APR 3 1981

REF: 4AH-AF

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. J. H. Phillips, General Manager
Sebring Utilities Commission
368 South Commerce Avenue
P. O. Box 971
Sebring, Florida 33870

Re: PSD-FL-071

Dear Mr. Phillips:

Review of your February 2, 1981 application to construct two slow-speed diesel generating units near Sebring, Florida has been completed. The construction is subject to rules for the Prevention of Significant Air Quality Deterioration (PSD), contained in §52.21.

We have determined that the construction, as described in the application, meets all applicable requirements of the PSD regulations, subject to the conditions in the State permit. The Florida Department of Environmental Regulation performed the Preliminary Determination concerning the proposed modification, and published a request for public comment on February 25, 1981. All comments that were received have been addressed and incorporated into the Final Determination. Authority to Construct a Stationary Source is hereby granted for the facility described above, subject to the conditions in the State permit issued March 16, 1981 (copy enclosed). This Authority to Construct is based solely on the requirements of 40 CFR §52.21, the federal regulations governing significant deterioration of air quality. It does not apply to NPDES or other permits issued by this agency or permits issued by other agencies. Information regarding EPA permitting requirements can be provided if you contact Mr. Joseph A. Franzmathes, Director, Office of Program Integration and Operations, at 404/881-3476. Additionally, construction covered by this Authority to Construct must be initiated within 18 months from the date of this letter.

Please be advised that a violation of any condition issued as part of this approval, as well as any construction which proceeds in material variance with information submitted in your application, will be subject to enforcement action.

Authority to Construct will take effect on the date of this letter. The complete analysis which justifies this approval has been fully documented for future reference, if necessary. Any questions concerning this approval may be directed to Dr. Kent Williams, Chief, New Source Review Section (404/881-4552).

Sincerely yours,

Thomas W. Devine
Director
Air and Hazardous Materials Division

Enclosure

cc: FL DER

Final Determination

Sebring Utilities Commission

Highlands County, Florida

Federal Permit Number: 046

PSD-FL-071

Florida Department of Environmental Regulation

Bureau of Air Quality Management

Central Air Permitting

April 2, 1981

Final Determination
Sebring Utilities Commission
PSD-FL-071

I. Applicant

Sebring Utilities Commission

Post Office Box 971

Sebring, Florida 33970

II. Source Location

The proposed source is located east of State Road 623, near the town of Sebring, in Highlands County, Florida. The UTM coordinates are: Zone 17, 464.3 km East and 3035.4 km North.

III. Project Description

The applicant proposes to install and operate two 19.5 MW output capacity, slow-speed, two-cycle diesel generating units equipped with a heat recovery system for auxiliary electric power production. The heat recovery system is expected to generate an additional 3.34 MW of electricity. The proposed diesel engine generators will be used as base load units supplying a majority of the Sebring Utilities Commission generating capacity. The engines will be operated at full load utilizing residual (No. 6) fuel oil having a maximum sulfur content of 2.5%. The maximum fuel oil consumption for each 19.5 MW unit will be 9,199.5 pounds per hour. This is equivalent to a heat input of 172 million Btu per hour (HHV of oil).

The proposed engines will operate in the range of 90-150 revolutions per minute. Units of this type, while popular in Europe, have not been widely used in America.

This will be the first such installation in Florida.

Construction of the new units is scheduled to begin in April 1981 with completion by June 1983. The units will be operated at an annual capacity factor of 80 percent.

IV. Source Impact Analysis

The proposed diesel engines have the potential to emit greater than 250 tons per year of sulfur dioxide, nitrogen oxides, carbon monoxide and volatile organic compounds, all criteria pollutants regulated under the Clean Air Act as amended on August 7, 1977. Thus, in accordance with Title 40, Code of Federal Regulations, Part 52.21 (40 CFR 52.21) as revised August 7, 1980 (45 FR 52676), the proposed construction is a major stationary source and is subject to review under federal Prevention of Significant Deterioration (PSD) regulations.

