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BUREAU OF AIR REGULATION

AIR PERMIT APPLICATION
TO CLARIFY
NO. 7 POWER BOILER
COAL FUEL SULFUR CONTENT

Prepared For:
Smurfit-Stone Container Enterprises, Inc.
North 8th Street
Fernandina Beach, Florida 32034

Prepared By:
Golder Associates, Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500

March 2007
053-7568

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APPLICATION FOR AIR PERMIT—LONG FORM

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application is to clarify that the maximum sulfur content for the coal burned in No. 7 Power Boiler is not restricted to 0.75 percent, but instead is restricted by the formula:

$$\%S \text{ (max allowed)} = (6.32 \times 10^{-5}) \times (\text{Btu per lb coal})$$

and by the maximum SO_2 emission limit of 1.2 lb/MMBtu.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
015	No. 7 Power Boiler	ACM 1	

Application Processing Fee

Check one: ☐ Attached - Amount: $____________ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1.	Owner/Authorized Representative Name : **George Q. Langstaff, Vice-President, Regional Mill Operations**
2.	Owner/Authorized Representative Mailing Address... Organization/Firm: **Smurfit-Stone Container Enterprises, Inc.** Street Address: **North 8th Street** City: **Fernandina Beach** State: **FL** Zip Code: **32034**
3.	Owner/Authorized Representative Telephone Numbers... Telephone: **(904)261-5551** ext. Fax: **(904)277-5888**
4.	Owner/Authorized Representative Email Address:
5.	Owner/Authorized Representative Statement: *I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.* Signature 3/13/07 Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):
   - ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
   - ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
   - ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
   - ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) - ext. Fax: ( ) -

5. Application Responsible Official Email Address:

6. Application Responsible Official Certification:
   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   ______________________ ______________
   Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1.	Professional Engineer Name: **David A. Buff** Registration Number: **19011**
2.	Professional Engineer Mailing Address... Organization/Firm: **Golder Associates Inc.**** Street Address: **6241 NW 23rd Street, Suite 500** City: **Gainesville** State: **FL** Zip Code: **32653**
3.	Professional Engineer Telephone Numbers... Telephone: **(352) 336-5600** ext.**545** Fax: **(352) 336-6603**
4.	Professional Engineer Email Address: **dbuff@golder.com**
5.	Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David A. Buff — 3/7/07

Signature — Date

(seal)

* Attach any exception to certification statement.

**** Board of Professional Engineers Certificate of Authorization #00001670**

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **No. 7 Power Boiler with Coal and Ash Handling System**

3. Emissions Unit Identification Number: **015**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A			**26**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment: **Consists of the No. 7 Power Boiler, Coal Handling System, and Ash Handling System. No. 7 Power Boiler is primarily fired with coal.**

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 5

1. Segment Description (Process/Fuel Type):
   External Combustion Boilers, Industrial, Bituminous Coal, Pulverized Coal: Dry Bottom (Tangential)

2. Source Classification Code (SCC): **1-02-002-12**	3. SCC Units: **Tons Burned**	
4. Maximum Hourly Rate: **40.84**	5. Maximum Annual Rate: **357,758**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash: **7**	9. Million Btu per SCC Unit: **25**

10. Segment Comment:
    Maximum % S limited by the formula: % S = (6.32 x 10^{-5}) x (Btu/lb coal). Maximum rates based on 12,500 Btu/lb and 1,021 MMBtu/hr.

Segment Description and Rate: Segment 2 of 5

1. Segment Description (Process/Fuel Type):
   External Combustion Boilers, Industrial, Residual Oil: Grade 6 Oil

2. Source Classification Code (SCC): **1-02-004-01**	3. SCC Units: **Thousand Gallons Burned**	
4. Maximum Hourly Rate: **6.807**	5. Maximum Annual Rate: **5,963**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **2.5**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **150**

10. Segment Comment:
    No. 6 fuel oil may contain on-spec used oil and shall only be used as supplemental fuel, standby when coal is not available, startups, and shutdowns. Basis: 1,021 MMBtu/hr; limited to 10 percent annual capacity factor.

