217/782-2113

CONSTRUCTION PERMIT -- PSD APPROVAL

PERMITTEE

Keystone Steel & Wire Company
Attn: John R. Skelley
7000 S.W. Adams Street
Peoria, Illinois 61641

Application No.: 99020046 I.D. No.: 143808AAA
Applicant's Designation: Phase 2 Date Received: February 10, 1999
Subject: Revise Phase II Production and Emissions Limits
Date Issued: June 1, 2000
Location: 7000 S.W. Adams Street, Peoria

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission sources and/or air pollution control equipment, consisting of physical and operational improvements to the Arc Shop to increase steel production as described in the above referenced application. This permit is subject to standard conditions attached hereto and the following special conditions:

In conjunction with this permit, approval is given with respect to the federal rules for Prevention of Significant Deterioration of Air Quality Regulations (PSD) for the above referenced equipment as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., the Federal regulations promulgated thereunder at 40 CFR 52.21 for Prevention of Significant Deterioration of Air Quality (PSD), and a Delegation of Authority agreement between the United States Environmental Protection Agency and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is also based upon and subject to the findings and conditions which follow:

Findings

1. Keystone Steel and Wire Company (“Keystone”) is proposing to modify the electric arc furnace (EAF) and ladle metallurgical furnace (LMF) in its existing Arc Shop to increase steel production at its Peoria plant. In conjunction with the changes, Keystone also proposes to upgrade particulate matter control by installing an additional baghouse and replacing the filter bags in existing baghouses with more effective filter bags.

2. The plant is located in Limestone Township in Peoria County. The area is currently designated attainment for all criteria pollutants.

3. The proposed project has potential emissions as listed in Table II which are more than 25 tons/year for particulate matter (PM), 40 tons/year for sulfur dioxide (SO_2), 40 tons/year for nitrogen oxides (NO_x), 100 tons/year for carbon monoxide (CO), 15 tons/year for PM_{10}, and more than 0.6 tons/year for lead (Pb). Potential emissions of volatile organic compounds (VOC) are less than 40 tons/yr. The project is therefore subject to PSD review as a major modification for PM, PM_{10}, SO_2, NO_x, CO, and Pb emissions.

4. The project must be designed, constructed and operated so that emissions are in compliance with (i) all applicable Board emission limits, (ii) Best Available Control Technology (BACT) on emissions of PM, SO_2, NO_x, CO, and Pb, and (iii) applicable Federal New Source Performance Standards (NSPS). The application submitted by Keystone, as reviewed by the Illinois EPA shows that the project will comply with these requirements.

5. The air quality analysis submitted by Keystone and reviewed by the Illinois EPA shows that the project will not cause a violation of the national ambient air quality standards (NAAQS) and increments.

6. The Illinois EPA has determined that the application for the proposed project complies with all applicable Illinois Air Pollution Control Board Regulations and the federal Prevention of Significant Deterioration of Air Quality Regulations (PSD), 40 CFR 52.21.

7. A copy of the application, and the Illinois EPA's project summary and draft permit were placed in a location in Peoria, and the public has been given notice and opportunity to examine this material and to submit comments and to request and participate in a public hearing on this matter. At the same time as this permit was issued, a copy of this permit and the Illinois EPA's response to comments was sent to all persons who submitted comments.

The Illinois EPA is issuing approval subject to the following conditions and consistent with the specifications and data included in the application. Any departure from the conditions of this approval or terms expressed in the application would need to receive prior written authorization the Illinois EPA.

<u>Conditions</u>

ELECTRIC ARC FURNACE (EAF) AND LADLE METALLURGICAL FURNACE (LMF)

1. The renovation to the EAF and LMF requires the implementation of Best Available Control Technology (BACT) for all pollutants that exceed the significant emission thresholds.

2. The EAF including the transformer, the capture and control system, and dust handling system are subject to a New Source Performance Standard (NSPS), 40 CFR 60, Subpart A and AAa for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.