PSD review is required for each pollutant for which a significant emissions increase will occur. Tables I and II summarize the potential to emit of all pollutants regulated under the Act which are associated with the proposed construction. As these tables show, the proposed emissions increases of particulate matter (PM), sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic compounds (VOC) exceed the significance levels set in the PSD regulations. The emissions increases of the non-criteria pollutants and lead will

not be significant and therefore these pollutants are not subject to PSD review.

The PSD review consists of an analysis of the following:

A. Best Available Control Technology (BACT);

B. National Ambient Air Quality Standard (NAAQS) Impacts;

C. PSD Increment Impacts;

D. Class I Area Impacts;

E. Growth Impacts; and

F. Soils, Visibility, and Vegetation Impacts.

Table I

Summary of Potential Emissions

Criteria Pollutants

(tons/year)*

Emission Unit	SO_2	NO_x	PM	CO	VOC
Diesel Engines (2) [a]	3,864	4,804	142	832	378
PSD Significance [b] Level	40	40	25	100	40

*Based on 8,400 hours/year operating time.

(a) As estimated by the applicant (supplemental information, dated January 30, 1980).

(b) Extracted from 40 CFR 52.21(b)(23)(i), promulgated August 7, 1980.

Table II

Summary of Potential Emissions-

Noncriteria Pollutants and Lead

(tons/year)*

Emission Unit	Lead	Beryllium	Mercury	Fluorides
Diesel Engines (2)[(a)]	0.03	6×10^{-6}	0.03	8×10^{-5}
PSD Significance Level[(b)]	0.05	0.0004	0.1	3

*Based on 8,400 hours/year operating time.

(a) As estimated by the applicant (PSD application, dated December 19, 1980).

(b) Extracted from 40 CFR 52.21(b)(23)(i), promulgated August 7, 1980.

A. Best Available Control Technology Analysis (BACT)

The applicant is required, under the provisions of 40 CFR 52.21 as revised August 7, 1980 (45 FR 52676), to apply BACT to all criteria and noncriteria pollutants emitted in significant quantities. BACT is determined for each pollutant on a case-by-case review, taking into account energy, environmental and economic impacts.

The applicant has proposed BACT for each applicable pollutant and has presented justification for the standards selected. The Department of Environmental Regulation (DER) has reviewed and accepted the technology and emission limits proposed as BACT. The federal PSD permit shall be conditioned to include these limits or any more stringent emission standards that are imposed by the State of Florida under its SIP for these proposed sources. These limits are summarized in Table III. A discussion of the BACT for each pollutant follows.

1. Nitrogen Oxide Control

The primary pollutant emitted by a stationary internal combustion (IC) engine is nitrogen oxides (NO_x). IC engines account for over 6 percent (or 16 percent of the stationary source component) of the total U.S. inventory of NO_x emissions.

The proposed New Source Performance Standard (NSPS) published July 23, 1979, for Stationary Internal Combustion Engines is 600 ppm corrected for shaft efficiency and to 15 percent oxygen on a dry basis. This standard was selected

as the best technological system of emission reduction of NO_x from stationary IC engines. Because of basic differences in the fuel and type of diesel engines selected by the applicant, the proposed NSPS is not considered applicable for this situation. However, the technological systems which are applicable to these IC engines are discussed at length in the preamble to the proposed standard.

Four emission control techniques or combinations of these techniques have been identified as demonstrated NO_x emission reduction systems for stationary large-bore IC engines. These techniques are:

(1). Retarded ignition or fuel injection.

(2). Air-to-fuel ratio changes.

(3). Manifold air cooling.

(4). Derating power output.

Fuel injection retard is the most effective NO_x control technique for diesel engines.

Due to inherent differences in the uncontrolled NO_x emission characteristics among various engines, the selection of the best system of emission reduction was analyzed in terms of the degree of reduction in NO_x emissions as a function of the degree of application of each emission control technique. Based on this criteria, the proposed NSPS for internal combustion engines showed that a 40 percent reduction for NO_x emissions would be achievable.

