



**TECHNICAL EVALUATION  
&  
PRELIMINARY DETERMINATION**

**APPLICANT**

Sugar Cane Growers Cooperative of Florida  
1500 West Sugar House Road  
Belle Glade, Florida 33430

Glades Sugar House  
Facility ID No. 0990026

**PROJECT**

Project No. 0990026-019-AC and 0990026-017-AC/PSD-FL-077B/PSD-FL-213A  
Application for Air Construction Permits/PSD Permits Revisions  
Increase steam production and heat input rates, Reduce PM and CO emissions limits, Add natural gas

**COUNTY**

Palm Beach County, Florida

**PERMITTING AUTHORITY**

Florida Department of Environmental Protection  
Air Resource Section  
South District Office  
2295 Victoria Avenue, Suite 364  
P.O. Box 2549  
Fort Myers, Florida 33902  
239-344-5600

April 24, 2012

## **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 Rules 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 on a quarterly basis 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**

Sugar Cane Growers Cooperative is an existing sugar mill, which is categorized under Standard Industrial Classification Code No. 2061. The facility is located in Palm Beach County at 1500 West Sugar House Road, Belle Glade, Florida 33430, Florida. The UTM coordinates of the existing facility are Zone 17, 534.9 km East, and 2953.3 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

### **Facility Regulatory Categories**

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has no 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 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**

Project 0990026-017-AC/PSD-FL-077B/PSD-FL-213A proposes to increase maximum hourly steam production limits, heat input limits, and reduce particulate matter (PM) and carbon monoxide (CO) emissions limits for Boiler No. 8. This project revises the respective limits in prevention significant deterioration permits PSD-FL-077 and PSD-FL-213. Project 0990026-019-AC proposes to add natural gas as an authorized fuel for Boiler Nos. 1, 2, 3, 4, 5 and 8. There are no significant emissions rate increases from either of these projects.

### **Processing Schedule**

November 9, 2011 Received the application for an air pollution construction permit (Project 0990026-017-AC/PSD-FL-077B/PSD-FL-213A).

December 6, 2011 Requested additional information.

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February 13, 2012 Received additional information; application complete.

March 13, 2012 Received the application for a air pollution construction permit (Project 0990026-019-AC).

March 13, 2012 Application complete.

### 2. PSD APPLICABILITY

#### General PSD Applicability

For areas currently in attainment with the state and federal 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 (Fl); 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 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 0990026-017-AC/PSD-FL-077B/PSD-FL-213A

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Project 0990026-017-AC/ PSD-FL-077B/PSD-FL-213A proposes to increase maximum hourly steam production limits, heat input limits, and reduce particulate matter (PM) and carbon monoxide (CO) emissions limits for Boiler No. 8. As provided in the application, the following Table A. summarizes potential emissions and PSD applicability for the project.

Table A. Potential Emissions (Tons/Year) and PSD

<b>Pollutant</b>	<b>Projected Actual Emissions (TPY)</b>	<b>Baseline Actual Emissions (TPY)</b>	<b>Project Potential Emissions (TPY)</b>	<b>Significant Emissions Rate (TPY)</b>	<b>Subject To PSD?</b>
CO	1829	1732	97.4	100	No
NO <sub>x</sub>	147.9	142.90	5.0	40	No
PM/PM <sub>10</sub>	80.3/74.6	78.0/72.5	2.3/2.1	25/15	No
SO <sub>2</sub>	86.2	57.2	28.97	40	No
VOC	88.3	83.6	4.7	40	No
SAM	3.83	2.5	1.3	7	No

As shown in the above table, total project emissions will not exceed the PSD significant emissions rates; therefore, the project is not subject to PSD preconstruction review. (note: The 10 year historical data used from stack testing in the PSD applicability review was from 2002-2010. Emission factors used were stack test data from 2001 – 2011).

These baseline actual emissions shall be used for Boiler No. 8’s 10 year annual reporting of actual emissions required by Permit No. 0990026-019-AC and 0990026-017-AC/PSD-FL-077B/PSD-FL-213A, Administrative Requirements, Specific Condition No. 9.

**PSD Applicability for Project 0990026-019-AC**

Project 0990026-019-AC proposes to add natural gas as an authorized fuel for Boiler Nos. 1, 2, 3, 4, 5 and 8. As provided in the application, the following Table B. summarizes potential emissions and PSD applicability for the project.

Table B. Potential Emissions (Tons/Year) and PSD Applicability

<b>Pollutant</b>	<b>Projected Actual Emissions (TPY)</b>	<b>Baseline Actual Emissions (TPY)</b>	<b>Project Potential Emissions (TPY)</b>	<b>Significant Emissions Rate (TPY)</b>	<b>Subject To PSD?</b>
CO	8380	8307	73.0	100	No
NO <sub>x</sub>	637.8	629.4	8.2	40	No
PM/PM <sub>10</sub>	319.2/296.3	316.1/293.8	3.1/2.5	25/15	No
SO <sub>2</sub>	324.5	286.7	37.8	40	No
VOC	401.9	397.6	4.3	40	No
SAM	14.4	12.7	1.7	7	No

As shown in the above table, total project emissions will not exceed the PSD significant emissions rates; therefore, the project is not subject to PSD preconstruction review. (note: The 10 year historical data used from stack testing in the PSD applicability review was from 2002-2010. Emission factors used were stack test data from 2001 – 2011).

