



**TECHNICAL EVALUATION  
&  
PRELIMINARY DETERMINATION**

**APPLICANT**

Oleander Power Project, L.P.  
555 Townsend Road  
Cocoa, Florida 32926

Oleander Power Project  
Facility ID No. 0090180

**PROJECT**

Project No. 0090180-007-AC/PSD-FL-258A/PSD-FL-377A  
Application for Minor Source Air Construction Permit  
Miscellaneous Revisions

**COUNTY**

Brevard County, Florida

**PERMITTING AUTHORITY**

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

May 9, 2013

## **1. GENERAL PROJECT INFORMATION**

### **Air Pollution Regulations**

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

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

### **Glossary of Common Terms**

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

### **Facility Description and Location**

Oleander Power Project is an existing electric power generator, which is categorized under Standard Industrial Classification Code No. 4911. The existing facility is located in Brevard County at 555 Townsend Road in Cocoa, Florida. The UTM coordinates are Zone 17, 520.12 km East, 3137.58 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to Ambient Air Quality Standards (AAQS).

### **Facility Regulatory Categories**

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

### **Project Description**

The purpose of this revision is to clarify the testing requirements for gas and oil upon permit renewal and to clarify that testing on fuel oil for Units 1 to 5 is not required when operating on fuel oil less than 400 hours annually and to remove the mass emissions limits for NO<sub>x</sub> from the requirements for Unit 5. These changes will require revisions to existing specific conditions in Permit No. 0090180-001-AC (PSD-FL-258) and Permit No. 0090180-003-AC (PSD-FL-377).

### **Processing Schedule**

4/9/2013      Received the application for a minor source air pollution construction permit.  
4/9/2013      Application is complete.

## **2. PSD APPLICABILITY**

### **General PSD Applicability**

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

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

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO<sub>x</sub>); sulfur dioxide (SO<sub>2</sub>); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM<sub>10</sub>); volatile organic compounds (VOC); lead (Pb); fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H<sub>2</sub>S); total reduced sulfur (TRS), including H<sub>2</sub>S; reduced sulfur compounds, including H<sub>2</sub>S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO<sub>2</sub> and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 µg/m<sup>3</sup>, 24-hour average.

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

### **PSD Applicability for Project**

There will be no change in currently permitted emissions limits for Units 1, 2, 3, 4 and 5 as a result of this project. Therefore, PSD review will not apply.

## **3. DEPARTMENT REVIEW**

The purpose of this revision is to clarify the testing requirements for gas and oil upon permit renewal and to clarify that testing on fuel oil for Units 1 to 5 is not required when operating on fuel oil less than 400 hours

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annually. These changes required revisions to the underlying PSD/air construction permit conditions, which are discussed below in this Technical Evaluation and Preliminary Determination.

**Permit Being Modified:** PSD-FL-258

**Affected Emissions Units:** Simple-Cycle Combustion Turbine-Electrical Generator (nominal 190 megawatt) Nos. 1, 2, 3 and 4 (E.U. ID Nos. 001, 002, 003 & 004)

The "Specific Condition No." cited below refers to the specific condition in PSD-FL-258.

1. Applicant's Requested Change:

29. Initial (I) performance tests shall be performed on each unit while firing natural gas as well as while firing fuel oil. Initial tests shall also be conducted after any modifications (and shake down period not to exceed 100 days after starting the CT) to air pollution control equipment, including low NO<sub>x</sub> burners or Hot SCR. Annual (A) compliance tests shall be performed during every federal fiscal year (October 1 - September 30) pursuant to Rule 62-297.310(7), F.A.C., on each unit as indicated. The following reference methods shall be used. No other test methods may be used for compliance testing unless prior DEP approval is received in writing.

- EPA Reference Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources" (I, A). If normal operation on fuel oil is less than 400 hours per calendar year, then subsequent compliance testing (annual or renewal) on fuel oil is not required for that year.
- EPA Reference Method 10, "Determination of Carbon Monoxide Emissions from Stationary Sources" (I, A).
- EPA Reference Method 20, "Determination of Oxides of Nitrogen Oxide, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines." Initial test only for compliance with 40CFR60 Subpart GG and (I, A) short-term NO<sub>x</sub> BACT limits (EPA reference Method 7E, "Determination of Nitrogen Oxides Emissions from Stationary Sources" or RATA test data may be used to demonstrate compliance for annual and renewal test requirements). If normal operation on fuel oil is less than 400 hours per calendar year, then subsequent compliance testing (annual or renewal) on fuel oil is not required for that year. If data collected from the reference method during the required CEMS quality assurance RATA test are substituted for annual or renewal compliance tests for NO<sub>x</sub>, then no separate annual or renewal compliance testing for the fuel fired while conducting the CEMS quality assurance RATA test shall be required.
- EPA Reference Method 18, and/or 25A, "Determination of Volatile Organic Concentrations." Initial test only. [Applicants Request]

Department's Response:

The Department agrees to the requested change.

