F.A.C.]
20. **LFG Sampling/Analysis:** For each calendar semiannual period (January – June and July – December), the permittee shall obtain a sample of LFG and have an analysis for sulfur and chlorine. Semiannual samples shall be taken at least five months apart. Each gas sample shall be collected under normal operating conditions (i.e., with valves open for all operating cells) by appropriate canisters (e.g. SUMMA® Bottle-Vac Sampler or equivalent). Based on Rule 62-297.310(7)(b)(Special Compliance Tests), F.A.C., the Compliance Authority may request additional gas sampling and analyses. Results shall also be reported as SO₂ and HCl emission factors in terms of lb/million standard cubic feet (lb/MMscf) of landfill gas. [Rules 62-210.200 and 62-212.400, F.A.C.]
21. **Diesel/Biodiesel Sampling/Analysis:** For each delivery of diesel and/or biodiesel fuel, the permittee shall obtain a fuel vendor certification (or bill of lading) identifying the actual or maximum sulfur content. The permittee shall maintain records documenting the sampling/analysis methods used by the vendor to determine the sulfur content. Optionally, the permittee can obtain a sample for a delivery and have it analyzed for the sulfur content. Fuel sulfur sampling and analysis shall be determined by appropriate methods including the following (or equivalent): ASTM D 4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products; ASTM D 129-91; ASTM D 2622-94; or ASTM D 4294-90; or the latest version of the methods. [Rule 62-4.070(3), F.A.C.]

RECORDKEEPING, REPORTING AND MONITORING REQUIREMENTS

22. **Stack Test Reports:** 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. 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

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report, other than for an EPA or DEP Method 9 test, shall provide the applicable information identified in Rule 62-297.310(8)(c). The lower heating value, sulfur content, chlorine content, SO₂ emission factor (lb/MMscf) and HCl emission factor (lb/MMscf) shall be provided as part of the stack test report. [Rule 62-297.310(8), F.A.C.]

23. **Fuel Analytical Reports:** For each required fuel analysis, the permittee shall submit the analytical report to the Compliance Authority within 45 days of taking the sample. The permittee shall maintain records of the required analysis (or vendor certification) for each fuel. [Rule 62-4.070(3), F.A.C.]
24. **Monthly Records:** Within 10 days following a given month, the permittee shall calculate and record the following information in a monthly record for the given month and the consecutive 12-month rolling period:
 - a. Total LFG consumption for all engines;
 - b. Diesel and biodiesel consumption for all engines;
 - c. Hours of operation (including any startup, shutdown or malfunction);
 - d. Calculated SO₂ emissions (including supporting calculations); and
 - e. Calculated HCl emissions (including supporting calculations).

In addition the permittee shall estimate the average monthly heating value of LFG from the engine operational data. [Rule 62-4.070(3)]

NSPS AND NESHAP PROVISIONS

25. **NSPS Subpart IIII:** The permittee shall provide the following documentation to the Division of Air Resource Management and the Compliance Authority: verification that each of the engines was manufactured prior to April 1, 2006 (applicability deadline for NSPS Subpart IIII) and a statement that the proposed engines have not been modified nor reconstructed. This will establish the engines as existing engines that predate the NSPS Subpart IIII provisions. The permittee shall obtain a modification of this permit to install another model/type of engine. [40 CFR 60]
26. **NESHAP Subpart ZZZZ Provisions:** The engines are subject to the applicable provisions of NESHAP Subpart ZZZZ in 40 CFR 63, including:
 - a. Change the oil and filter every 1,440 hours of operation or annually, whichever comes first;
 - b. During periods of startup minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply; and
 - c. Maintain recordkeeping requirements found in 40 CFR 63.6655, continuous compliance in 40 CFR 63.6605 and 40 CFR 63.6640 and monitoring, installation, collection, operation and maintenance requirements in 40 CFR 63.6625(e), (h), and (j).

The provisions of this Subpart may be provided in full upon request. Emissions units subject to a specific NESHAP Subpart in 40 CFR 63 are also subject to the applicable General Provisions of Subpart A in 40 CFR 63. [40 CFR Part 63, Subpart ZZZZ, 40 CFR 66.6603, Table 2d, 40 CFR 63.6625(b), 40 CFR 63.6655, 40 CFR 63.6605, 40 CFR 63.6640 and 40 CFR 63.6625(e), (h), and (j)]

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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.

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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 624.120 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 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.]
4. **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.]
5. **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.]
6. **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.]
7. **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.]
8. **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

9. **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.]
10. **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. *{Permitting Note: The permittee may request an alternate sampling plan from the Emissions Monitoring Section of the Department's Division of Air Resource Management in accordance with Rule 62-297.620, F.A.C., Exceptions and Approval of Alternate Procedures and Requirements.}*

- 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.

