TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Miami-Dade Water and Sewer Department
P. O. Box 330316
Miami, Florida 33233-0316

Central District Wastewater Treatment Plant
Facility ID No. 0250476

PROJECT

Project No. 0250476-011-AC
Application for Minor Source Air Construction Permit
Replacement of Two 1.5 Megawatt Engine Generators

COUNTY

Miami-Dade County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blairstone Road, MS#5505
Tallahassee, Florida 32399-2400

January 2013

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Chapters 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations in Rule 62-204.800, F.A.C.

Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

Facility Description and Location

The Central District Wastewater Treatment Plant Cogeneration Facility (CDWWTP) is engaged in wastewater treatment activities and is publicly owned. It is categorized under Standard Industrial Classification Code No. 4941. The existing facility is located in Miami-Dade County at 3869 Rickenbacker Causeway in Miami, Florida. The Universal Transverse Mercator (UTM) coordinates are Zone 17, 585.19 km East, and 2848.09 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to Ambient Air Quality Standards (AAQS).

Facility Regulatory Categories

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The 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.

Project Description

In this air construction permit application, Miami-Dade Water and Sewer Department (MDWASD) seeks to replace two (2) of its four (4) older digester gas (biogas) fueled 1.2 megawatt Superior Model 16GTLB electrical cogeneration engines Nos. 3 and 4, Emissions Unit ID Nos. 010 and 011 with two (2) new 1.2 megawatt Superior Model 16GTLD engine driven cogenerator units at its Central District Wastewater Treatment Plant (CDWWTP), Facility ID No. 0250476, located on Virginia Key, Florida.

These four (4) engine driven cogeneration units are operated collectively and play an important role in facility's operation by providing necessary heat to the plant's digester operations to achieve and meet the requirements for Processes to Significantly Reduce Pathogens (PSRPs) and to reduce Vector Attraction in the production of biosolids for beneficial use; while serving as a valuable waste-to-energy role by using digester gas (biogas) that

has been scrubbed to reduce hydrogen sulfide (H_2S) to produce electricity for the facility and which would otherwise be flared unscrubbed increasing Sulfur Dioxide (SO_2) emissions.

This application is to replace two (2) of the units. Since these four (4) engine driven cogeneration units are regulated singularly as a group of emission units, in addition to the replacement of units, the application also seeks to reduce the emission limitations of remaining units to remain a minor modification project. No reduction in the combined hours of the permitted operations for the units is being sought to allow for future additional digester gas production and additional beneficial waste-to-energy recovery.

Processing Schedule

December 3, 2012: Received the application for a minor source air pollution construction permit.

December 3, 2012: Application deemed complete.

2. PSD APPLICABILITY

General PSD Applicability

For areas currently in attainment with the Ambient Air Quality Standards (AAQS) or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's prevention of significant deterioration (PSD) preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission equals or exceeds the defined significant emissions rate of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

PSD Applicability for Project

This facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter carbon monoxide (CO), nitrogen oxides (NO_x), (PM/PM_{10}), sulfur dioxide (SO_2), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY). This facility is not within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. The facility is currently operating under Title V Air Operation Permit 0250476-010-AV, which expires on April 20, 2015.

Existing Equipment and Function

CDWWTP is equipped with four digester gas-fired cogeneration engines (E.U. Nos. 007, 009, 010 and 011), that burn scrubbed digester gas (biogas) produced in the anaerobic digesters. These cogeneration units provide necessary heat for the anaerobic digesters to achieve and meet the requirements for Processes to Significantly Reduce Pathogens (PSRPs) and reduce Vector Attraction in the production of biosolids applied to Agricultural Land, Forests, or Reclamation Sites for beneficial use. These cogeneration units also serve a valuable waste-to-energy role by using the digester gas (biogas) that has been scrubbed to reduce hydrogen sulfide (H_2S) to produce electricity for the facility. The scrubbed digester gas (biogas) has an approximate higher heating value of 700 btu/scf and in 2011 the average hydrogen sulfide (H_2S) concentration was 105.2 grains per 100 scf. Each cogenerator set consists of a four stroke lean burn spark ignition (4SLBSI) reciprocating internal combustion engine (RICE), a Superior Model 16 GTLB 1,700 hp turbocharged prime mover coupled to a 1,200 kWA electrical generator. The Superior Model 16 GTLB engines use pre-combustion chambers (PCC) and are equipped with electronic timing lean-burn technology to reduce NO_x emissions. These cogeneration units are only allowed to burn digester gas (biogas) as fuel. Commercial operation began in July 1989.