The applicant proposes to alter the compression ratio and to retard the fuel injection as BACT for the control of

NO_x emissions. This will result in a reduction of NO_x emissions of approximately 37 percent from that of an uncontrolled engine. This level of control is consistent with the proposed NSPS.

The applicant proposes a BACT emission level of 650 ppm with corrections for engine shaft and bottoming cycle efficiency and oxygen content in the stack gas. An emissions increase of 50 ppm NO_x above the proposed NSPS base level (600 ppm) is proposed because of the nitrogen content in the residual oil.

There is a NSPS (subpart GG) for Gas Turbines. This NSPS allows, as an upper limit, a 50 ppm NO_x emissions increase for the fuel-bound nitrogen content of residual oil. The proposed diesel engines will use No. 6 oil, a high-viscosity residual oil. The effect of the conversion of fuel-bound nitrogen in heavy fuel to NO_x was recognized in the NSPS (subpart GG) for Gas Turbines.

The proposed NSPS (subpart FF) for Stationary Internal Combustion Engines limits NO_x emissions to 600 ppm corrected to 15% oxygen on a dry basis. The fuel considered is No. 2 diesel oil from which the potential contribution of fuel-bound nitrogen to NO_x emissions is likely to be small. No allowance has been included for the fuel-bound nitrogen content of the fuel in determining compliance with the proposed NSPS for a diesel engine.

Highly efficient engines generally operate at higher temperature and pressure and as a result discharge gases with higher NO_x concentrations than less efficient engines, although the brake-specific mass emissions from both engines could be the same. Since the fuel consumption of IC engines varies linearly with efficiency, an efficiency adjustment factor is included in the proposed NSPS to permit increased NO_x emissions for the lower fuel consumption IC engines.

An IC engine with waste heat recovery will have a higher overall efficiency than an IC engine alone. The application of the efficiency adjustment factor to the entire system would permit greater NO_x emissions. The efficiency adjustment factor in the proposed NSPS applies only to the IC engine itself and not the entire system of which the engine may be a part.

The applicant proposes to capture waste heat from the diesel engine exhaust gases and use it for supplementary electric generation. Utilization of this waste heat will allow a considerable saving in the amount of oil required to generate a given amount of power. The waste heat boiler steam will eliminate the requirement for an auxiliary boiler to heat the No. 6 oil. As pollutant emissions are directly proportional to fuel use, this system will reduce by approximately 7 percent the emissions of SO_2, NO_x, PM, CO and VOC. If this system were not installed, generation of additional power

from the proposed facility (or another facility) would be required, resulting in increased pollutant emissions. The applicant proposes that the benefit of this increased efficiency be included in the determination of the allowable NO_x emission standard.

Based on the above comparisons and the BACT analysis presented by the applicant, DER determines that the proposed NO_x emission limit of 819 ppm corrected to 15% oxygen on a dry basis is reasonable as BACT.

2. Carbon Monoxide and Hydrocarbons Control

The applicant proposes emissions levels for carbon monoxide (CO) and volatile organic compounds (VOC) based on emission estimates from Sulzer Brother Limited who will manufacture the diesel engines. These emission levels are consistent with those found in AP-42.

CO and VOC emissions are a function of combustion efficiency. However, combustion conditions which minimize NO_x emissions increase uncontrolled CO and VOC emissions from stationary IC engines. NO_x emission control techniques are essentially design modifications, not add-on equipment. Therefore, NO_x emission reductions are much harder to achieve than CO or VOC emission reductions and there exists a trade-off between NO_x emission reduction and CO and VOC emissions increases.

Based on these facts, DER agrees that the proposed emission limits of 0.575 lb/million Btu for CO and 0.26

lb/million Btu for VOC constitute BACT for the proposed source.

