Florida Department of Environmental Protection

Memorandum

TO: Michael G. Cooke, Division of Air Resource Management

THRU: Trina Vielhauer, Bureau of Air Regulation

FROM: Jeff Koerner, Air Permitting North Program

DATE: October 31, 2005

SUBJECT: Smurfit-Stone Container Enterprises, Inc. - Panama City Mill
Project No. 0050009-021-AC
No. 4 Combination Boiler - OFA and Venturi Improvements

Smurfit-Stone Container operates the existing Panama City Mill, which is located at One Everitt Avenue in Panama City, Bay County, Florida. The final permit authorizes improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for the No. 4 Combination Boiler. The goal of the project is to reduce controlled particulate matter emissions at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu. The project is not expected to increase emissions of any pollutant. The project results in a minor source air construction permit and is not subject to PSD preconstruction review.

The Department distributed an "Intent to Issue Permit" package on October 6, 2005. The applicant published the "Public Notice of Intent to Issue" in the Panama City New Herald on October 14, 2005. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

As described in the attached Final Determination, the applicant provided comments regarding the maximum steam production rate specified in the draft permit (300,000 lb/hour). Although this was identified in the application as the maximum continuous steaming rate, the applicant contends to have operational and emissions information showing operation at approximately 330,000 lb/hour. Additional information will be necessary to review this requested change. If acceptable, a new Public Notice will be required. Based on phone conversations with the plant's Environmental Manager, the applicant does not want to delay issuance of the construction permit as the work is scheduled for an upcoming outage. We would review a request for a revised maximum steam production rate as modification to the permit.

Day #90 is December 27, 2005. I recommend your approval of the attached Final Permit for this project.

Attachments

FINAL DETERMINATION

PERMITTEE

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation, Air Permitting North Program
2600 Blair Stone Road, MS #5505
Tallahassee, Florida, 32399-2400

PROJECT

Air Permit No. 0050009-021-AC
Panama City Mill – No. 4 Combination Boiler

This permit authorizes improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for the No. 4 Combination Boiler. The goal of the project is to reduce controlled particulate matter emissions at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu. The existing unit is located at Smurfit-Stone Container's Panama City Mill, which is located at One Everitt Avenue in Panama City, Bay County, Florida.

NOTICE AND PUBLICATION

The Department distributed an "Intent to Issue Permit" package on October 6, 2005. The applicant published the "Public Notice of Intent to Issue" in the Panama City New Herald on October 14, 2005. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

COMMENTS

No comments on the Draft Permit were received from the public or the Department's Northwest District Office. The applicant requested that the 300,000 lb/hour maximum steam rate specified in the draft permit be revised to 330,000 lb/hour based on actual past production levels and test data, which would require a new public notice if acceptable. Because the unit is scheduled for an upcoming outage, the Department agreed to issue the final permit as drafted and review the requested change with supporting information as a subsequent modification.

CONCLUSION

Only minor revisions were made to correct typographical errors. The final action of the Department is to issue the permit with the changes described above.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Air Permit No. 0050009-021-AC
Panama City Mill
No. 4 Combination Boiler
OFA and Venturi Improvements

Authorized Representative:
B. G. Sammons, General Manager

Enclosed is Final Air Permit No. 0050009-021-AC, which authorizes the construction of improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for No. 4 Combination Boiler. The new equipment will be installed at the existing Panama City Mill, which is located at One Everitt Avenue in Panama City, Bay County, Florida. As noted in the attached Final Determination, only minor changes and clarifications were made. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty (30) days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Trina Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 11/3/05 to the persons listed:

Mr. B. G. Sammons, Smurfit-Stone Container Enterprises, Inc.*
Mr. Tom Clements, Smurfit-Stone Container Enterprises, Inc.
Mr. David Buff, Golder Associates Inc.
Ms. Sandra Veazey, NWD Office

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Mary F. Harris — (Clerk)

11/3/05 — (Date)

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

PERMITTEE:

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Authorized Representative:
B. G. Sammons, General Manager

Air Permit No. 0050009-021-AC
Facility ID No. 0050009
SIC No. 2611
OFA and Venturi Improvements
Permit Expires: September 13, 2007

PROJECT AND LOCATION

This permit authorizes improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for No. 4 Combination Boiler. The goal of the project is to reduce controlled particulate matter emissions at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu. The existing unit is located at Smurfit-Stone Container's Panama City Mill, which is located at One Everitt Avenue in Panama City, Bay County, Florida.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

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Michael G. Cooke, Director
Division of Air Resource Management

11/2/05
(Date)

FACILITY AND PROJECT DESCRIPTION

The permittee operates an existing pulp and paper mill (SIC No. 2611) in Panama City. The mill includes the No. 4 Combination Boiler (Emissions Unit 016), which is authorized to fire wood/bark, coal, fuel oil, and natural gas. The unit is authorized to operate as a backup for the lime kiln to destroy non-condensable gases (TRS/HAP/VOC) from the batch digesting system and multiple effects evaporator system. The unit is also authorized to operate as a backup to the No. 3 Combination Boiler to destroy HAP and TRS emissions in the condensate stripper off-gases (SOG). Existing air pollution controls include an overfire air (OFA) system and a venturi wet scrubber. The permittee proposes several improvements to these existing control systems in an effort to reduce controlled particulate matter emissions from No. 4 Combination Boiler at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu.

REGULATORY CLASSIFICATION

Title III: The facility is a major source of hazardous air pollutants (HAP).

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The facility is a PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards in 40 CFR 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63.

RELEVANT DOCUMENTS

The permit application and additional information received to make it complete are not a part of this permit; however, the information is specifically related to this permitting action and is on file with the Department.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to operate an emissions unit shall be submitted to Air Resources Section of the Department's Northwest District Office at 160 Governmental Center, Pensacola, Florida 32502-5794.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resources Section of the Department's Northwest District Office at 160 Governmental Center, Pensacola, Florida 32502-5794.

3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Format); Appendix B (General Conditions); and Appendix A (Common Requirements).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Relaxations of Restrictions on Pollutant Emitting Capacity. If a previously permitted facility or modification becomes a facility or modification which would be subject to the preconstruction review requirements of this rule if it were a proposed new facility or modification solely by virtue of a relaxation in any federally enforceable limitation on the capacity of the facility or modification to emit a pollutant (such as a restriction on hours of operation), which limitation was established after August 7,1980, then at the time of such relaxation the preconstruction review requirements of this rule shall apply to the facility or modification as though construction had not yet commenced on it. [Rule 62-212.400(2)(g), F.A.C.]

8. Title V Permit: This permit authorizes the proposed construction activities related to the existing air pollution controls. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a revised Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V air operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

This section of the permit addresses the following emissions unit.

Emissions Unit No. 016 – No. 4 Combination Boiler
No. 4 Combination Boiler is an existing unit at the Panama City Mill. The unit is currently authorized to fire carbonaceous fuels (includes wood, bark and primary clarified wood fibers), coal (maximum of 1.7% sulfur by dry weight), natural gas and No. 2 or 6 fuel oil (maximum of 2.4% sulfur by weight). Existing air pollution controls include an overfire air (OFA) system and a venturi wet scrubber. Title V air operation permit No. 0050009-020-AV specifies the following capacities: The total maximum operational heat input of this emissions unit is 545 MMBtu/hr based on a 24-hour average. The heat input shall not exceed 472 MMBtu/hr from fuel oil, 395 MMBtu/hr from coal, 474 MMBtu/hr from carbonaceous fuels, or 512 MMBtu/hr from natural gas. The total heat input to the Nos. 3 and 4 combination boilers due to carbonaceous fuels shall not exceed 501 MMBtu/hr based on a 24-hour average.

OTHER REQUIREMENTS

1. Other Permits: The No. 4 Combination Boiler remains subject to all applicable requirements from previously issued air construction and operating permits. The conditions of this permit are in addition to and supplement all other applicable permit requirements. The Department reserves the right to review this project in combination with future proposed projects related to this unit. [Rule 62-4.070(3), F.A.C.]

CONTROL EQUIPMENT IMPROVEMENTS

2. Overfire Air System: The permittee is authorized to perform the following general work on the existing overfire air system: Conduct a Computational Fluid Dynamics (CFD) modeling analysis. Based on the results of the analysis, modify or add overfire air ports, ductwork, velocity dampers, air nozzle assemblies, air flow measuring devices, and combustion control system to improve carbonaceous fuel firing. The project goal is to reduce unburned carbon to 20% or less, provide more stable combustion with a constant negative furnace pressure, and reduce uncontrolled particulate matter emissions from the boiler furnace to less than 4.2 lb/MMBtu.

   a. Within 15 days of completing the CFD report, the permittee shall submit a written report of the findings to the Bureau of Air Regulation and the Compliance Authority.

   b. Prior to commencing physical work on this project, the permittee shall submit a report to the Bureau of Air Regulation and the Compliance Authority summarizing the proposed changes based on the CFD modeling analysis.

   c. Within 15 days of completing the physical work, the permittee shall provide a report to the Bureau of Air Regulation and the Compliance Authority summarizing the actual OFA improvements made.

   [Application; Rule 62-4.070(3), F.A.C.]

3. Existing Wet Scrubber: The permittee is authorized to return the current fixed throat venturi scrubbing system to a variable throat venturi scrubbing system, which is the original design for this equipment. The project goal is to provide more control over the scrubber pressure differential and control of particulate matter emissions with the variable throat design. The permittee shall notify the Compliance Authority within 15 days of completing the proposed work. The permittee shall install, calibrate, operate and maintain a device to continuously monitor and record the scrubber pressure drop. [Application; Rule 62-4.070(3), F.A.C.]

PERFORMANCE RESTRICTIONS

4. Permitted Capacity: The maximum continuous steam production rate shall not exceed 300,000 pounds per hour based on a 24-hour average. The permittee shall install, calibrate, maintain, and operate equipment to continuously monitor and record the steam production rate to demonstrate compliance with this requirement. If the boiler is unable to operate within 90% of this specified steaming rate during the initial tests, the Department reserves the right to reduce the maximum steaming rate. [Rules 62-210.200(PTE) and 62-212.400(2)(g), F.A.C.]

EMISSIONS PERFORMANCE TESTING

5. Initial Performance Tests: Within 90 days of restarting the unit after completing the proposed work, the permittee shall conduct performance tests to determine the following emissions rates from the No. 4 Combination Boiler: carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM), and volatile organic compounds (VOC). The tests shall be conducted under the following conditions:

   a. Each test shall consist of three 1-hour test runs.

   b. The boiler shall fire only a combination of wood and coal. No more than 6.2 tons per hour of coal shall be fired for each 3-run test average.

   c. The boiler shall produce at least 270,000 pounds per hour of steam for each 3-run test average.

   The PM test shall demonstrate compliance with the applicable standards specified in the Title V air operation permit. The tests for CO, NOx, and VOC are for informational purposes. [Rule 62-297.310(7)(a)1, F.A.C.]

6. Test Notification: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. [Rule 62-297.310(7)(a)9, F.A.C.]

7. Test Methods: Required tests shall be performed in accordance with the following reference methods.

EPA Test Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content {These methods are performed as necessary to support the other methods.}
5	Determination of Particulate Matter (PM) Emissions
7E	Determination of Nitrogen Oxide (NOx) Emissions
10	Determination of Carbon Monoxide (CO) Emissions The method shall be based on a continuous sampling train.
18	Calculation Method for NOx, PM, and VOC Emission Rates
25A	Determination of Volatile Organic Compounds (VOC) {The permittee may elect to conduct EPA Method 18 on a simultaneous sample to determine emissions of methane and ethane, which may then be deducted from the determination of total hydrocarbons (THC) to determine VOC emissions. Otherwise, all measured THC shall be assumed to be VOC.}

Tests shall also be conducted in accordance with the requirements specified in Appendix C of Section 4 of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

RECORDS AND REPORTS

8. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix C of Section 4 of this permit. For each test run, the report shall also indicate the following: emissions rate (lb/MMBtu, lb/hour, and ppmvd @ 7% oxygen for gases); flue gas oxygen content (%); steam production rate (lb/hour); wood and coal firing rates (tons/hour); heat input rates from each fuel (MMBtu/hour); total air flow (acfm and lb/hour); overfire air distribution (%); and venturi wet scrubber pressure differential (recorded at 15-minute intervals during test). In addition, the permittee shall take a sample of coal and wood fired during each test. Each sample shall be analyzed for: higher and lower heating values (Btu/lb, dry); moisture content (%); sulfur content (% by weight); and ash content (% by weight). Results of the analyses shall be summarized in the test report.

   [Rule 62-297.310(8), F.A.C.]

SECTION 4. APPENDICES
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SECTION 4. APPENDIX A
CITATION FORMATS

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number
"001"identifies the specific permit project
"AC" identifies the permit as an air construction permit
"AF" identifies the permit as a minor federally enforceable state operation permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the Prevention of Significant Deterioration of Air Quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CRF 60.7]

Means: Title 40, Part 60, Section 7

SECTION 4. APPENDIX B
GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology;
    b. Determination of Prevention of Significant Deterioration; and
    c. Compliance with New Source Performance Standards.

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

COMMON CONDITIONS

{Permitting Note: Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.}

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. *Required Sampling Time.* Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

14. Determination of Process Variables

    a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

16. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]

17. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

18. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the

test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

19. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]
20. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. B. G. Sammons, General Manager
Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, Florida 32402

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Rose Matteson ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) R. MATTESON
C. Date of Delivery 11-4-05

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number (*Transfer from service label*) 7001 0320 0001 3692 1834

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	

Postmark Here

7001 0320 0001 3692 1834

Mr. B. G. Sammons, General Manager
Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, Florida 32402

PS Form 3800, January 2001 See Reverse for Instructions

Smurfit-Stone

Containerboard Mill Division

October 18, 2005

Mr. Jeff Koerner
Florida Dept. of Environmental Protection
2600 Blair Stone Rd.
MS #5505
Tallahassee, FL, 32399-2400

Re: Comments on Draft Permit
and Public Notice
Project No. 0050009-021-AC

Dear Mr. Koerner

We appreciate the rapid response on our construction permit application to improve the overfire air system (OFA) and scrubber on our #4 Combination Boiler (EU016 Title V permit No. 0050009-020). This project is needed for compliance with the particulate matter emission standard in NESHAP Subpart DDDDD of 40 CFR 63.

The required public notice was made in the "Panama City News Herald" on October 14. Proof of that notification is attached.

We can and will comply with all provisions in the draft permit, except #4: Permitted Capacity. The boiler has the capability of producing 330,000 #/hr of steam. The draft permit would limit that capacity to 300,000 #/hr. We understand that this limitation was proposed because the design basis for the OFA improvements was 300,000 #/hr. We have been in contact with the manufacturer, Alstom, and have requested their opinion. This is attached. They feel that the boiler and the OFA system can function correctly at 330,000 #/hr, but could not absolutely guarantee it. Because of this we would propose the following:

We will conduct the performance testing as required in Section 5 of the draft permit. If we can demonstrate compliance with our current permit limits at a steaming rate above 300,000 #/hr, (but at or below 330,000 #/hr) that steaming rate will become our new permitted capacity. If we cannot meet the Subpart DDDDD particulate limit, we will have until the compliance date of September 13, 2007 to take further corrective action to bring the boiler into compliance. We

Smurfit-Stone Container Corporation
1 Everitt Avenue 32401 P.O. Box 59560 32412-0560 Panama City, FL Phone (850) 785-4311 Fax (850) 763-6290

completed our annual stack testing on this boiler on October 12. The testing was done at a 323,000 #/hr steaming rate, and we met all permit limits. As a side note, in 2003 we conducted the stack testing at 328,000 #/hr and in 2004, we conducted the stack testing at 322,000 #/hr. In both cases, we easily met all permit limits. Since steaming rate is not a Title V parameter, we don't have steaming rate data for earlier tests. Two rounds of stack testing done within a six month period should provide reasonable assurance that the boiler can operate within its' permit limits while steaming at a 330,000 #/hr rate.

During periods when another boiler is down, the mill's production is curtailed due to a lack of steam. The amount of curtailment is proportional to the amount of steam that the three remaining boilers can produce. This is the primary reason for the need to maintain the capacity to operate the #4 Combination Boiler at 330,000 #/hr. One of the other boilers could be down for any number of reasons. These reasons include items such as tube failures, and in the case of the #3 Combination Boiler, the need to modify it to meet the Industrial Boiler MACT. These down periods can be several weeks in duration.

Alternatively, if we could obtain a provision to allow the #4 Combination Boiler to operate at 330,000 #/hr during the periods that another boiler is down, we could accept a 300,000 #/hr limit during normal operations.

We feel that either of the above proposals, or a combination of the proposals would provide reasonable assurance of compliance.

Please call me at (850) 785-4311 x470 if you have additional questions.

Sincerely

Tom Clements
Environmental Mgr.

Shared/IBM/#4 BB draft permit reply

From: Gaal, Richard
Sent: Wednesday, October 12, 2005 2:56 PM
To: Groome, Matt ; Fuster, Pedro
Subject: FW: Smurfit Stone-Panama City #4BB-Operation at 330,000 lb/hr

Answer to the 330,000.

Richard A. Gaal
Manager of Engineering
Panama City Mill-0324
Email: rgaal@smurfit.com
Ph: 850-785-4311, X287
Beeper: 850-872-5723

From: dave.cavers@power.alstom.com [mailto:dave.cavers@power.alstom.com]
Sent: Wednesday, October 12, 2005 1:10 PM
To: Raffield, Benny
Cc: Gaal, Richard ; steve.gibowski@power.alstom.com
Subject: Smurfit Stone-Panama City #4BB-Operation at 330,000 lb/hr

Benny-We have conducted a cursory review of the boiler and related equipment for potential operation up to 330,000 lb/hr steam flow for short periods of time when the #3PB is down for the rebuild. Based on this review, we have the following comments:

Fuels and Airflows

For the purpose of this review, we are using the most recent fuel analysis from August 3, 2005 (39.5% moisture content of bark). Assuming that SSCC will be achieving MCR load of 300,000 lb/hr using bark (198,000 lb/hr steam), coal (70,000 lb/hr steam), oil (30,000 lb/hr steam), and NCG & SOG (2000 lb/hr steam), we recommend that bark fuel be increased to reach the desired 330,000 lb/hr steam load. If bark is used to supplement, then this would equate to a 4% increase above the maximum design airflow for the new OFA system. This would increase the grate heat release rate (GHRR) to 1.24MBtu/(hr·ft^2) compared with the target GHRR of 1.20MBtu/(hr·ft^2).

The reason that we suggest bark as the supplemental fuel is because it has the least effect on the designed airflows. If coal or oil are used to supplement, then this would equate to a 20% increase above the maximum design airflow for the burner air system. A 20% increase in airflow will result in a higher pressure loss through the system, perhaps not all that significant but should be noted.

FD & ID fans

At 330,000 lb/hr steam load as identified above, the FD fan and ID fan will experience an increase in load. The flow through the FD fan will increase by 2-3%, and the flow through the ID fan will increase by 1%.

The ID fan should be able to handle the increased load. However, SSCC is already aware that we are on the edge of the FD fan's capacity (not even considering the 2-3% increase in flow). As we have insufficient data to confirm whether the FD fan can handle the increase in load, this becomes even more critical if the unit is to operate at the uprated condition.

Particulate Levels

The particulate loading will increase for the uprated condition and there is a potential for an increase in boiler bank and economizer tube erosion due to the higher gas weights.

Circulation/Drum Internals

The 1960's vintage boilers were typically a conservative design and the boiler circulation system should be capable of a 10-15% steam flow increase above design rating. However; if SSCC has experienced tube failures or blistering that can be related to poor circulation, we would suggest a circulation study be considered.

A review of the drum internals indicate that they are able to handle the 330,000 lb/hr steam flow and have a maximum capability of 339,000 lb/hr steam flow.

In summary, it is our opinion that the boiler should be capable of operating at 330,000 lb/hr provided the FD fan can provide the increased airflow and there has not been a history of circulation related failures.

Please contact us if you have any questions.

Dave

BEST AVAILABLE COPY

Florida Freedom Newspapers, Inc.

PUBLISHERS OF THE NEWS HERALD
Panama City, Bay County, Florida
Published Daily

State of Florida
County of Bay

Before the undersigned authority appeared _____

Glenda Sullivan, who on oath says that (s)he

is Classified Manager of The News Herald, a daily

newspaper published at Panama City, in Bay County, Florida; that the attached copy of

advertisement, being a Legal Advertisement - 9773

in the matter of Public Notice

Intent To Issue Air Permit

in the Bay County

Court, was published in said newspaper in the issue of _____

October 14, 2005

Affiant further says that The News Herald is a direct successor of the Panama City News and that this publication, together with its direct predecessor, has been continuously published in said Bay County, Florida, each day (except that the predecessor, Panama City News, was not published on Sundays), and that this publication together with its said predecessor, has been entered as periodicals matter at the post office in Panama City, in said Bay County, Florida, for a period of 1 year next preceding the first publication of the attached copy of advertisement; and affiant further says that he or she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Glenda Sullivan

State of Florida
County of Bay
Sworn and subscribed before me this 14th day of October, A.D., 2005 by Glenda Sullivan, Classified Manager of The News Herald, who is personally known to me or has produced na as identification.

Marie Forrest
Commission # DD209621
Expires May 5, 2007
Bonded Troy Fain - Insurance, Inc. 800-385-7019

Marie Forrest
Notary Public, State of Florida at Large

9773
PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Draft Air Construction Permit No. 0050009-021-AC
Smurfit-Stone Container Enterprises, Inc. - Panama City Mill
No. 4 Combination Boiler, Control Equipment Improvements
Bay County, Florida

Applicant: The applicant for this project is the Smurfit-Stone Container Enterprises, Inc. The applicant's authorized representative and mailing address is: Mr. B. G. Sammons, General Manager of the Panama City Mill, Smurfit-Stone Container Enterprises, Inc., One Everitt Avenue, Panama City, FL 32402.

Facility Location: Smurfit-Stone Container Enterprises, Inc. operates an existing pulp and paper mill (SIC No. 2611) located at One Everitt Avenue in Panama City, Bay County, Florida.

Project: The applicant proposes improvements to the existing overfire air system and existing wet scrubber to reduce particulate matter emissions. No other changes are necessary such as modifying the fuel feeders, fuel conveyors, ash handling system, supplemental burners, boiler tube replacements, etc. These efforts are being conducted in advance of the September 13, 2007 deadline to demonstrate compliance with the applicable particulate matter emissions standard specified for solid fuel fired industrial boilers in NESHAP Subpart DDDDD of 40 CFR 63. Modifications to existing control equipment require review and approval by the Department. This includes any additional improvements to the air pollution control systems that the applicant determines will be necessary should the proposed project fall short of the goal. The Department reserves the right to review this project in combination with future proposed projects related to this unit.

The applicant maintains that the proposed changes to the existing pollution controls will not increase the capacity of the existing boiler or steam production rate. The current maximum continuous steam production rate is 300,000 pounds per hour based on a 24-hour average for the original design and the design target for the new OFA system. To ensure there will be no increase in capacity, the draft permit limits the steam production rate of the No. 4 Combination Boiler to this maximum rate.

to the applicant for project described abc The applicant has pro ed reasonable assura that operation of propos equipment will not versely impact air qua and that the project comply with all appro ate provisions of Chapt 62-4, 62-204, 62-2 62-212, 62-296, a 62-297, F.A.C. The Perm ting Authority will issue Final Permit in accordan with the conditions of t proposed Draft Permit l less a timely petition for administrative hearing filed under Sectio 120.569 and 120.57, F. or unless public comme received in accordan with this notice results in different decision or a si nificant change of terms conditions.

Comments: The Permi ting Authority will acce written comments cor cerning the proposed Dra Permit for a period of fou teen (14) days from th date of publication of thi Public Notice. Writte comments must be provic ed to the Permitting Au thority at the above ad dress. Any written com ments filed will be mad available for public inspec tion. If written comment received result in a signif icant change to the Draf Permit, the Permitting Authority shall revise the Draf Permit and require, if applicable, another Public Notice.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within fourteen (14) days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections

The Title V permit currently regulates emissions of particulate matter and sulfur dioxide from the No. 4 Combination Boiler. There is little operational data available for other pollutant emissions such as carbon monoxide, nitrogen oxides, or volatile organic compounds. In addition to particulate matter, the draft permit requires testing for each of these pollutants to establish the emissions profile for the No. 4 Combination Boiler after completing the improvements.

The preliminary determination is that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project is not reasonably expected to result in increased emissions.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit

or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of how and when the petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available for this proceeding.

October 14, 2005

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

September 29, 2005

CERTIFIED MAIL – Return Receipt Requested

Mr. B. G. Sammons, General Manager
Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Re: Project No. 0050009-021-AC
Smurfit-Stone Container Enterprises, Inc. - Panama City Mill
No. 4 Combination Boiler - OFA and Venturi Improvements

Dear Mr. Sammons:

On September 2, 2005, the Department received your application requesting improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for No. 4 Combination Boiler at the existing Panama City Mill. Enclosed are the following documents: "Technical Evaluation and Preliminary Determination", "Draft Permit", "Written Notice of Intent to Issue Air Permit", and "Public Notice of Intent to Issue Air Permit".

The "Technical Evaluation and Preliminary Determination" summarizes the Permitting Authority's technical review of the application and provides the rationale for making the preliminary determination to issue a Draft Permit. The proposed "Draft Permit" includes the specific conditions that regulate the emissions units covered by the proposed project. The "Written Notice of Intent to Issue Air Permit" provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation. The "Public Notice of Intent to Issue Air Permit" is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact the Project Engineer, Jeff Koerner, at 850/921-9536.

Sincerely,

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an
Application for Air Permit by:

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Authorized Representative:
B. G. Sammons, General Manager

Air Permit No. 0050009-021-AC
Panama City Mill
No. 4 Combination Boiler
OFA and Venturi Improvements
Bay County, Florida

Facility Location: Smurfit-Stone Container Enterprises, Inc. operates an existing pulp and paper mill (SIC No. 2611) located at One Everitt Avenue in Panama City, Bay County, Florida.

Project: The applicant proposes improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for the No. 4 Combination Boiler. Details of the project are provided in the application, the enclosed "Technical Evaluation and Preliminary Determination", and the enclosed Draft Permit.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above.

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Air Permit" (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within seven (7) days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of the Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached Public Notice or within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this "Written Notice of Intent to Issue Air Permit" package (including the Public Notice, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10/6/05 to the persons listed below.

Mr. B. G. Sammons, Smurfit-Stone Container Enterprises, Inc.*
Mr. Tom Clements, Smurfit-Stone Container Enterprises, Inc.
Mr. David Buff, Golder Associates Inc.
Ms. Sandra Veazey, NWD Office

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Mary J. Harvey (Clerk) 10/6/05 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection

Draft Air Construction Permit No. 0050009-021-AC
Smurfit-Stone Container Enterprises, Inc. - Panama City Mill
No. 4 Combination Boiler, Control Equipment Improvements
Bay County, Florida

Applicant: The applicant for this project is the Smurfit-Stone Container Enterprises, Inc. The applicant's authorized representative and mailing address is: Mr. B. G. Sammons, General Manager of the Panama City Mill, Smurfit-Stone Container Enterprises, Inc., One Everitt Avenue, Panama City, FL 32402.

Facility Location: Smurfit-Stone Container Enterprises, Inc. operates an existing pulp and paper mill (SIC No. 2611) located at One Everitt Avenue in Panama City, Bay County, Florida.

Project: The applicant proposes improvements to the existing overfire air system and existing wet scrubber to reduce particulate matter emissions. No other changes are necessary such as modifying the fuel feeders, fuel conveyors, ash handling system, supplemental burners, boiler tube replacements, etc. These efforts are being conducted in advance of the September 13, 2007 deadline to demonstrate compliance with the applicable particulate matter emissions standard specified for solid fuel fired industrial boilers in NESHAP Subpart DDDDD of 40 CFR 63. Modifications to existing control equipment require review and approval by the Department. This includes any additional improvements to the air pollution control systems that the applicant determines will be necessary should the proposed project fall short of the goal. The Department reserves the right to review this project in combination with future proposed projects related to this unit.

The applicant maintains that the proposed changes to the existing pollution controls will not increase the capacity of the existing boiler or steam production rate. The current maximum continuous steam production rate is 300,000 pounds per hour based on a 24-hour average for the original design and the design target for the new OFA system. To ensure there will be no increase in capacity, the draft permit limits the steam production rate of the No. 4 Combination Boiler to this maximum rate.

The Title V permit currently regulates emissions of particulate matter and sulfur dioxide from the No. 4 Combination Boiler. There is little operational data available for other pollutant emissions such as carbon monoxide, nitrogen oxides, or volatile organic compounds. In addition to particulate matter, the draft permit requires testing for each of these pollutants to establish the emissions profile for the No. 4 Combination Boiler after completing the improvements.

The preliminary determination is that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project is not reasonably expected to result in increased emissions.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed

(Public Notice to be Published in the Newspaper)

under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of this Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within fourteen (14) days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of how and when the petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available for this proceeding.