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 5

1. Segment Description (Process/Fuel Type): **External Combustion Boilers, Industrial, Wood/Bark Waste**		
2. Source Classification Code (SCC): **1-02-009-02**	3. SCC Units: **Tons Burned**	
4. Maximum Hourly Rate: **10**	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Segment represents input of carbonaceous fuel (sludge and bark ash). Based on Permit No. 0890003-009-AV.**		

Segment Description and Rate: Segment 4 of 5

1. Segment Description (Process/Fuel Type): **Bulk Materials Storage Bins: Coal**		
2. Source Classification Code (SCC): **3-05-102-03**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **400**	5. Maximum Annual Rate: **357,758**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Maximum hourly rate represents system design unloading capacity. Annual rate represents throughput to No. 7 Power Boiler.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 5 of 5

1. Segment Description (Process/Fuel Type): **External Combustion Boilers, Industrial, Distillate Oil; Grades 1 and 2 oil**		
2. Source Classification Code (SCC): **1-02-005-01**	3. SCC Units: **Thousand Gallons Burned**	
4. Maximum Hourly Rate: **7.293**	5. Maximum Annual Rate: **6,389**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.5**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **140**
10. Segment Comment: **Maximum hourly rate based on 1,021 MMBtu/hr. Maximum annual rate based on limit of 10-percent annual capacity factor.** **No. 2 fuel oil used only as supplemental fuel, standby when coal is not available or for startups and shutdowns.**		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION
Section [1]
No. 7 Power Boiler

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	010		EL
PM_{10}	010		NS
SO_2			EL
NO_X			EL
CO			EL
VOC			NS
HAPS			NS
Hydrochloric Acid (H106)			EL
Hydrogen Fluoride (H107)			NS
Mercury (H114)	010		EL

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **1,225.2** lb/hour **5,366.38** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **1.2 lb/MMBtu** Reference: **40 CFR 60.43(a)(2)**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **1.2 lb/MMBtu x 1,021 MMBtu/hr=1,225.2 lb/hr** **1,225.2 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 5,366.38 TPY**	
11. Potential Fugitive and Actual Emissions Comment: **See also attached approved Coal Sampling and Testing Procedures.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.2 lb/MMBtu**	4. Equivalent Allowable Emissions: **1,225.2** lb/hour **5,366.38** tons/year
5. Method of Compliance: **Coal fuel sampling and analysis.**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 60.43(a)(2). Applies to solid fuel burning. See attached sampling and analysis plan, approved by EPA and FDEP.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.8 lb/MMBtu**	4. Equivalent Allowable Emissions: **816.8** lb/hour **3,577.58** tons/year
5. Method of Compliance: **Fuel Analysis.**	
6. Allowable Emissions Comment (Description of Operating Method): **40 CFR 60.43(a)(1). Applies to liquid fuel burning.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

II. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 2

1. Parameter Code: **VE**	2. Pollutant(s):
3. CMS Requirement: ☒ Rule ☐ Other	
4. Monitor Information... Manufacturer: **Land Combustion** Model Number: **4500 MKIIt** Serial Number: **11230452**	
5. Installation Date: **01 November 2005**	6. Performance Specification Test Date: **02 November 2005**
7. Continuous Monitor Comment: **40 CFR 60.45(a)**	

Continuous Monitoring System: Continuous Monitor 2 of 2

1. Parameter Code: **O2**	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☒ Other	
4. Monitor Information... Manufacturer: **Yokogawa** Model Number: **Z021** Serial Number: **630509**	
5. Installation Date: **1997**	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Required per Permit No. 0890003-001-AV, EPA/DER agreement, and CFR 52.21(j). Monitor is located in the economizer section of the boiler.**	

ATTACHMENT A

ATTACHMENT A

Smurfit-Stone Container Enterprises, Inc. (SSCE) recently received final Title V operating permit No. 0890003-009-AV, issued January 3, 2007, for the Fernandina Beach Mill. The final permit contains a specific condition for the No. 7 Power Boiler that restricts the sulfur content of the coal burned in the boiler to no more than 0.75 percent. The permit also contains a specific condition which requires continuous oxygen (O_2) monitoring of the flue gas from No. 7 Power Boiler. SSCE is seeking changes/clarifications to both of these conditions, as further described below.

<u>Coal Sulfur Content Limitation</u>

The permit condition reads as follows:

> "**F.26.** <u>Sulfur Dioxide</u>. *Sulfur dioxide emissions shall be monitored by fuel sampling and analysis as specified in the "Container Corporation of America Coal Sampling and Testing Procedures for Compliance Monitoring of SO_2 for #7 Power Boiler" in lieu of the installation and operation of a continuous monitoring system.*[1,2] *Coal fuel is limited to a maximum sulfur content determined by the following formula:*
>
> $$\%S\ (max\ allowed) = (6.32 \times 10^{-5}) \times (BTU\ per\ lb\ coal)$$
>
> [1] *The mill shall use the ASTM Methods stated in RAI response dated December 4, 2003 or other methods approved by the Department.*
>
> 2 *At no time shall the sulfur content exceed 0.75 percent (EPA established BACT dated April 13, 1981)."*

The reference cites a U.S. Environmental Protection Agency (EPA) best available control technology (BACT) determination dated April 13, 1981.