3. Particulate Matter Control

The BACT limitation proposed for particulate matter (PM), 0.1 lb/million Btu, is based upon particulate tests performed on the Freeport, New York diesel generating plant. The engines at this plant are similar to the ones proposed by the applicant.

Particulate emissions from stationary IC engines are virtually invisible when the engine is operating at a steady state, although excessive retard will cause the diesel unit to emit smoke. The NO_x emission control systems used in the development of the proposed NSPS for IC engines were considered only if the plume did not exceed ten percent opacity. Therefore, DER feels that the NO_x control techniques used to meet the proposed standards for large stationary IC engines will not cause excessive visible or particulate emissions.

DER concurs that the applicant's proposed 0.1 lb/million Btu emission limit for PM is reasonable as BACT.

4. Sulfur Dioxide Control

The applicant proposes an emission limit of 2.67 lb/million Btu (equivalent to 2.5% sulfur content in the oil) as BACT. The basis for the BACT emission limit is analysis of available control technology, environmental impacts, energy impacts and economic impacts.

Sulfur dioxide (SO_2) emissions from an IC engine depend on the sulfur content of the fuel and the fuel consumption of the engine. Scrubbing of IC engine exhausts to control SO_2 emissions does not appear to be reasonable from an economic viewpoint. Therefore, the only viable means of controlling SO_2 emissions is the combustion of low sulfur fuels.

The supply of low sulfur fuel oil on a long term basis is questionable. Recent actions by the OPEC countries to limit the export of lighter, lower sulfur crude oil will reduce the availability of these fuels.

Table IV summarizes the increase in fuel cost associated with the use of fuel oil containing less than 2.5 percent sulfur. It shows a cost of approximately \$1200/ton SO_2 removed, i.e. not emitted. Sebring Utilities Commission estimates that the cost of 1000 kw/hr of electricity would increase by \$8.30 to the customer if the use of low sulfur fuel is required. This is equivalent to a 10.6% increase over the March, 1981 cost of \$78.05 for 1000 kw/hr of electricity from the City. Since no PSD increment or NAAQS for SO_2 is threatened by the use of 2.5% sulfur fuel oil for these diesel engines, DER feels that this increased cost to the customer is not justified.

Since no NSPS for sulfur dioxide emissions from an internal combustion engine have been proposed, DER feels that the SO_2 emission limit should be as stringent as that allowed for existing utilities using the same fuel. Therefore, DER

concurs that the proposed maximum of 2.5% sulfur in the fuel oil constitutes BACT for SO_2 emissions for these diesel engines. This limit is consistent with a previous BACT determination made by the State of Florida for the same type engines.

Table III

BACT for Each Slow-Speed Diesel Engine

Pollutant	Proposed NSPS Limit	Applicant Proposed Limit	State Permit Limit	PSD BACT Limit
NO_2	600 ppm corrected for engine efficiency and to 15% oxygen on a dry basis.	650 ppm corrected for efficiency (shaft plus heat recovery) and oxygen	819 ppm[(a)] corrected to 15% oxygen on a dry basis	819 ppm[(a)] corrected to 15% oxygen on a dry basis
CO	--	0.575 lb/MMBTU	0.575 lb/MMBTU	0.575 lb/MMBTU
VOC	--	0.26 lb/MMBTU	0.26 lb/MMBTU	0.26 lb/MMBTU
PM	--	0.1 lb/MMBTU	0.1 lb/MMBTU	0.1 lb/MMBTU
SO_2	--	2.67 lb/MMBTU or 2.5% S in fuel oil	2.67 lb/MMBTU or 2.5% S in fuel oil	2.67 lb/MMBTU or 2.5% S in fuel oil

(a) Based on diesel engine operating at 100% capacity (162 MMBTU/hr heat input, 21,120 MW rate output). The allowable NO_x emissions rate was determined by the following formula:

$$STD = (650)\left(\frac{10.2}{Y}\right)$$

where:

STD = Allowable NO_x emission (parts-per-million volume corrected to 15 percent oxygen on a dry basis).