3. Pursuant to 40 CFR 60.11(d), at all times the Permittee shall maintain and operate the EAF including the transformer, the capture and control system, and the dust handling system in a manner consistent with good air pollution control practice for minimizing emissions.

4. Particulate matter emissions from the EAF, including meltdown and refining, charging, tapping, slagging, electrode port leakage, and ladle lancing shall not exceed the applicable allowable hourly emission rate specified by 35 Ill. Adm. Code 212.321 or 212.322 [35 Ill. Adm. Code 212.448].

5a. Continued operation of the EAF, LMF, and LMS in excess of the applicable emission standards of 35 Ill. Adm. Code, Part 212 is allowed during malfunction or breakdown of any Arc Shop related equipment for a limited period as necessary to prevent injury to personnel or severe damage to equipment [35 Ill. Adm. Code, Part 201, Subpart I].

   i. The emission units may continue to operate until the processing of material in progress is complete.

   ii. Reasonable measures shall be taken to minimize emissions during the malfunction or breakdown.

   iii. The Permittee shall notify the Illinois EPA’s Regional Office by telephone as soon as possible during normal working hours upon the occurrence of excess emissions due to malfunction or breakdown. The Permittee shall comply with all reasonable and safe directives of the Regional Office regarding such malfunction or breakdown.

b. Within five (5) working days of occurrence of continued operation with excess emissions during the malfunction or breakdown, the Permittee shall give written follow-up notice to the Illinois EPA’s Regional Office which contains the following outlined information:

   i. Date, time, and duration of the malfunction or breakdown;

   ii. A description of the malfunction or breakdown with a detailed explanation of the cause, if known;

   iii. An estimate of the quantity of emissions;

   iv. The measures used to reduce the quantity of emissions and the duration of the occurrence; and

v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.

6. For the EAF and LMF, the Permittee shall implement the following control technology which has been determined to meet BACT:

a. Captured PM, PM_{10} and Pb emissions will be ducted to baghouses:

i. During the melting and refining steps, the existing ventilation system consisting of DEC's on both furnaces shall be used to capture emissions. These captured emissions shall be ducted to baghouses.

ii. During the charging and tapping steps, emissions shall be collected by a penthouse canopy. A penthouse canopy is one that extends above the roof line allowing additional residence time.

iii. Baghouses shall be fitted with bags capable of controlling emissions at or below 0.0018 gr/dscf.

iv. Emissions from the Arc Shop baghouses shall not exceed 3 percent opacity.

b. Uncaptured PM, PM_{10} and Pb emissions will be emitted through the roof monitor:

i. The portion of the roof monitor above the EAF shall be closed.

ii. Emissions of PM, PM_{10} and Pb from the roof monitor shall not exceed 6 percent opacity except:

A. Shop opacity less than 20 percent may occur during charging periods; and

B. Shop opacity less than 40 percent may occur during tapping.

c. CO emissions shall be controlled by the DEC, Oxy/Fuel Burners, and Combustion Chamber.

d. NO_x emissions shall be controlled by the DEC and Oxy/Fuel Burners.

e. SO_2 emissions shall be controlled by using low sulfur injection coke (0.65% or less).

7. No owner or operator shall cause to be discharged into the atmosphere from the dust handling system any gases that exhibit 10 percent opacity or greater, pursuant to 40 CFR 60.272a(b).

