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December 3, 2007

0738-7617

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
APPLICATION TO FIRE WOOD CHIPS IN BOILER NO. 7
PROJECT NO. 0510003-044-AC (PSD-FL-389)
REQUEST FOR ALTERNATIVE MONITORING PLAN FOR OPACITY

Dear Ms. Banister:

U.S. Sugar is in receipt of the U.S. Environmental Protection Agency's (EPA) letter dated October 26, 2007 to Mr. Joe Kahn, Director, Division of Air Resources Management, Florida Department of Environmental Protection (FDEP), regarding the request for an alternative monitoring plan (AMP) for opacity for Boiler No. 7 when firing wood chips. The EPA letter states that the requested AMP is not approvable based in part on the firing of wood chips up to a 25 percent annual capacity factor. EPA does not believe that operation at an annual capacity factor of 25 percent represents infrequent operation of an affected facility under 40 CFR 60.13(i)(2). The letter states, however, that EPA has indicated in previous determinations that an annual capacity factor of 10 percent for a Subpart Db affected facility constitutes infrequent operation for purposes of alternative opacity monitoring under Section 60.13(i)(2). On the basis of this information, U.S. Sugar proposes to limit the annual capacity factor for wood chips to 10 percent or less for Boiler No. 7, and thereby meet EPA's criteria for infrequent operation. If necessary, to meet the criteria of infrequent operation, U.S. Sugar is also willing to limit the combined annual capacity factor for burning wood chips and No. 2 fuel oil to 10 percent.

Boiler No. 7 is currently permitted to burn bagasse and No. 2 fuel oil with a sulfur content of 0.05 percent or less by weight. Upon review of 40 CFR 60, Subpart Db, it does appear that by firing wood chips in Boiler No. 7, the boiler would become subject to the opacity standard under Subpart Db, along with the requirement to install and operate a continuous opacity monitoring system (COMS). The particulate matter (PM) standard for wood firing is contained in Section 60.43b(h)(4) for sources that commenced modification after February 28, 2005. The PM limit is 0.085 pounds per British thermal units (lb/MMBtu), which Boiler No. 7 meets by virtue of its current emission limit of 0.03 lb/MMBtu.

The opacity standard is contained in Section 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. This opacity standard under Subpart Db would only apply when Boiler No. 7 is firing wood chips. Section 60.48b(a) further provides that any affected facility subject to an opacity standard under 60.43b shall install a COMS.

Boiler No. 7 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 40 gallons per minute (gpm)] is injected into the flue gas stream passing through the separators. For this reason, a COMS placed in the Boiler No. 7 stack would not provide accurate measurements due to liquid water interferences.

A particulate matter continuous emissions monitoring system (PM CEMS) is allowed as an alternative to the COMS under 40 CFR 60.48b(j). However, the PM CEMS is expensive to install and maintain, and would not be justified from an economic standpoint for monitoring of wood chip firing emissions, which will occur infrequently.

Additionally, Boiler No. 7 will be operated infrequently while firing wood chips and No. 2 fuel oil (only during the off-season and very limited times during the crop season). The annual capacity factor for wood chips will be limited to 10 percent, and if necessary, the annual capacity factor for these two fuels combined will be limited to 10 percent.

In recognition of these issues, U.S. Sugar is proposing an alternative monitoring plan (AMP) to satisfy the COMS requirement. An AMP is allowed under 60.13(i). The proposed AMP is based on the Compliance Assurance Monitoring (CAM) Plan for Boiler No. 7, which relies on ESP power input measurements as an indicator parameter for PM emissions. The proposed AMP 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 FDEP amend the air construction permit for Boiler No. 7 to limit the annual capacity factor for the combined firing of wood chips and distillate oil, and to incorporate the AMP.

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

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

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

DB/sl

Enclosure

cc: Keith Tingberg, USSC
Jeff Koerner, FDEP

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ALTERNATIVE OPACITY MONITORING PLAN
FOR
BOILER NO. 7 WOOD CHIP FIRING
U. S. SUGAR CLEWISTON
(revised 12/03/07)

U.S. Sugar proposes the following alternative monitoring plan (AMP) for opacity when Boiler No. 7 is firing wood chips or No. 2 fuel oil. This plan is structured after the Compliance Assurance Monitoring (CAM) Plan for Boiler No. 7 at the Clewiston mill. Boiler No. 7 is subject to particulate matter (PM) limits, and the CAM Plan is for the purpose of indicating continuous compliance with the PM limit.

By firing wood chips in Boiler No. 7, the boiler would become subject to the opacity standard under Title 40, Part 64 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 PM standard for wood firing is contained in 60.43b(h)(4) for sources that commenced modification after February 28, 2005. The PM limit is 0.085 pounds per British thermal units (lb/MMBtu), which Boiler No. 7 meets by virtue of its current emission limit of 0.03 lb/MMBtu.

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. This opacity standard under Subpart Db would only apply when Boiler No. 7 is firing wood chips. Section 60.48b(a) further provides that any affected facility subject to an opacity standard under 60.43b shall install a COMS.

Boiler No. 7 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 40 gallons per minute (gpm)] is injected into the flue gas stream passing through the separators. For this reason, a COMS placed in the Boiler No. 7 stack may not provide accurate measurement due to liquid water interferences. Additionally, Boiler No. 7 will be operated infrequently while firing wood chips or No. 2 fuel oil (only during the off-season and very limited times during the crop season).

The annual capacity factor for wood chip and No. 2 fuel oil firing combined will be limited to 10 percent.

The effectiveness of the ESP in controlling PM emissions from Boiler No. 7 can be evaluated based on total power input to the ESP. The ESP has a total of three 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 PM/PM_{10} emissions. Because U.S. Sugar has no test data for PM emissions while firing wood chips or No. 2 fuel oil in Boiler No. 7, U.S. Sugar will conduct additional testing after the wood chip permit is issued. 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. 7 ESP for wood chips and No. 2 fuel oil firing. The test data correlating the ESP parameter to the PM emission levels is presented in the Clewiston 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 data, when compliance was demonstrated with the PM/PM_{10} limit. The calculation of the minimum parameter value is provided below:

- ESP secondary power input:
- Minimum test run value = 49.32 kW.
- Minimum parameter value = 49.32 x 0.9 = 44 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 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)]. Because Boiler No. 7 has controlled emissions of less than 100 TPY, U.S. Sugar proposes a recording frequency of once per 8-hour shift.

Based on collecting data once per 8-hour shift, an excursion will occur whenever any individual reading is below the minimum parameter value. 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. 7.

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. 7	Indicator No. 1
Indicator	Total Secondary Power Input
Measurement Approach	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 44 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
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 once per 8-hour shift.
Averaging Period	NA