SECTION IV. APPENDIX D
COMMON TESTING REQUIREMENTS

d. *Work Platforms.*

- (1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.
- (2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.
- (3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.
- (4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

- (1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.
- (2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

f. *Electrical Power.*

- (1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.
- (2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

- (1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.
 - (a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.
 - (b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.
 - (c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.
- (2) A complete monorail or dual rail arrangement may be substituted for the eyebolt and bracket.
- (3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

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

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

SECTION IV. APPENDIX D
COMMON TESTING REQUIREMENTS

RECORDS AND REPORTS

8. Test Reports:

- a. The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test.
- b. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed.
- c. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information.
 1. The type, location, and designation of the emissions unit tested.
 2. The facility at which the emissions unit is located.
 3. The owner or operator of the emissions unit.
 4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
 5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
 6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
 7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
 8. The date, starting time and duration of each sampling run.
 9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
 10. The number of points sampled and configuration and location of the sampling plane.
 11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
 12. The type, manufacturer and configuration of the sampling equipment used.
 13. Data related to the required calibration of the test equipment.
 14. Data on the identification, processing and weights of all filters used.
 15. Data on the types and amounts of any chemical solutions used.
 16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
 17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
 18. All measured and calculated data required to be determined by each applicable test procedure for each run.
 19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
 20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
 21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

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

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 identical lean-burn internal combustion Detroit Diesel Series 60 dual fuel engines or equivalent. 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 lean-burn engines will be connected to individual electrical generators. Each LFG 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 an existing major stationary source as defined in Rule 62-210.200, Florida Administrative Code (F.A.C.). The project is subject to preconstruction review in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration for carbon monoxide (CO), nitrogen oxides (NO_x) and particulate matter/particulate matter less than or equal to 10 microns (PM/PM₁₀). The increases in emissions of CO, NO_x and 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, NO_x and PM/PM₁₀.

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	1.0 lb/MMBtu 3.7 lb/hr (equivalent to 3.6 grams/bhp-hour)	Three, 1-hour runs	Stack Test EPA Method 10	BACT
NO _x	0.8 lb/MMBtu 2.9 lb/hr (equivalent to 2.8 grams/bhp-hour)	Three, 1-hour runs	Stack Test EPA Method 7 or 7E	BACT
PM/PM ₁₀	Work Practice Standard: Use of 1-micron filter in gas treatment system	Periodic Maintenance		BACT
	10% Opacity	6-minute block	Visible Emissions Test EPA Method 9	

Walker, Elizabeth (AIR)

From: Walker, Elizabeth (AIR)
Sent: Friday, May 27, 2011 2:20 PM
To: rgreene@ingenco.com; germanh@miamidade.gov
Cc: jasusan@ftch.com; Hoefert, Lee; muthiahm@miamidade.gov; forney.kathleen@epa.gov; dee_morse@nps.gov; Gibson, Victoria; DeVore, Christy; Koerner, Jeff
Subject: MIAMI DADE SOLID WASTE MGMT/SOUT DADE LF; 0250623-007-AC/PSD-FL-408
Attachments: 0250623_Notice_of_Final_signed.pdf

Dear Sir/ Madam:

Attached is the official **Notice of Final Permit** 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.F_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: FINAL
Permit Activity: CONSTRUCTION/INSTALLATION OF LANDFILL GAS ENGINES
Facility County: MIAMI-DADE

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.

Elizabeth Walker

Bureau of Air Regulation
Division of Air Resource Management (DARM)
(850)717-9093

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>> .

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Herschel T. Vinyard Jr. 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.

Walker, Elizabeth (AIR)

From: Robert L. Greene [rgreene@ingenco.com]
Sent: Friday, May 27, 2011 3:28 PM
To: Walker, Elizabeth (AIR)
Subject: RE: MIAMI DADE SOLID WASTE MGMT/SOUT DADE LF; 0250623-007-AC/PSD-FL-408

received

From: Walker, Elizabeth (AIR) [<mailto:Elizabeth.Walker@dep.state.fl.us>]
Sent: Friday, May 27, 2011 2:20 PM
To: Robert L. Greene; germanh@miamidade.gov
Cc: jasusan@ftch.com; Hoefert, Lee; muthiahm@miamidade.gov; forney.kathleen@epa.gov; dee_morse@nps.gov; Gibson, Victoria; DeVore, Christy; Koerner, Jeff
Subject: MIAMI DADE SOLID WASTE MGMT/SOUT DADE LF; 0250623-007-AC/PSD-FL-408

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Elizabeth Walker

Bureau of Air Regulation
Division of Air Resource Management (DARM)

(850)717-9093

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