Y = The ratio of fuel input heat rate, based on the lower heating value of the fuel, to the energy output of the generating system (diesel engine plus waste heat boiler), expressed as KJ/w-hr.

Table IV

Economic Analysis for Sulfur Dioxide BACT Determination

Percent S in Oil	Oil Cost[1] $/Barrel	Fuel Cost[2] Per Unit $/yr	Increased Cost Per Unit $/yr	Percent Increased Cost	Potential SO_2 Emissions TPY/Unit	Net SO_2 Reduction TPY/Unit	Cost SO_2 Reduction Unit $/ton
2.5	26	5,949,926	0 (Base)	0 (Base)	1931.9	0 (Base)	0 (Base)
2.0	28	6,407,612	457, 687	7.7	1545.5	386.4	1184
1.5	30	6,865,299	915,373	15.4	1159.1	772.8	1184
1.0	32	7,322,986	1,373,060	23.1	772.8	1159.1	1184
0.7	34	7,780,672	1,830,746	30.8	540.9	1391.0	1316

(1) As estimated by the applicant in December, 1980. Due to the volatility of fuel prices, this cost will fluctuate.

(2) Based on each unit using 228,843.3 barrels of oil per year.

B. National Ambient Air Quality Standards (NAAQS) Analysis

An air quality analysis was performed to demonstrate that emissions from the proposed new source (consisting of the two diesel engines) in addition to existing ambient concentrations, will not cause or contribute to ambient concentrations in excess of any NAAQS. The analysis considered emissions of sulfur dioxide (SO_2), particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC).

The analysis was performed using EPA-approved air quality dispersion models with five years of meteorological data. Orlando surface and Tampa upper air data were used in the modeling, with the Orlando surface data set chosen over Tampa's because of its better representation of an inland site. Annual average concentrations were estimated with AQDM-Briggs. Short-term concentrations (24-hours and less) were estimated by first running the CRSTER model for five years to identify periods and areas of maximum impact. Further more refined modling using PTMTPW with a finer receptor grid spacing (0.1 km) gave the final maximum short-term concentrations.

Background PM concentrations were obtained from two air quality monitoring stations in Highlands County operated by

the Florida Department of Environmental Regulation. The pollutants monitored were PM (two sites) and SO_2 (one site). The monitoring sites were established as being representative of the proposed location.

The SO_2 monitor, located near Sebring, had a maximum second-highest 24-hour observation over the five year record at the site of 50.0 ug/m^3. This occurred in 1979, the last year of the record. The maximum annual average, 10.9 ug/m^3, also occurred for the year 1979. These values were used for the respective 24-hour and annual background levels.

Information on the 3-hour background was not available from this monitor. However, a representative 3-hour background concentration was determined by multiplying the 24-hour background value by a factor derived from the Guidelines for Air Quality Maintenance Planning and Analysis, Volume 10 (Revised). This document suggests a range of factors to relate the maximum concentration for a 1-hour averaging period to that of a 3 and 24 hour period. The maximum ratio of the 3-hour factor to the 24-hour factor, taking into account the error limits, is 5.0. Therefore, a 3-hour background concentration of 250 ug/m^3 was obtained.

The annual average background level for PM was based on the highest annual average of the last three years at the Sebring site. This value was 32.0 ug/m^3. The 24-hour PM background level was based on the maximum second-highest 24-hour concentration at the Sebring site. The 24-hour PM background

level obtained was 75 ug/m^3.

The background levels for CO and NO_X were not addressed because the maximum impact of the proposed source is less than the significance levels for monitoring evaluation given in 40 CFR 52.21(c), as revised. Also, the Sebring area in Highlands County is a rural area over 100 kilometers from Tampa, the nearest urban center. Since high levels of pollution derived CO, NO_x, and ozone are associated with heavily urbanized areas, background values of these pollutants will be low.

