Technical Evaluation
and
Preliminary Determination

Utilities Commission
City of New Smyrna Beach
Volusia County, Florida
Swoope Units 3 and 4, Gas Diesel

Permit Numbers

State: AC 64-57578
AC 64-57580
Federal: PSD-FL-089

Florida Department of Enviromental Regulation
Bureau of Air Quality Management
Central Air Permitting

August 10, 1982

Public Notice

A modification to an existing air pollution source is being proposed by the City of New Smyrna Beach, Volusia County, Florida. The proposed modification is the construction of two gas diesel units, Swoope #3 and #4, with generating capacities of 2050 KW and 2275 KW, respectively. The modification will increase emissions of air pollutants, in tons per year, by the following amounts.

PM	SO_2	NO_x	CO	VOC
2	4	535	87	42

The proposed modification has been reviewed by the Florida Department of Environmental Regulation under Chapter 403, Florida Statutes, and, Federal regulation 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The Department has made a preliminary determination that the construction can be approved provided certain conditions are met. A summary of the basis for the determination and the application for State and Federal permits submitted by the City of New Smyrna Beach are available for public review at the following offices:

Brannon Memorial Library
105 Riverside Drive
New Smyrna Beach, Florida 32069

Bureau of Air Quality Management
Dept. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

St. Johns River District
3319 Maguire Drive
Suite 232
Orlando, Florida 32803

No allowable PSD increments for PM or SO_2 are consumed by the proposed modification.

Any person may submit written comments regarding the proposed modification. All comments, postmarked not later than 30 days from the date of this notice, will be considered in making a final determination regarding approval for construction of this source. Those comments will be made available for public review on request. Furthermore, a public hearing can be requested by any person. Such request should be submitted within 15 days of the date of this notice. Letters should be addressed to:

Mr. C. H. Fancy, P.E.
Dept. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Technical Evaluation
and
Preliminary Determination

Contents

I. Applicant and Site Location

Utilities Commission
City of New Smyrna Beach
P.O. Box 519
New Smyrna Beach, Florida 32069

The proposed modification will occur at the Swoope Generating Station located in the City of New Smyrna Beach, Volusia County, Florida. The UTM coordinates are 505.8 km East and 3214.8 km North.

II. Project Description

The Utilities Commission plans to construct two additional gas diesel units, Swoope #3 and #4, with generating capacities of 2050 KW and 2275 KW, respectively. Both units will be natural gas fired with 4 to 6 percent heat input from No. 2 fuel oil (diesel) as pilot fuel.

Currently there are two power generating units at the existing site. Swoope Unit #1 is a 116 MMBtu/hr steam generator and Swoope Unit #2 is a 910 KW gas diesel generator which is limited by permit condition to a 70 percent capacity factor.

The proposed modification is the addition of the two gas diesel units and an increase to 100 percent capacity factor for Swoope Unit #2.

III. Emissions and Controls

The major air pollutant emitted from the diesel generating units while firing 95% natural gas and 5% No. 2 fuel oil (based on Btu heat input) will be No_x emissions. The projected air pollutant emissions from Swoope Unit 3 and 4 are listed as follows:

Pollutant	Unit 3		Unit 4	
	Maximum lbs/hr	tons per year	Maximum lbs/hr	tons per year
Nitrogen Oxides, NO_x	57.1	250	55.9	245
Particulate, PM	0.25	1	0.28	1
Sulfur Dioxide, SO_2	0.42	2	0.47	2
Carbon Monoxide, CO	8.9	39	9.8	43
Hydrocarbon, HC	2.5	11	3.5	15

The current maximum air pollutant emissions and the projected maximum emissions after modification are listed in the following table:

Annual Emissions from Swoope Station

	NO_x	PM	SO_2	CO	HC*
Current	Tons per Year				
Unit 1 (steam)	140	27	1	5	8
Unit 2 (diesel)	94	0.1	0.3	12	37
TOTAL	234	27	1	17	45
Projected					
Unit 1	140	27	1	5	8
Unit 2	134	0.2	0.4	17	53
Unit 3	250	1	2	33	11
Unit 4	245	1	2	43	15
TOTAL	769	29	5	104	87
NET INCREASE	535	2	4	87	42

*Swoope Unit 2 hydrocarbons reported as total HC, Units 3 and 4 reported as non-methane HC.

There will not be any pollution control equipment installed at the site.

IV. Rule Applicability

State Rule

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code (FAC).

The proposed project location is in an attainment area for all the pollutants. It will make the existing minor facility become a major facility for NO_x as defined in Section 17-2.100, because NO_x emissions will increase by more than 250 tons per year due to this modification. The project is subject to the provisions of Section 17-2.500, Prevention of Significant Deterioration (PSD) which requires an air quality impact analysis and the use of Best Available Control Technology (BACT)

Federal Rule

The proposed source is subject to federal PSD review because it is a major modification (40 CFR 52.21(b)(2)). The actual NO_x emissions increase, 535 tons per year, is above the major emission rate 250 tons per year. Therefore, emissions of NO_x are subject to an air quality impact analysis and a BACT determination under 40 CFR 52.21(i).

V. Control Technology Review

Fuel injection retardation is an effective NO_x control technique but results in approximately a 3% increase in fuel usage. The increased monthly cost to a consumer using 1000 kwh of electricity would be approximately one dollar. Based on a proposed NSPS for stationary internal combustion engines, FDER has determined that this technique represents the best available control technology for the proposed gas diesel units. NO_x emissions will be limited for this modification as follows:

Unit No. 2 - 690 ppmv corrected to 15% oxygen on a dry basis

Unit No. 3 - 620 ppmv corrected to 15% oxygen on a dry basis

Unit No. 4 - 625 ppmv corrected to 15% oxygen on a dry basis

VI. Air Quality Impact Analysis

A. Summary

Since the proposed project is subject to both State and federal PSD review for the pollutant NO_x, an air quality impact analysis is required. This analysis includes:

- o An analysis of existing air quality;
- o An ambient air quality standards analysis;
- o An analysis of impact on soils, vegetation and visibility and growth-related air quality impacts.

The analysis of existing air quality may require preconstruction monitoring. The air quality standards

analysis depends on air quality modeling carried out in accordance with FDER- and EPA-approved methods. Federal PSD review also requires a good engineering practice stack height evaluation.

Based on this air quality impact analysis, FDER has reasonable assurance that the proposed project, as described in this permit and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any State or federal ambient air quality standard. A discussion of the required analysis follows.

B. Discussion

1. Modeling Methodology

Both State and federal regulations contain only annual average standards for NO_2. The State and federal annual average standards are the same, 100 ug/m^3. The FDER- and EPA-approved Industrial Source Complex Long-Term (ISCLT) model was used in the air quality impacts analysis. The conservative assumption that all NO_x is emitted as NO_2 was made in the modeling. One year of National Weather Service data collected at Daytona Beach, Florida in 1964 was used in the model. These data were summarized in the STAR format. A rectangular grid with a 0.1 kilometer spacing was used and all sources were assumed to emit at maximum allowable rates, 24 hours a day, every day of the year. Final stack parameters and emission rates used in modeling the proposed project are contained in Tables VI-I and VI-2.

Table VI-1

Stack Parameters for the Existing Swoope Generating Facility

Emissions Unit	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Emission Rate (g/s) NO_x
Swoope #1	38.1	1.38	9.5	644	4.04
Swoope #2	6.1	0.36	43.9	589	2.69

Table VI-2

Stack Parameters for Proposed Swoope Generating Station

Emission Unit	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Emission Rate (g/s) NO_x
Swoope #1	38.1	1.38	9.5	644	4.04
Swoope #2	6.1	0.36	43.9	589	3.84
Swoope #3	6.1	0.56	41.2	644	7.20
Swoope #4	6.1	0.56	44.2	644	7.00

2. Analysis of Existing Air Quality

In order to evaluate existing air quality in the area of a proposed project, FDER may require a period of continuous preconstruction monitoring for any pollutant subject to PSD review. An exemption from this requirement may be obtained if the net emissions increase of the pollutant from the modification would cause an air quality impact less than a certain de minimis level as defined in 40 CFR 52.21(i)(8) and Table 500-3 in Chapter 17-2, FAC. The federal level is 14 ug/m^3, annual average, however, in the State rules the level is currently defined as 14 ug/m^3, 24-hour average. Modeling predicts the impact of the proposed project to be greater than the State level, but less than the federal level.

Under the existing State regulation which requires preconstruction monitoring for NO_x, FDER has determined that existing representative NO_x ambient air monitoring data may be used. Since the Swoope facility is located in a remote area with respect to non-specified NO_x sources, FDER has determined that NO_x data gathered at a regional site may be used as representative data. FDER has chosen the Stanton Plant monitoring site in east Orange County, which is operated by the Orlando Utilities Commission, as a regional NO_x monitoring site for this project. Based on data from

this site, FDER has assumed a background NO_x value of 12 ug/m^3, annual average.

3. Ambient Air Quality Standards Analysis

Both State and federal PSD regulations require the permit applicant to demonstrate that, given existing air quality in an area, a proposed emissions increase subject to PSD will not cause or contribute to any violation of ambient air quality standards. For this project, an ambient air quality standards analysis is required for NO_x. Modeling results predict that the highest expected annual average impact due to the Swoope Generating Station is 28 ug/m^3 (this value includes a background value of 12 ug/m^3). This value is well below both the State and federal ambient air quality standard of 100 ug/m^3, annual average.

The impacts of interaction of emissions from other sources with those from the Swoope facility were evaluated. Maximum NO_x concentrations from surrounding sources are very small compared to maximum concentrations from Swoope. Therefore, no violations of ambient standards are predicted to occur due to interacting sources.

4. Good Engineering Practice Stack Height Evaluation

The stack heights proposed for the Swoope project do not exceed the Good Engineering Practice (GEP) stack height of 65 meters for stacks uninfluenced by structures or terrain.

No downwash analysis was performed since only long-term average air quality standards exist for NO_x emissions.

5. Analysis of Impact on Soils, Vegetation and Visibility and Growth-Related Air Quality Impacts

The maximum impact of the proposed NO_x emissions increase will be insignificant. No adverse effects on soils, vegetation and visiblity are expected.

There will be no secondary residential, commercial or industrial growth which will adversely affect air quality in the area.

VII. Conclusions

Based on evaluation of the application, FDER believes that compliance with all State and federal air regulations will be achieved provided certain specific conditions are met. The general and specific conditions are listed in the attached draft State permits (AC 64-57578 and AC 64-57580) and federal permit (PSD-FL-089).

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICANT: Utilities Commission
City of New Smyrna Beach
P. O. Box 519
New Smyrna Beach, Florida 32069

PERMIT/CERTIFICATION
NO. AC 64-57578

COUNTY: Volusia

PROJECT: Swoope Unit #3
Gas Diesel

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the installation of a 2050 kw diesel generating unit to be located at the existing Swoope plant site in the City of New Smyrna Beach, Volusia County, Florida. The UTM coordinates are 505.8 km East and 3214.8 km North.

The construction shall be in accordance with the attached permit application, plans and documents except as otherwise noted on page 3, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 28, 1982.

2. Best Available Control Technology (BACT) Determination dated August 18, 1982.

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance; including exact 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 revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

[ ] Determination of Best Available Control Technology (BACT)
[ ] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

SPECIFIC CONDITIONS:

1. The proposed unit shall be constructed in accordance with the capacities and specifications stated in the application and additional information supplied by the applicant.

2. Sulfur content of the fuel oil fired in the proposed gas diesel unit shall be limited to 0.3%.

3. Nitrogen oxides emissions from the Unit No. 3 shall be limited to 620 ppmv corrected to 15% oxygen on a dry basis. Compliance with the emission limits required by the attached BACT determination shall be determined by performance tests while the unit is at or close to full operating capacity.

4. The 70% capacity factor restriction of Swoope Unit No. 2 shall be eliminated. The new NO_x emission limit, which is regulated by the attached BACT determination, shall be 690 ppmv corrected to 15% oxygen on a dry basis.

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

Expiration Date: June 30, 1983

_____ Pages Attached.

Issued this _____ day of _____, 19_____.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
Signature

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICANT: Utilities Commission
City of New Smyrna Beach
P. O. Box 519
New Smyrna Beach, Florida 32069

PERMIT/CERTIFICATION NO. AC 64-57580

COUNTY: Volusia

PROJECT: Swoope Unit #4 Gas Diesel

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4 Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the installation of a 2275 kw diesel generating unit to be located at the existing Swoope plant site in the City of New Smyrna Beach, Volusia County, Florida. The UTM coordinates are 505.8 km East and 3214.8 km North.

The construction shall be in accordance with the attached permit application, plans and documents except as otherwise noted on page 3, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Source, DER Form 17-1.122(16), received on June 28, 1982.
2. Best Available Control Technology (BACT) Determination dated August 18, 1982.

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact 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 revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

[ ] Determination of Best Available Control Technology (BACT)
[ ] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

SPECIFIC CONDITIONS:

1. The proposed unit shall be constructed in accordance with the capacities and specifications stated in the application and additional information supplied by the applicant.

2. Sulfur content of the fuel oil fired in the proposed gas diesel unit shall be limited to 0.3%.

3. Nitrogen oxides emissions from the unit shall be limited to 625 ppmv corrected to 15% oxygen on a dry basis. Compliance with the emission limits required by the attached BACT determination shall be determined by performance tests while the unit is at or close to full operating capacity.

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

Expiration Date: June 30, 1983

_____ Pages Attached.

Issued this _____ day of _____, 19_____.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
Signature

Preliminary Determination

(PSD-FL-089)

Utilties Commission
City of New Smyrna Beach

The preceeding Technical Evaluation and Preliminary Determination are adopted by reference for the proposed federal permit, PSD-FL-089.

Special Conditions listed in the draft State permits, AC 64-57578 and AC 64-57580 are adopted as special conditions for the draft federal permit, PSD-FL-089, for this source.

The attached General Conditions are also made a part of the proposed federal permit PSD-FL-089 for this source.

Attachment: General Conditions (federal)

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 immediately notify the State District Manager by telephone and provide the District Office and the permitting authority with the following information in writing within four (4) days of such conditions:

   (a) description for 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 or representatives of the Environmental Protection Agency, upon 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 any 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 to this permit to the permitting agency shall be mailed to:

Mr. James T. Wilburn
Chief, Air Management Branch
Air & Waste Management Division
U.S. EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30365

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.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION
CITY OF NEW SMYRNA BEACH
VOLUSIA COUNTY

The City of New Smyrna Beach plans to increase electric power generation capacity an additional 4.33 megawatts. Two generators, each driven by a dual fuel twelve cylinder diesel engine, are to be installed at the Swoope generating station. The engines will use natural gas and No. 2 distillate oil as fuel.

The new installations identified as Swoope No. 3 and Swoope No. 4 will have a maximum engine heat input of 19.2 and 21.2 million Btu per hour, respectively. Both units are scheduled to operate 8760 hours per year.

Swoope No. 2, a similar existing 910 kilowatt unit is limited by permit conditions to operate at 70 percent of full load (AC 64-43484). The applicant has requested this permit condition be changed to allow unrestricted operation.

Air Contaminants Summary: (tons per year)

Source	PM	SO_2	CO	NO_x	HC
No. 3 Unit	<1	2	39	250	11
No. 4 Unit	<1	2	43	245	15
Total	2	4	82	495	26
No. 2 Unit[1]	<1	<1	5	40	16
Rate[2]	25	40	100	40	-

[1] Emissions due to increase from 70 to 100 percent operation.

[2] Significant Emission Rate, 17-2.500, FAC, Table 500-2.

The amount of NO_x emitted from the proposed sources exceed the significant emission rate and requires a BACT determination per 17-2.500(5)(c), FAC. A BACT determination is also required for Swoope No. 2 due to the relaxation of a permit limitation.

BACT Determination Requested by the Applicant:

Pollutant	Emission Limit
NO_x	Natural gas firing with the ignition timing set as recommended by the manufacturer

Date of Receipt of a BACT Application:

June 28, 1982

Date of Publication in the Florida Administrative Weekly:

July 9, 1982

Review Group Members:

Comments were obtained from the New Source Review Section, the Air Modeling Section in the Bureau of Air Quality Management, and DER St. Johns River District.

BACT Determined by DER:

*NO_x Pollutant Emission Limits

Unit 2 - 690 ppmv corrected to 15% oxygen on a dry basis

Unit 3 - 620 ppmv corrected to 15% oxygen on a dry basis

Unit 4 - 625 ppmv corrected to 15% oxygen on a dry basis

*Based on manufacturer's rated brake-specific fuel consumption at peak load. Applicant has option of using brake-specific fuel consumption as determined in the field. Test methods and operations monitoring as per the proposed NSPS 40 CFR 60.320, Subpart FF, Subsections 60.324 and 60.323.

DER Determination Rationale:

There is a proposed NSPS for stationary internal combustion engines, 40 CFR 60.320, Subpart FF. The NSPS is in administrative review and promulgation is expected in the last quarter of 1982. The consensus was that a more stringent NO_x emission limitation than the NSPS was not justified. The department has determined BACT for NO_x emissions to be based on the NSPS formula in Subpart FF, Subsection 60.322(a)(3)(ii).

$$STD = 600 \frac{10.2}{Y}$$

STD = Allowable NO_x emissions, ppmv corrected to 15% oxygen on a dry basis.

Y = Manufacturer's rated brake-specific fuel consumption at peak load (Kj/w-hr) or applicants brake-specific fuel consumption at peak load as determined in the field.

The NO_x emission limits determined as BACT are based on the manufacturer's brake-specific fuel consumption at peak load. The applicant has the option of using a brake-specific fuel consumption as determined in the field.

The NSPS was proposed July 23, 1979 (44 FR 43152) to apply to sources that commence construction after January 1982. The manufacturers of engines subject to the regulations should have had adequate time to develop a NO_x emission reduction control technique for their engines in anticipation of the NSPS being promulgated.

The applicant, therefore, should have no great difficulty in meeting the NO_x emission limits determined as BACT for Units 3 and 4. However, Unit 2 was permitted in July 1981 and that engine may require major modifications to meet the NO_x emission limit. In this case, the applicant may submit to the department actual field data indicating the inability to meet the NO_x emission limit. The department will then review the BACT determination for Unit 2 on basis of the new data presented.

The dual-fired engines serve the same application as diesel engines. In the event that natural gas should become limited the dual-fuel engines would likely operate as diesel engines. The NO_x emission limit determined as BACT also applies to diesel engines, therefore, simplifying compliance by the applicant in the event the engines are converted totally to diesel.

Fuel injection retard is an effective NO_x control technique but results in approximately a 3% increase in fuel usage. This will increase total fuel usage by 1107 cubic feet per hour of natural gas and 0.519 gallon per hour of No. 2 oil. The increased monthly cost to a consumer using 1000 kw of electricity would be approximately one dollar. The additional fuel cost is not considered excessive.

Details of the Analysis May Be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended By:

Lawrence A George
for Steve Smallwood, Chief BAQM

Date: August 18, 1982

Approved:

Terry Cole
Victoria J. Tschinkel, Secretary

Date: 8/18/82

PERMIT APPLICATIONS
AND
PSD ANALYSIS FOR NEW SMYRNA BEACH UTILITIES

SWOOPE UNIT #3 AND #4

CONTENTS

AC64-5

Best Available Copy

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
APPLICATION TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES

DER

JUN 28 1982

BAQM

SOURCE TYPE: City Utility/Gas Diesel [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Utilities Commission, City of New Smyrna Beach COUNTY: Volusia

Identify the specific emission point source(s) addressed in this application (i.e: Lime Kiln No. 4 with Venturi Scrubber; Peeking U
No. 2, Gas Fired) Swoope Unit 3 Gas Diesel

SOURCE LOCATION: Street 2495 N. Dixie Highway City New Smyrna Beach

UTM: East 505.8 North 3214.8

Latitude 29 ° 03 ' 47 "N Longitude 80 ° 56 ' 25 "W

APPLICANT NAME AND TITLE: Utilities Commission, City of New Smyrna Beach

APPLICANT ADDRESS: PO Box 519, New Smyrna Beach, FL 32069

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Utilities Commission, City of New Smyrna Beach, FL Construction Permit Application

I certify that the statements made in this application for a _____ are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P. A. Korelich

P. A. Korelich, Chief Engineer
Name and Title (Please Type)

Date: 6/24/82 Telephone No. 904-427-1361

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of poilutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when proerly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

(Affix Seal)

Signed: David A. Buff

David A. Buff, P.E.
Name (Please Type)

Environmental Science and Engineering, Inc.
Company Name (Please Type)

PO Box ESE, Gainesville, Florida 32602
Mailing Address (Please Type)

Florida Registration No. 19011

Date: 6/22/82 Telephone No. (904) 372-3318

[1] 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Installation and operation of diesel generating unit. Unit will be natural gas fired with 6 percent heat input from No. 2 oil as pilot fuel. Unit is rated at 2880 BHP with generating capacity of 2050 KW.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon permit issuance Completion of Construction December 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not Applicable

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

No previous DER permits have been issued for this unit

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ;

if seasonal, describe: ____

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied? ____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? ____
   c. If yes, list non-attainment pollutants. ____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

See Attachment A

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Nitrogen Oxides	57.1	250	NA	NA	57.1	250	B
Particulate	0.25	1	NA	NA	0.25	1	B
Sulfur Dioxide	0.42	2	NA	NA	0.42	2	B
Carbon Monoxide	8.9	39	NA	NA	8.9	39	B
Hydrocarbons	2.5	11	NA	NA	2.5	11	B

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (ft^3)	17,600	17,600	18.05
No. 2 Fuel Oil (gallons)	8.2	8.2	1.15

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas/Pilot Fuel Oil

Percent Sulfur: Trace/0.2 Percent Ash: Ng/Ng

Density: NA/7.21 lbs/gal Typical Percent Nitrogen: Ng/0.2

Heat Capacity: 1026 Btu/ft^3/19,430 BTU/lb NA/140,090 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average NA Maximum NA

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid and solid wastes will be disposed of in either a sanitary sewage system or sanitary landfill.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 22 inches ft.

Gas Flow Rate: 21,200 ACFM Gas Exit Temperature: 700 °F.

Water Vapor Content: 5 % Velocity: 135 FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation. Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See ATTACHMENT B
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Not Applicable
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See ATTACHMENT C
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See ATTACHMENT D
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See ATTACHMENT E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section IIIC

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Part F

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

ft. b. Diameter:

rate. ACFM d. Temperature:

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. See Part F

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

ain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

See Item 10

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

The BACT proposed for NO_x is natural gas firing with the ignition timing set as recommended by the manufacturer. Lower NO_x emissions could be achieved by retarding the pilot fuel injection but this would be at the cost of decreasing fuel efficiency. Since air quality impacts are only 16 percent of the standard, optimum fuel efficiency is considered the best available control technology.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Not Applicable

1. _____ no sites _____ TSP _____ ( ) SO^{2*} _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 64 to 12 / 31 / 64
month day year month day year

2. Surface data obtained from (location) NA

3. Upper air (mixing height) data obtained from (location) NA

4. Stability wind rose (STAR) data obtained from (location) Daytona (WBAN 12834)

C. Computer Models Used

1. Industrial Source Complex Long Term Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
~~TSP~~ NO_x	7.2 grams/sec
~~SO_2~~	_____ grams/sec

E. Emission Data Used in Modeling see Permit Application and ATTACHMENT F

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See ATTACHMENT F

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

The installation of this unit will improve the reliability of the community electrical system without significant social, economic, or environmental impacts.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

AC 64-5479 3

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

JUN 28 1982

BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: City Utility/Gas Diesel [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Utilities Commission, City of New Smyrna Beach COUNTY: Volusia

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Swoope Unit 4 Gas Diesel

SOURCE LOCATION: Street 2495 N. Dixie Highway City New Smyrna Beach

UTM: East 505.8 North 3214.8

Latitude 29 ° 03 ' 47 "N Longitude 80 ° 56 ' 25 "W

APPLICANT NAME AND TITLE: Utilities Commission, City of New Smyrna Beach

APPLICANT ADDRESS: PO Box 519, New Smyrna Beach, FL 32069

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Utilities Commission, City of New Smyrna Beach, FL

I certify that the statements made in this application for a Construction Permit Application permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P A Korelich

P. A. Korelich, Chief Engineeer
Name and Title (Please Type)

Date: 6/24/82 Telephone No. 904-427-1361

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of poilutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control faciiities and, if applicable, pollution sources.

Signed: David A. Buff

David A. Buff, P.E.
Name (Please Type)

(Affix Seal)

Environmental Science and Engineering, Inc.
Company Name (Please Type)

PO Box ESE, Gainesville, Florida 32602
Mailing Address (Please Type)

Florida Registration No. 19011 Date: 6/22/82 Telephone No. (904)372-3318

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Installation and operation of diesel generating unit. Unit will be natural gas fired with 6 percent heat input from No. 2 oil as pilot fuel. Unit is rated at 3168 BHP with generating capacity of 2275 kw.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon permit issuance Completion of Construction December 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not Applicable.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

No previous DER permits have been issued for this unit

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ;

if seasonal, describe: ____

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied? ____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? ____
   c. If yes, list non-attainment pollutants. ____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable. See Attachment A

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Nitrogen Oxides	55.9	245	NA	NA	55.9	245	B
Particulate	0.28	1	NA	NA	0.28	1	B
Sulfur Dioxide	0.47	2	NA	NA	0.47	2	B
Carbon Monoxide	9.8	43	NA	NA	9.8	43	B
Hydrocarbons	3.5	15	NA	NA	3.5	15	B

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (ft^3)	19,300	19,300	19.85
No. 2 Fuel Oil (gallons)	9.1	9.1	1.27

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas/Pilot Fuel Oil

Percent Sulfur: Trace/0.2 Percent Ash: Neg/Neg

Density: NA/7.21 lbs/gal Typical Percent Nitrogen: Neg/0.2

Heat Capacity: 1026 Btu/ft^3/19430 BTU/lb NA/140,090 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average NA Maximum NA

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid and solid wastes will be disposed of in either sanitary sewer system or sanitary land fill

H. Emission Stack Geometry and Flow Characteristics. (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 22 inches

Gas Flow Rate: 23,320 ACFM Gas Exit Temperature: 700 °F.

Water Vapor Content: 5 % Velocity: 145 FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See Attachment B
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio: for scrubber include cross-section sketch, etc.). Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Not Applicable
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment C
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment D
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section IIIC

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Part F

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. See Part F

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See Item 10

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

The BACT proposed for NOx is natural gas firing with the ignition timing set as recommended by the manufacturer. Lower NOx emissions could be achieved by retarding the pilot fuel injection, but at the cost of decreasing fuel efficiency. Since air quality impacts are only 16 percent of the standard optimum fuel efficiency is considered the best available control technology.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Not Applicable

1. _____ no sites _____ TSP _____( )SO2* _____ Wind spd/dir

Period of monitoring ____/____/____ to ____/____/____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 64 to 12 / 31 / 64
month day year month day year

2. Surface data obtained from (location) NA

3. Upper air (mixing height) data obtained from (location) NA

4. Stability wind rose (STAR) data obtained from (location) Daytona (WBAN 12834)

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

~~Pollutant~~	Emission Rate
NOx	7.0 grams/sec
~~TSP~~	
SO^2	_____ grams/sec

E. Emission Data Used in Modeling see permit application and Attachment F

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See Attachment F

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

The installation of this unit will improve the reliability of the community electrical system without significant social, economic, or environmental impacts.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT A

(Reference to Permit Section II)

1. Volusia County is not a non-attainment area for any pollutant.

2&3. The existing plant is not a major source for any pollutant so PSD review does not apply to any pollutant that does not increase 250 TPY with this modification. PSD Section (Attachment F) Table F-1, shows that the proposed expansion is a major source for nitrogen dioxide, thus both BACT and PSD review apply for this pollutant.

4. On July 23, 1979, NSPS were proposed for internal combustion engines; these standards were to become effective for engines which commenced construction after January 23, 1982, and would be applicable to dual fuel engines with displacements greater than 560 cubic inches per cylinder. The two proposed units each have a displacement of 1037 cubic inches per cylinder and would be required to meet the standard. However, these standards have not yet been adopted by law.

5. NESHAPS regulations do not apply to this type of source.

ATTACHMENT B

Colt Industries

Fairbanks Morse
Engine Division
701 Lawton Avenue
Beloit, Wisconsin 53511
608/364-4411

(206608)1

June 11, 1982

Environmental Science & Engr, Inc.
P. O. Box #ESE
Gainesville, Florida 32602

Attention: Mr. Michael H. Dybevick

Subject: Two (2) 12 Cyl - 38TDD 8-1/8 OP Engines
Relocated Gensets
Exhaust Emissions Data

Dear Mr. Dybevick:

At the request of our customer, Mr. Ed Berrier - Plant Supt. at the New Smyrna Beach Generating Facility, we have been instructed to advise you directly as to the exhaust emissions relative to the two (2) units planned for this installation. The data is as follows:

Unit No. 1 - 12 Cyl 38TDD 8-1/8 OP - Turbo Blower Series
Rated 2880 BHP @ 720 RPM - S/N 970348

Swoope #3

Mode	Diesel		Dual Fuel	
NO_x - GM/BHP-HR	10.0		9.0	
CO - GM/BHP-HR	1.2		1.4	
HC - GM/BHP-HR	.3		.4	← non-methane
* Particulate - GM/BHP-HR	.16	based on	.04	
* SO_2 - GM/BHP-HR	1.0	0.3% S →	.1	
Smoke - Bosch Units	.8		.2	

Unit No. 2 - 12 Cyl - 38TDD 8-1/8 OP - Turbo Blower Series
Rated 3168 BHP @ 720 RPM - S/N 873068

Swoope #4

Mode	Diesel		Dual Fuel	
NO_x - GM/BHP-HR	9.0		8.0	
CO - GM/BHP-HR	1.2		1.4	
HC - GM/BHP-HR	.3		1.2	← this is total HC by mistake
* Particulate - GM/BHP-HR	.18	based on	.04	Non-methane
* SO_2 - GM/BHP-HR	1.0	0.3% S →	.1	is ~0.5
Smoke - Bosch Units	.9		.2	

(conversation with
EL Bethea
6/18/82)

All Emission Values are for typical injection timings at each rating. These valves (*) are calculated from smoke emissions and for .3% sulfur fuel.

Should any additional information be required with respect to the foregoing, please feel free to contact the writer at your convenience.

Very truly yours,

COLT INDUSTRIES OPERATING CORP
FAIRBANKS MORSE ENGINE DIVISION

E. L. Betker
Contract Administrator

ELB:flb

cc: Al Belvedere - Beloit
Ed Berrier - New Smyrna Beach, Fla.
H. Dahlman - Beloit
H. Keinschrodt - Daytona Beach, Fla.
W. Marx - Houston Sales

SGS Control Services Inc.

Redwood Petroleum and Petrochemical division

825 Wynkoop Road
P O Box 5351
Tampa, Florida 33675
Tel (813) 247-3984
TWX (810) 876-2927

June 7, 1982

TO WHOM IT MAY CONCERN

Corrected Certificate

to accompany Certificate No

Analysis Certificate

Vessel Shore Tank No. 18
Receiver *Belcher Oil Company, Port Canaveral, Florida
Cargo No.2 Fuel Oil File No. 37434

Sample Marked Shore Tank No. 18 (Top, Middle and Bottom) (6-4-82)
Lab Reference No LP-2070-82
Sample Description No. 6 Fuel Oil
Submitted By SGS Control Services Inc.

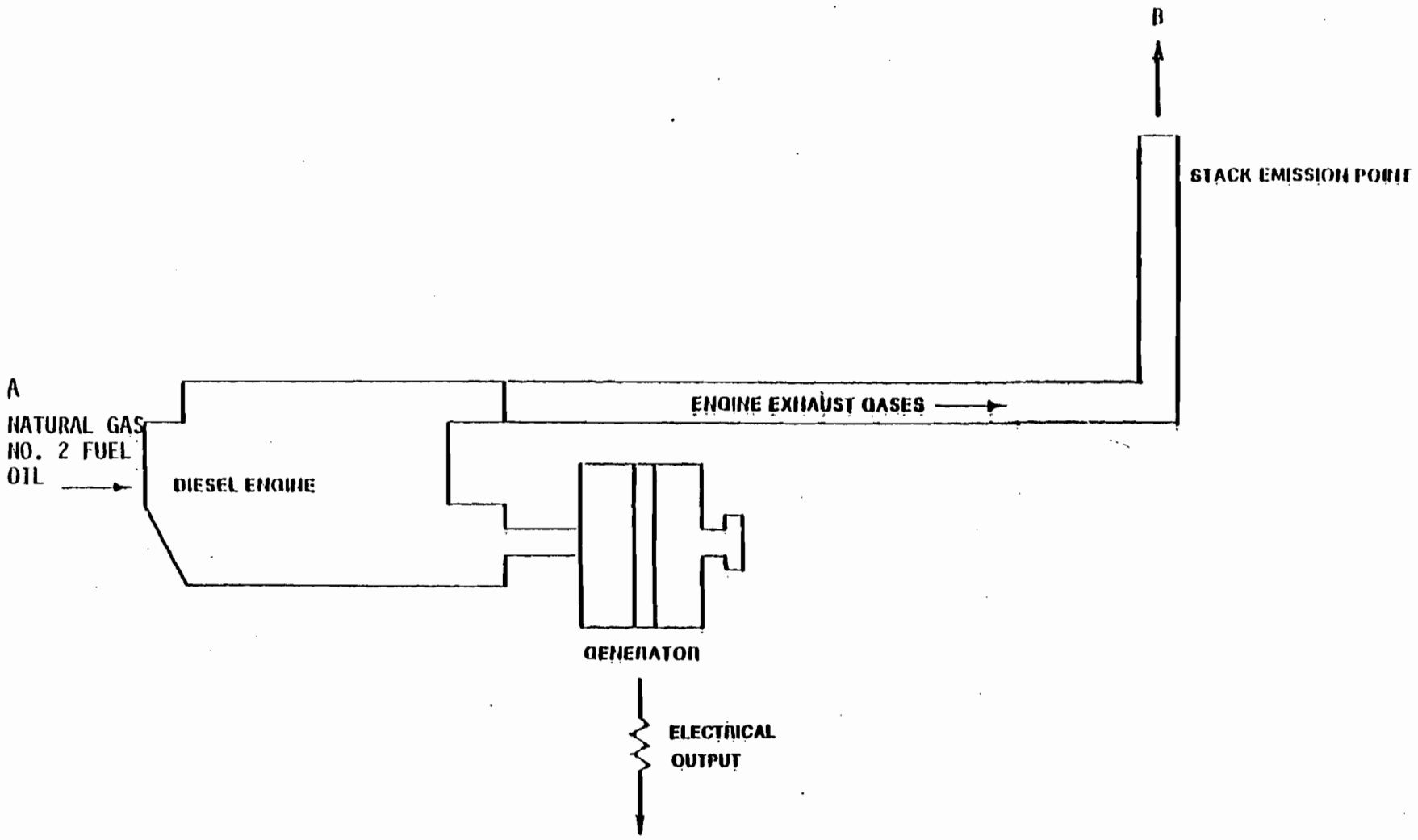
In accordance with your instructions per Mr. Dick Reed, we proceeded to *Belcher Oil Company, Port Canaveral, Florida on June 4, 1982 for the purpose of drawing a top, middle and bottom sample from Shore Tank No. 18. A portion of this sample was submitted to our Tampa laboratory for analytical findings. We now report to you as follows:

TEST	METHOD		RESULT
GRAVITY, A.P.I. @ 60°F	ASTM D-287		36.8
FLASH, °F (PMCC)	ASTM D-93		150
SEDIMENT & WATER, VOL.%	ASTM D-96		Trace
S.U.S. VISCOSITY, @ 100°F	ASTM D-445		33.5
POUR POINT, °F	ASTM D-97		Below 0°F
SULFUR, WT. %	ASTM D-1552		0.12
RAMSBOTTOM CARBON RES.,WT.% (10% BOTTOM)	ASTM D-524		0.14
CETANE INDEX	ASTM D-976		45.4
DISTILLATION, °F	ASTM D-86	I.B.P.	356
		5%	388
		10%	404
		20%	422
		90%	570
		END POINT	634
		% RECOVERY	98.5
		% LOSS	1.5
TRACE METALS	A.A.	CALICUM, ppm	None Detected
		LEAD, ppm	0.3
		POTASSIUM, ppm	0.1
		SODIUM, ppm	0.1
		VANADIUM, ppm	0.2

SGS CONTROL SERVICES INC.