In October 2009, the failure of the engine lubricating oil pump drive caused a loss of lubrication to Cogenerator #3 (E.U. 010) during operation under full load that resulted in catastrophic damages to the engines main bearings and crankshaft. With Cogenerator #3 (E.U. 010) now out of service and Cogenerator #1 (E.U. 007) being out of service since March 2008 due to cylinder jacket water leaks and the inability to be able to satisfactorily repair or obtain replacement for the upper portion of the engine block to obtain proper cylinder jacket water seals; there was only two (2) operational cogenerator units remaining in service to produce the heat needed for the anaerobic digesters. Since there were only two (2) cogeneration units operable, Cogenerator #2 (E.U. 009)and #4 (E.U. 011), and the damage to Cogenerator #3 did not affect the upper portion of the engine block; a decision to remove the upper portion of Cogenerator #3 (E.U. 010)'s engine block to effect the repair of Cogenerator #1 (E.U. 007) was made. Repairs were made to and emissions testing was conducted of Cogenerator #1 (E.U. 007) on November 24, 2010 before returning to service in January 2011.

To ensure that there would be adequate and reliable heating capacity available for the anaerobic digesters to meet the treatment requirements to Significantly Reduce Pathogens (PSRPs) and Vector Attraction in the production of biosolids and to reduce flaring raw unscrubbed digester gas (and facilities SO_2 emissions); it was determined by facility management that the most environmentally responsible action was to replace two (2) Cogenerators # 3 and #4 (E.U.s 010 and 011) both Cooper Superior Model GTLBs as soon as possible.

Baseline Emissions from Existing Units

The 24-month period from January 2010 to December 2011, inclusive, was selected using reported values from the Annual Operating Reports to determine the baseline actual emissions for Emission Units 007, 009, 010, and 011, as shown in Table 1 below. This period conforms to the requirement of Chapter 62-210 F.A.C., *Stationary*

Sources - General Requirements, that the period selected to determine Baseline Actual Emissions be "within the 5-year period immediately preceding the date a complete permit application is received by the Department". Consistent with the requirement of Chapter 62-212 F.A.C., *Stationary Sources – Preconstruction Review*, for the Baseline Actual-to-Potential applicability test for Construction of New Emission Units where a combination of new and existing emissions units are involved, the historic baseline emissions are being determined for all existing cogeneration units.

Table 1 Historical Emissions
Four Existing 1.2 MW Superior Model GTLB
Digester Gas Electric Cogenerators (E.U. 007, 009-011)
Central District Wastewater Treatment Plant

Year	Hours of Operation Runtime	Digester Gas Consumption (10^6 FT^3)	CO (tons)	NO_X (tons)	PM_{10} (tons)	SO_2 (tons)	VOC (tons)
2007	12,502	277.55	55.37	26.97	1.40	35.25	16.10
2008	14,063	323.10	64.46	26.84	1.63	41.03	18.74
2009	14,500	334.15	66.66	35.20	1.69	44.61	19.38
2010	15,047	346.83	69.19	45.95	1.75	46.82	20.12
2011	14,818	340.43	67.92	38.44	1.72	45.96	19.74
Sum 2-Yr 2010-11	29,865	687.26	137.11	84.39	3.47	92.78	39.86
Annual Aver. 2010-11	14,932	343.63	68.55[1]	42.19[4]	1.74[2]	46.39[5]	19.93[3]

[1]Calculated by multiplying USEPA WebFIRE emission factor of 399 lbs/10^6 standard cubic feet times 343.63x 10^6 ft^3 divided by 2000.

[2]Calculated by multiplying USEPA WebFIRE emission factor of 10.11 lbs/10^6 standard cubic feet times 343.63x 10^6 ft^3 divided by 2000.

[3]Calculated by multiplying USEPA WebFIRE emission factor of 116 lbs/10^6 standard cubic feet times 343.63x 10^6 ft^3 divided by 2000.

[4]Estimated by stack test results.

[5]Estimated by material balance (basis is 105.2 grains of H_2S/100 ft^3 scrubber digester gas maximum monthly average).

Proposed Replacement Units

The Superior Model GTLB Cogenerator units (E.U. 010 and 011) each driving a 1200 KVA generator began service in 1989. These two digester gas (biogas) fueled engine generator sets are to be removed and replaced by two nearly identical Superior Model 16GTLDs each driving a 1200 KVA generator.

