P.E. CERTIFICATION STATEMENT

PERMITTEE

Gerdau Ameristeel
Jacksonville Steel Mill
16770 Rebar Road
Baldwin, Florida 32234

Project No. 0310157-007-AC
PSD-FL-349
Modification to Increase Production
Duval County, Florida

PROJECT DESCRIPTION

The applicant proposes to substantially modify the melt shop, refining, and continuous casting operations at the existing plant. The project triggers PSD preconstruction review for CO, NOx, PM/PM10, SO2, and VOC emissions. As described in the Technical Evaluation and Preliminary Determination, determinations of the Best Available Control Technology (BACT) were made for each of these significant pollutants.

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 8-11-05

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

Adams, Patty

From: Friday, Barbara
Sent: Thursday, August 11, 2005 2:23 PM
To: 'John_Bunyak@nps.gov'; 'worley.gregg@epa.gov'
Cc: Mitchell, Bruce; Adams, Patty
Subject: DRAFT Air Construction Permit No.: 0310157-007-AC/PSD-FL-349
Attachments: 0310157-007-AC-D.zip

Attached for your records is a zip file for the subject DRAFT AC/PSD permit.

If I may be of further assistance, please feel free to contact me.

Barbara J. Friday
Planner II
Bureau of Air Regulation
(850)921-9524
Barbara.Friday@dep.state.fl.us

Department of Environmental Protection

Jeb Bush
Governor

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

Colleen M. Castille
Secretary

August 11, 2005

CERTIFIED MAIL – Return Receipt Requested

Mr. Donald R. Shumake
Vice President/General Manager
Gerdau Ameristeel
Jacksonville Steel Mill
16770 Rebar Road
Baldwin, Florida 32234

RE: Draft Air Construction Permit Project No.: 0310157-007-AC/PSD-FL-349
Request to Replace the Existing Electric Arc Furnace, the Ladle Metallurgical Furnace and the Billet Reheat Furnace and to Increase Steel Production

Dear Mr. Shumake:

Enclosed is one copy of the Technical Evaluation and Preliminary Determination, the Public Notice, and the Draft Air Construction permit for the construction of, a new Melt Shop, which will house the Electric Arc Furnace (EAF) operations; a new Continuous Caster Building, which will house the Continuous Caster and Ladle Metallurgical Furnace (LMF) operations; and, a new Billet Reheat Furnace (BRF). In addition, the project will allow for an increase in production in tapped (liquid) steel from 720,000 to 1,192,800 tons per year (TPY). This project will occur at the Gerdau Ameristeel's existing Jacksonville Steel Mill located at 16770 Rebar Road, Baldwin, Duval County, Florida. The permitting authority's "WRITTEN NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT" and the "PUBLIC NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT" are also included.

The "PUBLIC NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT" must be published within 30 (thirty) days of receipt of this letter. Proof of publication, i.e., newspaper affidavit, must be provided to the permitting authority's office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permits.

Please submit any written comments you wish to have considered concerning the permitting authority's proposed action to Jeff Koerner, P.E., at the above letterhead address. If you have any other questions, please contact Bruce Mitchell at 850/413-9198.

Sincerely,

Trina L. Vielhauer
Chief
Bureau of Air Regulation

TLV/jk/bm

Enclosures

In the Matter of an
Application for Permit by:

Gerdau Ameristeel
16770 Rebar Road
Baldwin, Florida 32234

Draft Air Construction Permit Project No.: 0310157-007-AC
PSD-FL-349
Gerdau Ameristeel's Jacksonville Steel Mill
Duval County

/

WRITTEN NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT

Facility Location: The applicant, Gerdau Ameristeel, operates an existing scrap iron and steel recycling (secondary metal production) facility (Jacksonville Steel Mill) located at 16770 Rebar Road, Baldwin, Duval County.

Project The applicant, Gerdau Ameristeel, applied on October 26, 2004, to the permitting authority for an AC for the construction of: a new Melt Shop, which will house the Electric Arc Furnace (EAF) operations; a new Continuous Caster Building, which will house the Continuous Caster and Ladle Metallurgical Furnace (LMF) operations; and, a new Billet Reheat Furnace (BRF); in addition, the project will allow for an increase in production in tapped (liquid) steel from 720,000 to 1,192,800 tons per year (TPY).

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 Florida Department of Environmental Protection's 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 32301, and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's phone 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 Technical Evaluation and Preliminary Determination, the Draft AC, the request/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 and phone number listed above. A copy of the complete project file is also available at the City of Jacksonville, Environmental Resource Management Department, Environmental Quality Division, 117 West Duval Street, Suite 225, Jacksonville, Florida 32202, (Telephone: 904/630-4900; and, Fax: 904/630-3638).

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air construction permit (AC) 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 applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.; and, the City of Jacksonville Ordinance Code, Title X, Chapter 376; and, the Jacksonville Environmental Protection Board Rule 2, Parts I thru VII and Parts IX thru XII. The permitting authority will issue the Final AC, in accordance with the conditions of the attached Draft AC, unless a timely petition for an administrative hearing is filed under Sections 10.569 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 Department will accept written comments and requests for public meetings concerning the proposed draft permit for a period of thirty (30) days from the date of publication of the Public Notice. Written comments and requests for public meetings regarding the draft permit should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant

change in the proposed agency action, the Department 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.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Trina L. 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 AC) was sent by certified mail (*) and copies were mailed by U.S Mail or sent electronically (with Received Receipt) before the close of business on 8/11/05 to the persons listed below.

Mr. Donald R. Shumake *V.P./G.M., Gerdau Ameristeel, 16770 Rebar Road, Baldwin, Florida 32234
Mr. Kennard F. Kosky, P.E., GAI
Mr. Richard Robinson, P.E., ERMD-EQD

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.

(Clerk) 8/11/05 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AN AIR CONSTRUCTION PERMIT

Permitting Authority
Department of Environmental Protection
Bureau of Air Regulation

Draft Air Construction Permit Project No.: 0310157-007-AC/PSD-FL-349

Gerdau Ameristeel
Jacksonville Steel Mill
Duval County

Applicant: The applicant for this project is the Gerdau Ameristeel, Jacksonville Steel Mill, located at 16770 Rebar Road, Baldwin, Duval County. The applicant's Responsible Official and Authorized Representative is: Mr. Donald R. Shumake, V.P./G.M., Gerdau Ameristeel, 16770 Rebar Road, Baldwin, Florida 32234

Facility Location: The applicant operates the existing Jacksonville Steel Mill, which is an iron and steel scrap recycling (secondary metal production) facility located near Baldwin, Duval County.

Project: The applicant, Gerdau Ameristeel, applied on October 26, 2004, to the permitting authority for an air construction permit (AC) for the construction of: a new Melt Shop, which will house the Electric Arc Furnace (EAF) operations; a new Continuous Caster Building, which will house the Continuous Caster and Ladle Metallurgical Furnace (LMF) operations; and, a new Billet Reheat Furnace (BRF). In addition, the project will allow for an increase in production in tapped (liquid) steel from 720,000 to 1,192,800 tons per year (TPY).

The facility is located in Duval County, which is an area that is currently in attainment with (or designated as unclassifiable for) all pollutants subject to state and federal Ambient Air Quality Standards. The plant is a major facility with respect to the Prevention of Significant Deterioration (PSD) of Air Quality as defined in Rule 62-212.400, F.A.C. Based on the application, the project will result in the following potential net emissions increases in terms of "tons per year" (TPY): 900 TPY of carbon monoxide (CO), 0.57 TPY of lead (Pb); 161 TPY of nitrogen oxides (NO_x); 52/44 TPY of particulate matter (PM/PM_{10}); 77 TPY of sulfur dioxide (SO_2); and 44 TPY of volatile organic compounds (VOC). Emissions of CO, NO_x, PM/PM_{10}, SO_2, and VOC exceed the PSD significant emission rates defined in Table 62-212.400-2, F.A.C. Therefore, the project is subject to PSD preconstruction review for these pollutants.

In accordance with Rule 62-212.400, F.A.C., the draft permit includes emissions standards that represent the Department's preliminary determination of the Best Available control Technology (BACT) for emissions of CO, NO_x, PM/PM_{10}, SO_2, and VOC. PM/PM_{10} emissions will be reduced by installing new canopy hood systems, new direct-shell evacuation control (DEC) systems, and a new baghouse control system (No. 5). NO_x emissions will be minimized by installing low-NO_x burners and furnace pressure controls. CO emissions will be controlled by installing canopy hood systems and DEC systems. SO_2 emissions will be minimized by implementing a scrap management plan and the exclusive firing of natural gas. VOC emissions will also be minimized by implementing a scrap management plan, the exclusive firing of natural gas, and good combustion practices.

As part of the required PSD preconstruction review, the Department reviewed the applicant's air quality analysis conducted for each PSD-significant pollutant. The air quality analysis showed no significant impacts from the project for any pollutants in nearby PSD Class I areas (Okefenokee National Wildlife Area, Wolf Island National Wildlife Area, Chassahowitzka National Wildlife Area and the St Marks National Wildlife). The initial review showed potential significant impacts in the vicinity of the project (PSD Class II areas) for NO_x and SO_2. Therefore, a more refined analysis was conducted. The results of the refined air quality analysis indicated that the project was well below the PSD Class II increments as well as the Ambient Air Quality Standards. The analysis provides the Department with reasonable assurance that the project will not cause or significantly contribute to a violation of the PSD increment level or any state or federal ambient air quality standard.

Permitting Authority: Applications for ACs 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 Florida Department of Environmental Protection's 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 32301, and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's phone number is 850/488-0114.

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Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an AC 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 applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.; and, the City of Jacksonville Ordinance Code, Title X, Chapter 376; and, the Jacksonville Environmental Protection Board Rule 2, Parts I thru VII and Parts IX thru XII. The permitting authority will issue the Final AC, in accordance with the conditions of the attached Draft AC, unless a timely petition for an administrative hearing is filed under Sections 10.569 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.

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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.

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Mediation: Mediation is not available in this proceeding.

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

Applicant

Gerdau Ameristeel - Jacksonville Steel Mill
16770 Rebar Road
Baldwin, Florida 32234

Facility ID No. 0310157

County

Duval County, Florida

Project

Project No. 0310157-007-AC
Draft Air Permit No. PSD-FL-349
Production Increase Modification

Permitting Authority

State of Florida
Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
2600 Blair Stone Road, Mail Station #5505
Tallahassee, Florida 32399-2400
Telephone: 850/488-0114
Fax: 850/921-9533

August 10, 2005

1. APPLICATION INFORMATION

Reviewing and Process Schedule

- Date of Receipt of Application: 10/26/2004
- Requests for additional information (RAI) dated 11/24/2004 and 12/14/2004.
- Response received 12/23/2004
- RAI dated 01/21/2005
- Response received 02/28/2005
- Letter received 03/15/2005 (reset the permitting clock) via facsimile.
- Additional information received 03/28/2005.
- Additional information received 05/03/2005, via e-mail (Ken Kosky (GAI)).
- Additional information received 05/13/2005, via e-mail (David Larocca (GAI)).
- Additional information received 05/26/2005, via e-mail (David Larocca (GAI)).
- Request for additional information and clarification sent by e-mail on 06/01/2005 (Bruce Mitchell).
- Additional information received 06/06/2005; application deemed complete.

Facility Location

Gerdau Ameristeel's Jacksonville Steel Mill is located at 16770 Rebar Road, Duval County, Florida. The UTM coordinates of this facility are: Zone 17; 405.7 km East; 3350.2 km North. The Latitude is 30° 16' 52" North and Longitude is 81° 58' 50".

General Facility and Process Description

Gerdau Ameristeel operates the existing Jacksonville Steel Mill near Baldwin in Duval County, Florida. The facility is a scrap iron and steel recycling (secondary metal production) plant that has been operating since 1975. The existing plant receives scrap steel by truck and rail and processes it into steel rebar, wire and rod. Main components of the plant include: an existing Fuchs electric arc furnace (EAF); a ladle metallurgy furnace (LMF); a scrap handling building adjacent to the existing EAF shop; a Rokop Continuous Caster; a Billet Reheat Furnace (BRF); a rolling mill; a rod mill; and slag handling and storage. The facility has a current permitted steel production capacity of 720,000 tons per year (TPY) of tapped, liquid steel. Actual liquid steel production has averaged 607,000 TPY for 2003 and 2004.

The secondary steel production plant melts and refines scrap steel materials into usable steel. Refining simply means to remove undesirable elements from the molten steel and add alloys to reach the final metal chemistry. The production of steel is a series of batch processes including charging, melting, refining, slagging, tapping, further refining, and casting.

The process begins by adding a "charge" of iron and steel scrap to the top of the electric arc furnace (EAF). Other materials, such as lime and carbon, may also be charged. The EAF consists of a furnace shell, furnace roof and the transformer. The EAF melts the charge by heating with electric arcs from carbon electrodes and secondarily with gas-fired sidewall burners inside the furnace. Molten steel is then tapped (poured) from the EAF into the ladle metallurgical furnace (LMF). A "heat cycle", sometimes referred to as a "heat", is the period of time beginning when scrap is charged to an empty EAF and ending when the EAF tap is completed.

The LMF is a second electric arc furnace that provides further refinement of the material to produce liquid steel. It is equipped with a bulk flux and alloy batching system, alloy wire feeders, water-cooled roof, and electrodes to allow temperature adjustments. Argon gas is also bubbled through the ladle to aid in the refining. Lime is added to react with impurities to form "slag", which floats on top of the liquid steel. Periodically, the operator takes a sample of the steel for analysis. Based on the sample results, the operator adds controlled amounts of lime and alloys. As needed, alloys are added to the steel by using the bulk alloy system, dumping bagged alloys into the ladle, and by using the wire feeder to feed metallurgical wire containing alloys. Alloys ensure that certain material properties are met. The electrodes may be used to adjust or maintain steel temperature. When the chemistry and temperature of the steel are within specifications, the LMF ladle is taken to the continuous caster. Before tapping, the furnace is tilted to pour slag into the furnace pit.

Refined liquid steel is gravity fed from the LMF ladle into the refractory-lined tundish (reservoir) of the continuous caster, which may generate small amounts of particulate matter. The continuous caster feeds numerous molds that form steel billets or bars. Billets are stored and later melted in the billet reheat furnace, which fires natural gas as the exclusive fuel. Various rolling and wire machines are used to process the refined molten steel from the billet recovery furnace into rebar, wire, and rod.

Hot slag is poured off of the top of the steel bath from the electrical arc furnaces into the slag pit located in the Melt Shop building. Here it cools and solidifies. Front-end loaders remove slag from the pit and transport it to the slag processing area where it is screened and sized for transport off site.

The following process flow diagram is from EPA's draft AP-42 Section 12.5.1 for "minimills" and shows the general steel production process.

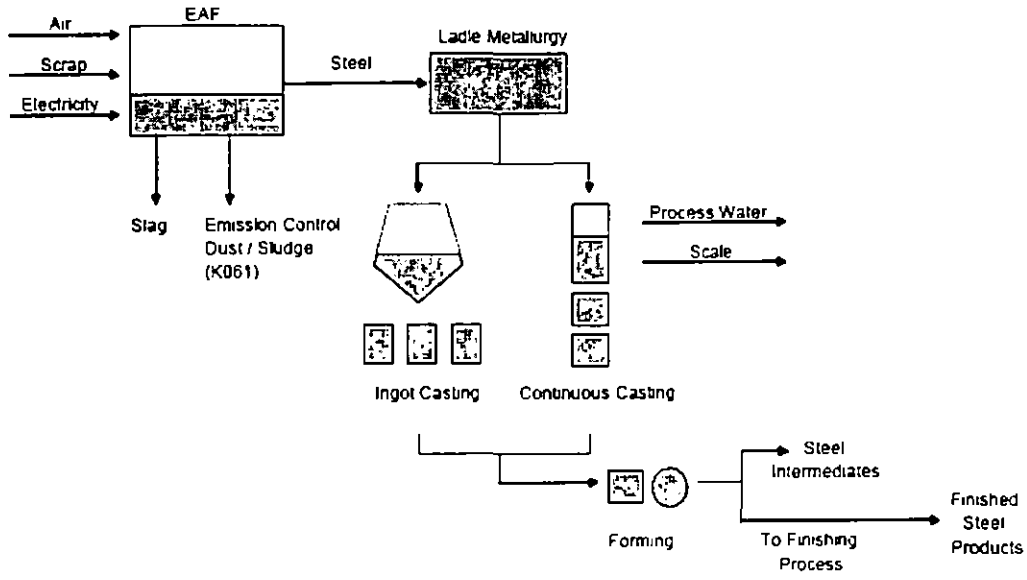

Figure 12.5.1-1. General flow diagram for a minimill

In addition, a process flow diagram for the Gerdau Ameristeel plant is provided in the Attachments to this Technical Evaluation.

Standard Industrial Classification Code (SIC)

The facility belongs to Major Group No. 33 (Primary Metal Industries), Group No. 339 (Miscellaneous Primary Metal Products), and Industry No. 3390 (Steel Mills). The North American Industry Classification System (NAICS) Code is No. 331111 for Steel Manufacturing Facilities That Operate Electric Arc Furnaces.

Facility Category

Title III: The existing facility is not a major source of hazardous air pollutants (HAP).

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

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

PSD: The existing facility is a PSD-major facility in accordance with Rule 62-212.400, F.A.C. This facility belongs to one of the 28 Major Facility Categories (Secondary Metal Production Plants) listed in Table 62-212.400-1, F.A.C.

NSPS: The existing facility operates an electric arc furnace operation subject to the New Source Performance Standards in Subpart AAa of 40 CFR 60, which are adopted and incorporated by reference in Rule 62-204.800(9)(e), F.A.C.

Project Description

Project Summary

In brief, the applicant proposes the following modifications to increase the production capacity of the plant.

1. *Revised Operational Restrictions*: The applicant requests an increase in the permitted steel production capacity from 720,000 to 1,192,800 tons per year of liquid steel by making several physical changes to the current process equipment. In addition, the applicant requests an increase in the permitted hours of operation from 8,000 to 8,520 hours per year.

2. *New Process Equipment*: To achieve the new production capacity, the applicant proposes to install a new electric arc furnace (EAF), a new ladle metallurgy furnace (LMF), a new continuous caster and support facilities to replace the existing continuous cater, and a new billet reheat furnace (BRF) to replace the existing BRF.

3. *Air Pollution Controls*: The applicant proposes to replace the existing baghouse controls with a new system (No. 5) having a minimum flow rate of 750,000 acfm and a maximum flow rate of 1,000,000 acfm. The new baghouse stack will be 115 feet tall with a diameter of 19 feet. The project also includes a refined direct-shell evacuation control (DEC) system to maintain negative pressure on the electric arc furnaces (EAF/LMF).

4. *Other Related Construction*: Two new separate buildings will be constructed with a common wall. One building will house the new EAF and the second will house the new LMF, continuous caster and support activities. The applicant identifies the maximum production capacity for the new equipment (EAF, LMF, continuous caster, and BRF) as: 176 tons/hour of scrap steel charged to the EAF (daily average); 160 tons/hour of tapped liquid steel produced (daily average); and 140 tons/hour of tapped liquid steel (monthly average).

Phase 1: New EAF, Melt Shop, and Baghouse Control System No. 5

The proposed EAF is designed to tap 105 tons of liquid steel per batch. The design "tap-to-tap" time (heat cycle) is a minimum of 40 minutes when processing a maximum of 176 tons/hour of scrap, which produces a maximum hourly production rate of 160 tons/hour of liquid steel. The average heat cycle is approximately 45 minutes when producing a monthly average of 140 tons/hour of liquid steel. Annual production will be limited to 1,192,800 tons per year of liquid steel and 8,520 hours per year. The new EAF will be able to charge carbon and lime at approximately 64 and 72 lb/ton of steel, respectively. The energy use will be approximately 280 to 350 kWh/ton of liquid steel. The new EAF will employ low-NO_x burners (LNBs) with a natural gas-firing rate of approximately 200 to 300 ft^3 per ton of liquid steel (0.034 $MMft^3$/hour).

The EAF will be housed in a new "Melt Shop" building that will consist of a building extension onto the east side of the existing Melt Shop. The existing EAF will be permanently shut down upon successful commissioning and startup of the new EAF. A new scrap building with a concrete floor will be constructed south of the new melt shop building. Incoming scrap will be received directly into the new scrap building by both railcar and truck and undesirable material (such as lead batteries) will be removed. Scrap will then be loaded into charge buckets with overhead cranes and transported by a specialized railcar to the melt shop. The railcars will be routed into the south end of the new melt shop building where a crane will pick up the loaded charge bucket and charge the EAF. The existing outside scrap yard will be maintained as a scrap inventory overflow area and the daily level of activities will be reduced.

The existing baghouse controls will be replaced with a new system (No. 5) having a minimum flow rate of 750,000 acfm and a maximum flow rate of 1,000,000 acfm (834,581 dscfm). The new baghouse stack will be 115 feet tall with a diameter of 19 feet. The project also includes a refined DEC system to maintain negative pressure on the electric arc furnaces (EAF/LMF).

Phase 2: Replacement of the LMF, Continuous Caster, and Support Facilities

The EAF and LMF occur in series and function together as a single process unit to produce liquid steel from scrap steel. The addition of a LMF reduces the heat cycle of the EAF by moving the final refining operation to the LMF, which is approximately 6 minutes, tap-to-tap. While molten steel is being refined in the LMF, the EAF can be charged with new scrap material and melted, thus increasing the production rate of the facility. Without the LMF, the refinement operations could be performed in the EAF, but production would be less.

The new LMF is designed to complement the new EAF for a maximum hourly production rate of 160 tons/hour of liquid steel and an average monthly production rate of 140 tons/hours of liquid steel. Production will be limited to 1,192,800 tons/year of liquid steel and 8,520 hours per year. A canopy collection hood system will be installed over the LMF/ladle stir station to capture fugitive particulate emissions for control by the new No. 5 baghouse control system, which will also control the EAF emissions.

The existing billet continuous caster was installed in 1976. It will be permanently shut down upon successful commissioning and startup of the new one. The proposed new continuous caster will be a five-strand machine with a 26.24 foot radius and will include the installation of a ladle turret. Distance between strand centers will be 3.92 feet. The minimum and maximum cross sections that the caster will handle will be 127 and 160 millimeters, respectively. The

continuous caster will have a physical tundish capacity of 110 tons. Casting ladles fill the tundish with molten steel tapped from the LMF. The throughput of the continuous caster will vary between 110 and 160 tons/hour depending on the grade and size of the product. Billet length will be extended from approximately 32 feet to a range of 45 - 50 feet.

The current tundish size for the casting ladles is approximately 8 tons with a steel residence time of approximately 5 - 6 minutes at current casting speeds. Experience has shown that a better product quality is achieved with a residence time of 10 to 12 minutes. The project will replace the 8 ton casting ladle with new 27 - 30 ton casting ladles to increase residence time and improve quality.

At the exit of the tundish, molten steel flows through the "nozzle" into the continuous caster. Current operating practices require nozzle replacement in the continuous caster after approximately 13 to 14 heat cycles, which significantly delay the operation. The proposed project includes a quick nozzle changing system to increase the casting cycles between nozzle replacements to 35 heat cycles. The quick nozzle changing system will ease coordination between the continuous caster and the EAF/LMF operations and allow increased operational flexibility by being able to change nozzle size during operation.

The proposed project includes new mold housings designed for improved water flow through the (billet) molds allowing increased casting speed and improved surface quality. A newly designed mechanical oscillation unit with an eccentric drive will be installed on each continuous caster strand. An eccentric drive creates vibrations by rotating an off-center mass. The oscillators will be relocated to the inside of the radius to allow for improved access to the spray chamber from the outside. The oscillator speed control will be automated to allow the withdrawal speed to be varied. A new secondary cooling spray system will be installed to improve access for maintenance and safety of personnel working within the spray chamber.

The continuous caster operations will be moved to a new building, which will be co-located with the new EAF building, but separated by a common wall. The new building will house the new continuous caster, a new LMF, and support facilities. A new continuous caster "runout" building and a new billet yard will be added. Other changes include: several new cranes; several new water systems (i.e., mold, spray, and machine cooling); and auxiliary and repair pieces of equipment including, but not limited to a mold test stand, a tundish tilt stand, tundish preheating and drying stations firing natural gas, and ladle pre-heaters firing natural gas. The continuous caster building houses several small sources of particulate matter related to quenching and cooling. These are generally controlled within the building using scavenger hoods, water sprays, etc.