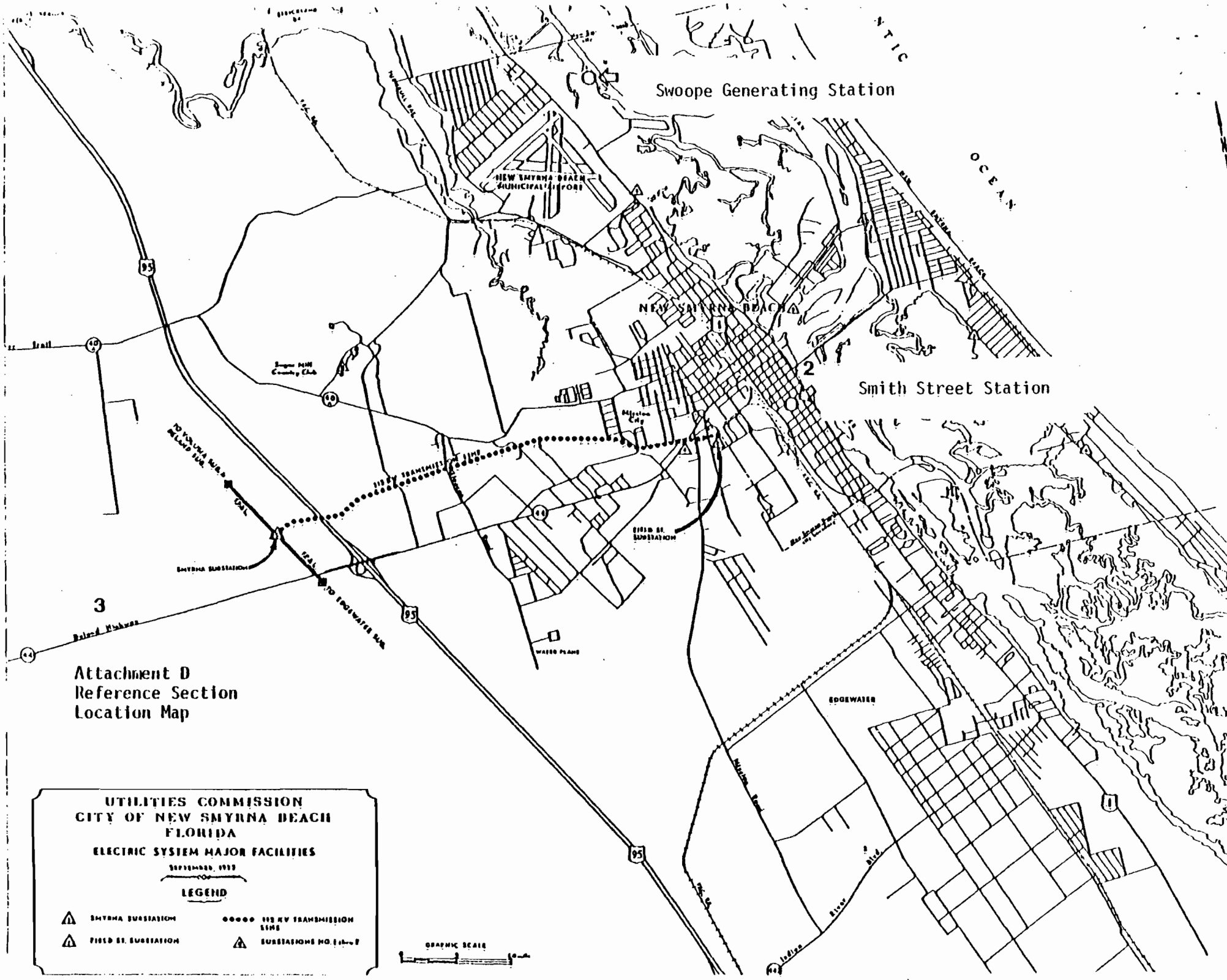
R. S. Sohngen
Operations Department

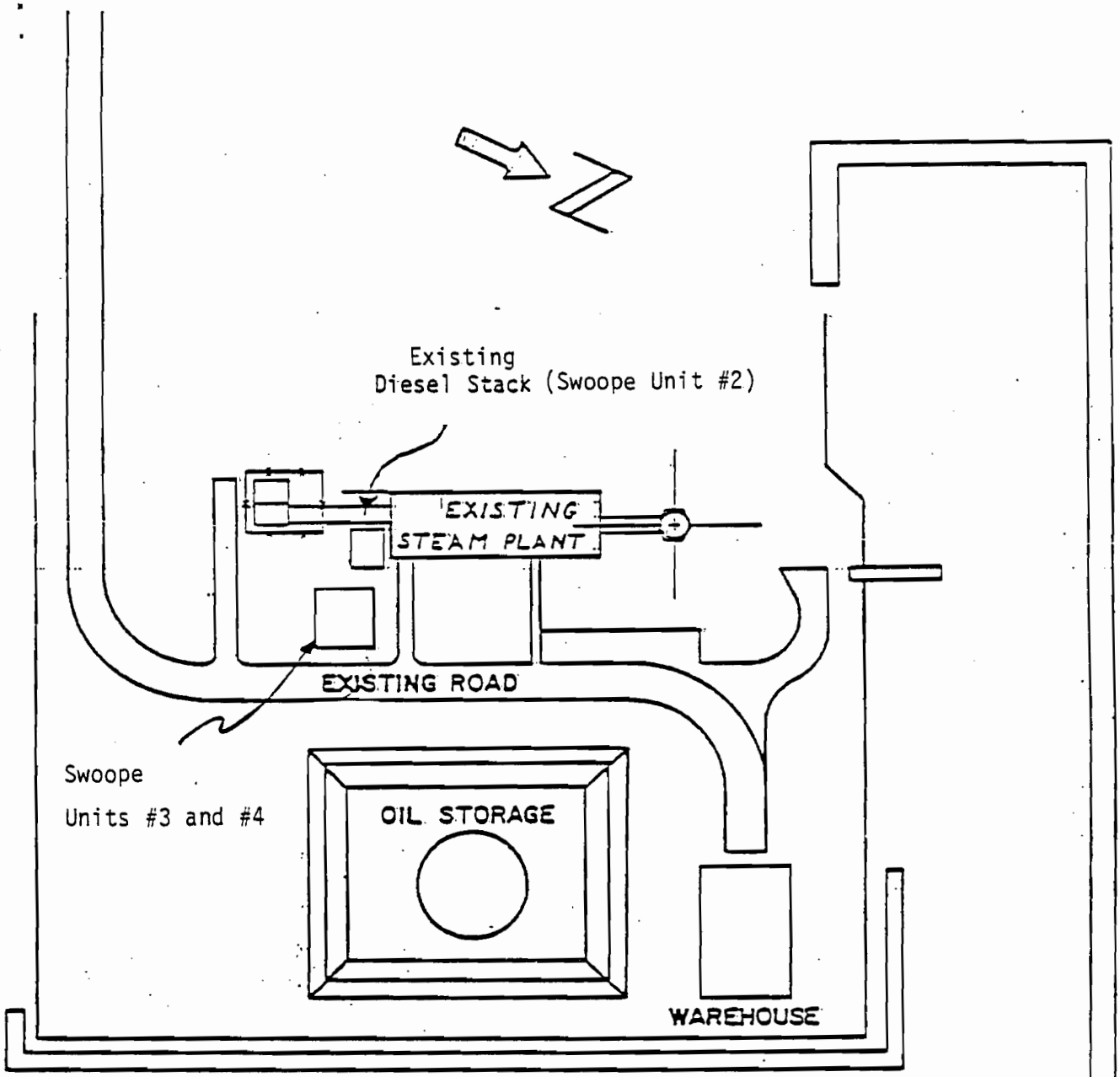
RSS/sl



Attachment C: Reference Section V 6

FLOW DIAGRAM


Swoope Generating Station
Smith Street Station
NEW SMYRNA BEACH
NEW SMYRNA BEACH MUNICIPAL AIRPORT
OCEAN
EDGEWATER
SMYRNA SUBSTATION
FIELD ST. SUBSTATION
WATER PLANT
1
2
3
Attachment D
Reference Section
Location Map
UTILITIES COMMISSION
CITY OF NEW SMYRNA BEACH
FLORIDA
ELECTRIC SYSTEM MAJOR FACILITIES
LEGEND
SMYRNA SUBSTATION
FIELD ST. SUBSTATION
115 KV TRANSMISSION LINE
GRAPHIC SCALE



INTRACOASTAL WATERWAY

Attachment E
Reference Section V 7
Utility Plot Plan

REV.	DATE	BY	REVISIONS

UTILITIES COMMISSION
CITY OF NEW SMYRNA BEACH, FL.

Swoope Generating Station-
Plot Plan

DWN. RLW	SCALE SHOWN	REV. 0
CKD.	DATE 3-3-81	SAA-109
APP.		

ATTACHMENT F
PSD ANALYSIS

The Swoope Generating Station currently consists of a 116 X 10^6 Btu/hr steam generator (Swoope #1) and a 910 KW gas diesel generator (Swoope #2), which is limited by permit condition to a 70 percent capacity factor. Neither of these sources are in a category listed in 40 CFR 52.21 or FAC 17-2, and Table F-1 shows that current emission levels of all pollutants are below 250 TPY. The current configuration is therefore not a major source.

The proposed modification is an addition of two more gas diesel units, and an increase to 100 percent capacity factor for Swoope #2. Table F-1 shows that the change would be a major source for NOx only, and requires PSD review for this pollutant. The source description and control technology review components of the PSD review are contained in the accompanying construction permit application. This attachment describes the air quality impact analysis and its results.

Both state and federal regulations contain only annual average standards for NOx, so modeling was performed with the EPA approved ISC long term model. One year (1964) of surface observations from Daytona International Airport were summarized in STAR format and input to the model. The stack parameters are shown in Table F-2. A rectangular grid with 100 meter spacing was used, and all sources were assumed to emit at maximum allowable rates 24 hours a day, every day of the year. The attached computer output contains the results of two model runs. The first run modeled the impacts of the entire plant, the second run modeled the impacts of the two new units (Swoope #3 and #4) and the increased emissions due to the increased capacity factor for Swoope #2.

Both state and federal regulations require pre-construction monitoring unless the impacts of the modification are below certain de minimis levels. For NOx, the de minimis level is 14 ug/ m^3, annual average. The maximum impact of the proposed modification is 11 ug/m^3, and therefore the project may be exempted from the PSD pre-construction monitoring requirement.

The state and federal air quality standard for NOx is 100 ug/m^3. The highest predicted annual average impact due to the Swoope Generating Station is 16 ug/m^3. The only other major point source of NOx within 40 km is the New Smyrna Beach Smith Street station (see Attachment D). Since the Smith Street station also consists of gas diesels, and the maximum impacts of the Swoope Generating Station were small relative to the standard and occurred within 800 meters of the plant, no other sources were modeled for interaction. The nearest NOx monitoring data available are from a gas bubbler station located 1.5 miles north of the FPL Sanford power plant, about 25 miles southwest of the Swoope Station, (site code 10-4600-001-J-02). In 1980, the annual average NOx concentration at this site was 22.5 ug/m^3. Even if this value was used directly as a background concentration, the projected impacts of the Swoope Generating Station are low enough to provide reasonable assurance that air quality standards will not be exceeded.

Table F-1. Annual Emissions From Swoope Generating Station

	Particulate Matter	Sulfur Dioxide	Carbon Monoxide	Nitrogen Oxides	Hydrocarbons
Current					
Swoope #1 (steam)*	27	1	5	140	8
Swoope #2 (diesel)*	0.1	0.3	12	94	37
Total	27	1	17	234	45
Projected					
Swoope #1 (steam)*	27	1	5	140	8
Swoope #2 (diesel)* (at 100% capacity factor)	0.2	0.4	17	134	53
Swoope #3 (diesel)+	1	2	39	250	11
Swoope #4 (diesel)+	1	2	43	245	15
Total	29	5	104	769	87
Net Increase	2	4	87	535	42

*based on Swoope #2 permit application (AC64-43484) and revisions in June 26, 1981, letter to C. M. Collins FDER ST. Johns River District from K. F. Kosky, ESE, Inc.

+based on manufacturers letter, Attachment B.

Note: Swoope #2 hydrocarbons reported as total HC, Swoope #3 and #4 reported as non-methane.

Table F-2. Modeling Parameters - Swoope Generating Station

Source	NOx Emission Rate (g/s)	Stack Height (m)	Gas Temperature (k)	Exist Velocity (m/s)	Diameter (m)
Swoope #1	4.04	38.1	644	9.5	1.38
Swoope #2	3.84	6.1	589	43.9	0.36
Swoope #3	7.2	6.1	644	41.2	0.56
Swoope #4	7.0	6.1	644	44.2	0.56

- ISCLT INPUT DATA -

NUMBER OF SOURCES = 3/2 and new only
NUMBER OF X AXIS GRID SYSTEM POINTS = 21
NUMBER OF Y AXIS GRID SYSTEM POINTS = 21
NUMBER OF SPECIAL POINTS = 0
NUMBER OF SEASONS = 1
NUMBER OF WIND SPEED CLASSES = 6
NUMBER OF STABILITY CLASSES = 5
NUMBER OF WIND DIRECTION CLASSES = 16
FILE NUMBER OF DATA FILE USED FOR REPORTS = 1
THE PROGRAM IS RUN IN RURAL MODE
CONCENTRATION (DEPOSITION) UNITS CONVERSION FACTOR =0.10000000E+07
ACCELERATION OF GRAVITY (METERS/SEC**2) = 9.800
HEIGHT OF MEASUREMENT OF WIND SPEED (METERS) = 7.000
ENTRAINMENT PARAMETER FOR UNSTABLE CONDITIONS = 0.600
ENTRAINMENT PARAMETER FOR STABLE CONDITIONS = 0.600
CORRECTION ANGLE FOR GRID SYSTEM VERSUS DIRECTION DATA NORTH (DEGREES) = 0.000
DECAY COEFFICIENT =0.00000000E+00
PROGRAM OPTION SWITCHES = 1, 1, 1, 0, 0, 3, 2, 2, 3, 0, 0, 0, 0,-1,-1, 0, 0, 1, 1, 0,
ALL SOURCES ARE USED TO FORM SOURCE COMBINATION 1
DISTANCE X AXIS GRID SYSTEM POINTS (METERS)= -1000.00, -900.00, -800.00, -700.00, -600.00, -500.00,
-400.00, -300.00, -200.00, -100.00, 0.00, 100.00, 200.00, 300.00, 400.00, 500.00,
600.00, 700.00, 800.00, 900.00, 1000.00,
DISTANCE Y AXIS GRID SYSTEM POINTS (METERS)= -1000.00, -900.00, -800.00, -700.00, -600.00, -500.00,
-400.00, -300.00, -200.00, -100.00, 0.00, 100.00, 200.00, 300.00, 400.00, 500.00,
600.00, 700.00, 800.00, 900.00, 1000.00,

- AMBIENT AIR TEMPERATURE (DEGREES KELVIN) -

	STABILITY CATEGORY 1	STABILITY CATEGORY 2	STABILITY CATEGORY 3	STABILITY CATEGORY 4	STABILITY CATEGORY 5	STABILITY CATEGORY 6
SEASON 1	300.0000	300.0000	300.0000	295.0000	289.0000	

- MIXING LAYER HEIGHT (METERS) -

SEASON 1

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.21840E+04	0.21840E+04	0.21840E+04	0.21840E+04	0.21840E+04	0.21840E+04
STABILITY CATEGORY 2	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04
STABILITY CATEGORY 3	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04
STABILITY CATEGORY 4	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04
STABILITY CATEGORY 5	0.10000E+05	0.10000E+05	0.10000E+05	0.10000E+05	0.10000E+05	0.10000E+05

- ISCLT INPUT DATA (CONT.) - and new only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 1

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00016100	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00020800	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00014100	0.00034200	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00023400	0.00056900	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00014100	0.00034200	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 2

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00110700	0.00113800	0.00102500	0.00000000	0.00000000	0.00000000
22.500	0.00025700	0.00034200	0.00045500	0.00000000	0.00000000	0.00000000
45.000	0.00014300	0.00034200	0.00102500	0.00000000	0.00000000	0.00000000
67.500	0.00032900	0.00056900	0.00250500	0.00000000	0.00000000	0.00000000
90.000	0.00087300	0.00182100	0.00318000	0.00000000	0.00000000	0.00000000
112.500	0.00066400	0.00068300	0.00091100	0.00000000	0.00000000	0.00000000
135.000	0.00037200	0.00022800	0.00045500	0.00000000	0.00000000	0.00000000
157.500	0.00051500	0.00068300	0.00022800	0.00000000	0.00000000	0.00000000
180.000	0.00092200	0.00102500	0.00045500	0.00000000	0.00000000	0.00000000
202.500	0.00036100	0.00011400	0.00068300	0.00000000	0.00000000	0.00000000
225.000	0.00066400	0.00068300	0.00102500	0.00000000	0.00000000	0.00000000
247.500	0.00103600	0.00091100	0.00136600	0.00000000	0.00000000	0.00000000
270.000	0.00062200	0.00102500	0.00113800	0.00000000	0.00000000	0.00000000
292.500	0.00043700	0.00011400	0.00034200	0.00000000	0.00000000	0.00000000
315.000	0.00122100	0.00102500	0.00045500	0.00000000	0.00000000	0.00000000
337.500	0.00043700	0.00011400	0.00034200	0.00000000	0.00000000	0.00000000

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- ISCLT INPUT DATA (CONT.) -

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 3

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00067800	0.00170800	0.00330100	0.00148000	0.00045500	0.00000000
22.500	0.00013200	0.00056900	0.00421199	0.00227700	0.00011400	0.00000000
45.000	0.00027300	0.00056900	0.00455400	0.00227700	0.00011400	0.00000000
67.500	0.00007900	0.00034200	0.00762799	0.00466799	0.00034200	0.00000000
90.000	0.00029100	0.00125200	0.01229499	0.00853799	0.00000000	0.00000000
112.500	0.00015900	0.00068300	0.00557799	0.00318800	0.00034200	0.00000000
135.000	0.00032600	0.00079700	0.00182100	0.00034200	0.00000000	0.00000000
157.500	0.00010600	0.00045500	0.00193500	0.00034200	0.00000000	0.00000000
180.000	0.00053700	0.00170800	0.00318800	0.00045500	0.00000000	0.00000000
202.500	0.00015900	0.00068300	0.00296000	0.00056900	0.00022800	0.00000000
225.000	0.00059000	0.00193500	0.00421199	0.00102500	0.00000000	0.00000000
247.500	0.00055600	0.00239100	0.00432600	0.00011400	0.00000000	0.00000000
270.000	0.00123100	0.00227700	0.00261800	0.00136600	0.00000000	0.00000000
292.500	0.00090500	0.00148000	0.00204900	0.00011400	0.00011400	0.00000000
315.000	0.00037000	0.00159400	0.00125200	0.00022800	0.00000000	0.00000000
337.500	0.00021200	0.00091100	0.00227700	0.00022800	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 4

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00122200	0.00387100	0.01411698	0.03403896	0.01206699	0.00113800
22.500	0.00040300	0.00125200	0.00751399	0.01445798	0.00170800	0.00022800
45.000	0.00023500	0.00091100	0.00648899	0.01092899	0.00113800	0.00022800
67.500	0.00047300	0.00182100	0.01001799	0.01710598	0.00125200	0.00011400
90.000	0.00055100	0.00250500	0.02014998	0.02834697	0.00159400	0.00022800
112.500	0.00035600	0.00193500	0.01343399	0.02128898	0.00216300	0.00011400
135.000	0.00053700	0.00239100	0.01126999	0.01092899	0.00227700	0.00000000
157.500	0.00034300	0.00182100	0.00922099	0.00637499	0.00125200	0.00022800
180.000	0.00076600	0.00239100	0.01434398	0.01354699	0.00296000	0.00079700
202.500	0.00055700	0.00148000	0.00853799	0.01104299	0.00296000	0.00079700
225.000	0.00084600	0.00284600	0.00546399	0.00751399	0.00250500	0.00056900
247.500	0.00181300	0.00364300	0.00455400	0.00899399	0.00102500	0.00045500
270.000	0.00055100	0.00250500	0.00523699	0.01115699	0.00620 59	0.00239100
292.500	0.00057300	0.00284600	0.00484099	0.00375799	0.00273600	0.00068300
315.000	0.00112700	0.00307400	0.00694399	0.00671699	0.00068300	0.00034200
337.500	0.00132700	0.00216300	0.00922099	0.00648899	0.00113800	0.00068300

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRE

SEASON 1

STABILITY CATEGORY 5

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00694999	0.00842399	0.00591999	0.00000000	0.00000000	0.00000000
22.500	0.00428799	0.00523699	0.00432600	0.00000000	0.00000000	0.00000000
45.000	0.00372700	0.00546399	0.00182100	0.00000000	0.00000000	0.00000000
67.500	0.00357400	0.00470099	0.00432600	0.00000000	0.00000000	0.00000000
90.000	0.00888199	0.01183999	0.01001799	0.00000000	0.00000000	0.00000000
112.500	0.00430499	0.00705799	0.00705799	0.00000000	0.00000000	0.00000000
135.000	0.01047199	0.01559698	0.00375700	0.00000000	0.00000000	0.00000000
157.500	0.00815999	0.01172599	0.00364300	0.00000000	0.00000000	0.00000000
180.000	0.01391298	0.02402097	0.00660299	0.00000000	0.00000000	0.00000000
202.500	0.00745999	0.01058699	0.00296000	0.00000000	0.00000000	0.00000000
225.000	0.00954299	0.01218099	0.00296000	0.00000000	0.00000000	0.00000000
247.500	0.01129099	0.01377498	0.00318800	0.00000000	0.00000000	0.00000000
270.000	0.01047599	0.01024599	0.00352900	0.00000000	0.00000000	0.00000000
292.500	0.00750399	0.00853799	0.00148000	0.00000000	0.00000000	0.00000000
315.000	0.01033499	0.01422998	0.00557799	0.00000000	0.00000000	0.00000000
337.500	0.00776299	0.00944899	0.00535099	0.00000000	0.00000000	0.00000000

- VERTICAL POTENTIAL TEMPERATURE GRADIENT (DEGREES KELVIN/METER) -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.000100E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+00
STABILITY CATEGORY 2	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+00
STABILITY CATEGORY 3	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+00
STABILITY CATEGORY 4	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+00
STABILITY CATEGORY 5	0.200000E-010	0.200000E-010	0.200000E-010	0.200000E-010	0.200000E-010	0.200000E-01

- WIND PROFILE POWER LAW EXPONENTS -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.100000E+000	0.100000E+000	0.100000E+000	0.100000E+000	0.100000E+000	0.100000E+00
STABILITY CATEGORY 2	0.150000E+000	0.150000E+000	0.150000E+000	0.150000E+000	0.150000E+000	0.150000E+00
STABILITY CATEGORY 3	0.200000E+000	0.200000E+000	0.200000E+000	0.200000E+000	0.200000E+000	0.200000E+00
STABILITY CATEGORY 4	0.250000E+000	0.250000E+000	0.250000E+000	0.250000E+000	0.250000E+000	0.250000E+00
STABILITY CATEGORY 5	0.300000E+000	0.300000E+000	0.300000E+000	0.300000E+000	0.300000E+000	0.300000E+00

- SOURCE INPUT DATA -

C A R D	T A F E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV-ATION (M)	/ - SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	38.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 9.50, STACK DIAMETER (M)= 1.380, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.04000E+00
		Swoope#1 Steam unit						
WARNING - DISTANCE BETWEEN SOURCE 1 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								
X		2	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 589.00, GAS EXIT VEL. (M/SEC)= 43.90, STACK DIAMETER (M)= 0.360, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.84000E+00
		Swoope#2 Existing Diesel						
WARNING - DISTANCE BETWEEN SOURCE 2 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								
X		3	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 42.70, STACK DIAMETER (M)= 0.560, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 1.42400E+01
		Swoope #3 & #4 Proposed Combined						
WARNING - DISTANCE BETWEEN SOURCE 3 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								

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** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-1000.000	-900.000	-800.000	-700.000	-600.000	-500.000	-400.000	-300.000	-200.000
	- CONCENTRATION -								
1000.000	6.125322	6.127700	6.094093	6.019985	5.903982	5.750503	5.766286	7.027227	8.411560
900.000	6.356190	6.562686	6.538740	6.464639	6.336689	6.156047	5.930664	6.638400	8.232006
800.000	6.688039	6.840491	7.033495	6.959665	6.801756	6.533855	6.225493	6.464143	8.059106
700.000	6.085277	7.149355	7.366058	7.509187	7.254660	6.901388	6.482676	6.076775	7.490542
600.000	7.194715	7.498895	7.734884	7.816087	7.742961	7.266974	6.676906	6.082804	6.595673
500.000	7.546048	7.900994	8.133423	8.204315	8.057222	7.643398	6.811241	5.924693	5.378366
400.000	8.055733	8.369009	8.642580	8.730305	8.529869	7.936595	6.917276	5.617219	4.515312
300.000	9.276226	9.495520	9.558521	9.481441	9.293653	8.578476	7.194072	5.255514	3.547530
200.000	10.560844	10.957678	11.205563	11.196426	10.786316	9.825712	8.184858	5.543178	[illegible]
100.000	11.878965	12.509329	13.024607	13.297129	13.123604	12.206591	10.177889	6.863959	7.344543
0.000	13.175607	14.069468	14.932831	15.609529	15.906578	15.455215	13.770771	10.179537	6.265150
-100.000	11.479237	12.059605	12.524664	12.754679	12.562798	11.683037	9.802814	6.831932	4.048810
-200.000	9.757004	10.048000	10.185202	10.073137	9.595356	8.657013	7.427290	5.412742	3.138496
-300.000	8.083979	8.146931	8.041805	7.836459	7.696771	7.169133	6.144471	4.714012	4.265866
-400.000	6.523219	6.666589	6.814183	6.816475	6.600318	6.095775	5.297487	5.407205	5.670534
-500.000	5.780070	5.952270	6.020259	5.953754	5.715302	5.282607	5.591874	5.971330	6.611378
-600.000	5.209709	5.307322	5.329631	5.225793	4.994627	5.364688	5.777692	6.268412	7.550534
-700.000	4.695052	4.736332	4.715121	4.609434	4.974573	5.372901	5.816212	6.325062	8.071970
-800.000	4.234854	4.235273	4.180302	4.530062	4.907113	5.299863	5.730793	6.542064	8.245063
-900.000	3.826123	3.797574	4.095892	4.421498	4.775195	5.156284	5.559735	6.678347	8.187111
-1000.000	3.464766	3.718670	3.994530	4.292553	4.612313	4.952946	5.426483	6.658602	7.965911

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
1000.000	9.869898	11.351654	9.954981	8.567457	7.239342	6.018775	5.742392	5.614089	5.464535
900.000	9.972669	11.668583	10.092953	8.553875	7.136763	6.168166	6.034616	5.897486	5.755775
800.000	9.866144	11.817623	10.036242	8.363705	6.886261	6.375821	6.279579	6.173057	6.055849
700.000	9.439804	11.630123	9.681034	7.935769	6.610131	6.598605	6.455699	6.460480	6.311479
600.000	8.565241	10.969043	8.907347	7.227982	6.529463	6.538840	6.592488	6.618515	6.517968
500.000	7.140826	9.615231	7.623003	6.270267	6.236110	6.458998	6.697357	6.717663	6.708563
400.000	5.176396	7.472694	5.840555	5.353290	5.737908	6.315817	6.588545	6.895285	6.911712
300.000	2.920495	4.577614	3.767562	4.160435	5.157791	5.825749	6.482625	6.943979	7.170959
200.000	1.252886	1.858342	2.132963	3.936510	4.179140	5.506903	6.573929	7.[illegible]	7.[illegible]
100.000	0.494475	0.328806	0.980206	2.676285	3.765391	5.489461	6.699579	7.105307	7.354886
0.000	2.162560	1.090600	0.761915	2.792976	4.605332	6.317980	7.246998	7.629152	7.644953
-100.000	1.278458	0.960045	0.429746	1.256586	2.570521	4.214346	5.382066	6.760357	6.360042
-200.000	2.493481	4.143908	1.435534	2.429105	3.112972	3.619251	4.031170	4.791282	5.239251
-300.000	4.745513	7.685[illegible]	5.847863	3.685576	4.915764	4.951458	4.882779	4.720389	4.483761
-400.000	7.364304	10.736780	6.724648	4.526872	5.552440	6.444570	[illegible]	[illegible]	[illegible]
-500.000	9.[illegible]	12.26[illegible]	[illegible]	5.948792	6.041991	6.552717	7.[illegible]	6.489358	5.885485
-600.000	9.[illegible]	12.724[illegible]	[illegible]	7.[illegible]	6.29[illegible]	6.561132	[illegible]	7.14[illegible]	6.468727

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** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - -100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
-700.000	10.237406	12.561590	10.150810	7.966827	6.318871	6.453076	6.639539	6.804550	6.912998
-800.000	10.124470	12.066786	10.116732	8.277456	6.653737	6.250275	6.361072	6.465375	6.500518
-900.000	9.796532	11.413338	9.836887	8.301712	6.892848	5.985910	6.046538	6.089931	6.100262
-1000.000	9.359263	10.721052	9.428007	8.147799	6.925193	5.804323	5.689330	5.724257	5.742361

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - 800.000	900.000	1000.000
	- CONCENTRATION -		
1000.000	5.351343	5.214439	5.075349
900.000	5.608542	5.455925	5.299848
800.000	5.877198	5.704020	5.534438
700.000	6.143172	5.961765	5.778400
600.000	6.404109	6.229158	6.031364
500.000	6.640710	6.506221	6.294152
400.000	6.897082	6.788972	6.539887
300.000	7.102132	6.893804	6.608261
200.000	7.142980	6.943727	6.671797
100.000	7.251471	7.024717	6.727612
0.000	7.453820	7.152027	6.803570
-100.000	6.403279	6.289964	6.090511
-200.000	5.441939	5.474508	5.400136
-300.000	4.611043	4.736910	4.743624
-400.000	4.785154	4.395904	4.144448
-500.000	5.360918	4.879007	4.419462
-600.000	5.864269	5.293977	4.790988
-700.000	6.231319	5.628532	5.102954
-800.000	6.485319	5.881890	5.350441
-900.000	6.698072	6.059033	5.535496
-1000.000	5.7384 5	5.711648	5.664222

- SOURCE INPUT DATA -

C A R D	T A P E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV- ATION (M)	- SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 589.00, GAS EXIT VEL. (M/SEC)= 43.90, STACK DIAMETER (M)= 0.360, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0

Swoope #2 Existing Diesel
Emission rate corresponds to
increase above 70% capacity factor limitation.

- SOURCE STRENGTHS (GRAMS PER SEC)

SEASON 1	SEASON 2	SEASON 3	SEASON 4
1.15000E+00			

WARNING - DISTANCE BETWEEN SOURCE 1 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED

X		2	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 42.70, STACK DIAMETER (M)= 0.560, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0

Swoope #3 & #4 Combined

- SOURCE STRENGTHS (GRAMS PER SEC)

SEASON 1	SEASON 2	SEASON 3	SEASON 4
1.42400E+01			

WARNING - DISTANCE BETWEEN SOURCE 2 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED

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** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-1000.000	-900.000	-800.000	-700.000	-600.000	-500.000	-400.000	-300.000	-200.000
	- CONCENTRATION -								
1000.000	4.529756	4.530603	4.511012	4.458233	4.371409	4.254956	4.263452	5.188981	6.256468
900.000	4.710518	4.858240	4.843405	4.787818	4.686647	4.544641	4.369836	5.021120	6.102467
800.000	4.914883	5.079499	5.210071	5.147761	5.016402	4.796514	4.548201	4.799167	5.817814
700.000	5.136922	5.321885	5.464080	5.538367	5.320856	5.018771	4.668899	4.348303	5.300343
600.000	5.382028	5.593119	5.741446	5.755008	5.635359	5.215117	4.713485	4.232643	4.523201
500.000	5.658475	5.903630	6.037080	6.023872	5.819725	5.394122	4.680183	3.961777	3.533201
400.000	6.051797	6.265864	6.419033	6.399251	6.124184	5.521543	4.598712	3.564828	2.762926
300.000	6.950764	7.094189	7.094568	6.957702	6.661875	5.923663	4.682643	3.135205	1.962312
200.000	7.907328	8.164433	8.276503	8.153919	7.686349	6.776796	5.296220	3.207801	1.309849
100.000	8.886695	9.308157	9.599226	9.646774	9.284388	8.294069	6.462439	3.851166	1.837859
0.000	9.853601	10.469259	11.008928	11.332335	11.268307	10.526871	8.779190	5.721337	2.732776
-100.000	8.584108	8.971802	9.231838	9.260172	8.906273	7.978684	6.299791	3.949928	2.376096
-200.000	7.298388	7.480745	7.520294	7.341415	6.861167	6.030926	4.925282	3.290251	1.714410
-300.000	6.053619	6.076718	5.962884	5.757898	5.557244	5.038174	4.145288	3.009334	2.599359
-400.000	4.887339	4.983474	5.065331	5.019750	4.790734	4.332579	3.663387	3.624520	3.700643
-500.000	4.329359	4.449526	4.481150	4.399299	4.177841	3.807566	3.968241	4.176242	4.569763
-600.000	3.899849	3.967222	3.972616	3.875276	3.678033	3.921675	4.191241	4.519220	5.395178
-700.000	3.511554	3.539032	3.516667	3.428170	3.690674	3.973131	4.287094	4.652943	5.698690
-800.000	3.163233	3.161773	3.117146	3.380041	3.661081	3.950712	4.268748	4.863049	6.102528
-900.000	2.852649	2.830565	3.058518	3.306043	3.573822	3.861777	4.166894	4.994776	6.110579
-1000.000	2.576872	2.772741	2.984722	3.212920	3.457094	3.716992	4.076013	4.995479	5.986277

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
1000.000	7.280466	8.376677	7.351406	6.337106	5.367568	4.477124	4.267008	4.163865	4.058664
900.000	7.297355	8.543680	7.396438	6.285521	5.269374	4.575168	4.472225	4.366213	4.255118
800.000	7.116298	8.526773	7.254468	6.074090	5.046179	4.691741	4.620716	4.554272	4.453984
700.000	6.659750	8.203991	6.842833	5.658136	4.784166	4.728436	4.713701	4.694533	4.642612
600.000	5.816922	7.452812	6.081230	5.018644	4.611780	4.664504	4.754748	4.818905	4.768865
500.000	4.586627	6.178986	4.942447	4.205564	4.257614	4.502133	4.762873	4.831600	4.872447
400.000	3.964259	4.409218	3.522186	3.386473	3.754132	4.292801	4.572982	4.826157	4.979425
300.000	1.528748	2.354199	2.049510	2.423868	3.224925	3.798440	4.397372	4.859688	5.129473
200.000	0.637268	0.984886	1.189432	1.626314	2.418879	3.453[illegible]72	4.35[illegible]290	4.885594	5.142127
100.000	0.2889[illegible]9	0.184[illegible]37	2.610358	1.128199	2.062204	3.402621	4.393205	4.967955	5.[illegible]52602
0.000	1.323775	[illegible]	0.449373	1.675435	2.608347	4.020135	4.913198	5.3762[illegible]	[illegible]
-100.000	0.813881	0.575565	0.254399	0.684745	1.414449	2.620183	3.591733	4.227263	4.561974
-200.000	1.385221	2.350532	0.738085	1.250501	1.774701	2.247648	2.660141	3.318553	3.737797
-300.000	2.628058	4.129972	2.088264	2.113570	3.013945	3.196094	3.288659	3.285767	3.195413
-400.000	4.633[illegible]48	6.712242	4.171715	3.196665	3.602841	4.341027	4.176223	3.[illegible]71232	3.733963
-500.000	6.165556	[illegible]	[illegible]	[illegible]	4.109[illegible]	4.547[illegible]27	[illegible]	[illegible]	[illegible]
-600.000	7.162424	[illegible]	[illegible]	5.274[illegible]3	4.432724	4.667337	[illegible]	[illegible]	4.736[illegible]

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** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
-700.000	7.445539	9.141445	7.340537	5.749539	4.562780	4.676843	4.841251	4.990833	5.092170
-800.000	7.481155	8.919882	7.450238	6.079086	4.880642	4.587487	4.679839	4.768476	4.800737
-900.000	7.305363	8.512440	7.316545	6.160236	5.104819	4.927017	4.472134	4.585086	4.617878
-1000.000	7.012303	8.032454	7.049086	6.079269	5.154711	4.307981	4.217338	4.239990	4.249018

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	800.000	900.000	1000.000
	- CONCENTRATION -		
1000.000	3.949165	3.835467	3.719000
900.000	4.137527	4.013654	3.890831
800.000	4.331511	4.199357	4.067876
700.000	4.522067	4.388280	4.249101
600.000	4.702225	4.580199	4.434093
500.000	4.856625	4.775698	4.623975
400.000	5.022134	4.973322	4.802281
300.000	5.156453	5.050423	4.862032
200.000	5.187934	5.095057	4.919748
100.000	5.264104	5.170949	4.973930
0.000	5.467811	5.288986	5.047168
-100.000	4.672099	4.633645	4.505657
-200.000	3.953654	4.018964	3.903482
-300.000	3.340763	3.466486	3.407743
-400.000	3.476663	3.212633	3.035532
-500.000	3.918939	3.578633	3.242232
-600.000	4.309852	3.894997	3.522620
-700.000	4.594871	4.149644	3.757112
-800.000	4.790774	4.340483	3.940945
-900.000	4.906586	4.471251	4.075399
-1000.000	4.239617	4.211065	4.165322

Final Determination

Utilities Commission
City of New Smyrna Beach
Volusia County, Florida
Swoope Units 3 and 4, Gas Diesel

Permit Numbers

State: AC 64-57578
AC 64-57580

Federal: PSD-FL-089

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

September 27, 1982

Response to Public Comment

Utilities Commission
City of New Smyrna Beach

The Utilities Commission's Construction Permit applications for installation of two gas diesel units at the existing Swoope Generation Station in New Smyrna Beach have been reviewed by FDER. Public Notice of the Department's Intent to Issue was published in the New Smyrna Beach News and Observer on August 27, 1982. Copies of the preliminary determination were available for public inspection at Brannon Memorial Library in the city, the FDER's St. Johns River District office and the Bureau of Air Quality Management.