Table V summarizes the results of the NAAQS analysis. It shows that emissions from the proposed new source will not cause or contribute to ambient concentrations in excess of any NAAQS.

Table V

NAAQS Analysis Results

Pollutant	Averaging Period	Monitoring Significance Value (ug/m^3)	Maximum Impact Proposed Source (ug/m^3)	Background Air Quality (ug/m^3)	Total Projected Air Quality (ug/m^3)	NAAQS (ug/m^3)
SO_2	Annual	-	2.6	11.	13.6	80.
	24-hour	13.	28.[1]	50.	78.	365.
	3-hour	-	114.[1]	250.	364.	1300.
PM	Annual	-	1	32.	33.	75.
	24-hour	10.	1[1]	75.	76.	260.
CO	8-hour	575.	13.	-	Negl.	10,000
	1-hour	-	37.	-	Negl.	40,000
NO_x[2]	Annual	14.	2.5	-	Negl.	100.

1. Highest second-high concentration for five-year period.

2. Assuming all NO_x is converted to NO_2.

C. PSD Increment Analysis

Maximum allowable increases in ambient air pollutant concentrations (increments) are set by the PSD regulations for SO_2 and PM. The proposed new source is subject to both SO_2 and PM increment analysis for Class II areas. In assessing the impact of the new source for increment consumption, all other sources which consume increment and which significantly interact with the proposed new source must be included. In the area surrounding the proposed site, no other increment consuming sources were identified which would interact significantly with the new source. Thus, the analysis was accomplished by modeling the new source alone and no determination of baseline concentrations was necessary.

The stack height of the source used in the modeling (150 ft.) does not exceed the Good Engineering Practice (GEP) stack height. The GEP stack height was calculated as follows:

$H_s = H_b + 1.5A$ where: H_s = GEP stack height (ft)

Hb = Building height (84 ft)

A = Lesser of building height (34 ft) or building width (134 ft)

$H_s = 84 + 1.5(84)$

$= 210$ ft.

The proposed source is in the proximity of a Federal Aviation Administration (FAA) regulated airport and is limited by FAA regulations to a maximum stack height of 150 feet. The possibility of a downwash situation has been effectively avoided

by increasing the stack exit velocity to 35 m/s, thus allowing the plume to escape the entraining cavity of the nearby building.

The results of the modeling using CRSTER for short-term averages and AQDM for long-term averages are compiled in Table VI. The maximum increment consumption for both pollutants and all averaging periods is 31% for the 24-hour SO_2 impact of 28 ug/m^3. The maximum annual SO_2 increment impact is 2.6 ug/m^3 or 13% of the increment. The 3-hour impact is 114 ug/m^3 or 22% of the increment. For PM the maximum annual impact is less than 1 ug/m^3 or less than 5% of the increment. The 24-hour maximum increment consumption is 1 ug/m^3 or approximately 2% of the allowed increase.

It should be noted that, in accordance with EPA modeling guidelines, maximum value impacts are based on the highest, second-high concentrations for each year for averaging times of 24-hours or less when five years of meteorology are used. Also, the model was run for loads of 100,75, and 50 percent capacity with the 100 percent condition found to be the limiting condition.

It is clear from these results that no increment violation will occur due to operation of the proposed new source.

Table VI

Increment Analysis Results

Pollutant	Averaging Period	Distance from Source (km)	Maximum Impact (ug/m^3)	Class II Increment (ug/m^3)	Percent of Increment Consumed (%)
SO_2	Annual	2.0	2.6	20.	13.
	24-hour	3.1	28.[1]	91.	31.
	3-hour	1.3	114.[1]	512.	22.
PM	Annual	2.0	1.	19.	5.
	24-hour	3.1	1.	37.	2.

