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BUREAU OF AIR REGULATION

U.S. Environmental Protection Agency
Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960

Attention: Ms. Beverly H. Banister, Director, Air, Pesticides, and Toxics Management Division

**RE: UNITED STATES SUGAR CORPORATION (U.S. SUGAR) –
CLEWISTON MILL, BOILER NO. 8
REQUEST TO REVISED ALTERNATIVE MONITORING PLAN FOR OPACITY**

Dear Ms. Banister:

United States Sugar Corporation (U.S. Sugar) operates Boiler No. 8 at the Clewiston Mill in Clewiston, Hendry County, Florida. Boiler No. 8 currently operates under an approved Alternative Monitoring Plan (AMP) for opacity to satisfy the new source performance standards (NSPS) for industrial boilers, contained in Title 40, Part 60 of the Code of Federal Regulations (40 CFR 60), Subpart Db [§60.48b(a)]. U.S. Sugar is now requesting, for the reasons set forth below, that the AMP be revised to allow the use of electrostatic precipitator (ESP) operating parameters in place of daily visible emissions (VE) readings to satisfy Subpart Db.

Description of Boiler No. 8

Boiler No. 8 is permitted to burn bagasse as its primary fuel, and wood chips and No. 2 fuel oil with a sulfur content of 0.05 percent or less by weight as supplemental and startup/shutdown fuels. Boiler No. 8 has a heat input capacity of 1,185 million British thermal units per hour (MMBtu/hr), with a maximum 24-hour permitted capacity of 1,077 MMBtu/hr. The boiler is permitted to operate 8,760 hours per year (hr/yr); however, the annual heat input is limited to 6,767,100 MMBtu/yr. The annual capacity factor for fuel oil burning is limited to less than 10 percent. The boiler is currently operating under Permit No. 0510003-037-AC/PSD-FL-333C.

Boiler No. 8 is equipped with wet sand separators ahead of the ESP control device. The wet sand separators are installed primarily to remove abrasive sand from the flue gas prior to the induced draft (ID) fan. A significant amount of water [up to 40 gallons per minute (gpm)] is injected into the flue gas stream passing through the separators.

Boiler No. 8 received its initial air construction and prevention of significant deterioration (PSD) permit on November 21, 2003 (Permit No. 0510003-021-AC/PSD-FL-333). This permit contained the U.S. Environmental Protection Agency (EPA)-approved AMP for opacity. A copy of the approval, issued September 22, 2003, is attached. The boiler was subsequently constructed and began initial operation in March 2005. Normal operation was achieved in October 2005.

Subpart Db Applicability

Boiler No. 8 is subject to NSPS Subpart Db. At the time of initial permitting and construction, the boiler was subject to limits for affected units that commenced construction prior to February 28,

2005. The initial permitting was for firing bagasse and No. 2 fuel oil; therefore, the only particulate matter (PM) limit that applied under Subpart Db was the opacity standard under §60.43b(f). The opacity standard applied only for the firing of fuel oil in the boiler. Subpart Db requires that an affected source subject to the opacity standard in §60.43b(f) must install and operate a continuous opacity monitoring system (COMS) [§60.48b(a)].

Subsequently, the boiler was permitted to also burn wood chips. Permit No. 0510003-030-AC/PSD-FL-333B, issued on April 7, 2006, authorized the firing of wood chips in the boiler. Since the boiler was already capable of burning wood chips and no increase in PM emissions resulted from this change, this change did not constitute a modification under NSPS. Therefore, the boiler remained subject to the pre-February 28, 2005 emission limits, and the PM limits of §60.43b(h) did not apply.

The PM limits for wood firing contained in §60.43b(c) potentially apply to the boiler. Section 60.43b(c)(1) applies if the annual capacity factor for the boiler is greater than 30 percent, and §60.43b(c)(2) applies if the annual capacity factor for wood is less than 30 percent and if the boiler has a maximum heat input capacity of 250 MMBtu/hr or less. The boiler has a maximum heat input capacity of more than 250 MMBtu/hr; therefore, §60.43b(c)(2) does not apply. Although the boiler does not have an annual capacity factor limit of 30 percent or less, the application to burn wood chips in Boiler No. 8 specified an annual heat input limit on wood of 1,200,000 MMBtu/yr. This would equate to an annual capacity factor of 12.7 percent based on the maximum permitted 24-hour heat input rate of 1,077 MMBtu/hr and 8,760 hr/yr operation.

Boiler No. 8 has never experienced an actual annual capacity factor of greater than 30 percent for wood, and U.S. Sugar is willing to take a permit limit, if necessary, to ensure the 30-percent capacity factor for wood is not exceeded. Therefore, §60.43b(c)(1) does not apply and the PM emission limits in §60.43b(c) do not apply.