There were no comments from the public as a result of the public notice period.

The final action of the Department will be to issue the permits as noticed in the public review process.

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CONSTRUCTION
PERMIT

NO. AC 64-57578

UTILITIES COMMISSION
CITY OF NEW SMYRNA BEACH
UNIT 3, GAS DIESEL

DATE OF ISSUANCE

September 30, 1982

DATE OF EXPIRATION

JUNE 30, 1983

VICTORIA J. TSCHINKEL
SECRETARY

DER FORM PERM 11-42

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICANT: Utilities Commission
City of New Smyrna Beach
P. O. Box 519
New Smyrna Beach, Florida 32069

PERMIT/CERTIFICATION
NO. AC 64-57578

COUNTY: Volusia

PROJECT: Swoope Unit #3
Gas Diesel

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the installation of a 2050 kw diesel generating unit to be located at the existing Swoope plant site in the City of New Smyrna Beach, Volusia County, Florida. The UTM coordinates are 505.8 km East and 3214.8 km North.

The construction shall be in accordance with the attached permit application, plans and documents except as otherwise noted on page 3, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 28, 1982.

2. Best Available Control Technology (BACT) Determination dated August 18, 1982.

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact 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 revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

[X] Determination of Best Available Control Technology (BACT)
[X] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

SPECIFIC CONDITIONS:

1. The proposed unit shall be constructed in accordance with the capacities and specifications stated in the application and additional information supplied by the applicant.

2. Sulfur content of the fuel oil fired in the proposed gas diesel unit shall be limited to 0.3%.

3. Nitrogen oxides emissions from the Unit No. 3 shall be limited to 620 ppmv corrected to 15% oxygen on a dry basis. Compliance with the emission limits required by the attached BACT determination shall be determined by performance tests while the unit is at or close to full operating capacity.

4. The 70% capacity factor restriction of Swoope Unit No. 2 shall be eliminated. The new NO_x emission limit, which is regulated by the attached BACT determination, shall be 690 ppmv corrected to 15% oxygen on a dry basis.

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

Expiration Date: June 30, 1983

Issued this 30 day of September, 1982.

_____ Pages Attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Victoria J. Tschinkel
Signature

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION

CONSTRUCTION
PERMIT

NO. AC 64-57580

UTILITIES COMMISSION
CITY OF NEW SMYRNA BEACH
UNIT 4, GAS DIESEL

DATE OF ISSUANCE

September 30, 1982

DATE OF EXPIRATION

JUNE 30, 1983

Victoria J. Tschinkel

VICTORIA J. TSCHINKEL
SECRETARY

DER FORM PERM 11-42

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICANT: Utilities Commission
City of New Smyrna Beach
P. O. Box 519
New Smyrna Beach, Florida 32069

PERMIT/CERTIFICATION
NO. AC 64-57580

COUNTY: Volusia

PROJECT: Swoope Unit #4
Gas Diesel

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the installation of a 2275 kw diesel generating unit to be located at the existing Swoope plant site in the City of New Smyrna Beach, Volusia County, Florida. The UTM coordinates are 505.8 km East and 3214.8 km North.

The construction shall be in accordance with the attached permit application, plans and documents except as otherwise noted on page 3, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Source, DER Form 17-1.122(16), received on June 28, 1982.

2. Best Available Control Technology (BACT) Determination dated August 18, 1982.

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact 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 revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

[X] Determination of Best Available Control Technology (BACT)
[X] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

SPECIFIC CONDITIONS:

1. The proposed unit shall be constructed in accordance with the capacities and specifications stated in the application and additional information supplied by the applicant.

2. Sulfur content of the fuel oil fired in the proposed gas diesel unit shall be limited to 0.3%.

3. Nitrogen oxides emissions from the unit shall be limited to 625 ppmv corrected to 15% oxygen on a dry basis. Compliance with the emission limits required by the attached BACT determination shall be determined by performance tests while the unit is at or close to full operating capacity.

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

Expiration Date: June 30, 1983

Issued this 30 day of September, 1982.

_____ Pages Attached.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Victoria Tschinkel
Signature

Final Determination
(PSD-FL-089)

Utilities Commission
City of New Smyrna Beach

The preceeding State Final Determinations are adopted by reference for the federal permit, PSD-FL-089.

Specific Conditions listed in the State permits, AC 64-57578 and AC 64-57580, are adopted as specific conditions for the federal permit, PSD-FL-089, for this source.

The attached General Conditions are also made a part of the federal permit PSD-FL-089 for this source.

Attachment: General Conditions (federal)

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 immediately notify the State District Manager by telephone and provide the District Office and the permitting authority with the following information in writing within four (4) days of such conditions:

   (a) description for 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 or representatives of the Environmental Protection Agency, upon 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 any 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 to this permit to the permitting agency shall be mailed to:

Mr. James T. Wilburn
Chief, Air Management Branch
Air & Waste Management Division
U.S. EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30365

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.

PERMIT APPLICATIONS
AND
PSD ANALYSIS FOR NEW SMYRNA BEACH UTILITIES

SWOOPE UNIT #3 AND #4

CONTENTS

AC 64-57578

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

JUN 28 1982

BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: City Utility/Gas Diesel [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Utilities Commission, City of New Smyrna Beach COUNTY: Volusia

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Swoope Unit 3 Gas Diesel

SOURCE LOCATION: Street 2495 N. Dixie Highway City New Smyrna Beach

UTM: East 505.8 North 3214.8

Latitude 29 ° 03 ' 47 "N Longitude 80 ° 56 ' 25 "W

APPLICANT NAME AND TITLE: Utilities Commission, City of New Smyrna Beach

APPLICANT ADDRESS: PO Box 519, New Smyrna Beach, FL 32069

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Utilities Commission, City of New Smyrna Beach, FL

I certify that the statements made in this application for a Construction Permit Application permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P.A. Korelich

P. A. Korelich, Chief Engineer
Name and Title (Please Type)

Date: 6/24/82 Telephone No. 904-427-1361

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: David A. Buff

David A. Buff, P.E.
Name (Please Type)

(Affix Seal)

Environmental Science and Engineering, Inc.
Company Name (Please Type)

PO Box ESE, Gainesville, Florida 32602
Mailing Address (Please Type)

Florida Registration No. 19011 Date: 6/22/82 Telephone No. (904) 372-3318

[1]See Section 17-2.02(15) and (22), Florida Administrative Code. (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Installation and operation of diesel generating unit. Unit will be natural gas fired with 6 percent heat input from No. 2 oil as pilot fuel. Unit is rated at 2880 BHP with generating capacity of 2050 KW.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon permit issuance Completion of Construction December 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not Applicable

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

No previous DER permits have been issued for this unit.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes __X__ No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ;

if seasonal, describe:

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied?
   b. If yes, has "Lowest Achievable Emission Rate" been applied?
   c. If yes, list non-attainment pollutants.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

See Attachment A

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Nitrogen Oxides	57.1	250	NA	NA	57.1	250	B
Particulate	0.25	1	NA	NA	0.25	1	B
Sulfur Dioxide	0.42	2	NA	NA	0.42	2	B
Carbon Monoxide	8.9	39	NA	NA	8.9	39	B
Hydrocarbons	2.5	11	NA	NA	2.5	11	B

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5])

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels.

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (ft^3)	17,600	17,600	18.05
No. 2 Fuel Oil (gallons)	8.2	8.2	1.15

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas/Pilot Fuel Oil

Percent Sulfur: Trace/0.2 Percent Ash: Ng/Ng

Density: NA/7.21 lbs/gal Typical Percent Nitrogen: Ng/0.2

Heat Capacity: 1026 Btu/ft^3/19,430 BTU/lb NA/140,090 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average NA Maximum NA

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid and solid wastes will be disposed of in either a sanitary sewage system or sanitary landfill.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 22 inches ft.

Gas Flow Rate: 21,200 ACFM Gas Exit Temperature: 700 °F.

Water Vapor Content: 5 % Velocity: 135 FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation. Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See ATTACHMENT B
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Not Applicable
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finisned products are obtained. See ATTACHMENT C
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See ATTACHMENT D
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See ATTACHMENT E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section IIIC

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Part F

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a.	Height:	ft.	b.	Diameter:	ft.
c.	Flow Rate:	ACFM	d.	Temperature:	°F
e.	Velocity:	FPS			

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. See Part F

a. Control Device:

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy*:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy**:

h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

See Item 10

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

The BACT proposed for NO_x is natural gas firing with the ignition timing set as recommended by the manufacturer. Lower NO_x emissions could be achieved by retarding the pilot fuel injection but this would be at the cost of decreasing fuel efficiency. Since air quality impacts are only 16 percent of the standard, optimum fuel efficiency is considered the best available control technology.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Not Applicable

1. _____ no sites _____ TSP _____ ( ) SO^{2*} _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 64 to 12 / 31 / 64
month day year month day year

2. Surface data obtained from (location) NA

3. Upper air (mixing height) data obtained from (location) NA

4. Stability wind rose (STAR) data obtained from (location) Daytona (WBAN 12834)

C. Computer Models Used

1. Industrial Source Complex Long Term Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
~~TSP~~ NO_x	7.2 grams/sec
~~SO_2~~	_____ grams/sec

E. Emission Data Used in Modeling see Permit Application and ATTACHMENT F

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See ATTACHMENT F

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

The installation of this unit will improve the reliability of the community electrical system without significant social, economic, or environmental impacts.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

AC 64-5[illegible]

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

JUN 28 1982

BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: City Utility/Gas Diesel [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Utilities Commission, City of New Smyrna Beach COUNTY: Volusia

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Swoope Unit 4 Gas Diesel

SOURCE LOCATION: Street 2495 N. Dixie Highway City New Smyrna Beach

UTM: East 505.8 North 3214.8

Latitude 29 ° 03 ' 47 "N Longitude 80 ° 56 ' 25 "W

APPLICANT NAME AND TITLE: Utilities Commission, City of New Smyrna Beach

APPLICANT ADDRESS: PO Box 519, New Smyrna Beach, FL 32069

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Utilities Commission, City of New Smyrna Beach, FL

I certify that the statements made in this application for a Construction Permit Application permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P A Korelich

P. A. Korelich, Chief Engineeer
Name and Title (Please Type)

Date: 6/24/82 Telephone No. 904-427-1361

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of poilutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control faciiities and, if applicable, pollution sources.

Signed: David A. Buff

David A. Buff, P.E.
Name (Please Type)

(Affix Seal)

Environmental Science and Engineering, Inc.
Company Name (Please Type)

PO Box ESE, Gainesville, Florida 32602
Mailing Address (Please Type)

Florida Registration No. 19011 Date: 6/22/82 Telephone No. (904)372-3318

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Installation and operation of diesel generating unit. Unit will be natural gas fired with 6 percent heat input from No. 2 oil as pilot fuel. Unit is rated at 3168 BHP with generating capacity of 2275 kw.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon permit issuance Completion of Construction December 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not Applicable

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

No previous DER permits have been issued for this unit

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ;

if seasonal, describe: ____

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied? ____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? ____
   c. If yes, list non-attainment pollutants. ____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable. See Attachment A

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Nitrogen Oxides	55.9	245	NA	NA	55.9	245	B
Particulate	0.28	1	NA	NA	0.28	1	B
Sulfur Dioxide	0.47	2	NA	NA	0.47	2	B
Carbon Monoxide	9.8	43	NA	NA	9.8	43	B
Hydrocarbons	3.5	15	NA	NA	3.5	15	B

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels.

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (ft^3)	19,300	19,300	19.85
No. 2 Fuel Oil (gallons)	9.1	9.1	1.27

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas/Pilot Fuel Oil

Percent Sulfur: Trace/0.2 Percent Ash: Neg/Neg

Density: NA/7.21 lbs/gal Typical Percent Nitrogen: Neg/0.2

Heat Capacity: 1026 Btu/ft^3/19430 BTU/lb NA/140,090 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average NA Maximum NA

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid and solid wastes will be disposed of in either sanitary sewer system or sanitary land fill

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 22 inches ~~XX~~

Gas Flow Rate: 23,320 ACFM Gas Exit Temperature: 700 °F.

Water Vapor Content: 5 % Velocity: 145 FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation. Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See Attachment B
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Not Applicable
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment C
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment D
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section IIIC

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Part F

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. See Part F

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to *manufacturing processes:*

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See Item 10

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

The BACT proposed for NOx is natural gas firing with the ignition timing set as recommended by the manufacturer. Lower NOx emissions could be achieved by retarding the pilot fuel injection, but at the cost of decreasing fuel efficiency. Since air quality impacts are only 16 percent of the standard optimum fuel efficiency is considered the best available control technology.

*Applicant must provice this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data — Not Applicable

1. _____ no sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

Period of monitoring ___/___/___ (month day year) to ___/___/___ (month day year)

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 64 (month day year) to 12 / 31 / 64 (month day year)

2. Surface data obtained from (location) NA

3. Upper air (mixing height) data obtained from (location) NA

4. Stability wind rose (STAR) data obtained from (location) Daytona (WBAN 12834)

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

~~Pollutant~~	Emission Rate
NOx	7.0 grams/sec
~~TSP~~	
SO^2	_____ grams/sec

E. Emission Data Used in Modeling — see permit application and Attachment F

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. — See Attachment F

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

The installation of this unit will improve the reliability of the community electrical system without significant social, economic, or environmental impacts.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT A

(Reference to Permit Section II)

1. Volusia County is not a non-attainment area for any pollutant.

2&3. The existing plant is not a major source for any pollutant so PSD review does not apply to any pollutant that does not increase 250 TPY with this modification. PSD Section (Attachment F) Table F-1, shows that the proposed expansion is a major source for nitrogen dioxide, thus both BACT and PSD review apply for this pollutant.

4. On July 23, 1979, NSPS were proposed for internal combustion engines; these standards were to become effective for engines which commenced construction after January 23, 1982, and would be applicable to dual fuel engines with displacements greater than 560 cubic inches per cylinder. The two proposed units each have a displacement of 1037 cubic inches per cylinder and would be required to meet the standard. However, these standards have not yet been adopted by law.

5. NESHAPS regulations do not apply to this type of source.

ATTACHMENT B

Colt Industries

Fairbanks Morse
Engine Division
701 Lawton Avenue
Beloit, Wisconsin 53511
608/364-4411

(206608)1

June 11, 1982

Environmental Science & Engr, Inc.
P. O. Box #ESE
Gainesville, Florida 32602

Attention: Mr. Michael H. Dybevick

Subject: Two (2) 12 Cyl - 38TDD 8-1/8 OP Engines
Relocated Gensets
Exhaust Emissions Data

Dear Mr. Dybevick:

At the request of our customer, Mr. Ed Berrier - Plant Supt. at the New Smyrna Beach Generating Facility, we have been instructed to advise you directly as to the exhaust emissions relative to the two (2) units planned for this installation. The data is as follows:

Unit No. 1 - 12 Cyl 38TDD 8-1/8 OP - Turbo Blower Series
Rated 2880 BHP @ 720 RPM - S/N 970348

Swoope #3

Mode		Diesel		Dual Fuel
NO_x	- GM/BHP-HR	10.0		9.0
CO	- GM/BHP-HR	1.2		1.4
HC	- GM/BHP-HR	.3		.4 ← non-methane
*	Particulate - GM/BHP-HR	.16	based on	.04
*	SO_2 - GM/BHP-HR	1.0	0.3% S →	.1
	Smoke - Bosch Units	.8		.2

Unit No. 2 - 12 Cyl - 38TDD 8-1/8 OP - Turbo Blower Series
Rated 3168 BHP @ 720 RPM - S/N 873068

Swoope #4

Mode		Diesel		Dual Fuel
NO_x	- GM/BHP-HR	9.0		8.0
CO	- GM/BHP-HR	1.2		1.4
HC	- GM/BHP-HR	.3		1.2 ← this is total HC by mistake
*	Particulate - GM/BHP-HR	.18	based on	.04
*	SO_2 - GM/BHP-HR	1.0	0.3% S →	.1
	Smoke - Bosch Units	.9		.2

Non-methane is ~0.5
(conversation with Ed. Bethea 6/18/82)

All Emission Values are for typical injection timings at each rating. These valves (*) are calculated from smoke emissions and for .3% sulfur fuel.

Should any additional information be required with respect to the foregoing, please feel free to contact the writer at your convenience.

Very truly yours,

COLT INDUSTRIES OPERATING CORP
FAIRBANKS MORSE ENGINE DIVISION

E. L. Betker
Contract Administrator

ELB:flb

cc: Al Belvedere - Beloit
Ed Berrier - New Smyrna Beach, Fla.
H. Dahlman - Beloit
H. Keinschrodt - Daytona Beach, Fla.
W. Marx - Houston Sales

SGS Control Services Inc.

Redwood Petroleum and Petrochemical division

825 Wynkoop Road
P O Box 5351
Tampa, Florida 33675
Tel (813) 247-3984
TWX (810) 876-2927

June 7, 1982

TO WHOM IT MAY CONCERN

Corrected Certificate

to accompany Certificate No

Analysis Certificate

Vessel Shore Tank No. 18
Receiver *Belcher Oil Company, Port Canaveral, Florida
Cargo No.2 Fuel Oil File No. 37434

Sample Marked Shore Tank No. 18 (Top, Middle and Bottom) (6-4-82)
Lab Reference No LP-2070-82
Sample Description No. 6 Fuel Oil
Submitted By SGS Control Services Inc.

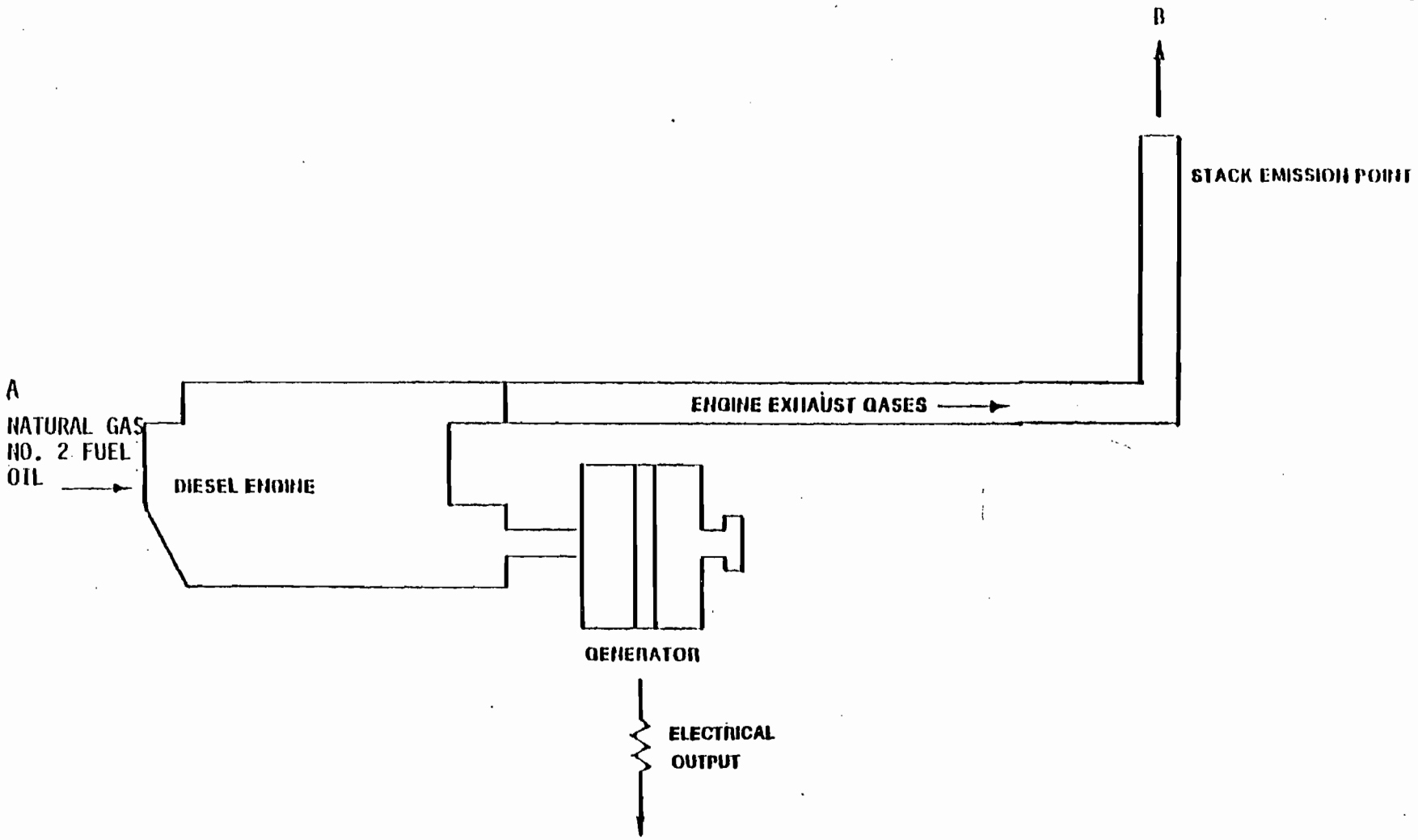
In accordance with your instructions per Mr. Dick Reed, we proceeded to *Belcher Oil Company, Port Canaveral, Florida on June 4, 1982 for the purpose of drawing a top, middle and bottom sample from Shore Tank No. 18. A portion of this sample was submitted to our Tampa laboratory for analytical findings. We now report to you as follows:

TEST	METHOD		RESULT
GRAVITY, A.P.I. @ 60°F	ASTM D-287		36.8
FLASH, °F (PMCC)	ASTM D-93		150
SEDIMENT & WATER, VOL.%	ASTM D-96		Trace
S.U.S. VISCOSITY, @ 100?F	ASTM D-445		33.5
POUR POINT, °F	ASTM D-97		Below 0°F
SULFUR, WT. %	ASTM D-1552		0.12
RAMSBOTTOM CARBON RES.,WT.% (10% BOTTOM)	ASTM D-524		0.14
CETANE INDEX	ASTM D-976		45.4
DISTILLATION, °F	ASTM D-86	I.B.P.	356
		5%	388
		10%	404
		20%	422
		90%	570
		END POINT	634
		% RECOVERY	98.5
		% LOSS	1.5
TRACE METALS	A.A.	CALICUM, ppm	None Detected
		LEAD, ppm	0.3
		POTASSIUM, ppm	0.1
		SODIUM, ppm	0.1
		VANADIUM, ppm	0.2

SGS CONTROL SERVICES INC.

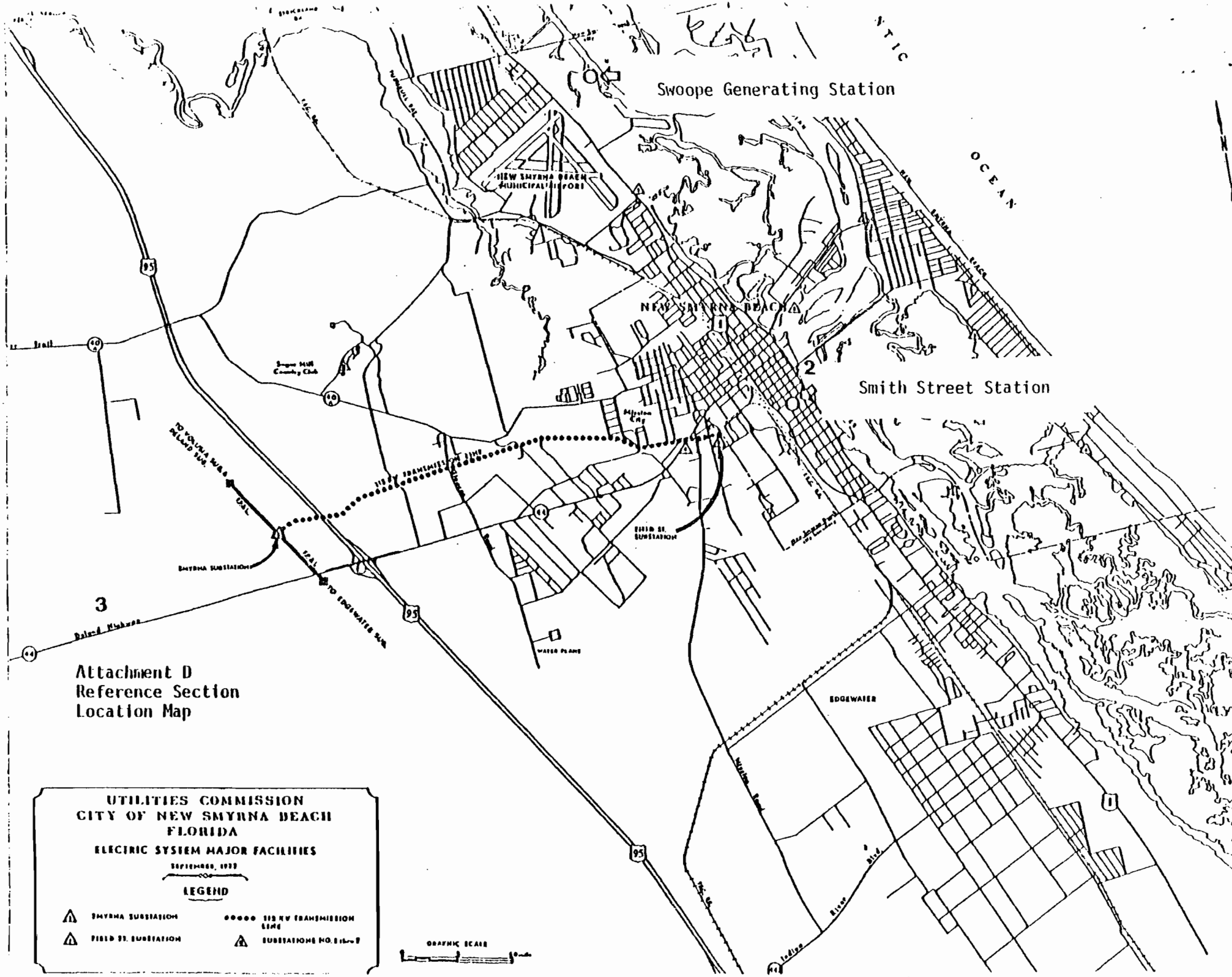
R. S. Sonngen
Operations Department

RSS/sl

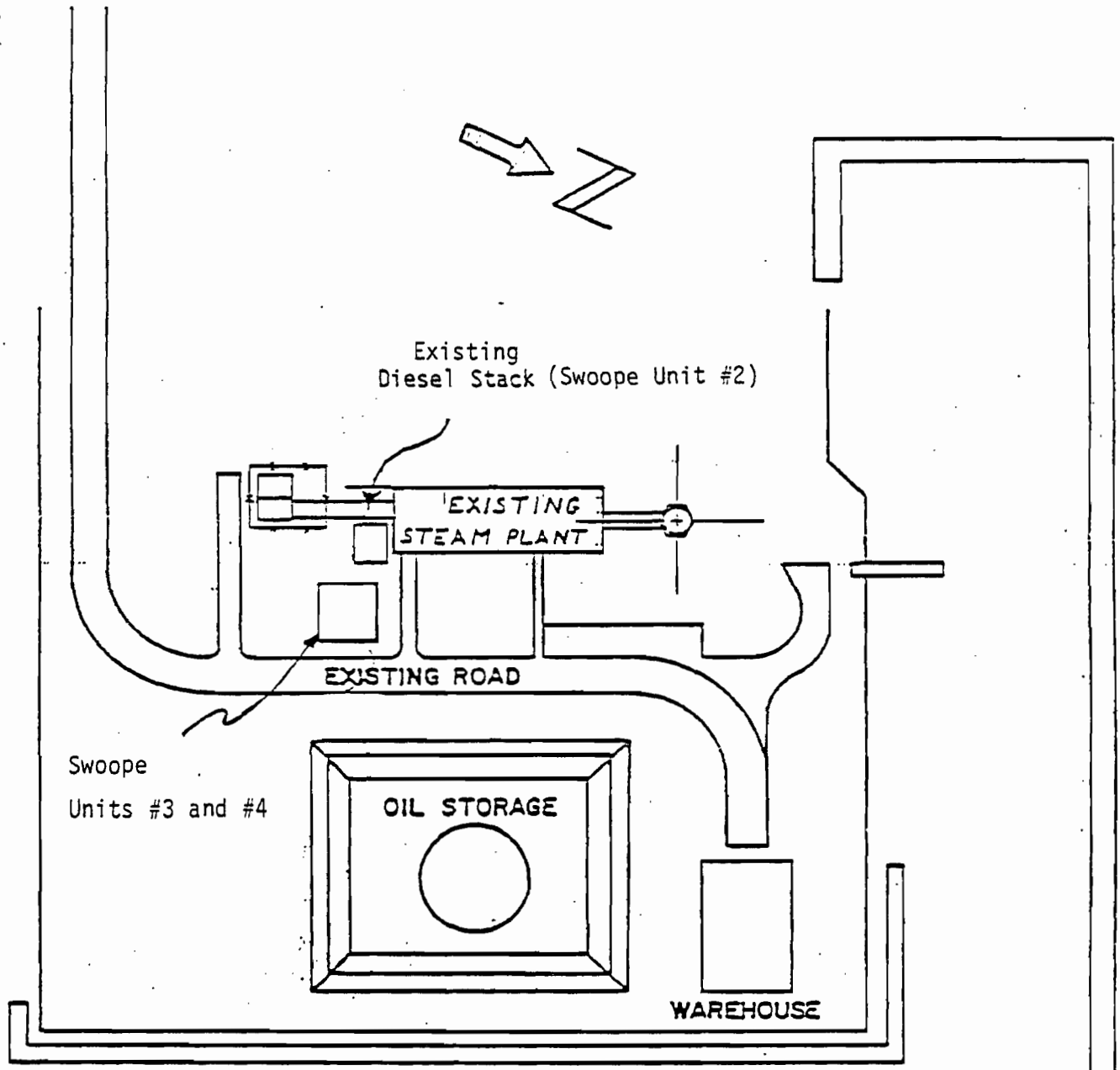


Attachment C: Reference Section V 6

FLOW DIAGRAM



Attachment D
Reference Section
Location Map



INTRACOASTAL WATERWAY

Attachment E
Reference Section V 7
Utility Plot Plan

REV.	DATE	BY	REVISIONS

UTILITIES COMMISSION
CITY OF NEW SMYRNA BEACH, FL.

Swoope Generating Station-
Plot Plan

DWN. RLW	SCALE SHOWN	REV. 0
CKD.	DATE 3-3-81	SAA-109
APP.		

ATTACHMENT F
PSD ANALYSIS

The Swoope Generating Station currently consists of a 116 X 10^6 Btu/hr steam generator (Swoope #1) and a 910 KW gas diesel generator (Swoope #2), which is limited by permit condition to a 70 percent capacity factor. Neither of these sources are in a category listed in 40 CFR 52.21 or FAC 17-2, and Table F-1 shows that current emission levels of all pollutants are below 250 TPY. The current configuration is therefore not a major source.

The proposed modification is an addition of two more gas diesel units, and an increase to 100 percent capacity factor for Swoope #2. Table F-1 shows that the change would be a major source for NOx only, and requires PSD review for this pollutant. The source description and control technology review components of the PSD review are contained in the accompanying construction permit application. This attachment describes the air quality impact analysis and its results.

Both state and federal regulations contain only annual average standards for NOx, so modeling was performed with the EPA approved ISC long term model. One year (1964) of surface observations from Daytona International Airport were summarized in STAR format and input to the model. The stack parameters are shown in Table F-2. A rectangular grid with 100 meter spacing was used, and all sources were assumed to emit at maximum allowable rates 24 hours a day, every day of the year. The attached computer output contains the results of two model runs. The first run modeled the impacts of the entire plant, the second run modeled the impacts of the two new units (Swoope #3 and #4) and the increased emissions due to the increased capacity factor for Swoope #2.

Both state and federal regulations require pre-construction monitoring unless the impacts of the modification are below certain de minimis levels. For NOx, the de minimis level is 14 ug/ m^3, annual average. The maximum impact of the proposed modification is 11 ug/m^3, and therefore the project may be exempted from the PSD pre-construction monitoring requirement.

The state and federal air quality standard for NOx is 100 ug/m^3. The highest predicted annual average impact due to the Swoope Generating Station is 16 ug/m^3. The only other major point source of NOx within 40 km is the New Smyrna Beach Smith Street station (see Attachment D). Since the Smith Street station also consists of gas diesels, and the maximum impacts of the Swoope Generating Station were small relative to the standard and occurred within 800 meters of the plant, no other sources were modeled for interaction. The nearest NOx monitoring data available are from a gas bubbler station located 1.5 miles north of the FPL Sanford power plant, about 25 miles southwest of the Swoope Station, (site code 10-4600-001-J-02). In 1980, the annual average NOx concentration at this site was 22.5 ug/m^3. Even if this value was used directly as a background concentration, the projected impacts of the Swoope Generating Station are low enough to provide reasonable assurance that air quality standards will not be exceeded.

