TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

Osceola Farms Company
32298 State Road 700
Pahokee, Florida 33476

Osceola Farms
Facility ID No. 0990019

PROJECT

Project No. 0990019-0015-AC
Application for Minor Source Air Construction Permit
Upgrade Existing Boilers No. 2, 3, 4, 5 and 6 to meet MACT Standards

COUNTY

Palm Beach, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Engineering and Permitting Section
South District Office
2295 Victoria Avenue
Fort Myers, FL 33901

February 7, 2014

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

Osceola Farms Company is an existing sugarcane processing mill, which is categorized under Standard Industrial Classification Code No. 2061. The facility is located in Palm Beach County at U.S. 98 and Hatton Highway, Pahokee, Florida. The UTM coordinates of the existing facility are Zone 17, 544.200 km East, and 2968.000 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.
- The facility is subject to 40 CFR 63, Subpart ZZZZ.
- The boilers are subject to Federal Regulations, Part 63 (40 CFR 63), Subpart DDDDD.

Project Description

Osceola Farms Company proposes to make modifications to five (5) existing boilers. (Boilers No. 2, 3, 4, 5 and 6) to comply with Boiler MACT CO limits.

a) Boilers Nos. 2, 3 and 6 – Modern OFA (Over Fire Air) systems are needed to reduce CO emissions to meet MACT emission limits for CO. As part of the new OFA systems, the bagasse fuel feeders are to be replaced to reduce the intrusion of cold air into the furnace. No other changes are proposed.

b) Boiler Nos. 4 and 5 – Do not currently employ grates. These boilers will be converted to inclined pinhole grate boilers by installing grates, new fuel feeders, new ash conveyance systems and other associated equipment. In addition, modern OFA systems for these boilers are to be installed to ensure compliance with the CO limit. The boilers are also to be converted to higher pressure boilers to match Boilers Nos. 2, 3 and 6 operations at the mill. The converted boilers are to be designed to operate at 350 psig and 600 degree F. steam conditions. To accomplish this, the boiler steam drums will be replaced, new superheaters will be installed to replace the existing superheaters, and the generating bank, rear wall and floor steam tubes will be replaced.

Processing Schedule

November 14, 2013 - Received the application for a minor source air pollution construction permit.

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_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and mercury (Hg). In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

If the potential emission 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

As provided in the application, the following table summarizes potential emissions and PSD applicability for the project. (See table 4-6: PSD Applicability Analysis for Boiler MACT Upgrades, in Application 09900019-015-AC)

Table A. Potential Emissions (Tons/Year) change per this project and PSD Applicability.

Combined total for Boilers Nos. 2,3,4,5 and 6.

Pollutant	Project Potential Emissions (TPY)	Significant Emissions Rate (TPY)	Subject To PSD?
CO	-3,951	100	No
NO_X	31.3	40	No
PM/PM_{10}	0	25/15	No
SO_2	-24.6	40	No
VOC	0	40	No
SAM	-1.1	-	No
Lead	0.0006	-	No
Mercury	0.0099	-	No
Fluoride	0.007	-	No

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

NOTE: For comparison of projected actual emissions to baseline actual emissions, see Table 4-6 of permit application No. 0990019-015-AC Dated November 2013.

3. APPLICATION REVIEW

Discussion of Emissions

It is noted that the changes to the OFA systems to reduce CO emissions will allow the boilers to meet the new Boiler MACT, CO standard. However, the improvement in the combustion process may also increase NOx emissions. Therefore the current NOx limits for boilers 3 and 6 will increase to 0.20 lb/MMBTU.

Projected Actual Emissions (TPY)

Unit ID. No.	SO_2	NO_x	CO	PM	PM_{10}	VOC
002	9.6	122.9	1,165	76.1	82.6	184.8
003	9.7	86.7	979	72.0	78.5	69.1
004	10.3	114.8	1,025	96.2	102.4	249.8
005	11.4	126.0	1,265	89.8	96.1	309.2

006	5.0	100.0	1,063	66.2	72.8	83.2

4. STACK TESTING

Boiler No. 2 and 5 (EU-002 and EU-005)have two (2) scrubbers and two (2) stacks that are used to control the PM emissions from Boiler No. 2. and No. 5. Each wet scrubber exhausts to a separate stack. The project (Permit 0990019-013-AC) authorized independent stack tests to be performed for each of the exhaust stacks o The two (2) scrubbers associated with Boiler No. 2. The stack tests are performed for the purpose of demonstrating compliance with permitted emissions limits for particulate matter (PM), volatile organic compounds (VOC) and nitrogen oxides (NO_X).

5. 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. Carter B. Endsley, P.E. 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 South District Office at 2295 Victoria Avenue, Suite 364, Fort Myers, Florida 33902.