Phase 3: Replacement of the Billet Reheat Furnace (BRF)

The BRF reheats steel billets to form liquid steel that is processed by various rolling and wire machines to produce steel rebar, wire and rod. The existing BRF uses low-NOx burners (LNBs) to fire natural gas at a maximum heat input rate of 222 MMBtu per hour. Currently, the BRF is limited to: 120 billet tons of steel per hour based on a maximum daily average; 720,000 billet tons of steel per year; and 8,500 hours per year operation.

The applicant proposes to increase the production capacity by replacing the existing BRF and extending the furnace bed length by 20 feet. The proposed BRF with the extended bed will be equipped with LNBs firing natural gas at a maximum heat input rate of 222 MMBtu per hour. The new BRF will be relocated immediately south and east of the existing furnace and the stack will now be located east of the rolling mill building. The proposed new BRF billet steel production rates will be the same as the new EAF/LMF production rates: 160 tons/hour (daily average); 140 tons/hour (monthly average); 1,192,800 tons/year; and 8,520 hours per year operation.

Slag Handling and Storage

Slag is generated from the operations of the EAF and LMF. The EAF and LMF are tilted and slag is poured off of the top of the steel bath into the slag pit located in the Melt Shop building. Particulate matter emissions from this operation are controlled by the canopy hood evacuation system and baghouse Slag is then transported by front end loader to the slag processing area, where it is screened and sized for transport off site. Fugitive particulate matter emissions from slag handling and storage are controlled by wet suppression and good operating practices. Although previous permits placed limitations on throughputs, there are no emissions standards or testing requirements. Therefore, the slag operation will be removed as a regulated emissions unit and moved to the facility-wide condition for "unconfined emissions" with the corresponding requirements.

2. RULE APPLICABILITY

Federal Requirements

The proposed new electric arc furnaces are subject to the New Source Performance Standards in Subpart AAa of 40 CFR 60, which are adopted and incorporated by reference in Rule 62-204.800(9)(e), F.A.C.

Based on PSD application received for this project, the facility is not major for emissions of hazardous air pollutants. Therefore, NESHAP Subpart EEEEE (Iron and Steel Foundries) in 40 CFR 63 does not apply.

State Regulations

The proposed project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following Chapters of the Florida Administrative Code (F.A.C.): Chapters 62-4 (Permitting Requirements), 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference), 62-210 (Required Permits, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms), 62-212 (Preconstruction Review, PSD Requirements, and BACT Determinations), 62-296 (Emission Limiting Standards), and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures). In addition, operation of the proposed equipment is subject to the requirements of Chapter 62-213, F.A.C. (Operation Permits for Major Sources of Air Pollution).

PSD Applicability Review

This facility is located in Duval County, which is classified as: in attainment with the ambient air quality standards for the pollutants carbon monoxide (CO) and nitrogen dioxide (NO_2); unclassifiable for the pollutant particulate matter with an aerodynamic diameter of ten microns or less (PM_{10}) and sulfur dioxide (SO_2); and a maintenance area for the pollutant ozone, which is regulated by the control of volatile organic compounds (VOC). The partial area of Duval County described as, "... the downtown Jacksonville area in Duval County located within the following boundary lines: south and then west along the St. Johns River from its confluence with Long Branch Creek, to Main Street, north along Main Street to Eighth Street; east along Eighth Street to Evergreen Avenue; north along Evergreen Avenue to Long Branch Creek; and east along Long Branch Creek to the St. Johns River", it is classified as a maintenance area for the particulate matter (PM); however, the project is not located within this area.

The existing facility belongs to one of the 28 Major Facility Categories (Secondary Metal Production Plants) listed in Table 62-212.400-1, F.A.C. Potential emissions of at least one pollutant are greater than 100 tons per year. Therefore, the existing facility is a major facility in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. New projects at PSD-major facilities must be reviewed for PSD applicability. The following table compares the past actual emissions from the existing facility to the future potential emissions from the facility after completion of the project.

Table 2A. Comparison of Past Actual to Future Potential Emissions

Pollutant	Past Actual Emissions (TPY) [3]	Future Potential Emissions (TPY) [4]	Net Emissions Increase (TPY)	PSD Significant Emission Rates (TPY)	Subject To PSD?
PM [1]	37.7	89.5	51.8	25	Yes
PM_{10} [1]	30.8	74.6	43.8	15	Yes
SO_2	43.2	119.9	76.7	40	Yes
NO_x	111.1	272.3	161.2	40	Yes
CO	325.6	1226	900.4	100	Yes
VOC	37.8	82.2	44.4	40	Yes
Pb [2]	0.592 (1,184 lb)	1.163 (2,326 lb)	0.571 (1,142 lb)	0.6 (1200 lb)	No

Notes:

1. PM and PM_{10} includes fugitive emissions from the slag handling and storage operations. PM_{10} emissions assumed to be PM emissions because the NSPS regulates only PM.
2. Lead emissions are based on test results from calendar years 1997 thru 2004, with a mean of 0.00195 lb/ton of steel produced.
3. Based on calendar years 2002 and 2003 and either test results or AP-42 emissions factors (VOCs only).

4. Based on:
   a. New capacities for Melt Shop operations (EAF) and Continuous Caster operations (continuous caster, LMF and support facilities): 8,520 hrs/yr operation and 1,192,800 tons of liquid steel per year.
   b. New capacities for BRF: 8,520 hours hrs/yr operation and 1,192,800 tons of liquid steel per year.
   c. New flow rates for No. 5 Baghouse Control System: 1,000,000 acfm (834,581 dscfm).

Lead emissions will be limited to 0.00195 lb/ton of steel produced, which is equivalent to 0.312 lb/hr and 2326 lbs/yr (1.163 TPY). The limit requested allowed the modification to avoid PSD requirements, including BACT. Based on the 2004 particulate stack test conducted on the existing EAF and Melt Shop and their baghouse control systems, it is estimated that 99%~ of the lead emissions are filterable type emissions (0.8% was determined to be condensable lead); therefore, the new No. 5 baghouse control system will remove most of the particulate lead emissions.

Based on the above analysis, the proposed project is subject to the applicable PSD preconstruction review requirements of Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration of Air Quality with regard to the following pollutants: CO, NOx, PM/PM10, SO2, and VOC emissions.

BACT Determination Procedure

A determination of the Best Available Control Technology (BACT) is required for each PSD-significant pollutant. In accordance with Rule 62-212.400, F.A.C., a BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Parts 61 and 63 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state (usually found in the EPA's RACT/BACT/LAER Clearinghouse (RBLC).
- The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

Air Quality Analysis

The proposed project is subject to PSD preconstruction review for CO, NOx, PM/PM10, SO2, and VOC emissions. This requires the following air quality analyses: a significant impact analysis for PM_{10}, SO_2, NO_X and CO; a PSD increment analysis for SO_2 and NO_2; an Ambient Air Quality Standards (AAQS) analysis for SO_2 and NO_2; and an analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

3. BACT DETERMINATIONS FOR THE MELT SHOP (EAF/LMF) OPERATIONS

Pollutant emissions will result from the combustion of fuels to melt and refine scrap steel. The following table summarizes the past actual emission and the future potential emissions form the melt shop operations.

Table 3A. Summary of Melt Shop Emissions

Pollutant	Past Actual Emissions (TPY) [3]	Future Potential Emissions (TPY) [4]	Net Emissions Increase (TPY)
PM/PM_{10} [1]	19.1	54.9	35.8
SO_2	43.0	119.3	76.3

NO_x	46.1	196.8	150.7
CO	325.53	1192.8	867.2
VOC	35.8	77.5	41.7
Pb [2]	0.592 (1184 lbs)	1.163 (2326 lbs)	0.571 (1,142 lbs)

Notes:

1. PM_{10} emissions assumed to be PM emissions because the NSPS regulates only PM.
2. Lead emissions are based on test results from calendar years 1997 thru 2004, with a mean of 0.00195 lb/ton of steel produced.
3. Based on revised PSD Application Table "Gerdau Ameristeel Modeling Parameters with 1,000,000 ACFM Baghouse", received 03/28/05.
4. Based on revised PSD Application Table "Gerdau Ameristeel Modeling Parameters with 1,000,000 ACFM Baghouse", received 03/28/05; e-mail received on 05/03/05 establishing the "dscfm" flow rate of the proposed baghouse system as 834,581; and, 8,520 hrs/yr operation and 1,192,800 tons of liquid steel per year.

The remainder of this section discusses the air pollution control options available for each PSD-significant pollutant (CO, NOx, PM/PM_{10}, SO_2, and VOC), the applicant's proposed BACT, and the Department's draft BACT determination. The applicant identified previous BACT determinations for EAF/LMF operations listed in EPA's RACT/BACT/LAER Clearinghouse. These are presented as attachments to this Technical Evaluation and Preliminary Determination.

BACT Review for PM/PM_{10} Emissions

Discussion of PM/PM10 Emissions

The quantity and type of emissions from an electric arc furnace depend upon furnace size, type and composition of scrap, quality of scrap, process melting rate, number of back-charges, refining procedure, tapping duration and temperature. The majority of the emissions from EAFs/LMFs are particulates, including both ferrous and nonferrous oxides. Furnace emissions are the highest during meltdown and refining operations; however, emissions during charging and tapping can also be significant, particularly if ladle additions are made during the tap and dirty scrap is charged. The charging and tapping emissions represent approximately 5% each of the total emissions during a heat cycle. Increases in electrical power to the furnace and the use of oxygen lancing will cause emissions to increase during meltdown and refining.

EAF/LMF emissions are classified as process or fugitive. Emissions generated at the furnaces during periods when the furnace roof is closed (during melting and refining) and the primary emissions capture device (e.g., DEC system, side draft hood with a fixed water-cooled duct) is operative are considered to be process emissions mainly comprised of slag and limestone dust. Those emissions generated during periods when the furnace roof is open (charging) or when the primary emission capture device cannot operate (charging and tapping) are considered to be fugitive emissions.

The chemical composition of the typical EAF fume during various stages of a melt is shown in Table 3A, below. Iron oxide is the main component of the EAF fume, with a large amount of calcium oxide emitted during refining and a large amount of manganese oxide emitted during charging. A representative example of the exhaust gas particulate composition from an EAF is presented below in Table 3B. A particle size distribution is presented below in Table 3C. The distribution of the particulate matter in EAF vessel fumes indicates that the particles are quite small. Lead is emitted as a component of particulate matter and exists primarily as compounds of lead (e.g. oxides). Nevertheless, lead emissions from the EAF are expressed as elemental lead.

Table 3B. Chemical Analysis of Electric Arc Furnace Dust by Phase of Furnace Operation

Phase	Dust Composition (Percentage)								
	SiO_2	CaO	MgO	Fe_2O_3	Al_2O_3	MnO	Cr_2O_3	SO_2	P_2O_3
Melting	9.77	3.39	0.46	56.75	0.31	10.15	1.32	2.08	0.60
Oxidizing	0.76	6.30	0.67	66.00	0.17	5.81	1.32	6.00	0.59
Oxygen Lancing	2.42	3.10	1.83	65.37	0.14	9.17	0.86	1.84	0.76
Reduction	Tr.	35.22	2.72	26.60	0.45	6.70	0.53	7.55	0.55

Source. EPA Document No EPA-450/3-82-020a

Table 3C. EAF Exhaust Gas Particulate Matter Composition

Constituent	Percent
Fe_2O_3	19-53
CaO	3-14
Al_2O_3	1-13
SiO_2	0.9-9
MgO	2-15
Mn_2O_3	0.6
ZnO	0-16.3
NiO	0-3
Cr_2O_3	0-14
CuO	0.1
MnO	0.6-12
Cl	1.2
PbO	0-4
FeO	4-10
Na_2O	1.5
LOI*	4.3-6 8
Other	4.8

Table 3D. Size Distribution of Particulate Matter Emissions from Steelmaking EAK Facilities

Particle size range (μm)	Size distribution (percent by weight)
<0.5	-
0.5-1.0	57-72
1.0-2.5	-
2.5-5 0	-
5-10	8-38
10-20	3-8
20-40	2-15
> 40	0-18

Source for both tables: EPA Document No. EPA-450/3-82-020a

* Loss on ignition.

PM/PM10 Control Options

Potential PM/PM_{10} control options include fuel substitution techniques, settling chambers, elutriators, momentum separators, mechanically aided separators, cyclones, electrostatic precipitators, fabric filters, and wet scrubbers. Fabric filters, or baghouses, utilize porous fabric to clean an air stream and are generally recognized as the top control option. They include cleaning types such as reverse-air, shaker, and pulse-jet. The dust that accumulates on the surface of the filter aids in the filtering of the particles in the gas stream. Efficiency is very high for all particle sizes, typically 99+ %. During fabric filtration, flue gas is sent or pulled through the fabric by the use of a forced-draft fan. The fabric is responsible for some filtration, but more significantly it acts as support for the dust layer that builds-up on the fabric. This layer of dust, generally known as the "filter cake", is a highly efficient filter, even for submicron size particles. Woven fabrics rely on the filtration of the dust cake much more than the felted fabrics.

Fabric filters offer high efficiencies, and are flexible to treat many types of dust and a wide range of volumetric gas flow rates. In addition, fabric filters can be operated with low pressure drops. Some potential disadvantages are:

- Plugging and blinding of the filter due to high moisture content of the gas stream, which requires bag replacement;
- Fabric bag damage due to high temperatures of the gas stream; and,
- Fabric filters have the potential for fire or explosion.

Fabric filters can be categorized by type of cleaning, including shaker, reverse-air, and pulse-jet:

- Shaker cleaning transfers energy to the fabric by suspending the bag from a motor-driven hook or framework that oscillates. Motion may be imparted to the bag in several ways, but the general effect is to create a sine wave along the fabric.
- In reverse-air cleaning, gas flow to the bags is stopped in the compartment being cleaned and reverse air flow is directed through the bags. This reversal of gas flow gently collapses the bags, which causes the filter cake to detach.

- Pulse-jet cleaning uses compressed air to force a burst of air down through the bag and expand it violently, thus releasing the filter cake.

Fabric filters have been used exclusively to control particulate matter from EAF/LMF operations.

Applicant's PM/PM10 Review

From a review of EPA's RACT/BACT/LAER Clearinghouse, previous BACT determinations to control of particulate matter emissions from EAF/LMF operations have relied exclusively on fabric filter controls. Emissions standards range from 0.0015 to 0.0052 gr/dscf. The applicant proposes to meet an emissions standard of 0.0018 gr/dscf for the No. 5 baghouse system to control particulate matter emissions from the EAF/LMF operations. Note that the No. 5 baghouse will also control particulate matter emissions from the dust handling system.

The new baghouse control system will be designed for a maximum flow rate of 1,000,000 acfm and to reduce particulate matter emissions by more than 99%. Although not required for the top control option, the applicant estimates the total annualized cost to be approximately $2.77 million. The applicant estimates a cost effectiveness of $426/ton of particulate matter removed based on a controlled emissions rate of 0.0018 gr/dscf, a flow rate of 834,581 dscfm, and 99% control efficiency.

Department's PM/PM10 Review

The Department agrees that a fabric filter is the top control for this project. The applicant proposed an emissions limit of 0.0018 gr/dscf based on a new baghouse control system. All entries listed in the RACT/BACT/LAER Clearinghouse are based on control with a baghouse ranging from 0.0015 to 0.0052 gr/dscf. Compliance tests conducted in 2003 on the existing EAF/LMF resulted in a mean emissions rate of 0.0018 gr/dscf from the existing baghouse. It is reasonable to expect that the new EAF/LMF operations with the new No. 5 baghouse control system will achieve this level of emissions or better.

In April of 2004, EPA published the final NESHAP Subpart EEEEE provisions that require the Maximum Available Control Technology (MACT) for Iron and Steel Foundries. Although the Gerdau Ameristeel plant is not a major HAP source subject to this regulation, it is instructive to consider the control requirements for the similar operation. For example, the PM limit is 0.002 gr/dscf for a new EAF subject to the NESHAP Subpart EEEEE. Therefore, the emissions standard proposed by the applicant for this project is slightly less than the MACT standard for a similar process and controls.

The Department determines the draft BACT to be the control of PM/PM_{10} emissions with a baghouse control system to achieve an emissions limit of 0.0018 gr/dscf. Compliance shall be demonstrated by conducting an initial and annual stack tests in accordance with EPA Method 5 and the requirements of 40 CFR 60.275a(e)(1). All particulate matter emitted is assumed to be PM_{10} and all particulate matter collected on the Method 5 filter is assumed to be PM_{10}. The PM/PM_{10} emissions from the operations of the Melt Shop building (EAF), the Continuous Caster building (LMF and continuous caster operations), and the dust handling system will be controlled by the new No. 5 baghouse control system with a single stack. The facility's dust-handling system will consist of the baghouse hoppers, enclosed screw conveyors or enclosed chain/paddle conveyors, dust silo building, and the enclosed loading building for the truck and rail load-out operations. It is noted that the draft BACT is a reduction of nearly half of the current allowable particulate matter emission standard of 0.0034 gr/dscf.

NSPS Subpart AAa (40 CFR 60.272a) establishes a particulate matter emissions limit of 0.0052 gr/dscf from the EAF/LMF operations. It also establishes the following visible emissions limits: < 3% opacity from the baghouse control system; < 6% from the Melt Shop and Continuous Caster buildings; and < 10% from the miscellaneous collection and transfer points along the dust handling system. The NSPS Subpart AAa visible emissions limits shall also represent BACT for this project.

BACT Review for NOx Emissions

Discussion of NOx Emissions

The three fundamental mechanisms of NO_x formation in the EAF/LMF process include thermal NO_x, fuel bound nitrogen NO_x, and prompt NO_x. Thermal NO_x arises from the thermal dissociation and subsequent reaction of nitrogen and oxygen molecules in air in a high temperature combustion zone. Fuel NO_x formation results from the evolution and reaction of fuel-bound nitrogen compounds with oxygen. The prompt NO_x mechanism involves the intermediate formation of hydrogen cyanide with fossil fuel combustion followed by the rapid oxidation of HCN to NO. Reference method test results show that more than 90% of all the NO_x in the EAF exhaust is NO, while very little is NO_2. However, NO emissions are rapidly oxidized to NO_2 when exhausted to the atmosphere.

Thermal NO_x is the most prevalent form. Thermal NO_x formation takes place at temperatures above 2000° F when both nitrogen and oxygen are present with sufficient residence time. In an EAF, the furnace temperature reaches 3000 – 3400° F and conditions exist for substantial formation of thermal NO_x. Verified NOx emissions rates are limited, but EPA identifies NO_x emission factors ranging from 0.1 to over 0.7 lb/ton of liquid steel produced. Modern, high-energy furnaces may be found at the higher end of the range.

NOx Control Options

A summary of potential NOx control options are presented in the following table with a brief discussion of each option thereafter.

Table 3E. NOx Control Options – EAF/LMF Operation

Control Option	Control Efficiency	Technically Feasible?	Demonstrated?	Rank Based on Efficiency	Proposed for the Project?
Removal of Nitrogen					
1 Ultra-Low Nitrogen Fuel	No Data	N	NA	NA	NA
2. Furnace Control	No Data	Y	Y	NA	Y
Oxidation of NOx with Subsequent Absorption					
3 Inject Oxidant	60 – 80%	N	NA	NA	NA
4 Non-Thermal Plasma Reactor (NTPR)	60 – 80%	N	NA	NA	NA
Chemical Reduction of NO_x					
5 Selective Catalytic Reduction (SCR)	35 – 80%	N	NA	NA	NA
6 Selective Non-Catalytic Reduction (SNCR)	35 – 80%	N	NA	NA	NA
Reducing Residence Time at Peak Temperature					
7 Air/Fuel Staging of Combustion	50 – 65%	N	NA	NA	NA
8. Steam Injection	50 – 65%	N	NA	NA	NA
Reducing Peak Temperature					
9. Flue Gas Recirculation (FGR)	15 – 25%	Y	Y	1	N
10 Natural Gas Reburn (NGR)	15 – 25%	N	N	NA	NA
11 Over Fire Air (OFA)	15 – 25%	Y	Y	1	N
12. Less Excess Air (LEA)	15 – 25%	Y	Y	1	Y
13. Combustion Optimization	15 – 25%	Y	Y	NA	NA
14 Low NO_x Burners (LNBs)	15 – 25%	Y	Y	1	Y

NA = Not Applicable

1. *Ultra-Low Nitrogen Fuel*: The primary source of heat for the EAF/LMF units is achieved through electrical arcing of AC power. The sidewall burners will fire natural gas, which contains negligible amounts of nitrogen.

2. *Furnace Control*: The primary source of nitrogen is from ambient air pulled into the furnace by the DEC system. Control of the DEC system results in control of furnace pressure which can reduce the temperature and thermal NO_x formation.

3. *Inject Oxidant*: The oxidation of nitrogen to its higher valence states makes NO_x soluble in water. When this is done, a gas absorber could be effective. Possible oxidants that could be injected into a gas stream are ozone, ionized oxygen, or hydrogen peroxide. This NO_x reduction technique has not been demonstrated on EAF/LMF units and will not be considered for this project.

4. *Non-Thermal Plasma Reactor (NTPR)*: This technique generates electron energies in the gas stream that generate gas-phased radicals, such as hydroxyl (OH) and atomic oxygen (O) through collision of electrons with water and oxygen molecules present in the flue gas stream. In the flue gas stream, these radicals oxidize NO to form nitric acid (HNO_3), which can then be condensed out through a wet condensing precipitator. NTPR has not been demonstrated on EAF/LMF units and will not be considered for this project.

5. *Selective Catalytic Reduction (SCR)*: SCR uses a catalyst to react injected ammonia to chemically reduce NO_x. SCR has typically used precious metal catalysts, but can now also use base metal and zeolite catalyst materials. The catalyst eventually loses its effectiveness and must be replaced. Some ammonia may slip through without being reacted. Effective SCR systems can achieve NOx reductions approaching 90%. However, for an SCR system to effectively reduce NO_x emissions, the exhaust stream should be relatively stable with regard to gas flow and temperature. EAF/LMF units involve highly transient operations due to the cyclic batch process. The temperature and flow rate of the EAF/LMF exhaust stream varies greatly over the heat cycle making it difficult to apply SCR as a control.

   There are other technical difficulties associated with employing SCR on the EAF/LMF operations. Premature catalyst deactivation is likely due to chemical poisoning of the catalyst resulting from phosphorous and zinc contaminants in the flue gas as well as other reactive compounds. Particulate matter can also accumulate and blind the catalyst, thus reducing its effectiveness and causing rapid catalyst deactivation. Any proposed SCR system would likely be located after a high-efficiency control device such as a baghouse. For the proposed process units, this would mean reheating the 1,000,000 acfm exhaust stream from approximately 200° F to the operating range for an SCR system (600 to 750° F). Reheat would require substantial amounts of fuel combustion and result in additional pollutant emissions. Due to these technical difficulties, SCR has not been required on previous EAF/LMF units to date and will not be considered for this project.

6. *Selective Non-Catalytic Reduction (SNCR)*: In SNCR systems, ammonia or urea is injected in a region where the temperature is between 1,600 and 2,000° F. This technology is based on temperature ionizing the ammonia or urea instead of using a catalyst. The temperature window for SNCR is very important because, outside of the target range, either more ammonia slips through without reducing NOx or more NO_x is actually generated than is being chemically reduced. The EAF/LMF operations are highly transient throughout the heat cycle. The temperature and residence time required for SNCR is not achieved within the duct work of the EAF/LMF units or the DEC system. Due to these technical difficulties, an SNCR system has not been required on previous EAF/LMF units to date and will not be considered for this project.

7. *Air/Fuel Staging of Combustion*: Either combustion air or fuel can be supplied in separate phases to stage the combustion process and reduce NOx emissions. For example, combustion air may be provided in two streams. The first stream is mixed with fuel in a ratio to produce a reducing flame. The second stream is injected downstream of the flame and creates an oxygen-rich zone

   Alternatively, fuel can be staged instead of air. One stream of fuel is provided for primary combustion with a fuel-to-air ratio to support a reducing atmosphere. Excess fuel in the primary combustion zone dilutes heat to reduce temperature. A second fuel stream is then injected downstream of the primary combustion with a net fuel-to-air ratio to create a slightly oxidizing atmosphere. The second stream completes oxidation of the fuel while reducing the NO_x to N_2. Due to the design of the EAF/LMF units and the non-steady cyclic operation, application of staged combustion is not appropriate and will not be considered for this project.