**Baseline Actual Emissions For Comparison with Actual Annual Emisions Per Permit Requirement**

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As submitted in the application, the following table provides the baseline actual emissions for Boiler Nos. 1, 2, 3, 4, 5, and 6 for each pollutant. These baseline actual emissions shall be used for the 5 year and (10 year for Boiler No. 8) annual reporting of actual emissions required by Permit No. 0990026-019-AC and 0990026-017-AC/PSD-FL-077B/PSD-FL-213A Administrative Requirements Specific Condition No. 9.

**Table C. Baseline Actual Emissions for Permit No. 0990026-019-AC and 0990026-017-AC/PSD-FL-077B/PSD-FL-213A**

Emission unit ID	Pollutant					
	SO <sub>2</sub> (TPY)	NO <sub>x</sub> (TPY)	CO (TPY)	PM/PM10 (TPY)	VOC (TPY)	SAM (TPY)
EU001	37.3	54.5	1018	32.9/30.6	23.5	1.7
EU002	33.4	49.6	965	39.2/36.4	48.1	1.5
EU003	24.4	48.8	743	29.0/27.0	86.2	1.1
EU004	81.3	207.0	2270	83.3/77.4	82.6	3.6
EU005	53.0	126.5	1579	53.7/49.9	73.6	2.4
EU008	57.22	142.9	1732	78.0/72.5	83.6	2.5

### 3. APPLICATION REVIEW

#### Discussion of Emissions

The applicant proposed to increase Boiler No. 8's maximum hourly steam production rate and heat input from 264,000 lb/hr and 504 MMBtu/hr to 290,000 lb/hr and 553.6 MMBtu/hr. The justification for an approximate 10% increase in steam production and heat input was that a decrease in bagasse moisture had been observed by the facility and that previous compliance testing demonstrated the boilers could operate at the higher capacities while not exceeding the emission limits. The applicant provided that there had been no modifications or reconstruction to the boiler. The applicant submitted bagasse moisture data from the last ten years. This data showed a slight decreasing trend; from about 54% to a little more than 52%. A corresponding decrease in emission limits for PM and CO were proposed; from 0.15 lb/mmBtu to 0.137 lb/mmBtu for PM and from 5.5 lb/mmBtu to 5.01 lb/mmBtu for CO. Hourly and annual emissions limits for SO<sub>2</sub>, NO<sub>x</sub> and VOC remained the same.

Project 0990026-019-AC proposed to add natural gas as an authorized fuel for Boiler Nos. 1, 2, 3, 4, 5 and 8. All emissions limits for all emissions units remain the same.

#### Federal NSPS Provisions

NSPS Db is not applicable subject to any of the facility's boilers. An existing source can become subject to NSPS Db if it is "modified" or "reconstructed." Per 40 CFR 60 Subpart A, a modification is any physical change or change in the method of operation that causes an increase in any pollutant regulated under the NSPS on a lb/hr

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basis. Per 40 CFR 60.14 an increase in production rate of an existing facility shall not by itself be considered a modification if the increase can be accomplished without a capital expenditure on the facility. The facility is accomplishing the increase in capacity without a capital expenditure. Therefore, Boiler 8 is not subject to NSPS Db due to the project for increasing capacity. The addition of natural gas as a fuel is a physical change. The application demonstrated that the emissions will not be increased on a lb/hr basis. Therefore, Boiler Nos. 1, 2, 3, 4, 5, and 8 are not subject to Subpart Db due to the project to add natural gas as a fuel.

### **Federal NESHAP Provisions**

All boilers at the facility will be subject to 40 CFR 63 Subpart DDDDD. However EPA is currently in the process of developing revised standards for this subpart which was previously vacated. Until new standards are finalized the facility is unable to develop a compliance strategy.

### **Other Draft Permit Requirements**

The Department is requiring a boiler efficiency test be performed on Boiler No. 8 every five years beginning during the 2012-2013 crop season. Since the applicant stated that there have not been any physical modifications or reconstruction to the boiler, since boiler efficiency tests are not being performed periodically, and since the decrease in the bagasse moisture was shown to be minimal, boiler efficiency test results will provide the Department reasonable assurance and valid justification for any potential future steam production rate or heat input rate increase requests.

The natural gas usage to each boiler shall be metered and recorded in order to calculate each boiler's emissions due to natural gas usage.

The OMP for CO control shall be updated prior to the 2012-2013 crop season to incorporate the permitted steam production and heat input rates, as well as current permitted conditions for flue gas oxygen content levels, and oxygen analyzer.

## **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. Susan Machinski 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 of Environmental Protection's Air Resource Section in the South District Office at 2295 Victoria Avenue, Suite 364, Fort Myers, Florida 33902.