SSCE is requesting that this condition be revised to remove the requirement that the sulfur content of the coal not exceed 0.75 percent at any time. SSCE requests that the coal sulfur content only be limited by the equation provided in the specific condition listed above. This equation is based on limiting the equivalent sulfur dioxide (SO_2) emissions from combusting the coal to 1.2 lb/MMBtu heat input. The maximum allowable %S varies with the heating value of the coal. For example, for coal with a heating value of 12,500 Btu/lb, the maximum allowable sulfur content according to the equation is 0.75 percent. However, coal with a heating value of 13,500 Btu/lb would be allowed a maximum sulfur content of 0.79 percent.

SSCE has been operating under this equation since the Florida DEP air construction permit and EPA PSD permit were issued in 1981. This is because the specific conditions in these two permits did not contain any specific restriction on the coal sulfur content. Only the above equation and a maximum sulfur limit of 1.2 lb/MMBtu were contained in the specific conditions.

Provided in Table 1 is a chronological history of the origin of condition F.26 in the current Title V permit which contains the coal sulfur limitation for the No 7 Power Boiler. A discussion of the history follows below.

5/1/80 PSD permit application to EPA

10/1/80 AC permit application to FDEP

This application states the following in regard to the proposed BACT for SO_2:

> "Assuming a heating value of 12,500 Btu/lb (HHV), the sulfur content in the coal is limited to 0.75% in order to meet the NSPS limit of 1.2 lb SO_2/MMBtu generated." (pg. 4-11 of PSD application)

This clearly proposes a limit of 1.2 lb/MMBtu, and 0.75% sulfur coal with an "assumed heating value of 12,500 Btu/lb" is given as an example only. Table 4-4 of the application listed various coals that would comply with the proposed BACT, including one coal described as having a sulfur content of 0.8%.

2/81 Preliminary determination issued by EPA (PSD-FL-062)

2/24/81 Facility comments on coal sulfur issue regarding proposed permit no. AC45-35532

This comment letter on the draft PSD permit submitted by Container Corporation of America (CCA) requested that the sulfur content of the coal not be specifically limited, and that the heating value of the fuel be taken into account. CCA proposed a formula which included sulfur content and heating value.

3/12/81 Construction permit issued (AC 45-35532)

In the FDEP Final Determination, FDEP responded to CCA's comment, and stated that the Department will allow credit for sulfur compounds retained in the fly ash and for the heating value of the coal in determining the maximum allowable sulfur in the coal. The final permit contains an SO2 emission limit of 1.2 lb/MMBtu and the following equation:

$$\%S \text{ (max allowed)} = (6.32 \times 10^{-5}) \times \text{(BTU per lb coal)}$$

4/13/81 EPA Final Determination and Final PSD Permit (PSD-FL-062)

The Final Determination document states:

> "With this condition, EPA concurs that the proposed use of less than 0.75 percent sulfur Eastern or Midwestern bituminous coal to achieve the NSPS emission limit does constitute BACT."

The Final Determination refers to Table 3, which provides the allowable emission limits. The SO_2 limit in the table is 1.2 lb/MMBtu. Thus, EPA was clearly stating that the NSPS limit was BACT, not 0.75 percent sulfur coal.

Specific Condition 4 of the permit states that emissions from No. 7 Power Boiler shall not exceed those shown in Table 7. The SO_2 limit in the table is 1.2 lb/MMBtu. There is no reference to coal sulfur content.

The Final Determination document included a "Response to Public Comment" section, which addresses a letter from CCA. Comment 2 and EPA's response are as follows:

> "Comment 2: An understanding that "low sulfur coals" are those which by reason of combined sulfur and heat content, result in emissions not exceeding 1.2 lb/MMBtu and hence the maximum percent sulfur will vary up or down depending upon the heat content of the coal (page 4)."

> "Response 2: The commenter is correct in his statement. The coal to be used is 0.75% sulfur and contains 1.2 pounds of SO_2 per million Btu heat input on a basis of a rolling average on a 30-day basis."

Although this statement references the 0.75% coal sulfur content CCA provided in its example, this statement that the commenter is correct, in conjunction with the actual emission limit of 1.2 lb/MMBtu, make it clear that EPA did not intend to specifically regulate coal sulfur content.