8. *Steam Injection*: The injection of steam can suppress the combustion temperature and reduce the formation of thermal NO_x emissions. Steam injection requires a steam source and would likely result in inefficient scrap melting. Due to the design of the EAF/LMF units and the non-steady cyclic operation, steam injection is not appropriate and will not be considered for this project.

9. *Flue Gas Recirculation (FGR)*: Recirculation of cooled flue gas reduces combustion temperature by diluting the oxygen content of the combustion air and by causing heat to be diluted in a greater mass of flue gas. Heat in the flue gas can be recovered by a heat exchanger. This reduction of temperature lowers the thermal NO_x concentration that is generated. For non-steady operations, it is difficult to control the air flows for effective FGR operation and control. Also, reducing the combustion temperature in this manner results in inefficient scrap melting and increases in tap-to-tap time. Due to the design of the EAF/LMF units and the non-steady cyclic operation, FGR will not be considered for this project.

10. *Natural Gas Reburn*: Reburn is designed for fossil fuel combustion units and is not known to have ever been utilized on an EAF or a LMF. In reburn technology, a set of natural gas burners are installed above the primary combustion zone. Natural gas is injected to form a fuel-rich, oxygen-deficient combustion zone above the main firing zone. Nitrogen oxides, created by the combustion process in the main portion of a boiler, drift upward into the reburn zone and are converted to molecular nitrogen. The technology requires no catalysts, chemical reagents, or changes to any existing burners, but does require additional burners. A variable exhaust flow makes application of natural gas reburn difficult. Due to the design of the EAF/LMF units and the non-steady cyclic operation, reburn will not be considered for this project.

11. *Over-Fire Air (OFA)*: When primary combustion uses a fuel-rich mixture, use of OFA completes the combustion. Because the mixture is always off-stoichiometric when combustion is occurring, the temperature is reduced. After all other stages of combustion, the remainder of the fuel is oxidized in the OFA. Reducing the combustion temperature in this manner would likely result in inefficient scrap melting. Also, a variable exhaust flow makes application of OFA difficult. Due to the design of the EAF/LMF units and the non-steady cyclic operation, OFA will not be considered for this project.

12. *Less Excess Air (LEA)*: Excess airflow combustion has been correlated to the amount of thermal NOx generated. Limiting the net excess airflow can limit the thermal NOx content of the flue gas. The EAF and LMF will utilize furnace pressure control (combustion practice) to control the formation of high temperature NOx.

13. *Combustion Optimization*: Combustion optimization refers to the active control of combustion. The active combustion control measures seek to find optimum combustion efficiency and to control combustion at that efficiency. The new EAF and LMF furnaces will be designed for efficient combustion.

14. *Low NOx Burners (LNBs)*: A LNB provides a stable flame that has several different zones. For example, the first zone can be primary combustion. The second zone can be fuel reburning with fuel added to chemically reduce NOx. The third zone can be final combustion in low excess air to limit the temperature. The oxy-fuel sidewall burners will incorporate a low-NOx burner design.

Applicant's Review

A review of EPA's RACT/BACT/LAER Clearinghouse database indicates that the control of NO_x has been exclusively based on combustion practices. Previous BACT emission limits for larger EAF/LMF operations range from 0.33 to 0.80 lb NO_x/ton of steel. There is one facility (Ellwood Quality Steels Company, Pennsylvania) that is listed at 0.1 lb NO_x/ton of steel; however, this facility operates a much smaller EAF than the proposed project (53 TPH vs. 160 TPH) and is not considered similar.

The two most recent BACT determinations for similar EAFs resulted in NO_x emission limits of 0.35 and 0.45 lb/ton, which were based on combustion practices and not add-on controls. In EPA's *Alternative Control Techniques Document - NOx Emissions from Iron and Steel Mills (1994)*, EPA states, "... that the use of electricity to melt steel scrap in the EAF transfers NO_x generation from the steel mill to a utility power plant. There is no information that NO_x emissions controls have been installed on EAFs or that suitable controls are available."

The applicant proposes the use of low-NO_x, oxy-fuel sidewall burners and furnace pressure control to achieve a NOx emission limit of 0.33 lb/ton of tapped steel from the proposed new EAF/LMF operations.

Department's NOx Review

As described earlier, the steel-making process involves the charging of scrap steel, charging of materials, melting, refining, and tapping. A complete heat cycle takes about 40 – 45 minutes. The cyclic process is non-steady state generating wide fluctuations in exhaust concentrations, temperatures, and flow rates. These factors make it difficult to control NOx emissions by applying NOx control technologies available for other external combustion sources. EPA's RACT/BACT/LAER Clearinghouse database indicates that NOx control for EAF/LMF operations has been exclusively based on combustion practices.

For the new EAF/LMF operations, the applicant proposes low-NO_x, oxy-fuel sidewall burners and furnace pressure control to achieve a NOx emission limit of 0.33 lb/ton of tapped steel. This is based on the vendor's guarantee for NOx in combination with the guarantee for lowering CO emissions. The current permitted NOx limit for the EAF is 0.33 lb/ton of tapped steel. Based on eight 3-run test averages (1997 – 2004) reported in the state's ARMS database, actual NOx emissions from the existing EAF ranged from 0.13 – 0.274 lb/ton tapped steel. These levels are in compliance with the current NOx limit for the existing system, which uses the same control methods as proposed for the new equipment.

Low-NOx burners present a type of localized staged combustion to combustion zone temperatures and prevent the formation of thermal NO_x. The direct-shell evacuation control (DEC) system will provide furnace pressure control to minimize excess air (nitrogen) during operation, which also inhibits the formation of thermal NOx. Based on EPA's RACT/BACT/LAER Clearinghouse database, the proposed NOx emissions limit is the lowest limit for a similarly sized unit. Therefore, the Department determines the draft BACT to be the control of NOx emissions by the combination of low-NO_x burners, good combustion practices, and furnace pressure control to achieve an emissions limit of 0.33 lb/ton of tapped steel from the combined EAF/LMF operations. Compliance shall be demonstrated by conducting initial and annual tests in accordance with EPA Method 7E. This level of control is consistent with previous BACT determinations for similar units.

BACT Review for CO Emissions

Discussion of CO Emissions

CO is generated during the charging, melting, slagging and tapping phases of the EAF heat cycle and refining in the LMF. Modern EAF and LMF facilities have a direct-shell evacuation control (DEC) system to control and minimize emissions and maintain safe conditions. A capture hood exhaust system is also used in combination with the DEC system. During the melting and refining stages of a heat cycle, both the EAF and LMF are maintained under negative pressure. The system incorporates a hole in the furnace roof (fourth hole) and a "fourth-hole" duct elbow connected to the furnace to direct the off-gas into a fixed water-cooled duct. At a point where the DEC system's duct meets the EAF or LMF, there is an adjustable gap that allows combustion air to enter and provides the oxygen necessary to oxidize CO. Exhaust gases mix with the combustion air at a temperature above the auto-ignition temperature of CO (~ 1350° F). Most of the CO generated from the process is oxidized to CO_2 by this method. The fourth-hole exhaust is directed to the baghouse. The proposed new EAF/LMF operations will utilize a fourth-hole evacuation for control of PM emissions and CO combustion.

The inlet to the fixed duct is usually enlarged in order to ensure discharge of the elbow gas into the fixed duct as the furnace tilts forward and backward within reasonable limits. The elbow is equipped with a flange that prevents excessive air from leaking into the enlarged duct. Good furnace operation is achieved when the furnace discharges a nearly constant amount of fume from around the electrodes into the melt shop. This concept provides good combustion of the CO in the off-gas. The lack of electrode emissions is a sign of excessive infiltration of air into the furnace. This causes increased electrode consumption and excessive heat loss to the fume system and potentially generates excessive thermal NO_x and adversely affects furnace metallurgy. The applicant's proposed new EAF/LMF operations are an evolution of this design. CO emissions generated in the furnace are oxidized at the air gap of the DEC systems. The DEC system's duct combustion system provides the time, temperature and mixing conditions necessary to oxidize CO emissions while preventing unnecessary drafting of the furnace and potential formation of thermal NO_x emissions.

CO Control Options

A summary of potential CO control options are presented in the following table with a brief discussion of each option thereafter.

Table 3F. Summary of CO Control Options – EAF/LMF Operations

Abatement Method	Technique Now Available	Efficiency Estimate	Technically Feasible?	Demonstrated?	Rank Based on Efficiency	Proposed for Project?
1. Good Operating Practice	Furnace Control	> 50%	Y	Y	1	Y
2. Post Combustion	Post Combustion Chamber	> 90%	Y	N	NA	N
3. Incinerators	Thermal	> 80%	N	NA	NA	NA
	Catalytic	> 80%	N	NA	NA	NA
4. Direct-Shell Evacuation Control (DEC) System	Fourth Hole	Unknown	Y	Y	NA	Y

1. *Good Operating Practices*. CO is formed from incomplete combustion in the EAF and LMF. The sources of carbon monoxide areas are: charge carbon (carbon added to the scrap steel prior to initiation of melting); injection carbon; and small amounts of hydrocarbon compounds on steel scrap. The EAF will utilize sidewall injectors similar to those currently operating on the existing EAF to allow for injection of carbon below the slag level of the steel bath resulting in a more homogeneous steel bath, less carbon combusted above the steel bath and in the forth-hole duct work and, as a result, more complete combustion.

2. *Post Combustion Reaction Chamber*: Post combustion chambers are a form of thermal oxidation. Post combustion chambers are capable of achieving up to 99% reduction of CO emissions given enough residence time at high temperature. There are three known installations of post combustion chambers on EAFs:

   - IPSCO Steel (IA) was issued a PSD permit in April of 1996, which required installation of a post combustion chamber. The initial permitted CO limit was 0.91 lb/ton of steel. However, in 2002, the permitted CO limit was increased to 1.93 lb/ton of steel based on the capabilities of the actual installed system.

   - Although not required as BACT, Tuscaloosa Steel (AL) installed a post combustion chamber with oxy-fuel burners on a trial basis to determine a means to achieve their CO BACT limit of 2.0 lb/ton of steel. The plant has since removed the burners in post combustion chamber because of excessive maintenance from particulate plugging.

- Gallatin Steel (KY) initially installed a post combustion chamber with burner system to maintain its proposed minor source status. Operation of the post combustion chamber resulted in CO reductions less than expected as well as increased NO_x emissions. Additional maintenance was also required due to particulate plugging. As a result, Gallatin Steel discontinued use of the post combustion chamber.

Post combustion chambers have been employed to control CO emissions from EAF/LMF operation, but have had limited success.

3. *Incinerators*: The two basic types of incinerators are thermal and catalytic. Thermal systems may be direct flame incinerators with no energy recovery (post combustion chambers), flame incinerators with a recuperative heat exchanger, or regenerative systems, which operate in a cyclic mode to achieve high-energy recovery. Catalytic systems include fixed bed (packed bed or monolith) systems and fluid-bed systems, both of which provide for energy recovery. Catalytic systems are not an option for EAFs or LMFs due to catalyst poisoning. Thermal oxidation systems are an available technology, however have not been proven in EAFs and LMFs. Problems similar to the experiences with post combustion chambers would be expected.

4. *Direct-Shell Evacuation Control (DEC) System (Fourth Hole)*: The primary CO control method for EAF and LMF units is the DEC system, otherwise referred to as the "fourth-hole" evacuation system. The DEC system consists of a water-cooled duct connected to the EAF and LMF through the furnace roof, which is called the "fourth hole". During the melting and refining stages of a heat cycle, the EAF and LMF are maintained under negative pressure. At the point where the DEC system's duct meets the EAF or LMF exhaust, there is an adjustable gap that allows combustion air to enter and provide the necessary oxygen to oxidize CO emissions. Exhaust from the fourth-hole system is directed to the baghouse control system. The proposed EAF and LMF will utilize a fourth-hole evacuation system for control of both PM emissions and CO combustion.

Applicant's CO Review

Post combustion chambers have been employed to control CO emissions from EAF/LMF operation, but have limited success. A review of EPA's RACT/BACT/LAER Clearinghouse database indicates previous CO BACT determinations for EAF/LMF operations have been exclusively based on combustion practices. Such determinations range from 1.34 to 6.0 lb/ton of steel. The only project with a post combustion chamber remaining in place has a CO limit of 1.93 lb/ton of steel. The applicant proposes a CO emission limit of 2.0 lb/ton steel for the EAF/LMF operations based on proper EAF/LMF design, use of the DEC system, and good operating practices. This level of control is consistent with previous determinations.

Department's CO Review

The charging of scrap steel is a non-steady state batch process in which the DEC system is offline. During melting and refining, amounts of carbon may be added during which the DEC system is used to reduce air infiltration, maintain consistent furnace temperatures, and reduce available nitrogen. During tapping, the DEC system is again offline. These conditions can cause substantial fluctuations in the CO emissions throughout the process cycle.

From the review of previous BACT determinations, it is evident that CO BACT determinations for EAF/LMF furnaces have consistently relied on combustion practices. The application and impacts of employing post combustion chambers appears questionable. The RACT/BACT/LAER Clearinghouse lists one project (Kestone Steel, IL – 2000) with a CO limit of 1.34 lb/ton of steel. However, it is also noted that the corresponding NOx standard for this system is 0.51 lb/ton of steel, which is 50% higher than the NOx limit proposed for the Gerdau project. For such external combustion processes, vendor guarantees for CO and NOx emissions are typically linked – lower CO guarantees mean higher NOx guarantees.

Compliance tests conducted over the last eight years for the existing EAF and LMF operations have measured actual emission rates ranging from of 0.80 - 1.5 lb/ton of tapped steel. The four most recent CO BACT determinations occurred in 2003 and ranged from 2.0 to 5.41 lb/ton of steel. Therefore, the Department determines the draft BACT to be the control of CO emissions by the proper design and operation of the EAF/LMF furnaces as well as the associated DEC systems to achieve a CO limit of 2.0 lbs/ton of tapped steel from the EAF/LMF operations based on initial and annual tests conducted in accordance with EPA Method 10. Compliance shall be based on the average of three, 3-hour test runs.

BACT Review for VOC Emissions

VOC Control Options

VOC emissions result from the volatilization of organic compounds present in the scrap metal and in other materials charged into the EAF as well as fuel combustion in the EAF and LMF. Potential VOC emissions from the EAF/LMF operations are estimated at approximately 78 tons per year. The following describes possible control options.

1. *Refrigerated Condensers*: The most common types of condensers used are surface and contact condensers. In surface condensers, the coolant does not contact the gas stream. Most surface condensers in refrigerated systems are shell and tube type. Shell and tube condensers circulate the coolant through tubes. The VOC condenses on the outside surface of the tube. Plate and frame type heat exchangers are also used as condensers in refrigerated systems. In these condensers, the coolant and the vapor flow separately over thin plates. In either design, the condensed VOC vapors drain away to a collection tank for storage, reuse, or disposal. Contact condensers cool the vapor stream by spraying either a liquid at ambient temperature or a chilled liquid directly into the gas stream. Refrigerated condensers are used as air pollution control devices for treating emissions with high VOC concentrations (>5,000 ppmv), such as gasoline bulk terminals, storage, etc. Due to the high flow rate (1,000,000 acfm) and relatively low VOC emissions, a refrigerated condenser is not appropriate for this project and will not be considered.

2. *Carbon Adsorption*: Adsorption removes VOC compounds from low to medium concentration gas streams. Adsorption is a phenomenon where gas molecules passing through a bed of solid particles are selectively held there by attractive forces, which are weaker and less specific than those of chemical bonds. During adsorption, a gas molecule migrates from the gas stream to the surface of the solid where it is held by physical attraction releasing energy, the heat of adsorption, which typically equals or exceeds the heat of condensation. Adsorption capacity of the solid for the gas tends to increase with the gas phase concentration, molecular weight, diffusivity, polarity, and boiling point. Gases form actual chemical bonds with the adsorbent surface groups. There are five types of adsorption techniques. Of the five techniques, fixed bed units are typically utilized for controlling continuous VOC containing streams from flow rates ranging from several hundred to several thousand cubic feet per minute. Due to the high flow rate (1,000,000 acfm), relatively low VOC emissions, and non-steady state operations, carbon adsorption is not appropriate for this project and will not be considered.

3. *Flare*: VOCs are piped to a remote, usually elevated, location and burned in an open flame in the open air using a specially designed burner tip and auxiliary fuel. Flares are not technically feasible for the proposed new EAF/LMF operations due to the large flow rate, non-steady state operation, and low heating value of the gas stream.

4. *Incinerators*: The two basic types of incinerators are thermal and catalytic. Catalytic systems include fixed bed (packed bed or monolith) systems and fluid-bed systems, both of which provide for energy recovery. As discussed previously, contaminants in the EAF/LMF exhaust gas systems would poison the catalyst and prematurely deactivate it. Thermal oxidation systems include direct flame incinerators with no energy recovery, flame incinerators with a recuperative heat exchanger, or regenerative thermal oxidation system that operate in a cyclic mode to achieve high-energy recovery. Catalytic and thermal incinerators are not considered appropriate for the proposed project due to the non-steady state operations, high particulate loading, potential for poisoning, large flow rates, and relatively low VOC concentrations.

5. *Good Operating Practices*: VOC emissions from EAFs are generated from the volatilization of the organic compounds present on the scrap steel and iron. The facility employs a scrap management plan intended to eliminate oils, greases, organic fluids, etc. from the scrap steel. These are the sources of the organic compounds that will be flashed off from the scrap materials when charged and melted in the EAF. The DEC system will collect and destroy most of the VOC emissions from the process due to the high temperatures within the duct resulting from the fourth-hole vent.

Applicant's VOC Review

A review of EPA's RACT/BACT/LAER Clearinghouse database indicates previous VOC BACT determinations for EAF/LMF operations have been exclusively based on combustion practices. Such determinations range from 0.1 to 0.35 lb/ton of steel. The applicant proposes a CO emission limit of 0.13 lb/ton steel for the EAF/LMF operations. The proposed limit is based on an effective scrap management plan, proper EAF/LMF design, use of the DEC systems, and good operating practices. This level of control is consistent with previous determinations.

Department's VOC Review

Previous BACT determinations have been in the range of 0.1 to 0.35 lb VOC per ton of steel and relied on good combustion and operating practices. Compliance tests conducted over the last eight years for the existing EAF and LMF operations have measured actual VOC emission rates ranging from of 0.12 – 0.19 lb/ton of tapped steel. The requested limit of 0.13 lb/ton of tapped steel appears reasonable given the available control methods. Therefore, the Department determines the draft BACT to be a VOC limit of 0.13 lb/ton of tapped steel from the EAF/LMF operations based on effective scrap management as well as the proper design and operation of the EAF/LMF furnaces and associated DEC systems. The new limit represents a 55% reduction over the previous permit limit of 0.295 lb/ton of steel.

BACT Review for SO_2 Emissions

SO_2 Control Options

The furnace will fire natural gas, which contains negligible amounts of sulfur. Therefore, SO_2 emissions from the EAF/LMF operations are directly related to the amount of sulfur in materials charged. Sources of sulfur include scrap metal, direct reduced iron, pig iron, charge carbon, and injection carbon. The existing facility implements a scrap management plan, which includes iron and steel scrap specifications intended to minimize the amount of sulfur charged in the EAF and LMF. Potential SO_2 emissions from the EAF/LMF operations are estimated at approximately 120 tons per year. The following describes possible SO_2 control options.

1. *Sorbent Injection*: Sorbent injection involves the injection of a dry sorbent into the flue gas duct where the temperature is about 750 to 1,250° C. During sorbent injection, a finely grained sorbent such as limestone ($CaCO_3$) or hydrated lime ($Ca(OH)_2$) is distributed quickly and evenly over the entire cross section in the duct work in a location where the temperature is in the range of 750 to 1,250° C. The sorbent reacts with SO_2 and O_2 to form $CaSO_4$, which is then captured in a particulate control device together with unused sorbent and fly ash. Temperatures over 1,250° C result in sintering of the surface on the sorbent, destroying the structure of the pores and reducing the active surface area. Under the appropriate conditions, control efficiencies of 80% or more can be achieved.

   There are many factors that influence the performance of a duct sorbent injection process. These include sorbent reactivity, quantity of injected sorbent, relative humidity of the flue gas, gas and solids residence time in the duct, and quantity of recycled, unreacted sorbent from the particulate control device. The most efficient way of achieving good conditions is to establish a dedicated reaction chamber. EAF/LMF operations are highly transient due to batch processing. The temperature and flow rate of the exhaust stream varies greatly over the heat cycle and contains high particulate loading and low SO_2 concentrations. There are no known installations of sorbent injection applied to EAF/LMF operations.

2. *Wet Scrubbers*: Devices that are based on absorption principles include packed towers, plate, columns, venturi scrubbers, and spray chambers. Absorption is a mass transfer operation in which one or more soluble components of a gas mixture are dissolved in a liquid that has low volatility under the process conditions The pollutant diffuses from the gas into the liquid when the liquid contains less than the equilibrium concentration of the gaseous component. The difference between the actual and the equilibrium concentration provides the driving force for absorption. High particulates loading will plug spray nozzles, packing, plates, and trays.

   Wet flue gas desulfurization (FGD) includes technologies such as lime, limestone forced or inhibited oxidation, and magnesium-enhanced lime FGD to chemically remove the acid gas. SO_2 control efficiencies for wet limestone FGD can exceed 90% under the appropriate conditions In addition, these systems create solid and liquid waste streams that must be treated before disposal.

   There are no known installations of wet scrubbers on EAF/LMF operations. Wet scrubbers are costly to install and operate. These systems are typically designed for exhaust streams containing SO_2 concentrations ranging from 250 to 10,000 ppmv. This is approximately 100 times greater than the SO_2 concentrations expected from the EAF/LMF operations.

3 *Spray Dry Scrubbers*: Dry FGD systems include lime spray drying, dry lime furnace injection, and dry lime duct injection. The lime slurry, also called lime milk, is atomized/sprayed into a reactor vessel in a cloud of fine droplets where the water is evaporated by the heat of the flue gas The SO_2 and other acid gases such as SO_3 and HCL react simultaneously with the hydrated lime to form a dry mixture of calcium sulphate/sulphite, which is removed by a highly efficient particulate matter control device, usually a fabric filter. Typically, a residence time of about 10 seconds is needed in the reactor to allow adequate time for the reaction to take place SO_2 control efficiencies for lime spray dry scrubbers can approach 90% under the appropriate conditions. Waste water treatment is not needed in spray dry scrubbers because the water is completely evaporated in the system Factors affecting the absorption chemistry include flue gas temperature, SO_2 concentration in the flue gas and the size of the atomized slurry droplets. There are no known installations of spray dry scrubbers for EAF/LMF operations.

Applicant's SO_2 Review

There are no known installations of scrubbers on EAF/LMF operations. Spray dry scrubbers are not considered feasible due to the presence of high particulate loading in the EAF/LMF exhaust gas. A control device could be added upstream of a spray dry scrubber; however, an additional particulate control device would also be required down stream to collect the calcium sulphate/sulphite. In general, scrubbers are costly to install and operate and are typically designed for exhaust streams containing SO_2 concentrations ranging from 250 to 10,000 ppmv. Wet scrubbers are not considered appropriate for

this project given the high flow rates and expected low concentrations of SO_2 in the EAF/LMF exhaust stream.

A review of EPA's RACT/BACT/LAER Clearinghouse database indicates that previous determinations for controlling SO_2 emissions from EAAF/LMF operations have exclusively relied on good operational practices. BACT determinations have been in the range of 0.07 to approximately 1.8 lb/ton of steel. The applicant proposes an SO_2 emission limit of 0.20 lb/ton of tapped steel from the EAF/LMF operations based on proper scrap management to minimize SO_2 emissions. This level of control is consistent with previous determinations.

Department's SO2 Review

There is no current SO_2 limit nor test data available for the existing EAF/LMF operations. Previous emissions were estimated to be less than the PSD significant emissions rate of 40 tons per year based on the scrap management plan. However, the increased production rate associated with this project requires a BACT determination for SO_2 emissions. Previous BACT determinations (1998 – 2003) for projects nationwide range from 0.07 to 1.8 lb/ton of tapped steel and rely exclusively on good operating practices. The most recent determinations in 2003 range from 0.15 to approximately 1.8 lb/ton of tapped steel.