8a. Steel production in the EAF and LMF system shall not exceed 115,000 tons per month and 1,200,000 tons per year.

b. Emissions from the EAF and LMF system shall not exceed the following limits:

Pollutant	Emission Factor (Lb/Ton Steel Produced)		E M I S S I O N S (Tons/Month)	(Tons/Year)
PM	Baghouse Vents	0.13	7.48	78.00
	Roof Monitor	0.14	8.05	84.00
PM_{10}	Baghouse Vents	0.10	5.75	60.00
	Roof Monitor	0.11	6.33	66.00
Pb	Baghouse Vents	0.003	0.18	1.80
	Roof Monitor	0.003	0.18	1.80
CO	Baghouse Vents	1.34	77.05	804.00
NO_x	Baghouse Vents	0.51	29.33	306.00
SO_2	Baghouse Vents	0.20	11.50	120.00
VOM	Baghouse Vents	0.13	7.48	78.00

These limits are based on the maximum steel production and the application of BACT. Compliance with annual limits shall be determined from a running total of 12 months of data.

9. The Permittee shall perform the following emission monitoring requirements:

a. Except as provided under paragraphs 9(b) and 9(c), a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator [40 CFR 60.273a(a)].

b. No continuous monitoring system shall be required on any control device serving the dust-handling system [40 CFR 60.273a(b)].

c. A continuous monitoring system for the measurement of opacity is not required on modular, multiple-stack, or negative-pressure control devices; or if the visible emissions from the control device are performed by a certified visible emission observer as

follows: Visible emission observations are conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations will be required. IN this case, 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) [40 CFR 60.273a(c)].

d. A furnace static pressure monitoring device is not required on any EAF equipped with a DEC system if observations of shop opacity are 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 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 [40 CFR 60.273a(d)].

10. The Permittee shall perform the following monitoring of operations requirements:

a. The owner or operator shall maintain records of the following information:

i. All data obtained under paragraph 10(b) [40 CFR 60.274a(a)(2); and

ii. All monthly operational status inspections performed under paragraph 10(c) [40 CFR 60.274a(a)(2)].

b. Except as provided under paragraph 9(d), the owner or operator shall check and record on a once-per-shift basis the furnace static pressure (if DEC system is in use, and a furnace static pressure gauge is installed according to paragraph 10(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 Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A of this part [40 CFR 60.274a(b)].

c. When the owner or operator is required to demonstrate compliance with the standards under 40 CFR 60.272a(a)(3) and at any other time the Administrator may require that (under section 114 of the Act, 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 paragraph 10(b)(1) or 10(b)(2). The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator’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)].

d. 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 holds in ductwork or hoods, flow constrictions cause by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed [40 CFR 60.274a(d)].

e. The owner or operator may petition the Administrator to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system [40 CFR 60.274a(e)].

f. During any performance test required under 40 CFR 60.8, and for any report thereof required by 40 CFR 60.275a(d), 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 [40 CFR 60.274a(h)]:

i. Charge weights and materials, and tap weights and materials [40 Cfr 60.274a(h)(1)];

ii. Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing [40 CFR 60.274a(h)(2)];

iii. Control device operation log [40 CFR 60.274a(h)(3)]; and

iv. Continuous monitor or Reference Method 9 data [40 CFR 60.274a(h)(4)].

11. The Permittee shall perform the following recordkeeping and reporting requirements:

a. Records of the measurements required in §60.274a must be retained for at least 2 years following the date of the measurement [40 CFR 60.276a(a)].

b. Each owner or operator shall submit a written report of exceedances of the control device opacity to the Administrator 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)].

c. 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 Administrator to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the Administrator semiannually [40 CFR 60.276a(c)].

d. The requirements of this section 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)].

e. When the owner or operator of an EAF or AOD is required to demonstrate compliance with the standard under 40 CFR 60.275(b)(2) or a combination of (b)(1) and (b)(2) the owner or operator shall obtain approval from the Administrator of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked 30 days prior to the performance test [40 CFR 60.276a(e)].

f. For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with 40 CFR 60.272a(a) and furnish the Administrator a written report of the results of the test. This report shall include the following information [40 CFR 60.276a(f)]:

i. Facility name and address;

ii. Plant representative;

iii. Make and model of process, control device, and continuous monitoring equipment;

iv. Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;

v. Rated (design) capacity of process equipment;

vi. Those data required under §60.274a(h) of this subpart;