10/5/84 **Coal monitoring plan submitted**

Included the equation from the FDEP construction permit relating coal sulfur content to heating value.

11/21/89 **Coal monitoring plan approved by EPA**

EPA approved the 10/5/84 plan by CCA which incorporated the sulfur content equation.

12/11/89 **Coal monitoring plan approved by DEP**

DEP approved the 10/5/84 plan by CCA, based on EPA's approval of 11/21/89.

6/15/98 **Original Title V permit issued (0890003-001-AV)**

Did not include sulfur limit; Condition F.5 stated the SO_2 emission limit as 1.2 lb/MMBtu heat input. Condition F.9 further states that "Coal fuel is limited to a maximum sulfur content determined by the following formula:

> %S (max allowed) = (6.32×10^{-5}) x (BTU per lb coal)"

12/16/02 **Title V permit renewal application submitted by facility**

3/5/03 **RAI #1 issued by FDEP** – requested information regarding SO_2 BACT

6/5/03 **Facility response to RAI #1** – see response to question #9

8/16/05 **First Title V renewal permit intent to issue** – included 0.75% sulfur limit

11/30/05 **Smurfit comments on draft Title V** – questioned validity of coal sulfur limit

2/27/06 **FDEP response to facility comments** – response #60 indicated that EPA had been contacted for clarification

3/21/06 **Email from R. Felton-Smith to B. Crews**

9/21/06 **Intent to issue Title V permit renewal (0890003-009-AV)** – included 0.75% sulfur limit

10/27/06 **Smurfit comments on draft Title V**

11/9/06 **Proposed determination to issue Title V permit** – included 0.75% sulfur limit

The proposed permit incorrectly states in the footnote to Condition F.26 that "At no time shall the sulfur content exceed 0.75 percent", and refers to EPA established BACT dated April 13, 1981. However, as discussed above, the April 13, 1981 Final PSD permit does not contain any such limitation.

The only limit on SO_2 from coal burning in the PSD permit is 1.2 lb/MMBtu. If EPA had intended that No. 7 Power Boiler be subject to a limit of 0.75% sulfur in the coal, it would have and easily could have included such a limit in the PSD permit. There is no such limit; instead the 0.75% appears in EPA's narrative discussion of its BACT determination.

In the BACT discussion from the April 13, 1981 Final Determination, EPA states:

> "The applicant's BACT review concluded that low sulfur bituminous coal would achieve the NSPS standard with the lowest economic impact and least technological uncertainty. EPA reviewed this analysis and questioned the availability of low sulfur coal over the lifetime of the proposed project. The applicant proposed to include in the equipment design allowances to enable addition of FGD at any future date if and when a poor availability of low sulfur coal interfered with meeting the allowable emission standard of 1.2 lbs SO_2/MMBtu. With this condition, EPA concurs that the proposed use of less than .75 percent sulfur Eastern and Mid Western bituminous coal to achieve the NSPS emission limit does constitute BACT."

Since the permit does not include a condition that the coal sulfur content not exceed 0.75%, there is no basis for contending that this is a limit. Also, the approved coal fuel sampling plan contains the equation relating fuel sulfur and heating value.

SSCE (formerly CCA) has always understood that they were proposing and that EPA had accepted that CCA could burn any percentage sulfur as long as the SO_2 emissions did not exceed 1.2 lb/MMBtu. The specific language in the application supports that CCA was not proposing to limit the coal to a not-to-exceed 0.75 percent.

However, regardless of any other language, including EPA's narrative discussion quoted above, the only limit in the permit is the 1.2 lbs SO_2/MMBtu. Moreover, the intent that this be the only limit is reinforced by footnote "a" to Table 7 in the PSD permit, which gives the formula for calculating the SO_2 emission limit when both coal and wood are burned. If EPA had intended to impose a ceiling on the sulfur content as calculated by the formula, it would have added language like that recently proposed by the FDEP.

In conclusion, the only binding conditions and emission limits are those expressly set forth as such in the permit and that an EPA discussion of the means to achieve an emission limit -- unless expressly incorporated as a permit condition -- is not part of the permit and certainly does not justify, 25 years after the initial permit was issued, inserting a limit not previously expressed in any other permit for the boiler.