2. Applicant's Requested Change:

32. Compliance with CO emission limit: An initial test for CO shall be conducted concurrently with the initial NO<sub>x</sub> test, as required. The initial NO<sub>x</sub> and CO test results shall be the average of three valid one-hour runs. Annual compliance testing for CO may be conducted concurrent with the annual RATA testing for NO<sub>x</sub> required pursuant to 40 CFR 75 and is (required for gas only). Such annual compliance test may be used for CO renewal test requirements, and is required for gas only. [Applicants Request]

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Department’s Response:

The Department agrees to the requested change.

3. Applicant’s Requested Change:

33. Compliance with the VOC emission limit: An initial test is required to demonstrate compliance with the BACT VOC emission limit. Thereafter, CO emission limit will be employed as surrogate and no annual **or renewal** testing is required. [Applicants Request]

Department’s Response:

The Department agrees to the requested change.

**Permit Being Modified:** PSD-FL-377

**Affected Emissions Unit:** Simple-Cycle Combustion Turbine-Electrical Generator (nominal 190 megawatt) (E.U. ID Nos. 005)

The “Specific Condition No.” cited below refers to the specific condition in PSD-FL-377.

4. Applicant’s Requested Change:

10. Emission Standards: Emissions from the combustion turbine shall not exceed the following standards.

Pollutant	Emission Standard <sup>c</sup>	Averaging Time	Compliance Method	Basis
NO <sub>x</sub> (Gas)	9.0 ppmvd @ 15% O <sub>2</sub>	24-hr rolling	CEMS	BACT
	<del>62.5 lb/hr</del> 9.0 ppmvd @ 15% O <sub>2</sub>	3 1-hr runs	Stack Test	
NO <sub>x</sub> (Oil)	42.0 ppmvd @ 15% O <sub>2</sub>	4-hr rolling	CEMS	NSPS
	336.8 lb/hr	3 1-hr runs	Stack Test	
PM/PM <sub>10</sub> <sup>a</sup>	10 % Opacity	6-minute block	Visible Emissions Test	BACT
	1.5 gr S/100 SCF of gas/ 0.05 % S fuel oil	N/A	Record Keeping	
SO <sub>2</sub> <sup>b</sup>	1.5 gr S/100 SCF of gas/ 0.05 % S fuel oil	N/A	Record Keeping	PSD Avoidance

- a. The fuel sulfur specifications combined with the efficient combustion design and operation of the combustion turbine represent BACT for PM/PM<sub>10</sub> emissions. Compliance with the visible emissions standard shall serve as an indicator of good combustion.
- b. The fuel sulfur specifications and limited hours of operation effectively limit the potential emissions of SO<sub>2</sub> and sulfuric acid mist (SAM) from the gas turbine.
- c. The mass emission rate standards are based on a turbine inlet condition of 59°F and 100 percent full load operation. Mass emission rate may be adjusted from actual test conditions in accordance with the performance curves and/or equations on file with the Department.

*{Permitting Note: In combination with the annual restriction on hours of operation, the above emissions standards effectively limit annual potential emissions from the combustion turbine to: 174.5 tons/year of NO<sub>x</sub>, 34.5 tons/year of PM/PM<sub>10</sub>, and 37.1 tons/year of SO<sub>2</sub>.}*

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[Rules 62-4.070(3), 62-210.200 (BACT), 62-212.400(PSD and PSD Avoidance), F.A.C; 40 CFR 60, Subpart KKKK; and, Applicants Request]

Department's Response:

Since a NO<sub>x</sub> continuous emissions monitor is used to show compliance with the BACT limit of 9.0 ppmvd @ 15% O<sub>2</sub> for gas and 42.0 ppmvd@15% O<sub>2</sub> for oil, the Department does not feel the mass emissions limit demonstrated by stack testing is required. Specific Condition 10. is changed as follows:

10. Emission Standards: Emissions from the combustion turbine shall not exceed the following standards.

Pollutant	Emission Standard <sup>e</sup>	Averaging Time	Compliance Method	Basis
NO <sub>x</sub> (Gas)	9.0 ppmvd @ 15% O <sub>2</sub>	24-hr rolling	CEMS	BACT
	62.5 lb/hr	3-1 hr runs	Stack Test	
NO <sub>x</sub> (Oil)	42.0 ppmvd @ 15% O <sub>2</sub>	4-hr rolling	CEMS	NSPS
	336.8 lb/hr	3-1 hr runs	Stack Test	
PM/PM <sub>10</sub> <sup>a</sup>	10 % Opacity	6-minute block	Visible Emissions Test	BACT
	1.5 gr S/100 SCF of gas/ 0.05 % S fuel oil	N/A	Record Keeping	
SO <sub>2</sub> <sup>b</sup>	1.5 gr S/100 SCF of gas/ 0.05 % S fuel oil	N/A	Record Keeping	PSD Avoidance