DRAFT PERMIT

PERMITTEE:

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Authorized Representative:
B. G. Sammons, General Manager

Air Permit No. 0050009-021-AC
Facility ID No. 0050009
SIC No. 2611
OFA and Venturi Improvements
Permit Expires: September 13, 2007

PROJECT AND LOCATION

This permit authorizes improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for No. 4 Combination Boiler. The goal of the project is to reduce controlled particulate matter emissions at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu. The existing unit is located at Smurfit-Stone Container's Panama City Mill, which is located at One Everitt Avenue in Panama City, Bay County, Florida.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

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(DRAFT)

Michael G. Cooke, Director
Division of Air Resource Management

(Date)

FACILITY AND PROJECT DESCRIPTION

The permittee operates an existing pulp and paper mill (SIC No. 2611) in Panama City. The mill includes the No. 4 Combination Boiler (Emissions Unit 016), which is authorized to fire wood/bark, coal, fuel oil, and natural gas. The unit is authorized to operate as a backup for the lime kiln to destroy non-condensable gases (TRS/HAP/VOC) from the batch digesting system and multiple effects evaporator system. The unit is also authorized to operate as a backup to the No. 3 Combination Boiler to destroy HAP and TRS emissions in the condensate stripper off-gases (SOG). Existing air pollution controls include an overfire air (OFA) system and a venturi wet scrubber. The permittee proposes several improvements to these existing control systems in an effort to reduce controlled particulate matter emissions from No. 4 Combination Boiler at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu.

REGULATORY CLASSIFICATION

Title III: The facility is a major source of hazardous air pollutants (HAP).

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The facility is a PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards in 40 CFR 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63.

RELEVANT DOCUMENTS

The permit application and additional information received to make it complete are not a part of this permit; however, the information is specifically related to this permitting action and is on file with the Department.

1. Permitting Authority: All documents related to applications for permits to operate an emissions unit shall be submitted to Air Resources Section of the Department's Northwest District Office at 160 Governmental Center, Pensacola, Florida 32502-5794.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resources Section of the Department's Northwest District Office at 160 Governmental Center, Pensacola, Florida 32502-5794.

3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Format); Appendix B (General Conditions); and Appendix A (Common Requirements).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Relaxations of Restrictions on Pollutant Emitting Capacity. If a previously permitted facility or modification becomes a facility or modification which would be subject to the preconstruction review requirements of this rule if it were a proposed new facility or modification solely by virtue of a relaxation in any federally enforceable limitation on the capacity of the facility or modification to emit a pollutant (such as a restriction on hours of operation), which limitation was established after August 7,1980, then at the time of such relaxation the preconstruction review requirements of this rule shall apply to the facility or modification as though construction had not yet commenced on it. [Rule 62-212.400(2)(g), F.A.C.]

8. Title V Permit: This permit authorizes the proposed construction activities related to the existing air pollution controls. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a revised Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V air operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

A. No. 4 Combination Boiler

This section of the permit addresses the following emissions unit.

Emissions Unit No. 016 – No. 4 Combination Boiler
No. 4 Combination Boiler is an existing unit at the Panama City Mill. The unit is currently authorized to fire carbonaceous fuels (includes wood, bark and primary clarified wood fibers), coal (maximum of 1.7% sulfur by dry weight), natural gas and No. 2 or 6 fuel oil (maximum of 2.4% sulfur by weight). Existing air pollution controls include an overfire air (OFA) system and a venturi wet scrubber. Title V air operation permit No. 0050009-020-AV specifies the following capacities: The total maximum operational heat input of this emissions unit is 545 MMBtu/hr based on a 24-hour average. The heat input shall not exceed 472 MMBtu/hr from fuel oil, 395 MMBtu/hr from coal, 474 MMBtu/hr from carbonaceous fuels, or 512 MMBtu/hr from natural gas. The total heat input to the Nos. 3 and 4 combination boilers due to carbonaceous fuels shall not exceed 501 MMBtu/hr based on a 24-hour average.

OTHER REQUIREMENTS

1. Other Permits: The No. 4 Combination Boiler remains subject to all applicable requirements from previously issued air construction and operating permits. The conditions of this permit are in addition to and supplement all other applicable permit requirements. The Department reserves the right to review this project in combination with future proposed projects related to this unit. [Rule 62-4.070(3), F.A.C.]

CONTROL EQUIPMENT IMPROVEMENTS

2. Overfire Air System: The permittee is authorized to perform the following general work on the existing overfire air system: Conduct a Computational Fluid Dynamics (CFD) modeling analysis. Based on the results of the analysis, modify or add overfire air ports, ductwork, velocity dampers, air nozzle assemblies, air flow measuring devices, and combustion control system to improve carbonaceous fuel firing. The project goal is to reduce unburned carbon to 20% or less, provide more stable combustion with a constant negative furnace pressure, and reduce uncontrolled particulate matter emissions from the boiler furnace to less than 4.2 lb/MMBtu.

   a. Within 15 days of completing the CFD report, the permittee shall submit a written report of the findings to the Bureau of Air Regulation and the Compliance Authority.

   b. Prior to commencing physical work on this project, the permittee shall submit a report to the Bureau of Air Regulation and the Compliance Authority summarizing the proposed changes based on the CFD modeling analysis.

   c. Within 15 days of completing the physical work, the permittee shall provide a report to the Bureau of Air Regulation and the Compliance Authority summarizing the actual OFA improvements made.

   [Application; Rule 62-4.070(3), F.A.C.]

3. Existing Wet Scrubber: The permittee is authorized to return the current fixed throat venturi scrubbing system to a variable throat venturi scrubbing system, which is the original design for this equipment. The project goal is to provide more control over the scrubber pressure differential and control of particulate matter emissions with the variable throat design. The permittee shall notify the Compliance Authority within 15 days of completing the proposed work. The permittee shall install, calibrate, operate and maintain a device to continuously monitor and record the scrubber pressure drop. [Application; Rule 62-4.070(3), F.A.C.]

PERFORMANCE RESTRICTIONS

4. Permitted Capacity: The maximum continuous steam production rate shall not exceed 300,000 pounds per hour based on a 24-hour average. The permittee shall install, calibrate, maintain, and operate equipment to continuously monitor and record the steam production rate to demonstrate compliance with this requirement. If the boiler is unable to operate within 90% of this specified steaming rate during the initial tests, the Department reserves the right to reduce the maximum steaming rate. [Rules 62-210.200(PTE) and 62-212.400(2)(g), F.A.C.]

EMISSIONS PERFORMANCE TESTING

5. Initial Performance Tests: Within 90 days of restarting the unit after completing the proposed work, the permittee shall conduct performance tests to determine the following emissions rates from the No. 4 Combination Boiler: carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM), and volatile organic compounds (VOC). The tests shall be conducted under the following conditions:

   a. Each test shall consist of three 1-hour test runs.

   b. The boiler shall fire only a combination of wood and coal. No more than 6.2 tons per hour of coal shall be fired for each 3-run test average.

   c. The boiler shall produce at least 270,000 pounds per hour of steam for each 3-run test average.

   The PM test shall demonstrate compliance with the applicable standards specified in the Title V air operation permit. The tests for CO, NOx, and VOC are for informational purposes. [Rule 62-297.310(7)(a)1, F.A.C.]

6. Test Notification: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. [Rule 62-297.310(7)(a)9, F.A.C.]

7. Test Methods: Required tests shall be performed in accordance with the following reference methods.

EPA Test Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content {These methods are performed as necessary to support the other methods.}
5	Determination of Particulate Matter (PM) Emissions
7E	Determination of Nitrogen Oxide (NOx) Emissions
10	Determination of Carbon Monoxide (CO) Emissions The method shall be based on a continuous sampling train.
18	Calculation Method for NOx, PM, and VOC Emission Rates
25A	Determination of Volatile Organic Compounds (VOC) {The permittee may elect to conduct EPA Method 18 on a simultaneous sample to determine emissions of methane and ethane, which may then be deducted from the determination of total hydrocarbons (THC) to determine VOC emissions. Otherwise, all measured THC shall be assumed to be VOC.}

Tests shall also be conducted in accordance with the requirements specified in Appendix C of Section 4 of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

RECORDS AND REPORTS

8. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix C of Section 4 of this permit. For each test run, the report shall also indicate the following: emissions rate (lb/MMBtu, lb/hour, and ppmvd @ 7% oxygen for gases); flue gas oxygen content (%); steam production rate (lb/hour); wood and coal firing rates (tons/hour); heat input rates from each fuel (MMBtu/hour); total air flow (acfm and lb/hour); overfire air distribution (%); and venturi wet scrubber pressure differential (recorded at 15-minute intervals during test). In addition, the permittee shall take a sample of coal and wood fired during each test. Each sample shall be analyzed for: higher and lower heating values (Btu/lb, dry); moisture content (%); sulfur content (% by weight); and ash content (% by weight). Results of the analyses shall be summarized in the test report.

   [Rule 62-297.310(8), F.A.C.]

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SECTION 4. APPENDIX A
CITATION FORMATS

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number
"001"identifies the specific permit project
"AC" identifies the permit as an air construction permit
"AF" identifies the permit as a minor federally enforceable state operation permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the Prevention of Significant Deterioration of Air Quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CRF 60.7]

Means: Title 40, Part 60, Section 7

SECTION 4. APPENDIX B
GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology;
    b. Determination of Prevention of Significant Deterioration; and
    c. Compliance with New Source Performance Standards.

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

{Permitting Note: Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.}

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. *Required Sampling Time.* Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

14. Determination of Process Variables

    a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

16. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]

17. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

18. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the

test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

19. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]
20. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

PROJECT

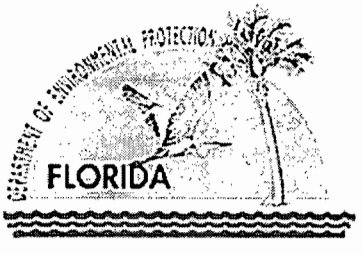
Draft Air Construction Permit No. 0050009-021-AC
No. 4 Combination Boiler – Control Equipment Improvements

COUNTY

Bay County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Air Permitting North Program



September 29, 2005

{Filename: 0050009-021-AC - TEPD}

1. GENERAL PROJECT INFORMATION

Processing Schedule

09/02/05 Received the application for a minor source air pollution construction permit; complete.

Facility Description and Location

Smurfit-Stone Container Enterprises, Inc. operates an existing pulp and paper mill (SIC No. 2611) located at One Everitt Avenue in Panama City, Bay County, Florida. The UTM coordinates of the Panama City Mill are Zone 16, 632.8 km East, and 3335.1 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to a National Ambient Air Quality Standard (NAAQS).

Regulatory Categories

Title III: The facility is a major source of hazardous air pollutants (HAP).

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The facility is a PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards in 40 CFR 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63.

2. PROJECT DESCRIPTION

No. 4 Combination Boiler fires a variety of fuels (carbonaceous fuels, coal, natural gas, and fuel oil) to produce steam and electricity for the papermaking process. This unit will be subject to the applicable requirements of NESHAP Subpart DDDDD in 40 CFR 63 (Industrial, Commercial, and Institutional Boilers and Process Heaters). The compliance deadline for the existing unit is September 13, 2007. In preparation for the upcoming NESHAP, the applicant proposes the following improvements for the No. 4 Combination Boiler:

- *Existing Overfire Air (OFA) System*: Conduct a Computational Fluid Dynamics (CFD) modeling analysis. Based on the analysis, modify or add overfire air ports, ductwork, velocity dampers, air nozzle assemblies, air flow measuring devices, and combustion control system to improve carbonaceous fuel firing. The purpose of the project is to reduce unburned carbon to 20% or less, provide more stable combustion with a constant negative furnace pressure, and reduce uncontrolled particulate matter emissions from the boiler furnace (prior to the wet scrubber) to less than 4.2 lb/MMBtu.
- *Existing Wet Scrubber*: Return the current fixed throat venturi to a variable throat venturi, which is the original design for this equipment. The variable throat will allow more control over the scrubber pressure differential and control of particulate matter emissions.

The Title V air operation permit currently limits particulate matter emissions to 0.3 lb/MMBtu for carbonaceous fuels and 0.1 lb/MMBtu for fossil fuels. Actual particulate matter emissions have been approximately 0.08 lb/MMBtu based on recent test data. The ultimate goal of the project is to reduce controlled particulate matter emissions at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu. If this goal is achieved, no further work will be necessary. Otherwise, additional improvements to the air pollution control systems will be required.

The current Title V air operation permit identifies the capacity as follows, "The total maximum operational heat input of this emissions unit is 545 MMBtu/hr based on a 24-hour average. The heat input shall not exceed 472 MMBtu/hr from fuel oil, 395 MMBtu/hr from coal, 474 MMBtu/hr from carbonaceous fuels, or 512 MMBtu/hr from natural gas. The total heat input to the No. 3 and No. 4 combination boilers due to carbonaceous fuels

shall not exceed 501 MMBtu/hr based on a 24-hour average." The project will not increase the capacity of the boiler. The annual capacity factor has been approximately 72% and will not change as a result of this project. Based on vendor information, the designed maximum steam production rate will remain at 300,000 pounds per hour.

3. CONCLUSION

The applicant proposes improvements to the existing overfire air system and existing wet scrubber to reduce particulate matter emissions. No other changes are necessary such as modifying the fuel feeders, fuel conveyors, ash handling system, supplemental burners, boiler tube replacements, etc. These efforts are being conducted in advance of the September 13, 2007 deadline to demonstrate compliance with the applicable particulate matter emission standard specified for solid fuel fired industrial boilers in NESHAP Subpart DDDDD of 40 CFR 63. Modifications to existing control equipment require review and approval by the Department. This includes any additional improvements to the air pollution control systems that the applicant determines will be necessary should the proposed project fall short of the goal. The Department reserves the right to review this project in combination with future proposed projects related to this unit.

The applicant maintains that the proposed changes to the existing pollution controls will not increase the capacity of the existing boiler or the steam production rate. The current maximum continuous steam production rate is 300,000 pounds per hour based on a 24-hour average for the original design and the design target for the new OFA system. To ensure there will be no increase in capacity, the draft permit limits the steam production rate of the No. 4 Combination Boiler to this maximum rate.

The Title V air operation permit currently regulates emissions of particulate matter and sulfur dioxide from the No. 4 Combination Boiler. There is little operational data available for other pollutant emissions such as carbon monoxide, nitrogen oxides, or volatile organic compounds. In addition to particulate matter, the draft permit requires testing for each of these pollutants to establish the emissions profile for the No. 4 Combination Boiler after completing the improvements.

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

P.E. CERTIFICATION STATEMENT

PERMITTEE

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Air Permit No. 0050009-021-AC
Facility ID No. 0050009
SIC No. 2611
OFA and Venturi Improvements
Bay County, Florida

PROJECT DESCRIPTION

The applicant proposes improvements to the existing overfire air system and existing wet scrubber for the No. 4 combination boiler to reduce particulate matter emissions. No other changes are necessary such as modifying the fuel feeders, fuel conveyors, ash handling system, supplemental burners, boiler tube replacements, etc. These efforts are being conducted in advance of the September 13, 2007 deadline to demonstrate compliance with the applicable particulate matter emission standard specified for solid fuel fired industrial boilers in NESHAP Subpart DDDDD of 40 CFR 63. Modifications to existing control equipment require review and approval by the Department. This includes any additional improvements to the air pollution control systems that the applicant determines will be necessary should the proposed project fall short of the goal. The Department reserves the right to review this project in combination with future proposed projects related to this unit.

The applicant maintains that the proposed changes to the existing pollution controls will not increase the capacity of the existing boiler or the steam production rate. The current maximum continuous steam production rate is 300,000 pounds per hour based on a 24-hour average for the original design and the design target for the new OFA system. To ensure there will be no increase in capacity, the draft permit limits the steam production rate of the No. 4 Combination Boiler to this maximum rate.

The Title V air operation permit currently regulates emissions of particulate matter and sulfur dioxide from the No. 4 Combination Boiler. There is little operational data available for other pollutant emissions such as carbon monoxide, nitrogen oxides, or volatile organic compounds. In addition to particulate matter, the draft permit requires testing for each of these pollutants to establish the emissions profile for the No. 4 Combination Boiler after completing the improvements.

The preliminary determination is that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project is not reasonably expected to result in increased emissions.

I HEREBY CERTIFY *that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).*

Jeffery F. Koerner, P.E.
Registration Number: 49441

9-29-05
(Date)

Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer, Chief
Bureau of Air Regulation

FROM: Jeff Koerner, Air Permitting North Program

DATE: September 29, 2005

SUBJECT: Smurfit-Stone Container Enterprises, Inc. - Panama City Mill
Project No. 0050009-021-AC
No. 4 Combination Boiler - OFA and Venturi Improvements

Attached for your review are the following items:

- Intent to Issue Permit and Public Notice Package;
- Technical Evaluation and Preliminary Determination;
- Draft Permit; and
- PE Certification

The draft permit authorizes improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for the No. 4 Combination Boiler. The goal of the project is to reduce controlled particulate matter emissions at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu. The project is not expected to increase emissions of any pollutant. The existing unit is located at Smurfit-Stone Container's Panama City Mill, which is located at One Everitt Avenue in Panama City, Bay County, Florida.

The Technical Evaluation and Preliminary Determination provides a detailed description of the project, rule applicability, and emissions standards. The P.E. certification briefly summarizes the proposed project. Day #74 is November 4, 2005. I recommend your approval of the attached Draft Permit for this project.

Attachments

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. B. G. Sammons, General Manager
Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, Florida 32402

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery 10/4

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7001 0320 0001 3692 1971

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

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Mr. B. G. Sammons, General Manager
Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, Florida 32402

PS Form 3800, January 2001 See Reverse for Instructions

APPLICATION TO MODIFY NO. 4 COMBINATION BOILER SMURFIT-STONE CONTAINER ENTERPRISES *PANAMA CITY MILL*

Prepared For:
Smurfit-Stone Container Enterprises
One Everitt Avenue
Panama City, Florida 32402

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

September 2005

0537542

DISTRIBUTION:
5 Copies – FDEP
3 Copies – SSCE
1 Copy – Golder Associates Inc.

APPLICATION FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Smurfit-Stone Container Enterprises, Inc.**	
2. Site Name: **Panama City Mill**	
3. Facility Identification Number: **0050009**	
4. Facility Location...: Street Address or Other Locator: **One Everitt Avenue** City: **Panama City** County: **Bay** Zip Code: **32402**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Tom Clements, Environmental Superintendent**
2. Application Contact Mailing Address... Organization/Firm: **Stone Container Corporation** Street Address: **One Everitt Avenue** City: **Panama City** State: **FL** Zip Code: **32402**
3. Application Contact Telephone Numbers... Telephone: **(850) 785-4311** ext.**470** Fax: **(850) 763-8530**
4. Application Contact Email Address: **tlclements@smurfit.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	9-2-05
2. Project Number(s):	0050009-021-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

FACILITY INFORMATION

Purpose of Application

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

Air Construction Permit

☒ Air construction permit.

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 modify the No. 4 Combination Boiler at the Panama City Mill in order to meet the Industrial Boiler MACT.

FACILITY INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
016	No. 4 Combination Boiler		

Application Processing Fee

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

FACILITY INFORMATION

Owner/Authorized Representative Statement

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

1. Owner/Authorized Representative Name :
   B.G. Sammons, General Manager

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Smurfit-Stone Container Enterprises, Inc.**
   Street Address: **One Everitt Avenue**
   City: **Panama City** State: **Florida** Zip Code: **32402**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(850) 785-4311** ext. Fax: **(850) 763-6290**

4. Owner/Authorized Representative Email Address: **bgsammons@smurfit.com**

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.

   B B Sammons — Signature

   8/29/05 — Date

FACILITY 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

FACILITY 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
Signature

8/31/05
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. 4 Combination Boiler

3. Emissions Unit Identification Number: **016**

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:
The Batch Digester System and Multi-Effect Evaporator System may vent non-condensable gases (NCGs) to the No. 4 Combination Boiler as a backup control device. The No. 4 Combination Boiler may also act as a backup to the No. 3 Combination Boiler for condensate stripper off-gas (SOG) destruction.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

021 - Thermal destruction of TRS and HAP gases (as a backup to the Lime Kiln and the No. 3 Combination Boiler)

053 - Venturi Scrubber

2. Control Device or Method Code(s): **021, 053**

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: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **39.0** lb/hour **170.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.07 lb/MMBtu** Reference: **40 CFR 63, Subpart DDDDD**	7. Emissions Method Code: **0**

8. Calculation of Emissions:

Hourly: [(474 MMBtu/hr) (wood/bark) + (83 MMBtu/hr) (fuel oil)] x 0.07 lb/MMBtu = 39.0 lb/hr
Annual: 39.0 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 170.7 TPY

9. Pollutant Potential/Estimated Fugitive Emissions Comment:
Maximum emissions based on firing a combination of wood/bark and No. 6 fuel oil.

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 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.3 lb/MMBtu**	4. Equivalent Allowable Emissions: **86.7** lb/hour **379.75** tons/year
5. Method of Compliance: **Annual test using EPA Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0050009-016-AC and Rule 62-296.410(1)(b)2; for carbonaceous fuel firing. Allowable emissions are 86.7 lb/hr (379.75 TPY) when any combination of fuel is utilized.**	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.1 lb/MMBtu**	4. Equivalent Allowable Emissions: **47.3** lb/hour **207.2** tons/year
5. Method of Compliance: **Annual test using EPA Test Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Rule 62-296.410(1)(b)2; for fossil fuel firing. Allowable emissions are 86.7 lb/hr (379.75 TPY) when any combination of fuel is utilized.**	

Allowable Emissions Allowable Emissions 3 of 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions: **09/13/2007**
3. Allowable Emissions and Units: **0.07 lb/MMBtu**	4. Equivalent Allowable Emissions: **39.0** lb/hour **170.7** tons/year
5. Method of Compliance: **EPA Method 5**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on 40 CFR 63, Subpart DDDDD.**	

PART B

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1.0 INTRODUCTION

Smurfit-Stone Container Enterprises (SSCE) is proposing changes to the No. 4 Combination Boiler at its Kraft pulp and paper mill located in Panama City, Bay County, Florida. The SSCE Panama City Mill consists of the following major plant areas: woodyard, digester system, brown stock washing system, bleaching system, chemical recovery area, paper drying/converting/warehousing, and power/ utilities area. The Panama City Mill is currently operating under Title V Permit No. 0050009-020-AV, issued July 29, 2005.

SSCE currently operates the No. 4 Combination Boiler to generate steam and electricity for the papermaking process. The boiler burns bark/wood, coal, No. 6 fuel oil, No. 2 fuel oil, and small quantities of natural gas (during start-up). In addition, the boiler serves as a destruction device for noncondensable gases (NCGs) and condensate stripper off-gas (SOG), which are generated by various process sources.

SSCE is requesting changes to the No. 4 Combination Boiler in order to allow the boiler to meet the Maximum Achievable Control Technology (MACT) standards for Industrial Boilers, promulgated under Title 40 of the Code of Federal Regulations, Part 63 (40 CFR 63), Subpart DDDDD. The compliance date for existing boilers under Subpart DDDDD is September 13, 2007. The changes will consist solely of improvements to the overfire air (OFA) system of the boiler and improvements to the existing wet venturi scrubber. No capacity increase (steam production) will result from the changes.

If the proposed project for the No. 4 Combination Boiler proves successful, SSCE will be able to meet the Boiler MACT limit for total select metals (TSM) or particulate matter (PM) prior to the compliance date of September 2007. The Boiler MACT limit for TSM is 0.001 pounds per million British thermal units (lb/MMBTU) or, alternatively, the Boiler MACT limit for PM is 0.07 pounds per million British thermal units (lb/MMBtu). This limit represents a reduction in PM emissions for the boiler- from the current emissions of approximately 0.084 lb/MMBtu (based on recent stack tests). If this proposed project moves forward at this time, but the project does not reach the goal of attaining the MACT TSM limit of 0.001 lb/MMBtu or PM limit of 0.07 lb/MMBtu, SSCE will still have time to make additional changes to the boiler and/or air pollution control system prior to September 2007 deadline.

This air construction permit application is organized into two additional sections, followed by an appendix. A description of the project, including air emission sources and pollution control equipment, is presented in Section 2.0. The regulatory applicability analysis for the proposed project is presented in Section 3.0.

Through this application, SSCE is requesting that a minor source construction permit be issued to allow the No. 4 Combination Boiler to move forward as quickly as possible with the planned changes.

2.0 PROJECT DESCRIPTION

SSCE is proposing to modify the No. 4 Combination Boiler to meet the Industrial Boiler MACT rules for TSM or PM. The Industrial Boiler MACT rules require that emissions from solid fuel-fired boilers be limited to TSM emissions of 0.001 lb/MMBtu or PM emissions of 0.07 lb/MMBtu of heat input.

The facility is currently operating under Title V Permit No. 0050009-020-AV, issued July 29, 2005. The facility is located at One Everitt Avenue, Panama City, Bay County, Florida. The following sections describe the proposed project in more detail.

2.1 NO. 4 COMBINATION BOILER'S EXISTING OPERATION

The No. 4 Combination Boiler is operated to provide steam to the papermaking process and the turbine generators that provide electricity for the facility. The boiler is a Combustion Engineering (CE) design installed in 1964, with a design steam rating of 330,000 lb/hr when burning a combination of wood/bark and coal. The No. 4 Combination Boiler is permitted to burn the following fuels and gases:

- Carbonaceous fuel (includes bark, wood, and primary clarified wood fibers);
- Bituminous coal, with a sulfur content not to exceed 1.7 percent by weight;
- No. 6 fuel oil, with a sulfur content not to exceed 2.4 percent by weight;
- No. 2 fuel oil;
- Natural gas;
- Non-condensable gases (NCGs) from the low-volume, high concentration (LVHC) gas collection system, as a backup to the No. 4 Lime Kiln; and
- Condensate stripper off-gas (SOG), as a backup to the No. 3 Combination Boiler.

The No. 4 Combination Boiler currently is permitted to operate up to a maximum heat input rate of 545 MMBtu/hr, based on a 24-hour average. For carbonaceous fuel burning, the maximum heat input is limited to 474 MMBtu/hr. Based on a minimum heat content of 7,900 Btu/lb, dry basis, this heat input rate is equivalent to a maximum bark/wood burning rate of 30.0 TPH (dry).

The maximum heat input for the boiler for coal firing is 395 MMBtu/hr. Based on a heating value for coal of 12,500 Btu/lb, this heat input rate is equivalent to 15.8 TPH of coal.

The maximum heat input for the boiler when firing No. 6 fuel oil is 472 MMBtu/hr. Based on a heating value for No. 6 fuel oil of 150,000 Btu/gal, this heat input rate is equivalent to 3,147 gal/hr of No. 6 fuel oil.

The maximum heat input for the boiler when firing No. 2 fuel oil is also 472 MMBtu/hr. Based on a heating value for No. 2 fuel oil of 136,000 Btu/gal, this heat input rate is equivalent to 3,471 gal/hr of No. 2 fuel oil. The boiler contains a total of four (4) oil burners.

The maximum heat input when firing natural gas is 512 MMBtu/hr. Based on a minimum heating value for natural gas of 1,000 Btu/scf, the maximum natural gas firing rate is 512,000 scf/hr. There are total of eight (8) gas ignitors installed in the boiler.

The No. 4 Combination Boiler also serves as the backup control device for the NCGs from the LVHC gas collection system and for the condensate SOG. HAPs and TRS emissions are controlled by injecting the gases into the boiler with the primary fuel or into the flame zone of the boiler, or with the combustion air. TRS gases are subject to a minimum of 1,200°F incineration temperature for at least 0.5 seconds.

SO_2 emissions from the boiler are controlled by limiting the sulfur content of the coal and fuel oil to a maximum of 1.7 percent and 2.4 percent by weight, respectively. SO_2 emissions are controlled, when firing 100 percent fuel oil and/or incinerating TRS or SOG gases, by maintaining the pH of the venturi scrubber scrubbing medium above 8.0, except during an unscheduled outage of the Lime Kiln. For an unscheduled switch of TRS gases from the Lime Kiln to the No. 4 Combination Boiler, an interim period of 30 minutes is allowed in order to achieve a scrubbing medium pH level of 8.0 or greater.

PM emissions are controlled by a fly ash arrestor (Process Equipment Model AR56UACB-8-7), followed by a wet venturi scrubber manufactured by FMC Link-Belt (model 200K dual-throat). The original design of the venturi scrubber incorporated a variable throat (moveable plate) to allow variation of the pressure drop across the scrubber. However, many years ago the throat adjustment mechanism failed, and the plate was welded at a fixed location.

The boiler is regulated under Rule 62-296.410, F.A.C., Carbonaceous Fuel Burning Equipment; Rule 62-296.404, F.A.C., Kraft Pulp Mills; and 40 CFR, Part 63, Subpart S. The boiler is also subject

to the requirements of 40 CFR 63 Subpart DDDDD; however, the unit is not required to be in full compliance with this subpart until September 13, 2007.

2.2 NO. 4 COMBINATION BOILER'S PROPOSED MODIFICATIONS

SSCE is proposing upgrading the biomass combustion air system and the scrubber to the No. 4 Combination Boiler solely to reduce PM emissions and meet the Boiler MACT rule. In order to attain the desired operation of the boiler, and meet the Industrial Boiler MACT standard for TSM or PM, SSCE is proposing the following changes to the No. 4 Combination Boiler:

- Upgrading the combustion air system, including the OFA system, to achieve the following under all firing conditions: reduce unburned carbon to 20 percent or less; provide stable combustion with a constant negative furnace pressure; and reduce PM emitted from the furnace to the multi-clone dust collector to less than 4.2 lbs/MMBtu and
- Return the existing fixed-throat venturi scrubber to its original design of variable-throat, with additional improvements to achieve TSM emissions of less than 0.001 lb/MMBtu or PM emissions of less than 0.07 lb/MMBtu at the outlet of the wet scrubber;

SSCE is proposing to upgrade the existing OFA system on the boiler. Such systems have been installed on a number of bark/wood boilers throughout the country, and have resulted in positive improvements to the boilers, including increased combustion efficiency and a reduction in the amount of excess air used in the boiler, while decreasing emissions of PM/PM_{10}, carbon monoxide (CO), and volatile organic compounds (VOC) on a lb/MMBtu basis. Emissions of nitrogen oxides (NO_x) can be maintained at the existing lb/MMBtu levels. Components of the OFA system which will be added or modified consist of OFA port locations, ductwork, velocity dampers, air nozzle assemblies, air flow measuring devices, and combustion controls. General information regarding the Alstom system is included in Appendix A.

