**Golder Associates Inc.**

6241 NW 23rd Street, Suite 500
Gainesville, FL USA 32653
Telephone (352) 336-5600
Fax (352) 336-6603
www.golder.com

November 17, 2004



0437618

Florida Department of Environmental Protection
Department of Air Resources Management
2600 Blair Stone Road, MS #5500
Tallahassee, FL 32399-2400

Attention : Mr. Jeffery F. Koerner, P. E., Air Permitting South Program

RE: UNITED STATES SUGAR CORPORATION (U.S. SUGAR) – CLEWISTON MILL
BOILER NOS. 1 AND 2 FUEL OIL BURNING MODIFICATIONS
PROJECT NO. 0510003-027-AC
REQUEST FOR ADDITIONAL INFORMATION

Dear Mr. Koerner:

U.S. Sugar and Golder Associates Inc. have received the Department's request for additional information (RAI) dated September 27, 2004, in regard to the above referenced project. Responses to the Department's requests are provided below.

1. The description contained in Item 1 of the RAI is accurate. The only difference is that not all the Clewiston boilers will be permitted to fire No. 2 distillate oil. Boiler No. 3 at Clewiston does not have the ability to burn No. 2 fuel oil; it is permitted for No. 6 fuel oil. Note, however, that Boiler No. 3 will be shutdown in early 2005, after the startup of Boiler No. 8.

2. The vendor specification sheet for the new burners is attached. The guaranteed $NO_x$ emission rate for No. 2 fuel oil firing is 0.15 lb/MMBtu. U.S. Sugar is not planning on any performance tests on the burners at this time. We believe that the vendor guarantee provides reasonable assurance that the project will not trigger PSD review.

In addition to the fuel oil burner modifications, U.S. Sugar requests that Boiler Nos. 1 and 2 be permitted to fire material from the Dissolved Aeration Filtration (DAF) system at the Clewiston Mill. This material contains small amounts of used oil. Boiler Nos. 4, 7, and 8 at Clewiston have recently been authorized to burn this material (Permit Nos. 0510003-023-AC and 0510003-024-AC). Boiler Nos. 1 and 2 are already authorized to fire facility-generated on-spec used oil. This request will allow all the boilers to burn DAF material, which is necessary since the material will be transferred to the bagasse conveyor system where it is commingled with the bagasse that is fed to all of the boilers. A more detailed description of the DAF material and its handling is contained in Draft Air Permit No. 0510003-024-AC/PSD-FL-333A.

No pages of the air permit application form need to be revised to support this request. The segment section of the application form for Boiler Nos. 1 and 2 already include facility-generated on-spec used oil. No emissions would change as a result of this request.

Please call or e-mail me if you have any questions concerning this information.

Sincerely,

GOLDER ASSOCIATES INC.