The applicant believes that the current scrap management plan will minimize SO_2 emissions from the EAF/LMF operations and achieve a proposed SO_2 emission limit of 0.20 lb/ton of tapped steel. This level of control produces potential emissions of approximately 120 tons per year based on the full proposed capacity of the new plant. Due to the high exhaust flow rates (1,000,000 acfm) of the exhaust system, the SO_2 concentrations will be very low. In addition, the batch process of the EAF/LMF operations creates varying exhaust flow rates as well as pollutant concentrations to further complicate effective control. Based on the proposed SO_2 emission limit and these technical difficulties, add-on controls are not considered appropriate for this project. Therefore, the Department determines the draft BACT to be an SO_2 limit of 0.20 lb/ton of tapped steel from the EAF/LMF operations based on effective scrap management.

4. BILLET REHEAT FURNACE (BRF) OPERATIONS

The billet reheat furnace fires natural gas to reheat steel billets for processing into rebar, wire and rod. Natural gas contains little ash or sulfur and is readily combusted. The following table summarizes past actual emissions from the existing BRF and future potential emissions from the new BRF firing natural gas at a maximum rate of 222 MMBtu/hour.

Table 4A. Summary of Emissions – Billet Reheat Furnace

Pollutant	Past Actual Emissions (TPY) [1]	Future Potential Emissions (TPY) [2]	Net Emissions Increase (TPY)
PM/PM_{10}	5.95	7.08	1.13
SO_2	0.22	0.56	0.34
NO_x	65.02	75.48	9.54
CO	0.07	33.02	31.95
VOCs	2.01	4.72	2.71

Notes:

1. Based on revised PSD Application Table "Gerdau Ameristeel Modeling Parameters with 1,000,000 ACFM Baghouse", received 03/28/05.
2. Based on 8,520 hours per year operation and 1,192,800 tons of liquid steel per year.

This section discusses the air pollution control options available for each PSD-significant pollutant (CO, NOx, PM/PM_{10}, SO_2, and VOC) with regard to the BRF, the applicant's proposed BACT, and the Department's draft BACT determination. The applicant identified previous BACT determinations for BRFs listed in EPA's RACT/BACT/LAER Clearinghouse. These are presented as attachments to this Technical Evaluation and Preliminary Determination.

BACT Review for NOx Emissions

NOx Control Options

NOx formation was discussed previously in the section covering the EAF/LMF operations. Fuel-bound NOx emissions are almost negligible because natural gas contains little nitrogen. The majority of NOx emissions from the BRF will be thermal NOx. A summary of potential NOx control options are presented in the following table with a brief discussion of each option thereafter.

Table 4B. NOx Control Options – Billet Reheat Furnace

Available Control Option	Estimated Efficiency	Technically Feasible	Demonstrated	Proposed for the Project?
Chemical Reduction				
1. Selective Catalytic Reduction (SCR)	35 – 80%	Y	N	NA
2. Selective Non-Catalytic Reduction (SNCR)	35 – 80%	N	NA	NA
Peak Temperature Reduction				
3. Flue Gas Recirculation (FGR)	15 – 25%	N	NA	NA
4. Natural Gas Reburning (NGR)	15 – 25%	N	NA	NA
5. Over Fire Air (OFA)	15 – 25%	N	NA	NA
6. Less Excess Air (LEA)	15 – 25%	Y	Y	Y
7. Combustion Optimization	15 – 25%	Y	Y	Y
8. Low NO_x Burners (LNBs)	15 – 25%	Y	Y	Y

NA = Not Applicable

General descriptions of these control systems are provided in the previous section covering EAF/LMF operations.

1. *Selective Catalytic Reduction (SCR)*: Effective SCR systems can achieve NOx reductions approaching 90%. SCR is technically feasible for a BRF.

2. *Selective Non-Catalytic Reduction (SNCR)*. The temperature requirement for SNCR is greater than the temperature available exiting the reheat furnace. Therefore, SNCR is not technically feasible for this project. Also, there are no known installations of SNCR on BRFs.

3. *Flue Gas Recirculation (FGR)*: FGR has been applied to large utility and industrial boilers, but has not been demonstrated in small reheat furnaces and is not considered appropriate for this project.

4 *Natural Gas Reburn*. Reburn has been applied to large utility and industrial boilers, but has not been demonstrated in small reheat furnaces and is not considered appropriate for this project.

5. *Over-Fire Air (OFA)*: OFA has been applied to large utility and industrial boilers, but has not been demonstrated in small reheat furnaces and is not considered appropriate for this project.

6 *Less Excess Air*. Excess airflow combustion has been correlated to the amount of NO_x generated. Limiting the net excess airflow can limit the NO_x content of the flue gas and will be used for this project.

7 *Low NO_x Burners (LNBs)*. The new BRF will incorporate low NOx burners.

Applicant's NOx Review

A review of EPA's RACT/BACT/LAER Clearinghouse indicated previous BACT determinations for billet reheat furnaces in the range of 0.077 to 0.096 lb NO_x per MMBtu. This range also represents the two most recent determinations. Although SCR is technically feasible, there is only one known installation for a reheat furnace. The Beta Steel plant in Portage, Indiana was originally limited to 14.7 lb/MMscf with SCR control, which is equivalent to 0.014 lb/MMBtu. Subsequent stack testing showed that the BRF could not meet this limit with test results ranging from 17.7 to 77.1 lbs/MMscf. As a result, Beta Steel requested a revised permit limit equivalent to 0.077 lb/MMBtu, which was the highest tested emission rate. The Indiana Department of Environmental Management (IDEM) conducted an investigation and issued a Notice of Approval in May of 2003 that stated, "Beta Steel has demonstrated that, due to the non-steady state nature of the reheat furnace process, it is not possible to maintain a consistent level of performance from SCR control. This results in lowered efficiency of control of NO_x. The following factors contribute to reduction in SCR control efficiency:

- The reheat furnace operation is a non-steady state operation where emission rates vary depending upon heat input rate and material being heated;
- Varying flue gas temperature at the inlet of SCR causes fluctuations in the catalyst performance; and
- The catalyst performance is affected due to deposition of particulate matter from the flue gas stream. As it is not

possible to run the gas through any kind of add-on control before the SCR. this factor is inherent to this application of SCR."

IDEM concluded that a permit limit of 0.077 lb/MMBtu was still more stringent than any other BACT determination and granted the request.

In the review of SCR for the reheat furnace. the applicant estimated a capital cost of $1.57 million. The total annualized cost was estimated at $231,000 per year. As proposed, potential uncontrolled NO_x emissions are approximately 75 tons per year. Assuming 30% reduction. the SCR system would remove approximately 23 tons per year of NOx. which results in a cost effectiveness of approximately $10.000 per ton of NO_x removed. Therefore. the applicant rejects SCR due to unreasonable costs.

The applicant proposes a NOx emissions limit of 0.08 lb/MMBtu. which is based on the application of LNBs and low excess air as well as the vendor's guarantee This level is within the range of the lowest and most recent BACT determinations for BRFs. For all practical purposes. the proposed limit is essentially equivalent to the Beta Steel limit of 0.077 lb/MMBtu that is based on SCR control.

Department's Review

Based on the applicant's cost estimates. SCR would result in high initial capital costs and is not cost effective at $10.000 per ton of NOx removed. The Department does not support or reject the applicant's cost analysis. but notes that at even higher control efficiencies the cost effectiveness remains very high. In addition. the actual control efficiency achievable is uncertain based on the one existing SCR installation and the non-steady state. cyclic nature of the billet reheat furnace.

Therefore. the Department determines the draft BACT to be the control of NOx emissions by the combination of low-NO_x burners. low excess air. and good combustion practices to achieve an emissions limit of 0.08 lb/MMBtu. Compliance shall be demonstrated by conducting an initial test in accordance with EPA Method 7E. This level of control is consistent with previous BACT determinations for billet reheat furnaces.

BACT Review for CO Emissions

Add-on controls to reduce CO emissions include thermal and catalytic incineration. Thermal systems may be direct flame incinerators. flame incinerators with a recuperative heat exchanger. or regenerative systems utilizing energy recovery. Catalytic systems include fixed-bed (packed bed or monolith) systems and fluidized-bed systems. Such systems are capable of achieving greater than 90% destruction efficiencies depending on the inlet concentration.

The reheat furnace design generally provides a moderately high temperature with sufficient turbulence and residence time at that temperature to complete combustion of the fuel. Good combustion practices maintain efficient combustion and minimize products of incomplete combustion. To assure good combustion. process monitors can be used to monitor the O_2 content of the reheat furnace flue gas. Real time data is fed to the control room. The operator uses the real time data to adjust the operation to ensure sufficient excess air levels.

Applicant's CO Review

A review of EPA's RACT/BACT/LAER Clearinghouse shows that previous BACT determinations for BRFs range from 0.01 to 0.084 lb/MMBtu. The wide range of emission rates is due to differences in reheat furnace design and operation. In addition. all of the listed CO BACT determinations for BRFs have all been based on good combustion design and practices. With estimated potential CO emissions of only 33 tons per year. the addition of an incineration system would be cost prohibitive. Therefore. the applicant proposes a CO emission limit of 0.035 lb/MMBtu based on proper furnace design and good combustion practices including the control of combustion air and combustion temperature.

Department's CO Review

Historical test data for the existing BRF shows actual CO emissions to be very low. Compliance tests conducted on the BRF over the last five years indicate the following actual tested emission rates: 0.003 lb/MMBtu in 2000; 0 0013 lb/MMBtu in 2001; 0.001 lb/MMBtu in 2002; 0.0003 lb/MMBtu in 2003; and 0.007 lb/MMBtu in 2004. These values are well below the current allowable limit of 0.035 lb/MMBtu. However. it is noted that CO emissions can fluctuate due to the non-steady, cyclic nature of operating the billet reheat furnace The vendor of the new BRF has guaranteed the proposed CO emissions rate of 0.035 lb/MMBtu in conjunction with the proposed NOx emission rate of 0.08 lb/MMBtu.

The estimated potential CO emissions are 33 tons per year based on vendor's predicted emission rate. At this level. the installation of an add-on control system would be cost prohibitive. particularly given the expected actual emissions. Consideration is also given to the lower proposed NOx emission limit of 0.08 lb/MMBtu for the new BRF. For such external combustion processes. vendor guarantees for CO and NOx emissions are typically linked – lower CO guarantees

mean higher NOx guarantees. Therefore, the Department determines the draft BACT to be the control of CO emissions by proper design, efficient combustion, and exclusive firing of natural gas to achieve an emission limit of 0.035 lb/MMBtu. Compliance shall be demonstrated by conducting an initial test in accordance with EPA Method 10.

BACT Review for VOC Emissions

Applicant's VOC Review

VOC emissions from natural gas fired sources are primarily the result of incomplete combustion. Combustion is a function of three variables: time, temperature and turbulence. Once the combustion process begins, there must be enough residence time at the required temperature to complete the process, and enough turbulence or mixing to ensure that the fuel gets enough oxygen from the combustion air. Combustion systems with poor control of the air-to-fuel, poor mixing, and insufficient residence time at combustion temperature have higher VOC emissions than do those with good controls.

A review of EPA's RACT/BACT/LAER Clearinghouse indicates that previous VOC BACT determinations for BRFs have been exclusively based on good combustion design and practices. Such determinations range from 0.0014 to 0 0055 lb/MMBtu. The range of emissions is due to differences in reheat furnace design and operation. Base on the proposed equipment, maximum annual VOC emissions are estimated to be less than 5 tons per year. At this low level, the addition of control equipment would be cost prohibitive. Therefore, the applicant proposes to minimize VOC emissions by the efficient combustion and exclusive firing of natural gas. This is expected to result in a maximum emission rate of 0.005 lb/MMBtu.

Department's VOC Review

VOC emissions will be generated from the combustion of natural gas with no additional emissions related to the process. Natural gas will be readily combusted in the furnace with potential VOC emissions estimated to be less than 5 tons per year. At this rate, add-on controls would not be cost effective. Therefore, the Department determines the draft BACT to be the control of VOC emissions by the proper design, efficient combustion, and exclusive firing of natural gas. The draft CO BACT standard will serve as an indicator of efficient combustion. No VOC testing is required.

BACT Review for PM/PM10 Emissions

PM/PM10 Control Options

PM/PM_{10} emissions result from the combustion of natural gas via three potential mechanisms: ash found in the fuel; particulates in the combustion air; and unburned carbon formed by incomplete combustion of the fuel. Such emissions from firing natural gas are relatively low because natural gas contains negligible amounts of ash and is readily combusted. Most standard control options are available for removing particulate matter including settling chambers, cyclones, electrostatic precipitators, fabric filters, and wet scrubbers.

Applicant's PM/PM10 Review

A review of EPA's RACT/BACT/LAER Clearinghouse indicates that previous PM/PM_{10} BACT determinations have been exclusively based on good combustion for BRFs firing natural gas. Previous PM/PM_{10} BACT determinations range from 0.002 to 0.08 lb per MMBtu, including the most recent determinations. Although all control options are technically feasible, add-on controls to remove particulate matter from reheat furnaces or industrial boilers are not typically required for gas-fired units. Therefore, the applicant proposes to control PM/PM_{10} emissions by the efficient combustion and exclusive firing of natural gas. This is expected to result in a maximum emission rate of 0.0075 lb/MMBtu

Department's PM/PM10 Review

Particulate emissions from the BRF are related entirely to fuel combustion with no additional inputs from the process. With respect to particulate matter, natural gas is a clean fuel that supports the concept of pollution prevention. Previous BACT determinations for BRFs firing natural gas have relied on the efficient combustion of this clean fuel. In addition, the costs to reduce particulate matter with add-on controls would be prohibitive given the actual expected emissions from the BRF.

The Department determines the draft BACT to be the control of PM/PM_{10} emissions by the efficient combustion and exclusive firing of natural gas. The draft CO BACT standard will serve as an indicator of efficient combustion. No PM/PM10 testing is required. In addition, the following visible emissions standard will be established as a surrogate for particulate matter emissions:

> Visible emissions from the BRF shall not exceed 10% opacity, except for up to one 6-minute period per hour during which the opacity shall not exceed 20%.

This is a reduction of the current visible emission standard, which is 15% opacity.

BACT Review for SO_2 Emissions

Applicant's SO_2 Review

The proposed new BRF will fire natural gas as the exclusive fuel, which results in potential SO_2 emissions of 0.56 tons per year. At this rate, further reductions of SO_2 emissions with add-on control equipment would be cost prohibitive. Therefore, the applicant proposes the firing of natural gas as the exclusive fuel to control SO_2 emissions, which results in a potential emission rate of 0.0006 lb/MMBtu. This level of control is consistent with previous BACT determinations for BRFs.

Department's SO_2 Review

Sulfur dioxide emissions from the BRF are related entirely to fuel sulfur contribution with no additional inputs from the process. With respect to sulfur dioxide, natural gas is a clean fuel that supports the concept of pollution prevention. Further reduction by add-on control equipment would not be cost effective. The Department determines the draft BACT to be the control of SO_2 emissions by the exclusive firing of natural gas. No SO_2 testing is required.

5. SUMMARY OF BACT DETERMINATIONS

Table 5A Summary of Draft BACT Determinations – EAF/LMF Operations

Pollutant	Emission Limits	Control Technology	Test Methods [1,2]
PM/PM_{10}	0.0018 gr/dscf	Direct-shell evacuation control (DEC) system (fourth hole vent with O_2) with canopy hoods and new No. 5 baghouse control system	EPA Method 5
NO_x	0.33 lb/ton tapped steel	Low-NO_x oxy-fuel sidewall burners (LNBs) and furnace pressure control (good combustion practices with low excess air by the DEC systems)	EPA Method 7E (in terms of NO_2)
SO_2	0.2 lb/ton tapped steel	Scrap management and the firing of natural gas	EPA Method 8
CO	2.0 lbs/ton tapped steel	DEC system, proper design of the EAF/LMF, and good combustion practices	EPA Method 10
VOCs	0.13 lb/ton tapped steel	Scrap management, DEC system, proper design of the EAF/LMF, and good combustion practices	EPA Methods 25 or 25A (Method 18 is optional)
Visible Emissions			
< 3% opacity from the No. 5 baghouse control system < 6% opacity from the Melt Shop roof and Continuous Caster building roof <10% opacity from miscellaneous pickup points along the dust-handling system connected to the No. 5 baghouse control system including baghouse hoppers, enclosed screw conveyors, enclosed chain/paddle conveyors, dust silo building, enclosed loading building for the truck and rail load-out operations, etc.			EPA Method 9

Notes:

1. For the EAF and LMF operations, the sampling time and sample volume of each PM test run shall be at least 4 hours and 160 dscf, respectively, and the sampling time shall include an integral number of heats. For CO testing, three 3-hour runs shall be conducted to determine compliance. For other pollutants, the averaging time for each limit shall be in accordance with the test method. [Rule 62-212.400(BACT); Rule 62-204.800, F.A.C.; and 40 CFR 60.275a(e)(1)]
2. Compliance tests on the EAF and LMF operations shall be conducted at a minimum production rate of 144 tons per hour of tapped steel per Rule 62-297.310(2)(b), F.A.C. [(160 tons/hour max.) (90%) = 144 tons/hour]

Table 5B. Summary of Draft BACT Determinations - BRF Operations

Pollutant	Emission Limits [1]	Control Technology	Test Methods [2]
PM/PM_{10}	--	Firing natural gas	--
NO_x	0.0.08 lb/ton steel	Low-NOx burners, good combustion practices and low excess air	EPA Method 7E

SO_2	--	Firing natural gas	--
CO	0.035 lb/MMBtu	Proper furnace design and good combustion practices, including control of combustion air and temperature	EPA Method 10
VOCs	--	Firing natural gas, proper furnace design and good combustion practices	--
≤ 10% opacity, except for up to one 6-minute period per hour during which the opacity shall not exceed 20%			EPA Method 9

1. The averaging time for each limit shall be in accordance with the test method.
2. Compliance tests on the BRF operation shall be conducted at a minimum rate of 126 billet tons per hour (BTPH) per Rule 62-297.310(2)(b) [140 BTPH x 90% = 126 BTPH]

6. SOURCE IMPACT ANALYSIS

Introduction

The proposed project is a major modification to an existing facility and will increase PM_{10}, SO_2, NOx, CO and VOC emissions at levels in excess of PSD significant amounts. PM_{10}, SO_2, and NO_X, are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments and significant impact levels defined for them. CO is a criteria pollutant and has only AAQS and significant impact levels defined for it. Emissions of VOC are related to the formation of ozone and are not generally modeled for individual stationary sources. The air quality impact analyses required by the PSD regulations for these pollutants include.

- An analysis of existing air quality for PM_{10}, SO_2, NO_X, CO and VOC;
- A significant impact analysis for PM_{10}, SO_2, NO_X and CO,
- A PSD increment analysis for SO_2 and NO_2;
- An Ambient Air Quality Standards (AAQS) analysis for SO_2 and NO_2; and,
- An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts

The analysis of existing air quality generally relies on preconstruction monitoring data collected with EPA-approved methods. The significant impact, PSD increment, and AAQS analyses depend on air quality dispersion modeling carried out in accordance with EPA guidelines.

Based on the required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D C Circuit in NRDC vs. Thomas, 838 F 2d 1224 (D C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A discussion of the required analyses follows.

Analysis of Existing Air Quality

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement shall be granted by rule if either of the following conditions is met: the maximum predicted air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimis ambient concentration; or the existing ambient concentrations are less than a pollutant-specific de minimis ambient concentration. If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from the existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not

included in the modeling. No de minimis ambient concentration is provided for ozone. Instead the net emissions increase of VOC is compared to a de minimis monitoring emission rate of 100 tons per year.

The table below shows project air quality impacts for comparison to de minimis ambient concentrations.

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE DE MINIMIS CONCENTRATIONS

Pollutant	Averaging Time	Modeled Concentration ($\mu g/m^3$)	Impact Greater than De Minimis (Yes/No)	De Minimis Level ($\mu g/m^3$)
SO_2	24-hr	13	Yes	13
PM_{10}	24-hr	4	No	10
CO	8-hr	279	No	575
NO_2	Annual	3	No	14
Ozone	Annual Emission Rate	41 TPY of VOC	No	100 TPY VOC

As shown in the table PM_{10}, NO_2 and CO impacts from the project are predicted to be less than the de minimis levels; therefore, preconstruction monitoring is not required for these pollutants. VOC emissions are predicted to be less than the de minimis emission rate; therefore preconstruction monitoring is not required for ozone.

However, the table shows that SO_2 impacts from the project are predicted to be greater than the corresponding de minimis level. Therefore, the applicant is not exempt from preconstruction monitoring for SO_2. The applicant may instead satisfy this requirement using previously existing representative data. Previously existing representative monitoring data does exist from SO_2 monitors located in Duval County; this data is appropriate for fulfilling the monitoring requirement for this pollutant and to establish a background concentration for use in the SO_2 AAQS analysis. Background concentrations for SO_2 are shown in the table below. In addition, determination of an NO_2 background concentration is required since an AAQS analysis for NO_2 will be required as will be shown in the significant impact section. This background concentration is derived from an NO_2 monitor in Duval County.

BACKGROUND CONCENTRATIONS FOR USE IN AAQS ANALYSES

Pollutant	Averaging Time	Background Concentration ($\mu g/m^3$)
SO_2	24-hour	55
	3-hour	149
NO_2	Annual	27

Models and Meteorological Data Used in Significant Impact, PSD increment and AAQS Analyses

PSD Class II Area

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area and the portion of the Okefenokee National Wilderness Area (NWA) Class I area located within 50 km of the project. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction- specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations from the National Weather Service (NWS) station at Jacksonville International Airport, Florida and twice-daily upper air soundings from Waycross, Georgia. The 5-year period of meteorological data was from 1984 through 1988. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

Since five years of data were used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest predicted yearly average

was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and in the PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

PSD Class I Area

The nearest distance of this site from the Okefenokee NWA Class I PSD area is 37 kilometers; however, much of the Okefenokee NWA is greater than 50 km from the project site. In addition, the applicant assessed the predicted impacts on other PSD Class I areas located within 200 km of the site. These are the Wolf Island NWA, the Chassahowitzka NWA and the St. Marks NWA located at 131, 180 and 193 km from the project site, respectively. Since a large part of these PSD Class I areas are greater than 50 km from the proposed facility, long-range transport modeling was required. The California Puff (CALPUFF) dispersion model was used to evaluate the potential impact of the proposed pollutant emissions on the PSD Class I increments and the following Air Quality Related Values (AQRVs): regional haze, nitrogen and sulfur deposition. CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources. The CALPUFF model has the capability to treat time-varying sources. It is also suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanisms.

The meteorological data used in the CALPUFF model was processed by the California Meteorological (CALMET) model. The CALMET model utilizes data from multiple meteorological stations and produces a three-dimensional modeling grid domain of hourly temperature and wind fields. The wind field is enhanced by the use of terrain data, which is also input into the model. Two-dimensional fields such as mixing heights, dispersion properties, and surface characteristics are produced by the CALMET model as well. Meteorological data were obtained and processed for the calendar years of 1990, 1992 and 1996, the years for which MM4 and MM5 data are available. The CALMET wind field and the CALPUFF model options used were consistent with the suggestions of the federal land managers.

Significant Impact Analysis

Preliminary modeling is conducted using only the proposed project's worst-case emission scenario for each pollutant and applicable averaging time. Over 3000 receptors were placed along the facility's restricted property line and out to 7 km from the facility, which is located in a PSD Class II area. 500 receptors were placed in the Okefenokee NWA PSD Class I area. In addition 30, 58 and 35 receptors were placed in the Wolf Island NWA, Chassahowitzka NWA and St Marks NWA PSD Class I areas, respectively.

For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modeling compares maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in a PSD Class II area in the vicinity of the facility or in any PSD Class I area. In the event that the maximum predicted impact of a proposed project is less than the appropriate significant impact level, a full impact analysis for that pollutant is not required. Full impact modeling is modeling that considers not only the impact of the project but also other major sources, including background concentrations, located within the vicinity of the project to determine whether all applicable AAQS or PSD increments are predicted to be met for that pollutant. Consequently, a preliminary modeling analysis, which shows an insignificant impact, is accepted as the required air quality analysis (AAQS and PSD increments) for that pollutant and no further modeling for comparison to the AAQS and PSD increments is required for that pollutant. The tables below show the results of this modeling. The radius of significant impact, if any, for each pollutant and applicable pollutant averaging time is also shown in the tables below.