SSCE has committed to installing an OFA system designed by Alstom on the Panama City No. 4 Combination Boiler. At the SSCE mill in Florence, South Carolina, a similar upgrade to their No. 3 Boiler OFA system was completed by Alstom last year that resulted in a 75% reduction of particulate emissions. As was expected, the No. 3 Boiler OFA system upgrade at our Florence mill resulted in reduced quantities of flyash leaving the furnace but also resulted in an unexpected increase in bottom ash that required subsequent upgrade to the bottom ash handling system. The South Carolina DHEC made the determination that NSR was not applicable to the No. 3 Boiler OFA system upgrade project at our Florence, South Carolina, mill.

The original design of the venturi scrubber incorporated a variable throat (moveable plate) to allow variation of the pressure drop across the scrubber. The system included a plate mounted on a set of gears, which allowed the plate to be adjusted to achieve the desired level of pressure drop. However, many years ago the throat adjustment mechanism failed, and the plate was welded at a fixed location, resulting in a fixed-throat venturi.

SSCE now desires the return the venturi to its original variable-throat design. This will provide more control over pressure drop through the scrubber and therefore over PM emissions. Through this upgrade and the changes to the boiler, SSCE believes it can meet the Boiler MACT standard for TSM or PM.

The proposed project will not result in any increase in steam rate for the boiler. The boiler has been able to achieve its design steam production rate of 330,000 lb/hr when burning a combination of bark/wood and fossil fuels. For example, during the last two compliance tests of the boiler, steam production rates of up to 323,000 lb/hr were attained.

Nor will the project result in any increase in annual steam production. The boiler currently operates at approximately a 72-percent capacity factor, and this will not change due to the project.

The current permitted maximum hourly heat input rates for the various fuels will not change as part of this project. The maximum heat input rate due to firing coal, No. 6 fuel oil, No. 2 fuel oil, or natural gas will not be affected by the proposed project.

2.3 AIR EMISSION ESTIMATES AND POLLUTION CONTROL EQUIPMENT

PM/PM_{10} emissions from the No. 4 Combination Boiler are currently controlled by a mechanical collector followed by a venturi scrubber. SSCE is proposing to upgrade the boiler OFA system and venturi scrubber to meet the Boiler MACT standards. This upgrade is expected to decrease emissions of PM/PM_{10}, CO, and VOC on a lb/MMBtu basis, while maintaining NO_x emissions on a lb/MMBtu basis.

PM emissions from the No. 4 Combination Boiler are currently limited to 0.3 lb/MMBtu for carbonaceous fuel and 0.1 lb/MMBtu for No. 6 fuel oil. Total mass PM emissions are limited to

109.5 lb/hr. SO_2 emissions are limited to 1,183 lb/hr when combusting NCG and SOG, and 772 lb/hr when not combusting NCG or SOG.

2.3.1.1 Future Potential Emissions

Future emissions from the No. 4 Combination Boiler will be limited to either 0.001 lbs of TSM/MMBtu or 0.07 lbs of PM/MMBtu, which is equivalent to the NESHAPs promulgated for Industrial Boilers under 40 CFR 63, Subpart DDDDD. This is a significant reduction from the current PM limit of 0.3 lb/MMBtu for wood/bark burning and 0.1 lb/MMBtu for fuel oil burning. The proposed emission limit is equivalent to a maximum PM emission rate of 39.0 lb/hr and 170.7 TPY for any fuel combination.

As described previously, no increase in NO_x emissions due to bark/wood firing is expected on a lb/MMBtu basis due to the proposed project. Future CO and VOC emissions in terms of lb/MMBtu will decrease due to the proposed project.

3.0 AIR QUALITY REVIEW REQUIREMENTS

Federal and State air regulatory requirements for a major new or modified source of air pollution are discussed in Sections 3.1 through 3.3. The applicability of these regulations to the proposed SSCE modification is presented in Section 3.4.

3.1 PSD REQUIREMENTS

The proposed project is solely for the purpose of meeting the Boiler MACT standards. Therefore, PSD review does not apply. However, if PSD review did apply, and a comparison of past actual to future potential emissions was conducted, the only pollutant of concern would be NO_x.

3.2 POTENTIALLY APPLICABLE EMISSION STANDARDS

3.2.1 NEW SOURCE PERFORMANCE STANDARDS

The NSPS are a set of national emission standards that apply to specific categories of new sources. As stated in the CAA Amendments of 1970, these standards "shall reflect the degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction the Administrator determines has been adequately demonstrated."

Existing non-NSPS sources may become subject to the NSPS if such sources undergo a "modification" or "reconstruction". "***Modification***" means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

"***Reconstruction***" means the replacement of components of an affected facility to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and

(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

40 CFR 60.5 defines "***fixed capital cost***" as the capital needed to provide all the depreciable components. 40 CFR 60.2 defines "***capital expenditure***" as:

an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair percentage" specified in the latest edition of IRS Publication 534 and the existing facility's basis, as defined by Section 1012 of the IRS Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes.

Federal NSPS exist for fossil-fuel and wood-fired industrial-commercial-institutional steam boilers constructed or modified after June 19, 1984. The NSPS are contained in 40 CFR 60, Subpart Db. The NSPS contain emission limits for SO_2, PM, and NO_x for oil firing and emission limits for PM for wood firing. Wood is defined in the NSPS to include bark, wood, and wood residue. Subpart Db is potentially applicable to the No. 4 Combination Boiler project.

Federal NSPS also exist for Fossil-Fuel-Fired Steam Generators for which construction or modification occurs after August 17, 1971 (40 CFR 60, Subpart D). The NSPS contains emission limits for PM, SO_2, and NO_x for liquid fossil fuel and wood residue firing. However, 40 CFR 60, Subpart Db, contains a provision that any unit subject to Subpart Db is not subject to Subpart D.

The No. 4 Combination Boiler is not currently subject to any NSPS. The boiler was originally constructed prior to 1965, and has not been previously modified or reconstructed per the NSPS definitions.

The No. 4 Combination Boiler will not be undergoing any physical changes to the existing fuel oil, coal, or natural gas firing systems, except for the overfire air system improvements. No increase in the maximum fuel oil, coal, or natural gas firing rates will occur. In addition, no hourly increase in emissions of any pollutant due to fuel oil, coal, or natural gas firing, will occur as part of the proposed project. As a result, the NSPS will not be triggered by the proposed project in regards to fuel oil, coal, or natural gas firing.

The boiler will be potentially more efficient at burning bark/wood, in that the improved combustion of biomass will potentially allow firing more bark/wood on an hourly basis, and potentially increasing actual PM emissions on an hourly basis. Therefore, the proposed project could constitute a "modification", which would subject the No. 4 Combination Boiler to regulation under 40 CFR 60, Subpart Db. The NSPS limit for PM emissions due to bark/wood firing is 0.1 lb/MMBtu. However, SSCE is proposing to reduce the current PM emission limit on the boiler to 0.07 lb/MMBtu. At this

maximum emission rate, the maximum hourly PM emission rate for the No. 4 Combination Boiler is 39.0 lb/hr.

A summary of historical PM compliance test data for the No. 4 Combination Boiler is shown in Table 3-1. These historic compliance tests were conducted while burning a combination of bark/wood and fossil fuel, in order to achieve at least 90 percent of rated heat input capacity during the testing. Based on the historical PM test data, PM emissions from the No. 4 Combination Boiler have been as high as 38.1 lb/hr. The proposed maximum PM emission rate after the proposed project is implemented is 39.0 lb/hr. Statistically, this represents no increase above the highest tested value. Therefore, the proposed project will not result in an increase in hourly PM emissions, and Subpart Db will not apply to the No. 4 Combination Boiler in regard to wood/bark firing.

The emission limits for SO_2 and NO_x under Subpart Db will not apply to the No. 4 Combination Boilers because there are no emission limits for these pollutants for wood/bark firing. Furthermore, neither the fossil fuel firing capability nor the maximum emissions due to fossil fuel firing will increase due to the proposed project. Therefore, the emission limits for fossil fuel firing under Subpart Db will not apply.

SSCE has developed a budget for the proposed project based on internal cost estimates. The total installed capital cost of the modifications to the No. 4 Combination Boiler is approximately $1.6 million. The term "comparable entirely new facility" would consist of a new boiler with components identical to the repaired boiler. Reconstruction calculations do not include air pollution control equipment. Using previously developed costs for new boilers in Florida, the cost of a new biomass and coal fired boiler, comparable to the No. 4 Combination Boiler (i.e., 500 MMBtu/hr), would be on the order of $40,000,000, excluding air pollution control equipment. Therefore, the planned modifications for the No. 4 Combination Boiler represent only about 4 percent of the cost of a new boiler. As a result, reconstruction is not triggered under the NSPS definitions.

3.2.2 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Maximum Achievable Control Technology (MACT) standards, codified in 40 CFR 63, were promulgated for industrial boilers on September 13, 2004, with an effective date of November 12, 2004. Subpart DDDDD, also known as the Industrial, Commercial, and Institutional Boiler and Process Heater MACT, regulates HAP metals (with PM as a surrogate), hydrogen chloride (HCl), and mercury (Hg) emissions from existing large solid fuel-fired industrial boilers. The compliance date for existing boilers is September 13, 2007.

Existing MACT sources may become subject to new source MACT if such sources are "reconstructed". In the General Provisions for the MACT Rules, 40 CFR 63, Subpart A, *reconstruction* is defined as follows:

> ***Reconstruction***, unless otherwise defined in a relevant standard, means the replacement of components of an affected or previously nonaffected source to such an extent that:
>
> (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and
>
> (2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator pursuant to Section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emission of hazardous air pollutants from that source.

The No. 4 Combination Boiler is in the large solid fuel-fired subcategory, and the applicable emission limits for bark/wood firing are 0.07 lb/MMBtu for PM (or 0.001 lb/MMBtu for total selected metals), 0.09 lb/MMBtu for HCl, and $9x10^{-6}$ lb/MMBtu for Hg. The compliance date for the boiler is September 13, 2007. SSCE will comply with the applicable standards by the compliance date. Based on the proposed project, the boiler will be able to comply with the PM (or total selected metals), HCl, and Hg limits by means of fuel analysis or stack testing.

As discussed above, the planned modifications to the boiler represent only about 4 percent of the cost of a new boiler. As a result, the No. 4 Combination Boiler will not be "reconstructed" for the purposes of the MACT rule.

3.2.3 FLORIDA RULES

The No. 4 Combination Boiler is subject to Rules 62-296.404 and 62-296.410, F.A.C. Rule 62-296.404, F.A.C., regulates Kraft Pulp Mills and contains a TRS emission standard for combustion equipment burning TRS gases. Rule 62-296.410, F.A.C., regulates carbonaceous fuel burning equipment and contains standards for opacity and PM. The standards applicable to the boiler are 30-percent opacity (except 40-percent opacity is allowed for up to 2 minutes per hour) and 0.3 lb PM/MMBtu for carbonaceous fuel plus 0.1 lb PM/MMBtu for fossil fuel. The modified No. 4 Combination Boiler will comply with these standards.

Table 3-1. Summary of PM Emissions from Historic Stack Tests Performed on No. 4 Combination Boiler , SSCE Panama City

	Test Date	
PM Emissions	October 2004	October 2003
Emission Rate, lb/hr	38.1	26.4
Emission Rate, lb/MMBtu	0.084	0.058

APPENDIX A

OVERFIRE AIR SYSTEM INFORMATION

TABLE A-1

CONTROL EQUIPMENT PARAMETERS [a]

NO. 4 COMBINATION BOILER VARIABLE THROAT SCRUBBER (VENTURI)

Manufacturer	FMC Link-Belt	
Model No.	200K Dual-Throat	
Date of Installation	1974	
Outlet Gas Temperature	140-150	°F
Outlet Gas Flow Rate	220,000-260,000	ACFM
Pressure Drop Across Device	8	inches of H_2O
Scrubber Media (b)	Water with caustic addition	
Scrubber Liquor Flow Rate (minimum)	1,096	gpm
Average Scrubbing liquor pH (c)	Variable	pH units
Control Efficiency - Particulate Matter (d)	90	%
- Sulfur Dioxide (e)	50-95	%
Maximum Permitted Particulate Matter Emission Rate (f)	39.0	lb/hr PM
Maximum Permitted Sulfur Dioxide Emission Rate (g)	1,183	lb/hr SO_2

(a) Control equipment parameters may vary according to process conditions.
(b) pH controlled with caustic
(c) SO_2 controlled by caustic addition to wet scrubber.
(d) Based on manufacturer's quote.
(e) Based on source test data.
(f) Based on 0.07 lb/MMBtu effective September 13, 2007 under the Maximum Achievable Control Technology (MACT) regulation for Industrial Boilers.
(g) From Permit No. 0050009-016-AC.

APPENDIX A

OVERFIRE AIR SYSTEM INFORMATION

3.1 COMBUSTION AIR SYSTEM UPGRADES – BASE SCOPE

3.1.1 HORIZONTAL MIXING ZONE (HMZ) OVERFIRE AIR (OFA) SYSTEM

To achieve the desired steam flow at an increased bark firing rate with reduced particulate and unburned carbon carryover levels, the existing OFA system will be replaced with new current day "state-of-the-art" technology and components. The Company recommends the addition of an HMZ OFA system, which will contribute to a significant improvement in the overall boiler, combustion system performance.

Introduction

A primary benefit of the HMZ OFA system will be a significant reduction in the amount of carryover. Carryover, essentially unburned fuel particles leaving the waterwall section of a burner, is a function of the drag coefficient of the particle, particle density, the upward furnace gas velocity and residence time. The available residence time for most units similar to the Purchaser's boiler is insufficient for all char particles to burn to completion without the aid of an effective OFA system. The Company's extensive R&D efforts have shown that char burnout becomes diffusion limited. That is, turbulence is required to dissipate the CO boundary layer around the char particle to further the combustion process. For a given furnace plan area, the gas velocity is a function of gas flow. By maximizing the quantity of effective OFA flow and minimizing the undergrate air (UGA) flow, the lower furnace gas velocity will be decreased. This will result in less carryover leaving the furnace. Carbon burnout is a function of a fuel's kinetic property, as well as residence time. Although the kinetic property of the fuel is relatively constant, the carbon burnout will improve due to increased furnace residence time resulting from lower furnace velocities.

All OFA systems attempt to provide the best combination of optimized mixing, uniform furnace velocity profile and effective use of excess air in the form of staging. The Company's HMZ OFA system is designed to optimize the stoichiometric mixing of unburned fuel particles above a stoker grate. By optimizing the air/fuel mixing just above the grate, the HMZ system can reduce carryover, improve combustion of volatiles, and provide more uniform gas temperatures and velocities at the furnace outlet. The HMZ OFA produces superior OFA mixing and a more uniform velocity distribution at the furnace outlet plane. The mixing zone is comprised of one row of single and double OFA nozzles situated along the front and rear walls of the furnace. The single and double nozzles alternate in a manner, which causes their respective airflows to create adjacent "shearing" surfaces within the depths of the furnace. These "shearing surfaces" are what enhance the mixing of air and char. An

additional benefit derived from incorporating the HMZ system is that the side to side temperature unbalance in the superheater is improved as a more uniform gas flow pattern is attained at the furnace outlet.

Referencing the test results for the existing Company application of an HMZ system at a paper mill in Louisiana gives a general idea of what might be expected if an HMZ were to be installed. With the installation of the HMZ OFA system on the Purchaser's power boiler, the bark firing capacity was increased almost forty percent (40%) over the design MCR bark firing rate. At the increased bark firing rate, it was found that all tests exhibited low unburned carbon content, which was directly attributable to the HMZ system by those running the tests. In addition, particulate emissions leaving the boiler were reduced by sixty percent (60%) with the installation of the HMZ system. The boiler was also able to operate at greatly reduced excess air levels.

The objectives and requirements of an effective OFA system, as provided by the HMZ design are summarized as follows:

- Provide Turbulence and Mixing
- Air streams must provide penetration.
- Air nozzle(s) positions, must provide coverage of the entire furnace plan area.
- Selections for uniform distribution of the OFA streams

The high velocity air streams from HMZ nozzles on the furnace sidewalls will provide the mixing momentum for completing the char combustion process. See Figures 2 and 3 for typical nozzle arrangement and flow pattern for five (5) nozzles per wall. Based on furnace dimensions at the Purchaser's facility, the Company is offering four (4) HMZ air nozzle assemblies per wall.

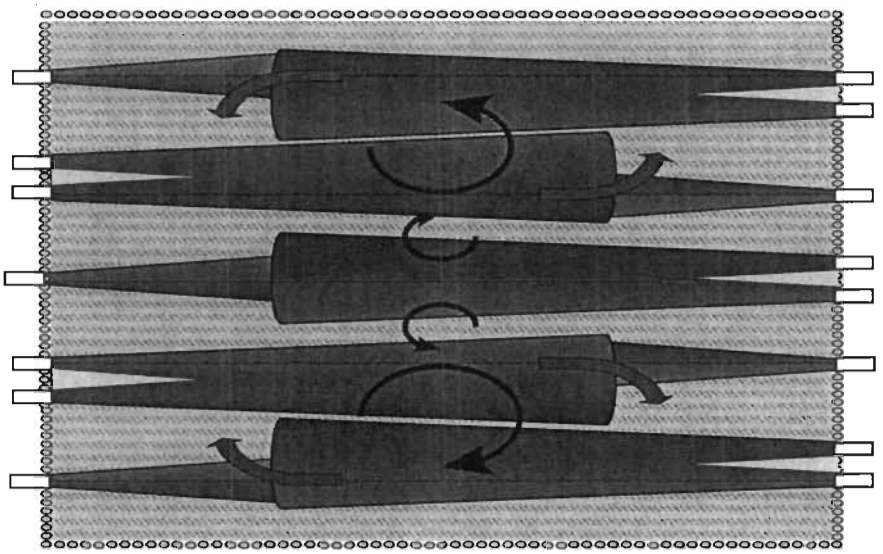

Figure 2 – Typical HMZ Nozzle Arrangement

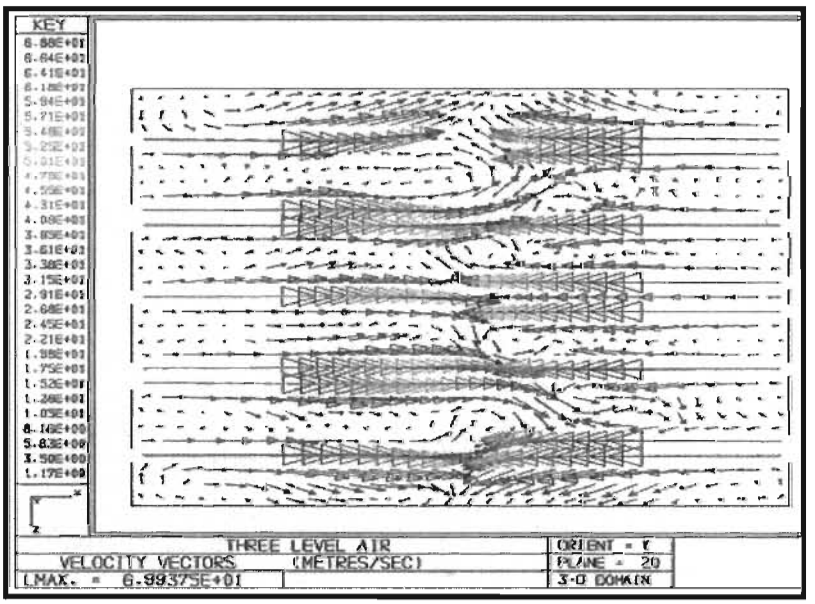

Figure 3 – HMZ Flow Pattern

The increase in the OFA system capacity will result in less available UGA flow while maintaining, or even reducing, the excess air. This reduced UGA quantity will result in lower gas velocities at the grate and fuel distributor levels, and thereby less entrainment of char and dry fuel. OFA system momentum will be increased to significantly enhance turbulence and burnout of solids and gaseous combustibles. This means combustible gases and particulate emissions will be reduced at the furnace outlet.

Minimizing the amount of UGA flow will also promote a thicker ash bed. A thicker ash bed will help insulate the grate, keeping operating temperatures lower. This will lead to potentially longer grate life. However, as UGA flow is minimized, care must be taken so that a good even side to side fuel bed is maintained. Fuel piling and side to side fuel maldistribution will create operational problems with reduced UGA flow, if not attended to by the operations personnel.

While an improved OFA system will reduce carryover and lower grate temperatures, its effectiveness will be enhanced by addressing other important areas such as optimizing excess air and furnace draft set points, ensuring proper fuel sizing and fuel distribution, providing proper UGA distribution and minimizing tramp air infiltration. ***Any boiler and air heater in-leakage should be minimized in order for the HMZ OFA system to operate at an optimum level.*** As an Option, the Company is offering a Fabric Stoker Seal to significantly reduce air in-leakage at the boiler to stoker interface.

Assumptions

Due to the lack of certain information and/or data, various assumptions had to be made when designing the equipment offered in this proposal. Following is a list of the assumptions made:

- All fans currently operate within the respective fan curves. Fan testing is recommended to confirm this.
- Since little to no current operating data was available, original design boiler data and fuel analysis were used as a basis for the Upgrade Predicted Performance.
- Bark supply and distribution on the grate is consistent and problem free
- Predicted airflow to the burner windbox includes leakage/cooling air. If the cooling air requirements are higher, this will affect the airflow distribution to the OFA level and affect overall performance.
- It is assumed that the existing burner air control dampers operate effectively to maintain minimum flow control to the existing burners.
- Indicated (Test Data) excess air levels are high 5 - 9%. It is unknown where the source of tramp air is. The Predicted Performance is based on 30% excess air in the gases leaving the furnace (O_2 - 4.87% vol. wet) at the Design Load of 300,000 lb/hr (Bark & Coal) and therefore the ability to distribute OFA & UGA flows as per design. If air leakage or cooling air flow at the undergrate or burner windbox is greater than predicted, this will impede the ability to provide the required air to the OFA level at the design excess air.
- No known operating problems re: excessive erosion, fouling etc.

- New airflow control dampers and flow devices are provided to replace the existing ones assuming the existing devices are inadequate.

Material Description

The HMZ OFA arrangement consists of single and double-opposed nozzle assemblies. The HMZ OFA nozzles will be located on the front and rear furnace walls above the burners at an elevation of approximately 30'. The nozzle arrangement is such that a single nozzle directly opposes a double nozzle located on the opposite furnace wall. The nozzles discharge horizontally at a high velocity to establish a high degree of penetration and mixing in the furnace. The single opposing nozzle prevents the strong double nozzle from impinging on the opposite wall. The HMZ nozzles will contain manual velocity dampers, which are set up to maintain constant jet velocity, or pressure, through a wide range of air flows (loads).

Four (4) sets of openings in each of the front and rear walls will be provided for installation of the nozzle assemblies. The openings for the nozzles will be formed by bent tube inserts, which will be installed in the field.

The front and rear wall oriented nozzles in the HMZ system arrangement will receive air through the existing hot air ducts currently used to supply the undergrate air. The Company's workscope will include two (2) overfire air supply ducts, which will connect the existing hot air ducts (from the tubular air heater), to the nozzles at the front and rear of the boiler.

The supply ducts will be supported off the existing undergrate air ducts, and the furnace walls. An expansion joint will be provided in each of the two (2) supply ducts, downstream from the connection with the existing hot air duct. An OFA control damper, including electric drive, will be installed in each of the supply ducts to optimize airflow distribution to the nozzles in the HMZ OFA System. See drawing G-MS-1117-01, in the Drawings Section of this proposal, for the HMZ OFA arrangement.

Airflow Measurement

The volume of combustion air being delivered to the HMZ OFA nozzles needs to be indicated to maintain optimum control and distribution of the air flow. The Company scope of supply includes two (2) airflow monitoring devices, including transmitters, to be installed in the OFA

ductwork, to accomplish this. Local pressure gauges, and pressure and temperature transmitters will be located in the OFA supply ducts.

A total of two (2) air flow measuring devices, one (1) per side, will also be installed in the existing hot air ducts from the air heater to measure the burner and the total bark combustion air flows. The existing air flow measuring devices which currently measure the undergrate and overfire air will be re-used and relocated, as required. ~~also be measured through the installation of two (2) air flow measuring devices, one (1) in each of the two (2) existing hot air ducts which supply the UGA and OFA systems.~~

New Burner and Undergrate Air Control Dampers

To achieve better airflow distribution and control, the existing burner air control and undergrate air control dampers will be replaced with new dampers. The existing burner air duct control dampers will each be replaced with a new damper arrangement. The existing damper drives will be reused.

The Company scope of supply will include new dampers to replace the existing undergrate air flow control dampers. The existing damper drives will be reused. It is anticipated that the new dampers will be inserted in the existing damper frame and the existing blades will be removed. The space between the dampers will be closed with plate to reduce the total free area.

The Company will also supply two (2) manual adjustable orifice plate dampers to be installed in the undergrate air duct. These dampers will also be supplied as part of the new undergrate air supply duct. The installation of these two (2) dampers will provide better control of airflow while maintaining the maximum pressure to the OFA ducts and nozzles.

Figure 4 provides airflows and duct sizes for the HMZ OFA duct arrangement. Figure 5 provides a flow schematic of the HMZ OFA arrangement.