A. List of charge and tap weights and materials;

B. Heat times and process log;

C. Control device operation log; and

D. Continuous monitor or Reference Method 9 data.

vii. Test dates and test times;

viii. Test company;

ix. Test company representative;

x. Test observers from outside agency;

xi. Description of test methodology used, including any deviation from standard reference methods;

xii. Schematic of sampling location;

xiii. Number of sampling points;

xiv. Description of sampling equipment;

xv. Listing of sampling equipment calibrations and procedures;

xvi. Field and laboratory data sheets;

xvii. Description of sample recovery procedures;

xviii. Sampling equipment leak check results;

xix. Description of quality assurance procedures;

xx. Description of analytical procedures;

xxi. Notation of sample blank corrections; and

xxii. Sample emission calculations.

g. The owner or operator shall maintain records of all shop opacity observations made in accordance with 40 CFR 60.273a(d). All shop opacity observations in excess of the emission limit specified in 40 CFR 60.272a(a)(3) shall indicate a period of excess emission, and shall be reported to the administrator semi-annually, according to 40 CFR 60.7(c) [40 CFR 60.276a(g)].

h. Steel production for the EAF and LMF (tons/month and tons/year).

i. Sulfur content of the coke purchased (percent).

LADLE PREHEATER 1 AND LADLE PREHEATER 2

The ladle preheaters will not increase operation and, therefore, will not increase emissions. BACT is not required for these emission units.

12a. Natural gas usage for the two ladle preheaters shall not exceed 18,823,200 scf/month and 188,496,000 scf/year.

b. Emissions from the combustion of fuel by the two ladle preheaters shall not exceed the following limits:

Pollutant	Emission Factor (Lb/mmscf)	E M I S S I O N S (Tons/Month)	(Tons/Year)
Carbon Monoxide (CO)	84	0.80	7.92
Nitrogen Oxides (NO_x)	100	0.95	9.43

These limits are based on the maximum fuel usage and standard AP-42 emission factors. Compliance with annual limits shall be determined from a running total of 12 months of data.

c. The Permittee shall keep monthly records of the following items:

i. Natural gas usage for the two ladle preheaters (mmscf/mo and mmscf/yr).

SEQUENCE CASTER

PM emissions from the sequence caster will be increasing due to the production increase; therefore, the sequence caster must demonstrate BACT for PM emissions. BACT for the sequence caster is "no control".

13a. Natural gas usage for the sequence caster shall not exceed 12,269,300 scf/month and 122,865,120 scf/year.

14a. Emissions from the sequence caster shall not exceed the following limits:

Pollutant	Emission Factor	E M I S S I O N S (Tons/Month)	(Tons/Year)
PM	0.015 lb/ton	0.87	9.00
PM_{10}	0.008 lb/ton	0.46	4.80
CO	84 lb/mmscf	0.52	5.16
NO_x	100 lb/mmscf	0.62	6.15

These limits are based on the maximum rate, uncontrolled emission factors for PM and PM_{10} from USEPA document “Iron and Steel Plant Emission Parameters”, G. McCutchen, 9/77, and standard AP-42 emission factors. Compliance with annual limits shall be determined from a running total of 12 months of data.

b. Particulate matter emissions from liquid steel charging in continuous casting operations shall be controlled by chemical or mechanical shrouds or methods of comparable effectiveness, [35 Ill. Adm. Code 212.450].

15. The Permittee shall keep monthly records of the following items:

a. Natural gas usage for the sequence caster (scf/month and scf/year).