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE PSD CLASS II SIGNIFICANT IMPACT LEVELS IN THE VICINITY OF THE FACILITY

Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	Significant Impact? (Yes/No)	SIA (km)
SO_2	Annual	0.2	1	No	None
	24-hr	13	5	Yes	<1
	3-hr	31	25	Yes	<1
PM_{10}	Annual	0.4	1	No	None
	24-hr	4	5	No	None
CO	8-hr	279	500	No	None
	1-hr	780	2,000	No	None
NO_2	Annual	3	1	Yes	<1

MAXIMUM PROJECT IMPACTS FOR COMPARISON TO THE PSD CLASS I SIGNIFICANT IMPACT LEVELS				
Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	Significant Impact? (Yes/No)
SO_2	Annual	0 0	0.1	No
	24-hr	0.003	0.2	No
	3-hr	0.02	1.0	No
PM10	Annual	0.0	0.2	No
	24-hr	0.01	0.3	No
NO2	Annual	0.002	0.1	No

PM_{10} and CO were predicted to have less than significant impacts in the Class II area while all the applicable pollutants were predicted to have less than significant impacts in the Class I areas. This demonstrates compliance with ambient air quality standards and PSD increments for these pollutants in these areas Except for NO_2 and SO_2 in the Class II area, no further dispersion modeling was required to be performed for these pollutants

NO_2 and SO_2 were determined to have greater than significant impacts in the Class II area. The SIA based on maximum predicted ambient air concentrations of SO_2 and NO_2 were less than 1 km. Therefore, refined dispersion modeling, including other sources in the area, was required and conducted for SO_2 and NO_2 to demonstrate compliance with the PSD increments and the AAQS within this SIA.

PSD Increment Analysis in the Class II Area in the Vicinity of the Facility

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant over a baseline level set in 1977 for SO_2 and 1988 for NO_2. Refined Class II Increment compliance modeling is performed only if the SIA determination modeling indicates that the project would have a significant impact on air quality The purpose of Class II increment compliance modeling is to demonstrate that the new sources will not significantly cause or contribute to a violation of a PSD Increment.

This modeling involved the sources under review as well as sources from within the SIA and within 80 km of the facility using approved screening techniques for determining the sources to be included in the modeling analysis.

The results of the Class II increment analyses are given below and show that the maximum predicted impacts are less than the respective allowable increments.

PSD CLASS II INCREMENT ANALYSIS				
Pollutant	Averaging Time	Maximum Predicted Impact ($\mu g/m^3$)	Impact Greater than Allowable Increment?	Allowable Increment ($\mu g/m^3$)
SO_2	24-hr	17	No	91
	3-hr	56	No	512
NO_2	Annual	4	No	25

AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum-modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The determination of the maximum modeled concentration involved the sources under review as well as sources from within the SIA and within 80 km of the facility using approved screening techniques for determining the sources to be included in the modeling analysis. The results of the AAQS analysis are summarized in the table below. As shown in this table, emissions from the proposed facility are not expected to cause or significantly contribute to a violation of any AAQS.

AMBIENT AIR QUALITY IMPACTS						
Pollutant	Averaging Time	Modeled Sources ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Total Impact Greater than AAQS	Florida AAQS ($\mu g/m^3$)
SO_2	24-hr	53	55	108	No	260
	3-hr	177	149	326	No	1300
NO_2	Annual	5	27	32	No	100

Additional Impacts Analysis

Impacts On Soils, Vegetation, Wildlife, and Visibility

The maximum ground-level concentrations predicted to occur due to PM10, NOx, CO and SO_2 emissions as a result of the proposed project, including all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the four Class I areas within 200 km of the project. No significant impacts on this area are expected. A Level I visibility screening analysis using the VISCREEN model was used to evaluate visibility impacts in the Class I area located within 50 km of the site. This analysis showed no significant impact on visibility in this area A regional haze analysis using the long-range transport model CALPUFF was done for the portions of the PSD Class I areas located greater than 50 km from the site. No adverse regional haze impacts were predicted for these areas. Total nitrogen (N) and sulfur (S) deposition rates on the Class I areas were also predicted using CALPUFF. The maximum predicted deposition rates are below the federal land manager recommended deposition threshold levels for N and S.

Growth-Related Air Quality Impacts

The proposed modification will not significantly change employment, population, housing or commercial/industrial development in the area to the extent that a significant air quality impact will result.

Good Engineering Practice Stack Height Determination

A Good Engineering Practice (GEP) review was conducted for each proposed new source to determine if building downwash effects needed to be included in the modeling and to determine the appropriate stack heights to be used with the models. The new stacks will be lower than GEP height; therefore building downwash effects were included in the modeling analyses

Additional Requirements

The permit has additional requirements that provide reasonable assurance that Department rules can be met. Some of these are conditions that limit fuels and materials to exclude hazardous wastes, contaminated materials and other fuels.

7. CONCLUSION

The permitting authority has determined that an air construction permit is required in order to construct some new emissions units and modify others, as described above. The permitting authority intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that the construction and operation of the affected emissions units will not adversely impact air quality and will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-256, 62-257, 62-281, 62-296, and 62-297, F.A.C. Based on the foregoing technical evaluation of the application submitted by the Gerdau Ameristeel, the Department has made a preliminary determination that the proposed project will be in compliance with all applicable state and federal air pollution regulations. The General and Specific Conditions are provided in the attached Draft Permit.

Permit Engineer: Bruce Mitchell

Reviewed and Approved by Jeff Koerner, P.E.

ATTACHMENTS

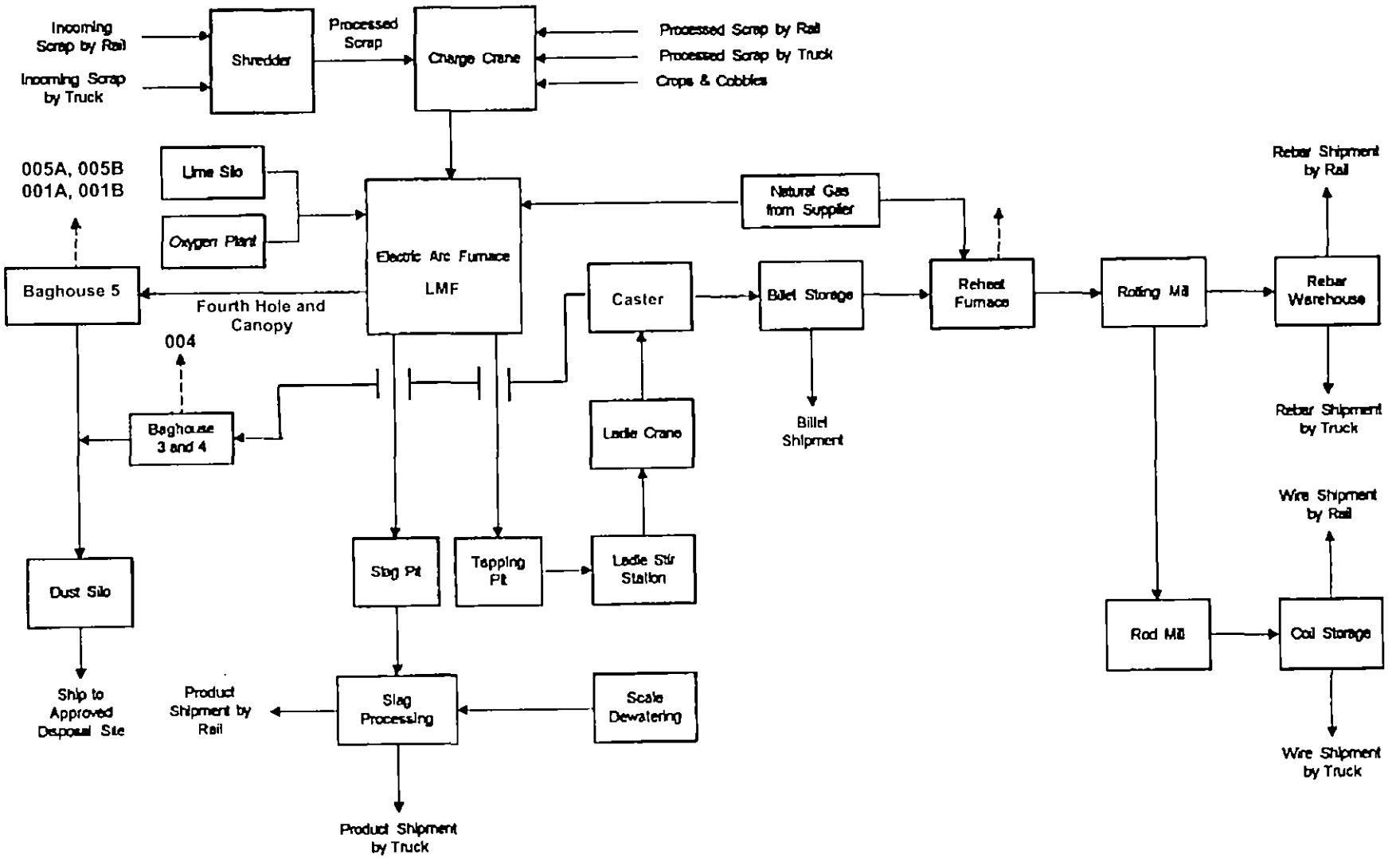

Figure 2-3.
Proposed Process Flow Diagram
Gerdau Ameristeel – Jacksonville Plant

Source: Golder, 2003.

Process Flow Legend

Solid/Liquid ——→

Gas - - - - - - →

Golder Associates

Table 5-2 BACT Determinations for Electric Arc Furnace (EAF), 1998 - 2004

Facility	State	Date	Throughput ton/hr	NOx lb/ton	CO lb/ton	VOC lb/ton	SO2 lb/ton	Lead lb/hr	Lead lb/ton	PM/PM10 gr/dscf	PM gr/dscf	PM10 gr/dscf
Nucor Steel Corp (Draft Determination)	Nebraska	6/22/2004	--	--	--	--	--	--	--	--	37.89lb/hr	28.78 lb/hr
Steel Dynamics, Hendricks	Indiana	8/29/2003	135	0.35	2	0.13	0.25-1.8	0.134	0.001	--	0.0018	0.0052
Beta Steel[1]	Indiana	5/30/2003	151	0.45	5.41	0.15	0.33	--	--	0.0052	--	0.0052
Timken Company/Faircrest Plant[2]	Ohio	2/20/2003	200	0.2 (NO_2)	4.8	0.1	0.15	0.26	0.001	0.0032	--	--
Nucor Jewett Plant[1]	Texas	1/5/2003	240	0.898	2.2	0.43	1.76	0.88	0.0037	--	55.5 lb/hr	34.2 lb/hr
Nucor Steel Decatur, LLC (Trico Steel)	Alabama	7/11/2002	440	0.4	2.0	0.2	0.5	--	--	0.0032	--	--
Nucor Steel Corp	North Carolina	2002	-	0.51	4	0.13	0.22	--	--	0.0018	--	--
IPSCO Steel	Iowa	2002	--	0.8	1.93	0.18	0.7	--	--	0.0052	--	--
Ellwood Quality Steels Co	Pennsylvania	4/30/2001	53ton/batch	0.1	5	0.3	0.45	--	--	--	--	--
SMI Steel	South Carolina	2001	--	0.51	2	--	0.35	-	--	0.002	--	--
Nucor Yamato	Arkansas	2001	--	0.38	2	0.13	0.15	--	--	0.0018	--	--
Keystone Steel	Illinois	2000	--	0.51	1.34	0.13	0.2	--	--	0.0018	--	--
Charter Steel	Wisconsin	2000	--	0.51	3.5	0.06	--	--	--	0.0015	--	--
Republic Technologies Int	Ohio	1/27/1999	165	0.35	4	0.35	0.07		--	0.0032	--	--
SDI Steel, Whitley	Indiana	1999	--	0.35	2	0.09	0.25	--	--	0.002	--	--
Gerdau-Ameristeel	Florida	1999	100	0.33	3	0.0295	--	0.7	0.007	0.0034	--	--
Gerdau-Ameristeel	North Carolina	4/29/1999	-	--	6*	--	--	--	--	--	--	--
IPSCO Steel Inc	Alabama	10/16/1998	200	0.4	2	0.35	0.7	--	--	0.0033	--	--
Roanoke Electric	Virginia	1998	--	0.378	2.4	0.3	0.17	--	--	0.0034	--	-
Quanex Corporation Macsteel Division	Arkansas	2/18/1998	86	0.51	4.9	0.13	1.05	0.3	0.0035	0.0018	--	--
Chaparral Steel	Virginia	1998	--	0.7	4	0.35	0.7	--	--	0.0018	--	--

[1]Emissions from Meltshop (EAF(w/Cojet Burners), LMF, Caster, & Natural Gas Comb. Units)

[2]NO_2 emission limit as reported in EPA RBLC Database

[3]EAF, LMT, Caster, Meltshop

Source: Golder, 2004.

Table 5-9. BACT Determinations for Reheat Furnaces, 1998 - 2004

Facility	State	Date	NO_x	CO	VOC	SO_2	PM/PM_{10}
Nucor Steel Corp (Draft Determination)	Nebraska	6/22/2004	0.096	0.035	0.0055	0.0006	--
Steel Dynamics, Hendricks	Indinana	8/29/2003	0.08	0.084	0.0050	0.0006	0.0019
Beta Steel*	Indiana	5/30/2003	0.077	0.04	--	--	--
Nucor Steel	North Carolina	2002	0.128	0.084	0.005	0.00058	--
IPSCO Steel	Iowa	2002	0.269	--	--	--	--
Nucor Yamato	Arkansas	2001	0.094	0.0824	0.0054	0.0006	0.0168
Charter Steel	Wisconsin	2000	0.09	0.011	0.0014	0.00061	0.082
Republic Technologies Int.	Ohio	1/27/1999	0.112	0.039	--	--	0.005
SDI Steel, Whitley	Indiana	1999	0.11	0.03	0.0055	--	--
Gerdau-Ameristeel	Florida	1999	0.19	0.035	--	--	0.0108
IPSCO Steel Inc.	Alabama	10/16/1998	0.172	--	--	--	0.0058
Quanex Corporation - Macsteel Division	Arkansas	2/18/1998	0.14	0.035	--	--	0.0031
Chaparral Steel	Virginia	1998	0.21	0.075	0.0053	0.0006	--

Note: All measurements in lb/MMBtu.

Source: Golder, 2004.

Gerdau Ameristeel
Jacksonville Steel Mill

Facility ID No.: 0310157
Duval County

Air Construction Permit Project No.: 0310157-007-AC/PSD-FL-349

Permitting Authority:
State of Florida
Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Mail Station #5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Telephone: 850/488-0114
Fax: 850/922-6979
Fax: 850/921-9533

Compliance Authority:
Environmental Resource Management Department
Environmental Quality Division
117 West Duval Street, Suite 225
Jacksonville, Florida 32202
Telephone: (904)630-4900
Fax: (904)630-3638

Permittee:
Gerdau Ameristeel
16770 Rebar Road
Baldwin, FL 32234

Permit Project No.: 0310157-007-AC/PSD-FL-349
Facility ID No.: 0310157
SIC No.: 3390
Project: New Melt Shop and Electric Arc Furnace; New Continuous Caster Building: Continuous Caster, Ladle Metallurgical Furnace and Support Operations; New Billet Reheat Furnace; and, Increase in Production

The purpose of this permit is to issue an air construction permit, No. 0310157-007-AC/PSD-FL-349, for the construction of: a new Melt Shop, which will house the Electric Arc Furnace (EAF) operations; a new Continuous Caster Building, which will house the Continuous Caster and Ladle Metallurgical Furnace (LMF) operations; and, a new Billet Reheat Furnace (BRF). In addition, the project will allow for an increase in production in tapped (liquid) steel from 720,000 to 1,192,800 tons per year (TPY). This project will occur at the Gerdau Ameristeel's Jacksonville Steel Mill. The facility receives scrap steel by truck and rail and processes it into steel rebar, wire and rod. Major components of the existing facility are the melt shop building, electric arc furnace, continuous caster, billet reheat furnace, rolling and wire mills, and slag processing operation. This facility is located at 16770 Rebar Road, Baldwin, Duval County, FL. UTM Coordinates are: Zone 17, 405.7 km East and 3350.2 km North; Latitude: 30° 16' 52" North and Longitude: 81° 58' 50" West.

This air construction permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297. The above named permittee is hereby authorized to operate the facility shown on the application and approved drawings, plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

Referenced attachments made a part of this permit:
Appendix SS-1, Stack Sampling Facilities
TABLE 297.310-1, CALIBRATION SCHEDULE (dated 10/07/96)
Attachment "40 CFR 60, Subpart A"
FIGURE 1 - SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE REPORT (40 CFR 60, July 1996)
Alternate Sampling Procedure: ASP Number 97-B-01
Gerdau Ameristeel: Scrap Receiving Policy and Procedures

Michael G. Cooke, Director
Division of Air Resource Management

MGC/tlv/jk/bm

GENERAL CONDITIONS:

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, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the 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), F.S., the issuance of this permit does not convey any 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 of 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 no 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 permitted 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 and 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 any record 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 non-compliance, 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.

GENERAL CONDITIONS:

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, F.S. 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 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:
(x) Determination of Best Available Control Technology (BACT)
(x) Determination of Prevention of Significant Deterioration (PSD)
(x) Compliance with New Source Performance Standards (NSPS)
( ) Compliance with National Emission Standards for Hazardous Air Pollutants/ Maximum Available Control Technology (MACT)

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 for 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:
- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurement;
- the dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- 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.

SPECIFIC CONDITIONS:

A. The following specific conditions apply facility-wide:

1. General Pollutant Emission Limiting Standards. Objectionable Odor Prohibited. The permittee shall not cause, suffer, allow, or permit the discharge of air pollutants which cause or contribute to an objectionable odor.
[Rule 62-296.320(2), F.A.C.; and, Rule 2.1001, JEPB]

2. General Particulate Emission Limiting Standards. General Visible Emissions Standard.
Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, no person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than 20 percent opacity in accordance with Rule 62-296.320(4)(b)1., F.A.C., and Rule 2.1001, JEPB. EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C., and Rule 2.1101, JEPB. Testing shall be required upon request of the Department.
[Rule 62-296.320(4)(b)1., F.A.C.; and, Rule 2.1101, JEPB]

3. General Pollutant Emission Limiting Standards. Volatile Organic Compounds (VOC) Emissions or Organic Solvents (OS) Emissions. The permittee shall allow no person to store, pump, handle, process, load, unload, or use in any installation, VOC or OS without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department.
[Rule 62-296.320(1)(a), F.A.C.; and, Rule 2.1001, JEPB]

4. Insignificant Emissions Units and/or Activities. Appendix I-1, List of Insignificant Emissions Units and/or Activities, is part of this permit.
[Rules 62-213.440(1), 62-213.430(6), and 62-4.040(1)(b), F.A.C.; and, Rules 2.501 and 2.1301, JEPB]

5. Unconfined Particulate Matter Emissions. Unconfined particulate matter emissions from yard operations, open stock piling of materials and/or materials handling operations, such as the slag handling operations (including, but not limited to, screening, crushing, and sizing operations of steel slag), shall be controlled by using the following reasonable precautions when visible emissions are equal to or greater than 20 percent opacity.
a. Reduced speed for vehicular traffic in the plant to 5 miles per hour.
b. Use of liquid resinous adhesives or other liquid (water) dust suppressants or wetting agents.
c. Use of paving or other asphaltic materials.
d. Removal of particulate matter from paved roads and/or other paved areas by vacuum cleaning or otherwise by wetting prior to sweeping.
e. Covering of trucks, trailers, front end loaders, and other vehicles or containers to prevent spillage of particulate matter during transport.
f. Use of mulch, hydroseeding, grassing, and/or other vegetative ground cover on barren areas to prevent or reduce particulate matter from being windblown.
g. Use of hoods, fans, filters, and similar equipment to contain, capture, and vent particulate matter.
h. Enclosures or covering of conveyor systems.
[Rules 62-296.320(4)(b) & (c)2., F.A.C.; 0310157-004-AC/PSD-FL-261; Rule 2.1001, JEPB; and, 0310157-007-AC/PSD-FL-349]

6. The permittee shall submit all compliance related notifications and reports required of this permit to:

Environmental Resource Management Department
Environmental Quality Division
117 West Duval Street, Suite 225
Jacksonville, FL 32202
Telephone: 904/630-4900
Fax: 904/630-3638

7. Any reports, data, notifications, certifications, and requests required to be sent to the United States Environmental Protection Agency should be sent to:

United States Environmental Protection Agency
Region 4
Air, Pesticides & Toxics Management Division
Air & EPCRA Enforcement Branch, Air Enforcement Section
61 Forsyth Street
Atlanta, GA 30303-8960
Telephone: (404) 562-9155
Fax: (404) 562-9163

8. The facility shall be subject to the City of Jacksonville Ordinance Code, Title X, Chapter 360 [Environmental Regulation], Chapter 362 [Air and Water Pollution], Chapter 376 [Odor Control], and JEPB Rule 1 [Final Rules with Respect to Organization, Procedure, and Practice].

9. The facility shall be subject to JEPB Rule 2, Parts I through VII, and Parts IX through XIII.

10. Construction and Expiration: The permit expiration date includes sufficient time to complete construction, perform required testing, submit test reports, and submit an application for a Title V operation permit to the Department. Approval to construct shall become invalid for any of the following reasons: construction is not commenced within 18 months after issuance of this permit; construction is discontinued for a period of 18 months or more; or construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. In conjunction with an extension of the 18-month period to commence or continue construction (or to construct the project in phases), the Department may require the permittee to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for emissions units regulated by the project. For good cause, the permittee may request that this PSD air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit
[Rules 62-4.070(4), 62-4.080, 62-210.300(1), and 62-212.400(6)(b), F.A.C.; 40 CFR 52.21(r)(2); 40 CFR 51.166(j)(4)]

11. 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.]

12. 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.]

13. Modifications: 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.
[Rule 62-4.030 and Chapters 62-210 and 62-212, F.A.C.]

14. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V 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 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 ERMD-EQD office.
[Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

B. New Melt Shop Building and EAF (Electric Arc Furnace) Operations and New Continuous Caster Building and LMF (Ladle Metallurgical Furnace) Operations with a New No. 5 Baghouse Control System Serving Its Dust-Handling System and the EAF and LMF Operations: Emissions Units Nos. 008 and 010.

Emissions Unit Descriptions:	A new Melt Shop Building will be built along with a new electric arc furnace (EAF) for processing recycled scrap-based steel; and, a new Continuous Caster Building will be built to include the continuous caster operations and the new LMF operations, which will be used for refining the tapped (liquid) steel received from the EAF. Emissions of particulate matter (both PM and PM_{10}) and visible emissions from the EAF's and LMF's operations will be controlled by a new No. 5 baghouse control system. The new No. 5 baghouse control system will also be used to control its associated dust-handling system. Heat will be provided by natural gas fired through low-NO_x oxy-fuel sidewall burners (LNBs) and with electric arcs from carbon electrodes.
Control:	Proper engineering design; firing of natural gas; low-NO_x oxy-fuel sidewall burners (LNBs); low excess air; good combustion practice; a new baghouse control system, designated as Baghouse No. 5, and associated canopy hoods with duct work; Direct-Shell Evacuation Control (DEC) systems (EAF's and LMF's); and, usage of a scrap management plan.

Definitions: 40 CFR 60, Subpart AAa.

a. Electric arc furnace (EAF): means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes; and, an EAF shall consist of the furnace shell and roof and the transformer.

b. Ladle metallurgical furnace (LMF): means an EAF that does the final refining of the molten steel that it receives from the EAF.

c. Charge: means the addition of iron and steel scrap or other materials into the top of an electric arc furnace.

d. Heat cycle: means the period beginning when scrap is charged to an empty EAF and ending when the EAF tap is completed.

e. Tap: means the pouring of molten steel from an EAF.

f. Dust-handling system: means the equipment used to handle particulate matter collected by the control device for an EAF and consists of the control device dust hoppers, the dust-conveying equipment, any central dust storage equipment, the dust-treating equipment (e.g., pug mill, pelletizer), dust transfer equipment (from storage to truck), and any secondary control devices used with the dust transfer equipment.

g. Refining: means that phase of the steel production cycle during which undesirable elements are removed from the molten steel and alloys are added to reach the final metal chemistry.

h. Direct-shell evacuation control system (DEC system): means a system that maintains a negative pressure within the EAF (and LMF) above the slag or metal and ducts emissions to the control device.

i. Bag leak detection system: means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other conditions that result in increases in particulate loadings. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, electrodynamic, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

The following specific conditions apply to the emission units described above.