ALSTOM CANADA INC., POWER

PERFORMANCE ENGINEERING — STD. NO: ISSUE DATE:

New Bark Boiler Air System w/ HMZ Over Fire Air Design - Power Boiler #4

Fuel	**Bark @ 50%mc+Coal**		Elevation	100' asl
Fuel Factor	n/a		Elevation Factor	1.005
Air Moisture corr.	1.01	(0.018 #H2O/#da)		
Steam Capacity	**300,000 #/hr**			

Note: All New Duct's and Modified Equipment are Shown in **Bold**

Item Description	Quantity Per Boiler	Total Weight (lb/hr.)	Temp. (°F)	Total Volume (CFM)	Max. Velocity (ft/min)	Min.Duct Area ** (ft^2)	Operating Pressure (in. w.g.)
Total Combustion Air (ind.Leakage Air)		514,100					
A Air from FD Fan	1	489,000	80	109,278	2,500	43.7	+16.0
B Hot air from Air Heaters	2	489,000	486	192,806	3,708	26.0	+13.0
B1 Total Comb. Air Flow Device	**2**	**489,000**	**486**	**192,806**	**3,708**	**26.0**	**+13.0**
Aux Fuel / Coal Burner Air							
C Hot air to Burners	2	189,100	486	74,737	1,661	22.5	+12.0
C1 Brnr Air Dud Damper* **	**2**	**189,100**	**486**	**74,737**	**3,000**	**12.5**	**+11.0**
Bark Air							
D Total Bark Airflow	2	279,900	486	110,624	1,856	29.8	+12.0
D1 Total Bark Air Flow Device	**2**	**279,900**	**486**	**110,624**	**1,856**	**29.8**	**+12.0**
E HMZ-1 Bark OverFireAir (OFA)	**2**	**139,950**	**486**	**55,444**	**3,000**	**9.2**	**+11.0**
E1 HMZ-1 Flow Device	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
E2 HMZ-1 Control Damper	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
E3 HMZ-1 Manifold Duct	**2**	**139,950**	**486**	**55,711**	**3,000**	**4.6**	**+9.0**
E4 HMZ-1 OFA (1X)-Nzl Feed	**4**	**139,950**	**486**	**55,980**	**3,000**	**1.6**	**+7.0**
E5 HMZ-1 OFA (2X)-Nzl Feed	**4**	**139,950**	**486**	**55,980**	**3,000**	**3.1**	**+7.0**
E6 HMZ-1 OFA (1X)-Nzl	**12**	**139,950**	**486**	**55,980**	**13,000**	**0.36**	**+7.0**
F Undergrate Air (UGA)	2	139,950	486	55,577	1,544	18.0	+10.0
F1 UGA Control Damper* **	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
F2 UGA Orifice Damper	**2**	**139,950**	**486**	**55,577**	**5,000**	**5.6**	**+10.0**
Coal Pulverizer Air							
G Hot Air to Coal Pulverizer	1	20,000	486	7,942	1,588	5.0	+10.0

Furnace Leakage Air (ind.Brnr. Leakage)	25,100
Bark Distributor Air	0
Air for other Fuel Sources - NCG's	0

Note: ** Air Duct Sizes shown are minimum recommended duct sizes

*** Existing Flow Control Dampers C-1 (Burner Air) & F1 (UGA) to be modified

HMZ OFA Nozzle Locations:

HMZ - 1 Location - Front and Rear Wall above platform Elev. 28'-0"

REVISIONS:			Prop. No.		Cont. No. 30543514
Rev.1	Removed HMZ-2 OFA Level	May 02/05 DRB	Customer:	Smurfit Stone Panama City	
			Eng'd By:	D.Burton	Date: 22-Apr-04
			Chk'd By :		Date:

AIR DUCT DESIGN - DATA SHEET - #4 PB | **Bark/Coal/Oil/NCG - 300,000#/hr Steam** | **1**

Figure 4 – Air Duct Design

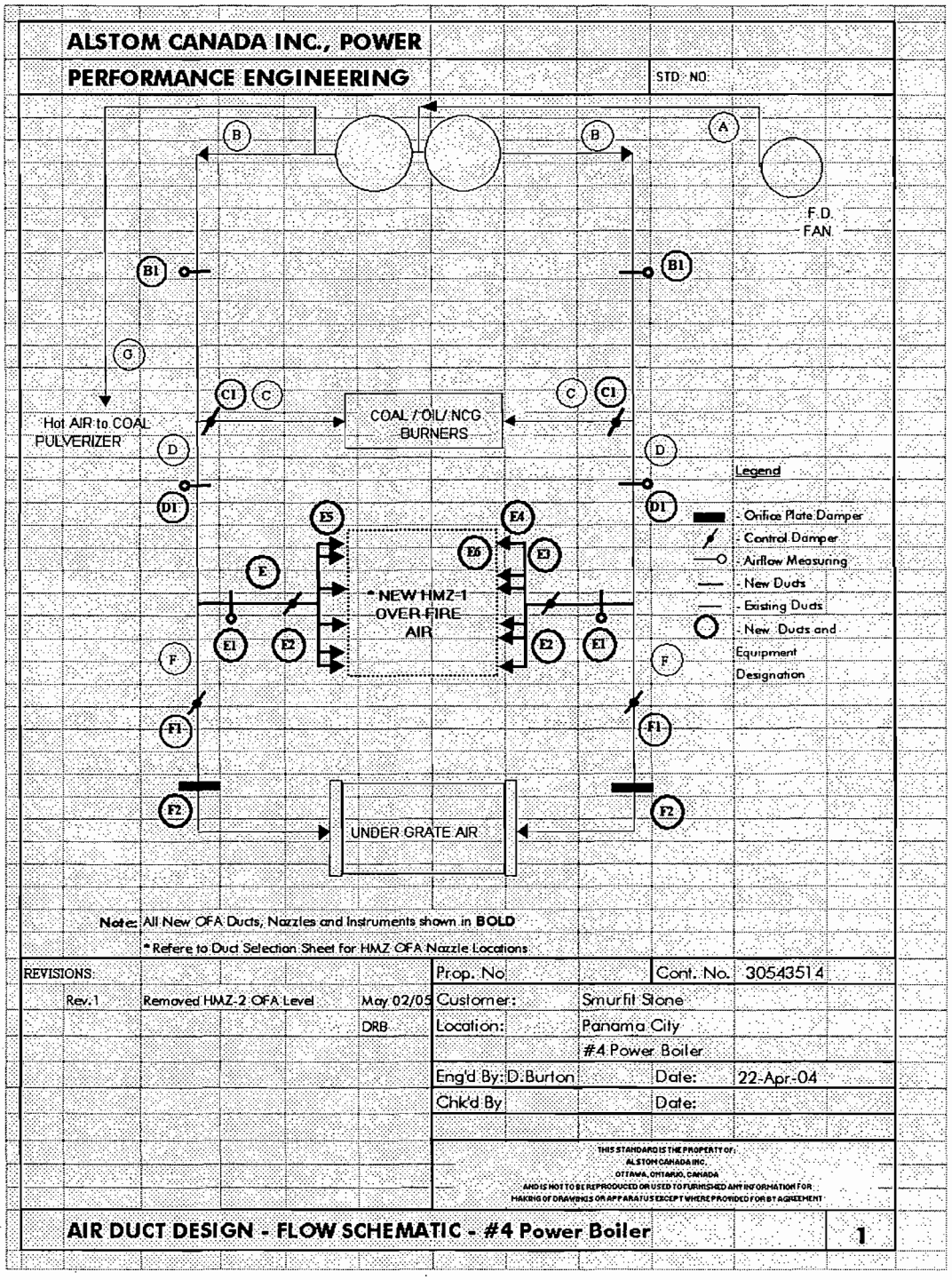

Figure 5 – New OFA System Flow Schematic

Forced Draft (FD) Fan

The HMZ OFA system is designed to provide up to fifty percent (50%) of the total stoker combustion air requirements. The design of this system is based upon the existing FD fan being capable of producing at least 10" wg pressure at the OFA nozzles, to increase the OFA discharge velocity to over 200 feet per second. Based upon a review of the FD fan curve, it appears that this fan has sufficient static pressure capacity to supply the static pressure and volumetric flow rates required for operation with the HMZ OFA System. However, this is based on the assumption that the fan is operating per the fan curve. It is strongly recommended that fan testing be conducted to confirm that the fan is operating per the curve. See the fan capacities provided below in Figure 6.

The Company has based this offering on the assumption that the ID fan is also capable of providing the rated static pressure and flow requirements.

Subject:	#4 Power Boiler - Fan Capacities					
FD Fan *						Notes:
		Existing FD Fan		**Upgrade Design - 300K**		
		MCR	**TestBlock**	**New MCR**	**Margin**	
Flow	LB/HR	446,000	537,000	501,200	579,300	Fan Predicted Performances
	ACFM	101000	126250	113,500	136,200	are based on Upgrade Design
SP	"wg	10.1	15.2	**16.0**	20.0	Load - 300,000 #/hr Steam
Temp	F	80	100	80	100	Flow
RPM		940	1180			
BHP		186	348			
*Existing FD Fan Performance taken from Fan Data provided on American Standard Dwg #12924						
ID Fan **						
		Rebuilt ID Fan		**Upgrade Design Operation**		
		MCR	**Testblock**	**New MCR**	**Margin**	
Flow	LB/HR		752,400	587,300		
	ACFM		285,000			
SP	"wg		34.0			
Temp	F					
RPM			820			
BHP			2200			
*Rebuilt ID Fan Performance taken from Fan Curve provided by Barron Ind. Feb 25/05						

Figure 6 – Fan Capacities

Pressure Part Work

Installation of the eight (8) HMZ OFA nozzle assemblies will require new tube inserts to form the openings in the furnace walls. Two (2) tube insert section will be required for each nozzle opening. The tube inserts will be supplied as individual loose tubes, pre-bent, with edge bars and scarfed tube ends. Tube inserts will match or be equivalent to the existing waterwall tubing specification.

Existing OFA Ductwork and Openings

The existing OFA ductwork will be removed or blanked off, as required. Refractory and plate will be used to close off the existing overfire air port openings in the furnace walls.

Control Philosophy for the New Overfire Air System

The new HMZ OFA System consists of an interlaced arrangement of four (4) sets of damper assemblies (constant velocity dampers) on each of the front and rear walls. These damper assemblies are manually set based on local pressure readings.

The two (2) ducts that feed the OFA compartments each have an air flow device, a flow control duct damper (new Beck drives), and a pressure transmitter. Refer to the Air Duct Design Flow Schematic previously shown as Figure 4.

A Sama control diagram will be furnished in the contract stage.

For a list of new instrumentation supplied with the system, refer to the instrument list in Table 1 below.

Item	Tag	Description	Quantity	Make	Model No	Range (Design)
TOTAL AIR FLOW						
1	xx-FT-xxx	Coal/Oil/NCG Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	238050 lbs/hr
2	xx-FT-xxx	Coal/Oil/NCG Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	238050 lbs/hr
NEW HMZ OVER FIRE AIR						
5	xx-FT-xxx	Bark Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	133500 lbs/hr
6	xx-FT-xxx	Bark Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	133500 lbs/hr
7	xx-FT-xxx	Overfire Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	66750 lbs/hr
8	xx-FT-xxx	Overfire Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	66750 lbs/hr
9	xx-FZ-xxx	Overfire Air Duct Damper Actuator (Left)	1	Beck	Series 11	
10	xx-FZ-xxx	Overfire Air Duct Damper Actuator (Right)	1	Beck	Series 11	
11	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Left#1)	1	Dwyer		
12	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Left#2)	1	Dwyer		
13	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Right#1)	1	Dwyer		
14	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Right#2)	1	Dwyer		
15	xx-PT-xxx	Overfire Air Duct Pressure Transmitter (Left)	1	Rosemount		
16	xx-PT-xxx	Overfire Air Duct Pressure Transmitter (Right)	1	Rosemount		
17	xx-TT-xxx	Temperature Transmitter for Airflow Temperature Compensation	1	Rosemount		0-500°F

Table 1 – Instrument List

Note: Items number 5 and 6, air flow devices, in Table 1 – Instrument List, have been deleted from the scope of supply.

Air System Control:

a) Air Flow Calculations

The Under Grate airflow can be calculated by subtracting the Total Bark Air Flow from the HMZ OFA.

The Coal/Oil/NCG Burner airflow can be calculated by subtracting the Total Bark Air Flow from the Total Air Flow

b) Combustion Control

The Under Grate and OFA Systems are modulated based on total hog fuel feed. The Control room operator will be able to adjust the split between Under Grate and OFA Systems. The Company expects the air flow split to be fifty percent (50%) Under Grate Air (UGA) and fifty percent (50%) OFA, but final values will be determined during commissioning.

Predicted Performance

With the installation of the equipment supplied, the Company predicts the performance as shown below in Table 2:

#4 (CE) Power Boiler - Predicted Performances						
Conditions		**Original Design**	**Upgrade Design -New HMZ OFA**			
		Wood (45% moisture) + Coal	**Wood (50% moisture) + Coal**	**Wood (45% moisture) + Coal**	**Max. Wood (50% Moisture) + Coal**	**Wood (50% moisture) + Coal + Oil + NCG**
Steam Flow	Lbs/hr	300,000	300,000	300,000	300,000	300,000
Wood Steam Flow	Lbs/hr	180,000	180,000	215,200	210,900	180,000
Coal Steam Flow	Lbs/hr	120,000	120,000	84,800	89,100	70,000
Oil Steam Flow	Lbs/hr	0	0	0	0	30,000
NCG Steam Flow	Lbs/hr	n/a	0	0	0	20,000
Steam Temp/Press	F / psig	950 / 1275	950 / 1275	950 / 1275	950 / 1275	950 / 1275
Feedwater Temp	F	280	280	280	280	280
Excess Air @ TAH In	%	25%	30%	30%	30%	25.5%
Air Temps						
- to Fan	F	80	80	80	80	80
- to Furn.	F	486	486	486	486	486
Bark Fuel Flow	Tons/hr	30.0	39.5	39.5	44.2	37.6
Bark Moist. Content	% m.c.	45.0	50.0	45.0	50.0	50.0
Coal Fuel Flow	Lbs/hr	15,160	12,379	9,420	9,920	7,770
Oil Flow	Lbs/hr	0	0	0	0	2,330
NCG Flow	scfh	0	0	0	0	99,000
Thermal Eff.	%	75.5%	72.9%	73.7%	71.7%	72.0%
Total Air Flow to Unit (incl.5%Leakage)	Lbs/hr	446,000	477,000	469,600	482,500	514,400
OFA / UGA Ratio	%	n/a	50 / 50	45 / 55	50 / 50	50 / 50
Exit Gas Flow @ TAH In	Lbs/hr	n/a	566,500	556,400	579,300	602,700
Exit Gas Temp	degF	382	385	385	390	380
Carbon Loss %			2.0	2.0	2.0	2.0
GHI (Wood) x 10^6	Btu/hr	283.8	339.7	373.7	380.5	323.4
GHI (Coal) x 10^6	Btu/hr	200.1	163.4	124.3	131.0	102.5
GHI (Oil) x 10^6	Btu/hr	0	0	0	0	42.6
GHI (NCG) x 10^6	Btu/hr	n/a	0	0	0	41.0
GHI (Total Fuel) x 10^6	Btu/hr	483.9	503.1	498.0	511.5	509.5
GHRR (Grate Heat Rate)	Btu/hr-ft2	895,000	1,071,000	1,178,500	1,200,000	1,019,900

Table 2 – Predicted Performance

3.1.2 COMPUTATIONAL FLUID DYNAMICS (CFD) BOILER MODELING

As a tool to evaluate the current operation of the subject boiler and support performance guarantees for the equipment to be installed, the Company's scope of supply will include Computational Fluid Dynamics (CFD) Modeling. The scope of the CFD modeling study will include the following activities:

1. Establish the boiler's baseline conditions.
2. Evaluate the boiler's flow and mixing characteristics, and relative emission levels.
3. Produce a baseline model and tune to measurements obtained from field data collection at the site.
4. Check the modification design configurations and optimize the upgrade boiler's combustion air system design.

The baseline model will include generation of a three dimensional (3-D) CFD model of the boiler in its existing condition. To develop the most accurate representation of the subject boiler, a data collection phase will be conducted at the Panama City Mill to view the operation, and gather

necessary process, air, and fuel flow inputs required for the CFD models. The baseline conditions will be modeled and calibrated to available emissions data and field operating data.

The baseline simulations will include bark firing and combined firing of bark, coal, oil, and waste gases, to support the commercial guarantees. The CFD model will illustrate the 3-D flow, temperature, species and particulate patterns for a representation of the current and retrofit air system arrangements at two (2) steaming rates. Using CFD, a total of eleven (11) runs are proposed to understand the behavior of the baseline, and alternate operating conditions with both bark and bark/coal/oil firing. A number of operating conditions will be evaluated to represent nominal bark, coal and oil firing scenarios.

After calibrating the baseline case, the matrix of runs for the retrofit cases will be performed. The retrofit model will contain the new air system configuration and several possible options for nozzles in service to allow tuning of the design. The retrofit models will be generated with a new geometry that includes the new air system, current burners to be reused, and any other changes. A total of eleven (11) runs are included in the cost estimate. These CFD runs will evaluate the performance of the OFA design under a range of possible bias conditions that may occur.

A final report will serve as the deliverable for the CFD Modeling Study. The report will provide the study results on CD in electronic format and include both Word and PowerPoint presentations. These files will include color plots, animations, and charts. The documentation will describe the approach, modeled geometries, inputs and results specific to this boiler modeling study. The text will describe the CFD model assumptions, dimensions, flow rates, and tabulations of the results. This will also include charts and graphs to quantify the flow distribution, temperatures and species. The results for each of the runs will be described to clearly identify the differences. Color contour plots, isosurfaces of velocity and pressure and other useful graphics will be included with annotations to explain the relevant aspects of the modeling task.

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

September 29, 2005

CERTIFIED MAIL – Return Receipt Requested

Mr. B. G. Sammons, General Manager
Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Re: Project No. 0050009-021-AC
Smurfit-Stone Container Enterprises, Inc. - Panama City Mill
No. 4 Combination Boiler - OFA and Venturi Improvements

Dear Mr. Sammons:

On September 2, 2005, the Department received your application requesting improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for No. 4 Combination Boiler at the existing Panama City Mill. Enclosed are the following documents: "Technical Evaluation and Preliminary Determination", "Draft Permit", "Written Notice of Intent to Issue Air Permit", and "Public Notice of Intent to Issue Air Permit".

The "Technical Evaluation and Preliminary Determination" summarizes the Permitting Authority's technical review of the application and provides the rationale for making the preliminary determination to issue a Draft Permit. The proposed "Draft Permit" includes the specific conditions that regulate the emissions units covered by the proposed project. The "Written Notice of Intent to Issue Air Permit" provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation. The "Public Notice of Intent to Issue Air Permit" is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact the Project Engineer, Jeff Koerner, at 850/921-9536.

Sincerely,

Trina Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an
Application for Air Permit by:

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Authorized Representative:
B. G. Sammons, General Manager

Air Permit No. 0050009-021-AC
Panama City Mill
No. 4 Combination Boiler
OFA and Venturi Improvements
Bay County, Florida

Facility Location: Smurfit-Stone Container Enterprises, Inc. operates an existing pulp and paper mill (SIC No. 2611) located at One Everitt Avenue in Panama City, Bay County, Florida.

Project: The applicant proposes improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for the No. 4 Combination Boiler. Details of the project are provided in the application, the enclosed "Technical Evaluation and Preliminary Determination", and the enclosed Draft Permit.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above.

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Air Permit" (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within seven (7) days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of the Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached Public Notice or within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this "Written Notice of Intent to Issue Air Permit" package (including the Public Notice, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10/6/05 to the persons listed below.

Mr. B. G. Sammons, Smurfit-Stone Container Enterprises, Inc.*
Mr. Tom Clements, Smurfit-Stone Container Enterprises, Inc.
Mr. David Buff, Golder Associates Inc.
Ms. Sandra Veazey, NWD Office

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Mary F. Harvey (Clerk) 10/6/05 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection

Draft Air Construction Permit No. 0050009-021-AC
Smurfit-Stone Container Enterprises, Inc. - Panama City Mill
No. 4 Combination Boiler, Control Equipment Improvements
Bay County, Florida

Applicant: The applicant for this project is the Smurfit-Stone Container Enterprises, Inc. The applicant's authorized representative and mailing address is: Mr. B. G. Sammons, General Manager of the Panama City Mill, Smurfit-Stone Container Enterprises, Inc., One Everitt Avenue, Panama City, FL 32402.

Facility Location: Smurfit-Stone Container Enterprises, Inc. operates an existing pulp and paper mill (SIC No. 2611) located at One Everitt Avenue in Panama City, Bay County, Florida.

Project: The applicant proposes improvements to the existing overfire air system and existing wet scrubber to reduce particulate matter emissions. No other changes are necessary such as modifying the fuel feeders, fuel conveyors, ash handling system, supplemental burners, boiler tube replacements, etc. These efforts are being conducted in advance of the September 13, 2007 deadline to demonstrate compliance with the applicable particulate matter emissions standard specified for solid fuel fired industrial boilers in NESHAP Subpart DDDDD of 40 CFR 63. Modifications to existing control equipment require review and approval by the Department. This includes any additional improvements to the air pollution control systems that the applicant determines will be necessary should the proposed project fall short of the goal. The Department reserves the right to review this project in combination with future proposed projects related to this unit.

The applicant maintains that the proposed changes to the existing pollution controls will not increase the capacity of the existing boiler or steam production rate. The current maximum continuous steam production rate is 300,000 pounds per hour based on a 24-hour average for the original design and the design target for the new OFA system. To ensure there will be no increase in capacity, the draft permit limits the steam production rate of the No. 4 Combination Boiler to this maximum rate.

The Title V permit currently regulates emissions of particulate matter and sulfur dioxide from the No. 4 Combination Boiler. There is little operational data available for other pollutant emissions such as carbon monoxide, nitrogen oxides, or volatile organic compounds. In addition to particulate matter, the draft permit requires testing for each of these pollutants to establish the emissions profile for the No. 4 Combination Boiler after completing the improvements.

The preliminary determination is that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project is not reasonably expected to result in increased emissions.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed

(Public Notice to be Published in the Newspaper)

under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of this Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within fourteen (14) days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of how and when the petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available for this proceeding.

DRAFT PERMIT

PERMITTEE:

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Authorized Representative:
B. G. Sammons, General Manager

Air Permit No. 0050009-021-AC
Facility ID No. 0050009
SIC No. 2611
OFA and Venturi Improvements
Permit Expires: September 13, 2007

PROJECT AND LOCATION

This permit authorizes improvements to the existing overfire air (OFA) system and existing wet venturi scrubber for No. 4 Combination Boiler. The goal of the project is to reduce controlled particulate matter emissions at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu. The existing unit is located at Smurfit-Stone Container's Panama City Mill, which is located at One Everitt Avenue in Panama City, Bay County, Florida.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

CONTENTS

(DRAFT)

Michael G. Cooke, Director
Division of Air Resource Management

(Date)

FACILITY AND PROJECT DESCRIPTION

The permittee operates an existing pulp and paper mill (SIC No. 2611) in Panama City. The mill includes the No. 4 Combination Boiler (Emissions Unit 016), which is authorized to fire wood/bark, coal, fuel oil, and natural gas. The unit is authorized to operate as a backup for the lime kiln to destroy non-condensable gases (TRS/HAP/VOC) from the batch digesting system and multiple effects evaporator system. The unit is also authorized to operate as a backup to the No. 3 Combination Boiler to destroy HAP and TRS emissions in the condensate stripper off-gases (SOG). Existing air pollution controls include an overfire air (OFA) system and a venturi wet scrubber. The permittee proposes several improvements to these existing control systems in an effort to reduce controlled particulate matter emissions from No. 4 Combination Boiler at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu.

REGULATORY CLASSIFICATION

Title III: The facility is a major source of hazardous air pollutants (HAP).

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The facility is a PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards in 40 CFR 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63.

RELEVANT DOCUMENTS

The permit application and additional information received to make it complete are not a part of this permit; however, the information is specifically related to this permitting action and is on file with the Department.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to operate an emissions unit shall be submitted to Air Resources Section of the Department's Northwest District Office at 160 Governmental Center, Pensacola, Florida 32502-5794.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resources Section of the Department's Northwest District Office at 160 Governmental Center, Pensacola, Florida 32502-5794.

3. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Format); Appendix B (General Conditions); and Appendix A (Common Requirements).

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Relaxations of Restrictions on Pollutant Emitting Capacity. If a previously permitted facility or modification becomes a facility or modification which would be subject to the preconstruction review requirements of this rule if it were a proposed new facility or modification solely by virtue of a relaxation in any federally enforceable limitation on the capacity of the facility or modification to emit a pollutant (such as a restriction on hours of operation), which limitation was established after August 7,1980, then at the time of such relaxation the preconstruction review requirements of this rule shall apply to the facility or modification as though construction had not yet commenced on it. [Rule 62-212.400(2)(g), F.A.C.]

8. Title V Permit: This permit authorizes the proposed construction activities related to the existing air pollution controls. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a revised Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V air operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

A. No. 4 Combination Boiler

This section of the permit addresses the following emissions unit.

Emissions Unit No. 016 – No. 4 Combination Boiler
No. 4 Combination Boiler is an existing unit at the Panama City Mill. The unit is currently authorized to fire carbonaceous fuels (includes wood, bark and primary clarified wood fibers), coal (maximum of 1.7% sulfur by dry weight), natural gas and No. 2 or 6 fuel oil (maximum of 2.4% sulfur by weight). Existing air pollution controls include an overfire air (OFA) system and a venturi wet scrubber. Title V air operation permit No. 0050009-020-AV specifies the following capacities: The total maximum operational heat input of this emissions unit is 545 MMBtu/hr based on a 24-hour average. The heat input shall not exceed 472 MMBtu/hr from fuel oil, 395 MMBtu/hr from coal, 474 MMBtu/hr from carbonaceous fuels, or 512 MMBtu/hr from natural gas. The total heat input to the Nos. 3 and 4 combination boilers due to carbonaceous fuels shall not exceed 501 MMBtu/hr based on a 24-hour average.

OTHER REQUIREMENTS

1. Other Permits: The No. 4 Combination Boiler remains subject to all applicable requirements from previously issued air construction and operating permits. The conditions of this permit are in addition to and supplement all other applicable permit requirements. The Department reserves the right to review this project in combination with future proposed projects related to this unit. [Rule 62-4.070(3), F.A.C.]

CONTROL EQUIPMENT IMPROVEMENTS

2. Overfire Air System: The permittee is authorized to perform the following general work on the existing overfire air system: Conduct a Computational Fluid Dynamics (CFD) modeling analysis. Based on the results of the analysis, modify or add overfire air ports, ductwork, velocity dampers, air nozzle assemblies, air flow measuring devices, and combustion control system to improve carbonaceous fuel firing. The project goal is to reduce unburned carbon to 20% or less, provide more stable combustion with a constant negative furnace pressure, and reduce uncontrolled particulate matter emissions from the boiler furnace to less than 4.2 lb/MMBtu.

   a. Within 15 days of completing the CFD report, the permittee shall submit a written report of the findings to the Bureau of Air Regulation and the Compliance Authority.

   b. Prior to commencing physical work on this project, the permittee shall submit a report to the Bureau of Air Regulation and the Compliance Authority summarizing the proposed changes based on the CFD modeling analysis.

   c. Within 15 days of completing the physical work, the permittee shall provide a report to the Bureau of Air Regulation and the Compliance Authority summarizing the actual OFA improvements made.

   [Application; Rule 62-4.070(3), F.A.C.]

3. Existing Wet Scrubber: The permittee is authorized to return the current fixed throat venturi scrubbing system to a variable throat venturi scrubbing system, which is the original design for this equipment. The project goal is to provide more control over the scrubber pressure differential and control of particulate matter emissions with the variable throat design. The permittee shall notify the Compliance Authority within 15 days of completing the proposed work. The permittee shall install, calibrate, operate and maintain a device to continuously monitor and record the scrubber pressure drop. [Application; Rule 62-4.070(3), F.A.C.]

PERFORMANCE RESTRICTIONS

4. Permitted Capacity: The maximum continuous steam production rate shall not exceed 300,000 pounds per hour based on a 24-hour average. The permittee shall install, calibrate, maintain, and operate equipment to continuously monitor and record the steam production rate to demonstrate compliance with this requirement. If the boiler is unable to operate within 90% of this specified steaming rate during the initial tests, the Department reserves the right to reduce the maximum steaming rate. [Rules 62-210.200(PTE) and 62-212.400(2)(g), F.A.C.]

EMISSIONS PERFORMANCE TESTING

5. Initial Performance Tests: Within 90 days of restarting the unit after completing the proposed work, the permittee shall conduct performance tests to determine the following emissions rates from the No. 4 Combination Boiler: carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM), and volatile organic compounds (VOC). The tests shall be conducted under the following conditions:

   a. Each test shall consist of three 1-hour test runs.

   b. The boiler shall fire only a combination of wood and coal. No more than 6.2 tons per hour of coal shall be fired for each 3-run test average.

   c. The boiler shall produce at least 270,000 pounds per hour of steam for each 3-run test average.

   The PM test shall demonstrate compliance with the applicable standards specified in the Title V air operation permit. The tests for CO, NOx, and VOC are for informational purposes. [Rule 62-297.310(7)(a)1, F.A.C.]

6. Test Notification: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. [Rule 62-297.310(7)(a)9, F.A.C.]

7. Test Methods: Required tests shall be performed in accordance with the following reference methods.

EPA Test . Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content {These methods are performed as necessary to support the other methods.}
5	Determination of Particulate Matter (PM) Emissions
7E	Determination of Nitrogen Oxide (NOx) Emissions
10	Determination of Carbon Monoxide (CO) Emissions The method shall be based on a continuous sampling train.
18	Calculation Method for NOx, PM, and VOC Emission Rates
25A	Determination of Volatile Organic Compounds (VOC) {The permittee may elect to conduct EPA Method 18 on a simultaneous sample to determine emissions of methane and ethane, which may then be deducted from the determination of total hydrocarbons (THC) to determine VOC emissions. Otherwise, all measured THC shall be assumed to be VOC.}

Tests shall also be conducted in accordance with the requirements specified in Appendix C of Section 4 of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

RECORDS AND REPORTS

8. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix C of Section 4 of this permit. For each test run, the report shall also indicate the following: emissions rate (lb/MMBtu, lb/hour, and ppmvd @ 7% oxygen for gases); flue gas oxygen content (%); steam production rate (lb/hour); wood and coal firing rates (tons/hour); heat input rates from each fuel (MMBtu/hour); total air flow (acfm and lb/hour); overfire air distribution (%); and venturi wet scrubber pressure differential (recorded at 15-minute intervals during test). In addition, the permittee shall take a sample of coal and wood fired during each test. Each sample shall be analyzed for: higher and lower heating values (Btu/lb, dry); moisture content (%); sulfur content (% by weight); and ash content (% by weight). Results of the analyses shall be summarized in the test report.

   [Rule 62-297.310(8), F.A.C.]

SECTION 4. APPENDICES

CONTENTS

SECTION 4. APPENDIX A
CITATION FORMATS

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number
"001"identifies the specific permit project
"AC" identifies the permit as an air construction permit
"AF" identifies the permit as a minor federally enforceable state operation permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the Prevention of Significant Deterioration of Air Quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CRF 60.7]

Means: Title 40, Part 60, Section 7

SECTION 4. APPENDIX B
GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology;
    b. Determination of Prevention of Significant Deterioration; and
    c. Compliance with New Source Performance Standards.

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SECTION 4. APPENDIX C
COMMON CONDITIONS

{Permitting Note: Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.}

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]

8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]

9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. *Required Sampling Time.* Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

14. Determination of Process Variables

    a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

16. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]

17. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

18. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the

test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1. The type, location, and designation of the emissions unit tested.
2. The facility at which the emissions unit is located.
3. The owner or operator of the emissions unit.
4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8. The date, starting time and duration of each sampling run.
9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10. The number of points sampled and configuration and location of the sampling plane.
11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12. The type, manufacturer and configuration of the sampling equipment used.
13. Data related to the required calibration of the test equipment.
14. Data on the identification, processing and weights of all filters used.
15. Data on the types and amounts of any chemical solutions used.
16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18. All measured and calculated data required to be determined by each applicable test procedure for each run.
19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.
21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

19. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]
20. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

PROJECT

Draft Air Construction Permit No. 0050009-021-AC
No. 4 Combination Boiler – Control Equipment Improvements

COUNTY

Bay County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Air Permitting North Program

September 29, 2005

{Filename: 0050009-021-AC - TEPD}

1. GENERAL PROJECT INFORMATION

Processing Schedule

09/02/05 Received the application for a minor source air pollution construction permit; complete.

Facility Description and Location

Smurfit-Stone Container Enterprises, Inc. operates an existing pulp and paper mill (SIC No. 2611) located at One Everitt Avenue in Panama City, Bay County, Florida. The UTM coordinates of the Panama City Mill are Zone 16, 632.8 km East, and 3335.1 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to a National Ambient Air Quality Standard (NAAQS).

Regulatory Categories

Title III: The facility is a major source of hazardous air pollutants (HAP).

Title IV: The facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The facility is a PSD-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards in 40 CFR 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR 63.