The Model 16GTLD engine is a sixteen-cylinder engine in Superior's line of natural gas fueled engines. The Superior ® brand name has a long-standing reputation for high quality engine and compressor products, dating back to 1889. Since 1976, when the Superior brand was purchased by Cameron, over 10,000 Superior engines and compressor frames have been manufactured and installed worldwide in a variety of high-speed and medium speed applications. Superior turbocharged gas engines are medium-speed and built for continuous, heavy-duty service. The optimal fuel/air mixing in the cylinder through the use of pre-combustion chambers, timed fuel injection, and turbocharged air inter-cooling; result in smoother more complete combustion reducing fuel consumption and lower emissions. The low compression (8.75:1) pistons keep dynamic stresses at a conservative

level, provide for more stable operation and enhance engine tolerance to variations in types of fuel, such as landfill or digester bio-gas. The conservative horsepower rating of Superior engines provides ample reserve for emergency situations. Inter-cooling with optimal valve overlap results in cooler combustion chamber parts while assuring lower fuel consumption, greater efficiency, longer service life and trouble-free operation.

Projected Emissions from Two Existing and Two Proposed Units

The projected emissions associated with this project are the typical pollutants from combustion of digester gas (biogas) fuel in spark ignited four stroke lean burn reciprocating internal combustion engines equipped with pre-combustion chambers (PCC). The primary pollutants associated with this project are NO_x, CO, and SO_2. The potential emissions for the two existing single-fuel digester gas (biogas) fired Superior Model 16GTLB 1760 HP engines to remain operating continuously are shown in Table 2 and the two proposed replacement single-fuel digester gas (biogas) fired Superior Model 16GTLD 1760 HP engines operating continuously are shown in Table 7-2.

Two Existing Units

Table 2 Potential Emissions
Existing Superior Model 16GTLB
1.2 MW Digester Gas Electric Cogenerators (EU 007 and 009 to remain)
Central District Wastewater Treatment Plant

Operations				EU 007	EU 009	Total
Hours of Operation				8,760	8,760	17,520
Horsepower				1,700		
Brake Specific Fuel Consumption (btu/bhp-hr)				7,100		
Fuel Consumption (MMbtu/hr)				12.5		
Annual Fuel consumption (MMBtu)				109,500	109,500	219,000
Digester Gas Heat Value (MMBtu/MMscf)				700		
Annual Digester Gas Consumption (MMscf)				156.429	156.429	312.858
	Emission Factor	Units	Source, SCC	Annual Emissions in Tons		
Carbon Monoxide (CO)	399	lb/10^6 scf	20300201	31.21	31.21	62.42
Nitrogen Oxides (NO_x)	7.45	Lbs/Hr	Requested	32.63	32.63	65.26
Sulfur Oxides (SO_2)	300.4	lb/10^6 scf	Derived	23.50	23.50	47.00
PM_{10}, Primary	10.11	lb/10^6 scf	20300201	0.79	0.79	1.37
$PM_{2.5}$, Primary	10.11	lb/10^6 scf	20300201	0.79	0.79	1.37
Volatile Organic Compounds (VOC)	116	lb/10^6 scf	20300201	9.07	9.07	18.14

Notes:
CO, PM, VOC Emission factors, based on USEPA WebFIRE for a similar, but different, process, natural gas. See footnotes to Table 1, above.
NO_x Emission factor, a revised limit of 7.45 lb/hr is requested by permittee based on historic testing. Presently NO_x emissions are synthetically limited by permit condition to a maximum allowable emission rate of 7.6 lb/hr.
SO_2 Emission factor is derived by mass balance, based on maximum monthly average scrubber digester gas H_2S concentration in last 5 years of 105.2 grains /100cf .
105.2 grains H_2S/100cf x 7000grain/Lb x (64 SO_2/34 H_2S) x 1000000cf / MMscf = 300.4 Lbs/MMscf.
Emissions (ton/year) = (emissions factor [lbs or grams/unit(s)]) x (units) / 2000 lbs/ton.

Two Proposed Units

Table 3 Potential Emissions
Proposed New Replacement Superior Model 16GTLD
1.2 MW Digester Gas Electric Cogenerators (EU 021 and 022)
Central District Wastewater Treatment Plant

Operations	EU 021	EU 022	Total
Hours of Operation	8,760	8,760	17,520
Horsepower	1,760		
Brake Specific Fuel Consumption (btu/bhp-hr)	7,100		
Fuel Consumption (MMbtu/hr)	12.496		
Annual Fuel consumption (MMBtu)	109,465	109,465	218,930
Digester Gas Heat Value (MMBtu/MMscf)	700		
Annual Digester Gas Consumption (MMscf)	156.379	156.379	312.758