General.

B.0. Post-Construction.

a. This permit authorizes the installation of an EAF, a LMF, a BRF, a continuous caster, DECs, canopy hoods, and a baghouse control system No. 5. The construction shall be in accordance with the application and associated documents provided to the Permitting Authority for the issuance of this permit. Any changes to the project that are contrary to these documents and permit shall be reported in writing to the Permitting Authority by the P.E. of Record.
[Rules 62-4.070(3) and 62-4.160(2), F.A.C.]

b. The existing EAF shall be removed from service upon commissioning and establishing normal operation of the new EAF and the initial performance tests have been conducted satisfactorily pursuant to 40 CFR 60.8 and the conditions of this permit. The existing LMF shall be removed from service upon commissioning and establishing normal operation of the new LMF and

the initial performance tests have been conducted satisfactorily pursuant to 40 CFR 60.8 and the conditions of this permit. A letter shall be sent to the City of Jacksonville's Environmental Resource Management Department – Environmental Quality Division (ERMD-EQD) and the Department's Northeast District (NED) offices upon completion of this specific condition.
[Rules 62-4.070(3) and 62-212.400(5) & (6), F.A.C.; and, 0310157-007-AC/PSD-FL-349]

B.1.a. 40 CFR 60, Subpart AAa, Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels, shall apply to the emissions units described herein.
b. 40 CFR 60, Subpart A, General Provisions, shall apply to the emissions units described herein.
[Rule 62-204.800, F.A.C.; Rule 2.201, JEPB; and, 40 CFR 60, Subparts A and AAa]

B.2. The owner and operator shall abide by the scrap management plan attached to the permit (see Gerdau Ameristeel, Scrap Receiving Policy and Procedures). The owner or operator shall update this plan as necessary through the Title V air operation permit approval process.
[Rule 62-4.070(3), F.A.C.]

Essential Potential to Emit (PTE) Parameters.

B.3. The maximum heat inputs shall not exceed the following:
a. EAF: 34.6×10^6 Btu per hour firing natural gas.
b. LMF: 34.6×10^6 Btu per hour firing natural gas.
[Rules 62-210.200(PTE) and 62-212.400(5), F.A.C.; Rule 2.401, JEPB, and, 0310157-007-AC/PSD-FL-349]

B.4. Permitted Capacity. The production rates shall not exceed any of the following:
a. EAF:
1. 176 tons of raw materials (scrap steel, fluxes, alloys, etc.) per hour, maximum daily average;
2. 160 tons of tapped steel (liquid) per hour, maximum daily average.
3. 140 billet tons of tapped steel (liquid) per hour, maximum monthly average.
4. 1,192,800 tons of tapped steel (liquid) during any consecutive 12 months.

b. LMF:
1. 160 tons of tapped steel (liquid) per hour, maximum daily average.

[Rules 62-210.200(PTE) and 62-212.400(5), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.5. The allowable hours of operation shall not exceed the following:
a. EAF: 8,520 hours per year.
b. LMF: 8,520 hours per year.
[Rules 62-210.200(PTE) and 62-212.400(5), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

Emission Limitations and Standards.

B.6. Best Available Control Technology Determination.

The following table shows the BACT emission limits, control technology, and test methods determined by the Department for the new EAF and LMF operations:

Pollutant	Emission Limits [1]	Control Technology	Test Methods [2 and 3]
PM as PM/PM_{10}	0.0018 gr/dscf	Direct-shell evacuation control (DEC) systems (fourth hole vent with O_2); and, canopy hoods and new No. 5 baghouse control system	EPA Reference Method 5 40 CFR 60, Appendix A
NO_x	0.33 lb/ton tapped steel	Low-NO_x oxy-fuel sidewall burners (LNBs) and furnace pressure control (good combustion practices – low excess air by the DEC systems)	EPA Reference Method 7, 7A or 7E; 40 CFR 60, Appendix A
SO_2	0.2 lb/ton tapped steel	Scrap management plan and supplemental firing of natural gas	EPA Reference Method 8 40 CFR 60, Appendix A
CO	2.0 lbs/ton tapped steel	DEC systems, and, proper design, operation and control of the combustion process	EPA Reference Method 10 40 CFR 60, Appendix A
VOCs	0.13 lb/ton tapped steel	DEC systems; proper design, operation and control of the combustion process; and, usage of a scrap management plan	EPA Reference Method 18, 25 or 25A 40 CFR 60, Appendix A
Visible Emissions	<3% Opacity: No. 5 baghouse control system <6% Opacity: Melt Shop Roof and Continuous Caster Building Roof	No. 5 baghouse control system and associated roof canopy hoods; and, usage of the associated DEC systems	EPA Reference Method 9 40 CFR 60, Appendix A
Visible Emissions	<10% Opacity: Miscellaneous pickup and transfer points along the dust-handling system for the No. 5 baghouse control system	No. 5 baghouse control system	EPA Reference Method 9 40 CFR 60, Appendix A

[1] Unless otherwise specified, the averaging time for each limit shall be in accordance with the test method.

[2] For the EAF and LMF operations, the sampling time and sample volume of each PM test run shall be at least 4 hours and 160 dscf, respectively, and the sampling time shall include an integral number of heats. Compliance with the CO standard shall be based on the average of three (3) 3-hour test runs.
[Rule 62-204.800, F.A.C., and 40 CFR 60.275a(e)(1)]

[3] Compliance tests on the EAF and LMF operations shall be conducted at a minimum production rate of 144 tons per hour (TPH) tapped steel per Rules 62-297.310(2) & (2)(b), F.A.C. [160 TPH x 90% = 144 TPH tapped steel]

B.7. Particulate matter (PM/PM_{10}) emissions shall not exceed 0.0018 grains per dry standard cubic foot (gr/dscf), 12.88 lbs/hr, and 54.9 TPY from the combined operations of the EAF and LMF, including the dust-handling system, based on the average of three (3) test runs conducted in accordance with EPA Reference Method 5 (as described in 40 CFR 60, Appendix A) and consistent with the requirements of 40 CFR 60.275a(e)(1). (See specific condition **B.33.**)
[Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.8. Visible Emissions (VE).
a. VE from the control device, the No. 5 baghouse control system, shall be less than 3 percent opacity.
[40 CFR 60.272a(a)(2); Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

b. VE from any opening in the melt shop building or continuous caster building shall be less than 6 percent opacity.
[40 CFR 60.272a(a)(3); Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

c. VE from any pickup points along the dust-handling system connected with the No. 5 baghouse control system shall be less than 10 percent opacity. Such points include the baghouse hoppers, enclosed screw conveyors or enclosed chain/paddle conveyors, dust silo building, and the enclosed loading building for the truck and rail load-out operations.
[40 CFR 60.272a(b); Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.9. Carbon monoxide (CO) emissions shall not exceed 2.0 lbs/ton of steel, 320.0 pounds per hour, and 1,192.80 TPY from the combined operations of the EAF and LMF, based on the average of three (3) 3-hour test runs conducted in accordance with EPA Reference Method 10 (as described in 40 CFR 60, Appendix A).
[Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB, and, 0310157-007-AC/PSD-FL-349]

B.10. Nitrogen oxides (NO_x) emissions shall not exceed 0.33 lb/ton of steel, 52.8 lbs/hr, and 196.8 TPY from the combined operations of the EAF and LMF, based on the average of three (3) test runs conducted in accordance with EPA Reference Method 7, 7A or 7E (as described in 40 CFR 60, Appendix A).
[Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.11. Volatile organic compounds (VOC) emissions shall not exceed 0.13 lb/ton of steel, 20.8 lbs/hr, and 77.5 TPY from the combined operations of the EAF and LMF, based on the average of three (3) test runs conducted in accordance with EPA Reference Method 18, 25, or 25A (as described in 40 CFR 60, Appendix A).
[Rule 62-212.400(1), F.A.C., Rule 2.401, JEPB, and, 0310157-007-AC/PSD-FL-349]

B.12. Lead (Pb) emissions shall not exceed 0.00195 lb/ton of steel produced, 0.312 lb/hr, and 1.163 TPY from the combined operations of the EAF and LMF, based on the average of three (3) test runs conducted in accordance with EPA Reference Method 12 (as described in 40 CFR 60, Appendix A).
[Rules 62-4.070(3) and 62-212.400(1), (2)(d)4 and (2)(g), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

Excess Emissions

B.13. 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.; and, Part III, Rule 2.301, JEPB]

B.14. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C.; and, Part III, Rule 2.301, JEPB]

Emissions Monitoring.

B.15. Observations of the opacity of the visible emissions from the control device shall be performed by a certified visible emission observer in accordance with 40 CFR 60.273a(c). Visible emission observations shall be conducted at least once per day for at least three 6-minute periods when the furnace is operating in the melting and refining period. All visible emission observations shall be conducted in accordance with EPA Reference Method 9. If visible emissions occur from more than one point, the opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emission, only one set of three 6-minute observations will be required. In that case, the EPA Reference Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in 40 CFR 60.272a(a). "Furnace" means the EAF (melting) and the LMF (refining).
[40 CFR 60.273a(c); and, Rule 2.201, JEPB]

B.16. A furnace static pressure monitoring device is not required on the EAF nor the LMF because each is equipped with a DEC system. Observations of shop opacity shall be performed by a certified visible emission observer as follows: Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop taken in accordance with EPA Reference Method 9. Shop opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of

visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. "Shop" shall include both the melt shop building and the continuous caster building; and, "furnace" means the EAF (melting) and the LMF (refining).
[40 CFR 60.273a(d); and, Rule 2.201, JEPB]

B.17. A bag leak detection system must be installed and continuously operated on the No. 5 Baghouse control system because the owner or operator elected not to install and operate a continuous opacity monitoring system as provided for under 40 CFR 60.273a(c). In addition, the owner or operator shall meet the visible emissions observation requirements in 40 CFR 60.273a(c) (see specific condition **B.15.**). The bag leak detection system must meet the specifications and requirements of 40 CFR 60.273a(e)(1) through (8).
(1) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 1 milligram per actual cubic meter (0.00044 grains per actual cubic foot) or less.
(2) The bag leak detection system sensor must provide output of relative particulate matter loadings and the owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).
(3) The bag leak detection system must be equipped with an alarm system that will sound when an increase in relative particulate loading is detected over the alarm set point established according to 40 CFR 60.273a(e)(4), and the alarm must be located such that it can be heard by the appropriate plant personnel.
(4) For each bag leak detection system required by 40 CFR 60.273a(e), the owner or operator shall develop and submit to the permitting authority, for approval, a site-specific monitoring plan that addresses the items identified in paragraphs (i) through (v) of 40 CFR 60.273a(e)(4). For each bag leak detection system that operates based on the triboelectric effect, the monitoring plan shall be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015). The owner or operator shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan shall describe the following:
(i) Installation of the bag leak detection system;
(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established;
(iii) Operation of the bag leak detection system including quality assurance procedures;
(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list; and,
(v) How the bag leak detection system output shall be recorded and stored.
(5) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time (if applicable).
(6) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the permitting authority except as provided for in 40 CFR 60.273a(e)(6)(i) and (ii).
(i) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects including temperature and humidity according to the procedures identified in the site-specific monitoring plan required under 40 CFR 60.273a(e)(4).
(ii) If opacities greater than zero percent are observed over four consecutive 15-second observations during the daily opacity observations required under 40 CFR 60.273a(c) and the alarm on the bag leak detection system does not sound, the owner or operator shall lower the alarm set point on the bag leak detection system to a point where the alarm would have sounded during the period when the opacity observations were made.
(7) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detection sensor must be installed downstream of the baghouse and upstream of any wet scrubber.
(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
[40 CFR 60.273a(e)(1) thru (8)]

B.18. For the bag leak detection system installed according to 40 CFR 60.273a(e), the owner or operator shall initiate procedures to determine the cause of all alarms within 1 hour of an alarm. Except as provided for under 40 CFR 60.273a(g), the cause of the alarm must be alleviated within 3 hours of the time the alarm occurred by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to, the following:
(1) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in particulate emissions;
(2) Sealing off defective bags or filter media;
(3) Replacing defective bags or filter media or otherwise repairing the control device;

(4) Sealing off a defective baghouse compartment;
(5) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; and,
(6) Shutting down the process producing the particulate emissions
[40 CFR 60.273a(f)]

B.19. In approving the site-specific monitoring plan required in 40 CFR 60.273a(e)(4), the compliance authority may allow owners or operators more than 3 hours to alleviate specific conditions that cause an alarm if the owner or operator identifies the condition that could lead to an alarm in the monitoring plan, adequately explains why it is not feasible to alleviate the condition within 3 hours of the time the alarm occurred, and demonstrates that the requested additional time will ensure alleviation of the condition as expeditiously as practicable.
[40 CFR 60.273a(g)]

Monitoring of Operations.

B.20. 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.; and, Part XI, Rule 2.1001, JEPB]

B.21. The owner or operator shall maintain records of the following information:
(1) All data obtained under 40 CFR 60.274a(b), and,
(2) All monthly operational status inspections performed under 40 CFR 60.274a(c).
[40 CFR 60.274a(a)]

B.22. Except as provided under 40 CFR 60.274a(e), the owner or operator shall check and record on a once-per-shift basis the furnace static pressure (if DEC system(s) is/are in use, and a furnace static pressure gauge is installed according to 40 CFR 60.274a(f)) and either: check and record the control system fan motor amperes and damper position on a once-per-shift basis; install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check and record damper positions on a once-per-shift basis. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The compliance authority may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to EPA Reference Methods 1 and 2 of Appendix A, 40 CFR 60. "Furnace" means both the EAF and the LMF.
[40 CFR 60.274a(b)]

B.23. When the owner or operator of an affected facility is required to demonstrate compliance with the standards under 40 CFR 60.272a(a)(3) and at any other time that the compliance authority may require (under section 114 of the CAA, as amended) either: the control system fan motor amperes and all damper positions, the volumetric flow rate through each separately ducted hood, or the volumetric flow rate at the control device inlet and all damper positions shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to 40 CFR 60.274a(b). The owner or operator may petition the permitting authority for reestablishment of these parameters whenever the owner or operator can demonstrate to the permitting authority's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of 40 CFR 60.276a(c).
[40 CFR 60.274a(c)]

B.24. Except as provided under 40 CFR 60.274a(e), the owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in duct-work or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.
[40 CFR 60.274a(d)]

B.25. The owner or operator may petition the permitting authority to approve any alternative to either the monitoring requirements specified in 40 CFR 60.274a(b) or the monthly operational status inspections specified in 40 CFR 60.274a(d) if the alternative will provide a continuous record of operation of each emission capture system.
[40 CFR 60.274a(e)]

B.26. Except as provided for under 40 CFR 60.273a(d), if emissions during any phase of the heat time are controlled by the use of a DEC system, the owner or operator shall install, calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF and the LMF to be monitored. The pressure shall be recorded as 15-minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF and the LMF or their DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ±5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.
[40 CFR 60.274a(f)]

B.27. Except as provided for under 40 CFR 60.273a(d), when the owner or operator of an EAF and a LMF controlled by a DEC is required to demonstrate compliance with the standard under 40 CFR 60.272a(a)(3), and at any other time the Administrator may require (under section 114 of the Clean Air Act, as amended), the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device required under 40 CFR 60.274a(f). The owner or operator may petition the permitting authority for reestablishment of the pressure whenever the owner or operator can demonstrate to the permitting authority's satisfaction that the EAF and the LMF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times when the EAF and/or the LMF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the compliance authority to be unacceptable operation and maintenance of the affected facility.
[40 CFR 60 274a(g)]

B.28. During any performance test required under 40 CFR 60.8, and for any report thereof required by 40 CFR 60.276a(f), or to determine compliance with 40 CFR 60.272a(a)(3), the owner or operator shall monitor the following information for all heats covered by the test:
(1) Charge weights and materials, and tap weights and materials;
(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside an EAF and a LMF when direct-shell evacuation control systems are used;
(3) Control device operation log; and,
(4) Continuous opacity monitor or EPA Reference Method 9 data.
[40 CFR 60.274a(h)]

Test Methods and Procedures

B.29. During performance tests required in 40 CFR 60.8, the owner or operator shall not add gaseous diluents to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.
[40 CFR 60.275a(a)]

B.30. When emissions from any EAF and/or LMF are combined with emissions from facilities not subject to the provisions of 40 CFR 60, Subpart AAa, but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test (see also 40 CFR 60.276a(e)):
(1) Determine compliance using the combined emissions.
(2) Use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of 40 CFR 60, Subpart AAa
[40 CFR 60 275a(b)]

B.31. When emissions from any EAF and/or LMF are combined with emissions from facilities not subject to the provisions of 40 CFR 60, Subpart AAa, the owner or operator shall demonstrate compliance with 40 CFR 60.272(a)(3) based on emissions from only the affected facility(ies).
[40 CFR 60.275a(c)]

B.32. In conducting the performance tests required in 40 CFR 60 8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A, 40 CFR 60, or other methods and procedures as specified in this section, except as provided in 40 CFR 60 8(b).
[40 CFR 60.275a(d)]

B.33. The owner or operator shall determine compliance with the particulate matter standards in 40 CFR 60.272a as follows:
(1) EPA Reference Method 5 shall be used for negative-pressure fabric filters and other types of control devices and EPA Reference Method 5D shall be used for positive-pressure fabric filters to determine the particulate matter concentration and volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.50 dscm (160 dscf) and, when a single EAF and LMF are sampled, the sampling time shall include an integral number of heats.
(3) Method 9 and the procedures of 40 CFR 60.11 shall be used to determine opacity.
(4) To demonstrate compliance with 40 CFR 60.272a(a) (1), (2), and (3), the Method 9 test runs shall be conducted concurrently with the particulate matter test runs, unless inclement weather interferes.
[40 CFR 60 275a(e)(1), (3) and (4)]

B.34. To comply with 40 CFR 60.274a(c), (f), (g), and (h), the owner or operator shall obtain the information required in these paragraphs during the particulate matter runs. (see specific conditions **B.23.**, **B.26.**, **B.27.**, and **B.28.**, respectively)
[40 CFR 60.275a(f)]

B.35. Any control device subject to the provisions of 40 CFR 60, Subpart AAa, shall be designed and constructed to allow measurement of emissions using applicable test methods and procedures.
[40 CFR 60.275a(g)]

B.36. Where emissions from any EAF and/or LMF are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:
(1) Base compliance on control of the combined emissions;
(2) Utilize a method acceptable to the Administrator that compensates for the emissions from the facilities not subject to the provisions of 40 CFR 60, Subpart AAa, or;
(3) Any combination of the criteria of 40 CFR 60.275a(h)(1) and (h)(2).
[40 CFR 60.275a(h)]

B.37. Where emissions from any EAF and/or LMF are combined with emissions from facilities not subject to the provisions of 40 CFR 60, Subpart AAa, determinations of compliance with 40 CFR 60.272a(a)(3) will only be based upon emissions originating from the affected facility(ies).
[40 CFR 60.275a(i)]

B.38. Unless the presence of inclement weather makes concurrent testing infeasible, the owner or operator shall conduct concurrently the performance tests required under 40 CFR 60.8 to demonstrate compliance with 40 CFR 60.272a(a)(1), (2), and (3) of 40 CFR 60, Subpart AAa.
[40 CFR 60.275a(j)]

B.39. PM. Testing for demonstration of compliance shall be performed in accordance with EPA Reference Method 5 (as described in 40 CFR 60, Appendix A) and 40 CFR 60.275a(e)(1) for PM. Tests shall be conducted initially and annually. (See specific condition **B.33.**)
[40 CFR 60.275(e)(1); Rules 62-212.400(BACT) and 62-297.310, F.A.C.; Rule 2.1101, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.40. VE. Testing for demonstration of compliance shall be performed concurrently with the PM test in accordance with EPA Reference Method 9 (as described in 40 CFR 60, Appendix A) for the visual determination of opacity. (See specific condition **B.33.**)
[40 CFR 60.275(e)(4), Rule 62-297.310, F.A.C.; Rule 2.1101, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.41. CO. Testing for demonstration of compliance shall be performed in accordance with EPA Reference Method 10 (as described in 40 CFR 60, Appendix A) for CO. Tests shall be conducted initially and annually.
[Rules 62-212.400(BACT) and 62-297.310, F.A.C.; Rule 2.1101, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.42. NO_y. Testing for demonstration of compliance shall be performed in accordance with EPA Reference Method 7, 7A or 7E (as described in 40 CFR 60, Appendix A) for NO_y (as NO_2). Tests shall be conducted initially and annually.
[Rules 62-212.400(BACT) and 62-297.310, F.A.C.; Rule 2.1101, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.43. VOC. Testing for demonstration of compliance shall be performed in accordance with EPA Reference Method 18, 25, or 25A (as described in 40 CFR 60, Appendix A) for VOC. Tests shall be conducted initially and annually.
[Rules 62-212.400(BACT) and 62-297.310, F.A.C.; Rule 2.1101, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.44. Pb. Testing for demonstration of compliance shall be performed in accordance with EPA Reference Method 12 (as described in 40 CFR 60, Appendix A) for Pb. Tests shall be conducted initially and annually.
[Rules 62-212.400(2)(g) and 62-297.310, F.A.C.; Rule 2.1101, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.45. 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 the two complete runs as proof of compliance, provided that the arithmetic mean of the results of the two complete runs is at least 20 percent below the allowable emission limiting standards.
[Rule 62-297.310(1), F.A.C.; and, Part XI, Rule 2.1001, JEPB]

B.46. Operating Rate During Testing. Testing of emissions shall be conducted with the emissions unit operation at permitted capacity, which is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emissions 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.
[Rules 62-297.310(2) & (2)(b), F.A.C.; Rule 2.1301, JEPB; and, 0310157-007-AC/PSD-FL-349]

B.47. Calculation of Emission Rate. 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.; and, Part XI, Rule 2.1001, JEPB]

B.48. Applicable Test Procedures.

(a) Required Sampling Time.

1. 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.

2. Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

a. For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.

b. The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.

c. The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

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

(c) Required Flow Rate Range. For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained.

(d) Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, attached as part of this permit.

(e) Allowed Modification to EPA Method 5. When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

[Rule 62-297.310(4), F.A.C.; and, Part XI, Rule 2.1001, JEPB]

B.49. Required Stack Sampling Facilities. When a mass emissions stack test is required, the permittee shall comply with the requirements contained in Appendix SS-1, Stack Sampling Facilities, attached to this permit.
[Rule 62-297.310(6), F.A.C.; and, Part XI, Rule 2.1001, JEPB]

B.50. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

(a) General Compliance Testing.

2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid fuel for more than 400 hours other than during startup.

3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to Rule 62-210.300(2)(a)3.b., c., or d., F.A.C., the permitting authority shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

a. Did not operate; or

b. In the case of a fuel burning emissions unit, burned liquid fuel for a total of no more than 400 hours.

4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

a. Visible emissions, if there is an applicable standard;

b. Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

c. Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours

9. The owner or operator shall notify the ERMD-EQD and DEP-NED, at least 30 days prior to the initial NSPS performance test and 15 days prior to the date on which each subsequent 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.