2. PROJECT DESCRIPTION

No. 4 Combination Boiler fires a variety of fuels (carbonaceous fuels, coal, natural gas, and fuel oil) to produce steam and electricity for the papermaking process. This unit will be subject to the applicable requirements of NESHAP Subpart DDDDD in 40 CFR 63 (Industrial, Commercial, and Institutional Boilers and Process Heaters). The compliance deadline for the existing unit is September 13, 2007. In preparation for the upcoming NESHAP, the applicant proposes the following improvements for the No. 4 Combination Boiler:

- *Existing Overfire Air (OFA) System*: Conduct a Computational Fluid Dynamics (CFD) modeling analysis. Based on the analysis, modify or add overfire air ports, ductwork, velocity dampers, air nozzle assemblies, air flow measuring devices, and combustion control system to improve carbonaceous fuel firing. The purpose of the project is to reduce unburned carbon to 20% or less, provide more stable combustion with a constant negative furnace pressure, and reduce uncontrolled particulate matter emissions from the boiler furnace (prior to the wet scrubber) to less than 4.2 lb/MMBtu.
- *Existing Wet Scrubber*: Return the current fixed throat venturi to a variable throat venturi, which is the original design for this equipment. The variable throat will allow more control over the scrubber pressure differential and control of particulate matter emissions.

The Title V air operation permit currently limits particulate matter emissions to 0.3 lb/MMBtu for carbonaceous fuels and 0.1 lb/MMBtu for fossil fuels. Actual particulate matter emissions have been approximately 0.08 lb/MMBtu based on recent test data. The ultimate goal of the project is to reduce controlled particulate matter emissions at the stack to comply with the NESHAP Subpart DDDDD particulate matter emissions limit of 0.07 lb/MMBtu. If this goal is achieved, no further work will be necessary. Otherwise, additional improvements to the air pollution control systems will be required.

The current Title V air operation permit identifies the capacity as follows, "The total maximum operational heat input of this emissions unit is 545 MMBtu/hr based on a 24-hour average. The heat input shall not exceed 472 MMBtu/hr from fuel oil, 395 MMBtu/hr from coal, 474 MMBtu/hr from carbonaceous fuels, or 512 MMBtu/hr from natural gas. The total heat input to the No. 3 and No. 4 combination boilers due to carbonaceous fuels

shall not exceed 501 MMBtu/hr based on a 24-hour average." The project will not increase the capacity of the boiler. The annual capacity factor has been approximately 72% and will not change as a result of this project. Based on vendor information, the designed maximum steam production rate will remain at 300,000 pounds per hour.

3. CONCLUSION

The applicant proposes improvements to the existing overfire air system and existing wet scrubber to reduce particulate matter emissions. No other changes are necessary such as modifying the fuel feeders, fuel conveyors, ash handling system, supplemental burners, boiler tube replacements, etc. These efforts are being conducted in advance of the September 13, 2007 deadline to demonstrate compliance with the applicable particulate matter emission standard specified for solid fuel fired industrial boilers in NESHAP Subpart DDDDD of 40 CFR 63. Modifications to existing control equipment require review and approval by the Department. This includes any additional improvements to the air pollution control systems that the applicant determines will be necessary should the proposed project fall short of the goal. The Department reserves the right to review this project in combination with future proposed projects related to this unit.

The applicant maintains that the proposed changes to the existing pollution controls will not increase the capacity of the existing boiler or the steam production rate. The current maximum continuous steam production rate is 300,000 pounds per hour based on a 24-hour average for the original design and the design target for the new OFA system. To ensure there will be no increase in capacity, the draft permit limits the steam production rate of the No. 4 Combination Boiler to this maximum rate.

The Title V air operation permit currently regulates emissions of particulate matter and sulfur dioxide from the No. 4 Combination Boiler. There is little operational data available for other pollutant emissions such as carbon monoxide, nitrogen oxides, or volatile organic compounds. In addition to particulate matter, the draft permit requires testing for each of these pollutants to establish the emissions profile for the No. 4 Combination Boiler after completing the improvements.

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

P.E. CERTIFICATION STATEMENT

PERMITTEE

Smurfit-Stone Container Enterprises, Inc.
Panama City Mill
One Everitt Avenue
Panama City, FL 32402

Air Permit No. 0050009-021-AC
Facility ID No. 0050009
SIC No. 2611
OFA and Venturi Improvements
Bay County, Florida

PROJECT DESCRIPTION

The applicant proposes improvements to the existing overfire air system and existing wet scrubber for the No. 4 combination boiler to reduce particulate matter emissions. No other changes are necessary such as modifying the fuel feeders, fuel conveyors, ash handling system, supplemental burners, boiler tube replacements, etc. These efforts are being conducted in advance of the September 13, 2007 deadline to demonstrate compliance with the applicable particulate matter emission standard specified for solid fuel fired industrial boilers in NESHAP Subpart DDDDD of 40 CFR 63. Modifications to existing control equipment require review and approval by the Department. This includes any additional improvements to the air pollution control systems that the applicant determines will be necessary should the proposed project fall short of the goal. The Department reserves the right to review this project in combination with future proposed projects related to this unit.

The applicant maintains that the proposed changes to the existing pollution controls will not increase the capacity of the existing boiler or the steam production rate. The current maximum continuous steam production rate is 300,000 pounds per hour based on a 24-hour average for the original design and the design target for the new OFA system. To ensure there will be no increase in capacity, the draft permit limits the steam production rate of the No. 4 Combination Boiler to this maximum rate.

The Title V air operation permit currently regulates emissions of particulate matter and sulfur dioxide from the No. 4 Combination Boiler. There is little operational data available for other pollutant emissions such as carbon monoxide, nitrogen oxides, or volatile organic compounds. In addition to particulate matter, the draft permit requires testing for each of these pollutants to establish the emissions profile for the No. 4 Combination Boiler after completing the improvements.

The preliminary determination is that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project is not reasonably expected to result in increased emissions.

I HEREBY CERTIFY *that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).*

Jeffery J. Koerner — 9-29-05

Jeffery F. Koerner, P.E. (Date)
Registration Number: 49441

APPLICATION TO MODIFY NO. 4 COMBINATION BOILER SMURFIT-STONE CONTAINER ENTERPRISES *PANAMA CITY MILL*

Prepared For:
Smurfit-Stone Container Enterprises
One Everitt Avenue
Panama City, Florida 32402

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

September 2005

0537542

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APPLICATION FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Smurfit-Stone Container Enterprises, Inc.**	
2. Site Name: **Panama City Mill**	
3. Facility Identification Number: **0050009**	
4. Facility Location...: Street Address or Other Locator: **One Everitt Avenue** City: **Panama City** County: **Bay** Zip Code: **32402**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Tom Clements, Environmental Superintendent**
2. Application Contact Mailing Address... Organization/Firm: **Stone Container Corporation** Street Address: **One Everitt Avenue** City: **Panama City** State: **FL** Zip Code: **32402**
3. Application Contact Telephone Numbers... Telephone: **(850) 785-4311** ext.**470** Fax: **(850) 763-8530**
4. Application Contact Email Address: **tlclements@smurfit.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	
2. Project Number(s):	
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

FACILITY INFORMATION

Purpose of Application

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

Air Construction Permit

☒ Air construction permit.

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 modify the No. 4 Combination Boiler at the Panama City Mill in order to meet the Industrial Boiler MACT.

FACILITY INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
016	No. 4 Combination Boiler		

Application Processing Fee

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

FACILITY INFORMATION

Owner/Authorized Representative Statement

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

1. Owner/Authorized Representative Name :
   B.G. Sammons, General Manager

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Smurfit-Stone Container Enterprises, Inc.**
   Street Address: **One Everitt Avenue**
   City: **Panama City** State: **Florida** Zip Code: **32402**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(850) 785-4311** ext. Fax: **(850) 763-6290**

4. Owner/Authorized Representative Email Address: **bgsammons@smurfit.com**

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.

B B Sammons — Signature

8/29/05 — Date

FACILITY 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

FACILITY 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.

D. Buff — 8/31/05

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. 4 Combination Boiler

3. Emissions Unit Identification Number: **016**

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:
The Batch Digester System and Multi-Effect Evaporator System may vent non-condensable gases (NCGs) to the No. 4 Combination Boiler as a backup control device. The No. 4 Combination Boiler may also act as a backup to the No. 3 Combination Boiler for condensate stripper off-gas (SOG) destruction.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

021 - Thermal destruction of TRS and HAP gases (as a backup to the Lime Kiln and the No. 3 Combination Boiler)

053 - Venturi Scrubber

2. Control Device or Method Code(s): **021, 053**

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: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **39.0** lb/hour **170.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.07 lb/MMBtu** Reference: **40 CFR 63, Subpart DDDDD**	7. Emissions Method Code: **0**
8. Calculation of Emissions: **Hourly: [(474 MMBtu/hr) (wood/bark) + (83 MMBtu/hr) (fuel oil)] x 0.07 lb/MMBtu = 39.0 lb/hr** **Annual: 39.0 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 170.7 TPY**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Maximum emissions based on firing a combination of wood/bark and No. 6 fuel oil.**	

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 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.3 lb/MMBtu**	4. Equivalent Allowable Emissions: **86.7** lb/hour **379.75** tons/year
5. Method of Compliance: **Annual test using EPA Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0050009-016-AC and Rule 62-296.410(1)(b)2; for carbonaceous fuel firing. Allowable emissions are 86.7 lb/hr (379.75 TPY) when any combination of fuel is utilized.**	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.1 lb/MMBtu**	4. Equivalent Allowable Emissions: **47.3** lb/hour **207.2** tons/year
5. Method of Compliance: **Annual test using EPA Test Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Rule 62-296.410(1)(b)2; for fossil fuel firing. Allowable emissions are 86.7 lb/hr (379.75 TPY) when any combination of fuel is utilized.**	

Allowable Emissions Allowable Emissions 3 of 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions: **09/13/2007**
3. Allowable Emissions and Units: **0.07 lb/MMBtu**	4. Equivalent Allowable Emissions: **39.0** lb/hour **170.7** tons/year
5. Method of Compliance: **EPA Method 5**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on 40 CFR 63, Subpart DDDDD.**	

PART B

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1.0 INTRODUCTION

Smurfit-Stone Container Enterprises (SSCE) is proposing changes to the No. 4 Combination Boiler at its Kraft pulp and paper mill located in Panama City, Bay County, Florida. The SSCE Panama City Mill consists of the following major plant areas: woodyard, digester system, brown stock washing system, bleaching system, chemical recovery area, paper drying/converting/warehousing, and power/ utilities area. The Panama City Mill is currently operating under Title V Permit No. 0050009-020-AV, issued July 29, 2005.

SSCE currently operates the No. 4 Combination Boiler to generate steam and electricity for the papermaking process. The boiler burns bark/wood, coal, No. 6 fuel oil, No. 2 fuel oil, and small quantities of natural gas (during start-up). In addition, the boiler serves as a destruction device for noncondensable gases (NCGs) and condensate stripper off-gas (SOG), which are generated by various process sources.

SSCE is requesting changes to the No. 4 Combination Boiler in order to allow the boiler to meet the Maximum Achievable Control Technology (MACT) standards for Industrial Boilers, promulgated under Title 40 of the Code of Federal Regulations, Part 63 (40 CFR 63), Subpart DDDDD. The compliance date for existing boilers under Subpart DDDDD is September 13, 2007. The changes will consist solely of improvements to the overfire air (OFA) system of the boiler and improvements to the existing wet venturi scrubber. No capacity increase (steam production) will result from the changes.

If the proposed project for the No. 4 Combination Boiler proves successful, SSCE will be able to meet the Boiler MACT limit for total select metals (TSM) or particulate matter (PM) prior to the compliance date of September 2007. The Boiler MACT limit for TSM is 0.001 pounds per million British thermal units (lb/MMBTU) or, alternatively, the Boiler MACT limit for PM is 0.07 pounds per million British thermal units (lb/MMBtu). This limit represents a reduction in PM emissions for the boiler- from the current emissions of approximately 0.084 lb/MMBtu (based on recent stack tests). If this proposed project moves forward at this time, but the project does not reach the goal of attaining the MACT TSM limit of 0.001 lb/MMBtu or PM limit of 0.07 lb/MMBtu, SSCE will still have time to make additional changes to the boiler and/or air pollution control system prior to September 2007 deadline.

This air construction permit application is organized into two additional sections, followed by an appendix. A description of the project, including air emission sources and pollution control equipment, is presented in Section 2.0. The regulatory applicability analysis for the proposed project is presented in Section 3.0.

Through this application, SSCE is requesting that a minor source construction permit be issued to allow the No. 4 Combination Boiler to move forward as quickly as possible with the planned changes.

2.0 PROJECT DESCRIPTION

SSCE is proposing to modify the No. 4 Combination Boiler to meet the Industrial Boiler MACT rules for TSM or PM. The Industrial Boiler MACT rules require that emissions from solid fuel-fired boilers be limited to TSM emissions of 0.001 lb/MMBtu or PM emissions of 0.07 lb/MMBtu of heat input.

The facility is currently operating under Title V Permit No. 0050009-020-AV, issued July 29, 2005. The facility is located at One Everitt Avenue, Panama City, Bay County, Florida. The following sections describe the proposed project in more detail.

2.1 NO. 4 COMBINATION BOILER'S EXISTING OPERATION

The No. 4 Combination Boiler is operated to provide steam to the papermaking process and the turbine generators that provide electricity for the facility. The boiler is a Combustion Engineering (CE) design installed in 1964, with a design steam rating of 330,000 lb/hr when burning a combination of wood/bark and coal. The No. 4 Combination Boiler is permitted to burn the following fuels and gases:

- Carbonaceous fuel (includes bark, wood, and primary clarified wood fibers);
- Bituminous coal, with a sulfur content not to exceed 1.7 percent by weight;
- No. 6 fuel oil, with a sulfur content not to exceed 2.4 percent by weight;
- No. 2 fuel oil;
- Natural gas;
- Non-condensable gases (NCGs) from the low-volume, high concentration (LVHC) gas collection system, as a backup to the No. 4 Lime Kiln; and
- Condensate stripper off-gas (SOG), as a backup to the No. 3 Combination Boiler.

The No. 4 Combination Boiler currently is permitted to operate up to a maximum heat input rate of 545 MMBtu/hr, based on a 24-hour average. For carbonaceous fuel burning, the maximum heat input is limited to 474 MMBtu/hr. Based on a minimum heat content of 7,900 Btu/lb, dry basis, this heat input rate is equivalent to a maximum bark/wood burning rate of 30.0 TPH (dry).

The maximum heat input for the boiler for coal firing is 395 MMBtu/hr. Based on a heating value for coal of 12,500 Btu/lb, this heat input rate is equivalent to 15.8 TPH of coal.

The maximum heat input for the boiler when firing No. 6 fuel oil is 472 MMBtu/hr. Based on a heating value for No. 6 fuel oil of 150,000 Btu/gal, this heat input rate is equivalent to 3,147 gal/hr of No. 6 fuel oil.

The maximum heat input for the boiler when firing No. 2 fuel oil is also 472 MMBtu/hr. Based on a heating value for No. 2 fuel oil of 136,000 Btu/gal, this heat input rate is equivalent to 3,471 gal/hr of No. 2 fuel oil. The boiler contains a total of four (4) oil burners.

The maximum heat input when firing natural gas is 512 MMBtu/hr. Based on a minimum heating value for natural gas of 1,000 Btu/scf, the maximum natural gas firing rate is 512,000 scf/hr. There are total of eight (8) gas ignitors installed in the boiler.

The No. 4 Combination Boiler also serves as the backup control device for the NCGs from the LVHC gas collection system and for the condensate SOG. HAPs and TRS emissions are controlled by injecting the gases into the boiler with the primary fuel or into the flame zone of the boiler, or with the combustion air. TRS gases are subject to a minimum of 1,200°F incineration temperature for at least 0.5 seconds.

SO_2 emissions from the boiler are controlled by limiting the sulfur content of the coal and fuel oil to a maximum of 1.7 percent and 2.4 percent by weight, respectively. SO_2 emissions are controlled, when firing 100 percent fuel oil and/or incinerating TRS or SOG gases, by maintaining the pH of the venturi scrubber scrubbing medium above 8.0, except during an unscheduled outage of the Lime Kiln. For an unscheduled switch of TRS gases from the Lime Kiln to the No. 4 Combination Boiler, an interim period of 30 minutes is allowed in order to achieve a scrubbing medium pH level of 8.0 or greater.

PM emissions are controlled by a fly ash arrestor (Process Equipment Model AR56UACB-8-7), followed by a wet venturi scrubber manufactured by FMC Link-Belt (model 200K dual-throat). The original design of the venturi scrubber incorporated a variable throat (moveable plate) to allow variation of the pressure drop across the scrubber. However, many years ago the throat adjustment mechanism failed, and the plate was welded at a fixed location.

The boiler is regulated under Rule 62-296.410, F.A.C., Carbonaceous Fuel Burning Equipment; Rule 62-296.404, F.A.C., Kraft Pulp Mills; and 40 CFR, Part 63, Subpart S. The boiler is also subject

to the requirements of 40 CFR 63 Subpart DDDDD; however, the unit is not required to be in full compliance with this subpart until September 13, 2007.

2.2 NO. 4 COMBINATION BOILER'S PROPOSED MODIFICATIONS

SSCE is proposing upgrading the biomass combustion air system and the scrubber to the No. 4 Combination Boiler solely to reduce PM emissions and meet the Boiler MACT rule. In order to attain the desired operation of the boiler, and meet the Industrial Boiler MACT standard for TSM or PM, SSCE is proposing the following changes to the No. 4 Combination Boiler:

- Upgrading the combustion air system, including the OFA system, to achieve the following under all firing conditions: reduce unburned carbon to 20 percent or less; provide stable combustion with a constant negative furnace pressure; and reduce PM emitted from the furnace to the multi-clone dust collector to less than 4.2 lbs/MMBtu and
- Return the existing fixed-throat venturi scrubber to its original design of variable-throat, with additional improvements to achieve TSM emissions of less than 0.001 lb/MMBtu or PM emissions of less than 0.07 lb/MMBtu at the outlet of the wet scrubber;

SSCE is proposing to upgrade the existing OFA system on the boiler. Such systems have been installed on a number of bark/wood boilers throughout the country, and have resulted in positive improvements to the boilers, including increased combustion efficiency and a reduction in the amount of excess air used in the boiler, while decreasing emissions of PM/PM_{10}, carbon monoxide (CO), and volatile organic compounds (VOC) on a lb/MMBtu basis. Emissions of nitrogen oxides (NO_x) can be maintained at the existing lb/MMBtu levels. Components of the OFA system which will be added or modified consist of OFA port locations, ductwork, velocity dampers, air nozzle assemblies, air flow measuring devices, and combustion controls. General information regarding the Alstom system is included in Appendix A.

SSCE has committed to installing an OFA system designed by Alstom on the Panama City No. 4 Combination Boiler. At the SSCE mill in Florence, South Carolina, a similar upgrade to their No. 3 Boiler OFA system was completed by Alstom last year that resulted in a 75% reduction of particulate emissions. As was expected, the No. 3 Boiler OFA system upgrade at our Florence mill resulted in reduced quantities of flyash leaving the furnace but also resulted in an unexpected increase in bottom ash that required subsequent upgrade to the bottom ash handling system. The South Carolina DHEC made the determination that NSR was not applicable to the No. 3 Boiler OFA system upgrade project at our Florence, South Carolina, mill.

The original design of the venturi scrubber incorporated a variable throat (moveable plate) to allow variation of the pressure drop across the scrubber. The system included a plate mounted on a set of gears, which allowed the plate to be adjusted to achieve the desired level of pressure drop. However, many years ago the throat adjustment mechanism failed, and the plate was welded at a fixed location, resulting in a fixed-throat venturi.

SSCE now desires the return the venturi to its original variable-throat design. This will provide more control over pressure drop through the scrubber and therefore over PM emissions. Through this upgrade and the changes to the boiler, SSCE believes it can meet the Boiler MACT standard for TSM or PM.

The proposed project will not result in any increase in steam rate for the boiler. The boiler has been able to achieve its design steam production rate of 330,000 lb/hr when burning a combination of bark/wood and fossil fuels. For example, during the last two compliance tests of the boiler, steam production rates of up to 323,000 lb/hr were attained.

Nor will the project result in any increase in annual steam production. The boiler currently operates at approximately a 72-percent capacity factor, and this will not change due to the project.

The current permitted maximum hourly heat input rates for the various fuels will not change as part of this project. The maximum heat input rate due to firing coal, No. 6 fuel oil, No. 2 fuel oil, or natural gas will not be affected by the proposed project.

2.3 AIR EMISSION ESTIMATES AND POLLUTION CONTROL EQUIPMENT

PM/PM_{10} emissions from the No. 4 Combination Boiler are currently controlled by a mechanical collector followed by a venturi scrubber. SSCE is proposing to upgrade the boiler OFA system and venturi scrubber to meet the Boiler MACT standards. This upgrade is expected to decrease emissions of PM/PM_{10}, CO, and VOC on a lb/MMBtu basis, while maintaining NO_x emissions on a lb/MMBtu basis.

PM emissions from the No. 4 Combination Boiler are currently limited to 0.3 lb/MMBtu for carbonaceous fuel and 0.1 lb/MMBtu for No. 6 fuel oil. Total mass PM emissions are limited to

109.5 lb/hr. SO_2 emissions are limited to 1,183 lb/hr when combusting NCG and SOG, and 772 lb/hr when not combusting NCG or SOG.

2.3.1.1 Future Potential Emissions

Future emissions from the No. 4 Combination Boiler will be limited to either 0.001 lbs of TSM/MMBtu or 0.07 lbs of PM/MMBtu, which is equivalent to the NESHAPs promulgated for Industrial Boilers under 40 CFR 63, Subpart DDDDD. This is a significant reduction from the current PM limit of 0.3 lb/MMBtu for wood/bark burning and 0.1 lb/MMBtu for fuel oil burning. The proposed emission limit is equivalent to a maximum PM emission rate of 39.0 lb/hr and 170.7 TPY for any fuel combination.

As described previously, no increase in NO_x emissions due to bark/wood firing is expected on a lb/MMBtu basis due to the proposed project. Future CO and VOC emissions in terms of lb/MMBtu will decrease due to the proposed project.

3.0 AIR QUALITY REVIEW REQUIREMENTS

Federal and State air regulatory requirements for a major new or modified source of air pollution are discussed in Sections 3.1 through 3.3. The applicability of these regulations to the proposed SSCE modification is presented in Section 3.4.

3.1 PSD REQUIREMENTS

The proposed project is solely for the purpose of meeting the Boiler MACT standards. Therefore, PSD review does not apply. However, if PSD review did apply, and a comparison of past actual to future potential emissions was conducted, the only pollutant of concern would be NO_x.

3.2 POTENTIALLY APPLICABLE EMISSION STANDARDS

3.2.1 NEW SOURCE PERFORMANCE STANDARDS

The NSPS are a set of national emission standards that apply to specific categories of new sources. As stated in the CAA Amendments of 1970, these standards "shall reflect the degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction the Administrator determines has been adequately demonstrated."

Existing non-NSPS sources may become subject to the NSPS if such sources undergo a "modification" or "reconstruction". "***Modification***" means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

"***Reconstruction***" means the replacement of components of an affected facility to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and

(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

40 CFR 60.5 defines "***fixed capital cost***" as the capital needed to provide all the depreciable components. 40 CFR 60.2 defines "***capital expenditure***" as:

an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair percentage" specified in the latest edition of IRS Publication 534 and the existing facility's basis, as defined by Section 1012 of the IRS Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes.

Federal NSPS exist for fossil-fuel and wood-fired industrial-commercial-institutional steam boilers constructed or modified after June 19, 1984. The NSPS are contained in 40 CFR 60, Subpart Db. The NSPS contain emission limits for SO_2, PM, and NO_x for oil firing and emission limits for PM for wood firing. Wood is defined in the NSPS to include bark, wood, and wood residue. Subpart Db is potentially applicable to the No. 4 Combination Boiler project.

Federal NSPS also exist for Fossil-Fuel-Fired Steam Generators for which construction or modification occurs after August 17, 1971 (40 CFR 60, Subpart D). The NSPS contains emission limits for PM, SO_2, and NO_x for liquid fossil fuel and wood residue firing. However, 40 CFR 60, Subpart Db, contains a provision that any unit subject to Subpart Db is not subject to Subpart D.

The No. 4 Combination Boiler is not currently subject to any NSPS. The boiler was originally constructed prior to 1965, and has not been previously modified or reconstructed per the NSPS definitions.

The No. 4 Combination Boiler will not be undergoing any physical changes to the existing fuel oil, coal, or natural gas firing systems, except for the overfire air system improvements. No increase in the maximum fuel oil, coal, or natural gas firing rates will occur. In addition, no hourly increase in emissions of any pollutant due to fuel oil, coal, or natural gas firing, will occur as part of the proposed project. As a result, the NSPS will not be triggered by the proposed project in regards to fuel oil, coal, or natural gas firing.

The boiler will be potentially more efficient at burning bark/wood, in that the improved combustion of biomass will potentially allow firing more bark/wood on an hourly basis, and potentially increasing actual PM emissions on an hourly basis. Therefore, the proposed project could constitute a "modification", which would subject the No. 4 Combination Boiler to regulation under 40 CFR 60, Subpart Db. The NSPS limit for PM emissions due to bark/wood firing is 0.1 lb/MMBtu. However, SSCE is proposing to reduce the current PM emission limit on the boiler to 0.07 lb/MMBtu. At this

maximum emission rate, the maximum hourly PM emission rate for the No. 4 Combination Boiler is 39.0 lb/hr.

A summary of historical PM compliance test data for the No. 4 Combination Boiler is shown in Table 3-1. These historic compliance tests were conducted while burning a combination of bark/wood and fossil fuel, in order to achieve at least 90 percent of rated heat input capacity during the testing. Based on the historical PM test data, PM emissions from the No. 4 Combination Boiler have been as high as 38.1 lb/hr. The proposed maximum PM emission rate after the proposed project is implemented is 39.0 lb/hr. Statistically, this represents no increase above the highest tested value. Therefore, the proposed project will not result in an increase in hourly PM emissions, and Subpart Db will not apply to the No. 4 Combination Boiler in regard to wood/bark firing.

The emission limits for SO_2 and NO_x under Subpart Db will not apply to the No. 4 Combination Boilers because there are no emission limits for these pollutants for wood/bark firing. Furthermore, neither the fossil fuel firing capability nor the maximum emissions due to fossil fuel firing will increase due to the proposed project. Therefore, the emission limits for fossil fuel firing under Subpart Db will not apply.

SSCE has developed a budget for the proposed project based on internal cost estimates. The total installed capital cost of the modifications to the No. 4 Combination Boiler is approximately $1.6 million. The term "comparable entirely new facility" would consist of a new boiler with components identical to the repaired boiler. Reconstruction calculations do not include air pollution control equipment. Using previously developed costs for new boilers in Florida, the cost of a new biomass and coal fired boiler, comparable to the No. 4 Combination Boiler (i.e., 500 MMBtu/hr), would be on the order of $40,000,000, excluding air pollution control equipment. Therefore, the planned modifications for the No. 4 Combination Boiler represent only about 4 percent of the cost of a new boiler. As a result, reconstruction is not triggered under the NSPS definitions.

3.2.2 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Maximum Achievable Control Technology (MACT) standards, codified in 40 CFR 63, were promulgated for industrial boilers on September 13, 2004, with an effective date of November 12, 2004. Subpart DDDDD, also known as the Industrial, Commercial, and Institutional Boiler and Process Heater MACT, regulates HAP metals (with PM as a surrogate), hydrogen chloride (HCl), and mercury (Hg) emissions from existing large solid fuel-fired industrial boilers. The compliance date for existing boilers is September 13, 2007.

Existing MACT sources may become subject to new source MACT if such sources are "reconstructed". In the General Provisions for the MACT Rules, 40 CFR 63, Subpart A, *reconstruction* is defined as follows:

> ***Reconstruction***, unless otherwise defined in a relevant standard, means the replacement of components of an affected or previously nonaffected source to such an extent that:
>
> (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and
>
> (2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator pursuant to Section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emission of hazardous air pollutants from that source.

The No. 4 Combination Boiler is in the large solid fuel-fired subcategory, and the applicable emission limits for bark/wood firing are 0.07 lb/MMBtu for PM (or 0.001 lb/MMBtu for total selected metals), 0.09 lb/MMBtu for HCl, and $9x10^{-6}$ lb/MMBtu for Hg. The compliance date for the boiler is September 13, 2007. SSCE will comply with the applicable standards by the compliance date. Based on the proposed project, the boiler will be able to comply with the PM (or total selected metals), HCl, and Hg limits by means of fuel analysis or stack testing.

As discussed above, the planned modifications to the boiler represent only about 4 percent of the cost of a new boiler. As a result, the No. 4 Combination Boiler will not be "reconstructed" for the purposes of the MACT rule.

3.2.3 FLORIDA RULES

The No. 4 Combination Boiler is subject to Rules 62-296.404 and 62-296.410, F.A.C. Rule 62-296.404, F.A.C., regulates Kraft Pulp Mills and contains a TRS emission standard for combustion equipment burning TRS gases. Rule 62-296.410, F.A.C., regulates carbonaceous fuel burning equipment and contains standards for opacity and PM. The standards applicable to the boiler are 30-percent opacity (except 40-percent opacity is allowed for up to 2 minutes per hour) and 0.3 lb PM/MMBtu for carbonaceous fuel plus 0.1 lb PM/MMBtu for fossil fuel. The modified No. 4 Combination Boiler will comply with these standards.