Table F-1. Annual Emissions From Swoope Generating Station

	Particulate Matter	Sulfur Dioxide	Carbon Monoxide	Nitrogen Oxides	Hydrocarbons
Current					
Swoope #1 (steam)*	27	1	5	140	8
Swoope #2 (diesel)*	0.1	0.3	12	94	37
Total	27	1	17	234	45
Projected					
Swoope #1 (steam)*	27	1	5	140	8
Swoope #2 (diesel)* (at 100% capacity factor)	0.2	0.4	17	134	53
Swoope #3 (diesel)+	1	2	39	250	11
Swoope #4 (diesel)+	1	2	43	245	15
Total	29	5	104	769	87
Net Increase	2	4	87	535	42

*based on Swoope #2 permit application (AC64-43484) and revisions in June 26, 1981, letter to C. M. Collins FDER ST. Johns River District from K. F. Kosky, ESE, Inc.

+based on manufacturers letter, Attachment B.

Note: Swoope #2 hydrocarbons reported as total HC, Swoope #3 and #4 reported as non-methane.

Table F-2. Modeling Parameters - Swoope Generating Station

Source	NOx Emission Rate (g/s)	Stack Height (m)	Gas Temperature (k)	Exist Velocity (m/s)	Diameter (m)
Swoope #1	4.04	38.1	644	9.5	1.38
Swoope #2	3.84	6.1	589	43.9	0.36
Swoope #3	7.2	6.1	644	41.2	0.56
Swoope #4	7.0	6.1	644	44.2	0.56

- ISCLT INPUT DATA - and new only

NUMBER OF SOURCES = 3/2
NUMBER OF X AXIS GRID SYSTEM POINTS = 21
NUMBER OF Y AXIS GRID SYSTEM POINTS = 21
NUMBER OF SPECIAL POINTS = 0
NUMBER OF SEASONS = 1
NUMBER OF WIND SPEED CLASSES = 6
NUMBER OF STABILITY CLASSES = 6
NUMBER OF WIND DIRECTION CLASSES = 16
FILE NUMBER OF DATA FILE USED FOR REPORTS = 1
THE PROGRAM IS RUN IN RURAL MODE
CONCENTRATION (DEPOSITION) UNITS CONVERSION FACTOR =0.10000000E+07
ACCELERATION OF GRAVITY (METERS/SEC**2) = 9.800
HEIGHT OF MEASUREMENT OF WIND SPEED (METERS) = 7.000
ENTRAINMENT PARAMETER FOR UNSTABLE CONDITIONS = 0.600
ENTRAINMENT PARAMETER FOR STABLE CONDITIONS = 0.600
CORRECTION ANGLE FOR GRID SYSTEM VERSUS DIRECTION DATA NORTH (DEGREES) = 0.000
DECAY COEFFICIENT =0.00000000E+00
PROGRAM OPTION SWITCHES = 1, 1, 1, 0, 0, 3, 2, 2, 3, 0, 0, 0, 0,-1,-1, 0, 0, 1, 1, 0,
ALL SOURCES ARE USED TO FORM SOURCE COMBINATION 1
DISTANCE X AXIS GRID SYSTEM POINTS (METERS)= -1000.00, -900.00, -800.00, -700.00, -600.00, -500.00,
-400.00, -300.00, -200.00, -100.00, 0.00, 100.00, 200.00, 300.00, 400.00, 500.00,
600.00, 700.00, 800.00, 900.00, 1000.00,
DISTANCE Y AXIS GRID SYSTEM POINTS (METERS)= -1000.00, -900.00, -800.00, -700.00, -600.00, -500.00,
-400.00, -300.00, -200.00, -100.00, 0.00, 100.00, 200.00, 300.00, 400.00, 500.00,
600.00, 700.00, 800.00, 900.00, 1000.00,

- AMBIENT AIR TEMPERATURE (DEGREES KELVIN) -

	STABILITY CATEGORY 1	STABILITY CATEGORY 2	STABILITY CATEGORY 3	STABILITY CATEGORY 4	STABILITY CATEGORY 5	STABILITY CATEGORY 6
SEASON 1	300.0000	300.0000	300.0000	295.0000	289.0000	

- MIXING LAYER HEIGHT (METERS) -

SEASON 1

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.21840E+04	0.21840E+04	0.21840E+04	0.21840E+04	0.21840E+04	0.21840E+04
STABILITY CATEGORY 2	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04
STABILITY CATEGORY 3	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04
STABILITY CATEGORY 4	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04	0.14560E+04
STABILITY CATEGORY 5	0.10000E+05	0.10000E+05	0.10000E+05	0.10000E+05	0.10000E+05	0.10000E+05

- ISCLT INPUT DATA (CONT.) - and new only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 1

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00016100	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00020800	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00014100	0.00034200	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00023400	0.00056900	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00014100	0.00034200	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 2

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00110700	0.00113800	0.00102500	0.00000000	0.00000000	0.00000000
22.500	0.00092700	0.00034200	0.00045500	0.00000000	0.00000000	0.00000000
45.000	0.00014300	0.00045500	0.00102500	0.00000000	0.00000000	0.00000000
67.500	0.00032900	0.00056900	0.00250500	0.00000000	0.00000000	0.00000000
90.000	0.00087300	0.00182100	0.00318800	0.00000000	0.00000000	0.00000000
112.500	0.00066400	0.00068300	0.00091100	0.00000000	0.00000000	0.00000000
135.000	0.00092700	0.00022800	0.00045500	0.00000000	0.00000000	0.00000000
157.500	0.00051500	0.00068300	0.00022800	0.00000000	0.00000000	0.00000000
180.000	0.00192200	0.00182500	0.00045500	0.00000000	0.00000000	0.00000000
202.500	0.00060360	0.00211400	0.00068300	0.00000000	0.00000000	0.00000000
225.000	0.00066400	0.00068300	0.00102500	0.00000000	0.00000000	0.00000000
247.500	0.00103600	0.00091100	0.00136600	0.00000000	0.00000000	0.00000000
270.000	0.00062200	0.00102500	0.00113500	0.00000000	0.00000000	0.00000000
292.500	0.00043700	0.00091100	0.00034200	0.00000000	0.00000000	0.00000000
315.000	0.00122100	0.00182500	0.00045500	0.00000000	0.00000000	0.00000000
337.500	0.00043700	0.00091100	0.00034200	0.00000000	0.00000000	0.00000000

52

- ISCLT INPUT DATA (CONT.) - and now only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 3

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00067800	0.00170800	0.00330100	0.00148000	0.00045500	0.00000000
22.500	0.00013200	0.00056900	0.00421199	0.00227700	0.00011400	0.00000000
45.000	0.00027300	0.00056900	0.00455400	0.00227700	0.00011400	0.00000000
67.500	0.00007900	0.00034200	0.00762799	0.00466799	0.00034200	0.00000000
90.000	0.00029100	0.00125200	0.01229499	0.00853799	0.00000000	0.00000000
112.500	0.00015900	0.00068300	0.00557799	0.00318800	0.00034200	0.00000000
135.000	0.00032600	0.00079700	0.00182100	0.00034200	0.00000000	0.00000000
157.500	0.00010600	0.00045500	0.00193500	0.00034200	0.00000000	0.00000000
180.000	0.00053700	0.00170800	0.00318800	0.00045500	0.00000000	0.00000000
202.500	0.00015900	0.00068300	0.00296000	0.00056900	0.00022800	0.00000000
225.000	0.00059000	0.00193500	0.00421199	0.00102500	0.00000000	0.00000000
247.500	0.00055600	0.00239100	0.00432600	0.00011400	0.00000000	0.00000000
270.000	0.00123100	0.00227700	0.00261800	0.00136600	0.00000000	0.00000000
292.500	0.00090500	0.00148000	0.00204900	0.00011400	0.00011400	0.00000000
315.000	0.00037000	0.00159400	0.00125200	0.00022800	0.00000000	0.00000000
337.500	0.00021200	0.00091100	0.00227700	0.00022800	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 4

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00122200	0.00387100	0.01411698	0.03403896	0.01206699	0.00113800
22.500	0.00040300	0.00125200	0.00751399	0.01445798	0.00170800	0.00022800
45.000	0.00023500	0.00091100	0.00640899	0.01092899	0.00113800	0.00022800
67.500	0.00047300	0.00182100	0.01001799	0.01718998	0.00125200	0.00011400
90.000	0.00055100	0.00250500	0.02014998	0.02834697	0.00159400	0.00022800
112.500	0.00035600	0.00193500	0.01343399	0.02128898	0.00216300	0.00011400
135.000	0.00053700	0.00239100	0.01126899	0.01092899	0.00227700	0.00000000
157.500	0.00054300	0.00182100	0.00922099	0.00637499	0.00125200	0.00022800
180.000	0.00076500	0.00432600	0.01434398	0.01254699	0.00296000	0.00079700
202.500	0.00055700	0.00148000	0.00853799	0.01104299	0.00296000	0.00079700
225.000	0.00046800	0.00284600	0.00546399	0.00751399	0.00250500	0.00056900
247.500	0.00081300	0.00364300	0.00455400	0.00899399	0.00102500	0.00045500
270.000	0.00055100	0.00250500	0.00523699	0.01115699	0.00262099	0.00239100
292.500	0.00037900	0.00227700	0.00489099	0.00375799	0.00273599	0.00068300
315.000	0.00112700	0.00239100	0.00694399	0.00671799	0.00068399	0.00034200
337.500	0.00132800	0.00216300	0.00922199	0.00648899	0.00113800	0.00068300

- ISCLT INPUT DATA (CONT.) - and new only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 5

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3600MPS)	WIND SPEED CATEGORY 4 (6.8900MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00694999	0.00842399	0.00591999	0.00000000	0.00000000	0.00000000
22.500	0.00428799	0.00523699	0.00432600	0.00000000	0.00000000	0.00000000
45.000	0.00372700	0.00546399	0.00182100	0.00000000	0.00000000	0.00000000
67.500	0.00357400	0.00470099	0.00432600	0.00000000	0.00000000	0.00000000
90.000	0.00888199	0.01183999	0.01001799	0.00000000	0.00000000	0.00000000
112.500	0.00430499	0.00705799	0.00705799	0.00000000	0.00000000	0.00000000
135.000	0.01047199	0.01559698	0.00375700	0.00000000	0.00000000	0.00000000
157.500	0.00815999	0.01172599	0.00364300	0.00000000	0.00000000	0.00000000
180.000	0.01391298	0.02402097	0.00660299	0.00000000	0.00000000	0.00000000
202.500	0.00745999	0.01058699	0.00296000	0.00000000	0.00000000	0.00000000
225.000	0.00954299	0.01218099	0.00296000	0.00000000	0.00000000	0.00000000
247.500	0.01129099	0.01377498	0.00318800	0.00000000	0.00000000	0.00000000
270.000	0.01047599	0.01024599	0.00352900	0.00000000	0.00000000	0.00000000
292.500	0.00750399	0.00853799	0.00148000	0.00000000	0.00000000	0.00000000
315.000	0.01033499	0.01422998	0.00557799	0.00000000	0.00000000	0.00000000
337.500	0.00776299	0.00944899	0.00535099	0.00000000	0.00000000	0.00000000

- VERTICAL POTENTIAL TEMPERATURE GRADIENT (DEGREES KELVIN/METER) -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.000100E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 2	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 3	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 4	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 5	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01

- WIND PROFILE POWER LAW EXPONENTS -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00
STABILITY CATEGORY 2	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00
STABILITY CATEGORY 3	0.200000E+00	0.200000E+00	0.200000E+00	0.200000E+00	0.200000E+00	0.200000E+00
STABILITY CATEGORY 4	0.250000E+00	0.250000E+00	0.250000E+00	0.250000E+00	0.250000E+00	0.250000E+00
STABILITY CATEGORY 5	0.300000E+00	0.300000E+00	0.300000E+00	0.300000E+00	0.300000E+00	0.300000E+00

- SOURCE INPUT DATA -

C A R D	T A F E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV- ATION (M)	/ / /	- SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	38.10	0.00		GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 5.50, STACK DIAMETER (M)= 1.380, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.04000E+00
		Swoope#1 Steam unit							
WARNING - DISTANCE BETWEEN SOURCE 1 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED									
X		2	STACK	0.00	0.00	6.10	0.00		GAS EXIT TEMP (DEG K)= 589.00, GAS EXIT VEL. (M/SEC)= 43.90, STACK DIAMETER (M)= 0.360, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.84000E+00
		Swoope#2 Existing Diesel							
WARNING - DISTANCE BETWEEN SOURCE 2 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED									
X		3	STACK	0.00	0.00	6.10	0.00		GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 42.70, STACK DIAMETER (M)= 0.560, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 1.42400E+01
		Swoope #3 & #4 Proposed Combined							
WARNING - DISTANCE BETWEEN SOURCE 3 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED									

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-1000.000	-900.000	-800.000	-700.000	-600.000	-500.000	-400.000	-300.000	-200.000
	- CONCENTRATION -								
1000.000	6.125322	6.127700	6.094093	6.019985	5.903982	5.750503	5.766286	7.027227	8.411560
900.000	6.356190	6.562686	6.538740	6.464639	6.336609	6.156047	5.930664	6.638479	8.222806
800.000	6.608039	6.840491	7.033495	6.959665	6.801756	6.533055	6.225493	6.464143	8.059186
700.000	6.885277	7.149355	7.366058	7.504187	7.254660	6.901388	6.482676	6.076775	7.490542
600.000	7.194715	7.498895	7.734884	7.816087	7.742961	7.266974	6.676906	6.082884	6.595673
500.000	7.546048	7.900994	8.133423	8.204315	8.057222	7.643398	6.811241	5.924693	5.378316
400.000	8.055733	8.369009	8.642580	8.730305	8.529869	7.936595	6.917276	5.617219	4.515312
300.000	9.270226	9.495520	9.558521	9.481441	9.293653	8.578476	7.194072	5.255514	3.547310
200.000	10.560844	10.957678	11.205563	11.196426	10.786316	9.825712	8.184858	5.543178	3.633295
100.000	11.878965	12.509329	13.024607	13.297129	13.123604	12.206591	10.177889	6.863959	2.344543
0.000	13.175607	14.069468	14.932831	15.609529	15.906578	15.455215	13.770771	10.179537	6.265150
-100.000	11.479237	12.059605	12.524664	12.754679	12.562798	11.683037	9.802814	6.831932	4.048810
-200.000	9.757004	10.048800	10.185202	10.073137	9.595356	8.657013	7.427290	5.412742	3.138496
-300.000	8.083979	8.146931	8.041805	7.836459	7.696771	7.169133	6.144471	4.714812	4.265856
-400.000	6.523219	6.666589	6.814183	6.816475	6.600318	6.095775	5.297487	5.407205	5.670534
-500.000	5.780070	5.952270	6.020259	5.953754	5.715382	5.282607	5.591874	5.971330	6.611378
-600.000	5.209709	5.307322	5.329631	5.225793	4.994627	5.364688	5.777692	6.268412	7.558534
-700.000	4.695052	4.736332	4.715121	4.609434	4.974573	5.372901	5.816212	6.325062	8.071970
-800.000	4.234854	4.235273	4.180302	4.530062	4.907113	5.299863	5.730793	6.542064	8.245663
-900.000	3.826123	3.797574	4.095892	4.421498	4.775195	5.156284	5.559735	6.678347	8.187111
-1000.000	3.464766	3.718670	3.994530	4.292553	4.612313	4.952946	5.426483	6.658609	7.965911

- GRID SYSTEM RECEPTORS -
- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
				- CONCENTRATION -					
1000.000	9.869898	11.351654	9.954981	8.567457	7.239342	6.018775	5.742392	5.614089	5.464535
900.000	9.972669	11.668583	10.092953	8.553875	7.136763	6.168166	6.034616	5.897486	5.755775
800.000	9.866144	11.817623	10.036242	8.363705	6.086261	6.375821	6.270579	6.173037	6.035849
700.000	9.439864	11.630123	9.601034	7.935769	6.610131	6.598605	6.455699	6.406480	6.311474
600.000	8.565241	10.969043	8.907347	7.227982	6.529463	6.538840	6.592488	6.618515	6.517968
500.000	7.140826	9.615231	7.623003	6.270267	6.236110	6.458998	6.697357	6.717663	6.708563
400.000	5.176396	7.472694	5.840555	5.353290	5.737008	6.315817	6.588545	6.895285	6.911712
300.000	2.920495	4.577614	3.767562	4.160435	5.157791	5.825749	6.482625	6.543979	7.170019
200.000	1.252886	1.858442	2.132963	3.936510	4.179140	5.506903	6.573929	7.045996	7.294359
100.000	0.494475	0.328586	0.988206	2.076285	3.765381	5.489461	6.693579	7.105307	7.334886
0.000	2.162560	0.990600	0.761915	2.792976	4.605332	6.317080	7.246998	7.624152	7.644953
-100.000	1.270458	0.960945	0.429746	1.256586	2.570521	4.214346	5.387666	6.760357	6.560042
-200.000	2.493481	4.143008	1.435534	2.429105	3.112972	3.619251	4.031170	4.720282	5.239251
-300.000	4.745513	7.685790	3.847863	3.685576	4.915764	4.951458	4.882779	4.720589	4.483781
-400.000	7.364364	10.736780	6.724641	4.526872	5.552440	6.444570	6.626629	5.610029	5.195459
-500.000	9.097662	12.203585	8.792476	5.948792	6.041991	6.552313	7.998196	6.459358	5.885485
-600.000	9.471312	12.724[illegible]7	9.70[illegible]342	7.532051	6.299523	6.561132	6.976[illegible]3	7.145100	6.468727

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - CONCENTRATION -								
-700.000	10.237406	12.561590	10.150810	7.966827	6.318871	6.453076	6.639539	6.804550	6.912958
-800.000	10.124470	12.066780	10.116732	8.277456	6.653737	6.250275	6.361072	6.465375	6.500518
-900.000	9.796532	11.413338	9.836867	8.301712	6.892848	5.985910	6.046538	6.089931	6.108262
-1000.000	9.359263	10.721052	9.428007	8.147799	6.925193	5.804323	5.689330	5.724257	5.742361

Y AXIS (DISTANCE, METERS)	800.000	900.000	1000.000
	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - CONCENTRATION -		
1000.000	5.351303	5.214439	5.075349
900.000	5.608562	5.455925	5.299848
800.000	5.877198	5.704020	5.534438
700.000	6.143172	5.961765	5.778400
600.000	6.404109	6.229158	6.031364
500.000	6.640710	6.506221	6.294152
400.000	6.897082	6.788972	6.539887
300.000	7.102132	6.893804	6.608261
200.000	7.142980	6.943727	6.671797
100.000	7.251471	7.024717	6.727612
0.000	7.453820	7.152027	6.803570
-100.000	6.403279	6.289964	6.090511
-200.000	5.441939	5.474588	5.400136
-300.000	4.611043	4.736916	4.743624
-400.000	4.785154	4.395904	4.144448
-500.000	5.360918	4.879607	4.419462
-600.000	5.864269	5.293977	4.790988
-700.000	6.231319	5.628532	5.102954
-800.000	6.485319	5.881890	5.350441
-900.000	6.698072	6.059633	5.535456
-1000.000	5.738455	5.711640	5.664222

- SOURCE INPUT DATA -

C A R D	T A P E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV- ATION (M)	- SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 589.00, GAS EXIT VEL. (M/SEC)= 43.90, STACK DIAMETER (M)= 0.360, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0

Swoope #2 Existing Diesel
Emission rate corresponds to
increase above 70% capacity factor limitation.

- SOURCE STRENGTHS (GRAMS PER SEC) -

SEASON 1	SEASON 2	SEASON 3	SEASON 4
1.15000E+00			

WARNING - DISTANCE BETWEEN SOURCE 1 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED

C A R D	T A P E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV- ATION (M)	- SOURCE DETAILS DEPENDING ON TYPE -
X		2	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 42.70, STACK DIAMETER (M)= 0.560, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0

Swoope #3 & #4 Combined

- SOURCE STRENGTHS (GRAMS PER SEC) -

SEASON 1	SEASON 2	SEASON 3	SEASON 4
1.42400E+01			

WARNING - DISTANCE BETWEEN SOURCE 2 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-1000.000	-900.000	-800.000	-700.000	-600.000	-500.000	-400.000	-300.000	-200.000
	- CONCENTRATION -								
1000.000	4.529756	4.530603	4.511012	4.458233	4.371409	4.254956	4.263452	5.188981	6.266468
900.000	4.710518	4.858240	4.843405	4.787918	4.686647	4.544641	4.369836	5.021120	6.132467
800.000	4.914683	5.079499	5.210071	5.147761	5.016402	4.796514	4.548201	4.099167	5.817814
700.000	5.136922	5.321885	5.464080	5.538367	5.320856	5.018771	4.668899	4.348303	5.300343
600.000	5.382028	5.593119	5.741446	5.755008	5.635359	5.215117	4.713485	4.232643	4.523201
500.000	5.658475	5.903630	6.037080	6.023872	5.819725	5.394122	4.680183	3.961777	3.533211
400.000	6.051797	6.265864	6.419033	6.399251	6.124184	5.521543	4.598712	3.564828	1.762926
300.000	6.950764	7.094189	7.094568	6.957702	6.661875	5.923663	4.682642	3.135205	1.962312
200.000	7.907308	8.164433	8.276503	8.153919	7.686349	6.776796	5.296220	3.207801	1.309849
100.000	8.886695	9.308157	9.599226	9.646774	9.284389	8.294069	6.462439	3.851166	1.837859
0.000	9.853601	10.469259	11.008928	11.332335	11.268307	10.526871	8.779190	5.721337	3.732776
-100.000	8.584108	8.971802	9.231838	9.260172	8.906273	7.978684	6.299791	3.949928	2.276096
-200.000	7.298388	7.480745	7.520294	7.341415	6.861167	6.030926	4.925282	3.290251	1.714410
-300.000	6.053619	6.076718	5.962884	5.757898	5.557244	5.038174	4.145288	3.009334	2.599359
-400.000	4.887339	4.983474	5.065331	5.019750	4.790734	4.332579	3.663387	3.624520	3.780043
-500.000	4.329359	4.449526	4.481150	4.399299	4.177841	3.807566	3.968241	4.176242	4.569763
-600.000	3.899849	3.967222	3.972616	3.875276	3.678033	3.921675	4.191241	4.519220	5.395178
-700.000	3.511554	3.539032	3.516667	3.428170	3.690674	3.973131	4.287094	4.652943	5.890690
-800.000	3.163233	3.161773	3.117146	3.380041	3.661081	3.950712	4.268748	4.863049	6.102528
-900.000	2.852649	2.830565	3.058518	3.306043	3.573822	3.861777	4.166894	4.994776	6.110559
-1000.000	2.576872	2.772741	2.984722	3.212920	3.457094	3.716992	4.076013	4.995479	5.986277

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
1000.000	7.280466	8.376677	7.351406	6.337106	5.367568	4.477124	4.267008	4.163865	4.058664
900.000	7.297355	8.543680	7.396438	6.285521	5.269374	4.575168	4.472225	4.366213	4.255118
800.000	7.116298	8.526773	7.254468	6.074090	5.046179	4.691741	4.620716	4.554272	4.453994
700.000	6.659750	8.203991	6.842833	5.658136	4.784166	4.728436	4.713701	4.694532	4.642012
600.000	5.816922	7.452812	6.081230	5.018644	4.611780	4.664504	4.754748	4.618905	4.768815
500.000	4.586627	6.178986	4.942447	4.205564	4.257614	4.502133	4.762873	4.831609	4.872447
400.000	3.964259	4.409218	3.522186	3.386473	3.754132	4.292801	4.572982	4.826157	4.979425
300.000	1.528748	2.354199	2.049510	2.423868	3.224925	3.798440	4.397372	4.859688	5.129473
200.000	0.637268	0.984886	1.189432	1.626314	2.418874	3.453572	4.350299	4.885594	5.142177
100.000	0.288909	0.184037	0.610358	1.128199	2.062204	3.402621	4.393205	4.987957	5.252612
0.000	1.303775	0.309080	0.449373	1.675433	2.608347	4.020135	4.913198	5.376232	5.525256
-100.000	0.813881	0.575565	0.254399	0.684745	1.414449	2.620183	3.591733	4.227263	4.561974
-200.000	1.385221	2.350532	0.738085	1.256501	1.774791	2.247648	2.668141	3.318553	3.737797
-300.000	2.628058	4.129972	2.088264	2.113570	3.013945	3.196194	3.288655	3.285767	3.195413
-400.000	4.633548	6.712242	4.171715	3.196665	3.602941	4.341627	4.176973	3.971232	3.733903
-500.000	6.165556	[illegible]	[illegible]	[illegible]	4.109992	4.547927	[illegible]	4.441565	[illegible]
-600.000	7.162424	9.317750	[illegible]	5.074903	4.432724	4.667537	[illegible]	[illegible]	[illegible]

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - -100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
-700.000	7.445539	9.141445	7.348537	5.749539	4.562780	4.676843	4.841251	4.990833	5.092170
-800.000	7.481155	8.919882	7.450238	6.079086	4.880642	4.587487	4.679839	4.768476	4.800737
-900.000	7.305363	8.512440	7.316545	6.160236	5.104819	4.427017	4.472134	4.505086	4.517848
-1000.000	7.012303	8.032454	7.049086	6.079269	5.154711	4.307981	4.217338	4.239990	4.249018

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - 800.000	900.000	1000.000
	- CONCENTRATION -		
1000.000	3.949165	3.835467	3.719000
900.000	4.137527	4.013654	3.890831
800.000	4.331511	4.199357	4.067876
700.000	4.522067	4.380280	4.249101
600.000	4.702225	4.580199	4.434093
500.000	4.856625	4.775698	4.623975
400.000	5.022134	4.973322	4.802281
300.000	5.156453	5.050423	4.862052
200.000	5.187934	5.095057	4.919748
100.000	5.284184	5.170849	4.973930
0.000	5.467811	5.288986	5.047168
-100.000	4.672099	4.633645	4.505657
-200.000	3.953654	4.018964	3.983482
-300.000	3.340763	3.466486	3.487743
-400.000	3.476663	3.212633	3.035532
-500.000	3.918939	3.578633	3.242232
-600.000	4.309852	3.894997	3.522620
-700.000	4.594871	4.149644	3.757112
-800.000	4.790774	4.340483	3.940945
-900.000	4.906586	4.471251	4.075399
-1000.000	4.239617	4.211085	4.165322

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION
CITY OF NEW SMYRNA BEACH
VOLUSIA COUNTY

The City of New Smyrna Beach plans to increase electric power generation capacity an additional 4.33 megawatts. Two generators, each driven by a dual fuel twelve cylinder diesel engine, are to be installed at the Swoope generating station. The engines will use natural gas and No. 2 distillate oil as fuel.

The new installations identified as Swoope No. 3 and Swoope No. 4 will have a maximum engine heat input of 19.2 and 21.2 million Btu per hour, respectively. Both units are scheduled to operate 8760 hours per year.

Swoope No. 2, a similar existing 910 kilowatt unit is limited by permit conditions to operate at 70 percent of full load (AC 64-43484). The applicant has requested this permit condition be changed to allow unrestricted operation.

Air Contaminants Summary: (tons per year)

Source	PM	SO_2	CO	NO_x	HC
No. 3 Unit	<1	2	39	250	11
No. 4 Unit	<1	2	43	245	15
Total	2	4	82	495	26
No. 2 Unit[1]	<1	<1	5	40	16
Rate[2]	25	40	100	40	-

[1] Emissions due to increase from 70 to 100 percent operation.

[2] Significant Emission Rate, 17-2.500, FAC, Table 500-2.

The amount of NO_x emitted from the proposed sources exceed the significant emission rate and requires a BACT determination per 17-2.500(5)(c), FAC. A BACT determination is also required for Swoope No. 2 due to the relaxation of a permit limitation.

BACT Determination Requested by the Applicant:

Pollutant	Emission Limit
NO_x	Natural gas firing with the ignition timing set as recommended by the manufacturer

Date of Receipt of a BACT Application:

June 28, 1982

Date of Publication in the Florida Administrative Weekly:

July 9, 1982

Review Group Members:

Comments were obtained from the New Source Review Section, the Air Modeling Section in the Bureau of Air Quality Management, and DER St. Johns River District.

BACT Determined by DER:

*NO_x Pollutant Emission Limits

Unit 2 - 690 ppmv corrected to 15% oxygen on a dry basis

Unit 3 - 620 ppmv corrected to 15% oxygen on a dry basis

Unit 4 - 625 ppmv corrected to 15% oxygen on a dry basis

*Based on manufacturer's rated brake-specific fuel consumption at peak load. Applicant has option of using brake-specific fuel consumption as determined in the field. Test methods and operations monitoring as per the proposed NSPS 40 CFR 60.320, Subpart FF, Subsections 60.324 and 60.323.

DER Determination Rationale:

There is a proposed NSPS for stationary internal combustion engines, 40 CFR 60.320, Subpart FF. The NSPS is in administrative review and promulgation is expected in the last quarter of 1982. The consensus was that a more stringent NO_x emission limitation than the NSPS was not justified. The department has determined BACT for NO_x emissions to be based on the NSPS formula in Subpart FF, Subsection 60.322(a)(3)(ii).

$$STD = 600 \frac{10.2}{Y}$$

STD = Allowable NO_x emissions, ppmv corrected to 15% oxygen on a dry basis.

Y = Manufacturer's rated brake-specific fuel consumption at peak load (Kj/w-hr) or applicants brake-specific fuel consumption at peak load as determined in the field.

The NO_x emission limits determined as BACT are based on the manufacturer's brake-specific fuel consumption at peak load. The applicant has the option of using a brake-specific fuel consumption as determined in the field.

The NSPS was proposed July 23, 1979 (44 FR 43152) to apply to sources that commence construction after January 1982. The manufacturers of engines subject to the regulations should have had adequate time to develop a NO_x emission reduction control technique for their engines in anticipation of the NSPS being promulgated.

The applicant, therefore, should have no great difficulty in meeting the NO_x emission limits determined as BACT for Units 3 and 4. However, Unit 2 was permitted in July 1981 and that engine may require major modifications to meet the NO_x emission limit. In this case, the applicant may submit to the department actual field data indicating the inability to meet the NO_x emission limit. The department will then review the BACT determination for Unit 2 on basis of the new data presented.

The dual-fired engines serve the same application as diesel engines. In the event that natural gas should become limited the dual-fuel engines would likely operate as diesel engines. The NO_x emission limit determined as BACT also applies to diesel engines, therefore, simplifying compliance by the applicant in the event the engines are converted totally to diesel.

Fuel injection retard is an effective NO_x control technique but results in approximately a 3% increase in fuel usage. This will increase total fuel usage by 1107 cubic feet per hour of natural gas and 0.519 gallon per hour of No. 2 oil. The increased monthly cost to a consumer using 1000 kw of electricity would be approximately one dollar. The additional fuel cost is not considered excessive.

Details of the Analysis May Be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended By:

Vanessa A George
for Steve Smallwood, Chief BAQM

Date: August 18, 1982

Approved:

Terry Cole
Victoria J. Tschinkel, Secretary

Date: 8/18/82

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

August 24, 1982

Ms. Carolyn Dekle
State A-95 Coordinator
Florida State Planning and
Development Clearinghouse
Office of Planning and Budget
The Capitol
Tallahassee, Florida 32301

Dear Ms. Dekle:

RE: Preliminary Determination - New Smyrna Beach Utilities Commission, Swoope Units 3 and 4 (PSD-FL-089)

I wish to bring to your attention that the City of New Smyrna Beach Utilities Commission proposes to construct two additional gas diesel units, Swoope #3 and #4, at the Swoope Generating Station located in the City of New Smyrna Beach, Volusia County, Florida, and that emissions of air pollutants will thereby be increased. The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has reviewed the proposed construction under Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21) and reached a preliminary determination of approval, with conditions, for this construction. This approval applies only to Federal regulatory requirements and has no bearing on other State or local functions.

Please also be aware that the attached Public Notice announcing the preliminary determination, the availablility of pertinent information for public scrutiny and the opportunity for public comment will be published in a local newspaper in the near future. This notice has been mailed to you for your information and in accordance with regulatory requirements. You need take no action unless you wish to comment on the proposed construction. If you have any questions, please feel free to call Mr. Bill Thomas or myself at (904) 488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/pa
Attachment

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

October 5, 1982

Mr. P. A. Korelich, P.E.
Utilities Commission
City of New Smyrna Beach
P. O. Box 519
New Smyrna Beach, Florida 32069

Dear Mr. Korelich:

RE: Final Determination - City of New Smyrna Beach Utilities Commission, Swoope Units 3 and 4, Application for State and Federal PSD Permits (AC 64-57578, AC 64-57580, PSD-FL-089)

Enclosed please find one copy of the referenced Final Determination. State Permit Numbers AC 64-57578 and AC 64-57580 are hereby issued as of September 30, 1982, pursuant to Section 403, Florida Statutes. Final approval of the Federal PSD permit, which is incorporated with the state permit, is contingent upon review and acceptance of the permit conditions by the Environmental Protection Agency Region IV office in Atlanta. Questions concerning final issuance of the Federal permit should be directed to Mr. James T. Wilburn of the EPA office.

Acceptance of the state permit constitutes notice and agreement that the Department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement actions for violation of the conditions and requirements thereof.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/pa
cc: James T. Wilburn, EPA Region IV
Charles Collins, DER St. Johns River District
David A. Buff, Environmental Science and Engineering

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

October 5, 1982

Mr. James T. Wilburn
Chief, Air Management Branch
Air & Waste Management Division
U.S. EPA, Region IV
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Wilburn:

RE: PSD Permit Application - City of New Smyrna Beach Utilities Commission, Swoope Units 3 and 4
PSD-FL-089

Enclosed please find a copy of the proof of publication of the public notice and the Department's Final Determination for the subject project. We recommend that the applicant be granted Authority to Construct, subject to the conditions in the Final Determination.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/pa

Enclosures

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

October 5, 1982

Mr. Clem Malecki, Librarian
Brannon Memorial Library
105 Riverside Drive
New Smyrna Beach, Florida 32069

Dear Mr. Malecki:

RE: Final Determination - City of New Smyrna Beach Utilities Commission, Swoope Units 3 and 4 PSD-FL-089

Please find enclosed one copy of the Final Determination for New Smyrna Beach Utilities Commission's application for a Federal Prevention of Significant Deterioration Construction Permit. As was done with the Preliminary Determination, this information must be available upon request for a period of at least 30 days from the date of this letter.

Again, we appreciate your help in providing this valuable public service. Should you have any questions, please call me at (904) 488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa

Enclosure

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

DEC 23 1982

DER
DEC 28 1982
BAQM

Mr. P. A. Korelich, P.E.
Chief Engineer
Utilities Commission
City of New Smyrna Beach
P.O. Box 519
New Smyrna Beach, Florida 32069

RE: PSD-FL-089 - City of New Smyrna Beach

Dear Mr. Korelich:

Review of your June 28, 1982, application to construct two natural gas/diesel generating units in New Smyrna Beach, Florida, has been completed. The construction is subject to rules for the Prevention of Significant Deterioration (PSD) of Air Quality contained in 40 CFR §52.21. The Florida Department of Environmental Regulation performed the preliminary determination concerning the proposed construction and published a request for public comment on August 27, 1982. No comments were received. The final determination was performed by the Florida Department of Environmental Regulation on September 27, 1982.