RODMILL REHEAT FURNACE

16a. Steel billet throughput in the reheat furnace shall not exceed the following limits:

Tons/Month	Tons/Year
86,250	900,000

These limits are based on the maximum steel billet throughput. Compliance with annual limits shall be determined from a running total of 12 months of data.

b. Emissions from the reheat furnace shall not exceed the following limits:

Pollutant	Emission Factor (Lb/Ton)	E M I S S I O N S (Tons/Month)	(Tons/Year)
Carbon Monoxide (CO)	0.038	1.64	17.01
Nitrogen Oxides (NO_x)	0.197	8.50	88.70

These limits are based on the maximum steel billet throughput specified in Condition 16a, and substantiated by a stack test conducted on August 6, 1998. Compliance with annual limits shall be determined from a running total of 12 months of data.

SLAG HANDLING

Fugitive dust emissions are generated by the movement of the front end loaders over the unpaved slag cooling and handling area. BACT for this operation is the use of a water spray system in the slag cooling handling area, configured such that the dangers of contact with the hot slag is minimized.

17. Emissions from the slag handling operations shall not exceed 0.013 tons per month and 0.15 tons per year. These limits are based on the maximum steel production and the minimum control efficiency (80%).

18. Emissions from the slag handling area shall be controlled by the use of wet suppression which shall provide at least 80 percent control efficiency.

PLANT ROADS

Keystone transports steel billets and coiled rod to and from the Arc Shop and Rod Mill via plant roadways generated fugitive dust. An increase in production will cause an increase in truck traffic and, hence, increase road fugitives. Most of the plant roads are paved which minimizes the dust; however, the roads in the area of the scrap yard and slag area are not. These roadways are covered by crushed slag, which generates particulate emissions.

19. For the plant roads, the Permittee shall implement the following control technology, which has been determined to meet BACT:

    a. All paved roads shall be swept twice per week and all paved parking areas shall be swept once per month.

    b. A chemical suppressant shall be applied to unpaved roads and areas once per month providing an 80 percent reduction in emissions of particulate matter and PM_{10}.

EMISSIONS TESTING

20a. i. Within 180 days from the completion of the construction under this permit, the emissions of PM, PM_{10}, NO_x, CO, VOM, Pb, SO_2 and opacity from the Arc Shop control system shall be measured by an approved testing service, during conditions which are representative of maximum emissions, to demonstrate compliance with the conditions of this permit.

    ii. After the initial tests required by this permit, the Permittee shall also perform the above tests within 90 days of a written request by the Illinois EPA.

b. i. The following methods and procedures shall be used for the testing, unless another method is approved by the Illinois EPA: Refer to 40 CFR 60, Appendix A for USEPA test methods.

Location of sample points	USEPA Method 1
Gas flow and velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Particulate Matter	USEPA Method 5D
PM_{10}	USEPA Method 201 or 201A
Nitrogen Oxides	USEPA Method 7
Opacity	USEPA Method 9
Carbon Monoxide	USEPA Method 10
Lead	USEPA Method 12
Volatile Organic Material	USEPA Method 25A
Sulfur Dioxide	USEPA Method 6, 6a, 6b, or 6c

    ii. For compliance purposes, all particulate matter measured shall be considered PM_{10} unless emissions are tested by the above referenced test method for PM_{10} or another approved test method.

c. At least 60 days prior to the actual date of testing, the Permittee shall submit a written test plan to the Illinois EPA for review and approval. This plan shall include as a minimum:

i. The name (or other identification) of the emission unit(s) to be tested and the name and address of the facility at which they are located;

ii. The name and address of the independent testing service(s) performing the tests, with the names of the individuals who may be performing sampling and analysis and their experience with similar tests;

iii. The specific determinations of emissions and/or performance which are intended to be made, including the site(s) in the ductwork or stack at which sampling will occur;

iv. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and minimum performance, the values of operating parameters for the emission unit, including associated control equipment, at or within which compliance is intended to be shown, and the means by which the operating parameters will be determined;

v. The procedures which will be used for testing, including test method(s) with the specific analysis method, if the method can be used with different analysis methods, the specific sampling and analytical procedures, and the calibration and other quality control procedures;

vi. A description and justification for any minor changes in standard methods and procedures proposed to accommodate the specific circumstances of testing and for any proposed use of an alternative test method;

vii. An outline of the contents of the Test Report.