Table 3-1. Summary of PM Emissions from Historic Stack Tests Performed on No. 4 Combination Boiler , SSCE Panama City

	Test Date	
PM Emissions	October 2004	October 2003
Emission Rate, lb/hr	38.1	26.4
Emission Rate, lb/MMBtu	0.084	0.058

APPENDIX A

OVERFIRE AIR SYSTEM INFORMATION

TABLE A-1

CONTROL EQUIPMENT PARAMETERS [a]

NO. 4 COMBINATION BOILER VARIABLE THROAT SCRUBBER (VENTURI)

Manufacturer	FMC Link-Belt	
Model No.	200K Dual-Throat	
Date of Installation	1974	
Outlet Gas Temperature	140-150	°F
Outlet Gas Flow Rate	220,000-260,000	ACFM
Pressure Drop Across Device	8	inches of H_2O
Scrubber Media (b)	Water with caustic addition	
Scrubber Liquor Flow Rate (minimum)	1,096	gpm
Average Scrubbing liquor pH (c)	Variable	pH units
Control Efficiency - Particulate Matter (d)	90	%
- Sulfur Dioxide (e)	50-95	%
Maximum Permitted Particulate Matter Emission Rate (f)	39.0	lb/hr PM
Maximum Permitted Sulfur Dioxide Emission Rate (g)	1,183	lb/hr SO_2

(a) Control equipment parameters may vary according to process conditions.
(b) pH controlled with caustic
(c) SO_2 controlled by caustic addition to wet scrubber.
(d) Based on manufacturer's quote.
(e) Based on source test data.
(f) Based on 0.07 lb/MMBtu effective September 13, 2007 under the Maximum Achievable Control Technology (MACT) regulation for Industrial Boilers.
(g) From Permit No. 0050009-016-AC.

APPENDIX A

OVERFIRE AIR SYSTEM INFORMATION

3.1 COMBUSTION AIR SYSTEM UPGRADES – BASE SCOPE

3.1.1 HORIZONTAL MIXING ZONE (HMZ) OVERFIRE AIR (OFA) SYSTEM

To achieve the desired steam flow at an increased bark firing rate with reduced particulate and unburned carbon carryover levels, the existing OFA system will be replaced with new current day "state-of-the-art" technology and components. The Company recommends the addition of an HMZ OFA system, which will contribute to a significant improvement in the overall boiler, combustion system performance.

Introduction

A primary benefit of the HMZ OFA system will be a significant reduction in the amount of carryover. Carryover, essentially unburned fuel particles leaving the waterwall section of a burner, is a function of the drag coefficient of the particle, particle density, the upward furnace gas velocity and residence time. The available residence time for most units similar to the Purchaser's boiler is insufficient for all char particles to burn to completion without the aid of an effective OFA system. The Company's extensive R&D efforts have shown that char burnout becomes diffusion limited. That is, turbulence is required to dissipate the CO boundary layer around the char particle to further the combustion process. For a given furnace plan area, the gas velocity is a function of gas flow. By maximizing the quantity of effective OFA flow and minimizing the undergrate air (UGA) flow, the lower furnace gas velocity will be decreased. This will result in less carryover leaving the furnace. Carbon burnout is a function of a fuel's kinetic property, as well as residence time. Although the kinetic property of the fuel is relatively constant, the carbon burnout will improve due to increased furnace residence time resulting from lower furnace velocities.

All OFA systems attempt to provide the best combination of optimized mixing, uniform furnace velocity profile and effective use of excess air in the form of staging. The Company's HMZ OFA system is designed to optimize the stoichiometric mixing of unburned fuel particles above a stoker grate. By optimizing the air/fuel mixing just above the grate, the HMZ system can reduce carryover, improve combustion of volatiles, and provide more uniform gas temperatures and velocities at the furnace outlet. The HMZ OFA produces superior OFA mixing and a more uniform velocity distribution at the furnace outlet plane. The mixing zone is comprised of one row of single and double OFA nozzles situated along the front and rear walls of the furnace. The single and double nozzles alternate in a manner, which causes their respective airflows to create adjacent "shearing" surfaces within the depths of the furnace. These "shearing surfaces" are what enhance the mixing of air and char. An

additional benefit derived from incorporating the HMZ system is that the side to side temperature unbalance in the superheater is improved as a more uniform gas flow pattern is attained at the furnace outlet.

Referencing the test results for the existing Company application of an HMZ system at a paper mill in Louisiana gives a general idea of what might be expected if an HMZ were to be installed. With the installation of the HMZ OFA system on the Purchaser's power boiler, the bark firing capacity was increased almost forty percent (40%) over the design MCR bark firing rate. At the increased bark firing rate, it was found that all tests exhibited low unburned carbon content, which was directly attributable to the HMZ system by those running the tests. In addition, particulate emissions leaving the boiler were reduced by sixty percent (60%) with the installation of the HMZ system. The boiler was also able to operate at greatly reduced excess air levels.

The objectives and requirements of an effective OFA system, as provided by the HMZ design are summarized as follows:

- Provide Turbulence and Mixing
- Air streams must provide penetration.
- Air nozzle(s) positions, must provide coverage of the entire furnace plan area.
- Selections for uniform distribution of the OFA streams

The high velocity air streams from HMZ nozzles on the furnace sidewalls will provide the mixing momentum for completing the char combustion process. See Figures 2 and 3 for typical nozzle arrangement and flow pattern for five (5) nozzles per wall. Based on furnace dimensions at the Purchaser's facility, the Company is offering four (4) HMZ air nozzle assemblies per wall.

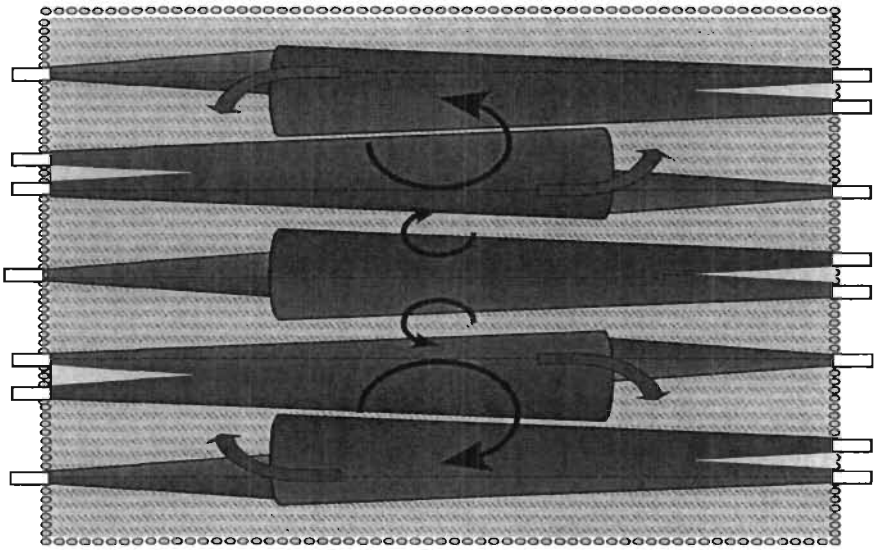

Figure 2 – Typical HMZ Nozzle Arrangement

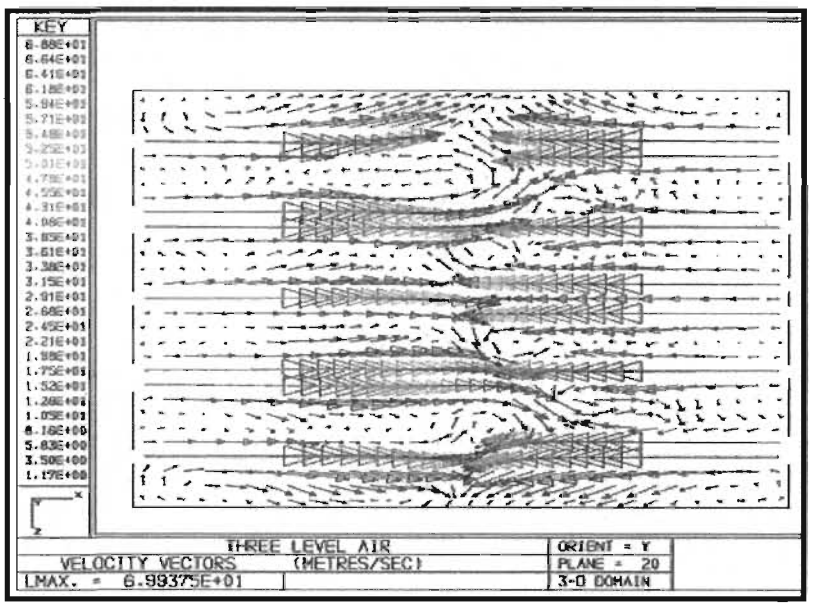

Figure 3 – HMZ Flow Pattern

The increase in the OFA system capacity will result in less available UGA flow while maintaining, or even reducing, the excess air. This reduced UGA quantity will result in lower gas velocities at the grate and fuel distributor levels, and thereby less entrainment of char and dry fuel. OFA system momentum will be increased to significantly enhance turbulence and burnout of solids and gaseous combustibles. This means combustible gases and particulate emissions will be reduced at the furnace outlet.

Minimizing the amount of UGA flow will also promote a thicker ash bed. A thicker ash bed will help insulate the grate, keeping operating temperatures lower. This will lead to potentially longer grate life. However, as UGA flow is minimized, care must be taken so that a good even side to side fuel bed is maintained. Fuel piling and side to side fuel maldistribution will create operational problems with reduced UGA flow, if not attended to by the operations personnel.

While an improved OFA system will reduce carryover and lower grate temperatures, its effectiveness will be enhanced by addressing other important areas such as optimizing excess air and furnace draft set points, ensuring proper fuel sizing and fuel distribution, providing proper UGA distribution and minimizing tramp air infiltration. ***Any boiler and air heater in-leakage should be minimized in order for the HMZ OFA system to operate at an optimum level.*** As an Option, the Company is offering a Fabric Stoker Seal to significantly reduce air in-leakage at the boiler to stoker interface.

Assumptions

Due to the lack of certain information and/or data, various assumptions had to be made when designing the equipment offered in this proposal. Following is a list of the assumptions made:

- All fans currently operate within the respective fan curves. Fan testing is recommended to confirm this.
- Since little to no current operating data was available, original design boiler data and fuel analysis were used as a basis for the Upgrade Predicted Performance.
- Bark supply and distribution on the grate is consistent and problem free
- Predicted airflow to the burner windbox includes leakage/cooling air. If the cooling air requirements are higher, this will affect the airflow distribution to the OFA level and affect overall performance.
- It is assumed that the existing burner air control dampers operate effectively to maintain minimum flow control to the existing burners.
- Indicated (Test Data) excess air levels are high 5 - 9%. It is unknown where the source of tramp air is. The Predicted Performance is based on 30% excess air in the gases leaving the furnace (O_2 - 4.87% vol. wet) at the Design Load of 300,000 lb/hr (Bark & Coal) and therefore the ability to distribute OFA & UGA flows as per design. If air leakage or cooling air flow at the undergrate or burner windbox is greater than predicted, this will impede the ability to provide the required air to the OFA level at the design excess air.
- No known operating problems re: excessive erosion, fouling etc.

- New airflow control dampers and flow devices are provided to replace the existing ones assuming the existing devices are inadequate.

Material Description

The HMZ OFA arrangement consists of single and double-opposed nozzle assemblies. The HMZ OFA nozzles will be located on the front and rear furnace walls above the burners at an elevation of approximately 30'. The nozzle arrangement is such that a single nozzle directly opposes a double nozzle located on the opposite furnace wall. The nozzles discharge horizontally at a high velocity to establish a high degree of penetration and mixing in the furnace. The single opposing nozzle prevents the strong double nozzle from impinging on the opposite wall. The HMZ nozzles will contain manual velocity dampers, which are set up to maintain constant jet velocity, or pressure, through a wide range of air flows (loads).

Four (4) sets of openings in each of the front and rear walls will be provided for installation of the nozzle assemblies. The openings for the nozzles will be formed by bent tube inserts, which will be installed in the field.

The front and rear wall oriented nozzles in the HMZ system arrangement will receive air through the existing hot air ducts currently used to supply the undergrate air. The Company's workscope will include two (2) overfire air supply ducts, which will connect the existing hot air ducts (from the tubular air heater), to the nozzles at the front and rear of the boiler.

The supply ducts will be supported off the existing undergrate air ducts, and the furnace walls. An expansion joint will be provided in each of the two (2) supply ducts, downstream from the connection with the existing hot air duct. An OFA control damper, including electric drive, will be installed in each of the supply ducts to optimize airflow distribution to the nozzles in the HMZ OFA System. See drawing G-MS-1117-01, in the Drawings Section of this proposal, for the HMZ OFA arrangement.

Airflow Measurement

The volume of combustion air being delivered to the HMZ OFA nozzles needs to be indicated to maintain optimum control and distribution of the air flow. The Company scope of supply includes two (2) airflow monitoring devices, including transmitters, to be installed in the OFA

ductwork, to accomplish this. Local pressure gauges, and pressure and temperature transmitters will be located in the OFA supply ducts.

A total of two (2) air flow measuring devices, one (1) per side, will also be installed in the existing hot air ducts from the air heater to measure the burner and the total bark combustion air flows. The existing air flow measuring devices which currently measure the undergrate and overfire air will be re-used and relocated, as required. ~~also be measured through the installation of two (2) air flow measuring devices, one (1) in each of the two (2) existing hot air ducts which supply the UGA and OFA systems.~~

New Burner and Undergrate Air Control Dampers

To achieve better airflow distribution and control, the existing burner air control and undergrate air control dampers will be replaced with new dampers. The existing burner air duct control dampers will each be replaced with a new damper arrangement. The existing damper drives will be reused.

The Company scope of supply will include new dampers to replace the existing undergrate air flow control dampers. The existing damper drives will be reused. It is anticipated that the new dampers will be inserted in the existing damper frame and the existing blades will be removed. The space between the dampers will be closed with plate to reduce the total free area.

The Company will also supply two (2) manual adjustable orifice plate dampers to be installed in the undergrate air duct. These dampers will also be supplied as part of the new undergrate air supply duct. The installation of these two (2) dampers will provide better control of airflow while maintaining the maximum pressure to the OFA ducts and nozzles.

Figure 4 provides airflows and duct sizes for the HMZ OFA duct arrangement. Figure 5 provides a flow schematic of the HMZ OFA arrangement.

ALSTOM CANADA INC., POWER

PERFORMANCE ENGINEERING — STD. NO: / ISSUE DATE:

New Bark Boiler Air System w/ HMZ Over Fire Air Design - Power Boiler #4

Fuel	**Bark @ 50%mc+Coal**		Elevation	100' asl
Fuel Factor	n/a		Elevation	1.005
Air Moisture corr.	1.01	(0.018 #H2O/#da)	Factor	
Steam Capacity	**300,000 #/hr**			

Note: All New Duds and Modified Equipment are Shown in **Bold**

Item Description	Quantity Per Boiler	Total Weight (lb/hr)	Temp. (°F.)	Total Volume (CFM)	Max. Velocity (ft/min)	Min.Dud Area ** (ft^2)	Operating Pressure (in. w.g.)
Total Combustion Air (ind.Leakage Air)		514,100					
A Air from FD Fan	1	489,000	80	109,278	2,500	43.7	+16.0
B Hot air from Air Heaters	2	489,000	486	192,806	3,708	26.0	+13.0
B1 Total Comb. Air Flow Device	**2**	**489,000**	**486**	**192,806**	**3,708**	**26.0**	**+13.0**
Aux Fuel / Coal Burner Air							
C Hot air to Burners	2	189,100	486	74,737	1,661	22.5	+12.0
C1 Brnr Air Dud Damper* **	**2**	**189,100**	**486**	**74,737**	**3,000**	**12.5**	**+11.0**
Bark Air							
D Total Bark Airflow	2	279,900	486	110,624	1,856	29.8	+12.0
D1 Total Bark Air Flow Device	**2**	**279,900**	**486**	**110,624**	**1,856**	**29.8**	**+12.0**
E HMZ-1 Bark OverFireAir (OFA)	**2**	**139,950**	**486**	**55,444**	**3,000**	**9.2**	**+11.0**
E1 HMZ-1 Flow Device	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
E2 HMZ-1 Control Damper	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
E3 HMZ-1 Manifold Dud	**2**	**139,950**	**486**	**55,711**	**3,000**	**4.6**	**+9.0**
E4 HMZ-1 OFA (1X)-Nzl Feed	**4**	**139,950**	**486**	**55,980**	**3,000**	**1.6**	**+7.0**
E5 HMZ-1 OFA (2X)-Nzl Feed	**4**	**139,950**	**486**	**55,980**	**3,000**	**3.1**	**+7.0**
E6 HMZ-1 OFA (1X)-Nzl	**12**	**139,950**	**486**	**55,980**	**13,000**	**0.36**	**+7.0**
F Undergrate Air (UGA)	2	139,950	486	55,577	1,544	18.0	+10.0
F1 UGA Control Damper* **	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
F2 UGA Orifice Damper	**2**	**139,950**	**486**	**55,577**	**5,000**	**5.6**	**+10.0**
Coal Pulverizer Air							
G Hot Air to Coal Pulverizer	1	20,000	486	7,942	1,588	5.0	+10.0

Furnace Leakage Air (ind.Brnr. Leakage)	25,100
Bark Distributor Air	0
Air for other Fuel Sources - NCG's	0

Note: ** Air Dud Sizes shown are minimum recommended dud sizes

*** Existing Flow Control Dampers C-1 (Burner Air) & F1 (UGA) to be modified

HMZ OFA Nozzle Locations:

HMZ - 1 Location - Front and Rear Wall above platform Elev. 28'-0"

REVISIONS:			Prop. No.		Cont. No. 30543514
Rev.1	Removed HMZ-2 OFA Level	May 02/05 ORB	Customer:	Smurfit Stone Panama City	
			Eng'd By:	D.Burton	Date: 22-Apr-04
			Chk'd By:		Date:

AIR DUCT DESIGN - DATA SHEET - #4 PB | **Bark/Coal/Oil/NCG - 300,000#/hr Steam** | **1**

Figure 4 – Air Duct Design

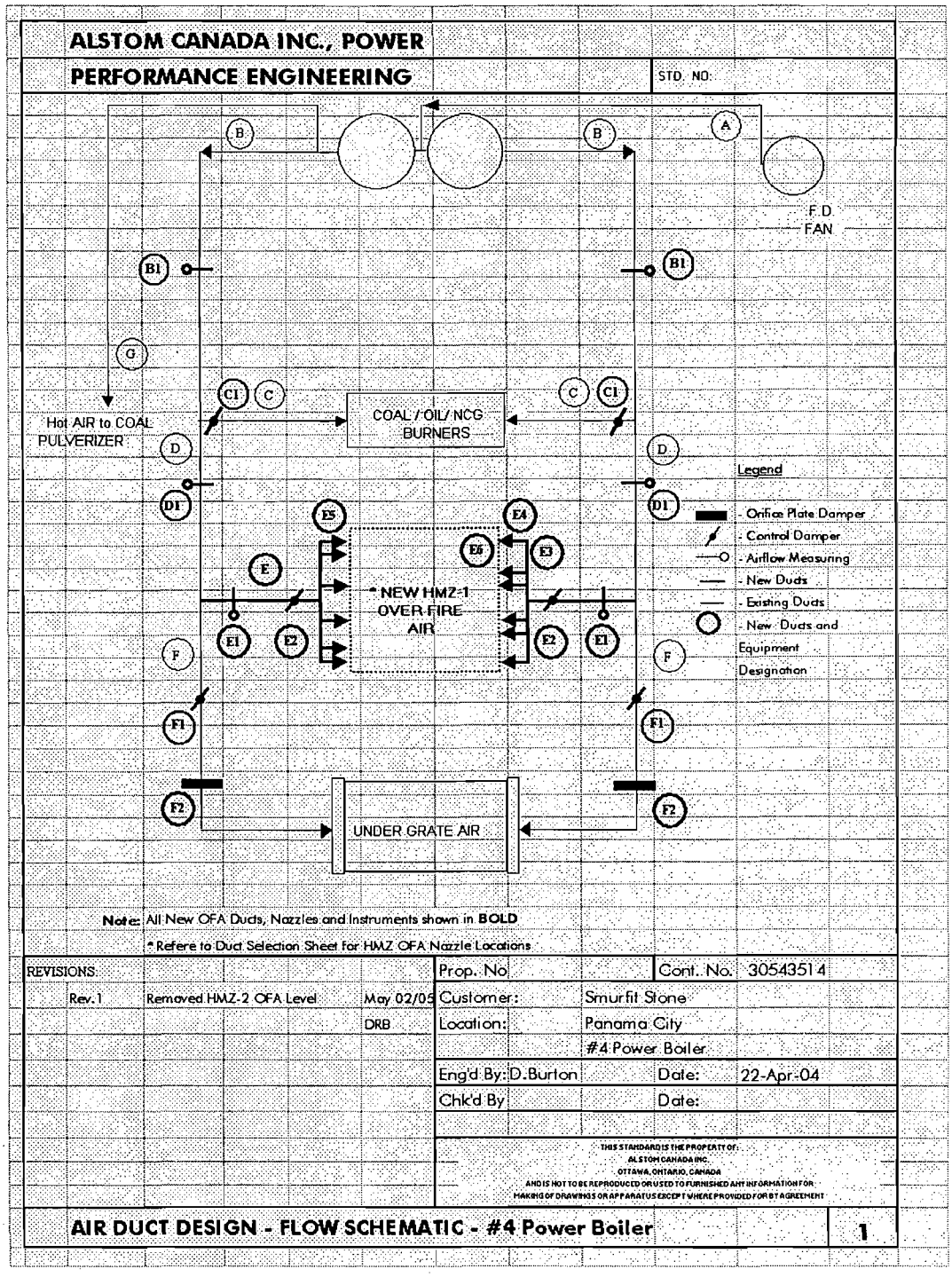

Figure 5 – New OFA System Flow Schematic

Forced Draft (FD) Fan

The HMZ OFA system is designed to provide up to fifty percent (50%) of the total stoker combustion air requirements. The design of this system is based upon the existing FD fan being capable of producing at least 10" wg pressure at the OFA nozzles, to increase the OFA discharge velocity to over 200 feet per second. Based upon a review of the FD fan curve, it appears that this fan has sufficient static pressure capacity to supply the static pressure and volumetric flow rates required for operation with the HMZ OFA System. However, this is based on the assumption that the fan is operating per the fan curve. It is strongly recommended that fan testing be conducted to confirm that the fan is operating per the curve. See the fan capacities provided below in Figure 6.

The Company has based this offering on the assumption that the ID fan is also capable of providing the rated static pressure and flow requirements.

Subject:	#4 Power Boiler - Fan Capacities					
FD Fan *						Notes:
		Existing FD Fan		**Upgrade Design - 300K**		
		MCR	**TestBlock**	**New MCR**	**Margin**	
Flow	LB/HR	446,000	537,000	501,200	579,300	Fan Predicted Performances
	ACFM	101000	126250	113,500	136,200	are based on Upgrade Design
SP	"wg	10.1	15.2	**16.0**	20.0	Load - 300,000 #/hr Steam
Temp	F	80	100	80	100	Flow
RPM		940	1180			
BHP		186	348			
* Existing FD Fan Performance taken from Fan Data provided on American Standard Dwg #12924						
ID Fan **						
		Rebuilt ID Fan		**Upgrade Design Operation**		
		MCR	**Testblock**	**New MCR**	**Margin**	
Flow	LB/HR		752,400	587,300		
	ACFM		285,000			
SP	"wg		34.0			
Temp	F					
RPM			820			
BHP			2200			
* Rebuilt ID Fan Performance taken from Fan Curve provided by Barron Ind. Feb 25/05						

Figure 6 – Fan Capacities

Pressure Part Work

Installation of the eight (8) HMZ OFA nozzle assemblies will require new tube inserts to form the openings in the furnace walls. Two (2) tube insert section will be required for each nozzle opening. The tube inserts will be supplied as individual loose tubes, pre-bent, with edge bars and scarfed tube ends. Tube inserts will match or be equivalent to the existing waterwall tubing specification.

Existing OFA Ductwork and Openings

The existing OFA ductwork will be removed or blanked off, as required. Refractory and plate will be used to close off the existing overfire air port openings in the furnace walls.

Control Philosophy for the New Overfire Air System

The new HMZ OFA System consists of an interlaced arrangement of four (4) sets of damper assemblies (constant velocity dampers) on each of the front and rear walls. These damper assemblies are manually set based on local pressure readings.

The two (2) ducts that feed the OFA compartments each have an air flow device, a flow control duct damper (new Beck drives), and a pressure transmitter. Refer to the Air Duct Design Flow Schematic previously shown as Figure 4.

A Sama control diagram will be furnished in the contract stage.

For a list of new instrumentation supplied with the system, refer to the instrument list in Table 1 below.

Item	Tag	Description	Quantity	Make	Model No	Range (Design)
TOTAL AIR FLOW						
1	xx-FT-xxx	Coal/Oil/NCG Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	238050 lbs/hr
2	xx-FT-xxx	Coal/Oil/NCG Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	238050 lbs/hr
NEW HMZ OVER FIRE AIR						
5	xx-FT-xxx	Bark Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	133500 lbs/hr
6	xx-FT-xxx	Bark Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	133500 lbs/hr
7	xx-FT-xxx	Overfire Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	66750 lbs/hr
8	xx-FT-xxx	Overfire Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	66750 lbs/hr
9	xx-FZ-xxx	Overfire Air Duct Damper Actuator (Left)	1	Beck	Series 11	
10	xx-FZ-xxx	Overfire Air Duct Damper Actuator (Right)	1	Beck	Series 11	
11	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Left#1)	1	Dwyer		
12	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Left#2)	1	Dwyer		
13	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Right#1)	1	Dwyer		
14	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Right#2)	1	Dwyer		
15	xx-PT-xxx	Overfire Air Duct Pressure Transmitter (Left)	1	Rosemount		
16	xx-PT-xxx	Overfire Air Duct Pressure Transmitter (Right)	1	Rosemount		
17	xx-TT-xxx	Temperature Transmitter for Airflow Temperature Compensation	1	Rosemount		0-500°F

Table 1 – Instrument List

Note: Items number 5 and 6, air flow devices, in Table 1 – Instrument List, have been deleted from the scope of supply.

Air System Control:

a) Air Flow Calculations

The Under Grate airflow can be calculated by subtracting the Total Bark Air Flow from the HMZ OFA.

The Coal/Oil/NCG Burner airflow can be calculated by subtracting the Total Bark Air Flow from the Total Air Flow

b) Combustion Control

The Under Grate and OFA Systems are modulated based on total hog fuel feed. The Control room operator will be able to adjust the split between Under Grate and OFA Systems. The Company expects the air flow split to be fifty percent (50%) Under Grate Air (UGA) and fifty percent (50%) OFA, but final values will be determined during commissioning.

Predicted Performance

With the installation of the equipment supplied, the Company predicts the performance as shown below in Table 2:

#4 (CE) Power Boiler - Predicted Performances						
Conditions		**Original Design**	**Upgrade Design -New HMZ OFA**			
		Wood (45% moisture) + Coal	**Wood (50% moisture) + Coal**	**Wood (45% moisture) + Coal**	**Max. Wood (50% Moisture) + Coal**	**Wood (50% moisture) + Coal + Oil + NCG**
Steam Flow	Lbs/hr	300,000	300,000	300,000	300,000	300,000
Wood Steam Flow	Lbs/hr	180,000	180,000	215,200	210,900	180,000
Coal Steam Flow	Lbs/hr	120,000	120,000	84,800	89,100	70,000
Oil Steam Flow	Lbs/hr	0	0	0	0	30,000
NCG Steam Flow	Lbs/hr	n/a	0	0	0	20,000
Steam Temp/Press	F / psig	950 / 1275	950 / 1275	950 / 1275	950 / 1275	950 / 1275
Feedwater Temp	F	280	280	280	280	280
Excess Air @ TAH In	%	25%	30%	30%	30%	25.5%
Air Temps						
- to Fan	F	80	80	80	80	80
- to Furn.	F	486	486	486	486	486
Bark Fuel Flow	Tons/hr	30.0	39.5	39.5	44.2	37.6
Bark Moist. Content	% m.c.	45.0	50.0	45.0	50.0	50.0
Coal Fuel Flow	Lbs/hr	15,160	12,379	9,420	9,920	7,770
Oil Flow	Lbs/hr	0	0	0	0	2,330
NCG Flow	scfh	0	0	0	0	99,000
Thermal Eff.	%	75.5%	72.9%	73.7%	71.7%	72.0%
Total Air Flow to Unit (incl.5%Leakage)	Lbs/hr	446,000	477,000	469,600	482,500	514,400
OFA / UGA Ratio	%	n/a	50 / 50	45 / 55	50 / 50	50 / 50
Exit Gas Flow @ TAH In	Lbs/hr	n/a	566,500	556,400	579,300	602,700
Exit Gas Temp.	degF	382	385	385	390	380
Carbon Loss %			2.0	2.0	2.0	2.0
GHI (Wood) x 10^6	Btu/hr	283.8	339.7	373.7	380.5	323.4
GHI (Coal) x 10^6	Btu/hr	200.1	163.4	124.3	131.0	102.5
GHI (Oil) x 10^6	Btu/hr	0	0	0	0	42.6
GHI (NCG) x 10^6	Btu/hr	n/a	0	0	0	41.0
GHI (Total Fuel) x 10^6	Btu/hr	483.9	503.1	498.0	511.5	509.5
GHRR (Grate Heat Rate)	Btu/hr-ft2	895,000	1,071,000	1,178,500	1,200,000	1,019,900

Table 2 – Predicted Performance

3.1.2 COMPUTATIONAL FLUID DYNAMICS (CFD) BOILER MODELING

As a tool to evaluate the current operation of the subject boiler and support performance guarantees for the equipment to be installed, the Company's scope of supply will include Computational Fluid Dynamics (CFD) Modeling. The scope of the CFD modeling study will include the following activities:

1. Establish the boiler's baseline conditions.
2. Evaluate the boiler's flow and mixing characteristics, and relative emission levels.
3. Produce a baseline model and tune to measurements obtained from field data collection at the site.
4. Check the modification design configurations and optimize the upgrade boiler's combustion air system design.