Although the Subpart Db limits for PM do not apply to the boiler, the PSD permit for the boiler limits PM emissions to 0.025 lb/MMBtu.

Approved AMP for Opacity

Boiler No. 8 is currently subject to an AMP for opacity, approved by the EPA in September 2003. The AMP was approved due to the high moisture content of the bagasse and the moisture introduced into the wet sand separator preceding the ESP control device. U.S. Sugar indicated that water droplets in the flue gas would interfere with reliable opacity measurements when using a COMS. Section 60.13(i) allows EPA to approve alternative monitoring procedures when liquid water interference does not provide accurate measurements with a COMS. Therefore, U.S. Sugar proposed at the time to conduct opacity readings using EPA Method 9 during each day that the boiler fired fuel oil. U.S. Sugar has been conducting these opacity readings since the boiler began operating in March 2005.

Request to Revise AMP for Opacity

Due to the extensive resources required to perform daily opacity readings on Boiler No. 8, U.S. Sugar is proposing an alternative to the current AMP for opacity. The current AMP requires a daily opacity reading of 12 minutes once per daylight shift during the period that the highest distillate fuel oil firing rate occurs. This is problematic in that it is frequently not feasible to conduct an opacity reading during the period of highest fuel oil burning.

Boiler No. 8 burns bagasse as its primary fuel. Distillate fuel oil is only burned out of necessity. This typically occurs when the sugarcane grinding mills experience a problem and

higher-than-normal-moisture bagasse is being fired. This may also occur when the boiler itself is experiencing upset conditions. These conditions may occur several times a day for short periods. Often during these times, certified opacity readers are not available to conduct Method 9 readings, since they are usually dedicated to correcting the operational issue with the boiler or are performing other duties.

As a result, U.S. Sugar often must deliberately burn fuel oil at a later time in the day, at a fuel oil firing rate at least as high as encountered during the plant/boiler operational problem, in order to satisfy the requirement to conduct the opacity reading during the highest oil firing rate during the day. This is a very inefficient use of resources and unnecessarily consumes fossil fuels.

U.S. Sugar must also maintain five or six certified VE readers at all times in order to cover all shifts, weekends, and holidays at the Mill. These staff must be re-certified every 6 months. This is a significant use of resources and a significant expense for U.S. Sugar.

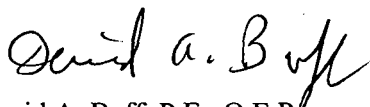
In recognition of these issues, U.S. Sugar is proposing to revise the current AMP for Boiler No. 8 to satisfy the COMS requirement. The proposed AMP is based on the recently EPA-approved AMP for opacity for Boiler No. 7 at the Clewiston Mill. It is also consistent with the draft Compliance Assurance Monitoring (CAM) Plan for Boiler No. 8, which relies on ESP power input measurements as an indicator parameter for PM emissions. The proposed revised AMP for Boiler No. 8 is attached.

U.S. Sugar requests that the proposed AMP be approved by EPA. Once EPA approves the AMP, U.S. Sugar will request that the Florida Department of Environmental Protection amend the air construction permit for Boiler No. 8 to limit the annual capacity factor for the firing of wood chips to less than 30 percent and to incorporate the AMP.

Please call (352-336-5600) or e-mail me (dbuff@golder.com) if you have any questions concerning this request.

Sincerely,

GOLDER ASSOCIATES INC.



David A. Buff, P.E., Q.E.P.
Principal Engineer
Florida P. E. # 19011

DB/tz

Enclosures

cc: Keith Tingberg
Jeff Koerner, FDEP
Keith Goff, EPA

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**ALTERNATIVE OPACITY MONITORING PLAN
FOR
BOILER NO. 8
FUEL OIL AND WOOD CHIP FIRING
U. S. SUGAR CLEWISTON**

United States Sugar Corporation (U.S. Sugar) proposes the following alternative monitoring plan (AMP) for opacity when Boiler No. 8 is firing wood chips or No. 2 fuel oil. This plan is consistent with the Compliance Assurance Monitoring (CAM) Plan for Boiler No. 8 at the Clewiston Mill. Boiler No. 8 is subject to particulate matter (PM) limits, and the CAM Plan is for the purpose of indicating continuous compliance with the PM limit. The CAM Plan for Boiler No. 8 has been issued in draft form in Draft Title V Permit No. 0510003-032-AV. The AMP proposed for Boiler No. 8 is also consistent with the recently issued revised AMP for opacity for Boiler No. 7 at the Clewiston Mill.