(b) Special Compliance Tests. When the ERMD-EQD or DEP-NED, 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 may 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 ERMD-EQD and DEP-NED.
[Rule 62-297.310(7), F.A.C.; Part XI, Rule 2.1101, JEPB; 40 CFR 60.8; and, SIP approved]

Recordkeeping and Reporting Requirements

B.51. Records of the measurements required in 40 CFR 60.274a must be retained for at least 5 years following the date of the measurement.
[40 CFR 60.276a(a); Rule 62-213.440(1)(b), F.A.C.; and, Rule 2.501, JEPB]

B.52. Each owner or operator shall submit a written report of exceedances of the control device opacity to the compliance authority semi-annually. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity is 3 percent or greater.
[40 CFR 60.276a(b)]

B.53. Operation at a furnace static pressure that exceeds the value established under 40 CFR 60.274a(g) and either operation of control system fan motor amperes at values exceeding ±15 percent of the value established under 40 CFR 60.274a(c) or operation at flow rates lower than those established under 40 CFR 60.274a(c) may be considered by the compliance authority to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the compliance authority semiannually.
[40 CFR 60.276a(c)]

B.54. The requirements of 40 CFR 60.276a remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.
[40 CFR 60.276a(d)]

B.55. When the owner or operator of an EAF and/or LMF are required to demonstrate compliance with the standard under 40 CFR 60.275a(b)(2) or a combination of (b)(1) and (b)(2), the owner or operator shall obtain approval from the permitting authority of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked at least 30 days prior to the performance test.
[40 CFR 60.276a(e)]

B.56. For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with 40 CFR 60.272a(a) of this subpart and furnish the compliance authority a written report of the results of the test. This report shall include the following information:
(1) Facility name and address;
(2) Plant representative;
(3) Make and model of process, control device, and continuous monitoring equipment;
(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;
(5) Rated (design) capacity of process equipment;

(6) Those data required under § 60.274a(h) of this subpart;
  (i) List of charge and tap weights and materials;
  (ii) Heat times and process log;
  (iii) Control device operation log; and
  (iv) Continuous monitor or Reference Method 9 data.
(7) Test dates and test times;
(8) Test company;
(9) Test company representative;
(10) Test observers from outside agency;
(11) Description of test methodology used, including any deviation from standard reference methods,
(12) Schematic of sampling location;
(13) Number of sampling points;
(14) Description of sampling equipment;
(15) Listing of sampling equipment calibrations and procedures;
(16) Field and laboratory data sheets;
(17) Description of sample recovery procedures,
(18) Sampling equipment leak check results,
(19) Description of quality assurance procedures,
(20) Description of analytical procedures,
(21) Notation of sample blank corrections, and,
(22) Sample emission calculations.
[40 CFR 60.276a(f)]

B.57. The owner or operator shall maintain records of all shop (melt shop and continuous caster buildings) opacity observations made in accordance with 40 CFR 60.273a(d). All shop (melt shop roof and continuous caster building roof) opacity observations in excess of the emission limit specified in 40 CFR 60.272a(a)(3) of 40 CFR 60, Subpart AAa, shall indicate a period of excess emission, and shall be reported to the compliance authority semi-annually, according to 40 CFR 60.7(c)
[40 CFR 60.276a(g)]

B.58. The owner or operator shall maintain the following records for each bag leak detection system required under 40 CFR 60.273a(e):
(1) Records of the bag leak detection system output;
(2) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and,
(3) An identification of the date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, if procedures were initiated within 1 hour of the alarm, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and if the alarm was alleviated within 3 hours of the alarm.
[40 CFR 60.276a(h)]

B.59. The owner or operator shall keep records of steel production to demonstarte compliance with the steel production capacities specified in this permit.
[Rule 62-4.070(3), F.A.C.]

C. BRF (Billet Reheat Furnace): Emissions Unit No. 009.

Emissions Unit Description: The facility processes steel billets into steel rebar, wire and rod. This is accomplished by reheating the steel billets produced by the continuous caster in the Reheat Furnace (BRF) and processing them through various rolling and wire machines in the rolling and wire mills. The new BRF will be relocated immediately south and east of the existing furnace and the stack will now be located east of the rolling mill building. The proposed new production limits will be the same as the EAF/LMF as follows:

- 160 billet tons of steel per hour, maximum daily average,
- 1,192,800 billet tons of steel per consecutive 12 months; and,
- 8,520 hours per year operation.

Control: Proper engineering design, firing of natural gas; low-NO_x burners (LNBs), low excess air, good combustion practice, including control of combustion air and temperature, and the firing of natural gas.

Definitions: AP-40.
a. Billet, means a semi-finished bar of steel nearly square in section made from the continuous caster operation

The following specific conditions apply to the emissions unit above.

Essential Potential to Emit (PTE) Parameters.

C.1. The maximum heat input shall not exceed 222.0 x 10^6 Btu per hour while firing natural gas.
[Rule 62-212.400(5), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.2. Steel processing throughput shall not exceed any of the following:
a. 160 billet tons of steel per hour (maximum daily average).
b. 1,192,800 billet tons of steel per consecutive 12 months.
[Rule 62-212.400(5), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.3. The hours of operation shall not exceed 8,520 hours per year.
[Rule 62-212.400(5), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

Emission Limitations and Standards

C.4. Best Available Control Technology Determination.

The following table shows the BACT emission limits, control technology, and test methods determined by the Department for the new BRF operations:

Pollutant	Emission Limits [1]	Control Technology	Test Methods [2]
PM as PM/PM_{10}	--	Firing natural gas	--
NO_x	0.08 lb/MMBtu	Low-NO_x burners (LNBs); and, good combustion practices and low excess air	EPA Reference Method 7, 7A or 7E; 40 CFR 60, Appendix A
SO_2	--	Firing natural gas	--
CO	0.035 lb/MMBtu	Proper furnace design and good combustion practices, including control of combustion air and temperature	EPA Reference Method 10 40 CFR 60, Appendix A
VOCs	--	Firing natural gas, and, proper furnace design and good combustion practices, including control of combustion air and temperature	--
Visible Emissions	≤10% opacity, except for one 6-min period per hour in which the opacity shall not exceed 20%	Firing natural gas	EPA Reference Method 9 40 CFR 60, Appendix A

[1] The averaging time for each limit shall be in accordance with the test method.
[2] Compliance tests on the BRF operation shall be conducted at a minimum rate of 126 billet tons per hour (BTPH) per Rules 62-297.310(2) & (2)(b), F.A.C. [140 BTPH x 90% = 126 BTPH]

C.5. PM/PM_{10}, SO_2 and VOC. Emissions shall be limited by firing natural gas.
[Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.6. VE. VE shall not exceed 10 percent opacity, except for one 6-minute period per hour during which the opacity shall not exceed 20 percent.
[Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.7. CO. CO emissions shall not exceed 0.035 lb/MMBtu, 3.11 lbs/hr, and 13.2 TPY, based on the average of three (3) test runs conducted in accordance with EPA Reference Method 10 (as described in 40 CFR 60, Appendix A).
[Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.8. NO_x. NO_x emissions shall not exceed 0.08 lb/MMBtu, 17.76 lbs/hr, and 75.7 TPY, based on the average of three (3) test runs conducted in accordance with EPA Reference Method 7, 7A or 7E (as described in 40 CFR 60, Appendix A).
[Rule 62-212.400(BACT), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

Excess Emissions

C.9. 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.; and, Part III, Rule 2.301, JEPB]

C.10. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C.; and, Part III, Rule 2.301, JEPB]

Monitoring of Operations.

C.11. 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.; and, Part XI, Rule 2.1001, JEPB]

Test Methods and Procedures

C.12. VE. Testing for demonstration of compliance shall be performed in accordance with EPA Reference Method 9 (as described in 40 CFR 60, Appendix A) for the visual determination of opacity. Tests shall be conducted initially and annually.
[40 CFR 60.275(e), Rule 62-297.310, F.A.C., Rule 2.1101, JEPB, and, 0310157-007-AC/PSD-FL-349]

C.13. CO. Testing for demonstration of compliance shall be performed in accordance with EPA Reference Method 10 (as described in 40 CFR 60, Appendix A) for CO. Tests shall be conducted initially and upon renewal.
[Rule 62-297.310, F.A.C.; Rule 2.1101, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.14. NO_x. Testing for demonstration of compliance shall be performed in accordance with EPA Reference Method 7, 7A or 7E (as described in 40 CFR 60, Appendix A) for NO_x. Tests shall be conducted initially and upon renewal
[Rule 62-297.310, F.A.C.; Rule 2.1101, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.15. 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 the two complete runs as proof of compliance, provided that the arithmetic mean of the results of the two complete runs is at least 20 percent below the allowable emission limiting standards.
[Rule 62-297.310(1), F.A.C.; and, Part XI, Rule 2.1001, JEPB]

C.16. Operating Rate During Testing. Testing of emissions shall be conducted with the emissions unit operation at permitted capacity, which is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the emissions 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.
[Rules 62-297.310(2) & (2)(b), F.A.C.; Rule 2.1301, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.17. Calculation of Emission Rate. 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.; and, Part XI, Rule 2.1001, JEPB]

C.18. Applicable Test Procedures.

(a) Required Sampling Time.

1. 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.

2. Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

a. For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.

b. The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.

c. The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

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

(c) Required Flow Rate Range. For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained.

(d) Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, attached as part of this permit.

(e) Allowed Modification to EPA Method 5. When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

[Rule 62-297.310(4), F.A.C.; and, Part XI, Rule 2.1001, JEPB]

C.19. Required Stack Sampling Facilities. When a mass emissions stack test is required, the permittee shall comply with the requirements contained in Appendix SS-1, Stack Sampling Facilities, attached to this permit.

[Rule 62-297.310(6), F.A.C.; and, Part XI, Rule 2.1001, JEPB]

C.20. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

(a) General Compliance Testing.

2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid fuel for more than 400 hours other than during startup.

3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to Rule 62-210.300(2)(a)3.b., c., or d., F.A.C., the permitting authority shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

a. Did not operate; or

b. In the case of a fuel burning emissions unit, burned liquid fuel for a total of no more than 400 hours.

4. During each federal fiscal year (October 1– September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:

a. Visible emissions, if there is an applicable standard;

b. Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and
c. Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
9. The owner or operator shall notify the ERMD-EQD and DEP-NED, at least 30 days prior to the initial NSPS performance test and 15 days prior to the date on which each subsequent 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.

(b) Special Compliance Tests. When the ERMD-EQD or DEP-NED, 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 may 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 ERMD-EQD and DEP-NED.
[Rule 62-297.310(7), F.A.C.; Part XI, Rule 2.1101, JEPB; 40 CFR 60.8; and, SIP approved]

Recordkeeping and Reporting Requirements

C.21. Monthly records shall be maintained for the following:
a. Billet tons of steel processed.
b. Hours of operation.
[Rule 62-212.400(5), F.A.C.; Rule 2.401, JEPB; and, 0310157-007-AC/PSD-FL-349]

C.22. Records shall be maintained for a minimum of five (5) years and made available to the Department upon request.
[Rule 62-213.440(1)(b), F.A.C.; Rule 2.501, JEPB; and, 0310157-007-AC/PSD-FL-349]

Appendix I-1. List of Insignificant Emissions Units and/or Activities.

Appendix I-1. List of Insignificant Emissions Units and/or Activities.

The facilities, emissions units, or pollutant-emitting activities listed in Rule 62-210.300(3)(a), F.A.C., Categorical Exemptions, are exempt from the permitting requirements of Chapters 62-210 and 62-4, F.A.C.; provided, however, that exempt emissions units shall be subject to any applicable emission limiting standards and the emissions from exempt emissions units or activities shall be considered in determining the potential emissions of the facility containing such emissions units. Emissions units and pollutant-emitting activities exempt from permitting under Rule 62-210.300(3)(a), F.A.C., shall not be exempt from the permitting requirements of Chapter 62-213, F.A.C., if they are contained within a Title V source; however, such emissions units and activities shall be considered insignificant for Title V purposes provided they also meet the criteria of Rule 62-213.430(6)(b), F.A.C. No emissions unit shall be entitled to an exemption from permitting under Rule 62.210.300(3)(a), F.A.C., if its emissions, in combination with the emissions of other units and activities at the facility, would cause the facility to emit or have the potential to emit any pollutant in such amount as to make the facility a Title V source.

The below listed emissions units and/or activities are considered insignificant pursuant to Rule 62-213.430(6), F.A.C.

	Brief Description of Emissions Units and/or Activities
1	Scrap Receiving
2	Rolling Mill
3	Rod MIll
4	Cooling Towers
5	Petroleum Products Storage Tanks
6	Water Treatment Plant
7	Lime Silo
8	Parts Washer
9	Welding, Brazing, and Soldering
10	Air Compressors
11	Scrap Cutting/Burning

Attachment "40 CFR 60, Subpart A"

General Provisions

40 CFR 60.1 Applicability.

(a) Except as provided in 40 CFR 60 subparts B and C, the provisions of this part apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.
(b) Any new or revised standard of performance promulgated pursuant to section 111(b) of the Act shall apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced
after the date of publication in this part of such new or revised standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.
(c) In addition to complying with the provisions of this part, the owner or operator of an affected facility may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution controlagency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to Title V of the Clean Air Act (CAA) as amended November 15, 1990 (42 U.S.C. 7661).
[Rule 62-204.800, F.A.C.; and, 40 CFR 60.1(a), (b) and (c)]

40 CFR 60.2 Definitions.

(a) *Administrator* means the Administrator of the Environmental Protection Agency or the Secretary or the Secretary's designee.
[Rule 62-204.800(7)(a), F.A.C.; and, 40 CFR 60.2]

40 CFR 60.7 Notification and recordkeeping.

(a) The owner or operator subject to the provisions of this part shall furnish the Administrator written notification as follows:

(1) A notification of the date construction (or reconstruction as defined under 40 CFR 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.

(2) A notification of the anticipated date of initial startup of an affected facility postmarked not more than 60 days nor less than 30 days prior to such date.

(3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

(4) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.

(5) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with 40 CFR 60.13(c). Notification shall be postmarked not less than 30 days prior to such date.

(6) A notification of the anticipated date for conducting the opacity observations required by 40 CFR 60.11(e)(1) of this part. The notification shall also include, if appropriate, a request for the Administrator to provide a visible emissions reader during a performance test. The notification shall be postmarked not less than 30 days prior to such date.

(7) A notification that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required by 40 CFR 60.8 in lieu of Method 9 observation data as allowed by 40 CFR 60.11(e)(5) of 40 CFR 60. This notification shall be postmarked not less than 30 days prior to the date of the performance test.

(b) The owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(c) The owner or operator required to install a continuous monitoring system (CMS) or monitoring device shall submit an excess emissions and monitoring systems performance report (excess emissions are defined in applicable subparts) and/or a summary report form (see 40 CFR 60.7(d) to the Administrator semiannually, except when: more frequent reporting is specifically required by an applicable subpart; or the CMS data are to be used directly for compliance determination, in which case quarterly reports shall be submitted; or the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary
to accurately assess the compliance status of the source. All reports shall be postmarked by the 30th day following the end of each calendar half (or quarter, as appropriate). Written reports of excess emissions shall include the following information:

(1) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(d) The summary report form shall contain the information and be in the format shown in Figure 1 unless otherwise specified by the Administrator. One summary report form shall be submitted for each pollutant monitored at each affected facility.

(1) If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in 40 CFR 60.7(c) need not be submitted unless requested by the Administrator.

(2) If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in 40 CFR 60.7(c) shall both be submitted.

[See Attached Figure 1-Summary Report-Gaseous and Opacity Excess Emission and Monitoring System Performance]

(e) The owner or operator subject to the provisions of this part shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.
(f) If notification substantially similar to that in 40 CFR 60.7(a) is required by any other State or local agency, sending the Administrator a copy of that notification will satisfy the requirements of 40 CFR 60.7(a).
(g) Individual subparts of this part may include specific provisions which clarify or make inapplicable the provisions set forth in this section.
[Rule 62-204.800, F.A.C.; and, 40 CFR 60.7(a), (b), (c), (d), (e), (f) and (g)]

40 CFR 60.8 Performance tests.

(a) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).
(b) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart unless the Administrator (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the affected facility is in compliance with the standard, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in 40 CFR 60.8 shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.
(c) Performance tests shall be conducted under such conditions as the Administrator shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.
(e) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such facility. This includes (i) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and (ii) providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.
(2) Safe sampling platform(s).
(3) Safe access to sampling platform(s).
(4) Utilities for sampling and testing equipment.

(f) Unless otherwise specified in the applicable subpart, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.
[Rule 62-204.800, F.A.C.; and, 40 CFR 60.8(a), (b)(1), (4) & (5), (c), (e) and (f)]

40 CFR 60.10 State authority.

The provisions of 40 CFR 60 shall not be construed in any manner to preclude any State or political subdivision thereof from:
(a) Adopting and enforcing any emission standard or limitation applicable to an affected facility, provided that such emission standard or limitation is not less stringent than the standard applicable to such facility.
(b) Requiring the owner or operator of an affected facility to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of such facility.
[Rule 62-204.800, F.A.C.; and, 40 CFR 60.10(a) and (b)].

40 CFR 60.11 Compliance with standards and maintenance requirements.

(a) Compliance with standards in this part, other than opacity standards, shall be determined by performance tests established by 40 CFR 60.8, unless otherwise specified in the applicable standard.
(b) Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Reference Method 9 in appendix A of this part, any alternative method that is approved by the Administrator, or as provided in 40 CFR 60.11(e)(5). For purposes of determining initial compliance, the minimum total time of observations shall be 3 hours (30 6-minute averages) for the performance test or other set of observations (meaning those fugitive-type emission sources subject only to an opacity standard).
(c) The opacity standards set forth in this part shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.
(d) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
(e)(1) For the purpose of demonstrating initial compliance, opacity observations shall be conducted concurrently with the initial performance test required in 40 CFR 60.8 unless one of the following conditions apply. If no performance test under 40 CFR 60.8 is required, then opacity observations shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility. If visibility or other conditions prevent the opacity observations from being conducted concurrently with the initial performance test required under 40 CFR 60.8, the source owner or operator shall reschedule the opacity observations as soon after the initial performance test as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. In these cases, the 30-day prior notification to the Administrator required in 40 CFR 60.7(a)(6) shall be waived. The rescheduled opacity observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under 40 CFR 60.8. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity observations from being made concurrently with the initial performance test in accordance with procedures contained in Reference Method 9 of appendix B of this part. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards. The owner or operator of an affected facility shall make available, upon request by the Administrator, such records as may be necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification. Except as provided in 40 CFR 60.11(e)(5), the results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the source shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1 in appendix B of 40 CFR 60, has been properly maintained and (at the time of the alleged violation) that the resulting data have not been altered in any way.

(2) Except as provided in 40 CFR 60.11(e)(3), the owner or operator of an affected facility to which an opacity standard in this part applies shall conduct opacity observations in accordance with 40 CFR 60.11(b), shall record the opacity of emissions, and shall report to the Administrator the opacity results along with the results of the initial performance test required under 40 CFR 60.8. The inability of an owner or operator to secure a visible emissions observer shall not be considered a reason for not conducting the opacity observations concurrent with the initial performance test.
(3) The owner or operator of an affected facility to which an opacity standard in this part applies may request the Administrator to determine and to record the opacity of emissions from the affected facility during the initial performance test and at such times as may be required. The owner or operator of the affected facility shall report the opacity results. Any request to the Administrator to determine and to record the opacity of emissions from an affected facility shall be included in the notification required in 40 CFR 60.7(a)(6). If, for some reason, the Administrator cannot determine and record the opacity of emissions from the affected facility during the performance test, then the provisions of 40 CFR 60.7(e)(1) shall apply.
(4) The owner or operator of an affected facility using a continuous opacity monitor (transmissometer) shall record the monitoring data produced during the initial performance test required by 40 CFR 60.8 and shall furnish the Administrator a written report of the monitoring results along with Method 9 and 40 CFR 60.8 performance test results.
(5) The owner or operator of an affected facility subject to an opacity standard may submit, for compliance purposes, continuous opacity monitoring system (COMS) data results produced during any performance test required under 40 CFR 60.8 in lieu of Method 9 observation data. If an owner or operator elects to submit COMS data for compliance with the opacity standard, he shall notify the Administrator of that decision, in writing, at least 30 days before any performance test required under 40 CFR 60.8 is conducted. Once the owner or operator of an affected facility has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent tests required under 40 CFR 60.8 until the owner or operator notifies the Administrator, in writing, to the contrary. For the purpose of determining compliance with the opacity standard during a performance test required under 40 CFR 60.8 using COMS data, the minimum total time of COMS data collection shall be averages of all 6-minute continuous periods within the duration of the mass emission performance test. Results of the COMS opacity determinations shall be submitted along with the results of the performance test required under 60.8. The owner or operator of an affected facility using a COMS for compliance purposes is responsible for demonstrating that the COMS meets the requirements specified in 40 CFR 60.13(c), that the COMS has been properly maintained and operated, and that the resulting data have not been altered in any way. If COMS data results are submitted for compliance with the opacity standard for a period of time during which Method 9 data indicates noncompliance, the Method 9 data will be used to determine opacity compliance.
(6) Upon receipt from an owner or operator of the written reports of the results of the performance tests required by 40 CFR 60.8, the opacity observation results and observer certification required by 40 CFR 60.11(e)(1), and the COMS results, if applicable, the Administrator will make a finding concerning compliance with opacity and other applicable standards. If COMS data results are used to comply with an opacity standard, only those results are required to be submitted along with the performance test results required by 40 CFR 60.8. If the Administrator finds that an affected facility is in compliance with all applicable standards for which performance tests are conducted in accordance with 40 CFR 60.8 of this part but during the time such performance tests are being conducted fails to meet any applicable opacity standard, the shall notify the owner or operator and advise him that he may petition the Administrator within 10 days of receipt of notification to make appropriate adjustment to the opacity standard for the affected facility.
(7) The Administrator will grant such a petition upon a demonstration by the owner or operator that the affected facility and associated air pollution control equipment was operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the Administrator; and that the affected facility and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.

(8) The Administrator will establish an opacity standard for the affected facility meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity standard in the Federal Register.

(f) Special provisions set forth under an applicable subpart of 40 CFR 60 shall supersede any conflicting provisions of 40 CFR 60.11.

(g) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[Rule 62-204.800, F.A.C.; and, 40 CFR 60.11(a), (b), (c), (d), (e), (f) and (g)]

40 CFR 60.12 Circumvention.

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[Rule 62-204.800, F.A.C.; and, 40 CFR 60.12]

40 CFR 60.13 Monitoring requirements.

(a) For the purposes of this section, all continuous monitoring systems required under applicable subparts shall be subject to the provisions of this section upon promulgation of performance specifications for continuous monitoring systems under appendix B of 40 CFR 60 and, if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis, appendix F to 40 CFR 60, unless otherwise specified in an applicable subpart or by the Administrator. Appendix F is applicable December 4, 1987.

(b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under 40 CFR 60.8. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device.

(c) If the owner or operator of an affected facility elects to submit continuos opacity monitoring system (COMS) data for compliance with the opacity standard as provided under 40 CFR 60.11(e)(5), he/she shall conduct a performance evaluation of the COMS as specified in Performance Specification 1, appendix B, of 40 CFR 60 before the performance test required under 40 CFR 60.8 is conducted. Otherwise, the owner or operator of an affected facility shall conduct a performance evaluation of the COMS or continuous emission monitoring system (CEMS) during any performance test required under 40 CFR 60.8 or within 30 days thereafter in accordance with the applicable performance specification in appendix B of 40 CFR 60. The owner or operator of an affected facility shall conduct COMS or CEMS performance evaluations at such other times as may be required by the Administrator under section 114 of the Act.

(1) The owner or operator of an affected facility using a COMS to determine opacity compliance during any performance test required under 40 CFR 60.8 and as described in 40 CFR 60.11(e)(5), shall furnish the Administrator two or, upon request, more copies of a written report of the results of the COMS performance evaluation described in 40 CFR 60.13(c) at least 10 days before the performance test required under 40 CFR 60.8 is conducted.

(2) Except as provided in 40 CFR 60.13(c)(1), the owner or operator of an affected facility shall furnish the Administrator within 60 days of completion two or, upon request, more copies of a written report of the results of the performance evaluation.

(d)(1) Owners and operators of all continuous emission monitoring systems installed in accordance with the provisions of this part shall check the zero (or low-level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with a written procedure. The zero and span shall, as a minimum, be adjusted whenever the 24-hour zero drift or 24-hour span drift exceeds two times the limits of the applicable performance specifications in appendix B. The system must allow the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified, whenever specified. For continuous monitoring systems measuring opacity of emissions, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero and span drift adjustments except that for systems using automatic zero adjustments. The optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

(2) Unless otherwise approved by the Administrator, the following procedures shall be followed for continuous monitoring systems measuring opacity of emissions. Minimum procedures shall include a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photo detector assembly.

(e) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under 40 CFR 60.13(d), all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(1) All continuous monitoring systems referenced by 40 CFR 60.13(c) for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(2) All continuous monitoring systems referenced by 40 CFR 60.13(c) for measuring emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(f) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of appendix B of 40 CFR 60 shall be used.

(g) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install an applicable continuous monitoring system on each separate effluent unless the installation of fewer systems is approved by the Administrator. When more than one continuous monitoring system is used to measure the emissions from one affected facility (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required from each continuous monitoring system.