The baseline model will include generation of a three dimensional (3-D) CFD model of the boiler in its existing condition. To develop the most accurate representation of the subject boiler, a data collection phase will be conducted at the Panama City Mill to view the operation, and gather

necessary process, air, and fuel flow inputs required for the CFD models. The baseline conditions will be modeled and calibrated to available emissions data and field operating data.

The baseline simulations will include bark firing and combined firing of bark, coal, oil, and waste gases, to support the commercial guarantees. The CFD model will illustrate the 3-D flow, temperature, species and particulate patterns for a representation of the current and retrofit air system arrangements at two (2) steaming rates. Using CFD, a total of eleven (11) runs are proposed to understand the behavior of the baseline, and alternate operating conditions with both bark and bark/coal/oil firing. A number of operating conditions will be evaluated to represent nominal bark, coal and oil firing scenarios.

After calibrating the baseline case, the matrix of runs for the retrofit cases will be performed. The retrofit model will contain the new air system configuration and several possible options for nozzles in service to allow tuning of the design. The retrofit models will be generated with a new geometry that includes the new air system, current burners to be reused, and any other changes. A total of eleven (11) runs are included in the cost estimate. These CFD runs will evaluate the performance of the OFA design under a range of possible bias conditions that may occur.

A final report will serve as the deliverable for the CFD Modeling Study. The report will provide the study results on CD in electronic format and include both Word and PowerPoint presentations. These files will include color plots, animations, and charts. The documentation will describe the approach, modeled geometries, inputs and results specific to this boiler modeling study. The text will describe the CFD model assumptions, dimensions, flow rates, and tabulations of the results. This will also include charts and graphs to quantify the flow distribution, temperatures and species. The results for each of the runs will be described to clearly identify the differences. Color contour plots, isosurfaces of velocity and pressure and other useful graphics will be included with annotations to explain the relevant aspects of the modeling task.

APPLICATION TO MODIFY
NO. 4 COMBINATION BOILER
SMURFIT-STONE CONTAINER ENTERPRISES
PANAMA CITY MILL

Prepared For:
Smurfit-Stone Container Enterprises
One Everitt Avenue
Panama City, Florida 32402

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

September 2005

0537542

DISTRIBUTION:
5 Copies – FDEP
3 Copies – SSCE
1 Copy – Golder Associates Inc.

APPLICATION FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Smurfit-Stone Container Enterprises, Inc.**
2. Site Name: **Panama City Mill**
3. Facility Identification Number: **0050009**
4. Facility Location...:
   Street Address or Other Locator: **One Everitt Avenue**
   City: **Panama City** County: **Bay** Zip Code: **32402**
5. Relocatable Facility? ☐ Yes ☒ No
6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Tom Clements, Environmental Superintendent**
2. Application Contact Mailing Address...
   Organization/Firm: **Stone Container Corporation**
   Street Address: **One Everitt Avenue**
   City: **Panama City** State: **FL** Zip Code: **32402**
3. Application Contact Telephone Numbers...
   Telephone: **(850) 785-4311** ext.**470** Fax: **(850) 763-8530**
4. Application Contact Email Address: **tlclements@smurfit.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	
2. Project Number(s):	
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

FACILITY INFORMATION

Purpose of Application

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

Air Construction Permit

☒ Air construction permit.

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 modify the No. 4 Combination Boiler at the Panama City Mill in order to meet the Industrial Boiler MACT.

FACILITY INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
016	No. 4 Combination Boiler		

Application Processing Fee

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

FACILITY INFORMATION

Owner/Authorized Representative Statement

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

1. Owner/Authorized Representative Name :
   B.G. Sammons, General Manager

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Smurfit-Stone Container Enterprises, Inc.**
   Street Address: **One Everitt Avenue**
   City: **Panama City** State: **Florida** Zip Code: **32402**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(850) 785-4311** ext. Fax: **(850) 763-6290**

4. Owner/Authorized Representative Email Address: **bgsammons@smurfit.com**

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.

   B B Sammons — Signature

   8/29/05 — Date

FACILITY 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

FACILITY 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
Signature

8/31/05
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. 4 Combination Boiler

3. Emissions Unit Identification Number: **016**

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:
The Batch Digester System and Multi-Effect Evaporator System may vent non-condensable gases (NCGs) to the No. 4 Combination Boiler as a backup control device. The No. 4 Combination Boiler may also act as a backup to the No. 3 Combination Boiler for condensate stripper off-gas (SOG) destruction.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

021 - Thermal destruction of TRS and HAP gases (as a backup to the Lime Kiln and the No. 3 Combination Boiler)

053 - Venturi Scrubber

2. Control Device or Method Code(s): **021, 053**

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: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **39.0** lb/hour **170.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.07 lb/MMBtu** Reference: **40 CFR 63, Subpart DDDDD**	7. Emissions Method Code: **0**
8. Calculation of Emissions: **Hourly: [(474 MMBtu/hr) (wood/bark) + (83 MMBtu/hr) (fuel oil)] x 0.07 lb/MMBtu = 39.0 lb/hr** **Annual: 39.0 lb/hr x 8,760 hr/yr x 1 ton/2,000 lb = 170.7 TPY**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Maximum emissions based on firing a combination of wood/bark and No. 6 fuel oil.**	

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 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.3 lb/MMBtu**	4. Equivalent Allowable Emissions: **86.7** lb/hour **379.75** tons/year
5. Method of Compliance: **Annual test using EPA Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0050009-016-AC and Rule 62-296.410(1)(b)2; for carbonaceous fuel firing. Allowable emissions are 86.7 lb/hr (379.75 TPY) when any combination of fuel is utilized.**	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.1 lb/MMBtu**	4. Equivalent Allowable Emissions: **47.3** lb/hour **207.2** tons/year
5. Method of Compliance: **Annual test using EPA Test Method 5.**	
6. Allowable Emissions Comment (Description of Operating Method): **Rule 62-296.410(1)(b)2; for fossil fuel firing. Allowable emissions are 86.7 lb/hr (379.75 TPY) when any combination of fuel is utilized.**	

Allowable Emissions Allowable Emissions 3 of 3

1. Basis for Allowable Emissions Code: **RULE**	2. Future Effective Date of Allowable Emissions: **09/13/2007**
3. Allowable Emissions and Units: **0.07 lb/MMBtu**	4. Equivalent Allowable Emissions: **39.0** lb/hour **170.7** tons/year
5. Method of Compliance: **EPA Method 5**	
6. Allowable Emissions Comment (Description of Operating Method): **Based on 40 CFR 63, Subpart DDDDD.**	

PART B

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(continued)

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1.0 INTRODUCTION

Smurfit-Stone Container Enterprises (SSCE) is proposing changes to the No. 4 Combination Boiler at its Kraft pulp and paper mill located in Panama City, Bay County, Florida. The SSCE Panama City Mill consists of the following major plant areas: woodyard, digester system, brown stock washing system, bleaching system, chemical recovery area, paper drying/converting/warehousing, and power/ utilities area. The Panama City Mill is currently operating under Title V Permit No. 0050009-020-AV, issued July 29, 2005.

SSCE currently operates the No. 4 Combination Boiler to generate steam and electricity for the papermaking process. The boiler burns bark/wood, coal, No. 6 fuel oil, No. 2 fuel oil, and small quantities of natural gas (during start-up). In addition, the boiler serves as a destruction device for noncondensable gases (NCGs) and condensate stripper off-gas (SOG), which are generated by various process sources.

SSCE is requesting changes to the No. 4 Combination Boiler in order to allow the boiler to meet the Maximum Achievable Control Technology (MACT) standards for Industrial Boilers, promulgated under Title 40 of the Code of Federal Regulations, Part 63 (40 CFR 63), Subpart DDDDD. The compliance date for existing boilers under Subpart DDDDD is September 13, 2007. The changes will consist solely of improvements to the overfire air (OFA) system of the boiler and improvements to the existing wet venturi scrubber. No capacity increase (steam production) will result from the changes.

If the proposed project for the No. 4 Combination Boiler proves successful, SSCE will be able to meet the Boiler MACT limit for total select metals (TSM) or particulate matter (PM) prior to the compliance date of September 2007. The Boiler MACT limit for TSM is 0.001 pounds per million British thermal units (lb/MMBTU) or, alternatively, the Boiler MACT limit for PM is 0.07 pounds per million British thermal units (lb/MMBtu). This limit represents a reduction in PM emissions for the boiler- from the current emissions of approximately 0.084 lb/MMBtu (based on recent stack tests). If this proposed project moves forward at this time, but the project does not reach the goal of attaining the MACT TSM limit of 0.001 lb/MMBtu or PM limit of 0.07 lb/MMBtu, SSCE will still have time to make additional changes to the boiler and/or air pollution control system prior to September 2007 deadline.

This air construction permit application is organized into two additional sections, followed by an appendix. A description of the project, including air emission sources and pollution control equipment, is presented in Section 2.0. The regulatory applicability analysis for the proposed project is presented in Section 3.0.

Through this application, SSCE is requesting that a minor source construction permit be issued to allow the No. 4 Combination Boiler to move forward as quickly as possible with the planned changes.

2.0 PROJECT DESCRIPTION

SSCE is proposing to modify the No. 4 Combination Boiler to meet the Industrial Boiler MACT rules for TSM or PM. The Industrial Boiler MACT rules require that emissions from solid fuel-fired boilers be limited to TSM emissions of 0.001 lb/MMBtu or PM emissions of 0.07 lb/MMBtu of heat input.

The facility is currently operating under Title V Permit No. 0050009-020-AV, issued July 29, 2005. The facility is located at One Everitt Avenue, Panama City, Bay County, Florida. The following sections describe the proposed project in more detail.

2.1 NO. 4 COMBINATION BOILER'S EXISTING OPERATION

The No. 4 Combination Boiler is operated to provide steam to the papermaking process and the turbine generators that provide electricity for the facility. The boiler is a Combustion Engineering (CE) design installed in 1964, with a design steam rating of 330,000 lb/hr when burning a combination of wood/bark and coal. The No. 4 Combination Boiler is permitted to burn the following fuels and gases:

- Carbonaceous fuel (includes bark, wood, and primary clarified wood fibers);
- Bituminous coal, with a sulfur content not to exceed 1.7 percent by weight;
- No. 6 fuel oil, with a sulfur content not to exceed 2.4 percent by weight;
- No. 2 fuel oil;
- Natural gas;
- Non-condensable gases (NCGs) from the low-volume, high concentration (LVHC) gas collection system, as a backup to the No. 4 Lime Kiln; and
- Condensate stripper off-gas (SOG), as a backup to the No. 3 Combination Boiler.

The No. 4 Combination Boiler currently is permitted to operate up to a maximum heat input rate of 545 MMBtu/hr, based on a 24-hour average. For carbonaceous fuel burning, the maximum heat input is limited to 474 MMBtu/hr. Based on a minimum heat content of 7,900 Btu/lb, dry basis, this heat input rate is equivalent to a maximum bark/wood burning rate of 30.0 TPH (dry).

The maximum heat input for the boiler for coal firing is 395 MMBtu/hr. Based on a heating value for coal of 12,500 Btu/lb, this heat input rate is equivalent to 15.8 TPH of coal.

The maximum heat input for the boiler when firing No. 6 fuel oil is 472 MMBtu/hr. Based on a heating value for No. 6 fuel oil of 150,000 Btu/gal, this heat input rate is equivalent to 3,147 gal/hr of No. 6 fuel oil.

The maximum heat input for the boiler when firing No. 2 fuel oil is also 472 MMBtu/hr. Based on a heating value for No. 2 fuel oil of 136,000 Btu/gal, this heat input rate is equivalent to 3,471 gal/hr of No. 2 fuel oil. The boiler contains a total of four (4) oil burners.

The maximum heat input when firing natural gas is 512 MMBtu/hr. Based on a minimum heating value for natural gas of 1,000 Btu/scf, the maximum natural gas firing rate is 512,000 scf/hr. There are total of eight (8) gas ignitors installed in the boiler.

The No. 4 Combination Boiler also serves as the backup control device for the NCGs from the LVHC gas collection system and for the condensate SOG. HAPs and TRS emissions are controlled by injecting the gases into the boiler with the primary fuel or into the flame zone of the boiler, or with the combustion air. TRS gases are subject to a minimum of 1,200°F incineration temperature for at least 0.5 seconds.

SO_2 emissions from the boiler are controlled by limiting the sulfur content of the coal and fuel oil to a maximum of 1.7 percent and 2.4 percent by weight, respectively. SO_2 emissions are controlled, when firing 100 percent fuel oil and/or incinerating TRS or SOG gases, by maintaining the pH of the venturi scrubber scrubbing medium above 8.0, except during an unscheduled outage of the Lime Kiln. For an unscheduled switch of TRS gases from the Lime Kiln to the No. 4 Combination Boiler, an interim period of 30 minutes is allowed in order to achieve a scrubbing medium pH level of 8.0 or greater.

PM emissions are controlled by a fly ash arrestor (Process Equipment Model AR56UACB-8-7), followed by a wet venturi scrubber manufactured by FMC Link-Belt (model 200K dual-throat). The original design of the venturi scrubber incorporated a variable throat (moveable plate) to allow variation of the pressure drop across the scrubber. However, many years ago the throat adjustment mechanism failed, and the plate was welded at a fixed location.

The boiler is regulated under Rule 62-296.410, F.A.C., Carbonaceous Fuel Burning Equipment; Rule 62-296.404, F.A.C., Kraft Pulp Mills; and 40 CFR, Part 63, Subpart S. The boiler is also subject

to the requirements of 40 CFR 63 Subpart DDDDD; however, the unit is not required to be in full compliance with this subpart until September 13, 2007.

2.2 NO. 4 COMBINATION BOILER'S PROPOSED MODIFICATIONS

SSCE is proposing upgrading the biomass combustion air system and the scrubber to the No. 4 Combination Boiler solely to reduce PM emissions and meet the Boiler MACT rule. In order to attain the desired operation of the boiler, and meet the Industrial Boiler MACT standard for TSM or PM, SSCE is proposing the following changes to the No. 4 Combination Boiler:

- Upgrading the combustion air system, including the OFA system, to achieve the following under all firing conditions: reduce unburned carbon to 20 percent or less; provide stable combustion with a constant negative furnace pressure; and reduce PM emitted from the furnace to the multi-clone dust collector to less than 4.2 lbs/MMBtu and
- Return the existing fixed-throat venturi scrubber to its original design of variable-throat, with additional improvements to achieve TSM emissions of less than 0.001 lb/MMBtu or PM emissions of less than 0.07 lb/MMBtu at the outlet of the wet scrubber;

SSCE is proposing to upgrade the existing OFA system on the boiler. Such systems have been installed on a number of bark/wood boilers throughout the country, and have resulted in positive improvements to the boilers, including increased combustion efficiency and a reduction in the amount of excess air used in the boiler, while decreasing emissions of PM/PM_{10}, carbon monoxide (CO), and volatile organic compounds (VOC) on a lb/MMBtu basis. Emissions of nitrogen oxides (NO_x) can be maintained at the existing lb/MMBtu levels. Components of the OFA system which will be added or modified consist of OFA port locations, ductwork, velocity dampers, air nozzle assemblies, air flow measuring devices, and combustion controls. General information regarding the Alstom system is included in Appendix A.

SSCE has committed to installing an OFA system designed by Alstom on the Panama City No. 4 Combination Boiler. At the SSCE mill in Florence, South Carolina, a similar upgrade to their No. 3 Boiler OFA system was completed by Alstom last year that resulted in a 75% reduction of particulate emissions. As was expected, the No. 3 Boiler OFA system upgrade at our Florence mill resulted in reduced quantities of flyash leaving the furnace but also resulted in an unexpected increase in bottom ash that required subsequent upgrade to the bottom ash handling system. The South Carolina DHEC made the determination that NSR was not applicable to the No. 3 Boiler OFA system upgrade project at our Florence, South Carolina, mill.

The original design of the venturi scrubber incorporated a variable throat (moveable plate) to allow variation of the pressure drop across the scrubber. The system included a plate mounted on a set of gears, which allowed the plate to be adjusted to achieve the desired level of pressure drop. However, many years ago the throat adjustment mechanism failed, and the plate was welded at a fixed location, resulting in a fixed-throat venturi.

SSCE now desires the return the venturi to its original variable-throat design. This will provide more control over pressure drop through the scrubber and therefore over PM emissions. Through this upgrade and the changes to the boiler, SSCE believes it can meet the Boiler MACT standard for TSM or PM.

The proposed project will not result in any increase in steam rate for the boiler. The boiler has been able to achieve its design steam production rate of 330,000 lb/hr when burning a combination of bark/wood and fossil fuels. For example, during the last two compliance tests of the boiler, steam production rates of up to 323,000 lb/hr were attained.

Nor will the project result in any increase in annual steam production. The boiler currently operates at approximately a 72-percent capacity factor, and this will not change due to the project.

The current permitted maximum hourly heat input rates for the various fuels will not change as part of this project. The maximum heat input rate due to firing coal, No. 6 fuel oil, No. 2 fuel oil, or natural gas will not be affected by the proposed project.

2.3 AIR EMISSION ESTIMATES AND POLLUTION CONTROL EQUIPMENT

PM/PM_{10} emissions from the No. 4 Combination Boiler are currently controlled by a mechanical collector followed by a venturi scrubber. SSCE is proposing to upgrade the boiler OFA system and venturi scrubber to meet the Boiler MACT standards. This upgrade is expected to decrease emissions of PM/PM_{10}, CO, and VOC on a lb/MMBtu basis, while maintaining NO_x emissions on a lb/MMBtu basis.

PM emissions from the No. 4 Combination Boiler are currently limited to 0.3 lb/MMBtu for carbonaceous fuel and 0.1 lb/MMBtu for No. 6 fuel oil. Total mass PM emissions are limited to

109.5 lb/hr. SO_2 emissions are limited to 1,183 lb/hr when combusting NCG and SOG, and 772 lb/hr when not combusting NCG or SOG.

2.3.1.1 Future Potential Emissions

Future emissions from the No. 4 Combination Boiler will be limited to either 0.001 lbs of TSM/MMBtu or 0.07 lbs of PM/MMBtu, which is equivalent to the NESHAPs promulgated for Industrial Boilers under 40 CFR 63, Subpart DDDDD. This is a significant reduction from the current PM limit of 0.3 lb/MMBtu for wood/bark burning and 0.1 lb/MMBtu for fuel oil burning. The proposed emission limit is equivalent to a maximum PM emission rate of 39.0 lb/hr and 170.7 TPY for any fuel combination.

As described previously, no increase in NO_x emissions due to bark/wood firing is expected on a lb/MMBtu basis due to the proposed project. Future CO and VOC emissions in terms of lb/MMBtu will decrease due to the proposed project.

3.0 AIR QUALITY REVIEW REQUIREMENTS

Federal and State air regulatory requirements for a major new or modified source of air pollution are discussed in Sections 3.1 through 3.3. The applicability of these regulations to the proposed SSCE modification is presented in Section 3.4.

3.1 PSD REQUIREMENTS

The proposed project is solely for the purpose of meeting the Boiler MACT standards. Therefore, PSD review does not apply. However, if PSD review did apply, and a comparison of past actual to future potential emissions was conducted, the only pollutant of concern would be NO_x.

3.2 POTENTIALLY APPLICABLE EMISSION STANDARDS

3.2.1 NEW SOURCE PERFORMANCE STANDARDS

The NSPS are a set of national emission standards that apply to specific categories of new sources. As stated in the CAA Amendments of 1970, these standards "shall reflect the degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction the Administrator determines has been adequately demonstrated."

Existing non-NSPS sources may become subject to the NSPS if such sources undergo a "modification" or "reconstruction". "***Modification***" means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

"***Reconstruction***" means the replacement of components of an affected facility to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and

(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

40 CFR 60.5 defines "***fixed capital cost***" as the capital needed to provide all the depreciable components. 40 CFR 60.2 defines "***capital expenditure***" as:

an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair percentage" specified in the latest edition of IRS Publication 534 and the existing facility's basis, as defined by Section 1012 of the IRS Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes.

Federal NSPS exist for fossil-fuel and wood-fired industrial-commercial-institutional steam boilers constructed or modified after June 19, 1984. The NSPS are contained in 40 CFR 60, Subpart Db. The NSPS contain emission limits for SO_2, PM, and NO_x for oil firing and emission limits for PM for wood firing. Wood is defined in the NSPS to include bark, wood, and wood residue. Subpart Db is potentially applicable to the No. 4 Combination Boiler project.

Federal NSPS also exist for Fossil-Fuel-Fired Steam Generators for which construction or modification occurs after August 17, 1971 (40 CFR 60, Subpart D). The NSPS contains emission limits for PM, SO_2, and NO_x for liquid fossil fuel and wood residue firing. However, 40 CFR 60, Subpart Db, contains a provision that any unit subject to Subpart Db is not subject to Subpart D.

The No. 4 Combination Boiler is not currently subject to any NSPS. The boiler was originally constructed prior to 1965, and has not been previously modified or reconstructed per the NSPS definitions.

The No. 4 Combination Boiler will not be undergoing any physical changes to the existing fuel oil, coal, or natural gas firing systems, except for the overfire air system improvements. No increase in the maximum fuel oil, coal, or natural gas firing rates will occur. In addition, no hourly increase in emissions of any pollutant due to fuel oil, coal, or natural gas firing, will occur as part of the proposed project. As a result, the NSPS will not be triggered by the proposed project in regards to fuel oil, coal, or natural gas firing.

The boiler will be potentially more efficient at burning bark/wood, in that the improved combustion of biomass will potentially allow firing more bark/wood on an hourly basis, and potentially increasing actual PM emissions on an hourly basis. Therefore, the proposed project could constitute a "modification", which would subject the No. 4 Combination Boiler to regulation under 40 CFR 60, Subpart Db. The NSPS limit for PM emissions due to bark/wood firing is 0.1 lb/MMBtu. However, SSCE is proposing to reduce the current PM emission limit on the boiler to 0.07 lb/MMBtu. At this

maximum emission rate, the maximum hourly PM emission rate for the No. 4 Combination Boiler is 39.0 lb/hr.

A summary of historical PM compliance test data for the No. 4 Combination Boiler is shown in Table 3-1. These historic compliance tests were conducted while burning a combination of bark/wood and fossil fuel, in order to achieve at least 90 percent of rated heat input capacity during the testing. Based on the historical PM test data, PM emissions from the No. 4 Combination Boiler have been as high as 38.1 lb/hr. The proposed maximum PM emission rate after the proposed project is implemented is 39.0 lb/hr. Statistically, this represents no increase above the highest tested value. Therefore, the proposed project will not result in an increase in hourly PM emissions, and Subpart Db will not apply to the No. 4 Combination Boiler in regard to wood/bark firing.

The emission limits for SO_2 and NO_x under Subpart Db will not apply to the No. 4 Combination Boilers because there are no emission limits for these pollutants for wood/bark firing. Furthermore, neither the fossil fuel firing capability nor the maximum emissions due to fossil fuel firing will increase due to the proposed project. Therefore, the emission limits for fossil fuel firing under Subpart Db will not apply.

SSCE has developed a budget for the proposed project based on internal cost estimates. The total installed capital cost of the modifications to the No. 4 Combination Boiler is approximately $1.6 million. The term "comparable entirely new facility" would consist of a new boiler with components identical to the repaired boiler. Reconstruction calculations do not include air pollution control equipment. Using previously developed costs for new boilers in Florida, the cost of a new biomass and coal fired boiler, comparable to the No. 4 Combination Boiler (i.e., 500 MMBtu/hr), would be on the order of $40,000,000, excluding air pollution control equipment. Therefore, the planned modifications for the No. 4 Combination Boiler represent only about 4 percent of the cost of a new boiler. As a result, reconstruction is not triggered under the NSPS definitions.

3.2.2 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Maximum Achievable Control Technology (MACT) standards, codified in 40 CFR 63, were promulgated for industrial boilers on September 13, 2004, with an effective date of November 12, 2004. Subpart DDDDD, also known as the Industrial, Commercial, and Institutional Boiler and Process Heater MACT, regulates HAP metals (with PM as a surrogate), hydrogen chloride (HCl), and mercury (Hg) emissions from existing large solid fuel-fired industrial boilers. The compliance date for existing boilers is September 13, 2007.

Existing MACT sources may become subject to new source MACT if such sources are "reconstructed". In the General Provisions for the MACT Rules, 40 CFR 63, Subpart A, *reconstruction* is defined as follows:

> ***Reconstruction***, unless otherwise defined in a relevant standard, means the replacement of components of an affected or previously nonaffected source to such an extent that:
>
> (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and
>
> (2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator pursuant to Section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emission of hazardous air pollutants from that source.

The No. 4 Combination Boiler is in the large solid fuel-fired subcategory, and the applicable emission limits for bark/wood firing are 0.07 lb/MMBtu for PM (or 0.001 lb/MMBtu for total selected metals), 0.09 lb/MMBtu for HCl, and $9x10^{-6}$ lb/MMBtu for Hg. The compliance date for the boiler is September 13, 2007. SSCE will comply with the applicable standards by the compliance date. Based on the proposed project, the boiler will be able to comply with the PM (or total selected metals), HCl, and Hg limits by means of fuel analysis or stack testing.

As discussed above, the planned modifications to the boiler represent only about 4 percent of the cost of a new boiler. As a result, the No. 4 Combination Boiler will not be "reconstructed" for the purposes of the MACT rule.

3.2.3 FLORIDA RULES

The No. 4 Combination Boiler is subject to Rules 62-296.404 and 62-296.410, F.A.C. Rule 62-296.404, F.A.C., regulates Kraft Pulp Mills and contains a TRS emission standard for combustion equipment burning TRS gases. Rule 62-296.410, F.A.C., regulates carbonaceous fuel burning equipment and contains standards for opacity and PM. The standards applicable to the boiler are 30-percent opacity (except 40-percent opacity is allowed for up to 2 minutes per hour) and 0.3 lb PM/MMBtu for carbonaceous fuel plus 0.1 lb PM/MMBtu for fossil fuel. The modified No. 4 Combination Boiler will comply with these standards.

Table 3-1. Summary of PM Emissions from Historic Stack Tests Performed on No. 4 Combination Boiler , SSCE Panama City

	Test Date	
PM Emissions	October 2004	October 2003
Emission Rate, lb/hr	38.1	26.4
Emission Rate, lb/MMBtu	0.084	0.058

APPENDIX A

OVERFIRE AIR SYSTEM INFORMATION

TABLE A-1

CONTROL EQUIPMENT PARAMETERS [a]

NO. 4 COMBINATION BOILER VARIABLE THROAT SCRUBBER (VENTURI)

Manufacturer	FMC Link-Belt	
Model No.	200K Dual-Throat	
Date of Installation	1974	
Outlet Gas Temperature	140-150	°F
Outlet Gas Flow Rate	220,000-260,000	ACFM
Pressure Drop Across Device	8	inches of H_2O
Scrubber Media (b)	Water with caustic addition	
Scrubber Liquor Flow Rate (minimum)	1,096	gpm
Average Scrubbing liquor pH (c)	Variable	pH units
Control Efficiency - Particulate Matter (d)	90	%
- Sulfur Dioxide (e)	50-95	%
Maximum Permitted Particulate Matter Emission Rate (f)	39.0	lb/hr PM
Maximum Permitted Sulfur Dioxide Emission Rate (g)	1,183	lb/hr SO_2

(a) Control equipment parameters may vary according to process conditions.
(b) pH controlled with caustic
(c) SO_2 controlled by caustic addition to wet scrubber.
(d) Based on manufacturer's quote.
(e) Based on source test data.
(f) Based on 0.07 lb/MMBtu effective September 13, 2007 under the Maximum Achievable Control Technology (MACT) regulation for Industrial Boilers.
(g) From Permit No. 0050009-016-AC.

APPENDIX A

OVERFIRE AIR SYSTEM INFORMATION

3.1 COMBUSTION AIR SYSTEM UPGRADES – BASE SCOPE

3.1.1 HORIZONTAL MIXING ZONE (HMZ) OVERFIRE AIR (OFA) SYSTEM

To achieve the desired steam flow at an increased bark firing rate with reduced particulate and unburned carbon carryover levels, the existing OFA system will be replaced with new current day "state-of-the-art" technology and components. The Company recommends the addition of an HMZ OFA system, which will contribute to a significant improvement in the overall boiler, combustion system performance.

Introduction

A primary benefit of the HMZ OFA system will be a significant reduction in the amount of carryover. Carryover, essentially unburned fuel particles leaving the waterwall section of a burner, is a function of the drag coefficient of the particle, particle density, the upward furnace gas velocity and residence time. The available residence time for most units similar to the Purchaser's boiler is insufficient for all char particles to burn to completion without the aid of an effective OFA system. The Company's extensive R&D efforts have shown that char burnout becomes diffusion limited. That is, turbulence is required to dissipate the CO boundary layer around the char particle to further the combustion process. For a given furnace plan area, the gas velocity is a function of gas flow. By maximizing the quantity of effective OFA flow and minimizing the undergrate air (UGA) flow, the lower furnace gas velocity will be decreased. This will result in less carryover leaving the furnace. Carbon burnout is a function of a fuel's kinetic property, as well as residence time. Although the kinetic property of the fuel is relatively constant, the carbon burnout will improve due to increased furnace residence time resulting from lower furnace velocities.