1. Highest second-high concentration for five year period.

D. Class I Impacts

The Class I area nearest to the site is the Chassahowitzka Wilderness Area, located 169 kilometers to the northwest. This distance is beyond the distance at which impacts can be reasonably estimated and no impact analysis was performed. However, considering the maximum impacts predicted in the vicinity of the source and the dilution which will be experienced over a 169 kilometer distance, it is concluded that the proposed source will have no impact on any Class I area.

E. Growth Impacts

The proposed source is not expected to significantly impact the industrial, commercial, or residential growth in the area. The local work force currently in the Sebring area will for the most part be sufficient to operate the new source. Further, the new source consumes less than 31 percent of the allowable PSD increments in the area and thus will not substantially limit future industrial growth in the area. Therefore, the overall impact on growth is small and no adverse effects are anticipated.

F. Soils Vegetation, and Visibility

No significant adverse impacts on soils, vegetation, and visibility are expected from the proposed new source. All pollutants have maximum impacts below the secondary standards designed to protect the public welfare. Public welfare includes damage to crops, buildings, vegetation, etc. In addition, scientific studies designed to quantify the sensitivity of many plant species have shown threshold levels much higher than those predicted to occur in the vicinity of the proposed site. For example, alfalfa, which is commonly thought to be one of the most sensitive species to SO_2, has a 2-hour threshold of about 2,600 ug/m^3 and an 8-hour threshold of 655 ug/m^3, far above any of the predicted impact levels.

The proposed source is expected to cause no significant impairment of visibility, either in the immediate area or at greater distances, except for some small transient effects locally during the construction phase of the source. No long-term effects are expected. In general no significant impacts are expected due to the relatively low emission rates of the source pollutants.

V. Conclusions

DER proposes a final determination of approval with conditions for the construction of the two 20 MW diesel engine generators with a waste heat recovery boiler proposed by Sebring Utilities Commission in its application (PSD-FL-071) submitted on January 9, 1981 (application determined complete as of February 2, 1981). This determination is based on the information contained in the application including supplementary information dated February 2, 1981. The conditions set forth in the permit are as follows:

1. The new source shall be constructed in accordance with the capacities and specifications stated in the application.
2. The allowable emissions limits for each slow-speed diesel engine shall be as follows:

Pollutant	Maximum Emissions
Nitrogen Oxides (NO_x)	819 ppm @ 15% O_2 and 572 lb/hr
Carbon Monoxide (CO)	0.575 lb/MMBTU and 99 lb/hr
Volatile Organic Compounds (VOC)	0.26 lb/MMBTU and 45 lb/hr
Particulate Matter (PM)	0.10 lb/MMBTU and 17 lb/hr
Sulfur Dioxide (SO_2)	2.67 lb/MMBTU and 460 lb/hr

or any other more stringent emission standard imposed by the State of Florida.

3. Performance tests to demonstrate compliance with the allowable emission limits for nitrogen oxides shall be conducted using EPA reference method 20 modified as per proposed NSPS, subpart FF, Section 60.324. Compliance with the sulfur dioxide emission limits will be determined by reference method 6 or by calculations based on fuel analysis for sulfur content. Compliance with carbon monoxide emission limits will be determined by reference method 10. Compliance with volatile organic compound emission limits will be assumed provided the CO allowable emission rate is achieved; specific VOC compliance testing is not required. Compliance with the PM emission rate will be assumed if the visible emissions, by reference method 9, are below 10% opacity. If visible emissions exceed 10% opacity, EPA reference method 5 must be used to determine the compliance status of the units with respect to the PM standard.

4. The following operation parameters shall be monitored on a daily basis. Daily monitoring requirements shall be accurate to within five percent.

    (1). Intake manifold temperature

    (2). Intake manifold pressure

    (3). Engine speed

    (4). Diesel rack position (full flow)

    (5). Injector timing

    (6). Gross heat of combustion value and percent

sulfur content by weight for each fresh supply of fuel added to the fuel storage facility.