d. The Illinois EPA shall be notified before these tests to enable the Illinois EPA to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.

e. The Final Report of these tests shall include as a minimum:

i. A tabular summary of results which includes:

A. Process/mode tested (e.g., charging, meltdown, tapping);

B. Process weight rate;

C. Production rate;

D. Allowable emission limit;

E. Measured emission rate;

F. Determination of control or capture efficiencies for the baghouses, post-combustion system, direct evacuation control, combustion chamber, canopy, etc.;

G. Emission factor (e.g., lb pollutant emitted per ton steel produced);

H. Compliance demonstrated - Yes/No; and

I. Arc Shop control system operating parameters (e.g., current to fans, pressure drop across baghouses, air flow in system, etc.).

ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including:

A. Pertinent process information (e.g. fuel or raw material consumption) and

B. Control equipment information, i.e. equipment condition and operating parameters during testing.

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration;

f. Copies of the Final Report for these tests shall be submitted to the Illinois EPA within 14 days after the test results are compiled and finalized and in no case later than upon the submittal of the operating permit application for this production increase.

g. Submittals of information shall be made as follows:

i. Notice of Test - one copy to Regional Office and one copy to Compliance Section.

ii. Final Report - one copy to Regional Office and one copy to Compliance Section.

Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

Illinois Environmental Protection Agency
Division of Air Pollution Control - Regional Office
5415 North University
Peoria, Illinois 61614

21. Any exceedance of the requirements of this permit as determined by the recordkeeping required by this permit shall be reported to the Illinois EPA in writing within 30 days of the exceedance. The report shall include a description of the incident, identify the emission units involved, provide the type and amount of the emissions during the exceedance, and describe corrective actions taken at the time of the exceedance and subsequent actions taken to prevent future exceedances. The report shall be sent to the following:

Illinois Environmental Protection Agency
Division of Air Pollution Control - Regional Office
5415 North University
Peoria, Illinois 61614

22. The Permittee may operate under the terms and conditions of this construction permit for 270 days from the completion of construction under this permit, superseding standard condition 6(b).

If you have any questions on this, please call Jason Schnepp at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:JMS:jar

cc: Region 2
USEPA

Attachment A

Summary of Changes in Annual Emissions (in Tons)

Change to Operation	Baseline Years	Baseline Steel Production		
		Arc Shop	Caster	Rod Mill
1987 Oxy-fuel Burner Addition	1980 & 1981 [1]	612,200	Not Limited	Not Limited
1992 Phase I Modifications	1990 & 1991	638,312	611,234	633,862
1995 Phase II Modifications	1990 & 1991	638,312	611,234	633,862
1999 Arc Shop Modifications	1997 & 1998	711,000	N/A	633,862

[1] The production levels during the years 1982 through 1987 were not representative of historical production due to foreign steel dumping resulting in a depression of domestic steel production.

Change to Operation	Applicable Years	Steel Production Limits		
		Arc Shop	Caster	Rod Mill
1987 Oxy-fuel Burner Addition	1988 - 1992	660,000	Not Limited	Not Limited
1992 Phase I Modifications	1993 - 1995	750,000	750,000	960,000
1995 Phase II Modifications	1996 - 1999	820,000	820,000	900,000
1999 Arc Shop Modifications	1999 to Present	1,200,000	N/A	900,000

Annual Emissions from the Arc Shop Before and After 1987 Oxy-fuel Burner Addition

Pollutant	Emission Factor (Lb/Ton)		Annual Emissions (Tons/Yr)	
	Baseline	Post Project	Baseline	Post Project
TSP	0.640	0.640	195.90	211.20
PM_{10}	0.490	0.490	149.99	161.70
Lead	0.015	0.015	4.59	4.95
CO	3.400	1.460	1,040.74 [2]	481.80 [2]
NO_x	0.690	0.690	211.21 [2]	227.70 [2]
VOM	0.130	0.130	39.79	42.90