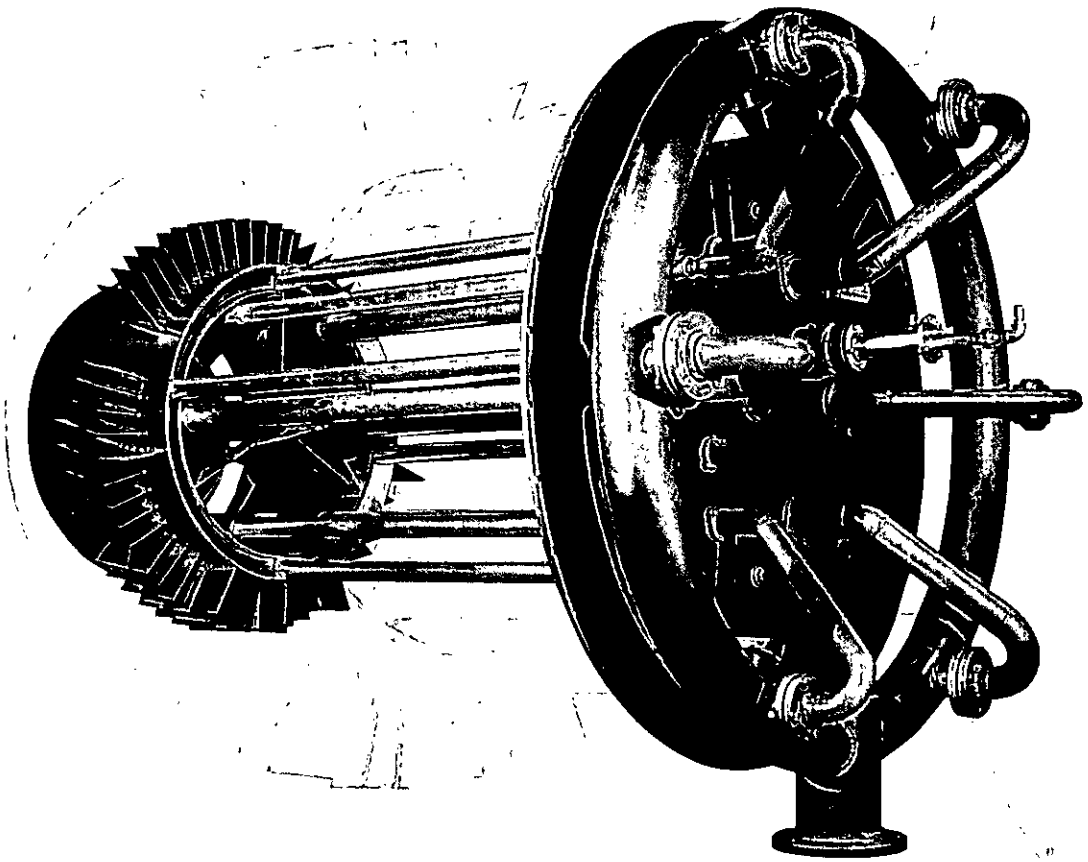
David A. Buff

David A. Buff, P.E., Q.E.P.
Principal Engineer
DB/
Enclosure
cc: Don Griffin
Ron Blackburn, DEP

Y:\Projects\2004\0437618 USSC Blrs 1 & 2\4\4.1\RAI-111704\L111704-618.doc

## Model MSC

# LOW-NOx OIL & GAS BURNER



Multi-Stage Combustion (MSC) techniques coupled with precision flame shaping offer these performance benefits for new or retrofit applications:

- Up to 80% NOx reduction including both thermal and fuel NOx.
- Ten percent or less excess air operation and significantly reduced particulate formation.
- Meets required NOx reduction while maintaining acceptable CO levels.
- Precise flame fit capability with excellent stability.
- Available with 12 to 52 inch throat diameters and firing capacities from 20 to more than 400 million BTU/hour.
- Oil unit and air slide can be pneumatically controlled.
- Adjustable gas spud geometry available.
- Suitable for use with or without flue gas recirculation.
- Available with water or steam injection.

Peabody Engineering

# MSC Low-NOx Burners

The Peabody Multi-Stage Combustion (MSC) burner achieves NOx emission compliance without compromising efficiency or other emission performance.

The flexible, high efficiency burner can be retrofitted to most existing boiler designs, and is also ideal for use with new field-erected or package boilers.

Low CO levels with full load excess air values of less than 10% are typical when firing either oil or gas. This performance is coupled with outstanding flame stability characteristics resulting in efficient, reliable and safe operation.

## How It Works

Combustion air and fuel are staged to produce rich, lean flame zones thus inhibiting NOx formation. Single source combustion air is divided into two streams. Primary air passes through the center of the flow divider and air diffuser. Secondary air flows in an annular section via swirl vanes, and discharges through a convergent/divergent throat.

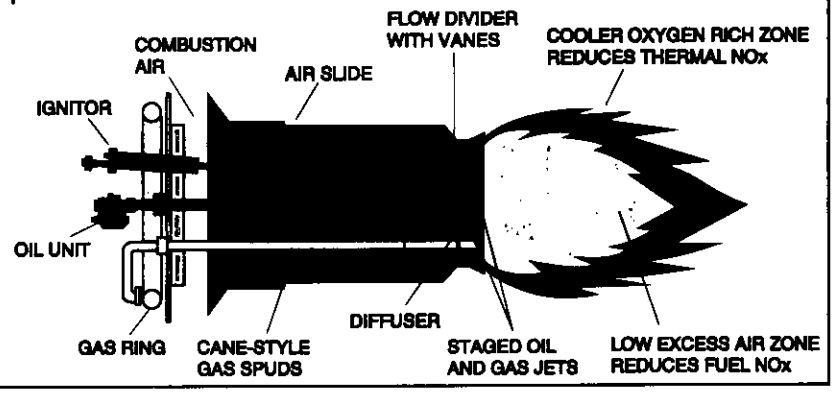
Gas jets and fuel oil atomizers are designed to further enhance combustion staging as well as produce the precision flame shaping essential for CO and particulate performance.

The above techniques result in low excess air in the primary combustion zone limiting the oxygen available to combine with nitrogen in the fuel. In the second combustion stage, additional air is introduced forming a cooler oxygen-rich zone where combustion is completed and the formation of thermal NOx is limited.