	Emission Factor	Units	Source, SCC[10]	Annual Emissions in Tons		
Carbon Monoxide (CO)	10.8	Lbs/Hr	Requested	47.30	47.30	94.60
Nitrogen Oxides (NOx)	3.7	Lbs/Hr	Requested	16.21	16.21	32.42
Sulfur Oxides (SO_2)	300.4	Lb/MMscf	Derived	23.49	23.49	46.98
PM_{10}, Primary	10.11	Lb/MMscf	20300201	0.79	0.79	1.37
$PM_{2.5}$, Primary	10.11	Lb/MMscf	20300201	0.79	0.79	1.37
Volatile Organic Compounds (VOC)	1.0	g/HP-Hr	Table 1, Subpart JJJJ	16.99	16.99	33.98

Notes:
CO Emission factor of 10.8 lb/hr (3.0 g/HP-Hr) is requested by permittee. Manufacturer provided letter indicated CO emissions at 2.2 g/HP-Hr, CO emissions are also limited by Table 1 to Subpart JJJJ of Part 60 to 5.0 g/bhp-hr or 610 ppmvd at 15% O_2.
NO_x Emission factor of 3.7 lb/hr is requested by permittee to escape PDS review. Manufacturer provided letter with NO_x emissions at 0.7 g/HP-Hr, NO_x emissions are also limited by Table 1 to Subpart JJJJ of Part 60 to 2.0 g/bhp-hr; (2.0 g/bhp-hr x 1760 bhp = 3520 g/hr x 0.0022046 lb/g = 7.76 lb/hr) or 150 ppmvd at 15% O_2.
SO_2 Emission factor is derived by mass balance.
The maximum monthly average scrubber digester gas H_2S concentration in last 5 years is 105.2 grains /100cf .
105.2 grains H_2S/100cf x 7000grain/Lb x (64 SO_2/34 H_2S) x 1000000 cf / MMscf = 300.4 lbs/MMscf.
PM Emissions factor is based on USEPA WebFIRE for a similar, but different, process, natural gas.
VOC Emission factor, limited by Table 1 to Subpart JJJJ of Part 60 to 1.0 g/bhp-hr or 80 ppmvd at 15% O_2(emissions of formaldehyde should not be included).
Emissions (ton/year) = (emissions factor [lbs or grams/unit(s)]) x (units) / 2000 lbs/ton.

All Four Units Synthetically Limited

Since the total potential emissions from the combined operations of the existing and proposed digester gas fuel cogeneration units will continue to be synthetically limited so that combined hours of operation for the all digester gas fuel cogeneration units (Nos. 007, 009, 021, and 022) shall not exceed 26,280 hours in any consecutive 12-month period, the potential worst case emissions of pollutants for the two extreme ranges of potential operational combinations of the four units are summarized in Table 4.

Table 4 Potential Emissions
Existing Superior Model 16GTLB and New Superior Model 16GTLD
1.2 MW Digester Gas Electric Cogenerators (EUs 007, 009, 021, 022)
Central District Wastewater Treatment Plant

Operational Combination	2 – 16GTLBs, 1 – 16 GTLD	1 – 16GTLB, 2 – 16 GTLDs	Maximum Potential
Hours of Operation	26,280	26,280	26,280
Annual Digester Gas Consumption (MMscf)	469.237*	469.187	469.237
	Annual Emissions in Tons		
Carbon Monoxide (CO)	99.81	125.81*	125.81
Nitrogen Oxides (NOx)	81.47*	65.05	81.47
Sulfur Oxides (SO_2)	70.49*	70.48	70.49
PM_{10}, Primary	2.16	2.16	2.16
$PM_{2.5}$, Primary	2.16	2.16	2.16
Volatile Organic Compounds (VOC)	35.13	43.05*	43.05

Note:
The potential emissions represent the two ranges of potential operations between the two different models of digester gas fueled cogeneration units under the existing limitation of 26,280 hours of combined operations for all four units.
*Maximum potential of the two combinations.

Emissions Analysis

The existing cogenerator units #3 and #4 are digester gas (biogas) fired four stroke lean burn spark ignition reciprocating internal combustion engines. Accordingly, replacing these engines with similarly digester gas (biogas) fired four stroke lean burn spark ignition reciprocating internal combustion engines would be expected to result in similar emissions. This is confirmed by the analysis conducted here, which also demonstrates that the emissions associated with this project are not significant and the project is not a major modification or subject to a Prevention of Significant Deterioration (PSD) program review.

Given that baseline operations for these four cogeneration units have been historically less than the maximum allowable 26,280 hours of operations contained in the current Title V Operating Permit 0250476-010-AV for all four (4) existing cogeneration units combined, the emissions of CO, NO_x, SO_2, PM_{10}, $PM_{2.5}$, and VOC are expected to increase but remain below the threshold increases for a major modification as defined in Chapter 62-210, F.A.C.