The Environmental Protection Agency (EPA) has determined that the construction as described in the application meets all the applicable requirements of 40 CFR §52.21. Accordingly, pursuant to 40 CFR §124.15, the Regional Administrator has made a final decision to issue the enclosed Permit to Construct-Part I Specific Conditions and Part II General Conditions. This authority to construct, granted as of the effective date of the permit, 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 other permits issued by this agency or by other agencies. Please be advised that a violation of any permit condition, as well as any construction which proceeds in material variance with information submitted in your application, will be subject to enforcement action.

This final permit decision is subject to appeal under 40 CFR §124.19 by petitioning the Administrator of the EPA within thirty (30) days after receipt hereof. The petitioner must submit a statement of reasons for the appeal and the Administrator must decide on the petition within a reasonable time period. If the petition is denied, the permit shall become effective upon notice of such action to the parties to the appeal. If the petition is granted, any applicable effective

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

KAHEL		FANCY		STARNES	
BLOMMEL		~~THOMAS~~ BC		MARTY HALL	
BARKER		GEORGE		MARSHALL MOTT-SMITH	
J. ROGERS		PALAGYI		Adams	

REMARKS

INFORMATION
- REVIEW & RETURN
- REVIEW & FILE
- INITIAL & FORWARD

DISPOSITION
- REVIEW & RESPOND
- PREPARE RESPONSE
- FOR MY SIGNATURE
- FOR YOUR SIGNATURE
- LET'S DISCUSS
- SET UP MEETING
- INVESTIGATE & REPT
- INITIAL & FORWARD
- DISTRIBUTE
- CONCURRENCE
- FOR PROCESSING
- INITIAL & RETURN

FROM

STEVE SMALLWOOD

DATE

PHONE

date shall be determined by the results of the appeal proceedings. If no appeal is filed with the Administrator, the permit shall become effective thirty (30) days after receipt of this letter. Upon the expiration of the thirty (30) day period, EPA will notify you of the status of the permit's effective date.

Receipt of this letter does not constitute authority to construct. Approval to construct this facility shall be granted as of the effective date of the permit. 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 Mr. Richard S. DuBose, Chief, Air Engineering Section, Air and Waste Management Division at (404) 881-7654.

Sincerely yours,

Thomas W. Devine, Director
Air and Waste Management Division

Enclosure

cc: Mr. Steve Smallwood
Chief, Bureau of Air Quality Management
Florida Department of Environmental
Regulation

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

DEC 27 '82

STEVE SMALLWOOD CHIEF AIRB0002
BUREAU OF AIR QUALITY MGT
TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE RD.
TALLAHASSEE FL 32301

20

PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. §7470 et seq., and the regulations promulgated thereunder at 40 CFR. §52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

Utilities Commission
City of New Smyrna Beach, Florida

is, as of the effective date of this permit authorized to construct/modify a stationary source at the following location:

2495 N. Dixie Highway
New Smyrna Beach, Florida

UTM Coordinates: 505.8 E, 3214.8 N

Upon completion of authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Specific Conditions (Part I) and General Conditions (Part II).

This permit is hereby issued on _____ and shall become effective thirty (30) days after receipt hereof unless a petition for administrative review is filed with the Administrator during that time. If a petition is filed any applicable effective date shall be determined in accordance with 40 CFR §124.19(f)(1)(i)-(iii).

If construction does not commence within 18 months after the effective date of this permit, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time this permit shall expire and authorization to construct shall become invalid.

This authorization to construct/modify shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and Local law.

DEC 23 1982
Date Signed

/s/ Charles R. Jeter
Regional Administrator
Regional Administrator

PART I - SPECIFIC CONDITIONS

Swoope Units 3 and 4

PSD Permit No: FL-089

1. The proposed units shall be constructed in accordance with the capacities and specifications stated in the application and any additional information supplied by the applicant.

2. Sulfur content of the fuel oil fired in the proposed natural gas/diesel oil fired units shall be limited to 0.3 percent.

3. Nitrogen oxides emissions from the units shall be limited to 625 ppmv each, corrected to 15% oxygen on a dry basis. Compliance with this emission limit shall be determined by performance tests while each unit is at or close to full operating capacity.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

MAR 2 1983

DER
MAR 07 1983
BAQM

4AM-AE

Mr. P. A. Korelich, P.E.
Chief Engineer
Utilities Commission
City of New Smyrna Beach
P.O. Box 519
New Smyrna Beach, Floria 32069

RE: PSD-FL-089 - City of New Smyrna Beach

Dear Mr. Korelich:

This is to notify you that no petitions have been filed with the Administrator regarding the above issued Prevention of Significant Deterioration (PSD) permit which you received on December 29, 1982, for the construction of two natural gas/diesel generating units. Therefore, in accordance with the provisions of the above permit, the effective date is January 28, 1983. If construction does not commence within 18 months after this effective date, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this permit shall expire and authorization to construct shall become invalid.

Please direct any questions you may have to Mr. Richard S. DuBose, Chief, Air Engineering Section of my staff at 404/881-7654.

Sincerely yours,

James T. Wilburn, Chief
Air Management Branch
Air and Waste Management Division

cc: Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Florida Department of Environmental Regulation

Technical Evaluation
and
Preliminary Determination

Utilities Commission
City of New Smyrna Beach
Volusia County, Florida
Swoope Units 3 and 4, Gas Diesel

Permit Numbers

State: AC 64-57578
AC 64-57580
Federal: PSD-FL-089

Florida Department of Enviromental Regulation
Bureau of Air Quality Management
Central Air Permitting

August 10, 1982

Public Notice

A modification to an existing air pollution source is being proposed by the City of New Smyrna Beach, Volusia County, Florida. The proposed modification is the construction of two gas diesel units, Swoope #3 and #4, with generating capacities of 2050 KW and 2275 KW, respectively. The modification will increase emissions of air pollutants, in tons per year, by the following amounts.

PM	SO_2	NO_x	CO	VOC
2	4	535	87	42

The proposed modification has been reviewed by the Florida Department of Environmental Regulation under Chapter 403, Florida Statutes, and, Federal regulation 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The Department has made a preliminary determination that the construction can be approved provided certain conditions are met. A summary of the basis for the determination and the application for State and Federal permits submitted by the City of New Smyrna Beach are available for public review at the following offices:

Brannon Memorial Library
105 Riverside Drive
New Smyrna Beach, Florida 32069

Bureau of Air Quality Management
Dept. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

St. Johns River District
3319 Maguire Drive
Suite 232
Orlando, Florida 32803

No allowable PSD increments for PM or SO_2 are consumed by the proposed modification.

Any person may submit written comments regarding the proposed modification. All comments, postmarked not later than 30 days from the date of this notice, will be considered in making a final determination regarding approval for construction of this source. Those comments will be made available for public review on request. Furthermore, a public hearing can be requested by any person. Such request should be submitted within 15 days of the date of this notice. Letters should be addressed to:

Mr. C. H. Fancy, P.E.
Dept. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

Technical Evaluation
and
Preliminary Determination

Contents

I. Applicant and Site Location

Utilities Commission
City of New Smyrna Beach
P.O. Box 519
New Smyrna Beach, Florida 32069

The proposed modification will occur at the Swoope Generating Station located in the City of New Smyrna Beach, Volusia County, Florida. The UTM coordinates are 505.8 km East and 3214.8 km North.

II. Project Description

The Utilities Commission plans to construct two additional gas diesel units, Swoope #3 and #4, with generating capacities of 2050 KW and 2275 KW, respectively. Both units will be natural gas fired with 4 to 6 percent heat input from No. 2 fuel oil (diesel) as pilot fuel.

Currently there are two power generating units at the existing site. Swoope Unit #1 is a 116 MMBtu/hr steam generator and Swoope Unit #2 is a 910 KW gas diesel generator which is limited by permit condition to a 70 percent capacity factor.

The proposed modification is the addition of the two gas diesel units and an increase to 100 percent capacity factor for Swoope Unit #2.

III. Emissions and Controls

The major air pollutant emitted from the diesel generating units while firing 95% natural gas and 5% No. 2 fuel oil (based on Btu heat input) will be No_x emissions. The projected air pollutant emissions from Swoope Unit 3 and 4 are listed as follows:

Pollutant	Unit 3		Unit 4	
	Maximum lbs/hr	tons per year	Maximum lbs/hr	tons per year
Nitrogen Oxides, NO_x	57.1	250	55.9	245
Particulate, PM	0.25	1	0.28	1
Sulfur Dioxide, SO_2	0.42	2	0.47	2
Carbon Monoxide, CO	8.9	39	9.8	43
Hydrocarbon, HC	2.5	11	3.5	15

The current maximum air pollutant emissions and the projected maximum emissions after modification are listed in the following table:

Annual Emissions from Swoope Station

	NO_x	PM	SO_2	CO	HC*
Current	Tons per Year				
Unit 1 (steam)	140	27	1	5	8
Unit 2 (diesel)	94	0.1	0.3	12	37
TOTAL	234	27	1	17	45
Projected					
Unit 1	140	27	1	5	8
Unit 2	134	0.2	0.4	17	53
Unit 3	250	1	2	33	11
Unit 4	245	1	2	43	15
TOTAL	769	29	5	104	87
NET INCREASE	535	2	4	87	42

*Swoope Unit 2 hydrocarbons reported as total HC, Units 3 and 4 reported as non-methane HC.

There will not be any pollution control equipment installed at the site.

IV. Rule Applicability

State Rule

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code (FAC).

The proposed project location is in an attainment area for all the pollutants. It will make the existing minor facility become a major facility for NO_x as defined in Section 17-2.100, because NO_x emissions will increase by more than 250 tons per year due to this modification. The project is subject to the provisions of Section 17-2.500, Prevention of Significant Deterioration (PSD) which requires an air quality impact analysis and the use of Best Available Control Technology (BACT)

Federal Rule

The proposed source is subject to federal PSD review because it is a major modification (40 CFR 52.21(b)(2)). The actual NO_x emissions increase, 535 tons per year, is above the major emission rate 250 tons per year. Therefore, emissions of NO_x are subject to an air quality impact analysis and a BACT determination under 40 CFR 52.21(i).

V. Control Technology Review

Fuel injection retardation is an effective NO_x control technique but results in approximately a 3% increase in fuel usage. The increased monthly cost to a consumer using 1000 kwh of electricity would be approximately one dollar. Based on a proposed NSPS for stationary internal combustion engines, FDER has determined that this technique represents the best available control technology for the proposed gas diesel units. NO_x emissions will be limited for this modification as follows:

Unit No. 2 - 690 ppmv corrected to 15% oxygen on a dry basis

Unit No. 3 - 620 ppmv corrected to 15% oxygen on a dry basis

Unit No. 4 - 625 ppmv corrected to 15% oxygen on a dry basis

VI. Air Quality Impact Analysis

A. Summary

Since the proposed project is subject to both State and federal PSD review for the pollutant NO_x, an air quality impact analysis is required. This analysis includes:

- o An analysis of existing air quality;
- o An ambient air quality standards analysis;
- o An analysis of impact on soils, vegetation and visibility and growth-related air quality impacts.

The analysis of existing air quality may require preconstruction monitoring. The air quality standards

analysis depends on air quality modeling carried out in accordance with FDER- and EPA-approved methods. Federal PSD review also requires a good engineering practice stack height evaluation.

Based on this air quality impact analysis, FDER has reasonable assurance that the proposed project, as described in this permit and subject to the conditions of approval proposed herein, will not cause or contribute to a violation of any State or federal ambient air quality standard. A discussion of the required analysis follows.

B. Discussion

1. Modeling Methodology

Both State and federal regulations contain only annual average standards for NO_2. The State and federal annual average standards are the same, 100 ug/m^3. The FDER- and EPA-approved Industrial Source Complex Long-Term (ISCLT) model was used in the air quality impacts analysis. The conservative assumption that all NO_x is emitted as NO_2 was made in the modeling. One year of National Weather Service data collected at Daytona Beach, Florida in 1964 was used in the model. These data were summarized in the STAR format. A rectangular grid with a 0.1 kilometer spacing was used and all sources were assumed to emit at maximum allowable rates, 24 hours a day, every day of the year. Final stack parameters and emission rates used in modeling the proposed project are contained in Tables VI-I and VI-2.

Table VI-1

Stack Parameters for the Existing Swoope Generating Facility

Emissions Unit	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Emission Rate (g/s) NO_x
Swoope #1	38.1	1.38	9.5	644	4.04
Swoope #2	6.1	0.36	43.9	589	2.69

Table VI-2

Stack Parameters for Proposed Swoope Generating Station

Emission Unit	Stack Height (m)	Stack Diameter (m)	Exit Velocity (m/s)	Exit Temperature (K)	Emission Rate (g/s) NO_x
Swoope #1	38.1	1.38	9.5	644	4.04
Swoope #2	6.1	0.36	43.9	589	3.84
Swoope #3	6.1	0.56	41.2	644	7.20
Swoope #4	6.1	0.56	44.2	644	7.00

2. Analysis of Existing Air Quality

In order to evaluate existing air quality in the area of a proposed project, FDER may require a period of continuous preconstruction monitoring for any pollutant subject to PSD review. An exemption from this requirement may be obtained if the net emissions increase of the pollutant from the modification would cause an air quality impact less than a certain de minimis level as defined in 40 CFR 52.21(i)(8) and Table 500-3 in Chapter 17-2, FAC. The federal level is 14 ug/m^3, annual average, however, in the State rules the level is currently defined as 14 ug/m^3, 24-hour average. Modeling predicts the impact of the proposed project to be greater than the State level, but less than the federal level.

Under the existing State regulation which requires preconstruction monitoring for NO_x, FDER has determined that existing representative NO_x ambient air monitoring data may be used. Since the Swoope facility is located in a remote area with respect to non-specified NO_x sources, FDER has determined that NO_x data gathered at a regional site may be used as representative data. FDER has chosen the Stanton Plant monitoring site in east Orange County, which is operated by the Orlando Utilities Commission, as a regional NO_x monitoring site for this project. Based on data from

this site, FDER has assumed a background NO_x value of 12 ug/m^3, annual average.

3. Ambient Air Quality Standards Analysis

Both State and federal PSD regulations require the permit applicant to demonstrate that, given existing air quality in an area, a proposed emissions increase subject to PSD will not cause or contribute to any violation of ambient air quality standards. For this project, an ambient air quality standards analysis is required for NO_x. Modeling results predict that the highest expected annual average impact due to the Swoope Generating Station is 28 ug/m^3 (this value includes a background value of 12 ug/m^3). This value is well below both the State and federal ambient air quality standard of 100 ug/m^3, annual average.

The impacts of interaction of emissions from other sources with those from the Swoope facility were evaluated. Maximum NO_x concentrations from surrounding sources are very small compared to maximum concentrations from Swoope. Therefore, no violations of ambient standards are predicted to occur due to interacting sources.

4. Good Engineering Practice Stack Height Evaluation

The stack heights proposed for the Swoope project do not exceed the Good Engineering Practice (GEP) stack height of 65 meters for stacks uninfluenced by structures or terrain.

No downwash analysis was performed since only long-term average air quality standards exist for NO_x emissions.

5. Analysis of Impact on Soils, Vegetation and Visibility and Growth-Related Air Quality Impacts

The maximum impact of the proposed NO_x emissions increase will be insignificant. No adverse effects on soils, vegetation and visiblity are expected.

There will be no secondary residential, commercial or industrial growth which will adversely affect air quality in the area.

VII. Conclusions

Based on evaluation of the application, FDER believes that compliance with all State and federal air regulations will be achieved provided certain specific conditions are met. The general and specific conditions are listed in the attached draft State permits (AC 64-57578 and AC 64-57580) and federal permit (PSD-FL-089).

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICANT: Utilities Commission
City of New Smyrna Beach
P. O. Box 519
New Smyrna Beach, Florida 32069

PERMIT/CERTIFICATION
NO. AC 64-57578

COUNTY: Volusia

PROJECT: Swoope Unit #3
Gas Diesel

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the installation of a 2050 kw diesel generating unit to be located at the existing Swoope plant site in the City of New Smyrna Beach, Volusia County, Florida. The UTM coordinates are 505.8 km East and 3214.8 km North.

The construction shall be in accordance with the attached permit application, plans and documents except as otherwise noted on page 3, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Source, DER Form 17-2.122(16), received on June 28, 1982.

2. Best Available Control Technology (BACT) Determination dated August 18, 1982.

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact 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 revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

[ ] Determination of Best Available Control Technology (BACT)
[ ] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

SPECIFIC CONDITIONS:

1. The proposed unit shall be constructed in accordance with the capacities and specifications stated in the application and additional information supplied by the applicant.

2. Sulfur content of the fuel oil fired in the proposed gas diesel unit shall be limited to 0.3%.

3. Nitrogen oxides emissions from the Unit No. 3 shall be limited to 620 ppmv corrected to 15% oxygen on a dry basis. Compliance with the emission limits required by the attached BACT determination shall be determined by performance tests while the unit is at or close to full operating capacity.

4. The 70% capacity factor restriction of Swoope Unit No. 2 shall be eliminated. The new NO_x emission limit, which is regulated by the attached BACT determination, shall be 690 ppmv corrected to 15% oxygen on a dry basis.

PERMIT NO.: AC 64-57578
APPLICANT: Utilities Commission

Expiration Date: June 30, 1983

_____ Pages Attached.

Issued this _____ day of _____, 19_____.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
Signature

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICANT: Utilities Commission
City of New Smyrna Beach
P. O. Box 519
New Smyrna Beach, Florida 32069

PERMIT/CERTIFICATION
NO. AC 64-57580

COUNTY: Volusia

PROJECT: Swoope Unit #4
Gas Diesel

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2 and 17-4, Florida Administrative Code. The above named applicant, hereinafter called Permittee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications attached hereto and made a part hereof and specifically described as follows:

For the installation of a 2275 kw diesel generating unit to be located at the existing Swoope plant site in the City of New Smyrna Beach, Volusia County, Florida. The UTM coordinates are 505.8 km East and 3214.8 km North.

The construction shall be in accordance with the attached permit application, plans and documents except as otherwise noted on page 3, Specific Conditions.

Attachments:

1. Application to Construct Air Pollution Source, DER Form 17-1.122(16), received on June 28, 1982.

2. Best Available Control Technology (BACT) Determination dated August 18, 1982.

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions:, and as such are binding upon the permittee and enforceable pursuant to the authority of Section 403.161(1), Florida Statutes. Permittee is hereby placed on notice that the department will review this permit periodically and may initiate court action for any violation of the "Permit Conditions:" by the permittee, its agents, employees, servants or representatives.

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

3. 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 notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance, including exact 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 revocation of this permit.

4. As provided in subsection 403.087(6), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor 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.

5. This permit is required to be posted in a conspicuous location at the work site or source during the entire period of construction or operation.

6. 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 arising under the Florida Statutes or department rules, except where such use is proscribed by Section 403.111, F.S.

7. In the case of an operation permit, permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

8. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant, or aquatic life or property and penalities therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, except where specifically authorized by an order from the department granting a variance or exception from department rules or state statutes.

9. This permit is not transferable. Upon sale or legal transfer of the property or facility covered by this permit, the permittee shall notify the department within thirty (30) days. The new owner must apply for a permit transfer within thirty (30) days. The permittee shall be liable for any non-compliance of the permitted source until the transferee applies for and receives a transfer of permit.

10. The permittee, by acceptance of this permit, specifically agrees to allow access to permitted source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this permit and department rules.

11. This permit does not indicate a waiver of or approval of any other department permit that may be required for other aspects of the total project.

12. This permit conveys no title to land or water, nor constitutes state recognition or acknowledgement of title, and does not constitute authority for the reclamation 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.

13. This permit also constitutes:

[ ] Determination of Best Available Control Technology (BACT)
[ ] Determination of Prevention of Significant Deterioration (PSD)
[ ] Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

SPECIFIC CONDITIONS:

1. The proposed unit shall be constructed in accordance with the capacities and specifications stated in the application and additional information supplied by the applicant.

2. Sulfur content of the fuel oil fired in the proposed gas diesel unit shall be limited to 0.3%.

3. Nitrogen oxides emissions from the unit shall be limited to 625 ppmv corrected to 15% oxygen on a dry basis. Compliance with the emission limits required by the attached BACT determination shall be determined by performance tests while the unit is at or close to full operating capacity.

PERMIT NO.: AC 64-57580
APPLICANT: Utilities Commission

Expiration Date: June 30, 1983

_____ Pages Attached.

Issued this _____ day of _____, 19_____.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

_____
Signature

Preliminary Determination

(PSD-FL-089)

Utilties Commission
City of New Smyrna Beach

The preceeding Technical Evaluation and Preliminary Determination are adopted by reference for the proposed federal permit, PSD-FL-089.

Special Conditions listed in the draft State permits, AC 64-57578 and AC 64-57580 are adopted as special conditions for the draft federal permit, PSD-FL-089, for this source.

The attached General Conditions are also made a part of the proposed federal permit PSD-FL-089 for this source.

Attachment: General Conditions (federal)

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 immediately notify the State District Manager by telephone and provide the District Office and the permitting authority with the following information in writing within four (4) days of such conditions:

   (a) description for 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 or representatives of the Environmental Protection Agency, upon 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 any 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 to this permit to the permitting agency shall be mailed to:

Mr. James T. Wilburn
Chief, Air Management Branch
Air & Waste Management Division
U.S. EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30365

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.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) DETERMINATION
CITY OF NEW SMYRNA BEACH
VOLUSIA COUNTY

The City of New Smyrna Beach plans to increase electric power generation capacity an additional 4.33 megawatts. Two generators, each driven by a dual fuel twelve cylinder diesel engine, are to be installed at the Swoope generating station. The engines will use natural gas and No. 2 distillate oil as fuel.

The new installations identified as Swoope No. 3 and Swoope No. 4 will have a maximum engine heat input of 19.2 and 21.2 million Btu per hour, respectively. Both units are scheduled to operate 8760 hours per year.

Swoope No. 2, a similar existing 910 kilowatt unit is limited by permit conditions to operate at 70 percent of full load (AC 64-43484). The applicant has requested this permit condition be changed to allow unrestricted operation.

Air Contaminants Summary: (tons per year)

Source	PM	SO_2	CO	NO_x	HC
No. 3 Unit	<1	2	39	250	11
No. 4 Unit	<1	2	43	245	15
Total	2	4	82	495	26
No. 2 Unit[1]	<1	<1	5	40	16
Rate[2]	25	40	100	40	-

[1] Emissions due to increase from 70 to 100 percent operation.

[2] Significant Emission Rate, 17-2.500, FAC, Table 500-2.

The amount of NO_x emitted from the proposed sources exceed the significant emission rate and requires a BACT determination per 17-2.500(5)(c), FAC. A BACT determination is also required for Swoope No. 2 due to the relaxation of a permit limitation.

BACT Determination Requested by the Applicant:

Pollutant	Emission Limit
NO_x	Natural gas firing with the ignition timing set as recommended by the manufacturer

Date of Receipt of a BACT Application:

June 28, 1982

Date of Publication in the Florida Administrative Weekly:

July 9, 1982

Review Group Members:

Comments were obtained from the New Source Review Section, the Air Modeling Section in the Bureau of Air Quality Management, and DER St. Johns River District.

BACT Determined by DER:

*NO_x Pollutant Emission Limits

Unit 2 - 690 ppmv corrected to 15% oxygen on a dry basis

Unit 3 - 620 ppmv corrected to 15% oxygen on a dry basis

Unit 4 - 625 ppmv corrected to 15% oxygen on a dry basis

*Based on manufacturer's rated brake-specific fuel consumption at peak load. Applicant has option of using brake-specific fuel consumption as determined in the field. Test methods and operations monitoring as per the proposed NSPS 40 CFR 60.320, Subpart FF, Subsections 60.324 and 60.323.

DER Determination Rationale:

There is a proposed NSPS for stationary internal combustion engines, 40 CFR 60.320, Subpart FF. The NSPS is in administrative review and promulgation is expected in the last quarter of 1982. The consensus was that a more stringent NO_x emission limitation than the NSPS was not justified. The department has determined BACT for NO_x emissions to be based on the NSPS formula in Subpart FF, Subsection 60.322(a)(3)(ii).

$$STD = 600 \frac{10.2}{Y}$$

STD = Allowable NO_x emissions, ppmv corrected to 15% oxygen on a dry basis.

Y = Manufacturer's rated brake-specific fuel consumption at peak load (Kj/w-hr) or applicants brake-specific fuel consumption at peak load as determined in the field.

The NO_x emission limits determined as BACT are based on the manufacturer's brake-specific fuel consumption at peak load. The applicant has the option of using a brake-specific fuel consumption as determined in the field.

The NSPS was proposed July 23, 1979 (44 FR 43152) to apply to sources that commence construction after January 1982. The manufacturers of engines subject to the regulations should have had adequate time to develop a NO_x emission reduction control technique for their engines in anticipation of the NSPS being promulgated.

The applicant, therefore, should have no great difficulty in meeting the NO_x emission limits determined as BACT for Units 3 and 4. However, Unit 2 was permitted in July 1981 and that engine may require major modifications to meet the NO_x emission limit. In this case, the applicant may submit to the department actual field data indicating the inability to meet the NO_x emission limit. The department will then review the BACT determination for Unit 2 on basis of the new data presented.

The dual-fired engines serve the same application as diesel engines. In the event that natural gas should become limited the dual-fuel engines would likely operate as diesel engines. The NO_x emission limit determined as BACT also applies to diesel engines, therefore, simplifying compliance by the applicant in the event the engines are converted totally to diesel.

Fuel injection retard is an effective NO_x control technique but results in approximately a 3% increase in fuel usage. This will increase total fuel usage by 1107 cubic feet per hour of natural gas and 0.519 gallon per hour of No. 2 oil. The increased monthly cost to a consumer using 1000 kw of electricity would be approximately one dollar. The additional fuel cost is not considered excessive.

Details of the Analysis May Be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Recommended By:

Vivienne A. George
for Steve Smallwood, Chief BAQM

Date: August 18, 1982

Approved:

Terry Cole
Victoria D. Tschinkel, Secretary

Date: 8/18/82

PERMIT APPLICATIONS
AND
PSD ANALYSIS FOR NEW SMYRNA BEACH UTILITIES

SWOOPE UNIT #3 AND #4

CONTENTS

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: City Utility/Gas Diesel [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Utilities Commission, City of New Smyrna Beach COUNTY: Volusia

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Swoope Unit 3 Gas Diesel

SOURCE LOCATION: Street 2495 N. Dixie Highway City New Smyrna Beach

UTM: East 505.8 North 3214.8

Latitude 29 ° 03 ' 47 "N Longitude 80 ° 56 ' 25 "W

APPLICANT NAME AND TITLE: Utilities Commission, City of New Smyrna Beach

APPLICANT ADDRESS: PO Box 519, New Smyrna Beach, FL 32069

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Utilities Commission, City of New Smyrna Beach, FL

I certify that the statements made in this application for a Construction Permit Application permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P A Korelich

P. A. Korelich, Chief Engineer
Name and Title (Please Type)

Date: 6/24/82 Telephone No. 904-427-1361

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: David A. Buff

David A. Buff, P.E.
Name (Please Type)

(Affix Seal)

Environmental Science and Engineering, Inc.
Company Name (Please Type)

PO Box ESE, Gainesville, Florida 32602
Mailing Address (Please Type)

Florida Registration No. 19011 Date: 6/22/82 Telephone No. (904) 372-3318

Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Installation and operation of diesel generating unit. Unit will be natural gas fired with 6 percent heat input from No. 2 oil as pilot fuel. Unit is rated at 2880 BHP with generating capacity of 2050 KW.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon permit issuance Completion of Construction December 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not Applicable

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

No previous DER permits have been issued for this unit.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes __X__ No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ;

if seasonal, describe:

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied?
   b. If yes, has "Lowest Achievable Emission Rate" been applied?
   c. If yes, list non-attainment pollutants.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Stanoards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

See Attachment A

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Nitrogen Oxides	57.1	250	NA	NA	57.1	250	B
Particulate	0.25	1	NA	NA	0.25	1	B
Sulfur Dioxide	0.42	2	NA	NA	0.42	2	B
Carbon Monoxide	8.9	39	NA	NA	8.9	39	B
Hydrocarbons	2.5	11	NA	NA	2.5	11	B

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table il, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels.

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (ft^3)	17,600	17,600	18.05
No. 2 Fuel Oil (gallons)	8.2	8.2	1.15

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas/Pilot Fuel Oil

Percent Sulfur: Trace/0.2 Percent Ash: Ng/Ng

Density: NA/7.21 lbs/gal Typical Percent Nitrogen: Ng/0.2

Heat Capacity: 1026 Btu/ft^3/19,430 BTU/lb NA/140,090 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average NA Maximum NA

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid and solid wastes will be disposed of in either a sanitary sewage system or sanitary landfill.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 22 inches ft.

Gas Flow Rate: 21,200 ACFM Gas Exit Temperature: 700 °F.

Water Vapor Content: 5 % Velocity: 135 FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation. Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See ATTACHMENT B
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Not Applicable
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See ATTACHMENT C
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See ATTACHMENT D
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See ATTACHMENT E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section IIIC

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Part F

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

ft. b. Diameter:

...rate: ACFM d. Temperature:

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. See Part F

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

...lain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

See Item 10

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

The BACT proposed for NO_x is natural gas firing with the ignition timing set as recommended by the manufacturer. Lower NO_x emissions could be achieved by retarding the pilot fuel injection but this would be at the cost of decreasing fuel efficiency. Since air quality impacts are only 16 percent of the standard, optimum fuel efficiency is considered the best available control technology.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Not Applicable

1. _____ no sites _____ TSP _____ ( ) SO^{2*} _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? _____ Yes _____ No

b) Was instrumentation calibrated in accordance with Department procedures? _____ Yes _____ No _____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 64 to 12 / 31 / 64
month day year month day year

2. Surface data obtained from (location) NA

3. Upper air (mixing height) data obtained from (location) NA

4. Stability wind rose (STAR) data obtained from (location) Daytona (WBAN 12834)

C. Computer Models Used

1. Industrial Source Complex Long Term Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
~~TSP~~ NO_x	7.2 grams/sec
~~SO_2~~	_____ grams/sec

E. Emission Data Used in Modeling see Permit Application and ATTACHMENT F

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See ATTACHMENT F

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

The installation of this unit will improve the reliability of the community electrical system without significant social, economic, or environmental impacts.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

AC64-5[illegible]

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

JUN 28 1982

BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: City Utility/Gas Diesel [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Utilities Commission, City of New Smyrna Beach COUNTY: Volusia

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Swoope Unit 4 Gas Diesel

SOURCE LOCATION: Street 2495 N. Dixie Highway City New Smyrna Beach

UTM: East 505.8 North 3214.8

Latitude 29 ° 03 ' 47 "N Longitude 80 ° 56 ' 25 "W

APPLICANT NAME AND TITLE: Utilities Commission, City of New Smyrna Beach

APPLICANT ADDRESS: PO Box 519, New Smyrna Beach, FL 32069

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Utilities Commission, City of New Smyrna Beach, Fl

I certify that the statements made in this application for a Construction Permit Application permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P A Korelich

P. A. Korelich, Chief Engineeer
Name and Title (Please Type)

Date: 6/24/82 Telephone No. 904-427-1361

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: David A. Buff

David A. Buff, P.E.
Name (Please Type)

(Affix Seal)

Environmental Science and Engineering, Inc.
Company Name (Please Type)

PO Box ESE, Gainesville, Florida 32602
Mailing Address (Please Type)

Florida Registration No. 19011 Date: 6/22/82 Telephone No. (904)372-3318

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Installation and operation of diesel generating unit. Unit will be natural gas fired with 6 percent heat input from No. 2 oil as pilot fuel. Unit is rated at 3168 BHP with generating capacity of 2275 kw.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon permit issuance Completion of Construction December 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not Applicable

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

No previous DER permits have been issued for this unit.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ;

if seasonal, describe: ____

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied? ____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? ____
   c. If yes, list non-attainment pollutants. ____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable. See Attachment A

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Nitrogen Oxides	55.9	245	NA	NA	55.9	245	B
Particulate	0.28	1	NA	NA	0.28	1	B
Sulfur Dioxide	0.47	2	NA	NA	0.47	2	B
Carbon Monoxide	9.8	43	NA	NA	9.8	43	B
Hydrocarbons	3.5	15	NA	NA	3.5	15	B

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (ft^3)	19,300	19,300	19.85
No. 2 Fuel Oil (gallons)	9.1	9.1	1.27

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas/Pilot Fuel Oil

Percent Sulfur: Trace/0.2 Percent Ash: Neg/Neg

Density: NA/7.21 lbs/gal Typical Percent Nitrogen: Neg/0.2

Heat Capacity: 1026 Btu/ft^3/19430 BTU/lb NA/140,090 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average NA Maximum NA

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid and solid wastes will be disposed of in either sanitary sewer system or sanitary land fill

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 22 inches ~~ft~~

Gas Flow Rate: 23,320 ACFM Gas Exit Temperature: 700 °F.

Water Vapor Content: 5 % Velocity: 145 FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation. Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See Attachment B
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Not Applicable
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment C
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment D
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section IIIC

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Part F

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. See Part F

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See Item 10

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

The BACT proposed for NOx is natural gas firing with the ignition timing set as recommended by the manufacturer. Lower NOx emissions could be achieved by retarding the pilot fuel injection, but at the cost of decreasing fuel efficiency. Since air quality impacts are only 16 percent of the standard optimum fuel efficiency is considered the best available control technology.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Not Applicable

1. _____ no sites _____ TSP _____ ( ) SO_2* _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 64 to 12 / 31 / 64
month day year month day year

2. Surface data obtained from (location) NA

3. Upper air (mixing height) data obtained from (location) NA

4. Stability wind rose (STAR) data obtained from (location) Daytona (WBAN 12834)

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

~~Pollutant~~	Emission Rate
NOx	7.0 grams/sec
~~TSP~~	
SO_2	grams/sec

E. Emission Data Used in Modeling see permit application and Attachment F

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See Attachment F

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

The installation of this unit will improve the reliability of the community electrical system without significant social, economic, or environmental impacts.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT A

(Reference to Permit Section II)

1. Volusia County is not a non-attainment area for any pollutant.

2&3. The existing plant is not a major source for any pollutant so PSD review does not apply to any pollutant that does not increase 250 TPY with this modification. PSD Section (Attachment F) Table F-1, shows that the proposed expansion is a major source for nitrogen dioxide, thus both BACT and PSD review apply for this pollutant.

4. On July 23, 1979, NSPS were proposed for internal combustion engines; these standards were to become effective for engines which commenced construction after January 23, 1982, and would be applicable to dual fuel engines with displacements greater than 560 cubic inches per cylinder. The two proposed units each have a displacement of 1037 cubic inches per cylinder and would be required to meet the standard. However, these standards have not yet been adopted by law.