(h) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to 6-minute averages and for continuous monitoring systems other than opacity to 1-hour averages for time periods as defined in 40 CFR 60.2. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period. For continuous monitoring systems other than opacity, 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period. Data recorder during periods of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph. An arithmetic or integrated average of all data may be used. The data may be recorded in reduced or non reduced form (e.g., ppm pollutant and percent O2 or ng/J of pollutant). All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in subparts. After conversion into units of the standard, the data may be rounded to the same number of significant digits as used in the applicable subparts to specify the emission limit (e.g., rounded to the nearest 1 percent opacity).

(i) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part including, but not limited to the following:

(1) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances with the effluent gases.

(2) Alternative monitoring requirements when the affected facility is infrequently operated.

(3) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct for stack moisture conditions.

(4) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

(5) Alternative methods of converting pollutant concentration measurements to units of the standards.

(6) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells.

(7) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any subpart.

(8) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, appendix B, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Administrator may require that such demonstration be performed for each affected facility.

(9) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities are released to the atmosphere through more than one point.

(j) An alternative to the relative accuracy test specified in Performance Specification 2 of appendix B may be requested as follows:

(1) An alternative to the reference method tests for determining relative accuracy is available for sources with emission rates demonstrated to be less than 50 percent of the applicable standard. A source owner or operator may petition the Administrator to waive the relative accuracy test in section 7 of Performance Specification 2 and substitute the procedures in section 10 if the results of a performance test conducted according to the requirements in 40 CFR 60.8 of this subpart or other tests performed following the criteria in 40 CFR 60.8 demonstrate that the emission rate of the pollutant of interest in the units of the applicable standard is less than 50 percent of the applicable standard. For sources subject to standards expressed as control efficiency levels, a source owner or operator may petition the Administrator to waive the relative accuracy test and substitute the procedures in section 10 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the continuous emission monitoring system is used to determine compliance continuously with the applicable standard. The petition to waive the relative accuracy test shall include a detailed description of the procedures to be applied. Included shall be location and procedure for conducting the alternative, the concentration or response levels of the alternative RA materials, and the other equipment checks included in the alternative procedure. The Administrator will review the petition for completeness and applicability. The determination to grant a waiver will depend on the intended use of the CEMS data (e.g., data collection purposes other than NSPS) and may require specifications more stringent than in Performance Specification 2 (e.g., the applicable emission limit is more stringent than NSPS).

(2) The waiver of a CEMS relative accuracy test will be reviewed and may be rescinded at such time following successful completion of the alternative RA procedure that the CEMS data indicate the source emissions approaching the level of the applicable standard. The criterion for reviewing the waiver is the collection of CEMS data showing that emissions have exceeded 70 percent of the applicable standard for seven, consecutive, averaging periods as specified by the applicable regulation(s). For sources subject to standards expressed as control efficiency levels, the criterion for reviewing the waiver is the collection of CEMS data showing that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for seven, consecutive, averaging periods as specified by the applicable regulation(s) [e.g., 40 CFR 60.45(g)(2) and 40 CFR 60.45(g)(3), 40 CFR 60.73(e), and 40 CFR 60.84(e)]. It is the

responsibility of the source operator to maintain records and determine the level of emissions relative to the criterion on the waiver of relative accuracy testing. If this criterion is exceeded, the owner or operator must notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increasing emissions. The Administrator will review the notification and may rescind the waiver and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 7 of Performance Specification 2.

[Rule 62-204.800, F.A.C.; and, 40 CFR 60.13(a) thru (j)].

40 CFR 60.14 Modification.

(a) Except as provided under 40 CFR 60.14(e) and 40 CFR 60.14(f), any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.

(b) Emission rate shall be expressed as kg/hr (lbs/hour) of any pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine emission rate:

(1) Emission factors as specified in the latest issue of "Compilation of Air Pollutant Emission Factors", EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where utilization of emission factors demonstrate that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.

(2) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in 40 CFR 60.14(b)(1) does not demonstrate to the Administrator's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator utilizing emission factors as referenced in 40 CFR 60.14(b)(1) . When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in 40 CFR 60 appendix C of 40 CFR 60 shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator based on representative performance of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

(c) The addition of an affected facility to a stationary source as an expansion to that source or as a replacement for an existing facility shall not by itself bring within the applicability of this part any other facility within that source.

(d) [Reserved]

(e) The following shall not, by themselves, be considered modifications under this part:

(1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category, subject to the provisions of 40 CFR 60.14(c) and 40 CFR 60.15.

(2) An increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility.

(3) An increase in the hours of operation.

(4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by 40 CFR 60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Act, shall not be considered a modification.

(5) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system which the Administrator determines to be less environmentally beneficial.

(6) The relocation or change in ownership of an existing facility.

(f) Special provisions set forth under an applicable subpart of this part shall supersede any conflicting provisions of this section.

(g) Within 180 days of the completion of any physical or operational change subject to the control measures specified in 40 CFR 60.14(a), compliance with all applicable standards must be achieved.

[Rule 62-204.800, F.A.C.; and, 40 CFR 60.14(a) thru (g)].

40 CFR 60.15 Reconstruction.

(a) An existing facility, upon reconstruction, becomes an affected facility, irrespective of any change in emission rate.

(b) "Reconstruction" means the replacement of components of an existing 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.

(c) "Fixed capital cost"' means the capital needed to provide all the depreciable components.

(d) If an owner or operator of an existing facility proposes to replace components, and 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, he shall notify the Administrator of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

(1) Name and address of the owner or operator.

(2) The location of the existing facility.

(3) A brief description of the existing facility and the components which are to be replaced.

(4) A description of the existing air pollution control equipment and the proposed air pollution control equipment.

(5) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility.

(6) The estimated life of the existing facility after the replacements.

(7) A discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

(e) The Administrator will determine, within 30 days of the receipt of the notice required by 40 CFR 60.15(d) and any additional information he may reasonably require, whether the proposed replacement constitutes reconstruction.

(f) The Administrator's determination under 40 CFR 60.15(e) shall be based on:

(1) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;

(2) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;

(3) The extent to which the components being replaced cause or contribute to the emissions from the facility; and

(4) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

(g) Individual subparts of this part may include specific provisions which refine and delimit the concept of reconstruction set forth in this section.

[Rule 62-204.800, F.A.C.; and, 40 CFR 60.15(a) thru (g)].

GERDAU AMERISTEEL
SCRAP RECEIVING POLICY AND PROCEDURES

SHIPPING NOTICES – MISAPPLICATIONS

Gerdau Ameristeel has had a long-standing policy with regard to railcars arriving at the mill without prior notification. Due to the increasing frequency of cars arriving at the mills with no prior notification, we feel it is important to review and re-emphasize that policy.

CARS ARRIVING WITHOUT PRIOR NOTIFICATION WILL BE ASSESSED A CHARGE OF $150 PER CAR. Please send shipment notification to Gerdau Ameristeel or the DJJ Company at least **three** full working days prior to the arrival of the rail car; preferably at the time that the car is released to the railroad.

Advance notice can be a fax containing the following information: (See sample following)

- Shipper name
- Origin city
- Date shipped
- Contract number
- Grade of scrap
- Weight at origin, if available
- Car number
- RR Contract number

If you do not have a standard shipment notification form/fax that you use, we can e-mail you a sample for your use.

This information needs to be faxed to the following applicable person:

SHIPMENTS TO:	CARTERSVILLE:	Stan McLane	770-387-5710
	ALL OTHER MILLS:	DJJ Office	843-971-8517

NOTE: This policy also applies to misapplication of grade or contract number. If you are unsure of your contract number, call your representative or Marcia Smith, the system administrator in Tampa, FL at 813-207-2394.

With your cooperation, we will assure that neither you nor Gerdau Ameristeel incur unnecessary costs associated with scrap shipments.

GERDAU AMERISTEEL
SCRAP RECEIVING POLICY AND PROCEDURES

WEIGHT DISCREPANCIES

RAIL CARS

Shippers are encouraged to weigh rail cars before and after loading, and to communicate the "light" and "heavy" scale weights to Gerdau Ameristeel via a Shipping Notice at time of shipment. If a rail car is received for which "light" and "heavy" scale weights at origin have NOT been communicated to Gerdau Ameristeel before the car arrives at our plant site, and Gerdau Ameristeel unloads the car, then Gerdau Ameristeel will NOT consider an "origin" or other "third party" scale weight as a basis for adjusting the settlement weight determined at destination. Mill weights govern, but we will investigate any substantial differences.

TRUCK SHIPMENTS

After a truck shipment leaves Gerdau Ameristeel plant property, Gerdau Ameristeel will NOT accept a shipper's or other "third party" scale weights as a basis for settlement. The burden is upon the shipper to assure that he is notified by the truck driver, BEFORE UNLOADING, in the event that an unacceptable difference occurs between Gerdau Ameristeel's gross weight at time of weigh-in and the gross weight determined at yard of origin. Gerdau Ameristeel will not accept responsibility for pointing out truck scale weight discrepancies to shippers or carriers.

GERDAU AMERISTEEL
SCRAP RECEIVING POLICY AND PROCEDURES

DOWNGRADES – REJECTIONS

REJECTIONS

All scrap grades received at Gerdau Ameristeel mill locations are subject to ABSOLUTE REJECTION if the following PROHIBITED MATERIALS are present in the load(s):

1. Sealed containers or other explosives
2. Radiation Sources (see guidelines under "Safety and Environmental")
3. Hazardous Materials

In general, prohibited materials are defined as those which may endanger people or the environment. Discovery of prohibited materials in any delivery of scrap shall be cause for immediate rejection, subject to any applicable regulatory requirements, and may expose the shipper to loss of subsequent business or penalties under law.

Discovery of the following OBJECTIONABLE MATERIALS may result in a warning, followed by a rejection, or an outright rejection if excessive:

1. Excess Foreign materials
    a. Non-Metallics: wood, concrete, rubber, etc.
    b. Non-Ferrous: Lead, copper, tin, zinc, etc.
    c. Alloys: stainless, Corten, leaded steels, etc.
    d. Volatiles: grease, oil, tar, etc.
    e. Composites: slags, brake shoes, motors, etc.
    f. Refuse: dirt, scale, debris, trash, etc.

2. Violation of Material Specs
    a. Oversize
    b. Turnings cast in material
    c. Graded wrong
    d. Deteriorating quality

Objectionable materials will be a sufficient condition for rejection when included in a shipment of scrap. Where variances are permitted, this is noted in the detailed specification for individual grades. Gerdau Ameristeel recognizes that, due to the raw materials employed and the level of processing technology available for producing some scrap grades, objectionable materials may appear in commercially acceptable material. In practice, Gerdau Ameristeel will exercise its best judgment concerning the acceptability of minor amounts of these materials on a shipment by shipment basis, and reserves the sole right to accept or reject any shipment based upon that judgment. Scrap suppliers are expected to control objectionable materials to minimal levels for the grade supplied.

If rejected, shipments will be returned to the shipper at the shipper's expense. Handling costs (e.g. reloading of trucks, etc.) may be charged back to the shipper. Prohibited or objectionable materials discovered after initial inspection may result in partial rejection of a shipment.

GERDAU AMERISTEEL
SCRAP RECEIVING POLICY AND PROCEDURES

DOWNGRADES

All shipments of scrap received by Gerdau Ameristeel shall be subject to inspection under the guidelines and specification set forth herein. Appropriate training and guidance will be provided to inspection personnel to assure an informed assessment of all materials inspected.

Materials found to be out of compliance with these guidelines and specifications may be subject to either REJECTION or DOWNGRADE. Materials which are received by Gerdau Ameristeel, and, upon inspection, are deemed to fail to meet the grade specification for the ordered grade supplied may be adjusted to an alternate grade. Downgrades will be issued on a limited case basis.

OTHER PENALTIES

Although Gerdau Ameristeel will exercise reasonable effort to inspect scrap shipments, materials supplied can contain constituents not readily detected during normal inspection which expose the company to hazards associated with use. Such constituents may include, for example, sealed containers, radiation sources, hazardous volatiles, etc. In all cases, Gerdau Ameristeel's acceptance of any shipment shall not constitute any waiver of its rights to pursue a claim of damages if subsequent use results in damage or injury to people or property.

As a condition of doing business with Gerdau Ameristeel, suppliers accept in advance that Gerdau Ameristeel may impose penalties upon receiving items that are prohibited or objectionable, or that otherwise jeopardize the health or safety of Gerdau Ameristeel employees or property, or threaten Gerdau Ameristeel's ability to comply with environmental laws and regulations, or threaten Gerdau Ameristeel's productivity or cost of operations. Examples for which penalties may be imposed:

- Shipments containing radioactive sources.
- Shipments containing capacitors or "PCB" items.
- Shipments containing one or more Lead Acid batteries.
- Shipments contaminated with toxic substances or hazardous waste.
- Shipments containing one or more "closed containers", or other items that present risk of explosion.

GERDAU AMERISTEEL
SCRAP RECEIVING POLICY AND PROCEDURES

SAFETY & ENVIRONMENTAL

At Gerdau Ameristeel, we value the safety of our employees foremost, as we're sure you do at your own facilities. Prohibited materials, including radioactive and hazardous/explosive materials, arriving in loads of scrap to our melt facilities have seriously endangered lives. A recent load of scrap received at one of our locations contained an item that caused an explosion at the furnace.

Due to this and other potentially harmful and costly events, we are reaffirming the Gerdau Ameristeel "Zero Tolerance" policy at our mills, in regard to potentially radioactive or hazardous/explosive materials. In the event that a load of inbound material triggers the Gerdau Ameristeel radiation detection system, the material will be immediately returned to the origin at the shipper's expense. Gerdau Ameristeel will promptly notify the shipper or seller of any contaminated load, as well as appropriate local, state and/or federal agencies.

We recognize that some items (with limited likelihood of damaging our systems or employees) can trigger the system. Even though these items represent no potential danger in the furnace, I am sure you can appreciate the fact that we're unable to take a risk on ANY load that sets off our radiation detection equipment. You can rest assured that we are taking steps to maintain our monitoring systems in good reliable condition with frequent calibration to assure valid results.

Due to the significance of this and other events, we ask that you analyze your current receiving and inspecting procedures to insure removal of any potentially hazardous scrap materials. By making your yard personnel more aware of explosive and radioactive items (hazardous or not), you will be doing both Gerdau Ameristeel and yourself a service. By removing these items at your facility, you will save Gerdau Ameristeel the cost involved in identifying these problem loads, while saving yourself the additional freight and handling cost.

An on-site audit to determine your capabilities in identifying radioactive and hazardous materials will be conducted before delivery to any Gerdau Ameristeel facility. Industry resources for instructional materials include isri.org, amazon.com and other commercial and industry sources.

We consider a vendor's radiation detection capability and their hazardous inspection process important in choosing our supplier base. In addition to the on-site audit, any shipper to Gerdau Ameristeel is REQUIRED to monitor scrap for radiation before delivery. If you are brokering material from another source, it must pass through your inspection process before it can be delivered to our mill, or you must ensure that the vendor is monitoring material for radiation.

A copy of Gerdau Ameristeel's Safety and Environmental Compliance Agreement is attached, along with a recent copy of our Specification for Iron and Steel Scrap. Please review the Specifications and return the agreement via fax to 813-207-2343, so that we can be certain that you have received this information.

GERDAU AMERISTEEL

SAFETY AND ENVIRONMENTAL COMPLIANCE AGREEMENT

The undersigned Seller has read GERDAU AMERISTEEL'S Specifications for Iron and Steel Scrap. This includes General Information regarding prohibited and objectionable materials, Iron and Steel Scrap Specifications and the Radioactive Scrap policy of GERDAU AMERISTEEL Corporation. In addition, I understand that no scrap material may be brokered from another source, unless it has passed through Seller's radiation detection equipment or is an otherwise certified shipper having also signed this Agreement.

Seller acknowledges that GERDAU AMERISTEEL may not accept any shipment in whole or in part that does not meet the conditions and specifications described in the specification document. Seller also acknowledges that vendors found to violate this Agreement may be disqualified from supplying scrap materials to GERDAU AMERISTEEL.

Although GERDAU AMERISTEEL will exercise reasonable effort to inspect scrap shipments, materials supplied can contain constituents not readily detected during normal inspection, which expose the company to hazards associated with use. Such constituents may include, for example, sealed containers, radiation sources, hazardous volatiles, etc. In all cases, GERDAU AMERISTEEL'S acceptance of any shipment shall not constitute any waiver of its rights to pursue a claim of damages if subsequent use results in damage or injury to people or property.

I, the undersigned Seller, or authorized representative of Seller, do hereby acknowledge receipt and understanding of the aforementioned specifications and conditions. Seller also agrees to supply scrap materials for recycling that are in accordance with the Radiation, Safety and Environmental Policy of GERDAU AMERISTEEL Corporation.

PLEASE COMPLETE AND RETURN BY FAX TO MARCIA SMITH AT 813-207-2343.

SELLER'S NAME: _____

COMPANY NAME: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

PHONE: _____ FAX: _____

EMAIL: _____

SIGNATURE: _____

TITLE: _____

RADIATION DETECTION EQUIPMENT

MODEL #: HAND HELD _____ TRUCK _____ RAIL _____

GERDAU AMERISTEEL
SCRAP RECEIVING POLICY AND PROCEDURES

RADIOACTIVE SCRAP

I. Policy

Radioactive scrap materials from any source are prohibited under AmeriSteel's specifications for iron & steel scrap to protect our employees, customers and the environment. Federal, state and local regulations will be fully observed in dealing with these materials. AmeriSteel maintains radiation detection equipment of various kinds to help protect its employees and operations, and strongly urges its suppliers to do likewise. Detection equipment is a safeguard, but no substitute for diligent monitoring on the part of AmeriSteel's suppliers to assure that these materials do not enter our scrap supply. All scrap materials purchased by AmeriSteel are bought on the basis that suppliers bear full responsibility for the results of shipping radiation sources into our melting facilities or raw materials storage.

II. Procedures

AmeriSteel has detailed, written procedures developed for each of its facilities concerning steps to be taken upon detection of a source of radiation. In general, any such materials will be investigated immediately, and appropriate steps taken to minimize exposure. A written report of any such incident will be made.

AmeriSteel will promptly notify the shipper or seller of any contaminated load, as well as appropriate local, state, and/or federal agencies and any other parties considered by the company to require notice. Inbound materials determined to contain such prohibited materials will be returned to their origin, subject to applicable regulations regarding handling and shipment.

III. Liability

Radioactive materials are strictly prohibited from all grades of scrap purchased by AmeriSteel under its specifications for iron & steel scrap. All scrap purchases are made on the basis of such prohibition. Therefore, AmeriSteel shall accept no liability to people, property or the environment arising from the inclusion of sources of radiation in any shipment of raw materials made to its melting facilities.

GERDAU AMERISTEEL
SCRAP RECEIVING POLICY AND PROCEDURES

SAFETY

Safety rules to be followed while at a Gerdau Ameristeel facility:

1. Truck driver safety while on Gerdau Ameristeel property

   a. Truck drivers entering Gerdau Ameristeel property must wear a hard hat, shirt, long pants, and shoes ("flip-flop", open toe, or open heel shoes are not acceptable). It is the responsibility of the truck driver or the driver's employer to provide required safety apparel.
   b. Truck drivers must obey all traffic control and warning signs, and not exceed the plant-wide speed limit of 20 MPH.
   c. Drivers must remain with their trucks at all times except in designated parking areas.

2. Riders accompanying truck drivers

   a. Riders accompanying truck drivers will not be allowed to enter a Gerdau Ameristeel plant site without prior permission. Permission for an adult rider to enter a Gerdau Ameristeel plant site may be granted under special circumstances that include:

      - A second driver (long distance haulers only)
      - A driver in training
      - And other reasons judged suitable by authorized personnel.

   b. The Gerdau Ameristeel personnel authorized to grant permission for a rider to enter the plant site are: A shredder or scrap yard operations supervisor or Gerdau Ameristeel Security personnel

   c. If permission is granted, an adult rider may wait in the scrap scalehouse waiting area until the truck has been unloaded and returns to the scalehouse. Riders that accompany a driver into the plant site will be regarded as "Visitors", and will be required to sign in at the plant security office.

   d. Only the truck driver will be allowed in unloading areas.

   e. Children and minors will not be permitted to enter a Gerdau Ameristeel plant site.

GERDAU AMERISTEEL
SCRAP RECEIVING POLICY AND PROCEDURES

RECEIVING CHANGES

It is the policy of Gerdau Ameristeel to give shippers plenty of advance notice to any changes in receiving hours due to closures for holidays, maintenance, etc. This usually comes in the form of a fax from specific mill personnel or the DJJ Company. Please advise Vicki Roche at 813-207-2331 if you do not receive prompt (at least two days prior) notice of receiving changes.

When there are instances where, due to uncontrollable circumstances, we have to shut down receiving quickly, we will work with vendors that have trucks loaded.

Appendix JEPB Rule 2

JACKSONVILLE ENVIRONMENTAL PROTECTION BOARD

RULE 2
AIR POLLUTION CONTROL

Effective	03/18/85
Amended	12/15/85
Amended	06/18/86
Amended	06/15/86
Amended	10/27/88
Amended	12/20/88
Amended	07/09/90
Amended	10/22/92
Repealed, renumbered and readopted	01/10/93
Amended	12/19/94, Effective 01/11/95
Amended	09/11/95, Effective 10/05/95
Amended	11/12/96, Effective 12/16/96

RULE OF THE
JACKSONVILLE ENVIRONMENTAL PROTECTION BOARD
RULE 2
AIR POLLUTION CONTROL

INDEX

PART IX - AIR POLLUTION EPISODES

2.901 Air Pollution Episodes - Local Rules

PART X - STATIONARY SOURCES EMISSION STANDARDS

2.1001 Adopts 62-296 FAC by reference

PART XI - STATIONARY SOURCES - EMISSIONS MONITORING

2.1101 Adopts 62-297 FAC by reference

PART XII - AIR POLLUTION NUISANCE RULES

2.1201 General Standard for Volatile Organic Compounds
2.1202 Emissions from Ships and Locomotives
2.1203 Air Pollution Nuisances

PART XIII - PERMITS - GENERAL PROVISIONS

2.1301 Adopts 62-4 FAC by reference
2.1302 Adopts 120.57 FS and 62 103.150 FAC by reference

P.E. CERTIFICATION STATEMENT

PERMITTEE

Gerdau Ameristeel
Jacksonville Steel Mill
16770 Rebar Road
Baldwin, Florida 32234

Project No. 0310157-007-AC
PSD-FL-349
Modification to Increase Production
Duval County, Florida

PROJECT DESCRIPTION

The applicant proposes to substantially modify the melt shop, refining, and continuous casting operations at the existing plant. The project triggers PSD preconstruction review for CO, NOx, PM/PM10, SO2, and VOC emissions. As described in the Technical Evaluation and Preliminary Determination, determinations of the Best Available Control Technology (BACT) were made for each of these significant pollutants.

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

8-11-05

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

(Date)

INTEROFFICE MEMORANDUM

TO:	Trina Vielhauer
THRU:	Jeff Koerner
FROM:	Bruce Mitchell
DATE:	August 11, 2005
SUBJECT:	Gerdau Ameristeel Jacksonville Steel Mill Air Construction Permit Permit Project No.: 0310157-007-AC/PSD-FL-349

Attached is the Draft Air Construction Permit for the Gerdau Ameristeel's existing Jacksonville Steel Mill, located at 16770 Rebar Road, Jacksonville, Duval County, Florida. The Draft Air Construction Permit is being issued for the construction of: a new Melt Shop, which will house the Electric Arc Furnace (EAF) operations; a new Continuous Caster Building, which will house the Continuous Caster and Ladle Metallurgical Furnace (LMF) operations; and, a new Billet Reheat Furnace (BRF); in addition, the project will allow for an increase in production in tapped (liquid) steel from 720,000 to 1,192,800 tons per year (TPY).

The application was deemed complete on June 6, 2005. August 11 is Day 66 of the permitting clock.

Attachments

TLV/jk/bm

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. Donald R. Shumake
Vice President/General Manager
Gerdau Ameristeel
Jacksonville Steel Mill
16770 Rebar Road
Baldwin, Florida 32234

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Harry Ervin | C. Date of Delivery

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

BALDWIN FL AUG 15 2005

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 2398

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1540

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

7001 0320 0001 3692 2398

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

Postmark Here

Mr Donald R. Shumake
Vice President/General Manager
Gerdau Ameristeel
Jacksonville Steel Mill
16770 Rebar Road
Baldwin, Florida 32234

PS Form 3800, January 2001 See Reverse for Instructions