Firing fuel oil and/or wood chips in Boiler No. 8 subjects the boiler to the opacity standard under Title 40, Part 60 of the Code of Federal Regulations (40 CFR 60), Subpart Db, along with the requirement to install and operate a continuous opacity monitoring system (COMS). The opacity standard is contained in §60.43b(f), and is 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. Section §60.48b(a) further provides that any affected facility subject to an opacity standard under 60.43b shall install a COMS.

There is no applicable PM emission limit under Subpart Db. However, Boiler No. 8 has a PM limit of 0.025 pound per million British thermal units (lb/MMBtu), based on a previously issued best available control technology (BACT) determination and prevention of significant deterioration (PSD) permit (PSD-FL-333).

Boiler No. 8 is equipped with wet sand separators ahead of the electrostatic precipitator (ESP) control device. The wet sand separators are there primarily to remove abrasive sand from the flue gas prior to the induced draft (ID) fan. A significant amount of water [up to 800 gallons per minute (gpm)] is injected into the flue gas stream passing through the separators. For these reasons, a COMS placed in the Boiler No. 8 stack may not provide accurate measurement due to liquid water interferences.

The effectiveness of the ESP in controlling PM emissions from Boiler No. 8 can be evaluated based on total power input to the ESP. The ESP has a total of five fields. Total power input can be determined by monitoring secondary voltage and secondary current to each field, calculating power input to each field, and summing the individual field values to obtain total power input.

Total secondary power input to the ESP is a recognized parameter for controlling emissions of PM and PM equal to or less than 10 microns in diameter (PM₁₀). U.S. Sugar has test data for PM emissions while firing both bagasse and wood chips in Boiler No. 8. Due to limited PM test data while firing wood chips, U.S. Sugar is choosing to use the historic test data on bagasse at this time to establish an indicator value for total secondary power input to the Boiler No. 8 ESP for wood chip and No. 2 fuel oil firing. The test data correlating the parameter to the PM emission levels is presented in the Clewiston Mill CAM Plan.

The proposed parameter minimum value is based on 90 percent of the minimum parameter value recorded during any test run from the historic PM testing on Boiler No. 8, when compliance was demonstrated with the PM/PM₁₀ limit. The minimum parameter value was demonstrated during the January 2006 compliance testing. The calculation of the minimum parameter value is provided below:

ESP secondary power input:

Minimum test run value = 28 kilowatts (kW)

Minimum parameter value = $28 \times 0.9 = 25$ kW

ESP operating parameter values below this minimum parameter value will be indicative of abnormal operation of the control device. This methodology is consistent with the establishment of ESP operating limits under 40 CFR 63, Subpart DDDDD, which are the Industrial Boiler/Process Heater Maximum Available Control Technology (MACT) standards (the rule has now been vacated).

The CAM regulations generally require that pollutant-specific emissions units with the potential to emit greater than 100 tons per year (TPY) collect monitoring data at least four times per hour. The CAM regulations also state that emission units with controlled emissions less than 100 TPY are subject to a reduced data collection frequency of at least once per day [40 CFR 64.3(b)(4)(iii)]. Although Boiler No. 8 has controlled emissions of less than 100 TPY, U.S. Sugar proposes to continuously record total ESP secondary power input and to calculate a 3-

hour block average. This is consistent with the recently issued AMP for Boiler No. 7 at the U.S. Sugar Clewiston Mill.

Based on collecting data continuously and calculating 3-hour block averages, an excursion will occur whenever any 3-hour block average of total secondary power input is below the minimum parameter value of 25 kW. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence, to determine the action required (if any) to correct the situation. All excursions will be documented and reported on a semi-annual basis.

The AMP for opacity when firing wood chips and No. 2 fuel oil is summarized below for Boiler No. 8.

Monitoring Approach

The monitoring approach is based on monitoring total ESP secondary power input, which is calculated from the ESP secondary voltage and secondary current. The monitoring approach is summarized in the table below.

Boiler No. 8	Indicator No. 1
Indicator	Total ESP Secondary Power Input
Measurement Approach	Whenever No. 2 fuel oil or wood chips are fired in Boiler No. 8, total secondary power input to each field is calculated from the secondary current and voltage, which are monitored with an amp/volt meter.
Indicator Range	An excursion is defined as any total power input below 25 kW. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	Accuracy of the amp/volt meter is ± 1 milliampere (mA) and ± 1 kilovolt (kV).
Verification of Operational Status	NA
Quality Assurance/Quality Control (QA/QC) Practices and Criteria	The amp/volt meter is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	ESP secondary current and secondary voltage are measured continuously and used to determine the total secondary power input.
Data Collection Procedures	Total power input calculated from voltage and current readings taken continuously for each field of the ESP.
Averaging Period	Calculation of a 3-hour block average of total power input.