Flue Gas O_2 Monitoring

The Title V Permit condition from the PSD permit reads as follows:

> *F.27. Oxygen. Oxygen shall be continuously monitored. The continuous Oxygen monitoring system shall comply with the applicable requirements of 40 CFR Part 60, Appendix B, Performance Specification 3.*
> *[Construction Permit No. AC45-35532; EPA Modification to PSD-FL-062 dated 4/13/81]*

This condition stems from Table 3 of the PSD permit dated 4/13/81. Under the allowable emission limits for NO_x, the "Basis" of the limit is stated as "BACT", with a footnote. The footnote states "BACT control is to be established in accordance with Attachment II". Attachment II of the PSD permit is entitled "Use of Flue Gas Oxygen Meter as BACT for Combustion Controls" (see attached copy). This document, in turn, states in part the following:

> "The permittee shall install a continuous oxygen monitor in the flue of the permitted combustion device which meets the requirements of 40 CFR, Appendix B, Performance Specification 3."

The performance specifications of Appendix B are typically for extraction type continuous emission monitoring systems (CEMS) located in the stack. In fact, Performance Specification 3 (PS3) references to PS 2 for the proper stack location of an O_2 monitor. PS2, Section 8.0, states the following:

> "Install the CEMS at an accessible location where the pollutant concentration or emission rate measurements are directly representative or can be corrected so as to be representative of the total emissions from the affected facility or at the measurement location cross section. Then select representative measurement points or paths for monitoring in locations that the CEMS will pass the RA test (see Section 8.4). If the cause or failure to meet the RA test is determined to be the measurement location and a satisfactory correction technique cannot be established, the Administrator may require the CEMS to be relocated."

> "8.1.2. CEMS Measurement Location. It is suggested that the measurement location be (1) at least two equivalent diameters downstream from the nearest control device, the point of pollutant generation, or other point at which a change in the pollutant concentration or emission rate may occur and (2) at least a half equivalent diameter upstream from the effluent exhaust or control device."

One issue is that when referring to "combustion controls," i.e., monitoring good boiler combustion to minimize NO_x and CO, this is by definition referring to "boiler O_2," not "stack O_2." Stack O_2 would be after the ID fan and include all of the leaks, etc. through the precipitator, and would not be indicative of boiler combustion conditions. The standard practice for monitoring boiler combustion is to monitor the excess air in the flue gas after the combustion zone, usually in the economizer section of the boiler, and prior to the control device. This is in fact what SSCE does. SSCE uses a probe into the economizer section, not a stack extraction monitor. It is maintained and calibrated on a set schedule. This is consistent with SSCE's other mills that have similar O_2 monitoring requirements. Note that SSCE monitors this same boiler O_2 on all of their power and recovery boilers as an indication of boiler operating conditions. Additionally, PS3 requires a RATA to compare O_2 to stack sampling conditions.

SSCE's O_2 monitor on the No. 7 Power Boiler is not inconsistent with the first part of PS3, i.e., that the monitor be located at a location that is "directly representative" of the total emissions. The O_2 monitor is located at the most representative location. However, an RA test cannot be conducted at the location due to the stack sampling criteria.

SSCE therefore requests to remove the PS 3 requirement from this permit in conjunction with the revision request associated with the coal SO_2 monitoring issue. Suggested rewording of the condition is provided below:

> *F.27. Oxygen. Boiler oxygen shall be continuously monitored. The continuous Oxygen monitoring system shall be calibrated at least annually following the manufacturer's recommendations.*

TABLE 1

Smurfit-Stone Container Enterprises, Inc.
Fernandina Beach Mill
PB7 SO_2 Issue Timeline

5/1/80	PSD permit application to EPA
10/1/80	AC permit application to FDEP
2/81	Preliminary determination (PSD-FL-062)
2/24/81	Facility comments on coal sulfur issue
3/12/81	Construction permit issued (AC 45-35532) – see response to facility comments; did not include sulfur limit
4/13/81	EPA Final Determination (PSD-FL-062) – see response to facility comments
10/5/84	Coal monitoring plan submitted
12/11/89	Coal monitoring plan approved by EPA
6/15/98	Original Title V permit issued (0890003-001-AV) – did not included sulfur limit
12/16/02	Title V permit renewal application submitted by facility
3/5/03	RAI #1 issued by FDEP – requested information regarding SO2 BACT
6/5/03	Facility response to RAI #1 – see response to question #9
8/16/05	First Title V intent to issue – included 0.75% sulfur limit
11/30/05	Smurfit comments on draft Title V – questioned validity of coal sulfur limit
2/27/06	FDEP response to facility comments – response #60 indicated that EPA had been contacted for clarification
3/21/06	Email from R. Felton-Smith to B. Crews
9/21/06	Intent to issue Title V permit renewal (0890003-009-AV) – included 0.75% sulfur limit
10/27/06	Smurfit comments on draft Title V
11/9/06	Proposed determination to issue Title V permit – included 0.75% sulfur limit