All OFA systems attempt to provide the best combination of optimized mixing, uniform furnace velocity profile and effective use of excess air in the form of staging. The Company's HMZ OFA system is designed to optimize the stoichiometric mixing of unburned fuel particles above a stoker grate. By optimizing the air/fuel mixing just above the grate, the HMZ system can reduce carryover, improve combustion of volatiles, and provide more uniform gas temperatures and velocities at the furnace outlet. The HMZ OFA produces superior OFA mixing and a more uniform velocity distribution at the furnace outlet plane. The mixing zone is comprised of one row of single and double OFA nozzles situated along the front and rear walls of the furnace. The single and double nozzles alternate in a manner, which causes their respective airflows to create adjacent "shearing" surfaces within the depths of the furnace. These "shearing surfaces" are what enhance the mixing of air and char. An

additional benefit derived from incorporating the HMZ system is that the side to side temperature unbalance in the superheater is improved as a more uniform gas flow pattern is attained at the furnace outlet.

Referencing the test results for the existing Company application of an HMZ system at a paper mill in Louisiana gives a general idea of what might be expected if an HMZ were to be installed. With the installation of the HMZ OFA system on the Purchaser's power boiler, the bark firing capacity was increased almost forty percent (40%) over the design MCR bark firing rate. At the increased bark firing rate, it was found that all tests exhibited low unburned carbon content, which was directly attributable to the HMZ system by those running the tests. In addition, particulate emissions leaving the boiler were reduced by sixty percent (60%) with the installation of the HMZ system. The boiler was also able to operate at greatly reduced excess air levels.

The objectives and requirements of an effective OFA system, as provided by the HMZ design are summarized as follows:

- Provide Turbulence and Mixing
- Air streams must provide penetration.
- Air nozzle(s) positions, must provide coverage of the entire furnace plan area.
- Selections for uniform distribution of the OFA streams

The high velocity air streams from HMZ nozzles on the furnace sidewalls will provide the mixing momentum for completing the char combustion process. See Figures 2 and 3 for typical nozzle arrangement and flow pattern for five (5) nozzles per wall. Based on furnace dimensions at the Purchaser's facility, the Company is offering four (4) HMZ air nozzle assemblies per wall.

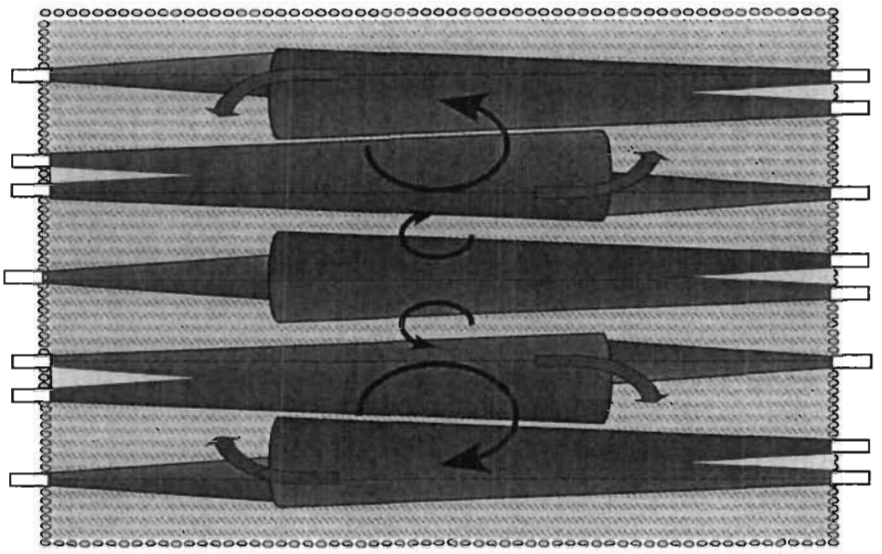

Figure 2 – Typical HMZ Nozzle Arrangement

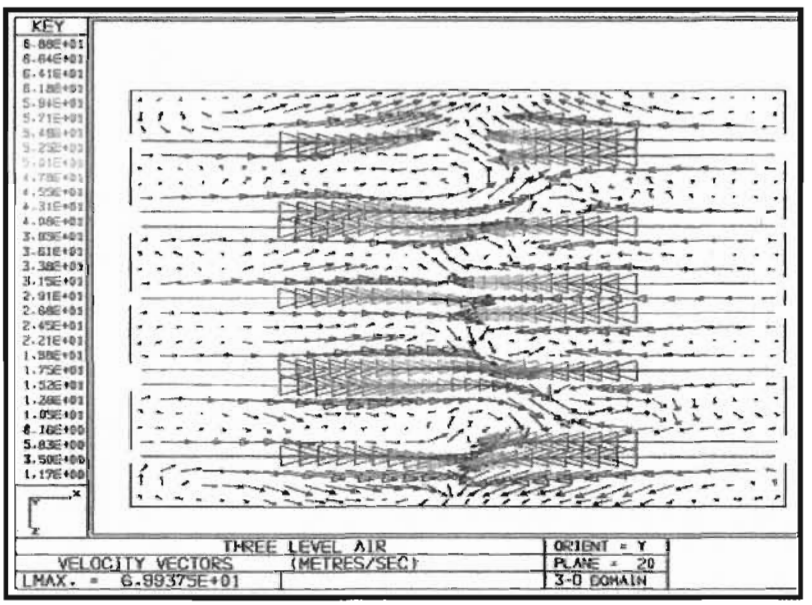

Figure 3 – HMZ Flow Pattern

The increase in the OFA system capacity will result in less available UGA flow while maintaining, or even reducing, the excess air. This reduced UGA quantity will result in lower gas velocities at the grate and fuel distributor levels, and thereby less entrainment of char and dry fuel. OFA system momentum will be increased to significantly enhance turbulence and burnout of solids and gaseous combustibles. This means combustible gases and particulate emissions will be reduced at the furnace outlet.

Minimizing the amount of UGA flow will also promote a thicker ash bed. A thicker ash bed will help insulate the grate, keeping operating temperatures lower. This will lead to potentially longer grate life. However, as UGA flow is minimized, care must be taken so that a good even side to side fuel bed is maintained. Fuel piling and side to side fuel maldistribution will create operational problems with reduced UGA flow, if not attended to by the operations personnel.

While an improved OFA system will reduce carryover and lower grate temperatures, its effectiveness will be enhanced by addressing other important areas such as optimizing excess air and furnace draft set points, ensuring proper fuel sizing and fuel distribution, providing proper UGA distribution and minimizing tramp air infiltration. ***Any boiler and air heater in-leakage should be minimized in order for the HMZ OFA system to operate at an optimum level.*** As an Option, the Company is offering a Fabric Stoker Seal to significantly reduce air in-leakage at the boiler to stoker interface.

Assumptions

Due to the lack of certain information and/or data, various assumptions had to be made when designing the equipment offered in this proposal. Following is a list of the assumptions made:

- All fans currently operate within the respective fan curves. Fan testing is recommended to confirm this.
- Since little to no current operating data was available, original design boiler data and fuel analysis were used as a basis for the Upgrade Predicted Performance.
- Bark supply and distribution on the grate is consistent and problem free
- Predicted airflow to the burner windbox includes leakage/cooling air. If the cooling air requirements are higher, this will affect the airflow distribution to the OFA level and affect overall performance.
- It is assumed that the existing burner air control dampers operate effectively to maintain minimum flow control to the existing burners.
- Indicated (Test Data) excess air levels are high 5 - 9%. It is unknown where the source of tramp air is. The Predicted Performance is based on 30% excess air in the gases leaving the furnace (O_2 - 4.87% vol. wet) at the Design Load of 300,000 lb/hr (Bark & Coal) and therefore the ability to distribute OFA & UGA flows as per design. If air leakage or cooling air flow at the undergrate or burner windbox is greater than predicted, this will impede the ability to provide the required air to the OFA level at the design excess air.
- No known operating problems re: excessive erosion, fouling etc.

- New airflow control dampers and flow devices are provided to replace the existing ones assuming the existing devices are inadequate.

Material Description

The HMZ OFA arrangement consists of single and double-opposed nozzle assemblies. The HMZ OFA nozzles will be located on the front and rear furnace walls above the burners at an elevation of approximately 30'. The nozzle arrangement is such that a single nozzle directly opposes a double nozzle located on the opposite furnace wall. The nozzles discharge horizontally at a high velocity to establish a high degree of penetration and mixing in the furnace. The single opposing nozzle prevents the strong double nozzle from impinging on the opposite wall. The HMZ nozzles will contain manual velocity dampers, which are set up to maintain constant jet velocity, or pressure, through a wide range of air flows (loads).

Four (4) sets of openings in each of the front and rear walls will be provided for installation of the nozzle assemblies. The openings for the nozzles will be formed by bent tube inserts, which will be installed in the field.

The front and rear wall oriented nozzles in the HMZ system arrangement will receive air through the existing hot air ducts currently used to supply the undergrate air. The Company's workscope will include two (2) overfire air supply ducts, which will connect the existing hot air ducts (from the tubular air heater), to the nozzles at the front and rear of the boiler.

The supply ducts will be supported off the existing undergrate air ducts, and the furnace walls. An expansion joint will be provided in each of the two (2) supply ducts, downstream from the connection with the existing hot air duct. An OFA control damper, including electric drive, will be installed in each of the supply ducts to optimize airflow distribution to the nozzles in the HMZ OFA System. See drawing G-MS-1117-01, in the Drawings Section of this proposal, for the HMZ OFA arrangement.

Airflow Measurement

The volume of combustion air being delivered to the HMZ OFA nozzles needs to be indicated to maintain optimum control and distribution of the air flow. The Company scope of supply includes two (2) airflow monitoring devices, including transmitters, to be installed in the OFA

ductwork, to accomplish this. Local pressure gauges, and pressure and temperature transmitters will be located in the OFA supply ducts.

A total of two (2) air flow measuring devices, one (1) per side, will also be installed in the existing hot air ducts from the air heater to measure the burner and the total bark combustion air flows. The existing air flow measuring devices which currently measure the undergrate and overfire air will be re-used and relocated, as required. ~~also be measured through the installation of two (2) air flow measuring devices, one (1) in each of the two (2) existing hot air ducts which supply the UGA and OFA systems.~~

New Burner and Undergrate Air Control Dampers

To achieve better airflow distribution and control, the existing burner air control and undergrate air control dampers will be replaced with new dampers. The existing burner air duct control dampers will each be replaced with a new damper arrangement. The existing damper drives will be reused.

The Company scope of supply will include new dampers to replace the existing undergrate air flow control dampers. The existing damper drives will be reused. It is anticipated that the new dampers will be inserted in the existing damper frame and the existing blades will be removed. The space between the dampers will be closed with plate to reduce the total free area.

The Company will also supply two (2) manual adjustable orifice plate dampers to be installed in the undergrate air duct. These dampers will also be supplied as part of the new undergrate air supply duct. The installation of these two (2) dampers will provide better control of airflow while maintaining the maximum pressure to the OFA ducts and nozzles.

Figure 4 provides airflows and duct sizes for the HMZ OFA duct arrangement. Figure 5 provides a flow schematic of the HMZ OFA arrangement.

ALSTOM CANADA INC., POWER

PERFORMANCE ENGINEERING STD. NO: ISSUE DATE:

New Bark Boiler Air System w/ HMZ Over Fire Air Design - Power Boiler #4

Fuel	**Bark @ 50%mc+Coal**		Elevation	100' asl
Fuel Factor	n/a		Elevation Factor	1.005
Air Moisture corr.	1.01	(0.018 #H2O/#da)		
Steam Capacity	**300,000 #/hr**			

Note: All New Ducts and Modified Equipment are Shown in **Bold**

Item Description	Quantity Per Boiler	Total Weight (lb/hr)	Temp. (°F)	Total Volume (CFM)	Max. Velocity (ft/min)	Min.Duct Area ** (ft^2)	Operating Pressure (in. w.g.)
Total Combustion Air (incl.Leakage Air)		514,100					
A Air from FD Fan	1	489,000	80	109,278	2,500	43.7	+16.0
B Hot air from Air Heaters	2	489,000	486	192,806	3,708	26.0	+13.0
B1 Total Comb. Air Flow Device	**2**	**489,000**	**486**	**192,806**	**3,708**	**26.0**	**+13.0**
Aux Fuel / Coal Burner Air							
C Hot air to Burners	2	189,100	486	74,737	1,661	22.5	+12.0
C1 Brnr Air Duct Damper* **	**2**	**189,100**	**486**	**74,737**	**3,000**	**12.5**	**+11.0**
Bark Air							
D Total Bark Airflow	2	279,900	486	110,624	1,856	29.8	+12.0
D1 Total Bark Air Flow Device	**2**	**279,900**	**486**	**110,624**	**1,856**	**29.8**	**+12.0**
E HMZ-1 Bark OverFireAir (OFA)	**2**	**139,950**	**486**	**55,444**	**3,000**	**9.2**	**+11.0**
E1 HMZ-1 Flow Device	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
E2 HMZ-1 Control Damper	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
E3 HMZ-1 Manifold Duct	**2**	**139,950**	**486**	**55,711**	**3,000**	**4.6**	**+9.0**
E4 HMZ-1 OFA (1X)-Nzl Feed	**4**	**139,950**	**486**	**55,980**	**3,000**	**1.6**	**+7.0**
E5 HMZ-1 OFA (2X)-Nzl Feed	**4**	**139,950**	**486**	**55,980**	**3,000**	**3.1**	**+7.0**
E6 HMZ-1 OFA (1X)-Nzl	**12**	**139,950**	**486**	**55,980**	**13,000**	**0.36**	**+7.0**
F Undergrate Air (UGA)	2	139,950	486	55,577	1,544	18.0	+10.0
F1 UGA Control Damper* **	**2**	**139,950**	**486**	**55,577**	**3,000**	**9.3**	**+10.0**
F2 UGA Orifice Damper	**2**	**139,950**	**486**	**55,577**	**5,000**	**5.6**	**+10.0**
Coal Pulverizer Air							
G Hot Air to Coal Pulverizer	1	20,000	486	7,942	1,588	5.0	+10.0

Furnace Leakage Air (incl.Brnr. Leakage)	25,100
Bark Distributor Air	0
Air for other Fuel Sources - NCG's	0

Note: ** Air Duct Sizes shown are minimum recommended duct sizes

*** Existing Flow Control Dampers C-1 (Burner Air) & F1 (UGA) to be modified

HMZ OFA Nozzle Locations:

HMZ - 1 Location - Front and Rear Wall above platform Elev. 28'-0"

REVISIONS:			Prop. No.		Cont. No.	30543514
Rev.1	Removed HMZ-2 OFA Level	May 02/05 DRB	Customer:	Smurfit Stone Panama City		
			Eng'd By:	D.Burton	Date:	22-Apr-04
			Chk'd By :		Date:	

AIR DUCT DESIGN - DATA SHEET - #4 PB | **Bark/Coal/Oil/NCG - 300,000#/hr Steam** | **1**

Figure 4 – Air Duct Design

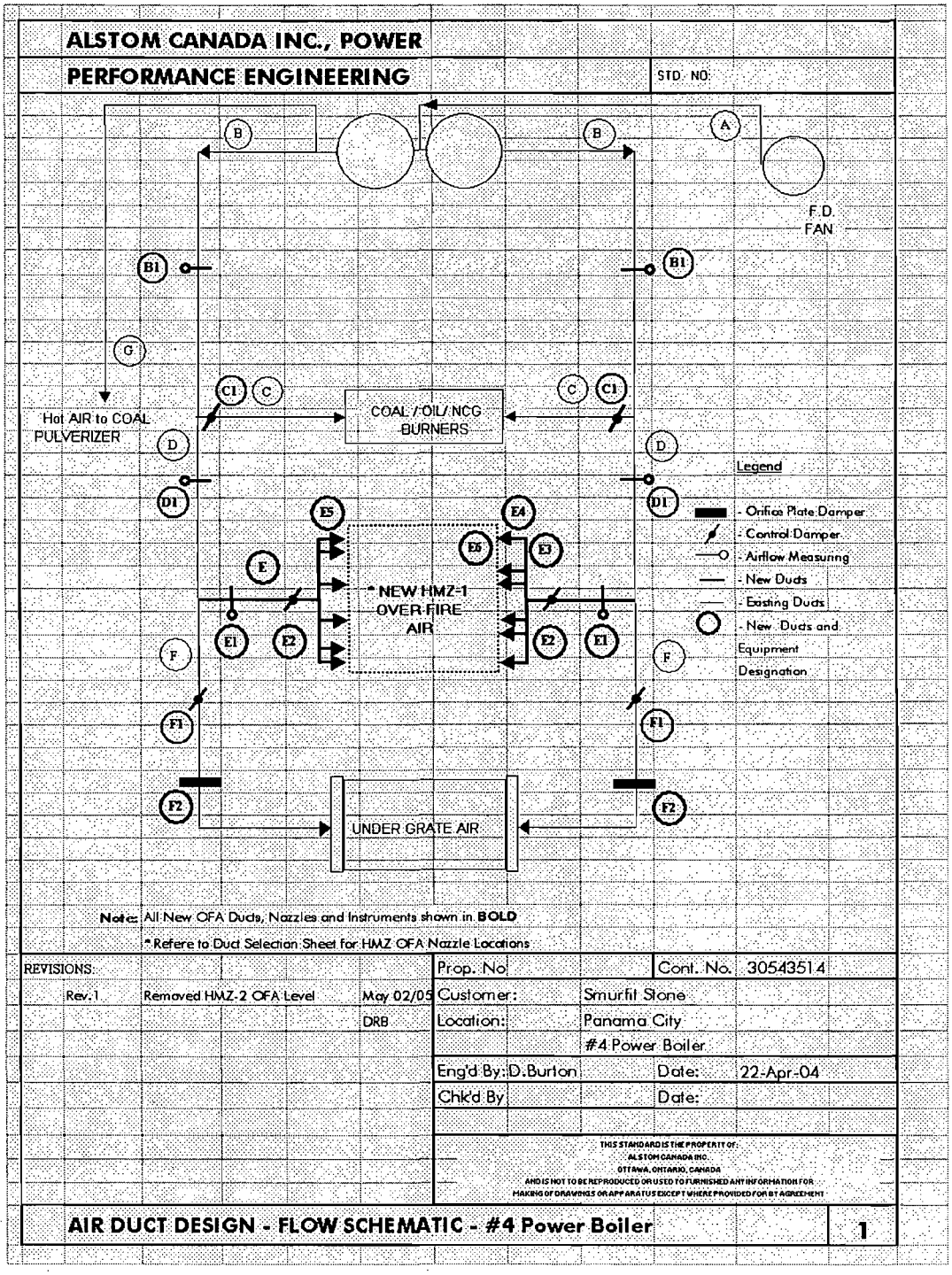

Figure 5 – New OFA System Flow Schematic

Forced Draft (FD) Fan

The HMZ OFA system is designed to provide up to fifty percent (50%) of the total stoker combustion air requirements. The design of this system is based upon the existing FD fan being capable of producing at least 10" wg pressure at the OFA nozzles, to increase the OFA discharge velocity to over 200 feet per second. Based upon a review of the FD fan curve, it appears that this fan has sufficient static pressure capacity to supply the static pressure and volumetric flow rates required for operation with the HMZ OFA System. However, this is based on the assumption that the fan is operating per the fan curve. It is strongly recommended that fan testing be conducted to confirm that the fan is operating per the curve. See the fan capacities provided below in Figure 6.

The Company has based this offering on the assumption that the ID fan is also capable of providing the rated static pressure and flow requirements.

Subject: #4 Power Boiler - Fan Capacities

FD Fan *

		Existing FD Fan		Upgrade Design - 300K		Notes:
		MCR	TestBlock	New MCR	Margin	
Flow	LB/HR	446,000	537,000	501,200	579,300	Fan Predicted Performances
	ACFM	101000	126250	113,500	136,200	are based on Upgrade Design
SP	"wg	10.1	15.2	**16.0**	20.0	Load - 300,000 #/hr Steam
Temp	F	80	100	80	100	Flow
RPM		940	1180			
BHP		186	348			

* Existing FD Fan Performance taken from Fan Data provided on American Standard Dwg #12924

ID Fan **

		Rebuilt ID Fan		Upgrade Design Operation	
		MCR	Testblock	New MCR	Margin
Flow	LB/HR		752,400	587,300	
	ACFM		285,000		
SP	"wg		34.0		
Temp	F				
RPM			820		
BHP			2200		

* Rebuilt ID Fan Performance taken from Fan Curve provided by Barron Ind. Feb 25/05

Figure 6 – Fan Capacities

Pressure Part Work

Installation of the eight (8) HMZ OFA nozzle assemblies will require new tube inserts to form the openings in the furnace walls. Two (2) tube insert section will be required for each nozzle opening. The tube inserts will be supplied as individual loose tubes, pre-bent, with edge bars and scarfed tube ends. Tube inserts will match or be equivalent to the existing waterwall tubing specification.

Existing OFA Ductwork and Openings

The existing OFA ductwork will be removed or blanked off, as required. Refractory and plate will be used to close off the existing overfire air port openings in the furnace walls.

Control Philosophy for the New Overfire Air System

The new HMZ OFA System consists of an interlaced arrangement of four (4) sets of damper assemblies (constant velocity dampers) on each of the front and rear walls. These damper assemblies are manually set based on local pressure readings.

The two (2) ducts that feed the OFA compartments each have an air flow device, a flow control duct damper (new Beck drives), and a pressure transmitter. Refer to the Air Duct Design Flow Schematic previously shown as Figure 4.

A Sama control diagram will be furnished in the contract stage.

For a list of new instrumentation supplied with the system, refer to the instrument list in Table 1 below.

Item	Tag	Description	Quantity	Make	Model No	Range (Design)
TOTAL AIR FLOW						
1	xx-FT-xxx	Coal/Oil/NCG Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	238050 lbs/hr
2	xx-FT-xxx	Coal/Oil/NCG Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	238050 lbs/hr
NEW HMZ OVER FIRE AIR						
5	xx-FT-xxx	Bark Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	133500 lbs/hr
6	xx-FT-xxx	Bark Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	133500 lbs/hr
7	xx-FT-xxx	Overfire Air Duct Flow Device (Left)	1	AMC	Voluprobe 1SS	66750 lbs/hr
8	xx-FT-xxx	Overfire Air Duct Flow Device (Right)	1	AMC	Voluprobe 1SS	66750 lbs/hr
9	xx-FZ-xxx	Overfire Air Duct Damper Actuator (Left)	1	Beck	Series 11	
10	xx-FZ-xxx	Overfire Air Duct Damper Actuator (Right)	1	Beck	Series 11	
11	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Left#1)	1	Dwyer		
12	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Left#2)	1	Dwyer		
13	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Right#1)	1	Dwyer		
14	xx-PI-xxx	Overfire Air Duct Pressure Gauge (Right#2)	1	Dwyer		
15	xx-PT-xxx	Overfire Air Duct Pressure Transmitter (Left)	1	Rosemount		
16	xx-PT-xxx	Overfire Air Duct Pressure Transmitter (Right)	1	Rosemount		
17	xx-TT-xxx	Temperature Transmitter for Airflow Temperature Compensation	1	Rosemount		0-500°F

Table 1 – Instrument List

Note: Items number 5 and 6, air flow devices, in Table 1 – Instrument List, have been deleted from the scope of supply.

Air System Control:

a) Air Flow Calculations

The Under Grate airflow can be calculated by subtracting the Total Bark Air Flow from the HMZ OFA.

The Coal/Oil/NCG Burner airflow can be calculated by subtracting the Total Bark Air Flow from the Total Air Flow

b) Combustion Control

The Under Grate and OFA Systems are modulated based on total hog fuel feed. The Control room operator will be able to adjust the split between Under Grate and OFA Systems. The Company expects the air flow split to be fifty percent (50%) Under Grate Air (UGA) and fifty percent (50%) OFA, but final values will be determined during commissioning.

Predicted Performance

With the installation of the equipment supplied, the Company predicts the performance as shown below in Table 2:

#4 (CE) Power Boiler - Predicted Performances						
Conditions		**Original Design**	**Upgrade Design -New HMZ OFA**			
		Wood (45% moisture) + Coal	**Wood (50% moisture) + Coal**	**Wood (45% moisture) + Coal**	**Max. Wood (50% Moisture) + Coal**	**Wood (50% moisture) + Coal + Oil + NCG**
Steam Flow	**Lbs/hr**	**300,000**	**300,000**	**300,000**	**300,000**	**300,000**
Wood Steam Flow	**Lbs/hr**	**180,000**	**180,000**	**215,200**	**210,900**	**180,000**
Coal Steam Flow	**Lbs/hr**	**120,000**	**120,000**	**84,800**	**89,100**	**70,000**
Oil Steam Flow	**Lbs/hr**	**0**	**0**	**0**	**0**	**30,000**
NCG Steam Flow	**Lbs/hr**	**n/a**	**0**	**0**	**0**	**20,000**
Steam Temp/Press	F / psig	950 / 1275	950 / 1275	950 / 1275	950 / 1275	950 / 1275
Feedwater Temp	F	280	280	280	280	280
Excess Air @ TAH In	%	25%	30%	30%	30%	25.5%
Air Temps						
- to Fan	F	80	80	80	80	80
- to Furn.	F	486	486	486	486	486
Bark Fuel Flow	Tons/hr	30.0	**39.5**	**39.5**	**44.2**	**37.6**
Bark Moist. Content	% m.c.	**45.0**	**50.0**	**45.0**	**50.0**	**50.0**
Coal Fuel Flow	Lbs/hr	15,160	12,379	9,420	9,920	7,770
Oil Flow	Lbs/hr	0	0	0	0	2,330
NCG Flow	scfh	0	0	0	0	99,000
Thermal Eff.	%	75.5%	72.9%	73.7%	71.7%	72.0%
Total Air Flow to Unit (incl.5%Leakage)	Lbs/hr	446,000	477,000	469,600	482,500	514,400
OFA / UGA Ratio	%	n/a	50 / 50	45 / 55	50 / 50	50 / 50
Exit Gas Flow @ TAH In	Lbs/hr	n/a	566,500	556,400	579,300	602,700
Exit Gas Temp	degF	382	385	385	390	380
Carbon Loss %			2.0	2.0	2.0	2.0
GHI (Wood) x 10^6	Btu/hr	283.8	339.7	373.7	380.5	323.4
GHI (Coal) x 10^6	Btu/hr	200.1	163.4	124.3	131.0	102.5
GHI (Oil) x 10^6	Btu/hr	0	0	0	0	42.6
GHI (NCG) x 10^6	Btu/hr	n/a	0	0	0	41.0
GHI (Total Fuel) x 10^6	Btu/hr	483.9	503.1	498.0	511.5	509.5
GHRR (Grate Heat Rate)	Btu/hr-ft2	895,000	1,071,000	**1,178,500**	**1,200,000**	1,019,900

Table 2 – Predicted Performance

3.1.2 COMPUTATIONAL FLUID DYNAMICS (CFD) BOILER MODELING

As a tool to evaluate the current operation of the subject boiler and support performance guarantees for the equipment to be installed, the Company's scope of supply will include Computational Fluid Dynamics (CFD) Modeling. The scope of the CFD modeling study will include the following activities:

1. Establish the boiler's baseline conditions.
2. Evaluate the boiler's flow and mixing characteristics, and relative emission levels.
3. Produce a baseline model and tune to measurements obtained from field data collection at the site.
4. Check the modification design configurations and optimize the upgrade boiler's combustion air system design.

The baseline model will include generation of a three dimensional (3-D) CFD model of the boiler in its existing condition. To develop the most accurate representation of the subject boiler, a data collection phase will be conducted at the Panama City Mill to view the operation, and gather

necessary process, air, and fuel flow inputs required for the CFD models. The baseline conditions will be modeled and calibrated to available emissions data and field operating data.

The baseline simulations will include bark firing and combined firing of bark, coal, oil, and waste gases, to support the commercial guarantees. The CFD model will illustrate the 3-D flow, temperature, species and particulate patterns for a representation of the current and retrofit air system arrangements at two (2) steaming rates. Using CFD, a total of eleven (11) runs are proposed to understand the behavior of the baseline, and alternate operating conditions with both bark and bark/coal/oil firing. A number of operating conditions will be evaluated to represent nominal bark, coal and oil firing scenarios.

After calibrating the baseline case, the matrix of runs for the retrofit cases will be performed. The retrofit model will contain the new air system configuration and several possible options for nozzles in service to allow tuning of the design. The retrofit models will be generated with a new geometry that includes the new air system, current burners to be reused, and any other changes. A total of eleven (11) runs are included in the cost estimate. These CFD runs will evaluate the performance of the OFA design under a range of possible bias conditions that may occur.

A final report will serve as the deliverable for the CFD Modeling Study. The report will provide the study results on CD in electronic format and include both Word and PowerPoint presentations. These files will include color plots, animations, and charts. The documentation will describe the approach, modeled geometries, inputs and results specific to this boiler modeling study. The text will describe the CFD model assumptions, dimensions, flow rates, and tabulations of the results. This will also include charts and graphs to quantify the flow distribution, temperatures and species. The results for each of the runs will be described to clearly identify the differences. Color contour plots, isosurfaces of velocity and pressure and other useful graphics will be included with annotations to explain the relevant aspects of the modeling task.