5. NESHAPS regulations do not apply to this type of source.

ATTACHMENT B

Colt Industries

Fairbanks Morse
Engine Division
701 Lawton Avenue
Beloit, Wisconsin 53511
608/364-4411

(206608)1

June 11, 1982

Environmental Science & Engr, Inc.
P. O. Box #ESE
Gainesville, Florida 32602

Attention: Mr. Michael H. Dybevick

Subject: Two (2) 12 Cyl - 38TDD 8-1/8 OP Engines
Relocated Gensets
Exhaust Emissions Data

Dear Mr. Dybevick:

At the request of our customer, Mr. Ed Berrier - Plant Supt. at the New Smyrna Beach Generating Facility, we have been instructed to advise you directly as to the exhaust emissions relative to the two (2) units planned for this installation. The data is as follows:

Unit No. 1 - 12 Cyl 38TDD 8-1/8 OP - Turbo Blower Series
Rated 2880 BHP @ 720 RPM - S/N 970348

Swoope #3

Mode	Diesel		Dual Fuel
NO_x - GM/BHP-HR	10.0		9.0
CO - GM/BHP-HR	1.2		1.4
HC - GM/BHP-HR	.3		.4 ← non-methane
* Particulate - GM/BHP-HR	.16	based on	.04
* SO_2 - GM/BHP-HR	1.0	0.3% S →	.1
Smoke - Bosch Units	.8		.2

Unit No. 2 - 12 Cyl - 38TDD 8-1/8 OP - Turbo Blower Series
Rated 3168 BHP @ 720 RPM - S/N 873068

Swoope #4

Mode	Diesel		Dual Fuel
NO_x - GM/BHP-HR	9.0		8.0
CO - GM/BHP-HR	1.2		1.4
HC - GM/BHP-HR	.3		1.2 ← this is total HC by mistake
* Particulate - GM/BHP-HR	.18	based on	.04 Non-methane is ~0.5
* SO_2 - GM/BHP-HR	1.0	0.3% S →	.1
Smoke - Bosch Units	.9		.2

(conversation with
EC Bether
6/18/92)

All Emission Values are for typical injection timings at each rating. These valves (*) are calculated from smoke emissions and for .3% sulfur fuel.

Should any additional information be required with respect to the foregoing, please feel free to contact the writer at your convenience.

Very truly yours,

COLT INDUSTRIES OPERATING CORP
FAIRBANKS MORSE ENGINE DIVISION

E. L. Betker
Contract Administrator

ELB:flb

cc: Al Belvedere - Beloit
Ed Berrier - New Smyrna Beach, Fla.
H. Dahlman - Beloit
H. Keinschrodt - Daytona Beach, Fla.
W. Marx - Houston Sales

SGS Control Services Inc.

Redwood Petroleum and Petrochemical division

825 Wynkoop Road
P O Box 5351
Tampa, Florida 33675
Tel (813) 247-3984
TWX (810) 876-2927

June 7, 1982

TO WHOM IT MAY CONCERN

Corrected Certificate

to accompany Certificate No

Analysis Certificate

Vessel	Shore Tank No. 18
Receiver	*Belcher Oil Company, Port Canaveral, Florida
Cargo	No.2 Fuel Oil File No. 37434
Sample Marked	Shore Tank No. 18 (Top, Middle and Bottom) (6-4-82)
Lab Reference No	LP-2070-82
Sample Description	No. 6 Fuel Oil
Submitted By	SGS Control Services Inc.

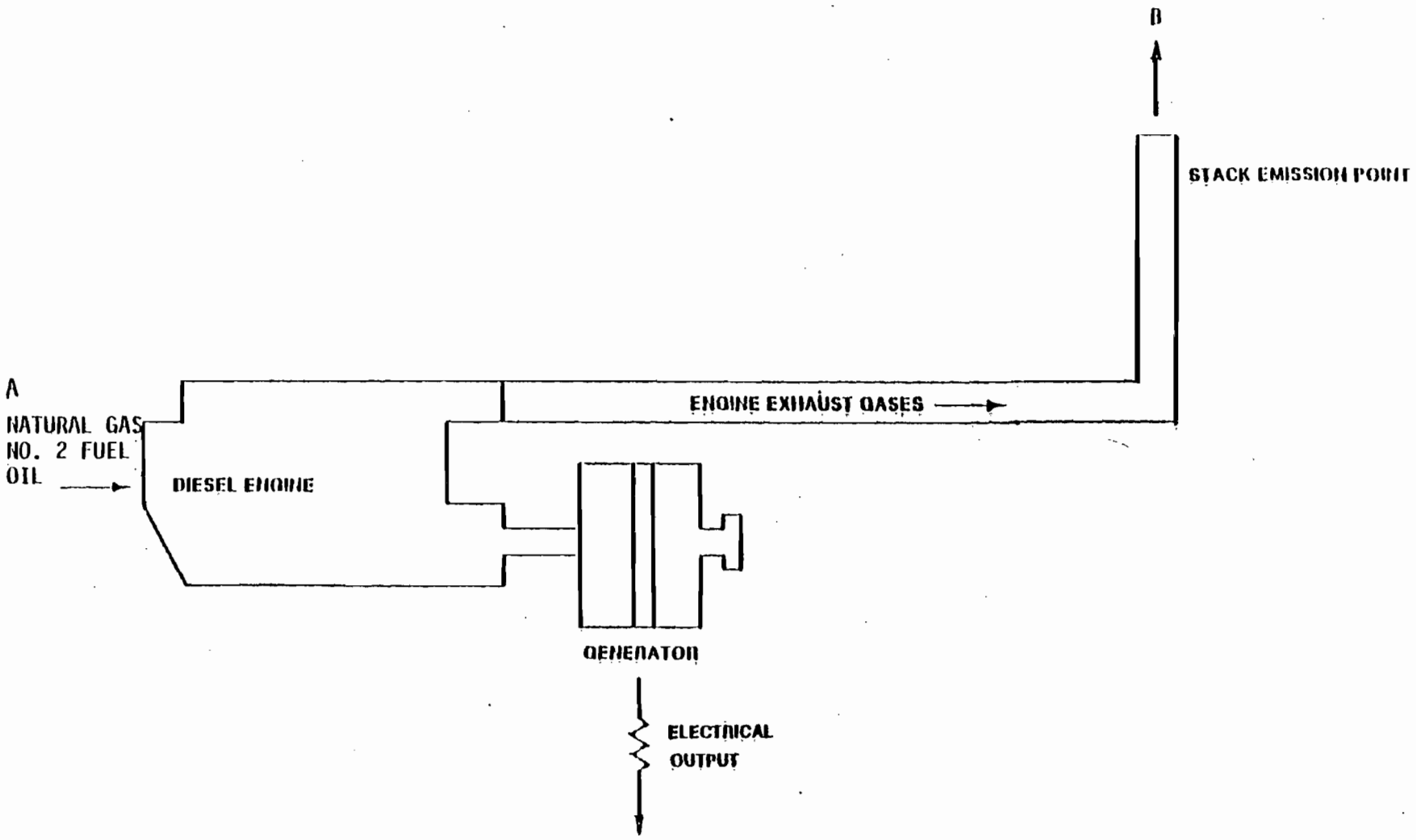
In accordance with your instructions per Mr. Dick Reed, we proceeded to *Belcher Oil Company, Port Canaveral, Florida on June 4, 1982 for the purpose of drawing a top, middle and bottom sample from Shore Tank No. 18. A portion of this sample was submitted to our Tampa laboratory for analytical findings. We now report to you as follows:

TEST	METHOD		RESULT
GRAVITY, A.P.I. @ 60°F	ASTM D-287		36.8
FLASH, °F (PMCC)	ASTM D-93		150
SEDIMENT & WATER, VOL.%	ASTM D-96		Trace
S.U.S. VISCOSITY, @ 100°F	ASTM D-445		33.5
POUR POINT, °F	ASTM D-97		Below 0°F
SULFUR, WT. %	ASTM D-1552		0.12
RAMSBOTTOM CARBON RES.,WT.% (10% BOTTOM)	ASTM D-524		0.14
CETANE INDEX	ASTM D-976		45.4
DISTILLATION, °F	ASTM D-86	I.B.P.	356
		5%	388
		10%	404
		20%	422
		90%	570
		END POINT	634
		% RECOVERY	98.5
		% LOSS	1.5
TRACE METALS	A.A.	CALICUM, ppm	None Detected
		LEAD, ppm	0.3
		POTASSIUM, ppm	0.1
		SODIUM, ppm	0.1
		VANADIUM, ppm	0.2

SGS CONTROL SERVICES INC.

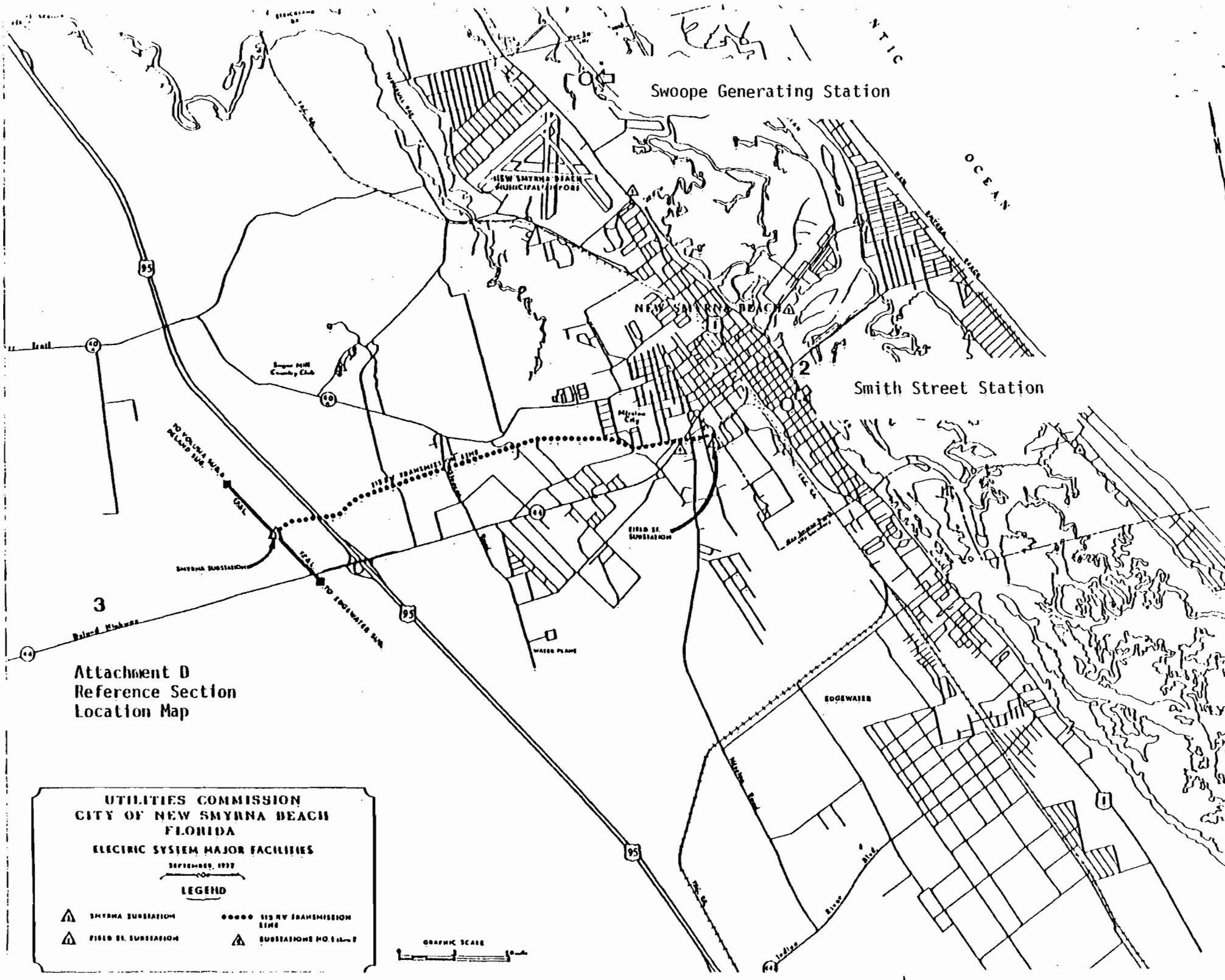
R. S. Sohngen
Operations Department

RSS/sl

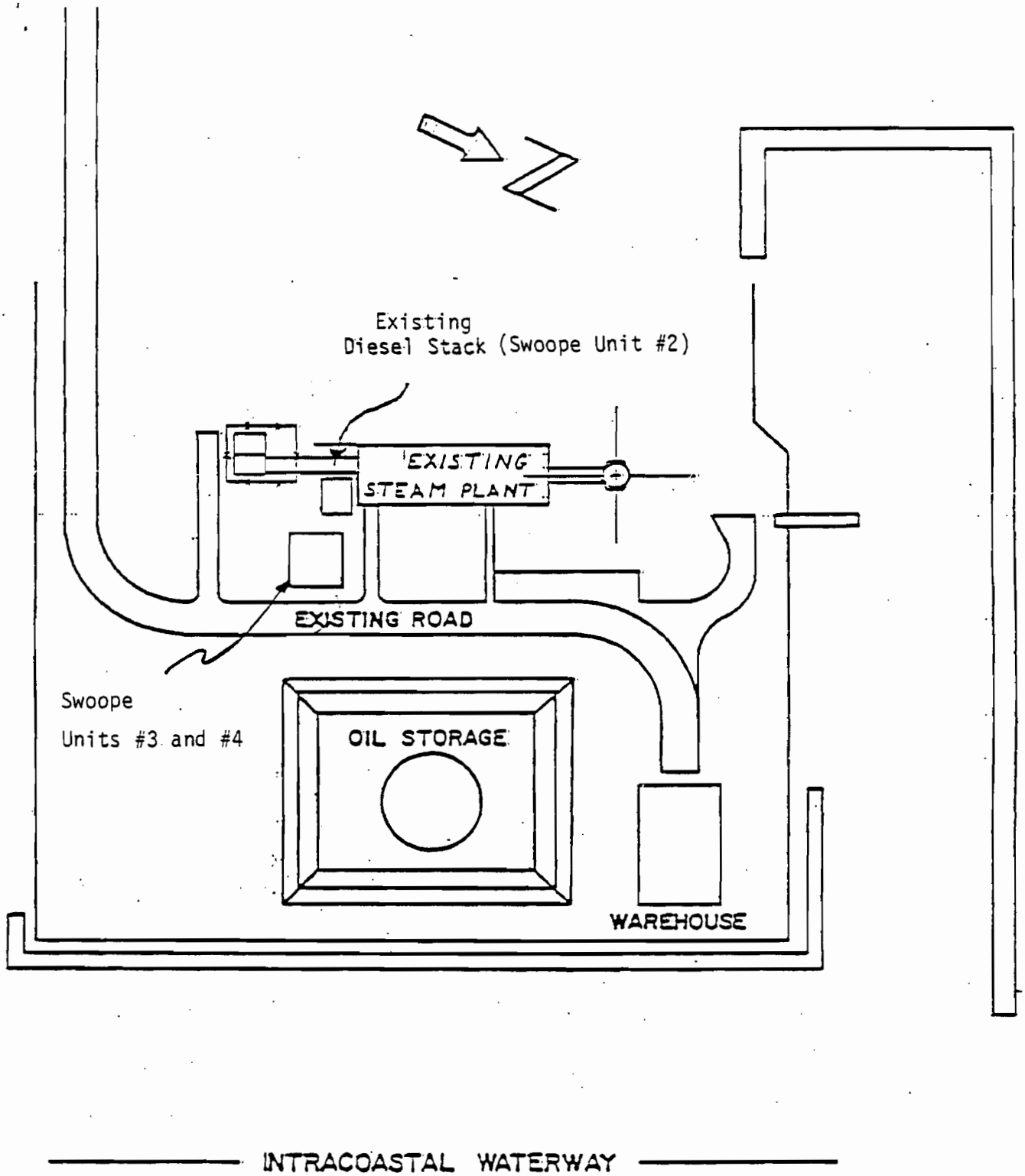


Attachment C: Reference Section V 6

FLOW DIAGRAM



Attachment D
Reference Section
Location Map



Attachment E
Reference Section V 7
Utility Plot Plan

REV.	DATE	BY	REVISIONS

UTILITIES COMMISSION
CITY OF NEW SMYRNA BEACH, FL.

Swoope Generating Station-
Plot Plan

DWN. RLW	SCALE SHOWN	REV. 0
CKD.	DATE 3-3-61	SAA-109
APP.		

ATTACHMENT F
PSD ANALYSIS

The Swoope Generating Station currently consists of a 116 X 10^6 Btu/hr steam generator (Swoope #1) and a 910 KW gas diesel generator (Swoope #2), which is limited by permit condition to a 70 percent capacity factor. Neither of these sources are in a category listed in 40 CFR 52.21 or FAC 17-2, and Table F-1 shows that current emission levels of all pollutants are below 250 TPY. The current configuration is therefore not a major source.

The proposed modification is an addition of two more gas diesel units, and an increase to 100 percent capacity factor for Swoope #2. Table F-1 shows that the change would be a major source for NOx only, and requires PSD review for this pollutant. The source description and control technology review components of the PSD review are contained in the accompanying construction permit application. This attachment describes the air quality impact analysis and its results.

Both state and federal regulations contain only annual average standards for NOx, so modeling was performed with the EPA approved ISC long term model. One year (1964) of surface observations from Daytona International Airport were summarized in STAR format and input to the model. The stack parameters are shown in Table F-2. A rectangular grid with 100 meter spacing was used, and all sources were assumed to emit at maximum allowable rates 24 hours a day, every day of the year. The attached computer output contains the results of two model runs. The first run modeled the impacts of the entire plant, the second run modeled the impacts of the two new units (Swoope #3 and #4) and the increased emissions due to the increased capacity factor for Swoope #2.

Both state and federal regulations require pre-construction monitoring unless the impacts of the modification are below certain de minimis levels. For NOx, the de minimis level is 14 ug/ m^3, annual average. The maximum impact of the proposed modification is 11 ug/m^3, and therefore the project may be exempted from the PSD pre-construction monitoring requirement.

The state and federal air quality standard for NOx is 100 ug/m^3. The highest predicted annual average impact due to the Swoope Generating Station is 16 ug/m^3. The only other major point source of NOx within 40 km is the New Smyrna Beach Smith Street station (see Attachment D). Since the Smith Street station also consists of gas diesels, and the maximum impacts of the Swoope Generating Station were small relative to the standard and occurred within 800 meters of the plant, no other sources were modeled for interaction. The nearest NOx monitoring data available are from a gas bubbler station located 1.5 miles north of the FPL Sanford power plant, about 25 miles southwest of the Swoope Station, (site code 10-4600-001-J-02). In 1980, the annual average NOx concentration at this site was 22.5 ug/m^3. Even if this value was used directly as a background concentration, the projected impacts of the Swoope Generating Station are low enough to provide reasonable assurance that air quality standards will not be exceeded.

Table F-1. Annual Emissions From Swoope Generating Station

	Particulate Matter	Sulfur Dioxide	Carbon Monoxide	Nitrogen Oxides	Hydrocarbons
Current					
Swoope #1 (steam)*	27	1	5	140	8
Swoope #2 (diesel)*	0.1	0.3	12	94	37
Total	27	1	17	234	45
Projected					
Swoope #1 (steam)*	27	1	5	140	8
Swoope #2 (diesel)* (at 100% capacity factor)	0.2	0.4	17	134	53
Swoope #3 (diesel)+	1	2	39	250	11
Swoope #4 (diesel)+	1	2	43	245	15
Total	29	5	104	769	87
Net Increase	2	4	87	535	42

*based on Swoope #2 permit application (AC64-43484) and revisions in June 26, 1981, letter to C. M. Collins FDER ST. Johns River District from K. F. Kosky, ESE, Inc.

+based on manufacturers letter, Attachment B.

Note: Swoope #2 hydrocarbons reported as total HC, Swoope #3 and #4 reported as non-methane.

Table F-2. Modeling Parameters - Swoope Generating Station

Source	NOx Emission Rate (g/s)	Stack Height (m)	Gas Temperature (k)	Exist Velocity (m/s)	Diameter (m)
Swoope #1	4.04	38.1	644	9.5	1.38
Swoope #2	3.84	6.1	589	43.9	0.36
Swoope #3	7.2	6.1	644	41.2	0.56
Swoope #4	7.0	6.1	644	44.2	0.56

- ISCLT INPUT DATA - ank new only

NUMBER OF SOURCES = 3/2
NUMBER OF X AXIS GRID SYSTEM POINTS = 21
NUMBER OF Y AXIS GRID SYSTEM POINTS = 21
NUMBER OF SPECIAL POINTS = 0
NUMBER OF SEASONS = 1
NUMBER OF WIND SPEED CLASSES = 6
NUMBER OF STABILITY CLASSES = 5
NUMBER OF WIND DIRECTION CLASSES = 16
FILE NUMBER OF DATA FILE USED FOR REPORTS = 1
THE PROGRAM IS RUN IN RURAL MODE
CONCENTRATION (DEPOSITION) UNITS CONVERSION FACTOR =0.10000000E+07
ACCELERATION OF GRAVITY (METERS/SEC**2) = 9.800
HEIGHT OF MEASUREMENT OF WIND SPEED (METERS) = 7.000
ENTRAINMENT PARAMETER FOR UNSTABLE CONDITIONS = 0.600
ENTRAINMENT PARAMETER FOR STABLE CONDITIONS = 0.600
CORRECTION ANGLE FOR GRID SYSTEM VERSUS DIRECTION DATA NORTH (DEGREES) = 0.000
DECAY COEFFICIENT =0.00000000E+00
PROGRAM OPTION SWITCHES = 1, 1, 1, 0, 0, 3, 2, 2, 3, 0, 0, 0, 0,-1,-1, 0, 0, 1, 1, 0,
ALL SOURCES ARE USED TO FORM SOURCE COMBINATION 1
DISTANCE X AXIS GRID SYSTEM POINTS (METERS)= -1000.00, -900.00, -800.00, -700.00, -600.00, -500.00,
-400.00, -300.00, -200.00, -100.00, 0.00, 100.00, 200.00, 300.00, 400.00, 500.00,
600.00, 700.00, 800.00, 900.00, 1000.00,
DISTANCE Y AXIS GRID SYSTEM POINTS (METERS)= -1000.00, -900.00, -800.00, -700.00, -600.00, -500.00,
-400.00, -300.00, -200.00, -100.00, 0.00, 100.00, 200.00, 300.00, 400.00, 500.00,
600.00, 700.00, 800.00, 900.00, 1000.00,

- AMBIENT AIR TEMPERATURE (DEGREES KELVIN) -

	STABILITY CATEGORY 1	STABILITY CATEGORY 2	STABILITY CATEGORY 3	STABILITY CATEGORY 4	STABILITY CATEGORY 5	STABILITY CATEGORY 6
SEASON 1	300.0000	300.0000	300.0000	295.0000	289.0000	

- MIXING LAYER HEIGHT (METERS) -

SEASON 1

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.21840CE+040	.21840E+040	.21840E+040	.21840E+040	.21840E+040	.21840E+04
STABILITY CATEGORY 2	0.14560CE+040	.14560E+040	.14560E+040	.14560E+040	.14560E+040	.14560E+04
STABILITY CATEGORY 3	0.14560E+040	.14560E+040	.14560E+040	.14560E+040	.14560E+040	.14560E+04
STABILITY CATEGORY 4	0.14560CE+040	.14560E+040	.14560E+040	.14560E+040	.14560E+040	.14560E+04
STABILITY CATEGORY 5	0.10000CE+050	.10000E+050	.10000E+050	.10000E+050	.10000E+050	.10000E+05

- ISCLT INPUT DATA (CONT.) - and new only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 1

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00016100	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00020800	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00014100	0.00034200	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00023400	0.00056900	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00014100	0.00034200	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 2

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00110700	0.00113800	0.00102500	0.00000000	0.00000000	0.00000000
22.500	0.00025700	0.00034200	0.00045500	0.00000000	0.00000000	0.00000000
45.000	0.00014300	0.00034200	0.00102500	0.00000000	0.00000000	0.00000000
67.500	0.00032900	0.00056900	0.00250500	0.00000000	0.00000000	0.00000000
90.000	0.00087300	0.00182100	0.00318000	0.00000000	0.00000000	0.00000000
112.500	0.00066400	0.00068300	0.00091100	0.00000000	0.00000000	0.00000000
135.000	0.00067200	0.00022800	0.00045500	0.00000000	0.00000000	0.00000000
157.500	0.00051500	0.00068300	0.00022800	0.00000000	0.00000000	0.00000000
180.000	0.00092200	0.00102500	0.00045500	0.00000000	0.00000000	0.00000000
202.500	0.00003600	0.00011400	0.00068300	0.00000000	0.00000000	0.00000000
225.000	0.00066400	0.00068300	0.00102500	0.00000000	0.00000000	0.00000000
247.500	0.00103600	0.00091100	0.00136600	0.00000000	0.00000000	0.00000000
270.000	0.00062200	0.00102500	0.00113800	0.00000000	0.00000000	0.00000000
292.500	0.00043700	0.00091100	0.00034200	0.00000000	0.00000000	0.00000000
315.000	0.00122100	0.00102500	0.00045500	0.00000000	0.00000000	0.00000000
337.500	0.00043700	0.00091100	0.00034200	0.00000000	0.00000000	0.00000000

52

- ISCLT INPUT DATA (CONT.) - and now only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 3

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00067800	0.00170800	0.00330100	0.00148000	0.00045500	0.00000000
22.500	0.00013200	0.00056900	0.00421199	0.00227700	0.00011400	0.00000000
45.000	0.00027300	0.00056900	0.00455400	0.00227700	0.00011400	0.00000000
67.500	0.00007900	0.00034200	0.00762799	0.00466799	0.00034200	0.00000000
90.000	0.00029100	0.00125200	0.01229499	0.00853799	0.00000000	0.00000000
112.500	0.00015900	0.00068300	0.00557799	0.00318800	0.00034200	0.00000000
135.000	0.00032600	0.00079700	0.00182100	0.00034200	0.00000000	0.00000000
157.500	0.00010600	0.00045500	0.00193500	0.00034200	0.00000000	0.00000000
180.000	0.00053700	0.00170800	0.00318800	0.00045500	0.00000000	0.00000000
202.500	0.00015900	0.00068300	0.00296000	0.00056900	0.00022800	0.00000000
225.000	0.00059000	0.00193500	0.00421199	0.00102500	0.00000000	0.00000000
247.500	0.00055600	0.00239100	0.00432600	0.00011400	0.00000000	0.00000000
270.000	0.00123100	0.00227700	0.00261800	0.00136600	0.00000000	0.00000000
292.500	0.00090500	0.00148000	0.00204900	0.00011400	0.00011400	0.00000000
315.000	0.00037000	0.00159400	0.00125200	0.00022800	0.00000000	0.00000000
337.500	0.00021200	0.00091100	0.00227700	0.00022800	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 4

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00122200	0.00387100	0.01411698	0.03403896	0.01206699	0.00113800
22.500	0.00090300	0.00125200	0.00751399	0.01445798	0.00170800	0.00022800
45.000	0.00023500	0.00091100	0.00640899	0.01092899	0.00113800	0.00022800
67.500	0.00047000	0.00182100	0.01001799	0.01718898	0.00125200	0.00011400
90.000	0.00155100	0.00250500	0.02014998	0.02834697	0.00159400	0.00022800
112.500	0.00035600	0.00193500	0.01343399	0.02128898	0.00216300	0.00011400
135.000	0.00053700	0.00239100	0.01126999	0.01092899	0.00227700	0.00000000
157.500	0.00034300	0.00182100	0.00922999	0.00637499	0.00125200	0.00022800
180.000	0.00076100	0.00284600	0.01434398	0.01354699	0.00296000	0.00079700
202.500	0.00055700	0.00148000	0.00853799	0.01104299	0.00296000	0.00079700
225.000	0.00046800	0.00204600	0.00546399	0.00751399	0.00250500	0.00056900
247.500	0.00081300	0.00364300	0.00455400	0.00899599	0.00102500	0.00045500
270.000	0.00055100	0.00250500	0.00523699	0.01115699	0.00262599	0.00239100
292.500	0.00037900	0.00204600	0.00489499	0.00375799	0.00125200	0.00068300
315.000	0.00112700	0.00227400	0.00694399	0.00671799	0.00068300	0.00034200
337.500	0.00132000	0.00216000	0.00922999	0.00648899	0.00113800	0.00068300

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIREC...

SEASON 1

STABILITY CATEGORY 5

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00694999	0.00842399	0.00591999	0.00000000	0.00000000	0.00000000
22.500	0.00428799	0.00523699	0.00432600	0.00000000	0.00000000	0.00000000
45.000	0.00372700	0.00546399	0.00182100	0.00000000	0.00000000	0.00000000
67.500	0.00357480	0.00478099	0.00432600	0.00000000	0.00000000	0.00000000
90.000	0.00888199	0.01183999	0.01001799	0.00000000	0.00000000	0.00000000
112.500	0.00430499	0.00705799	0.00705799	0.00000000	0.00000000	0.00000000
135.000	0.01047199	0.01559698	0.00375700	0.00000000	0.00000000	0.00000000
157.500	0.00815999	0.01172599	0.00364300	0.00000000	0.00000000	0.00000000
180.000	0.01391298	0.02402097	0.00660299	0.00000000	0.00000000	0.00000000
202.500	0.00745999	0.01058699	0.00296000	0.00000000	0.00000000	0.00000000
225.000	0.00954299	0.01218099	0.00296000	0.00000000	0.00000000	0.00000000
247.500	0.01129099	0.01377498	0.00318800	0.00000000	0.00000000	0.00000000
270.000	0.01047599	0.01024599	0.00352900	0.00000000	0.00000000	0.00000000
292.500	0.00750399	0.00853799	0.00148000	0.00000000	0.00000000	0.00000000
315.000	0.01033499	0.01422998	0.00557799	0.00000000	0.00000000	0.00000000
337.500	0.00776299	0.00944099	0.00535099	0.00000000	0.00000000	0.00000000

- VERTICAL POTENTIAL TEMPERATURE GRADIENT (DEGREES KELVIN/METER) -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+00
STABILITY CATEGORY 2	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+00
STABILITY CATEGORY 3	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+00
STABILITY CATEGORY 4	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+000	0.000000E+00
STABILITY CATEGORY 5	0.200000E-010	0.200000E-010	0.200000E-010	0.200000E-010	0.200000E-010	0.200000E-01

- WIND PROFILE POWER LAW EXPONENTS -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.100000E+000	0.100000E+000	0.100000E+000	0.100000E+000	0.100000E+000	0.100000E+00
STABILITY CATEGORY 2	0.150000E+000	0.150000E+000	0.150000E+000	0.150000E+000	0.150000E+000	0.150000E+00
STABILITY CATEGORY 3	0.200000E+000	0.200000E+000	0.200000E+000	0.200000E+000	0.200000E+000	0.200000E+00
STABILITY CATEGORY 4	0.250000E+000	0.250000E+000	0.250000E+000	0.250000E+000	0.250000E+000	0.250000E+00
STABILITY CATEGORY 5	0.300000E+000	0.300000E+000	0.300000E+000	0.300000E+000	0.300000E+000	0.300000E+00

- SOURCE INPUT DATA -

C A R D	I A F E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV-ATION (M)	- SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	38.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 9.50, STACK DIAMETER (M)= 1.380, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0
		Swoope#1 Steam unit						- SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4
								4.04000E+00
WARNING - DISTANCE BETWEEN SOURCE 1 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								
X		2	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 589.00, GAS EXIT VEL. (M/SEC)= 43.90, STACK DIAMETER (M)= 0.360, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0
		Swoope#2 Existing Diesel						- SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4
								3.84000E+00
WARNING - DISTANCE BETWEEN SOURCE 2 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								
X		3	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 42.70, STACK DIAMETER (M)= 0.560, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0
		Swoope #3 & #4 Proposed Combined						- SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4
								1.42400E+01
WARNING - DISTANCE BETWEEN SOURCE 3 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								

Best Available Copy

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-1000.000	-900.000	-800.000	-700.000	-600.000	-500.000	-400.000	-300.000	-200.000
	- CONCENTRATION -								
1000.000	6.125322	6.127700	6.094093	6.019985	5.903982	5.750503	5.766286	7.027227	8.411560
900.000	6.356190	6.562686	6.538740	6.464639	6.336689	6.156047	5.930664	6.63841[illegible]	8.22[illegible]
800.000	6.688039	6.840491	7.033495	6.959665	6.801756	6.533855	6.225493	6.464143	8.059186
700.000	6.885277	7.149355	7.366058	7.569187	7.254660	6.901388	6.482676	6.976775	7.490542
600.000	7.194715	7.498895	7.734884	7.816087	7.742961	7.266974	6.676906	6.082804	6.595673
500.000	7.546048	7.900994	8.133423	8.204315	8.057222	7.643398	6.811241	5.924693	5.378306
400.000	8.055733	8.369009	8.642580	8.730305	8.529869	7.936595	6.917276	5.617212	4.515312
300.000	9.276226	9.495520	9.558521	9.481441	9.293653	8.578476	7.194072	5.255514	3.547350
200.000	10.560844	10.957678	11.205563	11.196426	10.786316	9.825712	8.184658	5.543170	[illegible]
100.000	11.878965	12.509329	13.024607	13.297129	13.123604	12.206591	10.177889	6.063959	[illegible].344543
0.000	13.175607	14.069460	14.932831	15.609529	15.906578	15.455215	13.770771	10.179537	6.265190
-100.000	11.479237	12.059605	12.524664	12.754679	12.562798	11.683037	9.802814	6.831932	4.040810
-200.000	9.757004	10.048000	10.185202	10.073137	9.595356	8.657013	7.427290	5.412742	3.138496
-300.000	8.083979	8.146931	8.041805	7.836459	7.696771	7.169133	6.144471	4.714012	4.265816
-400.000	6.523219	6.666589	6.814183	6.816475	6.600318	6.095775	5.297487	5.407205	5.670534
-500.000	5.780070	5.952270	6.020259	5.953754	5.715382	5.282607	5.591874	5.971330	6.011378
-600.000	5.209709	5.307322	5.329631	5.225793	4.994627	5.364688	5.777692	6.268412	7.558514
-700.000	4.695052	4.736332	4.715121	4.609434	4.974573	5.372901	5.816212	6.325062	8.071970
-800.000	4.234854	4.235273	4.180302	4.530062	4.907113	5.299863	5.730793	6.542064	8.245603
-900.000	3.826123	3.797574	4.095892	4.421498	4.775195	5.156284	5.559735	6.678347	8.187111
-1000.000	3.464766	3.718670	3.994530	4.292553	4.612313	4.952946	5.426483	6.65860[illegible]	7.[illegible]59 1

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
1000.000	9.869898	11.351654	9.954981	8.567457	7.239342	6.018775	5.742392	5.614089	5.464535
900.000	9.972669	11.668583	10.092953	8.553875	7.136763	6.168166	6.034616	5.897486	5.755775
800.000	9.866144	11.810623	10.036242	8.363705	6.886261	6.375821	6.270579	6.173037	6.055849
700.000	9.4398[illegible]4	11.630123	9.681034	7.935769	6.610131	6.598605	6.455699	6.460486	6.311474
600.000	8.565241	10.960043	8.907347	7.227982	6.529463	6.538840	6.592488	6.618515	6.517968
500.000	7.140026	9.615231	7.623003	6.270267	6.236110	6.458998	6.697357	6.717663	6.708563
400.000	5.176396	7.472694	5.840555	5.353290	5.737908	6.315817	6.588545	6.895285	6.911712
300.000	2.920495	4.577614	3.767562	4.160435	5.157791	5.825749	6.482625	6.943979	7.170919
200.000	1.252086	1.858642	2.132963	3.936510	4.179140	5.506903	6.573929	7.[illegible]35996	7.294319
100.000	0.494475	2.328606	0.980206	2.076285	3.765391	5.489461	6.699579	7.105337	7.334816
0.000	2.162560	[illegible]	0.761915	2.792976	4.605332	6.317980	7.246998	7.024152	7.044953
-100.000	1.270458	0.960045	0.429746	1.256586	2.570521	4.214346	5.382066	6.760357	6.360042
-200.000	2.493481	4.143908	1.475574	2.429105	3.112972	3.619551	4.031170	4.791282	5.239251
-300.000	4.745513	7.685[illegible]	[illegible].847863	3.085576	4.915764	4.951458	4.882779	4.720389	4.483701
-400.000	7.764304	10.756700	6.724648	4.526872	5.552440	6.444570	[illegible]	5.610029	[illegible].195419
-500.000	9.[illegible]97602	12.2[illegible]	[illegible].792476	5.948792	6.041901	6.552313	7.9[illegible]176	6.459350	[illegible].885485
-600.000	9.[illegible]713[illegible]2	12.724[illegible]7	[illegible].76[illegible]342	7.[illegible]32[illegible]	6.29[illegible]	6.561132	6.9[illegible]3	7.1431[illegible]	6.468727

(9)

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - CONCENTRATION -								
	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
-700.000	10.237406	12.561590	10.150810	7.966827	6.318871	6.453076	6.639539	6.804550	6.912958
-800.000	10.124470	12.066780	10.116732	8.277456	6.653737	6.250275	6.361072	6.465375	6.500518
-900.000	9.796532	11.413338	9.836887	8.301712	6.892848	5.985910	6.046538	6.089931	6.108262
-1000.000	9.359263	10.721052	9.428007	8.147799	6.925193	5.804323	5.689330	5.724257	5.742301

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - CONCENTRATION -		
	800.000	900.000	1000.000
1000.000	5.351343	5.214439	5.075349
900.000	5.608542	5.455925	5.299848
800.000	5.877198	5.704020	5.534430
700.000	6.143172	5.961765	5.778400
600.000	6.404109	6.229158	6.031364
500.000	6.640710	6.506221	6.294152
400.000	6.897082	6.788972	6.539887
300.000	7.102132	6.893804	6.608261
200.000	7.142980	6.943727	6.671797
100.000	7.251471	7.024717	6.727612
0.000	7.453820	7.152027	6.803570
-100.000	6.403279	6.289964	6.090511
-200.000	5.441939	5.474588	5.400136
-300.000	4.611043	4.736916	4.743624
-400.000	4.785154	4.395904	4.144448
-500.000	5.360918	4.879607	4.419462
-600.000	5.864269	5.293977	4.790988
-700.000	6.231319	5.628532	5.102954
-800.000	6.485319	5.881890	5.350441
-900.000	6.690072	6.059033	5.535456
-1000.000	5.7384 5	5.711648	5.664222

- SOURCE INPUT DATA -

C A R D	T A P E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV- ATION (M)	- SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 589.00, GAS EXIT VEL. (M/SEC)= 43.90, STACK DIAMETER (M)= 0.360, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0

Swoope #2 Existing Diesel
Emission rate corresponds to
increase above 70% capacity factor limitation.