Emissions Increases resulting from Oxy-fuel Burner Addition

Pollutant	Baseline Emissions (Tons/Yr)	Emission Limits (Tons/Yr)	Emissions Increases (Tons/Yr)	Significant Level (Tons/Yr)
TSP	195.90	211.20	- 3.40	25.0
PM_{10}	149.99	161.70	- 2.59	15.0
Lead	4.59	4.95	0.36	0.6
CO	1,040.74 [2]	481.80 [2]	- 558.94	100
NO_x	211.21 [2]	227.70 [2]	16.49	40.0
VOM	39.79	42.90	3.11	40.0

[2] NO_x and CO emissions from the combustion of natural gas by the two ladle preheaters, tundish preheater, tundish heater, and billet cutting torches are not quantified in this netting exercise since emissions from these units are determined by fuel usage, not steel production, and have not increased during the years addressed by this netting exercise.

Annual Emissions Before and After Phase I Modifications

Pollutant	Emission Factor (Lb/Ton)		Annual Emissions (Tons/Yr)	
	Baseline	Post Project	Baseline	Post Project
Arc Shop				
TSP	0.640	0.540	204.26	202.50
PM_{10}	0.490	0.420	156.39	157.50
Lead	0.015	0.013	4.79	4.88
CO	1.460	1.460	465.97 [2]	547.50 [2]
NO_x	0.690	0.690	220.22 [2]	258.75 [2]
VOM	0.130	0.130	41.49	48.75
Caster Building				
TSP	0.015	0.0003	4.58	0.11
PM_{10}	0.008	0.0002	2.44	0.06
Lead	0.000	0.000	0.00	0.00
CO	0.000	0.000	0.00 [2]	0.00 [2]
NO_x	0.346	0.000	0.00 [2]	0.00 [2]
VOM	0.000	0.000	0.00	0.00
Rod Mill Reheat Furnace				
TSP	0.009	0.009	2.85	4.32
PM_{10}	0.007	0.007	2.22	3.36
Lead	0.000	0.000	0.00	0.00
CO	0.038	0.038	11.98	18.14
NO_x	0.346	0.197	109.53	94.61
VOM	0.000	0.000	0.00	0.00

Source-wide Emissions Increases Resulting From Phase I Modifications

Pollutant	Baseline Emissions (Tons/Yr)	Emission Limits (Tons/Yr)	Emissions Increases (Tons/Yr)	Significant Level (Tons/Yr)
TSP	211.70	206.93	- 4.76	25.0
PM_{10}	161.05	160.92	- 0.13	15.0
Lead	4.79	4.88	0.09	0.6
CO	477.94 [2]	565.64 [2]	87.90	100.0
NO_x	329.75 [2]	353.35 [2]	24.65	40.0
VOM	41.49	48.75	7.26	40.0

[2] NO_x and CO emissions from the combustion of natural gas by the two ladle preheaters, tundish preheater, tundish heater, and billet cutting torches are not quantified in this netting exercise since emissions from these units are determined by fuel usage, not steel production, and have not increased during the years addressed by this netting exercise.

The following control equipment/measures were implemented as part of the Phase I production increases:

- Closing of a large part of the Arc Shop roof monitor
- Installation of low NO_x burners in the Rod Mill reheat furnace
- Installation of a baghouse control system on the continuous billet caster