APPROVED COAL SAMPLING AND TEST PROCEDURES

NO. 7 POWER BOILER

USE OF FLUE GAS OXYGEN METER AS BACT FOR COMBUSTION CONTROLS

Within the time limits specified in General Condition 3 of this permit, the permittee shall determine the emissions of nitrogen oxides and carbon monoxide from the permitted combustion device in accordance with test methods and procedures set out in 40 CFR Part 60, Appendix A, Methods 7 and 10, respectively. These emission determinations shall be made at:

1) Maximum design capacity; and

2) Normal operational load.

The permittee shall install a continuous oxygen monitor in the flue of the permitted combustion device which meets the requirements of 40 CFR Part 60, Appendix B, Performance Specification 3. Results of emission determinations shall be correlated to the flue gas oxygen content to define:

1) The point at which Nitrogen Oxides (NO_x) emissions (lb/MMBtu) equals the allowable NO_x emission rate contained in the permit.
2) The point at which carbon monoxide (CO) emissions exceed the allowable CO emission rate contained in the permit.

The flue gas oxygen content shall be maintained between these points and alarms shall be set to sound when flue gas oxygen levels exceed either side of this range. Any operation outside of this range will constitute noncompliance with this specific condition, shall be recorded in accordance with General Condition 4 of this permit, and will be reported quarterly along with excess emissions in accordance with 40 CFR 60.7 (c).

Should any combustion equipment modifications be made such as different type burners, combustion air relocation, fuel conversion, tube removal or addition, etc., emissions correlations as described above shall be conducted within 90 days of attaining full operation after such modification. Results of all emission determinations shall be sent to the permitting authority within 90 days after completion of the tests.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

December 11, 1989

cc: R. Hagan
D. Little
R. Cobb - Clayton legal
R. Williams - Jax CMD
(original to S. Luedtke)

Mr. Roger Hagan
Container Corporation of America
North 8th Street
Fernandina Beach, Florida 32034

Dear Mr. Hagan:

Enclosed is the Environmental Protection Agency's recommended approval of your power boiler #7 fuel sampling and analysis procedures in lieu of continuous emissions monitoring for SO_2. The EPA's response is in reply to an inquiry by the Department's Air Compliance Section.

The Department hereby approves your requested sampling and analysis procedures that have been in effect since #7 power boiler became operational. We do not plan to take any further action, however, you should not in the future, assume that you have a waiver from rule requirements until final approval is granted. The submittal of a request does not constitute approval.

Please contact John Brown at (904) 488-1344 or me if you have any questions.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/ht

cc: Andy Kutyna, NE District
Terry Cole

R P HAGAN
RECEIVED

DEC 14 REC'D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

RECEIVED
NOV 27 1989
DER - BAQM

NORTHEAST DIST.
DER-JACKSONVILLE

NOV 21 1989

4APT-AC

Mr. Steve Smallwood, P.E., Director
Division of Air Resources Management
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Smallwood:

As requested in your letter of September 18, 1989, we have reviewed the fuel sampling and analysis plan to determine SO_2 emissions from boiler No. 7 operated by Container Corporation of America in Nassau County, Florida. Boiler No. 7 is subject to 40 CFR Part 60, Subpart D and is required to monitor SO_2 emissions as specified by §60.45(a). Since boiler No. 7 does not have an SO_2 control device, Container Corporation can monitor SO_2 by fuel sampling and analysis as allowed by §60.45(b). However, since the fuel sampling and analysis procedures are reserved, then source owners must propose their own.

We recommend that Container Corporation's proposed fuel sampling and analysis procedures be approved. Their proposed procedures should provide representative SO_2 emissions from boiler No.7 and should prevent the firing of non-complying sulfur coal.

If you have any questions regarding this letter, please contact Mr. Paul Reinermann at 404/347-2904.

Sincerely yours,

Roger O. Pfaff, Chief
Air Compliance Branch
Air, Pesticides and Toxics
Management Division

cc: A. Kutyna, NE Dist.
M. Benjamin, NE Dist.