- a. The fuel sulfur specifications combined with the efficient combustion design and operation of the combustion turbine represent BACT for PM/PM<sub>10</sub> emissions. Compliance with the visible emissions standard shall serve as an indicator of good combustion.
- b. The fuel sulfur specifications and limited hours of operation effectively limit the potential emissions of SO<sub>2</sub> and sulfuric acid mist (SAM) from the gas turbine.
- c. ~~The mass emission rate standards are based on a turbine inlet condition of 59°F and 100 percent full load operation. Mass emission rate may be adjusted from actual test conditions in accordance with the performance curves and/or equations on file with the Department.~~

*{Permitting Note: In combination with the annual restriction on hours of operation, the above emissions standards effectively limit annual potential emissions from the combustion turbine to: 174.5 tons/year of NO<sub>x</sub>, 34.5 tons/year of PM/PM<sub>10</sub>, and 37.1 tons/year of SO<sub>2</sub>.}*

[Rules 62-4.070(3), 62-210.200 (BACT), 62-212.400(PSD and PSD Avoidance), F.A.C; 40 CFR 60, Subpart KKKK; and, Applicants Request]

5. Applicant's Requested Change:

16. Testing Requirements: Initial tests shall be conducted between 90% and 100% of permitted capacity; otherwise, this permit shall be modified to reflect the true maximum capacity as constructed. Subsequent annual tests shall be conducted between 90% and 100% of permitted capacity in accordance with the requirements of Rule 62-297.310(2), F.A.C. Tests shall be conducted for each pollutant while firing each fuel in the CT. For each run during tests for visible emissions, emissions of NO<sub>x</sub> recorded by the CEMS shall also be reported. Data collected from the reference method during the required CEMS quality assurance RATA tests may substitute for annual and renewal compliance tests for NO<sub>x</sub>, provided the owner or operator indicates this intent in the submitted test protocol, and obtains approval prior to testing. If the RATA is conducted at less than permitted capacity, and the data is used for annual compliance, the

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requirements of 62-297.310(2) (Operating Rate During Testing) still apply. The mass emission rate standards are based on a turbine inlet condition of 59°F and 100 percent full load operation. Mass emission rate may be adjusted from actual test conditions in accordance with the performance curves and/or equations on file with the Department. [Rule 62-297.310(2), and (7)(a), F.A.C.; 40 CFR 60.8; and, Applicants Request]

### Department's Response:

The Department agrees to the requested change.

### 6. Applicant's Requested Change:

18. Subsequent Compliance Testing: Annual compliance tests for NO<sub>x</sub>, and visible emissions shall be conducted during each federal fiscal year (October 1<sup>st</sup>, to September 30<sup>th</sup>). If normal operation on fuel oil is less than 400 hours per calendar year, then subsequent compliance testing (annual or renewal) on fuel oil is not required for that year. If normal operation on fuel oil exceeds 400 hours per year, the Department shall require compliance testing for NO<sub>x</sub> and visible emissions while firing fuel oil. If data collected from the reference method during the required CEMS quality assurance RATA test are substituted for annual or renewal compliance tests for NO<sub>x</sub>, then no separate annual or renewal compliance testing for the fuel fired while conducting the CEMS quality assurance RATA test shall be required.

[Rules 62-4.070, 62-210.200(BACT), and 62-297.310(7)(a)4, F.A.C.; and, Applicants Request]

### Department's Response:

The Department agrees to the requested change.

## Revisions

The approved revisions are shown in striketrough (for deletions) and double-underlines (for additions) format within the permit revision itself. All changes are emphasized with yellow highlight.

## State Requirements

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the F.A.C. The facility is subject to the applicable rules and regulations defined in the following Chapters of the F.A.C.

<u>Chapter</u>	<u>Description</u>
62-4	Permits
62-204	Air Pollution Control – General Provisions
62-210	Stationary Sources – General Requirements
62-212	Stationary Sources Preconstruction Review
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Stationary Sources – Emissions Standards
62-297	Stationary Sources – Emissions Monitoring

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### Federal Requirements

The facility was or is subject to the applicable federal provisions regarding air quality as established by the EPA in the following sections of the Code of Federal Regulations (CFR).

<u>Title 40, CFR</u>	<u>Description</u>
Section 52.21	Prevention of Significant Deterioration of Air Quality  Subpart A Standards of Performance for New Stationary Sources – General Provisions.
Part 60	Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.  Subpart GG - Standards of Performance for Stationary Gas Turbines.  Subpart KKKK Standards of Performance for Stationary Combustion Turbines.

### 4. PRELIMINARY DETERMINATION

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