The operating monitoring parameters shall be recorded daily for each engine. The operating ranges for each parameter over which the engine complies with the NO_x emission limit shall be determined during the compliance test. Once established these parameters will be monitored to ensure proper operation and maintenance of the emission control techniques employed to meet the emission limit.

Records of the analysis and monitored engine parameters shall be recorded and kept for public inspection for a minimum of two years after the data are recorded.

5. Operation of each engine shall be limited to 8,400 hours per year.
6. Maximum fuel oil consumption shall be 9,199.5 pounds per hour for each engine.
7. The source shall comply with the provisions and requirements of the attached general conditions.

GENERAL CONDITIONS

1. The permittee shall notify the permitting authority in writing of the beginning of construction of the permitted source within 30 days of such action and the estimated date of start-up of operation.

2. The permittee shall notify the permitting authority in writing of the actual start-up of the permitted source within 30 days of such action and the estimated date of demonstration of compliance as required in the specific conditions.

3. Each emission point for which an emission test method is established in this permit shall be tested in order to determine compliance with the emission limitations contained herein within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source. The permittee shall notify the permitting authority of the scheduled date of compliance testing at least thirty (30) days in advance of such test. Compliance test results shall be submitted to the permitting authority within forty-five (45) days after the complete testing. The permittee shall provide (1) sampling ports adequate for test methods applicable to such facility, (2) safe sampling platforms, (3) safe access to sampling platforms, and (4) utilities for sampling and testing equipment.

4. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of two (2) years from the date of recording.

5. If, for any reason, the permittee does not comply with or will not be able to comply with the emission limitations specified in this permit, the permittee shall provide the permitting authority with the following information in writing within five (5) days of such conditions:

   (a) description of noncomplying emission(s),

   (b) cause of noncompliance,

   (c) anticipated time the noncompliance is expected to continue or, if corrected, the duration of the period of noncompliance,

   (d) steps taken by the permittee to reduce and eliminate the noncomplying emission,

   and

   (e) steps taken by the permittee to prevent recurrence of the noncomplying emission.

   Failure to provide the above information when appropriate shall constitute a violation of the terms and conditions of this permit. Submittal of this report does not constitute a waiver of the emission limitations contained within this permit.

6. Any change in the information submitted in the application regarding facility emissions or changes in the quantity or quality of materials processed that will result in new or increased emissions must be reported to the permitting authority. If appropriate, modifications to the permit may then be made by the permitting authority to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.

7. In the event of any change in control or ownership of the source described in the permit, the permittee shall notify the succeeding owner of the existence of this permit by letter and forward a copy of such letter to the permitting authority.

8. The permittee shall allow representatives of the State environmental control agency and/or representatives of the Environmental Protection Agency, upon the the presentation of credentials:

   (a) to enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of the permit;

   (b) to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit, or the Act;

   (c) to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

   (d) to sample at reasonable times any emission of pollutants;

   and

   (e) to perform at reasonable times an operation and maintenance inspection of the permitted source.

9. All correspondence required to be submitted by this permit to the permitting agency shall be mailed to the:

   Chief, Air Facilities Branch
   Air and Hazardous Materials Division
   U.S. Environmental Protection Agency
   Region IV
   345 Courtland Street
   Atlanta, Georgia 30308

10. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

The emission of any pollutant more frequently or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit.

VI. References

1. Code of Federal Regulations, 40 CFR, Appendix A.
2. Federal Register, Vol. 44, No. 142, July 23, 1979- Proposed Standards of Performance for Stationary Internal Combustion Engines.
3. Federal Register, Vol. 44, No. 176, September 10, 1979 - Standards of Performance for Stationary Gas Turbines.
4. Federal Register, Vol. 45, No. 154, August 7, 1980 - Requirements for Preparation, Adoption, and Submittal of Implemtnation Plans; Approval and Promulgation of Implementation Plans.
5. Guideline for Air Quality Maintenance Planning and Analysis, Volume 10 (Revised), U.S. Environmental Protection Agency, Research Triangle Park, N.C., October 1977.