RECEIVED
DEC 11
Ans'd..........

cc: R. HAGAN
D. Little
R. Cobb - Clayton Legal
ENV File
R. CAFFO

Container Corporation of America

North Eighth Street
Fernandina Beach, Florida 32034
Phone 904 261-5551

October 5, 1984

bcc C.L. Sawyer
R.L. Cobb - Main Office
P.E. Trout - Carol Stream

Mr. Bill Vogel
Air and Waste Management Division
EPA
345 Courtland Street
Atlanta, Georgia

Dear Mr. Vogel:

Enclosed is a copy of CCA's procedures for compliance monitoring of SO_2 by sampling and testing of coal. The Northeast subdistrict suggested we send your office a copy of these procedures for your office to approve as an alternative method for determining compliance with the SO_2 limit. We have reviewed our procedures with the Florida DER subdistrict and they approve of our SO_2 sampling and testing methods. They are awaiting your decision on this matter so an operating permit can be issued. Your prompt reply will be appreciated.

If you have any additional questions, please do not hesitate to be in contact with me.

Sincerely,

CONTAINER CORPORATION OF AMERICA

David R. James

for: Cynthia L. Sawyer
Environmental Group Leader

Enclosure

jrb

CC C.H. Fancy, BAQM
John C. Brown, Jr, Northeast District

Container Corporation of America

Paper Mill Division

North Eighth Street
Fernandina Beach, Florida 32034

Phone: 904 261-5551

CONTAINER CORPORATION OF AMERICA

COAL SAMPLING AND TESTING PROCEDURES

FOR COMPLIANCE MONITORING OF SO_2

FOR #7 POWER BOILER

INTRODUCTION

INTRODUCTION TO COAL TESTING

Coal Testing at Container Corporation of America's Fernandina Beach Mill demonstrates compliance with the 1.2 lbs SO_2/mmBTU on a 30-day rolling average. Container has contracts with two coal companies that supply approximately 5,000 tons of coal per week to the CCA's Fernandina Beach facility. In CCA's construction permit for this NSPS source, the amount of sulfur allowed in the coal is calculated as follows:

$$\text{ALLOWABLE \% SULFUR} = 6.32 \times 10^{-5} \times (\text{BTU per lb coal})$$

The coal which is purchased is low surfur coal with high BTU values. The coal purchasing contract states that the coal cannot exceed 1.2 lb SO_2/mmBTU. The buyer will reject the coal if it does not meet the requirements in the contract for SO2. CCA felt as though it would be best to have the coal analyzed prior to receiving the shipment at the mill. Therefore, the coal is analyzed by each coal mine and it is also analyzed by a commercial laboratory. If there is a discrepency in the analyses, both the mine and the lab run their test again. The sample is also sent to an independent lab to verify which analysis is correct.

Since the boiler came on line, CCA has been following this procedure for SO_2 compliance monitoring. During the past year and a half, no sample has gone over the 1.2 lbs SO_2/mmBTU limit. This procedures handbook is to identify our coal sampling and testing procedures which document compliance with the 1.2 lbs SO_2/mmBTU allowable.

SAMPLING POINT SELECTION

SAMPLING POINT LOCATION

We elected to have the coal sampled and analyzed at each respective mine site prior to shipments. These analyses are received at our mill before the coal shipments arrive, affording us the opportunity to reject shipments not meeting contract and/or compliance conditions.

If sampling were performed at the mill and the analysis showed non-compliance with SO_2, it would be very difficult to distinguish and/or remove the non-compliance coal from the storage system.

In conjunction with the analyses conducted at the mine sites, duplicate coal samples are sent to an independent laboratory (Commercial Testing, Charleston, WV) for verification of the mines' results. To date, comparison of analyses has been excellent.

SAMPLING METHODS

SAMPLING METHODS

Not only is the sampling location important but also the method by which the coal is sampled. The sample collection is accomplished at the coal mines by different sampling methods. The Golden Oaks Mine uses a J. A. Redding automatic coal sampling system (schematic attached). This is a two stage continuous sampler. Coal shipments to CCA from Golden Oaks consist of approximately 20 to 25 railcars per lot. This sampler has a primary cutter which randomly cuts the full stream of the coal being loaded. During the entire loading about 7,500 lbs. go to the secondary system where it is crushed to a 8 mesh and split into a 50 lb. sample. This sample is then put through a riffler which splits the sample down to the 5 lb. increment that is sent to Commercial Testing for duplicate analysis.

The Peabody Mines (Stickney and Robin Hood, WV) use a semi-mechanical system. The loading operator stops the conveyor belt and takes a straight cut of approximately 50 lbs. across the belt. This is done four times per railcar. The lot size is approximately 16 to 20 railcars. There are approximately 64 to 80 incremental samples per lot. The sample is then crushed to 8 mesh and further divided by a riffler. The sample is split until a 5 to 10 lb. sample is obtained. This sample is also sent to Commercial Testing and to Peabody's in-house laboratory. Both of these coal mines sampling procedures meet ASTM method 2234 for sample size and number of increments.