Annual Emissions Before and After Phase II Modifications

Pollutant	Emission Factor (Lb/Ton)		Annual Emissions (Tons/Yr)	
	Baseline	Post Project	Baseline	Post Project
Arc Shop				
TSP	0.640	0.430	204.26	176.30
PM_{10}	0.490	0.330	156.39	135.30
Lead	0.015	0.010	4.79	4.10
CO	1.460	1.340	465.97 [2]	549.40 [2]
NO_x	0.690	0.650	220.22 [2]	266.50 [2]
VOM	0.130	0.130	41.49	53.30
Caster Building				
TSP	0.015	0.0003	4.58	0.12
PM_{10}	0.008	0.0002	2.44	0.07
Lead	0.000	0.000	0.00	0.00
CO	0.000	0.000	0.00 [2]	0.00 [2]
NO_x	0.000	0.000	0.00 [2]	0.00 [2]
VOM	0.000	0.000	0.00	0.00
Rod Mill Reheat Furnace				
TSP	0.009	0.009	2.85	4.05
PM_{10}	0.007	0.007	2.22	3.15
Lead	0.000	0.000	0.00	0.00
CO	0.038	0.038	11.98	17.01
NO_x	0.346	0.197	109.53	88.70
VOM	0.000	0.000	0.00	0.00

Source-wide Emissions Increases Resulting From Phase II Modifications

Pollutant	Baseline Emissions (Tons/Yr)	Emission Limits (Tons/Yr)	Emissions Increases (Tons/Yr)	Significant Level (Tons/Yr)
TSP	211.70	180.47	- 31.22	25.0
PM_{10}	161.05	138.52	- 22.53	15.0
Lead	4.79	4.10	- 0.69	0.6
CO	477.94 [2]	566.41 [2]	88.78	100.0
NO_x	329.75 [2]	355.20 [2]	27.01	40.0
VOM	41.49	53.30	11.81	40.0

[2] NO_x and CO emissions from the combustion of natural gas by the two ladle preheaters, tundish preheater, tundish heater, and billet cutting torches are not quantified in this netting exercise since emissions from these units are determined by fuel usage, not steel production, and have not increased during the years addressed by this netting exercise.

The following control equipment/measures were implemented as part of the Phase II production increases:

- Add two additional air/oxy/fuel burners for a total of four to the EAF
- Enlarge DEC ducting
- Install water-cooled duct and peak shaver in the DEC system
- Install a dropout box/combustion chamber in the DEC system
- Modified canopy hood system

Summary of Emission Changes Associated With The Arc Shop Modifications

EAF & LMF Emission Summary

Pollutant	Actual Emissions* Tons/Year	Potential Emissions Tons/Year	Emissions Increase Tons/Year
PM	124.43	162.00	37.57
PM_{10}	95.99	126.00	30.01
Pb	2.84	3.60	0.76
CO	476.37	804.00	327.63
NO_x	231.08	306.00	74.92
VOM	46.22	78.00	31.78
SO_2	92.43	120.00	27.57

Sequence Caster Emission Summary

Pollutant	Actual Emissions* Tons/Year	Potential Emissions Tons/Year	Emissions Increase Tons/Year
PM	5.33	9.00	3.67
PM_{10}	2.84	4.80	1.96

Slag Handling Emission Summary

Pollutant	Actual Emissions* Tons/Year	Potential Emissions Tons/Year	Emissions Increase Tons/Year
PM	0.0884	0.15	0.0616
PM_{10}	0.0884	0.15	0.0616

Plant Roads Emission Summary

Pollutant	Actual Emissions* Tons/Year	Potential Emissions Tons/Year	Emissions Increase Tons/Year
PM	228.09	183.47	-44.62
PM_{10}	50.81	40.87	- 9.94

Arc Shop Modification Emission Summary Totals

Pollutant	Actual Emissions* Tons/Year	Potential Emissions Tons/Year	Emissions Increase Tons/Year
PM	357.9384	354.62	-3.3184
PM_{10}	149.7284	171.82	22.0916
Pb	2.84	3.60	0.76
CO	476.37	804.00	327.63
NO_x	231.08	306.00	74.92
VOM	46.22	78.00	31.78
SO_2	92.43	120.00	27.57

*Actual emissions are based on an average of the actual emissions from the previous two calendar years.

DES:JMS:psj