- SOURCE STRENGTHS (GRAMS PER SEC)

SEASON 1	SEASON 2	SEASON 3	SEASON 4
1.15000E+00			

WARNING - DISTANCE BETWEEN SOURCE 1 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED

X		2	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 694.00, GAS EXIT VEL. (M/SEC)= 42.70, STACK DIAMETER (M)= 0.560, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0

Swoope #3 & #4 Combined

- SOURCE STRENGTHS (GRAMS PER SEC)

SEASON 1	SEASON 2	SEASON 3	SEASON 4
1.42400E+01			

WARNING - DISTANCE BETWEEN SOURCE 2 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED

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** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-1000.000	-900.000	-800.000	-700.000	-600.000	-500.000	-400.000	-300.000	-200.000
	- CONCENTRATION -								
1000.000	4.529756	4.530603	4.511012	4.458233	4.371409	4.254956	4.263452	5.188981	6.286468
900.000	4.710518	4.858240	4.843405	4.787018	4.686647	4.544641	4.369836	5.071120	6.172467
800.000	4.914683	5.079499	5.210071	5.147761	5.016402	4.796514	4.548201	4.629167	5.817814
700.000	5.136922	5.321885	5.464080	5.538367	5.320856	5.018771	4.668899	4.348303	5.300343
600.000	5.382028	5.593119	5.741446	5.755008	5.635359	5.215117	4.713485	4.232643	4.523201
500.000	5.658475	5.903630	6.037080	6.023872	5.819725	5.394122	4.680183	3.961777	3.533261
400.000	6.051797	6.265864	6.419033	6.399251	6.124184	5.521543	4.598712	3.564828	2.762926
300.000	6.950764	7.094189	7.094568	6.957702	6.661875	5.923663	4.682643	3.135205	1.962312
200.000	7.907328	8.164433	8.276503	8.153919	7.686349	6.776796	5.296220	3.207801	1.209849
100.000	8.886695	9.308157	9.599226	9.646774	9.284388	8.294069	6.462439	3.851166	1.837859
0.000	9.853601	10.469259	11.008928	11.332335	11.268307	10.526871	8.779190	5.721337	3.732776
-100.000	8.584108	8.971802	9.231838	9.260172	8.906273	7.978684	6.299791	3.949928	2.276096
-200.000	7.298388	7.480745	7.520294	7.341415	6.861167	6.030926	4.925282	3.290251	1.714410
-300.000	6.057619	6.076718	5.962884	5.757898	5.557244	5.038174	4.145288	3.009334	2.599359
-400.000	4.887339	4.983474	5.065331	5.019750	4.790734	4.332579	3.663387	3.624520	3.700643
-500.000	4.329359	4.449526	4.481150	4.399299	4.177841	3.807566	3.968241	4.176242	4.569763
-600.000	3.899849	3.967222	3.972616	3.875276	3.678033	3.921675	4.191241	4.519220	5.295178
-700.000	3.511554	3.539032	3.516667	3.428170	3.690674	3.973131	4.287094	4.652943	5.690690
-800.000	3.163233	3.161773	3.117146	3.380041	3.661081	3.950712	4.268748	4.863849	6.102528
-900.000	2.852649	2.830565	3.058518	3.306043	3.573822	3.861777	4.166894	4.994776	6.110559
-1000.000	2.976872	2.772741	2.984722	3.212920	3.457094	3.716992	4.076013	4.995479	5.986277

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
1000.000	7.280466	8.376677	7.351406	6.337106	5.367568	4.477124	4.267008	4.163865	4.058664
900.000	7.297355	8.543680	7.396438	6.285521	5.269374	4.575168	4.472225	4.366213	4.255118
800.000	7.116248	8.526773	7.254468	6.074090	5.046179	4.691741	4.620716	4.554272	4.453984
700.000	6.659750	8.203991	6.842833	5.658136	4.784166	4.728436	4.713701	4.694533	4.642612
600.000	5.816922	7.452812	6.081230	5.018644	4.611780	4.664504	4.754748	4.818905	4.768865
500.000	4.586627	6.178986	4.942447	4.205564	4.257614	4.502133	4.762873	4.831609	4.872447
400.000	3.964259	4.409218	3.522186	3.386473	3.754132	4.292801	4.572902	4.826157	4.979435
300.000	1.528748	2.354199	2.049510	2.423868	3.224925	3.790440	4.397372	4.859688	5.129473
200.000	0.637208	0.984886	1.189432	1.626314	2.418874	3.453172	4.350290	4.885594	5.142127
100.000	[illegible]	[illegible]	0.610358	1.128199	2.062204	3.402621	4.393205	[illegible]	[illegible]
0.000	1.323775	[illegible]	0.449375	1.675433	2.608347	4.020135	4.913198	[illegible]	[illegible]
-100.000	0.813881	0.575565	0.254399	0.684745	1.414409	2.620183	3.591733	4.227263	4.561974
-200.000	1.385221	2.350532	0.738085	1.256501	1.774751	2.247698	2.668141	3.318553	3.737797
-300.000	2.628058	4.129972	2.088264	2.113570	3.013345	3.196094	3.288659	3.205767	3.195413
-400.000	4.633148	6.712242	4.171715	3.196665	3.602941	4.341627	4.176323	3.971232	3.733963
-500.000	6.165556	5.326246	[illegible]	[illegible]	4.189992	4.547927	[illegible]	4.641565	4.272940
-600.000	7.162424	9.317756	[illegible]	5.274903	4.432724	4.647537	[illegible]	[illegible]	4.736032

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - CONCENTRATION -								
-700.000	7.445539	9.141445	7.348537	5.749539	4.562780	4.676843	4.841251	4.990853	5.092170
-800.000	7.481155	8.919882	7.450238	6.079086	4.880642	4.587487	4.679839	4.768476	4.900737
-900.000	7.305563	8.512440	7.316545	6.160236	5.104819	4.927017	4.672134	4.595086	4.617848
-1000.000	7.012383	8.032454	7.049086	6.079269	5.154711	4.907981	4.217338	4.239990	4.249018

Y AXIS (DISTANCE, METERS)	800.000	900.000	1000.000
	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - CONCENTRATION -		
1000.000	3.949165	3.835467	3.719000
900.000	4.137527	4.013654	3.890831
800.000	4.331511	4.199357	4.067876
700.000	4.522067	4.388280	4.249101
600.000	4.702225	4.580199	4.434093
500.000	4.856625	4.775698	4.623975
400.000	5.022134	4.973322	4.802281
300.000	5.156453	5.050423	4.862032
200.000	5.187934	5.095057	4.919748
100.000	5.264184	5.170949	4.973930
0.000	5.467811	5.288986	5.047168
-100.000	4.672099	4.633645	4.505657
-200.000	3.953654	4.018964	3.983482
-300.000	3.340763	3.466486	3.487743
-400.000	3.476663	3.212633	3.035532
-500.000	3.918939	3.578633	3.242232
-600.000	4.309852	3.894997	3.522620
-700.000	4.594871	4.149644	3.757112
-800.000	4.790774	4.340483	3.940945
-900.000	4.906586	4.471251	4.075399
-1000.000	4.239617	4.211065	4.165322

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

DER
SEP 27 1982
BAQM

SEP 24 1982

REF: 4AW-AM

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Fancy:

This is to acknowledge receipt of your August 24, 1982, letter containing your Bureau's preliminary determination for the City of New Smyrna Beach Utilities Commission's proposed construction of two additional gas diesel units to be located at their existing Swoope Generating Station.

My staff has reviewed the preliminary determination and finds it complete.

Sincerely yours,

James T. Wilburn, Chief
Air Management Branch
Air & Waste Management Division

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

CENTRAL AIR PERMITTING

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION)	INITIAL / DATE
ADAMS AMODIO FANCY GEORGE	
2. HANKS HERON HOLLADAY ~~KING~~	INITIAL / DATE
3. MITCHELL, Becky MITCHELL, Bruce	INITIAL / DATE
4. PALAGYI POWELL ROGERS SVEC ~~THOMAS~~	INITIAL / DATE

REMARKS:

INFORMATION
- REVIEW & RETURN
- REVIEW & FILE
- INITIAL & FORWARD

DISPOSITION
- REVIEW & RESPOND
- PREPARE RESPONSE
- FOR MY SIGNATURE
- FOR YOUR SIGNATURE
- LET'S DISCUSS
- SET UP MEETING
- INVESTIGATE & REPT
- INITIAL & FORWARD
- DISTRIBUTE
- CONCURRENCE
- FOR PROCESSING
- INITIAL & RETURN

FROM: Lacy George

DATE 9/27/82

PHONE

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

August 24, 1982

Mr. Clem Malecki, Librarian
Brannon Memorial Library
105 Riverside Drive
New Smyrna Beach, Florida 32069

Dear Mr. Malecki:

RE: Proposed Air Pollution Source, City of New Smyrna Beach Utilities Commission, Swoope Units 3 and 4, PSD-FL-089

The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has need to display certain information regarding the subject source pursuant to Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21, Paragraph (q)). You will find this information enclosed. We appreciate your offer to make this information available to the interested public. A notice directing people to the library will be published in the local newspaper in the near future.

The information must be available upon request for a period of at least 30 days from the notice date. At the end of the period, we will forward to you a Final Determination on the permit application which must be available for an additional 30-day period.

We appreciate your help in providing this valuable public service. Should you have any questions, please call Mr. Bill Thomas at (904)488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa

Enclosure

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

ATLANTA SEP 24 '82 GA

U.S. POSTAGE =0.20 METER 5062153

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Twin Towers Office Building
2600 Blairstone Road
Tallahassee, Florida 32301

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

August 24, 1982

Mr. James T. Wilburn, Chief
Air Management Branch
Air & Waste Management Division
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Wilburn:

RE: Preliminary Determination - City of New Smyrna Beach Utilities Commission, Swoope Units 3 and 4, PSD-FL-089

Enclosed for your review and comment are the Public Notice and Preliminary Determination for the City of New Smyrna Beach Utilities Commission's proposal to construct two additional gas diesel units at the Swoope Generating Station located in the City of New Smyrna Beach, Volusia County, Florida.

Please inform my office if you have comments or questions regarding this determination, at (904) 488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa

Enclosure

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

August 24, 1982

Mr. Clifford Gullet
East Central Regional Planning
Council
1011 Wymore Road
Winter Park, Florida 32769

Dear Mr. Gullet:

RE: Preliminary Determination - New Smyrna Beach Utilities Commission, Swoope Units 3 and 4 (PSD-FL-089)

I wish to bring to your attention that the City of New Smyrna Beach Utilities Commission proposes to construct two additional gas diesel units, Swoope #3 and #4, at the Swoope Generating Station located in the City of New Smyrna Beach, Volusia County, Florida, and that emissions of air pollutants will thereby be increased. The Florida Department of Environmental Regulation, under the authority delegated by the U.S. Environmental Protection Agency, has reviewed the proposed construction under Federal Prevention of Significant Deterioration Regulations (40 CFR 52.21) and reached a preliminary determination of approval, with conditions, for this construction. This approval applies only to Federal regulatory requirements and has no bearing on other State or local functions.

Please also be aware that the attached Public Notice announcing the preliminary determination, the availablility of pertinent information for public scrutiny and the opportunity for public comment will be published in a local newspaper in the near future. This notice has been mailed to you for your information and in accordance with regulatory requirements. You need take no action unless you wish to comment on the proposed construction. If you have any questions, please feel free to call Mr. Bill Thomas or myself at (904) 488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management

CHF/pa
Attachment

PERMIT APPLICATIONS
AND
PSD ANALYSIS FOR NEW SMYRNA BEACH UTILITIES

SWOOPE UNIT #3 AND #4

CONTENTS

AC 64-57578

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

JUN 28 1982

BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: City Utility/Gas Diesel [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Utilities Commission, City of New Smyrna Beach COUNTY: Volusia

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Swoope Unit 3 Gas Diesel

SOURCE LOCATION: Street 2495 N. Dixie Highway City New Smyrna Beach

UTM: East 505.8 North 3214.8

Latitude 29 ° 03 ' 47 "N Longitude 80 ° 56 ' 25 "W

APPLICANT NAME AND TITLE: Utilities Commission, City of New Smyrna Beach

APPLICANT ADDRESS: PO Box 519, New Smyrna Beach, FL 32069

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Utilities Commission, City of New Smyrna Beach, FL

I certify that the statements made in this application for a Construction Permit Application permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P A Korelich

P. A. Korelich, Chief Engineer
Name and Title (Please Type)

Date: 6/24/82 Telephone No. 904-427-1361

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: David A. Buff

David A. Buff, P.E.
Name (Please Type)

(Affix Seal)

Environmental Science and Engineering, Inc.
Company Name (Please Type)

PO Box ESE, Gainesville, Florida 32602
Mailing Address (Please Type)

Florida Registration No. 19011 Date: 6/22/82 Telephone No. (904) 372-3318

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Installation and operation of diesel generating unit. Unit will be natural gas fired with 6 percent heat input from No. 2 oil as pilot fuel. Unit is rated at 2880 BHP with generating capacity of 2050 KW.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon permit issuance Completion of Construction December 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not Applicable

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

No previous DER permits have been issued for this unit

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes __X__ No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ;

if seasonal, describe: ____

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied?
   b. If yes, has "Lowest Achievable Emission Rate" been applied?
   c. If yes, list non-attainment pollutants.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

See Attachment A

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Nitrogen Oxides	57.1	250	NA	NA	57.1	250	B
Particulate	0.25	1	NA	NA	0.25	1	B
Sulfur Dioxide	0.42	2	NA	NA	0.42	2	B
Carbon Monoxide	8.9	39	NA	NA	8.9	39	B
Hydrocarbons	2.5	11	NA	NA	2.5	11	B

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table il, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (ft^3)	17,600	17,600	18.05
No. 2 Fuel Oil (gallons)	8.2	8.2	1.15

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas/Pilot Fuel Oil

Percent Sulfur: Trace/0.2 Percent Ash: Ng/Ng

Density: NA/7.21 lbs/gal Typical Percent Nitrogen: Ng/0.2

Heat Capacity: 1026 Btu/ft^3/19,430 BTU/lb NA/140,090 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average NA Maximum NA

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid and solid wastes will be disposed of in either a sanitary sewage system or sanitary landfill.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 22 inches ft.

Gas Flow Rate: 21,200 ACFM Gas Exit Temperature: 700 °F.

Water Vapor Content: 5 % Velocity: 135 FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation. Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See ATTACHMENT B
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Not Applicable
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See ATTACHMENT C
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See ATTACHMENT D
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See ATTACHMENT E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section IIIC

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Part F

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. See Part F

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

See Item 10

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

The BACT proposed for NO_x is natural gas firing with the ignition timing set as recommended by the manufacturer. Lower NO_x emissions could be achieved by retarding the pilot fuel injection but this would be at the cost of decreasing fuel efficiency. Since air quality impacts are only 16 percent of the standard, optimum fuel efficiency is considered the best available control technology.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Not Applicable

1. _____ no sites _____ TSP _____ ( ) SO^{2*} _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 64 to 12 / 31 / 64
month day year month day year

2. Surface data obtained from (location) NA

3. Upper air (mixing height) data obtained from (location) NA

4. Stability wind rose (STAR) data obtained from (location) Daytona (WBAN 12834)

C. Computer Models Used

1. Industrial Source Complex Long Term Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
~~TSP~~ NO_x	7.2 grams/sec
~~SO_2~~	_____ grams/sec

E. Emission Data Used in Modeling see Permit Application and ATTACHMENT F

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See ATTACHMENT F

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

The installation of this unit will improve the reliability of the community electrical system without significant social, economic, or environmental impacts.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

AC 64-54573

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

DER

JUN 28 1982

BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: City Utility/Gas Diesel [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Utilities Commission, City of New Smyrna Beach COUNTY: Volusia

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Swoope Unit 4 Gas Diesel

SOURCE LOCATION: Street 2495 N. Dixie Highway City New Smyrna Beach

UTM: East 505.8 North 3214.8

Latitude 29 ° 03 ' 47 "N Longitude 80 ° 56 ' 25 "W

APPLICANT NAME AND TITLE: Utilities Commission, City of New Smyrna Beach

APPLICANT ADDRESS: PO Box 519, New Smyrna Beach, FL 32069

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Utilities Commission, City of New Smyrna Beach, FL

I certify that the statements made in this application for a Construction Permit Application permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: P A Korelich

P. A. Korelich, Chief Engineeer
Name and Title (Please Type)

Date: 6/24/82 Telephone No. 904-427-1361

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit apolication. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed: David A. Buff

David A. Buff, P.E.
Name (Please Type)

(Affix Seal)

Environmental Science and Engineering, Inc.
Company Name (Please Type)

PO Box ESE, Gainesville, Florida 32602
Mailing Address (Please Type)

Florida Registration No. 19011 Date: 6/22/82 Telephone No. (904)372-3318

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

Installation and operation of diesel generating unit. Unit will be natural gas fired with 6 percent heat input from No. 2 oil as pilot fuel. Unit is rated at 3168 BHP with generating capacity of 2275 kw.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction upon permit issuance Completion of Construction December 1982

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Not Applicable

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

No previous DER permits have been issued for this unit.

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes X No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ; if power plant, hrs/yr 8760 ;

if seasonal, describe: ____

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? No
   a. If yes, has "offset" been applied? ____
   b. If yes, has "Lowest Achievable Emission Rate" been applied? ____
   c. If yes, list non-attainment pollutants. ____
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. Yes
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII. Yes
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable. See Attachment A

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable: Not Applicable

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): Not Applicable

2. Product Weight (lbs/hr): Not Applicable

C. Airborne Contaminants Emitted:

Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
Nitrogen Oxides	55.9	245	NA	NA	55.9	245	B
Particulate	0.28	1	NA	NA	0.28	1	B
Sulfur Dioxide	0.47	2	NA	NA	0.47	2	B
Carbon Monoxide	9.8	43	NA	NA	9.8	43	B
Hydrocarbons	3.5	15	NA	NA	3.5	15	B

D. Control Devices: (See Section V, Item 4) Not Applicable

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard

[4] Emission, if source operated without control (See Section V, Item 3)

[5] If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural Gas (ft^3)	19,300	19,300	19.85
No. 2 Fuel Oil (gallons)	9.1	9.1	1.27

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis: Natural Gas/Pilot Fuel Oil

Percent Sulfur: Trace/0.2 Percent Ash: Neg/Neg

Density: NA/7.21 lbs/gal Typical Percent Nitrogen: Neg/0.2

Heat Capacity: 1026 Btu/ft^3/19430 BTU/lb NA/140,090 BTU/gal

Other Fuel Contaminants (which may cause air pollution): None

F. If applicable, indicate the percent of fuel used for space heating. Annual Average NA Maximum NA

G. Indicate liquid or solid wastes generated and method of disposal.

All liquid and solid wastes will be disposed of in either sanitary sewer system or sanitary land fill

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 22 inches ~~XX~~

Gas Flow Rate: 23,320 ACFM Gas Exit Temperature: 700 °F.

Water Vapor Content: 5 % Velocity: 145 FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							

Description of Waste

Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)

Approximate Number of Hours of Operation per day days/week

Manufacturer

Date Constructed Model No.

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight – show derivation. Not Applicable
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made. See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test). See Attachment B
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.). Not Applicable
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency). Not Applicable
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained. See Attachment C
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map). See Attachment D
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram. See Attachment E

9. An application fee of $20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?
[ ] Yes [X] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section IIIC

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Part F

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:
5. Useful Life:
6. Operating Costs:
7. Energy:
8. Maintenance Cost:
9. Emissions:

Contaminant	Rate or Concentration

*Explain method of determining D 3 above.

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1. See Part F

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy*: h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy**: h. Maintenance Costs:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

*Explain method of determining efficiency.

**Energy to be reported in units of electrical power – KWH design rate.

3.

a. Control Device:

b. Operating Principles:

c. Efficiency*: d. Capital Cost:

e. Life: f. Operating Cost:

g. Energy: h. Maintenance Cost:

*Explain method of determining efficiency above.

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space and operate within proposed levels:

4.

a. Control Device

b. Operating Principles:

c. Efficiency*:

d. Capital Cost:

e. Life:

f. Operating Cost:

g. Energy:

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See Item 10

1. Control Device:

2. Efficiency*:

3. Capital Cost:

4. Life:

5. Operating Cost:

6. Energy:

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

*Explain method of determining efficiency above.

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

b.

(1) Company:

(2) Mailing Address:

(3) City:

(4) State:

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions*:

Contaminant	Rate or Concentration

(8) Process Rate*:

10. Reason for selection and description of systems:

The BACT proposed for NOx is natural gas firing with the ignition timing set as recommended by the manufacturer. Lower NOx emissions could be achieved by retarding the pilot fuel injection, but at the cost of decreasing fuel efficiency. Since air quality impacts are only 16 percent of the standard optimum fuel efficiency is considered the best available control technology.

*Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII – PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data Not Applicable

1. _____ no sites _____ TSP _____ ( ) SO^{2*} _____ Wind spd/dir

Period of monitoring ___/___/___ to ___/___/___
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

2. Instrumentation, Field and Laboratory

a) Was instrumentation EPA referenced or its equivalent? ____ Yes ____ No

b) Was instrumentation calibrated in accordance with Department procedures? ____ Yes ____ No ____ Unknown

B. Meteorological Data Used for Air Quality Modeling

1. 1 Year(s) of data from 1 / 1 / 64 to 12 / 31 / 64
month day year month day year

2. Surface data obtained from (location) NA

3. Upper air (mixing height) data obtained from (location) NA

4. Stability wind rose (STAR) data obtained from (location) Daytona (WBAN 12834)

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

~~Pollutant~~	Emission Rate
NOx	
~~TSP~~	7.0 grams/sec
SO^2	_____ grams/sec

E. Emission Data Used in Modeling see permit application and Attachment F

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review. See Attachment F

*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

The installation of this unit will improve the reliability of the community electrical system without significant social, economic, or environmental impacts.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT A

(Reference to Permit Section II)

1. Volusia County is not a non-attainment area for any pollutant.

2&3. The existing plant is not a major source for any pollutant so PSD review does not apply to any pollutant that does not increase 250 TPY with this modification. PSD Section (Attachment F) Table F-1, shows that the proposed expansion is a major source for nitrogen dioxide, thus both BACT and PSD review apply for this pollutant.

4. On July 23, 1979, NSPS were proposed for internal combustion engines; these standards were to become effective for engines which commenced construction after January 23, 1982, and would be applicable to dual fuel engines with displacements greater than 560 cubic inches per cylinder. The two proposed units each have a displacement of 1037 cubic inches per cylinder and would be required to meet the standard. However, these standards have not yet been adopted by law.

5. NESHAPS regulations do not apply to this type of source.

ATTACHMENT B

Colt Industries

Fairbanks Morse
Engine Division
701 Lawton Avenue
Beloit, Wisconsin 53511
608/364-4411

(206608)1

June 11, 1982

Environmental Science & Engr, Inc.
P. O. Box #ESE
Gainesville, Florida 32602

Attention: Mr. Michael H. Dybevick

Subject: Two (2) 12 Cyl - 38TDD 8-1/8 OP Engines
Relocated Gensets
Exhaust Emissions Data

Dear Mr. Dybevick:

At the request of our customer, Mr. Ed Berrier - Plant Supt. at the New Smyrna Beach Generating Facility, we have been instructed to advise you directly as to the exhaust emissions relative to the two (2) units planned for this installation. The data is as follows:

Unit No. 1 - 12 Cyl 38TDD 8-1/8 OP - Turbo Blower Series
Rated 2880 BHP @ 720 RPM - S/N 970348

Swoope #3

Mode		Diesel		Dual Fuel
NO_x	- GM/BHP-HR	10.0		9.0
CO	- GM/BHP-HR	1.2		1.4
HC	- GM/BHP-HR	.3		.4 ← non-methane
* Particulate	- GM/BHP-HR	.16	based on	.04
* SO_2	- GM/BHP-HR	1.0	0.3% S →	.1
Smoke	- Bosch Units	.8		.2

Unit No. 2 - 12 Cyl - 38TDD 8-1/8 OP - Turbo Blower Series
Rated 3168 BHP @ 720 RPM - S/N 873068

Swoope #4

Mode		Diesel		Dual Fuel
NO_x	- GM/BHP-HR	9.0		8.0
CO	- GM/BHP-HR	1.2		1.4
HC	- GM/BHP-HR	.3		1.2 ← this is total HC by mistake
* Particulate	- GM/BHP-HR	.18	based on	.04 Non-methane is ~0.5
* SO_2	- GM/BHP-HR	1.0	0.3% S →	.1
Smoke	- Bosch Units	.9		.2

(conversation with Ed. Bethea 6/18/82)

All Emission Values are for typical injection timings at each rating. These valves (*) are calculated from smoke emissions and for .3% sulfur fuel.

Should any additional information be required with respect to the foregoing, please feel free to contact the writer at your convenience.

Very truly yours,

COLT INDUSTRIES OPERATING CORP
FAIRBANKS MORSE ENGINE DIVISION

E. L. Betker
Contract Administrator

ELB:flb

cc: Al Belvedere - Beloit
Ed Berrier - New Smyrna Beach, Fla.
H. Dahlman - Beloit
H. Keinschrodt - Daytona Beach, Fla.
W. Marx - Houston Sales

SGS Control Services Inc.

Redwood Petroleum and Petrochemical division

825 Wynkoop Road
P O Box 5351
Tampa, Florida 33675
Tel (813) 247-3984
TWX (810) 876-2927

June 7, 1982

TO WHOM IT MAY CONCERN

Corrected Certificate

ENGINEERING

JUN 24 1982

UTILITIES COMMISSION
NEW SMYRNA BEACH, FL

to accompany Certificate No

Analysis Certificate

Vessel Shore Tank No. 18
Receiver *Belcher Oil Company, Port Canaveral, Florida
Cargo No.2 Fuel Oil File No. 37434

Sample Marked Shore Tank No. 18 (Top, Middle and Bottom) (6-4-82)
Lab Reference No LP-2070-82
Sample Description No. 6 Fuel Oil
Submitted By SGS Control Services Inc.

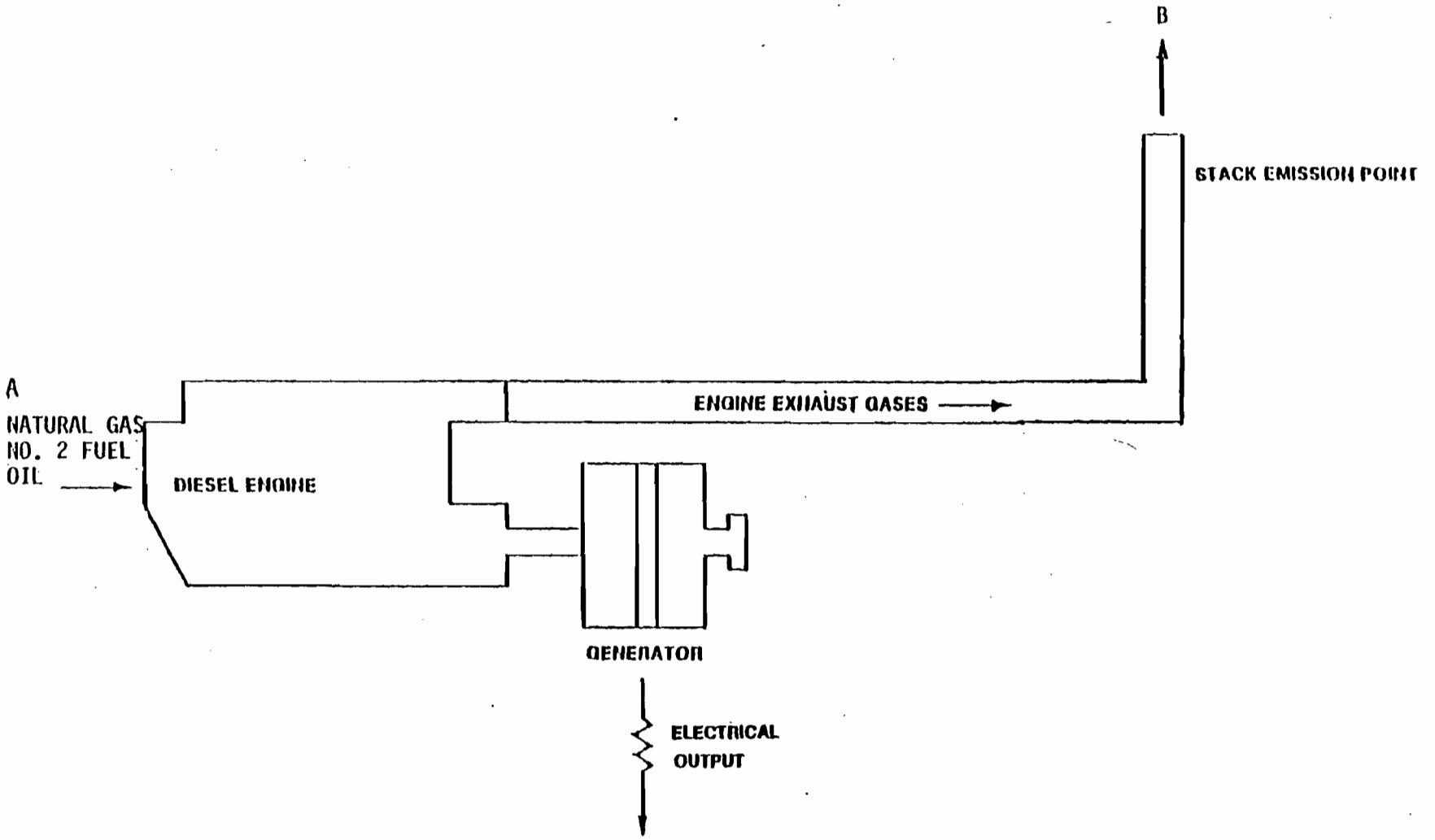
In accordance with your instructions per Mr. Dick Reed, we proceeded to *Belcher Oil Company, Port Canaveral, Florida on June 4, 1982 for the purpose of drawing a top, middle and bottom sample from Shore Tank No. 18. A portion of this sample was submitted to our Tampa laboratory for analytical findings. We now report to you as follows:

TEST	METHOD		RESULT
GRAVITY, A.P.I. @ 60°F	ASTM D-287		36.8
FLASH, °F (PMCC)	ASTM D-93		150
SEDIMENT & WATER, VOL.%	ASTM D-96		Trace
S.U.S. VISCOSITY, @ 100°F	ASTM D-445		33.5
POUR POINT, °F	ASTM D-97		Below 0°F
SULFUR, WT. %	ASTM D-1552		0.12
RAMSBOTTOM CARBON RES.,WT.% (10% BOTTOM)	ASTM D-524		0.14
CETANE INDEX	ASTM D-976		45.4
DISTILLATION, °F	ASTM D-86	I.B.P.	356
		5%	388
		10%	404
		20%	422
		90%	570
		END POINT	634
		% RECOVERY	98.5
		% LOSS	1.5
TRACE METALS	A.A.	CALICUM, ppm	None Detected
		LEAD, ppm	0.3
		POTASSIUM, ppm	0.1
		SODIUM, ppm	0.1
		VANADIUM, ppm	0.2

SGS CONTROL SERVICES INC.