PURCHASE CONTRACT

COAL SPECIFICATIONS

TABLE 2

PURCHASE CONTRACT
COAL SPECIFICATIONS

Washed coal crushed to size of 2" x 0"

BTU/lb	12,500 minimum
Moisture, as received	8% maximum
Ash, as received	11% maximum
Volatile	30% minimum
Sulfur	1.2 lbs SO_2/mmBTU maximum

Coal not meeting specifications for SO_2 will be rejected.

TEST METHODS

TEST METHODS

	ASTM METHOD				
	Sample Collection	Sample Preparation	Sulfur	Moisture	GCV
Method 19	D2234	D2013	D3177	D3173	D3176*
Golden Oaks	D2234	D2013	Leco Sulfur Analyzer	D3302	D3286
Peabody	D2234	D2013	D3177	D3302	D3286
Commercial Testing	---	D2013	D3177	D3302 D3173	D3286

* This is the ASTM method for an Ultimate Analysis which does not include GCV. ASTM D 3286 is the method to determine GCV.

The Peabody mine participates in a round robin program where they receive an unknown sample once a month for analysis. Peabody also checks their analysis using standard samples on a more frequent basis.

Commercial Testing and Engineering in Charleston, WV serves as the independent laboratory. A copy of their standard laboratory procedure is enclosed. Following is a comparison of results based on sulfur analyses by the mines and Commercial Testing. These are monthly averages and show very little difference between analysts. All the records on compliance monitoring of SO_2 are maintained by the mill Environmental Group.

CCA NO. 7 POWER BOILER

Emissions lb SO_2 mm BTU as determined by Sulfur Analysis of the coal. Mining Company vs Commercial Testing.

1984	Mining Company Golden Oaks	Commercial Testing
January	0.96	1.02
February	0.94	1.02
March	0.97	1.05
April	0.96	1.01
May	1.02	1.05
June	0.99	1.05

1984	Peabody	Commercial Testing
January	0.97	1.05
February	0.96	1.08
March	1.10	1.14
April	1.05	1.06
May	1.07	1.07
June	1.05	1.06

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 · AREA CODE 312 726-8434

WEST VIRGINIA DIVISION MANAGER
TOM BRAZEAU

PLEASE ADDRESS ALL CORRESPONDENCE T
P.O. BOX 808, CHARLESTON, WV 253
OFFICE TEL. (304) 925-66

February 23, 1984

Cindy Sawyer
Container Corp. of America
Mill Div., North 8th Street
Fernandina Beach, Florida 32034

Dear Cindy,

Commercial Testing & Engineering Co. in Charleston receives 1000-2000 grams of 8 Mesh coal samples directly from two suppliers that is to be shipped to Container Corp. of America.

The coal sample is identified by railcar no's. and airdried in accordance with ASTM D3302 sec. 3.2.2, 3.2.3 and 3.3 at 10°C above ambient temperature until the moisture loss is less than 0.1% per hour. The sample is then riffled to 1000 grams and pulverized to -60Mesh. This sample is subdivided to between 75 and 100 grams and thoroughly mixed in a sample shaker.

This sample is then sent to the laboratory where the following test are performed. Residual Moisture ASTM D3173-79 Ash ASTM D3174-82, Volatile Matter ASTM D-3175 sec. 6.1, Gross Calorific Value ASTM D3286-77 and Sulfur determination ASTM D3177-1982 sec. 3.3.

C.T.&E. adheres to ASTM procedures and has internal (daily) as well as external (weekly) quality control samples run under identical procedures for quality assurance.

If you have any other questions please feel free to contact me at your convenience.

Very truly yours,

COMMERCIAL TESTING & ENGINEERING CO.

Edwin B. Snellings

Edwin B. Snellings, Manager
Charleston Office

EBS/tk

OVER 40 BRANCH

CONCLUSION

CONCLUSION

CCA feels the sampling method and analysis are sufficient to meet the fuel analysis specified by CFR 40 60.45(b)(2). In the Federal register dated Oct. 21,1983, Standards of Performance for New Stationary Sources, proposed revisions stated if the fuel is sampled, it must meet ASTM D-2234. As we stated ealier, these samplers do meet ASTM Method D-2234 and are also analyzed by ASTM methods. We believe this demonstrates compliance with CFR 40 60.45(b)(2).

COAL SAMPLING SYSTEM