## Efficient, Safe Combustion

The blending of these technologies within the Peabody MSC burner results in reduced NOx formation without compromising other performance criteria. Exceptional flame stability, even when using flue gas recirculation, ensures that operational safety is not compromised.

Operation of low-NOx MSC burner




## SPECIFICATIONS

| | |
|---|---|
| **Throat diameter:** | 12 to 52 inches |
| **Firing rate:** | 20 to >400 million BTU/hr |
| **NOx reduction:** | To 60%, up to 80% with flue gas recirculation |
| **CO Emissions:** | <100 ppm corrected to 3% $O_2$ |
| **Excess air operation:** | 10% or less typical firing oil or gas |
| **Fuels fired:** | Light and heavy oil<br>Natural gas and propane<br>Waste gases |
| **Oil atomization:** | Choice of steam, air, or mechanical |
| **Gas unit:** | Internal plenum or external gas ring with gas spuds |
| **Register:** | Multiple concentric annular flow and axial swirl flame stabilization |
| **Ignitor:** | Peabody gas-electric, oil-electric, or direct spark-high energy |
| **Auxiliary ports:** | Flame scanner, sight port |
| **Turndown ratio:** | Up to 10:1 |
| **Combustion air:** | Ambient to 700°F |
| **Fuel pressure:** | Oil, 150 psig typical<br>Gas, 8 psig typical |

For further information or to obtain a quotation dealing with any Peabody product, contact:

**Peabody Engineering Corporation**
70 Shelton Technology Center
Shelton, CT 06484
Tel: 203-922-1199, Fax: 203-922-8866
Toll free: 1-877-PEABODY
E-mail: sales@peabodyengineering.com

**Peabody Engineering Canada**
360 Guelph Street, #36B
Georgetown, Ont. L7G 4B5 Canada
Tel: 905-877-2222, Fax: 905-877-1985
E-mail: sales@peabodyengineering.com

**Ingenieria Peabody S.A. de C.V.**
Calle Dante No. 32 Bis. - 4 Piso
Col. Nueva Anzures
11590 Mexico, D.F.
Tel: +52 (55) 5254-6510
Fax: +52 (55) 5254-6364
E-mail: ingenieriapeabody@prodigy.net.mx

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Peabody Engineering



Printed in U.S.A.

HAMWORTHY
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Incorporating
AIROIL - FLAREGAS
CHENTRONICS

Hamworthy Peabody Proposal No. S-14839

September 29, 2004

U.S. Sugar Corporation
Clewiston Sugar Mill & Refinery
111 Ponce DeLeon Avenue
Clewiston, FL 33440

E-Mail bnesbitt@ussugar.com

Attention: Mr. Brett Nesbitt

Reference: Replacement Burners for Boiler Nos. 1 and 2

Dear Mr. Nesbitt,

In response to the "Request for Additional Information" from the DEP we have the following comments.

1. Each burner will be designed for a heat input of 104 MM BTU/hr when firing No. 2 fuel oil with ambient combustion air. Based on a HHV of 19,200 BTU/lb it is expected that the oil flow will be 1505 gallons/hr total for both burners.

2. The Hamworthy Peabody Combustion scope consists of:

   2- MSC low NOx burners for steam-atomized oil firing. Each burner will include a center-fired oil gun, flame scanner and ignitor with flame proving rod.

   2- Individual burner windboxes, each with electrically operated modulating damper.

   1- Set, ignitor valve trains.

   We cannot comment on the combustion air fan, fuel oil pump set, burner management system and oil/steam valve train as they are not in the Hamworthy Peabody scope.

3. The NOx emissions are guaranteed to be 0.15 lb/MM or less provided the fuel bound nitrogen content of the fuel oil is 0.05% (wt) or less and the burners are

fired with ambient combustion air. Emissions testing is not included in the Hamworthy Peabody scope of supply.