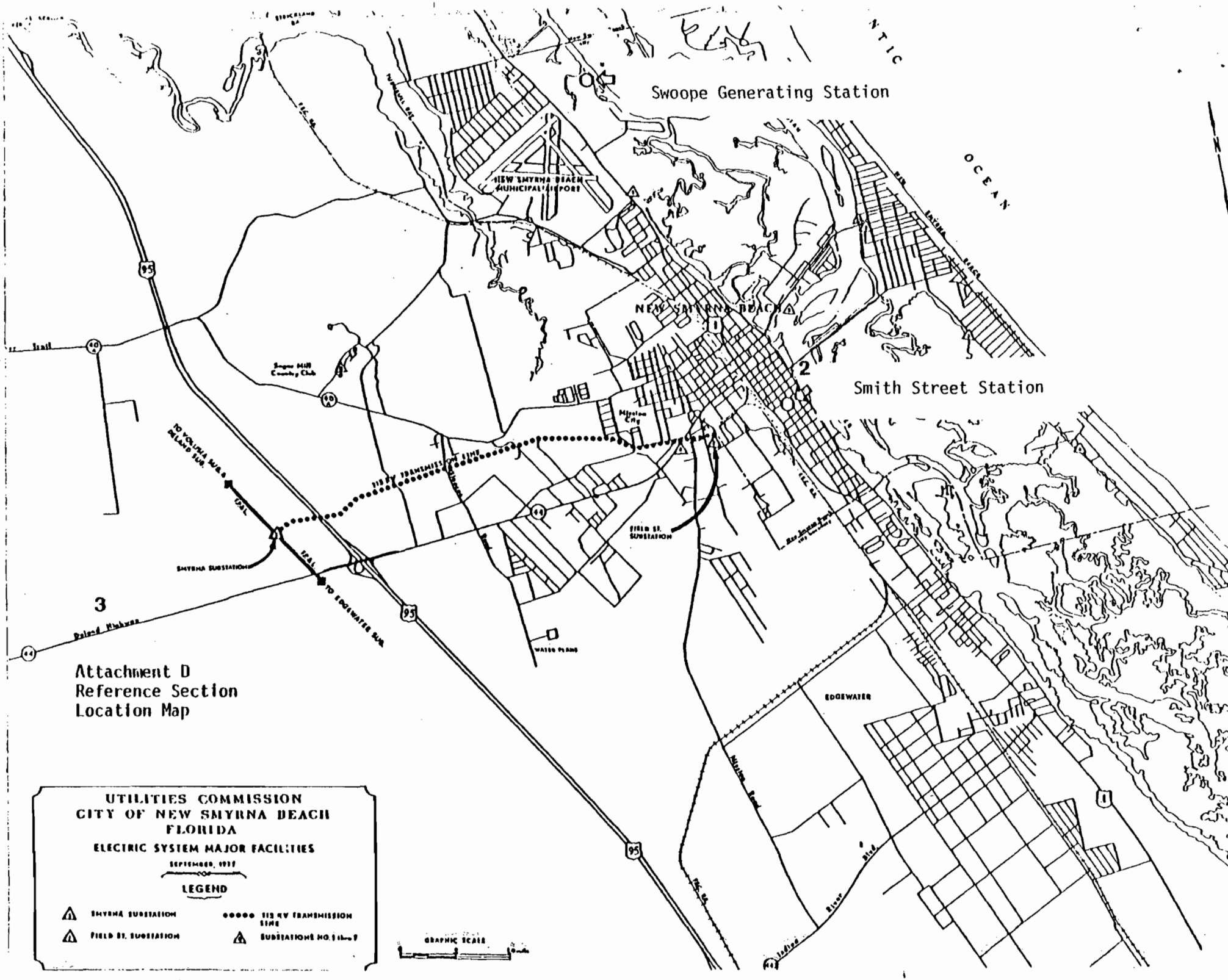
R. S. Sohngen
Operations Department

RSS/sl

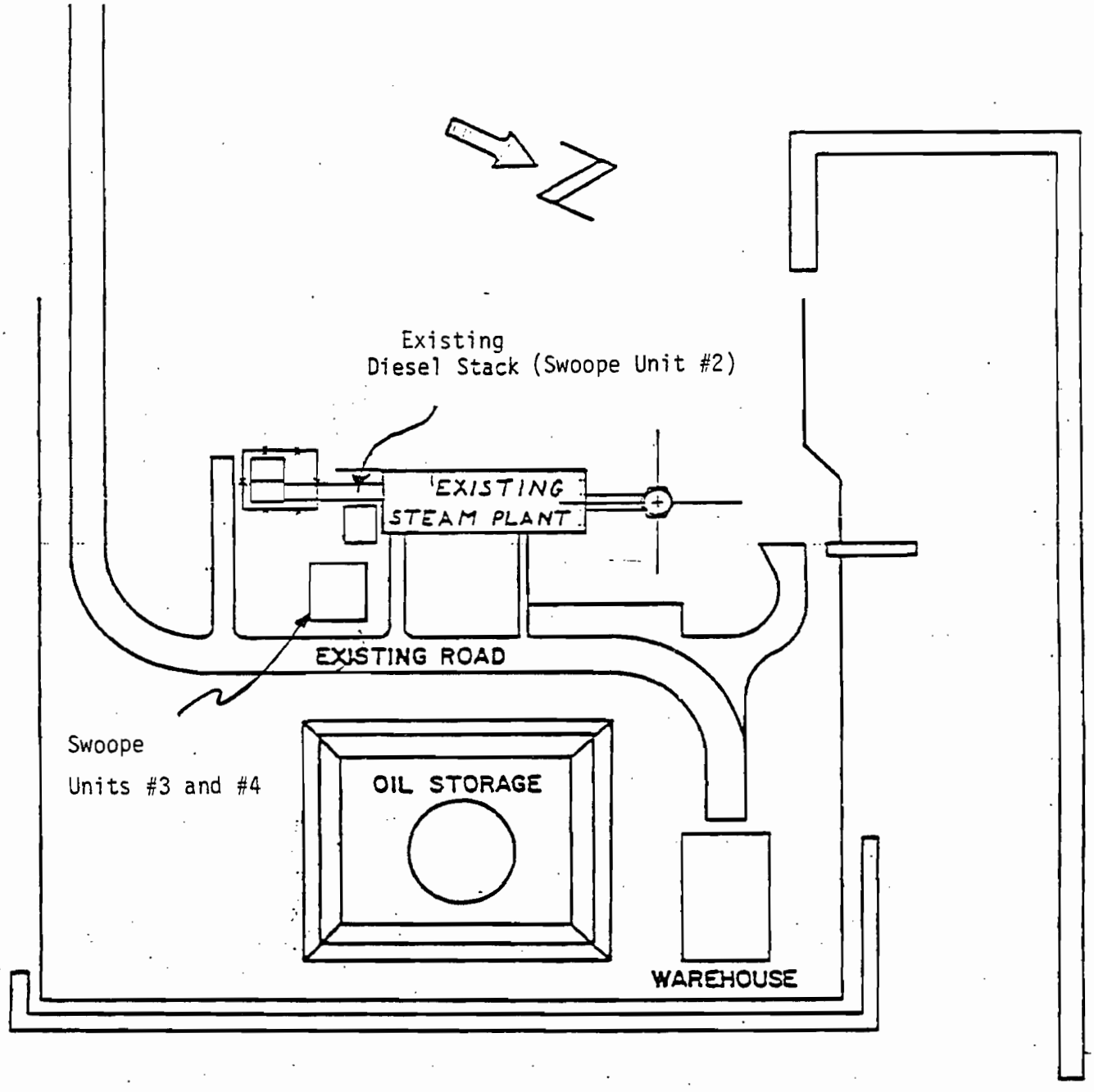


Attachment C: Reference Section V 6

FLOW DIAGRAM



Attachment D
Reference Section
Location Map



INTRACOASTAL WATERWAY

Attachment E
Reference Section V 7
Utility Plot Plan

REV.	DATE	BY	REVISIONS

UTILITIES COMMISSION
CITY OF NEW SMYRNA BEACH, FL.

Swoope Generating Station-
Plot Plan

DWN. RLW	SCALE SHOWN	REV. 0
CKD.	DATE 3-3-81	SAA-109
APP.		

ATTACHMENT F
PSD ANALYSIS

The Swoope Generating Station currently consists of a 116 X 10^6 Btu/hr steam generator (Swoope #1) and a 910 KW gas diesel generator (Swoope #2), which is limited by permit condition to a 70 percent capacity factor. Neither of these sources are in a category listed in 40 CFR 52.21 or FAC 17-2, and Table F-1 shows that current emission levels of all pollutants are below 250 TPY. The current configuration is therefore not a major source.

The proposed modification is an addition of two more gas diesel units, and an increase to 100 percent capacity factor for Swoope #2. Table F-1 shows that the change would be a major source for NOx only, and requires PSD review for this pollutant. The source description and control technology review components of the PSD review are contained in the accompanying construction permit application. This attachment describes the air quality impact analysis and its results.

Both state and federal regulations contain only annual average standards for NOx, so modeling was performed with the EPA approved ISC long term model. One year (1964) of surface observations from Daytona International Airport were summarized in STAR format and input to the model. The stack parameters are shown in Table F-2. A rectangular grid with 100 meter spacing was used, and all sources were assumed to emit at maximum allowable rates 24 hours a day, every day of the year. The attached computer output contains the results of two model runs. The first run modeled the impacts of the entire plant, the second run modeled the impacts of the two new units (Swoope #3 and #4) and the increased emissions due to the increased capacity factor for Swoope #2.

Both state and federal regulations require pre-construction monitoring unless the impacts of the modification are below certain de minimis levels. For NOx, the de minimis level is 14 ug/ m^3, annual average. The maximum impact of the proposed modification is 11 ug/m^3, and therefore the project may be exempted from the PSD pre-construction monitoring requirement.

The state and federal air quality standard for NOx is 100 ug/m^3. The highest predicted annual average impact due to the Swoope Generating Station is 16 ug/m^3. The only other major point source of NOx within 40 km is the New Smyrna Beach Smith Street station (see Attachment D). Since the Smith Street station also consists of gas diesels, and the maximum impacts of the Swoope Generating Station were small relative to the standard and occurred within 800 meters of the plant, no other sources were modeled for interaction. The nearest NOx monitoring data available are from a gas bubbler station located 1.5 miles north of the FPL Sanford power plant, about 25 miles southwest of the Swoope Station, (site code 10-4600-001-J-02). In 1980, the annual average NOx concentration at this site was 22.5 ug/m^3. Even if this value was used directly as a background concentration, the projected impacts of the Swoope Generating Station are low enough to provide reasonable assurance that air quality standards will not be exceeded.

Table F-1. Annual Emissions From Swoope Generating Station

	Particulate Matter	Sulfur Dioxide	Carbon Monoxide	Nitrogen Oxides	Hydrocarbons
Current					
Swoope #1 (steam)*	27	1	5	140	8
Swoope #2 (diesel)*	0.1	0.3	12	94	37
Total	27	1	17	234	45
Projected					
Swoope #1 (steam)*	27	1	5	140	8
Swoope #2 (diesel)* (at 100% capacity factor)	0.2	0.4	17	134	53
Swoope #3 (diesel)+	1	2	39	250	11
Swoope #4 (diesel)+	1	2	43	245	15
Total	29	5	104	769	87
Net Increase	2	4	87	535	42

*based on Swoope #2 permit application (AC64-43484) and revisions in June 26, 1981, letter to C. M. Collins FDER ST. Johns River District from K. F. Kosky, ESE, Inc.

+based on manufacturers letter, Attachment B.

Note: Swoope #2 hydrocarbons reported as total HC, Swoope #3 and #4 reported as non-methane.

Table F-2. Modeling Parameters - Swoope Generating Station

Source	NOx Emission Rate (g/s)	Stack Height (m)	Gas Temperature (k)	Exist Velocity (m/s)	Diameter (m)
Swoope #1	4.04	38.1	644	9.5	1.38
Swoope #2	3.84	6.1	589	43.9	0.36
Swoope #3	7.2	6.1	644	41.2	0.56
Swoope #4	7.0	6.1	644	44.2	0.56

- ISCLT INPUT DATA - and new only

NUMBER OF SOURCES = 3/2
NUMBER OF X AXIS GRID SYSTEM POINTS = 21
NUMBER OF Y AXIS GRID SYSTEM POINTS = 21
NUMBER OF SPECIAL POINTS = 0
NUMBER OF SEASONS = 1
NUMBER OF WIND SPEED CLASSES = 6
NUMBER OF STABILITY CLASSES = 5
NUMBER OF WIND DIRECTION CLASSES = 16
FILE NUMBER OF DATA FILE USED FOR REPORTS = 1
THE PROGRAM IS RUN IN RURAL MODE
CONCENTRATION (DEPOSITION) UNITS CONVERSION FACTOR =0.10000000E+07
ACCELERATION OF GRAVITY (METERS/SEC**2) = 9.800
HEIGHT OF MEASUREMENT OF WIND SPEED (METERS) = 7.000
ENTRAINMENT PARAMETER FOR UNSTABLE CONDITIONS = 0.600
ENTRAINMENT PARAMETER FOR STABLE CONDITIONS = 0.600
CORRECTION ANGLE FOR GRID SYSTEM VERSUS DIRECTION DATA NORTH (DEGREES) = 0.000
DECAY COEFFICIENT =0.00000000E+00
PROGRAM OPTION SWITCHES = 1, 1, 1, 0, 0, 3, 2, 2, 3, 0, 0, 0, 0,-1,-1, 0, 0, 1, 1, 0,
ALL SOURCES ARE USED TO FORM SOURCE COMBINATION 1
DISTANCE X AXIS GRID SYSTEM POINTS (METERS)= -1000.00, -900.00, -800.00, -700.00, -600.00, -500.00,
-400.00, -300.00, -200.00, -100.00, 0.00, 100.00, 200.00, 300.00, 400.00, 500.00,
600.00, 700.00, 800.00, 900.00, 1000.00,
DISTANCE Y AXIS GRID SYSTEM POINTS (METERS)= -1000.00, -900.00, -800.00, -700.00, -600.00, -500.00,
-400.00, -300.00, -200.00, -100.00, 0.00, 100.00, 200.00, 300.00, 400.00, 500.00,
600.00, 700.00, 800.00, 900.00, 1000.00,

- AMBIENT AIR TEMPERATURE (DEGREES KELVIN) -

	STABILITY CATEGORY 1	STABILITY CATEGORY 2	STABILITY CATEGORY 3	STABILITY CATEGORY 4	STABILITY CATEGORY 5	STABILITY CATEGORY 6
SEASON 1	300.0000	300.0000	300.0000	295.0000	289.0000	

- MIXING LAYER HEIGHT (METERS) -

SEASON 1

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.218400E+04	0.218400E+04	0.218400E+04	0.218400E+04	0.218400E+04	0.218400E+04
STABILITY CATEGORY 2	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04
STABILITY CATEGORY 3	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04
STABILITY CATEGORY 4	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04	0.145600E+04
STABILITY CATEGORY 5	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05	0.100000E+05

- ISCLT INPUT DATA (CONT.) - and new only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 1

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00009000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00016100	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00020800	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00014100	0.00034200	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00023400	0.00056900	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00014100	0.00034200	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00004700	0.00011400	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 2

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00110700	0.00113800	0.00102500	0.00000000	0.00000000	0.00000000
22.500	0.00025700	0.00034200	0.00045500	0.00000000	0.00000000	0.00000000
45.000	0.00014300	0.00045500	0.00102500	0.00000000	0.00000000	0.00000000
67.500	0.00032900	0.00156900	0.00250500	0.00000000	0.00000000	0.00000000
90.000	0.00087300	0.00182100	0.00318000	0.00000000	0.00000000	0.00000000
112.500	0.00066400	0.00068300	0.00091100	0.00000000	0.00000000	0.00000000
135.000	0.00007200	0.00022800	0.00045500	0.00000000	0.00000000	0.00000000
157.500	0.00051500	0.00068300	0.00022800	0.00000000	0.00000000	0.00000000
180.000	0.00092200	0.00102500	0.00045500	0.00000000	0.00000000	0.00000000
202.500	0.00090300	0.00011400	0.00068300	0.00000000	0.00000000	0.00000000
225.000	0.00066400	0.00068300	0.00102500	0.00000000	0.00000000	0.00000000
247.500	0.00103600	0.00091100	0.00136600	0.00000000	0.00000000	0.00000000
270.000	0.00062200	0.00102500	0.00113800	0.00000000	0.00000000	0.00000000
292.500	0.00043700	0.00091100	0.00034200	0.00000000	0.00000000	0.00000000
315.000	0.00122100	0.00148025	0.00045500	0.00000000	0.00000000	0.00000000
337.500	0.00043700	0.00091100	0.00034200	0.00000000	0.00000000	0.00000000

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- ISCLT INPUT DATA (CONT.) - and now only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 3

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00067800	0.00170800	0.00339100	0.00148000	0.00045500	0.00000000
22.500	0.00013200	0.00056900	0.00421199	0.00227700	0.00011400	0.00000000
45.000	0.00027300	0.00056900	0.00455400	0.00227700	0.00011400	0.00000000
67.500	0.00007900	0.00034200	0.00762799	0.00466799	0.00034200	0.00000000
90.000	0.00029100	0.00125200	0.01229499	0.00853799	0.00000000	0.00000000
112.500	0.00015900	0.00068300	0.00557799	0.00318800	0.00034200	0.00000000
135.000	0.00032600	0.00079700	0.00182100	0.00034200	0.00000000	0.00000000
157.500	0.00010600	0.00045500	0.00193500	0.00034200	0.00000000	0.00000000
180.000	0.00053700	0.00170800	0.00318800	0.00045500	0.00000000	0.00000000
202.500	0.00015900	0.00068300	0.00296000	0.00056900	0.00022800	0.00000000
225.000	0.00059000	0.00193500	0.00421199	0.00102500	0.00000000	0.00000000
247.500	0.00055600	0.00239100	0.00432600	0.00011400	0.00000000	0.00000000
270.000	0.00123100	0.00227700	0.00261800	0.00136600	0.00000000	0.00000000
292.500	0.00090500	0.00148000	0.00204900	0.00011400	0.00011400	0.00000000
315.000	0.00037000	0.00159400	0.00125200	0.00022800	0.00000000	0.00000000
337.500	0.00021200	0.00091100	0.00227700	0.00022800	0.00000000	0.00000000

SEASON 1

STABILITY CATEGORY 4

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00122200	0.00387100	0.01411698	0.03403896	0.01206699	0.00113800
22.500	0.00040300	0.00125200	0.00751399	0.01445798	0.00170800	0.00022800
45.000	0.00023500	0.00091100	0.00648899	0.01092899	0.00113800	0.00022800
67.500	0.00047000	0.00182100	0.01001799	0.01710998	0.00125200	0.00011400
90.000	0.00055100	0.00250500	0.02014998	0.02834697	0.00159400	0.00022800
112.500	0.00035600	0.00193500	0.01343399	0.02128898	0.00216300	0.00011400
135.000	0.00053700	0.00239100	0.01126999	0.01092899	0.00227700	0.00000000
157.500	0.00034300	0.00102100	0.00922099	0.00637499	0.00125200	0.00022800
180.000	0.00076600	0.00432600	0.01434398	0.01594699	0.00296000	0.00079700
202.500	0.00055700	0.00148000	0.00853799	0.01104299	0.00296000	0.00079700
225.000	0.00084600	0.00284600	0.00546399	0.00751399	0.00250500	0.00056900
247.500	0.00081300	0.00364300	0.00455400	0.00899399	0.00102500	0.00045500
270.000	0.00055100	0.00250500	0.00523699	0.01115699	0.00626099	0.00239100
292.500	0.00037900	0.00204599	0.00489499	0.00375799	0.00273599	0.00068300
315.000	0.00112700	0.00307499	0.00694399	0.00671699	0.00068399	0.00034200
337.500	0.00132099	0.00261899	0.00922099	0.00648899	0.00113899	0.00068399

- ISCLT INPUT DATA (CONT.) - and new only

- FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY -

SEASON 1

STABILITY CATEGORY 5

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (0.7500MPS)	WIND SPEED CATEGORY 2 (2.5000MPS)	WIND SPEED CATEGORY 3 (4.3000MPS)	WIND SPEED CATEGORY 4 (6.8000MPS)	WIND SPEED CATEGORY 5 (9.5000MPS)	WIND SPEED CATEGORY 6 (12.5000MPS)
0.000	0.00694999	0.00842399	0.00591999	0.00000000	0.00000000	0.00000000
22.500	0.00428799	0.00523699	0.00432600	0.00000000	0.00000000	0.00000000
45.000	0.00372700	0.00546399	0.00182100	0.00000000	0.00000000	0.00000000
67.500	0.00357400	0.00478099	0.00432600	0.00000000	0.00000000	0.00000000
90.000	0.00888199	0.01183999	0.01001799	0.00000000	0.00000000	0.00000000
112.500	0.00430499	0.00705799	0.00705799	0.00000000	0.00000000	0.00000000
135.000	0.01047199	0.01559698	0.00375700	0.00000000	0.00000000	0.00000000
157.500	0.00815999	0.01172599	0.00364300	0.00000000	0.00000000	0.00000000
180.000	0.01391298	0.02402097	0.00660299	0.00000000	0.00000000	0.00000000
202.500	0.00745999	0.01058699	0.00296000	0.00000000	0.00000000	0.00000000
225.000	0.00954299	0.01218099	0.00296000	0.00000000	0.00000000	0.00000000
247.500	0.01129099	0.01377498	0.00318800	0.00000000	0.00000000	0.00000000
270.000	0.01047599	0.01024599	0.00352900	0.00000000	0.00000000	0.00000000
292.500	0.00750399	0.00853799	0.00148000	0.00000000	0.00000000	0.00000000
315.000	0.01033499	0.01422998	0.00557799	0.00000000	0.00000000	0.00000000
337.500	0.00776299	0.00944899	0.00535099	0.00000000	0.00000000	0.00000000

- VERTICAL POTENTIAL TEMPERATURE GRADIENT (DEGREES KELVIN/METER) -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 2	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 3	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 4	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00	0.000000E+00
STABILITY CATEGORY 5	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01	0.200000E-01

- WIND PROFILE POWER LAW EXPONENTS -

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY 1	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00	0.100000E+00
STABILITY CATEGORY 2	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00	0.150000E+00
STABILITY CATEGORY 3	0.200000E+00	0.200000E+00	0.200000E+00	0.200000E+00	0.200000E+00	0.200000E+00
STABILITY CATEGORY 4	0.250000E+00	0.250000E+00	0.250000E+00	0.250000E+00	0.250000E+00	0.250000E+00
STABILITY CATEGORY 5	0.300000E+00	0.300000E+00	0.300000E+00	0.300000E+00	0.300000E+00	0.300000E+00

- SOURCE INPUT DATA -

C A R D	T A P E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV- ATION (M)	- SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	38.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 9.50, STACK DIAMETER (M)= 1.380, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0
								- SOURCE STRENGTHS (GRAMS PER SEC) -
								SEASON 1 SEASON 2 SEASON 3 SEASON 4
								4.04000E+00
WARNING - DISTANCE BETWEEN SOURCE 1 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								
X		2	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 589.00, GAS EXIT VEL. (M/SEC)= 43.90, STACK DIAMETER (M)= 0.360, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0
								- SOURCE STRENGTHS (GRAMS PER SEC) -
								SEASON 1 SEASON 2 SEASON 3 SEASON 4
								3.84000E+00
WARNING - DISTANCE BETWEEN SOURCE 2 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								
X		3	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 42.70, STACK DIAMETER (M)= 0.560, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0
								- SOURCE STRENGTHS (GRAMS PER SEC) -
								SEASON 1 SEASON 2 SEASON 3 SEASON 4
								1.42400E+01
WARNING - DISTANCE BETWEEN SOURCE 3 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								

Swoope#1 Steam unit

Swoope#2 Existing Diesel

Swoope #3 ; #4 Proposed Combined

Best Available Copy

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-1000.000	-900.000	-800.000	-700.000	-600.000	-500.000	-400.000	-300.000	-200.000
	- CONCENTRATION -								
1000.000	6.125322	6.127700	6.094093	6.019985	5.903982	5.750503	5.766286	7.027227	8.411560
900.000	6.356190	6.562686	6.538740	6.464639	6.336689	6.156047	5.930664	6.838499	8.2228[illegible]6
800.000	6.608039	6.840491	7.033495	6.959665	6.801756	6.533855	6.225493	6.464143	8.059186
700.000	6.885277	7.149355	7.366058	7.504187	7.254660	6.901388	6.489676	6.076775	7.490542
600.000	7.194715	7.498895	7.734884	7.816087	7.742961	7.266974	6.676906	6.082804	6.595673
500.000	7.546048	7.900994	8.133423	8.204315	8.057222	7.643398	6.811241	5.924693	5.378366
400.000	8.055733	8.369009	8.642580	8.730305	8.529869	7.936595	6.917276	5.617219	4.515382
300.000	9.270226	9.495520	9.558521	9.481441	9.293653	8.578476	7.194072	5.255514	3.547350
200.000	10.560844	10.957678	11.205563	11.196426	10.786316	9.825712	8.184658	5.543178	[illegible].633325
100.000	11.878965	12.509329	13.024607	13.297129	13.123604	12.206591	10.177889	6.863959	7.344543
0.000	13.175607	14.069468	14.932831	15.609529	15.906578	15.455215	13.770771	10.179537	6.265150
-100.000	11.479237	12.059605	12.524664	12.754679	12.562798	11.683037	9.802814	6.831932	4.040810
-200.000	9.757004	10.048000	10.185202	10.073137	9.595356	8.657013	7.427290	5.412742	3.138496
-300.000	8.083979	8.146931	8.041805	7.836459	7.696771	7.169133	6.144471	4.714012	4.365896
-400.000	6.523219	6.666589	6.814183	6.816475	6.600318	6.095775	5.297487	5.407205	5.670534
-500.000	5.780070	5.952970	6.020259	5.953754	5.715382	5.282607	5.591874	5.971330	6.611378
-600.000	5.209709	5.307322	5.329631	5.225793	4.994627	5.364688	5.777692	6.268412	7.558534
-700.000	4.695052	4.736332	4.715121	4.609434	4.974573	5.372901	5.816212	6.325062	8.071970
-800.000	4.234854	4.235273	4.180302	4.530062	4.907113	5.299863	5.730793	6.542064	8.245063
-900.000	3.826123	3.797574	4.095892	4.421498	4.775195	5.156284	5.559735	6.678347	8.187111
-1000.000	3.464766	3.718670	3.994530	4.292553	4.612313	4.952946	5.426483	6.658609	7.9859[illegible]1

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE , METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
1000.000	9.869898	11.351654	9.954981	8.567457	7.239342	6.018775	5.742392	5.614089	5.464535
900.000	9.972689	11.668583	10.092953	8.553875	7.136763	6.168166	6.034616	5.897486	5.755775
800.000	9.866144	11.810623	10.036242	8.363705	6.886261	6.375821	6.270579	6.173937	6.135849
700.000	9.439804	11.630123	9.681034	7.935769	6.610131	6.508605	6.455699	6.460480	6.311454
600.000	8.565241	10.960043	8.907347	7.227982	6.529463	6.538840	6.592488	6.618515	6.517968
500.000	7.140826	9.615231	7.623003	6.270267	6.236110	6.458998	6.697357	6.717663	6.708583
400.000	5.176396	7.472694	5.840555	5.353290	5.737008	6.315817	6.580545	6.895285	6.911712
300.000	2.920495	4.577614	3.767562	4.160435	5.157791	5.825749	6.482625	6.943979	7.170089
200.000	1.252086	1.858642	2.132963	3.036510	4.179140	5.506003	6.573929	7.[illegible]35996	7.204359
100.000	0.494475	0.328906	0.980206	2.076285	3.765391	5.489461	6.609579	7.105307	7.334866
0.000	2.162560	0.000000	0.761915	2.792976	4.605332	6.317080	7.246098	7.024152	7.644953
-100.000	1.270458	0.960945	0.429746	1.256586	2.570521	4.214346	5.382666	6.060357	6.360042
-200.000	2.493481	4.143908	1.435534	2.429105	3.112972	3.619251	4.031170	4.720282	5.239251
-300.000	4.745513	7.68539[illegible]	5.847863	3.605576	4.915764	4.951458	4.882779	4.720389	4.483781
-400.000	7.364384	10.736780	6.724648	4.526872	5.552440	6.444570	6.07[illegible]	5.610029	5.195459
-500.000	9.097662	12.2675[illegible]	8.752436	5.948792	6.041991	6.552313	7.0[illegible]196	6.059358	5.885485
-600.000	9.2713[illegible]2	12.724[illegible]7	5.70[illegible]342	7.232[illegible]	6.29[illegible]	6.561132	6.97[illegible]3	7.1431[illegible]	6.468737

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** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - -100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
-700.000	10.237406	12.561590	10.150810	7.966827	6.318871	6.453076	6.639539	6.804550	6.912998
-800.000	10.124470	12.066780	10.116732	8.277456	6.653737	6.250275	6.361072	6.465375	6.500518
-900.000	9.796532	11.413338	9.836887	8.301712	6.892848	5.985910	6.046538	6.089931	6.108262
-1000.000	9.359263	10.721052	9.428007	8.147799	6.925193	5.804323	5.689330	5.724257	5.742361

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - 800.000	900.000	1000.000
	- CONCENTRATION -		
1000.000	5.351393	5.214439	5.075349
900.000	5.608562	5.455925	5.299848
800.000	5.877198	5.704020	5.534438
700.000	6.143172	5.961765	5.778400
600.000	6.404109	6.229158	6.031364
500.000	6.640710	6.506221	6.294152
400.000	6.897082	6.788972	6.539887
300.000	7.102132	6.893804	6.608261
200.000	7.142980	6.943727	6.671797
100.000	7.251471	7.024717	6.727612
0.000	7.453820	7.152027	6.803570
-100.000	6.403279	6.289964	6.090511
-200.000	5.441939	5.474588	5.400136
-300.000	4.611043	4.736916	4.743624
-400.000	4.785154	4.395904	4.144448
-500.000	5.360918	4.879807	4.419462
-600.000	5.864269	5.293977	4.790988
-700.000	6.231319	5.628532	5.102954
-800.000	6.485319	5.881890	5.350441
-900.000	6.698072	6.059633	5.535496
-1000.000	5.738455	5.711640	5.664222

- SOURCE INPUT DATA -

C A R D	T A P E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE ELEV- ATION (M)	- SOURCE DETAILS DEPENDING ON TYPE -
X		1	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 589.00, GAS EXIT VEL. (M/SEC)= 43.90, STACK DIAMETER (M)= 0.360, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0
								- SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4
								1.15000E+00
WARNING - DISTANCE BETWEEN SOURCE 1 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								
X		2	STACK	0.00	0.00	6.10	0.00	GAS EXIT TEMP (DEG K)= 644.00, GAS EXIT VEL. (M/SEC)= 42.70, STACK DIAMETER (M)= 0.560, HEIGHT OF ASSO. BLDG. (M)= 0.00, WIDTH OF ASSO. BLDG. (M)= 0.00, WAKE EFFECTS FLAG = 0
								- SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4
								1.42900E+01
WARNING - DISTANCE BETWEEN SOURCE 2 AND POINT X,Y= 0.00, 0.00 IS LESS THAN PERMITTED								

Swoope #2 Existing Diesel
Emission rate corresponds to
increase above 70% capacity factor limitation.

Swoope #3 & #4 Combined

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-1000.000	-900.000	-800.000	-700.000	-600.000	-500.000	-400.000	-300.000	-200.000
	- CONCENTRATION -								
1000.000	4.529756	4.530603	4.511012	4.458233	4.371409	4.254956	4.263452	5.188981	6.286468
900.000	4.710518	4.858240	4.843405	4.787918	4.686647	4.544641	4.369836	5.021120	6.102467
800.000	4.914883	5.079499	5.210071	5.147761	5.016402	4.796514	4.548201	4.629167	5.817804
700.000	5.136922	5.321885	5.464080	5.538367	5.320856	5.018771	4.668899	4.348303	5.300343
600.000	5.382028	5.593119	5.741446	5.755008	5.635359	5.215117	4.713485	4.232643	4.523201
500.000	5.658475	5.903630	6.037080	6.023872	5.819725	5.394122	4.680183	3.961777	3.533201
400.000	6.051797	6.265864	6.419033	6.399251	6.124184	5.521543	4.598712	3.564828	2.762926
300.000	6.950764	7.094189	7.094568	6.957702	6.661875	5.923663	4.682643	3.135205	1.962312
200.000	7.907338	8.164433	8.276503	8.153919	7.686349	6.776796	5.296220	3.207801	1.309849
100.000	8.886095	9.308157	9.599226	9.646774	9.284388	8.294069	6.462439	3.851166	1.837859
0.000	9.853601	10.469259	11.008928	11.332335	11.268307	10.526871	8.779190	5.721337	3.732776
-100.000	8.584108	8.971802	9.231838	9.260172	8.906273	7.978684	6.299791	3.949928	2.376056
-200.000	7.298388	7.480745	7.520294	7.341415	6.861167	6.030926	4.925282	3.290251	1.714460
-300.000	6.053619	6.076718	5.962884	5.757898	5.557244	5.038174	4.145288	3.009334	2.599359
-400.000	4.887339	4.983474	5.065331	5.019750	4.790734	4.332579	3.663387	3.624520	3.700643
-500.000	4.329359	4.449526	4.481150	4.399299	4.177841	3.807566	3.968241	4.176242	4.569763
-600.000	3.899849	3.967222	3.972616	3.875276	3.678033	3.921675	4.191241	4.519220	5.395178
-700.000	3.511554	3.539032	3.516667	3.428170	3.690674	3.973131	4.287094	4.652943	5.890690
-800.000	3.163233	3.161773	3.117146	3.380041	3.661081	3.950712	4.268748	4.863049	6.102528
-900.000	2.852649	2.830565	3.058518	3.306043	3.573822	3.861777	4.166894	4.994776	6.110539
-1000.000	2.576872	2.772741	2.984722	3.212920	3.457094	3.716992	4.076013	4.995479	5.986277

- GRID SYSTEM RECEPTORS -

- X AXIS (DISTANCE, METERS) -

Y AXIS (DISTANCE, METERS)	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
	- CONCENTRATION -								
1000.000	7.280466	8.376677	7.351406	6.337106	5.367568	4.477124	4.267008	4.163865	4.058664
900.000	7.297355	8.543688	7.396438	6.285521	5.269374	4.575168	4.472225	4.366213	4.255118
800.000	7.116298	8.526773	7.254468	6.074090	5.096179	4.691741	4.620716	4.554272	4.453094
700.000	6.659750	8.203991	6.842833	5.658136	4.784166	4.728436	4.713701	4.694533	4.642612
600.000	5.816922	7.452812	6.081230	5.018644	4.611780	4.664504	4.754748	4.718905	4.768865
500.000	4.586627	6.178086	4.942447	4.205564	4.257614	4.502133	4.762873	4.831609	4.872447
400.000	3.964259	4.409218	3.522186	3.386473	3.754132	4.292801	4.572902	4.826157	4.979425
300.000	1.528748	2.354199	2.049510	2.423868	3.224925	3.798440	4.397372	4.859688	5.129473
200.000	0.637208	0.984886	1.189432	1.626319	2.418874	3.453172	4.357290	4.885594	5.142127
100.000	0.288919	0.184337	0.610358	1.128199	2.062204	3.402621	4.393205	4.987955	5.252602
0.000	1.323775	[illegible]	0.449373	1.675433	2.608347	4.020135	4.913198	5.376213	5.525256
-100.000	0.813881	0.575565	0.254399	0.684745	1.414449	2.620183	3.591733	4.727263	4.561974
-200.000	1.385221	2.350532	0.738085	1.250501	1.779791	2.247648	2.668141	3.318553	3.737797
-300.000	2.628058	4.129972	2.088264	2.113579	3.013345	3.196694	3.288659	3.285767	3.195413
-400.000	4.633548	6.712242	4.171715	3.196665	3.602941	4.341627	4.176923	3.971232	3.733903
-500.000	6.165956	8.326246	5.842155	[illegible]	4.109892	4.547997	[illegible]	[illegible]	4.272960
-600.000	7.162424	9.217750	6.867889	5.274963	4.432734	4.667537	[illegible]	5.129542	[illegible]

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED (CONT.) **

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - CONCENTRATION -								
	-100.000	0.000	100.000	200.000	300.000	400.000	500.000	600.000	700.000
-700.000	7.445539	9.141445	7.348537	5.749539	4.562780	4.676843	4.841251	4.990833	5.092370
-800.000	7.481155	8.919882	7.450238	6.079086	4.880642	4.587487	4.679839	4.768476	4.900737
-900.000	7.305363	8.512440	7.316545	6.160236	5.104819	4.427017	4.472134	4.595086	4.617848
-1000.000	7.012303	8.032454	7.049086	6.079269	5.154711	4.307981	4.217338	4.339796	4.349018

Y AXIS (DISTANCE, METERS)	- GRID SYSTEM RECEPTORS - X AXIS (DISTANCE, METERS) - CONCENTRATION -		
	800.000	900.000	1000.000
1000.000	3.949165	3.835467	3.719000
900.000	4.137527	4.013654	3.890831
800.000	4.331511	4.199357	4.067876
700.000	4.522067	4.388280	4.249101
600.000	4.702225	4.580199	4.434093
500.000	4.856625	4.775698	4.623975
400.000	5.022134	4.973322	4.802281
300.000	5.156453	5.050423	4.862032
200.000	5.187934	5.095057	4.919748
100.000	5.264184	5.170945	4.973930
0.000	5.467811	5.288986	5.047168
-100.000	4.672099	4.633645	4.505657
-200.000	3.953654	4.018964	3.983482
-300.000	3.340763	3.466486	3.487743
-400.000	3.476663	3.212633	3.035532
-500.000	3.918939	3.578633	3.242239
-600.000	4.309852	3.894997	3.522620
-700.000	4.594871	4.149644	3.757112
-800.000	4.790774	4.340483	3.940945
-900.000	4.906586	4.471251	4.075399
-1000.000	4.239617	4.211085	4.165322