This project consists of replacing existing engines with new engines, therefore a Baseline Actual-to-Projected Actual Applicability Test as required under Rule 62-212.400, *Prevention of Significant Deterioration (PSD),* was performed to determine if a significant emissions increase of a PSD pollutant would result. The results are shown in Table 5 below. For this applicability test, the period from January 2010 to December 2011, inclusive, was chosen to determine the baseline actual emissions. This period conforms to the requirement of Chapter 62-210, F.A.C., *Stationary Sources - General Requirements*, that the period selected to determine Baseline Actual Emissions be "within the 5-year period immediately preceding the date a complete permit application is received by the Department."

Referring to Table 1, the baseline actual (reported) emissions for the existing Cogenerators (EUs 007, 009, 010, and 011) and to Table 4 for the range potential usage of the remaining and replacement Cogenerators (EUs 007, 009, 021, and 022) it can be seen that proposed actual potential usages will yield higher emissions than the baseline emissions, but the increase is well below the significant increase levels that define a major modification under Chapter 62-210, F.A.C., as shown in Table 5, below.

Table 5 Netting Analysis
Replacement Cogenerators #3 and #4
Central District Wastewater Treatment Plant

Line	Description	Source	CO (tons)	NO_x (tons)	SO_2 (tons)	PM_{10} (tons)	$PM_{2.5}$ (tons)	VOC (tons)
A	Actual	Table 1	68.55	42.19	46.39	1.74	1.74	19.93
Projected Emissions								
B	Projected Actual	Table 4	125.81	81.47	70.49	2.16	2.16	43.05
C	Change	B - A	57.26	39.28	24.10	1.99	1.99	20.84
PSD Significance Levels[1]		Rule	100	40	40	15	10	40
Applicability to PSD Review?			No	No	No	No	No	No

Note: All emissions values are in tons/year.
[1] Florida Administrative Code 212.400-2

As shown in the above table, total project emissions will not exceed the PSD significant emissions rates; therefore, the project is not subject to PSD preconstruction review.

3. DEPARTMENT REVIEW

Brief Discussion of Emissions

This facility is classified as a major source of air pollution and as such, would be subject to PSD preconstruction review for any pollutant increase at or above the significant emissions rate. A review of the projected emissions for this project shows none of the emissions from the new engines project exceeds the significant emissions rate. Therefore, the proposed project is not subject to PSD preconstruction review and is considered a minor modification to a major facility. These engines are subject to the requirements of 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* and 40 CFR Part 60 Subpart JJJJ, *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*.

State Requirements

This project is subject to the applicable rules and regulations defined in the following Chapters of the Florida Administrative Code.

Chapter	Description
62-4	Permitting Requirements
62-204	Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference
62-210	Required Permits, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms
62-212	Preconstruction Review, PSD Requirements, and BACT Determinations
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Emission Limiting Standards
62-297	Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures

Federal NSPS Provisions

For the purposes of 40 CFR Part 60 Subpart JJJJ – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*, replacement Cogeneration units #3 and #4 (E.U. 021 and 022) are considered new sources and must comply with new standards of performance in Subpart JJJJ §§ 60.4233(e) and (f)(5) for emission standards found in Table 1 to Subpart JJJJ of Part 60 CFR. Since the replacement Cogeneration units #3 and #4 (E.U. 021 and 022) are not voluntarily being certified by the manufacturer as per 40 CFR Part 60 § 60.4241(g); MDWASD as the owner operator, under Subpart JJJJ § 60.4243(a)(1)(i)(2), must conduct a performance test to demonstrate initial compliance with the emission standards in Subpart JJJJ § 60.4233(f). These initial performance tests of the replacement Cogeneration units #3 and #4 (E.U. 021 and 022) must adhere to the test methods and procedures prescribed in Subpart JJJJ § 60.4244; however since the stationary units are non-certified SI engines, MDWASD may choose to comply with the emission standards in units of either g/HP-hr or in ppmvd at 15 percent O_2.

Federal NESHAP Provisions

The existing facility is not considered a major source of hazardous air pollutants (HAP). Therefore, the proposed project will be located at an area source of hazardous air pollutants and will be subject to NESHAP Subpart ZZZZ in 40 CFR 63 as non-emergency engines. However, 40 CFR 63.6590(c) and (1) states: (c) *Stationary RICE*

subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part. (1) A new or reconstructed stationary RICE located at an area source. Therefore for this project, compliance with subpart JJJJ satisfies subpart ZZZZ requirements.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Tom Cascio is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Office of Permitting and Compliance at Mail Station #5505, 2600 Blairstone Road, Tallahassee, Florida 32399-2400.