4. Descriptive literature for the Hamworthy Peabody low NOx burner is attached.

Specific burner information is:

| Burner Data: | |
|---|---|
| Burner Model | MSC 600 |
| Nominal Throat Diameter | 23.6" |
| Register Draft Loss @ MCR | 7.6" w.c. maximum |
| Estimated Flame Length | 17.6 Ft. (oil) |
| Estimated Flame Diameter | 6 Ft. |

| Burner Design Specification: | |
|---|---|
| Heat Input per Burner | 104 MM BTU/hr |
| No. Burners per Boiler | 2 |
| Excess Air @ MCR | 15% |
| Combustion Air Flow per Burner | 90,500 PPH |
| Combustion Air Temperature | 100°F |
| Oil Pressure at Burner | 80-120 psig* |
| Steam Pressure at Burner | 20 psi greater than oil pressure |
| Gas Pressure at Ignitor | 1-2 psig |

| Fuel Data: | |
|---|---|
| Type | No. 2 Fuel Oil |
| Higher Heating Value | 19,200 BTU/lb. |
| Pressure Available | Not specified* |
| Viscosity at Burner | 35 SSU |
| Nitrogen | 0.05% wt max. |

If you need any additional information or clarifications I can be reached by telephone at extension 251 or by e-mail at cmeady@hamworthy-peabody.com with any questions.

Yours truly,
HAMWORTHY PEABODY COMBUSTION

Christine Meady

Christine Meady
Sr. Proposal Engineer

HAMWORTHY
Peabody
COMBUSTION

cc: L. Berry/HPC
S. Brewer/HPC
F. Odom/Sunbelt Energy
file

Attachment

HAMWORTHY
Peabody
COMBUSTION

# Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary


September 27, 2004

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. William Raiola
Sr. Vice President of Sugar Processing
U. S. Sugar Corporation, Clewiston Sugar Mill and Refinery
111 Ponce DeLeon Avenue
Clewiston, Florida 33440

Re: Project No. 0510003-027-AC
Request for Additional Information
U. S. Sugar Corporation – Clewiston Sugar Mill and Refinery
Boilers 1 and 2, Replacement of Oil Burners

Dear Mr. Raiola:

On September 22, 2004, the Department received your application requesting authorization to replace the existing No. 6 fuel oil burner systems for Boilers 1 and 2 with new distillate oil burner systems at the Clewiston mill in Hendry County, Florida. The application is incomplete. In order to continue processing your application, the Department will need the additional information requested below. Should your response to any of the requested items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Please verify the following description of the new oil burner systems.

   For each boiler, the existing No. 6 fuel oil burner system will be replaced with the following new equipment:

   - Two new Peabody multi-stage combustion (MSC) burners with fuel/steam valve train, steam atomized center-fired oil gun, flame scanner, ignitor and flame proving rod;
   - New burners will be a low-NOx type with a maximum emission rate of 0.15 lb/MMBtu;
   - New multi-burner windbox with electrically operated modulating dampers;
   - New combustion air fan with associated ductwork;
   - New fuel oil pump set; and
   - New burner management system.

   Each burner will have a maximum heat input rate of 104 MMBtu/hour. With both burners, each boiler will have a maximum oil firing rate of 1541 gallons/hour. The new systems will allow the firing of distillate oil containing 0.05% sulfur by weight or less. After completing the project, all of the existing Clewiston sugar mill boilers will be permitted for firing distillate oil. The modified boilers will be able to produce approximately 156,000 pounds of steam per hour when firing only distillate oil. Bagasse will remain the primary fuel with distillate oil used as a startup and supplemental fuel when bagasse is unavailable or the supply is interrupted from the mill.

2. The application indicates that the new burners will incorporate a "low-NOx" design with a NOx emission rate of 0.15 lb/MMBtu. Please provide the vendor specification sheets describing the burners and emissions. Does U.S. Sugar have a manufacturer guarantee for this NOx emission rate? If so, please provide. Will performance tests be conducted to verify the manufacturer's NOx rate? Based on the PSD applicability analysis for this project, potential NOx emissions approach the PSD significant emission rate. The Department requires reasonable assurance of the maximum NOx emission rate for the burners.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the

State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you have any questions regarding this matter, please call me at 850/921-9536.

Sincerely,

Jeffery F. Koerner
Air Permitting South Program

cc: Mr. David Buff, Golder Associates Inc.
Mr. Ron Blackburn, DEP South District Office
Mr. James Stormer, PBCHD
Mr. Gregg Worley, EPA Region 4
Mr. John Bunyak, NPS

# Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary


September 27, 2004

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. William Raiola
Sr. Vice President of Sugar Processing
U. S. Sugar Corporation, Clewiston Sugar Mill and Refinery
111 Ponce DeLeon Avenue
Clewiston, Florida 33440

Re: Project No. 0510003-026-AC
Request for Additional Information
U. S. Sugar Corporation – Clewiston Sugar Mill and Refinery
New Sugar Dryer No. 2

Dear Mr. Raiola:

On September 13, 2004, the Department received your application requesting the installation of a new sugar dryer for the existing refinery operations at the Clewiston mill in Hendry County, Florida. The application is incomplete. In order to continue processing your application, the Department will need the additional information requested below. Should your response to any of the requested items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Please verify the following description and details of the new dryer.

   The new sugar dryer will be a fluidized bed-type dryer/cooler manufactured by Entoleter LLC with a rated capacity of 85 tons per hour of refined sugar. After wet refined sugar is centrifuged the dryer will be used to drive off remaining moisture. The dryer suspends sugar in a fluidized bed with jets of hot, conditioned air. A maximum of 11,000 pounds per hour of low pressure steam (12 psig) from the existing mill boilers will supply heat for the process. The refined sugar is then transferred to the conditioning silos. No other new equipment is being added.

   *Dryer Inlet Conditions*: Sugar at 1.5% moisture; inlet temperature of 120° to 140° F
   *Dryer Outlet Conditions*: Sugar at 0.03% moisture; outlet temperature of 92° to 102° F

2. The information in the following table was taken from the application. Please verify this data.

   Table 1. Cylcone/Wet Scrubber Data – PM Loading and Removal

| Point | Inlet Loading | | Control Efficiency | Outlet Loading | |
|---|---|---|---|---|---|
| | lb/hour | gr/dscf | | lb/hour | gr/dscf |
| From Centrifuges | --- | --- | --- | 11,760 | 14 |
| Cyclones | 11,760 | 14 | ~ 99% | 118 | 0.14 |
| Wet Scrubber | 118 | 0.14 | ~ 96% | 4.2 | 0.005 |
| Overall | --- | --- | 99.96% | --- | --- |

   Please provide any data available for the particle size distribution of the particulate matter (sugar).

3. What is the rated capacity of existing sugar dryer No. 1 (tons/hour of refined sugar)? Please detail the problems and causes of the problems associated with the baghouse on dryer No. 1. What steps have been taken to correct these problems? How many bags does the existing particulate control device have? What is the cost of a single bag? What is the labor cost for the replacement of a bag? When problems occur, how many bags are replaced on average? What

is the down time for such a bag replacement? Must the refinery operations be shut down for such replacements? How many bags have been replaced during each of the past two years?

4. Based on the application, U.S. Sugar is requesting the following production restrictions: No more than 2000 tons of refined sugar per day and no more than 730,000 tons of refined sugar per consecutive 12 months shall be packaged at this facility. In addition, no more than **2250** tons of refined sugar per day and no more than 803,000 tons of refined sugar per consecutive 12 months shall be loaded out from this facility. These restrictions will replace those in Condition 2 in Section IIIF of Permit No. PSD-FL-272A. Is this correct?

5. Rule 62-212.400(3)(d), F.A.C. states, "Modifications Under Fifty Tons Per Year. If a proposed modification subject to the preconstruction review requirements of this rule would be made to a facility that was in existence on March 1, 1978, and would result in a net emissions increase of each pollutant listed in Table 212.400-2, Regulated Air Pollutants – Significant Emission Rates, of less than 50 tons per year after the application of BACT, such modification shall be exempt from the requirements of Rule 62-212.400(5)(d), (e), (f), and (g), F.A.C., **as they relate to any maximum allowable increase for a Class II area.**" From Rule 62-212.400(5), F.A.C. these are modeling requirements related to: (d) Ambient Impact Analysis, (e) Additional Impact Analysis, (f) Preconstruction Air Quality Monitoring and Analysis, and (g) Post Construction Monitoring.

   After a discussion with our staff meteorologists, Rule 62-212.400(3)(d), F.A.C. does not waive any of the modeling requirements for Ambient Air Quality Standards (AAQS) or Class I areas. Please provide a modeling analysis of impacts from the project with regards to the AAQS and the affected Class I areas.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you have any questions regarding this matter, please call me at 850/921-9536.

Sincerely,

Jeffery F. Koerner
Air Permitting South Program

cc: Mr. David Buff, Golder Associates Inc.
Mr. Ron Blackburn, DEP South District Office
Mr. James Stormer, PBCHD
Mr. Gregg Worley, EPA Region 4
Mr. John Bunyak, NPS

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1. Article Addressed to:

Mr. William Raiola
Sr. Vice President of Sugar Processing
U.S. Sugar Corporation
Clewiston Sugar Mill and Refinery
111 Ponce DeLeon Avenue
Clewiston, Florida 33440

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Sr. Vice President of Sugar Processing
Street, Apt. No.; or PO Box No. 111 Ponce DeLeon Avenue
City, State, ZIP+4 Clewiston, Florida 33440

PS Form 3800, May 2000 See Reverse for Instructions

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